EIGHTH REPORT

OF THE

STATE BOARD OF HEALTH

OF

MINNESOTA,

FOR THE YEARS

1879—1880.

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1881.

MINNESOTA STATE BOARD OF HEALTH.
Secretary's Office, July 1st, 1881.

To His Excellency, John S. Pillsbury, Governor of Minnesota:

SIR: I have the honor to transmit herewith the eighth Report of the State Board of Health for the years 1879-80.

Very respectfully,
Your obedient servant,
CHARLES N. HEWITT,
Secretary.

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MEMBERS STATE BOARD OF HEALTH.

D. W. HAND, M. D., Saint Paul, President.
V. SMITH, Duluth.
CHAS. N. HEWITT, M. D., Red Wing, Secretary.
FRANKLIN STAPLES, M. D., Winona.
W. H. LEONARD, M. D., Minneapolis.
E. J. DAVIS, M. D., Mankato.
CH. GRONVALD, M. D., Holden.

NOTE.—All communications should be addressed to Secretary State Board of Health, Red Wing, Minn.

GENERAL REPORT.

JULY 1st, 1881.

The State Board of Health submit their Report for 1879-80. It was nearly ready at the date of the meeting of the Legislature, but at the request of the board a preliminary report was substituted and the regular report delayed till all the examinations then in progress were completed. The circulars Nos. 1, 2 and 3 were printed separately and have been widely distributed through the State. Up to the date of this report there has been no marked prevalence of epidemic disease with the single exception of diphtheria. Owing largely to the fact that the medical profession, as a rule, came cordially to the support of the state and local boards, popular opinion has been educated by an increase of popular knowledge, and there has been less and less difficulty in enforcing quarantine of the sick and of infected. No other disease has so entirely confined its most malignant attacks to the young, and none, of its class, caused such mortality among them. The circular on Diphtheria of this board (of which thousands of copies have already been distributed, and which will be sent to any address by the secretary) details, for popular use, the opinions of practical sanitarians as to the best means of controlling and preventing this dreaded disease. All parents will find cause for thankfulness and energetic action in the fact that those means are within the power of every family in our population and if further, they will remember that they have a duty to their neighbors as to themselves, they will understand that what protects themselves, most perfectly protects others also. Householders who attempt to carry these rules into actual practice will quickly come to know how essential to their own success is the organization and work of local boards of health, for which there is abundant legal provision for every town of the state. They will learn also how important it is that the executive officer of the board should be an educated physician and that the work of such a board should be constant and energetic. A popular mistake in dealing

with diphtheria or other preventible disease, is that little can be done till the disease appears in a family or community. This mistake grows out of the belief so common that all diseases are specific or else that they come and go in an order of which we have no knowledge and of which we have little or no control. The error is the natural one of confounding the specific and proximate cause of disease. In vaccination, for example, the specific cause is the virus, but ill health or some peculiarity of the patient may so affect the operation of the virus as to convert the ordinarily harmless vesicle into a corroding ulcer. Or perhaps a better illustration of the secondary or proximate cause would be the common experience of pin-prick. In the vast majority of cases a trifling wound is the only result; but in a case or two the secondary cause, a predisposition to disease, exists, or from some temporary derangement, the little scratch occasions an erysipelas which may be of a very serious character. The removal of these secondary causes, the maintenance of the most perfect health, by constant sanitary supervision of the house by the family, and of the town by local authorities, give the surest guarantee that, if specific disease causes do come, they can be met and dealt with more promptly and successfully than when the standard of health, for the individual or for a community has been lowered by the neglect of the simplest sanitary precautions. In hygiene, as in war, the best place to meet the enemy is on the outposts and the worst, is to permit it to get into the very heart of a population before efforts to expel it are begun.

SMALL-POX.

The statistics of the sea-board cities and of the quarantine stations indicate that small-pox may be introduced into our state by eastern or foreign immigrants during the coming summer and fall. We are not prepared to meet it, because, as we have had no general outbreak of the disease for many years, parents have neglected vaccination. The circular on small-pox herewith published was printed and distributed as soon as the supply of the previous circular on the subject was exhausted. We can add nothing to what is there stated. *Vaccination and re-vaccination are our only real protection against small-pox*—a protection so easy and safe that parents incur a fearful responsibility in neglecting it.

TYPHOID FEVER.

As to Typhoid Fever: it is very rarely absent from the state. It is liable at any time to become endemic in any town or city where each case occurring is not carefully secluded and disinfected. It is very clearly demonstrated that one case neglected may easily cause many more, and that the infection is chiefly communicated by the discharges from the bowels of the sick. The circular on Typhoid Fever, herewith published, explains how this infection is spread and the easy means of preventing it.

The paper upon "Infantile Diseases as a cause of Mortality" will be distributed through the state at the time when those diseases are most prevalent. The board urgently call upon physicians to co-operate in measures to reduce the sickness and mortality from these causes. We call especial attention to the statistics there given that *the greatest mortality is not from epidemic, infectious diseases as diptheria and scarlet fever, but from cholera infantum, general debility and like disorders which find their cause in the insanitary condition of the houses and places in which children live; also in impure drinking water and improper food.* There is no field in which earnest physicians can reap so full a harvest of good, as in this one, if they will interest themselves, and take hold of the matter in a practical way. The number is constantly increasing, of physicians who recognize this duty and are pleased to be consulted by their clients for the prevention of disease as for its cure. The people at large, especially anxious mothers, have only to seek to find, very great help from the family physician in this direction. Let them advise with him in all matters relating to the health of the family, with the same freedom with which they consult him for the *cure* of disease. The duty of the physician to help *ward* off disease, is almost forgotten in our time, in his recognized duty of coming to the family aid in the effort to expel it, *after it has gained access to the home.*

It will be no fault of medical men in the future if this is so, for they are the ones who, through evil report and good report, have made practical hygiene what it now is. The people have only to put the matter to practical test to discover on the part of their family physician a willingness to give them any aid in his power. Nothing but good can come from such consultation, and the greater the demand for the knowledge which it implies, the wider and more available that knowledge will be. One of the most serious obstacles with which health officers have to contend is the ignorance of practical sanitary work, even among educated men and

women, and therefore the difficulty of securing such work when, as in the presence of epidemic disease, it is most urgently needed. Among various ways by which the state board of health have endeavored to meet this difficulty the holding of sanitary councils has been one. The report published herewith, of the council held at St. Paul in February 1881, will show our methods and enable the reader to judge of its success, where hearty co-operation is accorded to the effort by prominent men. We wish to call particular attention to the resolution adopted by that council in favor of the organization of voluntary sanitary associations in every town, to co-operate with the local and state boards of health.

The plan of such an organization sketched by the secretary of this board (p 42) will be sufficient to suggest to thinking men and women what they can do to further practical sanitary work in their own communities. No mbre efficient way of organizing men and women for the doing real good to others can be devised than such associations, under proper direction, become. At first they should be composed of a few earnest and intelligent workers, who as soon as they can see their way to more work than they can alone accomplish may call to their aid, now here and there one, until in a few months they have a well organized and active body of laborers who will be an aid and a stimulus to the organization and work of a local board of health. This board having legal and very extended powers, will be able to enforce the reforms which an intelligent public opinion, worked up by the voluntary association of citizens demands. This is the real difficulty, How to secure the co-operation of educated people in local sanitary work. We believe that one cause is found in the mistaken notion that really efficient effort in this direction requires the personal interference of a physician, and that there is very little that can be done without his personal help.

DISEASES OF INFANCY AND CHILDHOOD.

The causes of the most fatal diseases of infancy and childhood exist in the location, internal arrangement, and management of the house, which is the home for children—see the paper on vital statistics of Infancy pp 117-125 of this report. A careful reading of that paper will be sufficient to indicate a very wide field for sanitary effort by parents and particularly by mothers. And, as in so many other less important matters, womem have, by associated effort, accomplished great good, why not in this, which so nearly concerns the welfare of themselves and their families?

In the matter of dealing with infectious diseases, small-pox, scarlet fever, measles, diphtheria, typhoid fever and the like, if the reader will study the reports herewith presented it will be readily understood that an educated popular sentiment is of the greatest importance, for without it the efforts of most experienced health officer, backed by the legal authority of the local and state boards of health, will very often fail of adequate results. The obstinacy and stupid indifference of so many people as respects these diseases *when themselves or their families are the sufferers*, is only equalled by their blind fury when others are the victims, and themselves likely to suffer from others carelessness or indifference.

In every outbreak of small-pox, for example, these traits of human character are exhibited and make the work of controlling and crushing out the disease sometimes very difficult.

It has been suggested to introduce the study of hygiene into the schools as one means of popular education. There has been no lack of effort to do this very thing for the last ten years on the part of this board, and yet we are compelled to say that the study is not yet properly pursued in any school in the state. For eight years the secretary of this board has given a brief course of lectures to the graduating class of the University and has established there a system of physical examinations, but no instruction is given by text book, and the lectures are a side issue, attendance is optional, and they are given out of the regular hours. This board have offered to provide lecturers and instruction in practical hygiene in teachers' institutes, and we believe some instruction in physiology is regularly given, but not of the character best fitted to enable teachers to instruct scholars how to prevent and ward off ill health.

We are glad to be able to state that the desire for such instruction is increasing and that we are using every means in our power to satisfy it. We need, for any adequate success, the cordial support and co-operation of every teacher in the state and of every educated man and woman. We hope for help from the sanitary councils which we intend to meet in different parts of the state. The next one will be held at Albert Lea in September, and another in Mankato later in the year.

INTER-STATE CO-OPERATION IN DEALING WITH EPIDEMICS AND INFECTIOUS DISEASES.

We have under consideration a plan for securing co-operation between the states of Wisconsin, Iowa, Minnesota, the territory of Dakota, and the province of Manitoba, in dealing with epidemics

and infectious diseases. Such a conference will be called by the direction of the Governor, at our request, to meet at Albert Lea in September, and we have assurances that there will be a full representation, and that a simple plan of mutual notification and co-operation in this direction will grow out of the consultation of the representatives of the boards of health who will meet there.

LOCAL BOARDS OF HEALTH.

The present organization of the local boards of health is so imperfect that this board have great difficulty in dealing with epidemic diseases or in securing any regular sanitary work. And the difficulty is not so much in the law, as in the apathy and indifference of local authorities. Outside the larger towns health boards have no *active* existence except in the presence of epidemics, chiefly such as create popular panics, as small-pox, and then as a rule their usefulness depends upon the character of the physician selected as health officer. Their action is very much hampered too by the item of expense; towns inclining to shift it on to the counties and counties on to the state, when it is incurred in dealing with an epidemic.

With the technical justice of the matter we have, here, nothing to do; but the practical effect will be, in the end, to lay the expense of dealing with infectious diseases by boards of health, upon the counties and possibly the state. And yet the *actual management* of the local outbreak is the legal and manifest duty of the town in which it appears.

There is no lack of competent medical men to serve as health officers in nearly every county in the state, but until local boards of health are recognized necessities, and as such are supplied with funds for the practical performance of the duties which are, by law, imposed upon them, it will be very difficult to secure the services of reliable men as health officers.

Another difficulty is the short tenure of office of local health boards and so of health officers. It would be an advantage if the membership could be changed gradually each year, leaving a majority of old members. In the case of a competent health officer he should be retained so long as efficient. The position is not now a desirable one, and the physician who takes it must have an established reputation of his own for honest fearlessness or he must be sustained by those who have. Such support is all essential to him and is a powerful stimulus to the doing his whole duty.

We are able to report an increase in the number of local boards of health which are active in dealing with diphtheria, scarlet fever and typhoid fever. Since our last report this has been done with varying success. A thorough success is reported on page 56, by the health officer, Dr. A. T. Conley, under whose courageous direction the fight was made. The paper will repay careful reading. It will be seen that the methods used were a judicious combination of legal authority and common sense:

1st. The board inquired as to their powers and what had been done elsewhere.

2d. They asked for and received the hearty aid and support of the state board of health. The secretary visited and co-operated with them.

3d. By quiet and earnest effort, public meetings were held, and the necessities of the case were thoroughly and intelligently put before the people.

4th. An advisory committee of leading citizens was organized to support and co-operate with the local health board.

5th. As a consequence, when the movement began on the enemy it was a sustained and determined one. Opposition was so jointly and honestly met as to be overcome and the whole village really participated in the final success.

A similar effort in the township of Cannon Falls showed clearly what two or three determined men as town supervisors can do for practical hygiene.

Such examples are a healthy evidence of the utility of local boards of health whose very existence is too often dependent on the impulse of a "scare" rather than a sustained popular belief in their value and constant use. One result is already quite evident; local boards of health are oftener called for and held to an increased responsibility. It will not be the fault of the state board of health if they are not held to the full accountability which their great powers justify, and it will be an occasion of sincere congratulation when in every town such a board can be found, ready at least for the emergency of infectious diseases, if not for the routine work which is, after all, the most important of its duties.

We are very glad to be able to state that, after years of effort to that end, the medical profession and the mass of the people are now satisfied of the infectious character of diphtheria and that this belief has borne good fruit in attempts, as above noted, to stay the progress of that pestilent disease. If the reader desires to read evidence that diphtheria is a very infectious disease, and that

its spread is more frequently determined by that peculiarity than by secondary causes, let him study the paper on sanitary councils, and the general report on diphtheria, p. 67, also special report by Dr Berry, p. 106.

Those papers contain but a tithe of the evidence which can be found in previous reports, and in the correspondence of the board. The experience in Minnesota seems enough to settle the question, but we refer to like evidence scattered all through current sanitary literature to the same effect. Because of this evidence, and of the fearful mortality which accompanies true diphtheria, we again call upon local boards of health, and parents to renewed efforts to expel this disease which at times seems likely to become endemic in some localities. *Seclude every case of Diphtheria.*

There is another disease which inflicts a heavy loss of life and efficiency on the adult population of our state every year—typhoid fever. Tract No. 3, p. 171 of this report, sums up the most reliable information at our command, and gives in connection with tract No. 1, p. 185, the details of methods for controlling and preventing its occurrence. We call particular attention to these papers and to the truths which they contain. Let it be clearly understood that even when our best physicians and sanitarians differ as to the possibility of isolated cases occurring without a specific cause, none deny that the disease is thereafter spread by a specific poison in the discharges from the bowels of the sick. The importance of this practical fact cannot be overestimated in efforts at preventing the spread of the disease. The most important thing to do is to *disinfect all such discharges* before they are removed from the sick room, by the free use of a saturated solution of Sulphate of Iron (green vitrol), which salt is cheap, easily used and efficient. With so easy an effort as this disinfection implies, this fatal and tedious disease may be brought under such control as to be an exceptional occurrence, even in crowded towns. What excuse therefore, is there for so large a sick and death rate from typhoid fever? There is none, and the responsibility for the neglect of these simple measures should rest on physicians and people alike, until *all* will use such knowledge to help put this fever (at present a leading cause of mortality in Minnesota) in its proper place as one of the least. If the human suffering and premature death which it is admitted to cause can be estimated in trouble and money, then compared to such cost, the use of these easy precautions will be rightfully regarded as a trifling outlay for so great and helpful results.

The circulars and tracts of the board on these subjects can be

procured of the secretary. If local boards of health and thinking citizens will reprint them in local newspapers or publish articles of their own, to the same effect, they will help towards the popular understanding of the matter, and save many a week of sickness and hundreds of premature deaths. In this connection, we call attention to increasing danger from the accumulation of refuse in privies, cess-pools, and other ways, upon, or *in*, the soil of towns and cities. A reference to the water analyses made in the laboratory of the board (p. 134) will show how these collections of filth are poisoning the well waters, which are the chief source of supply to the population. In several instances, springs locally famous for the purity of their supply, have become too foul to drink, and in a case or two, for any use whatever.

None of our towns are yet adequately supplied with water works. Minneapolis is in greatest need. Her supply from the river is good, but its distribution is not yet general. We have repeatedly urged taking the supply *above* the town. It will probably be done, and the sewers and water mains extended. The city's growth has been so great that such provision is difficult. When that is done and the distribution is general, the influence will be marked upon her sickness and death rate. At present the well supply is, as a rule, bad; in some parts of the town should typhoid fever appear it will probably be spread through the entrance of its specific poison into many wells. The attention of the health authorities of the city has already been called to this danger.

The water supply of St. Paul is very fine at present, from Lake Phalen, but they will have to seek other sources and give it a wider distribution. The sewerage system of both cities is far from complete, and the disposal of garbage into the river, as is done in large amount, at Minneapolis, should be forbidden by law.

If the two cities could come to some arrangement as to a common abbatoir, on the plan of that at Brighton, Mass., or a better one if it can be devised, where all slaughtering should be done and the rendering of animal refuse done on scientific principles, great good would be accomplished. As financial ventures abbatoirs pay, and from a sanitary stand-point they are essential in all great centers of population. Stillwater has provided for an abundant and pure supply of water, and Winona is at this time considering a change in her supply which at present is taken from wells near the river bank. Compare analysis of domestic well water with this supply in Winona, No.'s 81-88, p. 136 of this report.

We are studying methods in use elsewhere of water supply, sewerage, and the control of offensive trades, and hope to be able to procure plans available for our smaller cities and towns. These things are much more cheaply and easily provided for early in the history of a centre of population than later. The literature of the subject is abundant, but the use of patented appliances not infrequently adds to cost without proportionate benefit. The essential thing is to co-ordinate the sewerage system with the water supply. Because of cost it is not uncommon to introduce a water supply and leave the sewerage system till later, or what is perhaps worse, attempt to use a partial system of surface water drains for sewerage purpose. The result is saturation of soil with sewerage, a very serious danger to the water supply from wells.

WELLS AS A SOURCE OF DRINKING WATER SUPPLY.

We call particular attention to the report on Drinking Waters, p. 129, and to the increasing danger of well poisoning from the infiltration of animal excretions from cess-pools, privies, manure heaps and the like. It is of the utmost importance that every householder should understand the danger to the health of his family from impure drinking water. Beside taking care that surface water is kept out of wells, as much care should be used that the supply is taken from the bottom of the well or at least below an impervious stratum of clay or stone, down to which the well should be walled up with hard burned brick or stone laid in hydraulic cement.

When the water supply is of necessity surface water or water coming in to shallow wells from the adjacent soil the supply should be suspected, in case of sickness among those using it. It is always best to filter such water before drinking it, and a simple filter made of a large flower pot, in which are put alternate layers of fresh charcoal and clean sand, well pressed down, will serve a good purpose. Such filters should have for the upper layer fine clean sand, which will retain any solid matters in suspension in the water, and should be frequently renewed. The entire filter should be allowed to dry out every few days, in the sunlight, and then the first water run through it should be thrown away. Once a month it is well to change all the filtering material; or if new cannot be readily obtained, the old should be washed and dried, and then may be used again. The silicated carbon filter is probably the best in the market, among patented articles, but the one above described within the reach of every family, is a good one.

CISTERN WATER FOR DRINKING PURPOSES.

The popular suspicion of well water is making the resort to cistern water for drinking purposes more and more common. Rain water collects impurities from the air (which it washes) and from the roofs and gutters over and through which it runs into the cistern. (See analysis on page 138). The annual cleaning of, even the best, cisterns shows what an amount of offensive matter goes in with the water. The ordinary filter is a brick wall; at the best, its operation is mechanical and most matters in solution go through unaffected by it. It is a question, still undecided, whether pure rain water is the best for children and whether the lime, magnesia, and iron in spring and well waters are not natural sources of supply for such elements necessary, to digestion and growth. In any event, all cistern water should be filtered before drinking, and every precaution should be taken to keep the cistern clean and well ventilated.

ICE IN DRINKING WATER.

Care should always be taken that ice used for this purpose is clear and clean. Instances are upon record where it is not unlikely that offensive matter has in this way gotten into drinking water, and sickness has been occasioned by it.

METEOROLOGY OF THE STATE.

Our thanks are due to the gentlemen who have aided the committee of the board in this important study. Reports are received regularly from eleven stations in different parts of the state. We have the co-operation of the U. S. Signal observers, and the data so secured are of increasing value. There are many records made by individuals of which we have not yet secured reports. It is hoped to obtain them, as also records of the observed relations of meteorological phenomena to disease prevalence. A striking illustration of this relationship is quoted in the report p. 145.

Taken altogether, the retrospect of sanitary work in Minnesota for the years 1879-80 is an encouraging one. There is greatly increased popular interest in all matters pertaining to health, but chiefly in the means of preventing infectious diseases. Local boards of health are increasing in number and efficiency, and they are securing more and more the support and co-operation of the best of all classes of people.

The policy of the state board of health has been to encourage and assist all local efforts for sanitary reform. We believe that the local board of health should be the responsible authority in its district, and that everything which increases its influence or efficiency is clear gain for the whole State. A great need, perhaps the greatest at this time, is thoroughly educated health officers. Physicians, who knowing the science and art of hygiene are not merely executive officers of the law, but, what is far better, teachers of the best methods of sanitary work.

This board are fully convinced of another principle, that all sanitary work should proceed upon the assumption that the hygiene of the house and family which make the home, is the unit of public hygiene whether for the town or the state, and therefore we are using every effort to increase public knowledge in that direction.

As respects infectious diseases, we rely upon prompt information of their appearance from local health boards, or in their absence, would be thankful to any responsible person for giving it. In thinly settled districts, where physicians are rare, it is the duty of the town clerk to give such information. Several times we have received such notice from ladies, mothers of families, in the district invaded. For such information we are under many obligations.

We go on to another year's experience and work encouraged by the knowledge that hygiene, the art of preserving our most valued possession, health, will grow more and more in popular confidence and respect, and will win in the near future a hearty and general support. Its legal penalties will be less potent than the educated dread of preventible disease and premature death, and the punishment of an outraged public sentiment will be visited upon all who obstinately and willfully disobey the laws whose sole object is "to render growth more perfect, decay less rapid, life more vigorous, death more remote."

D. W. HAND,
CHAS. N. HEWITT,
V. SMITH,
FRANKLIN STAPLES,
W. H. LEONARD,
E. J. DAVIS.
CH. GRONVALD.

EVENING SESSION.

Lieut. Gov. Gilman presided at the evening session.

Hon. C. K. Davis read a thoughtful paper on the hygiene of crime. He said, in substance:

What are called civil rights are amply cared for, while the criminal department of administration is crude. The individual is left to his primal liberty and impulse toward transgression, care being only taken to punish, not to prevent. While philosophers had sought remedies for these evils, politicians were the last of men to learn the lessons taught in books, and seldom learn them at all until they learn them of the masses. The doctrine of the irresponsibility of the insane, inoculation for small-pox, and other steps in social and moral progress had made their way, not as the result of thoughtful statesmanship, but through the force of circumstance. The indifference of states to the prevention of crime was greatly due to theological notions that there is something in the nature of sin with which physical causes have nothing to do. Crime is often a disease which, while demanding punishment, also demands that punishment shall cease to be wholly retributory in its character, but shall also be corrective. The speaker considered the different classes of crime in relation to their periodicity. There are seasons of various crimes among different classes, the causes of which must be sought in the special environment of society for that time; and so far as administrative agencies can control that environment, to a large degree the question becomes one of criminal hygiene, with which the State has to do as a duty. Now, while in the present condition of knowledge, conditions and theories of this character are mainly speculative, so far as their practical application to government is concerned, they are mandatory upon government for prevention whenever they are sufficiently understood to be easily controlled. What is merely speculative to-day will, in ten years, be practical, and may in one hundred years become ordinarily functional elements in the regulation of every-day life. Great progress has been made in the past century, especially in prison discipline, the classification of crime and gradation of punishments, establishment of reformatory instructions for the young, and in the treatment of the insane. The crowded tenements of cities were the spawning grounds of crime; and here the question becomes one of moral disease and its prevention.

While modern thought, as it delights to call itself, seems committed to the idea that the interferance of the State in matters which it is pleased to call merely subjects of speculative administration is wholly misplaced and usurpatory, the consoling fact remains that science, little by little, is possessing itself of the administrative functions of society. Among the questions pressing for solution are few more practical in their character than this one, which demands from lawyer and physician their best efforts to ascertain the boundary line which divides wicked and punishable transgressions from those acts which are as truly the results of disease as the struggles of a madman in his bonds.

HYGIENE OF THE DEAF, DUMB AND BLIND.

J. L. Noyes, superintendent of the State Institution for the Deaf, Dumb and Blind, not having received sufficient notice, con-

fined himself to a few facts regarding their sanitary condition. The average daily attendance in the institution for the first ten years of its existence was about fifty; for the past eight and one-half years, one hundred. There are now one hundred and ten deaf and dumb, twenty-six blind, and twenty-two in the imbecile department; total, one hundred and fifty-eight. All are now in good health, and this is generally the case, though the condition and vigor of these children is low, compared with others, as the disease depriving them of sight or speech leaves the body feeble and unable to resist disease. Some physicians assert that the deaf and dumb and blind are more susceptible to endemics and consumption, and shorter-lived than other children. During the first thirteen years there was no death in the institution, with an average attendance of over fifty.

Many seasons it is without more sickness than often occurs in a family of five to seven persons. But two deaths have taken place since 1863, and those under peculiar circumstances—the first case being that of a girl with a malformation at the base of the brain, that was injured by a fall, resulting in death; the other, a child violently attacked with croupal diphtheria thirty-six hours after entering the institution and dying in three days. There were no other cases following, and it was evident the disease was contracted before entrance. Girls and boys are subjected to the same regimen and observe the same hours; and the girls fully equal the boys in health. During their stay in the institution both sexes improve in health, and leave in better physical condition than they enter. The reasons for these favorable results were given, as follows: Regular habits, abundant and wholesome food, pure water, plenty of sleep in comfortable, well ventilated, sunny rooms, and daily exercise in the open air. Special pains had been taken with the water supply, and the State board had rendered efficient aid in the matter. All the pupils were required to work three or four hours per day (Sunday excepted) at various trades; five to six hours daily were devoted to study; the change from study to work being a decided benefit to the pupils, who rarely left on account of poor health—such cases averaging less than one in three years. Recreation was various and systematically arranged. "Thus the day passes with a pleasing variety of study, work and recreation, all systematically arranged, and habits of thought, regularity and industry are acquired, which are of great value in after life. Parents often speak of this, and one father declared he wished more of his

children were deaf and dumb, that they might enjoy the benefits of the institution at Faribault."

Prof. Noyes also stated that cerebro spinal meningitis, or spotted fever, now stood at the head of causes of deaf-muteness and blindness; though scarlet fever had occupied that place until recently, and that children generally came to them ignorant of all sanitary principles. Rev. J. H. Riheldaffer next read a paper upon

HYGIENE AT THE REFORM SCHOOL.

The health of the inmates was far above the average. This was the result of the following conditions: The first step with new inmates was to wash them and put them in clean clothes; as they generally came to the school dirty, ragged and infested with vermin; second, regularity in habits, amusements and labor; the boys lead an active, joyous life of study, work and play, which was highly conducive to health. It was the aim of the discipline to restrain the youth from their evil habits and make the mind healthy as well as the body. Wholesome food and pure water were most important factors in producing these results. The water supply some years since had been unsatisfactory, and a well 150 feet deep was sunk in the solid rock; and this had undoubtedly saved the school from much disease. Seasons of pleasureable excitement, including the holidays, occasional entertainment, and a week's annual encampment on the danks of a lake, some miles distant, were among these reasons. The boys were kept in a healthful frame of mind as well as body. The reform school was a healthful institution. The speaker closed with the expression of the belief that the progress of sanitary science was not only improving the health of the race, but increasing its longevity.

The secretary stated that Dr. Bartlett, superintendent of hospital for insane, of St. Peter, had intended to be present, but his duties were so onerous that he was unable to attend. Dr. Bowers, superintendent of insane hospital, of Rochester, was in attendance, but circumstances had prevented his preparing a paper.

COTTAGE HOSPITALS FOR THE INSANE.

Dr. C. H. Boardman, of St. Paul, read an interesting paper on the Cottage Hospitals for the Insane, in which he combatted the policy of building large and costly edifices, in which are confined all classes of the insane, curable and incurable alike, without discrimination. and asked, as an economic question, whether

it was wise to continue a lavish expenditure for the benefit of a single class. He said:

In 1877 there were about 45,000 insane persons in the United States, and of these about 90 per cent. were cared for in buildings provided either by taxation or by charitable endowment. Some idea of the significance of these facts may be derived from the statement that between 1867 and 1877, there were erected, in various States, twenty hospitals for the insane, whose capacity was sufficient for 9,758 patients, and the aggregate cost of which was $19,506,000. This is an average cost of $1,993 per patient, contrasted with which is the statement of the lunacy commissioners of Great Britain, according to whom the maximum cost of asylums in that country is £159 per patient, or $850, inclusive of land and furniture. The record of our State in this respect is better than that of most others, but the number of the insane seeking relief is increasing relatively to the growth of the population, and it is well that timely provision should be made to meet the difficulty, and that the mistakes of others should be corrected. If experience had shown that our system results in a larger proportion of cures than any other, no objection should be made to it; but of this there are grave doubts. The results obtained in this country are less favorable than those reported from abroad, where different methods are in vogue, and one is forced to the conclusion that there must be some grave defects in our machinery. One of these seems to be that we make the same institution an asylum and a hospital. If our costly appliances are essential to the successful treatment of acute cases of insanity, which is denied on good authority, it does not follow that they are also necessary for the cure of the chronic and incurables, who might otherwise be cared for at much less expense and with equal advantage to themselves. Another defect is the multiplication of the duties of the superintendents of our asylums. It cannot be expected that they can devote that careful personal attention to the patients which is desirable while they are burdened with the conduct of a great institution in all its details; the cooking, heating, washing, ventilation and baking, as well as the farm operations. The superintendents of our own asylums are deserving of the highest commendation for their faithfulness and efficiency, for accomplishing so much in spite of a vicious system. A remedy for these and other evils which might be mentioned, seems to be the abandonment of further outlay for large hospitals, and the adoption in their place of the comparatively inexpensive cottage system; the advocacy of which does not rest upon hypothetical considerations since their efficacy has been tested and established. Its greater economy has been referred to. Another argument in its favor is its incomparably greater safety in case of fire. It is of value also as a therapeutic measure, as it not only permits but invites an open air life to a much greater extent than is possible under the existing system; and this will lead, it is hoped, to the introduction of employment for the patients, which is regarded in foreign hospitals as a means of treatment of the highest value.

It would seem to be an act of humanity as well as a sound hygienic measure to supply these unfortunates with some occupation as far as possible, instead of permitting them to spend months and even years in wandering aimlessly about corridors or sitting idly with folded hands, the monotony of their existance broken only by an occasional walk when permitted by the weather. The infrequency of the use of restraining apparatus for the insane in English hospitals,

seems due in a great measure to the treatment here advocated, since such [illegible] of irritation as close confinement and enforced idleness are to a great ex[illegible] moved. In conclusion, the system in question is urged, because exp[illegible] structures involve in addition to the original outlay a large annual expen[illegible] for repairs and a greater cost of living than would be incurred in less pr[illegible] tious buildings, and because of the large number of the insane to be provid[illegible] for, who are but one of the dependent classes demanding public aid; and und[illegible] cost of maintenance of any one class is an injustice to all the others. It will provide for them more easily than can be done in any other way, various kinds of useful labor adapted to their tastes, strength or capacity, in order to relieve their morbid states of mind by drawing their attention away from themselves and fixing it upon the labor in which they engage, and at the same time giving tone and vigor to the body and control over their actions and mental processes, and thus aiding to restore the nerves and brain to their normal condition. It will enable the patients to pass the day in open air, or in shops well ventilated, freeing them from the oppressive monotony of confinement within the walls of a building, with only scant opportunities for exercises; and at the same time it will afford a degree of safety in case of fire which is unattainable under the existing system.

And, finally, it may be stated that the earnings of labor would reduce to some extent the outlay for current expenses.

THE COTTAGE SYSTEM DISCUSSED.

Dr. Bowers was not prepared for a speech, and did not feel like controverting the previous speaker. But the questions put to him in the general discussion which followed, elicited the fact that he thought the cottage system impracticable and extravagant, and was opposed to it. A number of interesting facts and figures were brought out by the debate, the general drift of which seemed to support Dr. Bowers' views. Dr. Sheardown, of Winona, member of the legislature, said he had been in favor of the cottage plan, but investigation had altered his views upon the matter. He doubted if it were adapted to this section and climate. This view was endorsed by other medical gentlemen, who had had occasion to study the matter.

At 10 o'clock the council adjourned, to meet this morning at 10 o'clock.