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FOURTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH

OF

MINNESOTA.

JANUARY, 1876.

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MINNESOTA STATE BOARD OF HEALTH,
SECRETARY'S OFFICE,
RED WING, Minn., January 13th, 1876.

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

SIR:—I have the honor herewith to transmit the fourth annual report of the State Board of Health, and Vital Statistics.

Your obedient servant,

CHARLES N. HEWITT,

Secretary State Board of Health.

MEMBERS OF THE BOARD.

D. W. HAND, M. D., St. Paul, President.

V. SMITH, M. D., Duluth.

G. D. WINCH, M. D., Blue Earth City.

FRANKLIN STAPLES, M. D., Winona.

A. E. SENKLER, M. D., St. Cloud.

W. H. LEONARD, M. D., Minneapolis.

CHARLES N. HEWITT, M. D., Red Wing, Secretary.

GENERAL REPORT OF THE MINNESOTA STATE BOARD OF HEALTH FOR 1875.

INEBRIATE ASYLUM.

Referring to previous Reports, the Board urge the organization of the *Asylum for the care and cure of Inebriates* as speedily as possible.

The State Medical Society, at its last meeting, expressed the opinion of that profession here and elsewhere, that such an Asylum is needed in Minnesota, thus endorsing the action of this Board in this matter.

At a moderate estimate, there are as many confirmed inebriates in our State as insane—more than five hundred (500.)

Properly organized Asylums have, after twenty (20) years trial, proven the only means of care and cure, at all successful with this class of unfortunates. Their statistics show more than thirty-five (35) per cent. of cures, (i. e., those who have remained well more than two years,) as many more permanently benefitted; and they have provided comfortable homes, and freedom from temptation to many others who would, without such provision, have speedily filled a drunkard's grave. Numbers of citizens leave our State every year, for asylum treatment in other States.

FEEBLE MINDED CHILDREN.

The number of this class, *whose only hope is early, prolonged and careful special education*, is already so great as to demand the attention of the Legislature. Five or six are now resident at the Insane Asylum. Thirteen (13) have been discharged or rejected from the Deaf-mute and Blind Asylums. One (1) was, at our last inspection, found in the Reform School, to which he had been returned from the Insane Asylum, and has since been returned to the

Poor House of Ramsey county. It is believed that as many as forty (40) of this class are now known to the superintendents of these Institutions, who are properly subjects of State care. They are out of place in any existing Institution, except, perhaps, a few who might be cared for in the Reform School. They certainly are not subjects for treatment in the Insane Asylum. We believe that the superintendents of the State Institutions agree with this Board, that some special provision should be made for them. The following seems to us a practicable arrangement, and one, too, that, while not increasing the expenses of the State, will result in the organization of a school for feeble-minded children, which, so endorsed, will derive a considerable income from the care and education of children whose parents are able and willing to pay for them, of which there are many in the State :

Let the Legislature enact that any person or persons organizing an Institution for the care and cure of feeble-minded children, shall be authorized to receive and care for persons of this class properly subjects of State care ; *provided*, that such person or persons be approved as properly qualified, by the superintendents of the Insane and Deaf-Mute Asylums, and of the Reform School, and that the school be subject to the inspection of the State Board of Health. We believe that such an act, providing reasonable compensation for the childrens' education, would secure the organization of such a school by private enterprise, relieving the State entirely of all expense, except for care and education of such of its wards as may become pupils.

THE LAW REGULATING THE SALE OF OIL FOR ILLUMINATING PURPOSES.

Several accidents, including the terrible one at Wadena, have occurred in Minnesota since the passage of the act, and by the use of oil flashing *under* 150° F. The list might be indefinitely extended by accidents in other States. This whole matter has undergone thorough investigation by scientific men in nearly every State of the Union, and as a result of such investigations, stimulated by the fearful accidents so frequently occurring, the standard required *has been constantly raising*. The standard of the Minnesota law is that no oil shall be used for illuminating purposes, except such as does not give off an inflammable vapor below 150° F. This standard is necessary for the following reasons :

First.—The temperature of lamps in rooms of ordinary temperature 70° F., (in small houses and in winter it is often much higher

than that) has by experiment, been found to reach as high as 135° F., and the metal cap, in which is the burner 145° F. In lamps so heated, any oil flashing below 135° F. or 150° F. if mixed with air, as it is when oil is low, would, upon application of flame or accidental breaking of burning lamp, explode and burn.

Second.—Oil of 150° F. flashing, does not give off any vapors at any lower temperature. It cannot be ignited by a burning wick or flame, as such oil requires a temperature of 170° F. and higher to burn. It is therefore safe and no lower degree is anything like as safe.

Absolute safety in an article of so common use is the end of the law and the reason for the standard.

Third.—Such oil costs but little more a gallon than inferior oil. It is less offensive and clearer, burns longer, and gives a brighter light than inferior oil.

Fourth.—Such oil, pure and clear, has been furnished since our law went into operation.

The chief objection to the law came from the manufacturers. Up to the latter part of July, the oil sent which met the requirements of our law was pure, clear, and quite free from offensive odor. Since then, there have been increasing complaints, that it is more offensive, and gives less light, than oil of lower grade, and that in some cases it does not burn well unless lamps are full. We are investigating the truth of these statements, and the reason therefor. One general agent of an oil company has stated to a member of the Board that the high test requires the addition of paraffine, and other of the heavier products. This cannot be so, because no such products will distill at a temperature of 150° Fahrenheit, or 170° Fahrenheit. The cause of the deterioration in oil is given by Prof. Peckham in his report. See page 21.

The investigations rendered necessary by this state of affairs enable us to give clearly and upon evidence the exact facts. Oil of 300° Fahrenheit is manufactured by the Downer Oil Company, of Boston, Mass., and burns in ordinary lamps, using what is called a dual burner, with ease, and the whale oil of old times required a much higher temperature to ignite, yet burned readily in inferior lamps, and a fair sample of 150° F., Flashing Test, oil did not become thick or milky at 32° F., the freezing point.

This Board respectfully ask that no changes be made in the standard of the existing law.

Attention is called to the article on "Kerosene; its manufacture, uses and dangers," by Prof. S. F. Peckham, of the State Uni-

versity, appended to this report. It is a clear and authoritative statement, by one who, as a chemist and manufacturer, has had an intimate practical acquaintance with the subject.

A sample of the 300° Fahrenheit oil to which he refers, known as "Mineral Sperm," has been purchased by this Board, and experiments are now being made with it in our office. In an ordinary lamp, having a burner with two wicks instead of one, it gives a brilliant flame, equal it is claimed, to that of 14 standard candles, at a cost of not more than half a cent an hour. The oil is of a light yellow color, with no offensive odor. Tried by the "Oil Tester" approved by the Board, it "flashed" at 270° Fahrenheit, and took fire at 308° Fahrenheit.

The examinations and inquiries now in progress, when complete, can be put into shape for the use of the Legislature, and will be submitted, if desired. As required by the law, this Board approved a Tester for oil, and it is in use by all the inspectors.

STATE PRISON.

Careful inspection has been made. The lower tier of cells are so badly ventilated that they should not be used except when unavoidable. The enlargement of cell room is completed. The cells are well cared for. Steam heating apparatus not yet in use, but nearly ready. Food excellent in quality and abundant. The system of drainage not complete; should be finished without delay, and all water and slops securely cut off from foundations and cellars, and all surplus spring water should enter the sewers. There are no adequate provisions for laundry or bathing purposes, and the out-houses are not what they should be. These things are *essentials*, and should be provided immediately. We again call attention to the fact that under existing arrangements, the Warden is little more than the boarding house keeper of the Prison. He has little opportunity or power for the classifications of the prisoners, a very important means of their reformation.

Murderers and abandoned convicts are subjected to no other restraints, as a rule, than other convicts, and have too many opportunities to be the examples and guides of young men confined for minor offenses, and for shorter terms. Great evils have already resulted from this lack of authority by the Warden. For these and other reasons, stated in previous reports, we again urge the organization of a new Prison, in a place, upon plans, and under management more nearly in accord with the demands of modern Prison reform than is possible in the present one.

INSANE ASYLUM.

The new building is nearly completed and when comfortably occupied, the entire building will accommodate 450 patients. If crowded 500. The statistics for the year 1875 are as follows: It began with 381 patients in hospital. It closes December 1st, 1875, with 434, an increase of 53.

During the coming winter there will probably be 500 in hospital, and after this year it is not likely there will ever be less than that number in residence at any time, on the contrary, the number will increase. It is therefore evident that the new building is not large enough yet.

The old hospital buildings, in town, are badly out of repair, the wooden building especially is hardly fit for human occupancy. Necessary repairs, to make it what it ought to be, would involve practical reconstruction. Though in better order, the stone building cannot be made over except at great expense. The lot in St. Peter is too small, crowded and unsuited for the purpose.

The problem for the future as respects the care and health of the insane, is a very simple one. More buildings, and more land suited for such labor as the insane are capable of. Four plans suggest themselves. We submit them, but are not prepared to advise the adoption of any of them.

1st. *Enlarge the present Hospital.*

This is negatived in the judgement of the Superintendent and the board of managers, and we believe they are right. The hospital is as large as any such building ought ever to be.

2d. *Extensive repairs of old buildings* and their occupation for a few years more. This is opposed on the ground that such an arrangement would be temporary and that even for them, the expense would nearly equal that of new buildings.

3d. *Enlarge present farm* and erect suitable houses, one or more in which living in the farmer's family, properly selected patients could engage under his supervision in farm or garden work. To such houses patients could be easily sent, or as easily withdrawn to central hospital, as the judgment of the Superintendent dictated.

4th. *Begin a new hospital in some other part of the State.*

This plan is based on the supposition that in the near future, one or two other asylums will be necessary, located for convenience of access, one in the northern and one in the southern part of the state. A new hospital would involve an outlay, at the beginning, of \$75,000 or \$100,000, if intended to provide for 100 patients, and

the organization of a new staff of medical and other officers, or an addition to the present one, should it be determined to keep the new hospital under the existing Board.

The additions to the permanent buildings have been well and thoroughly built.

The sanitary condition of the hospital is fair. Water supply excellent in quality, Food, abundant and varied, and careful inspection showed, thorough attention to cleanliness of persons, rooms and clothing. The water-closet system is, in many ways, defective, and sufficient appropriation should be made to effect such changes as experience has shown to be necessary.

During the year there has been under treatment 567 patients, of whom 135 have been discharged or died. Of this number :

Recovered, 48.8 per cent.

Improved, 26.6 per cent.

Unimproved, 4.4 per cent.

Died, 20 per cent.

Of the whole number treated—576—434, or 76.5 per cent. remain in Hospital December 1st.

Sixty-six, or 11.4 per cent., discharged cured.

Thirty-six, or 6.2 per cent., discharged improved.

Six, or 1 per cent., discharged unimproved.

Twenty-seven, or 4.6 per cent., died.

DEAF, DUMB AND BLIND INSTITUTION.

Since its organization this Institution has received of—

Deaf-mutes..... 163

Blind 32

Total..... 195

Of whom were discharged as graduates—

Deaf-mutes, 30, or 18.4 per cent. of whole number discharged.

Blind, 4, or 12.4 per cent. of whole number discharged.

Imbecile and incapable of instruction—

Deaf-mutes, 3, or 1.83 per cent.

Imbeciles not deaf-mutes, 8, or 4.9 per cent.

Imbecile blind, 2, or 6.2 per cent. of whole number discharged.

Withdrawn by parents, or from other causes—

Deaf-mutes, 13, or 7.97 per cent. of whole number discharged.

Blind, 5, or 15.6 per cent. of whole number discharged.

Total discharged, 65.

Which is 33.12 per cent. of all deaf-mutes received, and 34.8 per cent. of all blind received.

There are now remaining in the Institution—

Deaf-mutes.....	109
Blind.....	21

These statistics are interesting as showing that five per cent. of deaf-mute children sent to the Institution are feeble minded children, incapable of instruction, and so by the terms of the law must be discharged; and 7.2 per cent. of the blind received must be discharged for the same cause. For these *doubly* unfortunate children the existing law does not provide.

Nearly 8 per cent. of deaf-mutes received are removed by parents or friends, or their own motion, before education is complete; and of the blind 16 per cent. go out for the same reason. It is evident that the benefits intended by the State are very materially diminished by these causes, and that from no fault of its managers or superintendent, the institution by so much fails of its intended work.

The sanitary inspection by this Board shows that the Deaf and Dumb Asylum is now too much crowded. The kitchen and laundry are inconvenient and not sufficient for the actual needs of the pupils.

The dormitories are too crowded. The central building, for which the foundations are already laid, should be completed as soon as possible. The physical wants of the pupils are well cared for. The food is excellent and varied, and the condition of the buildings, rooms, clothing, bedding, and of the pupils themselves, indicates a watchful and generous care.

REFORM SCHOOL.

There have been received during the year into this Institution .

Boys.....	26
Girls.....	2

Total..... 28

Discharged during the year—

Boys.....	25
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There are now in the school—

Boys.....	104
Girls	6

Total..... 110

One death from disease of heart. No other deaths, and no sickness.

This Institution cares for a number of feeble minded children. The Superintendent reports that they have made little trouble, and that they have received great benefit.

The central building needs repairs, to include bathing facilities and water closet. The out houses are not yet what they ought to be, and should be thoroughly reconstructed as earth closets, and with interior partitions.

SOLDIERS' ORPHANS' HOME.

There are at present seventy-three (73) inmates in this Institution. The building, (rented for the use of the Home,) is heated by hot air furnaces. The ventilation is fair. Drainage into a cesspool as far from the building as the size of the lot will permit. This cesspool is cleaned and disinfected as often as necessary.

The food is good and abundant, and the education of the children, physical and mental, well provided for. Much credit is due to the local managers, for the faithful care with which they have dispensed the bounty of the State, in the organization and management of the Home.

NORMAL SCHOOL BUILDING AT MANKATO.

The attention of the Legislature is called to the necessity for the reconstruction of the heating and ventilating apparatus. At present it is not only expensive and inefficient, but it endangers the safety of the building.

The inspection work of this Board in the public institutions demonstrates the fact, that in their construction sufficient attention has not been paid to ventilation and other essentials of health.

We respectfully urge that all plans of public buildings shall hereafter be submitted to this Board with reference to these subjects, for they are best and most economically provided for *before* building. Afterwards it is often impossible to do it satisfactorily.

OTHER WORK OF THE BOARD.

Considerable advance has been made in the study of the water supply of the state. The subject is one of great importance, especially to the population of the western counties.

The preliminary survey has included personal inspection along the lines of the St. Paul and Pacific Railroad, main line, St. Paul

and Sioux City, to Mankato, and Winona and St. Peter to Marshall. Every facility is promised by the railroad companies, and thanks are due those mentioned for courtesies extended. About fifty qualitative analyses of water are already made, but it is thought best to delay their publication till all intended are complete. Very important questions are suggested by these analyses, which will be investigated as the work goes on. Meantime we publish "a report as to the best methods, for popular use, of judging of the quality of waters, their purification and preservation, and the construction of cisterns and wells," by the Secretary of the Board.

THE ADULTERATIONS OF FOOD.

This study is constantly in progress, as occasion occurs. Some memoranda on the subject are published in the reports.*

The subject of "*Ventilation*" is discussed by Dr. D. W. Hand, of St. Paul, in an article herewith published, to which attention is called.

Dr. A. E. Senkler, of St. Cloud, presents preliminary report of his work in the study of the climate of Minnesota, with reference to its dryness, and the presence and operation of ozone.

He has been provided with apparatus by the Board, and has the aid of the signal service and other observers throughout the State. The work has but just begun. The meteorological statistics are the first systematic attempt ever made to determine, by careful observation, these important facts for the whole State.

"*The influence of the climate of Minnesota upon Catarrh, Pneumonia, and Phthisis,*" is the title of the preliminary report by Dr. Franklin Staples, of Winona, herewith presented. This report is based upon a voluminous correspondence and the work hitherto done in this direction.

EDUCATIONAL WORK.

The Secretary of the Board serves as nonresident Professor of Public Health at the State University, and during the last year has given one course of lectures on *Foods* to the senior class. These lectures were attended by many students of other classes also, and much interest was manifested in the discussions incidental to the subject studied.

The Secretary has attended and addressed several Teachers' Institutes upon sanitary matters. The Board are using every effort to increase the interest in the study of Hygiene in all the schools of the

State. Beside his regular duty in inspections, correspondence, and at the University, the Secretary of the Board has begun, by order of the Board, a study of the water supply of the State as related to the health of the population. This involves many analyses, traveling, and extensive reading and study. For this and other additional work the Board have voted him five hundred dollars additional compensation. The annual appropriation will be nearly exhausted when all accounts are settled.

MINERAL SPRINGS.

A large number of springs have been developed during the past year for which medical virtues are claimed, and the opinion of this Board has been several times sought. We have declined to assume the expense of visits and analyses, as they are matters of business speculation, and not directly related to our work.

We have advised that such waters be submitted to the Professor of Chemistry at the State University whose analyses we should be glad to have. Our advice has not, to our knowledge, been followed. Such an analysis is a necessary preliminary to an intelligent study of the effects of any given water upon health or disease.

Dr. N. B. Hill, a member of this Board, died February 5, 1875. An extract from the records of the Board in reference thereto, is appended to this report. By appointment of the Governor, Dr. Wm. H. Leonard, of Minneapolis, succeeds Dr. Hill. Commission dated February 27th, 1875.

The financial statement appended, exhibits the expenditure of the appropriation made for the use of the Board.

Respectfully submitted,

D. W. HAND,
CHAS. N. HEWITT,
V. SMITH,
G. D. WINCH,
FRANKLIN STAPLES,
A. E. SENKLER,
W. H. LEONARD,

Members State Board of Health of Minnesota.