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State of Iowa

1928

REPORT OF THE

## STATE DEPARTMENT OF HEALTH

FOR THE

BIENNIAL PERIOD ENDING JUNE 30, 1928

HENRY ALBERT, M. D.

Commissioner

Published by  
THE STATE OF IOWA  
Des Moines

# IOWA STATE DEPARTMENT OF HEALTH

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### DIVISIONS

Administration  
Communicable Diseases  
Child Hygiene  
Public Health Engineering and Housing  
Examinations and Licenses  
Lecturing

Vital Statistics  
Laboratories (at Iowa City)  
Nursing Education  
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## LETTER OF TRANSMITTAL

HON. JOHN HAMMILL, Governor of Iowa:

SIR: In accordance with the provisions of Section 2216, Code of Iowa, 1927, I have the honor to present the twenty-third biennial report of the State Department of Health for the period commencing July 1, 1926, and ending June 30, 1928.

HENRY ALBERT, M. D., Commissioner.

Des Moines, December 5, 1928.

# REPORT OF STATE DEPARTMENT OF HEALTH DIVISION OF ADMINISTRATION

HENRY ALBERT, M. D., Commissioner

*Progress Made but Position Still Backwards.* The past biennium has witnessed distinct progress in connection with every division of activity of the State Department of Health. These are referred to briefly in the following paragraphs and more in detail in the special reports from the several divisions.

In spite of the progress made, however, the Department has not been able to render the service so greatly needed in the cause of disease prevention nor meet the desires of many of our citizens who are in close touch with the needs for effective public health work and efficient service on the part of the several occupations and professions whose members are licensed by this department to practice in the State.

Indeed it may be said that the fundamental basis underlying the care of the sick and the prevention of disease is on a lower plane in Iowa than it is in any other State in the Union. The reason for such lies partly in the insufficiency of some of our laws but chiefly because of the lack of funds for carrying on efficient public health work and providing the machinery for the effective administration of laws pertaining to the ten occupations and professions designated by law as "affecting the public health."

## PERSONNEL

The past biennium has witnessed changes of personnel in the directorship of a number of the divisions of the department. The present Commissioner has served in that capacity since September 1st, 1926. The position of Deputy Commissioner was filled by Dr. J. W. Wallace from July 1st, 1927, to February 1st, 1928 and by Dr. D. C. Steelsmith for the balance of the period. Mr. A. H. Wieters became chief of the Division of Sanitary Engineering January 1st, 1927. The last legislature provided for the new positions of Director of Nursing Education and Inspectors in Barbering and Cosmetology.

## ORGANIZATION

A department to which has been delegated by law as many functions and types of work as has the State Department of Health, must have the work set out by divisions corresponding to the type of work done and the group of persons assigned to such.

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## FUNCTIONS

The work of the department as prescribed by law is contained in Chapter 105, Sections 2181 to 2585, Code of Iowa, 1927. The functions of the several divisions of activity are given more in detail in the "Iowa Health Bulletin," Vol. XLII, No. 1 (Jan., Feb., March, 1928).

## LICENSING OF PROFESSIONS AFFECTING THE PUBLIC HEALTH

In Iowa, the practitioners of ten professions, totaling 22,261 members are, on the recommendation of the respective examining boards, licensed by the State Department of Health. The cost of the administration of these several practice acts cannot be properly charged to expenditures for public health. The members of the several professions pay an examination and annual license renewal fee.

## FEES PAID BY PROFESSIONS EXCEED COST OF ADMINISTRATION

The members of the several professions pay a certain sum for their license and a certain annual renewal fee to keep their license in force. These are obviously intended to be used for the administration of the law pertaining to these professions. They are not, we believe, intended to be a source of revenue. Nevertheless, for the year ending June 30, 1928, the receipts from examination and renewal of licenses amounted to \$61,446.32, whereas, the expenditures in behalf of the administration of the law was only \$50,327.71.

It will thus be seen that there was turned into the State Treasury as unexpended receipts, the sum of \$11,118.61 which could, with great benefit to the people of the state, have been used for better administration—more especially investigations preliminary to the law enforcement of the practice acts. The following is an itemized statement of receipts and expenditures by professions:

## RECEIPTS AND EXPENDITURES DIVISION OF EXAMINATIONS AND LICENSES FOR THE YEAR ENDING JUNE 30, 1928

GENERAL EXPENDITURES THROUGH DEPARTMENT, ETC.	
Salary Registrar Exam.....	\$2,400.00
Rent (estimated).....	500.00
Attorney General (estimated).....	500.00
Auditors, Etc. (estimated).....	100.00
Stenographers (estimated 2 at \$1,200.00).....	2,400.00
(Not to include Barber and Cosmetology Stenographers.)	
Part time salary Commissioner and Chief Clerk (estimated).....	1,000.00
Stationery-forms-fixtures (estimated).....	2,400.00
(Not including Barber and Cosmetology.)	
Total .....	\$9,500.00

## RECEIPTS AND EXPENDITURES BY BOARD

Board	Receipts	Expenditures			Un-expended Receipts
		By Board as Such	Estimated Proportion of General	Total	
Medical .....	\$ 8,225.00	\$ 1,642.47	\$ 2,499.00	\$ 4,141.47	\$ 4,083.53
Dental .....	7,702.00	2,700.41	1,800.00	4,500.41	3,201.59
Dental Hygiene .....	62.00				62.00
Nurses .....	8,302.00	1,896.12	1,400.00	3,296.12	5,005.88
Division Bureau Education:					
Traveling .....		363.15		363.15	
Director Salary .....		2,000.00		2,000.00	
Stenographer .....		1,700.00		1,700.00	
Optometry .....	2,436.50	409.91	800.00	1,209.91	1,226.59
Osteopathic .....	1,506.00	1,006.50	100.00	2,006.50	300.50
Chiropractic .....	7,762.00	2,450.16	100.00	2,550.16	5,211.84
Podiatry .....	120.00	100.50	50.00	150.50	69.50
Embalming .....	1,477.22	662.50	800.00	1,462.50	15.72
			General Expense	Total	Un-expended Receipts
Cosmetology .....	9,570.00	1,200.25	\$ 172.33	\$ 1,372.58	\$ 8,197.42
Barbers .....	21,846.00	1,812.58	\$ 17,250.36	\$ 19,062.94	\$ 2,783.06
Not including duplicate renewals			11,000.00		
Total .....	\$ 61,446.32	\$ 18,064.62	\$ 32,201.59	\$ 50,266.21	\$ 11,180.11

\*Actual, by division.  
†Part of general department.  
‡Printing to be charged off, \$644.14.  
Minor signs mean deficit.

## LAW ENFORCEMENT IN CONNECTION WITH PROFESSIONS

There are many violations of the public health law and of the acts which provide for the licensing of members of "professions affecting the public health." The law makes provision for a penalty in case of nonobservance on the part of individuals, organizations or communities of the laws pertaining to the numerous activities over which the State Department of Health has jurisdiction. The Department has, however, not been provided with the means of obtaining proper evidence necessary for securing the enforcement of the law.

The law places the machinery of law enforcement proper in the office of the Attorney General. The Attorney General informs us, however, that he does not have the necessary assistance to secure the proper evidence in case complaint is made and he will not, of course, start action without proper evidence. Those who complain usually have difficulty in securing evidence in a form satisfactory to the Attorney General. Furthermore, they claim—and very properly so—that it is the business of the State to secure such evidence.

The State, after making provision for the licensing for professional people and insisting on certain qualifications, should also make provision for the reasonable enforcement of the law, which aims not only to protect the members of the profession from unfair competition, but chiefly to protect the people from incompetent and illegitimate practitioners, many of whom are pure charlatans, preying on the public.

It is hoped that the next legislature will provide the Department with a special "Inspection Division" the annual budget for which is placed at \$8,500.00. It will be noticed that even with provision for such a division the probable receipts (on the basis of this year's figures) will still be in excess of the probable expenditures on behalf of the several professions.

The duties of the inspectors will be to investigate all complaints in which legal action in the way of law enforcement may become necessary, to aim to correct any violations of the law by educational and persuasive methods and to collect such evidence as may be necessary for prosecution, to be turned over to the Attorney General.

APPROPRIATIONS FOR STATE DEPARTMENT OF HEALTH  
LOWER, ON PER CAPITA BASIS, THAN THAT OF COR-  
RESPONDING DEPARTMENT OF ALL OTHER  
STATES IN UNION

The Iowa State Department of Health is relatively the most inadequately supported department of its kind in this country. Your State Department of Health receives for health work, a smaller per capita appropriation than does the same department of every other state in the Union. According to figures prepared by the International Health Board, the Iowa Department receives for health work, an annual per capita appropriation of only two and one-half cents, whereas, the average for the State Health Departments of the country is nearly nine cents. The annual per capita appropriation for the work of licensing physicians and carrying out the "medical practice act" is only one-fifth of one cent—also the lowest, we believe, of any state in the Union.

Even if we add the portion of such state appropriations as are given to other organizations for supposed public health work, as it has been possible to utilize through a coordination of efforts, for carrying out the functions of the State Department of Health as prescribed by law, the total appropriation will still be only about one-half of the average appropriation to the State Departments of Health of this country.

#### FINANCIAL AID

In recognition of the urgent need for additional funds to carry on certain very essential work the International Health Board supplemented the appropriation made by the last legislature in order that certain work in connection with Communicable Diseases and Child Hygiene, required by law, might be carried on even though only in a very limited way. It is the policy of this Board not to continue a given appropriation beyond the time that such can be made available by the next legislature.

#### COMMUNICABLE DISEASES

Except in connection with diphtheria not much progress has been made in the control of communicable diseases.

The facilities of the department for the control of communicable diseases are very inadequate. The department should have a reasonably accurate report of cases as they occur, a field man to make investigations and a great deal more educational work than is now possible.

#### FORECASTING MEASLES EPIDEMIC

No state or smaller community should be satisfied with simply stamping out epidemics after they develop. Epidemics should be prevented, if possible. If such is not possible, the public should be warned of the impending occurrence of an epidemic. The department forecasted the epidemic of measles of 1927 several months in advance of its occurrence. The very low mortality of that epidemic is, we believe, largely because physicians and the public were prepared and many complications were, no doubt, prevented. With more adequate support the department will be in a position to forecast other epidemics and especially their occurrence in smaller communities.

#### DIPHTHERIA

Diphtheria can be very effectively prevented by immunization with toxin-antitoxin. The campaign of the department with a slogan of "No diphtheria in Iowa by 1930" is making rapid progress. More than half of the school children of the state have been immunized.

#### SCARLET FEVER

The use of anti-scarlet fever toxin for prevention and antitoxin for treatment has done something to prevent many cases of the disease and a great deal in reducing the mortality. The disease is, however, still very wide spread. Much more can and should be

done to prevent this disease which is accompanied by many serious complications.

#### VENEREAL DISEASES

Although not affecting as large a proportion of the population as do more common communicable diseases of childhood, nevertheless, these serious diseases are very prevalent. Much educational work, many conferences and some aid in furnishing material for the treatment of indigents under certain circumstances are greatly needed.

#### TULAREMIA OR RABBIT DISEASE

Only a few cases of this relatively new disease have been reported to the department. In Iowa, it is acquired by the handling of diseased rabbits. Iowa cottontails seem to be much more free from the disease than are those of Ohio and Kentucky or the jack rabbits of the West.

#### UNDULANT (MALTA) FEVER

This is another newly recognized disease. Previous to June, 1927, very few Iowa cases were reported. During the past year, 96, were reported. The diagnosis of most of these was made with the aid of laboratory methods. The disease is caused by the germ that produces contagious abortion in cattle and hogs. Most of the cases are apparently the result of drinking the milk of infected cows. Some were contracted by handling infected animals in slaughter houses.

#### RINGLESS RINGWORM OF HANDS AND FEET

A disease affecting chiefly the hands and feet and caused by a germ belonging to the ringworm group—yet not causing typical ringworm appearance of the skin—has become quite prevalent throughout the country during the past ten years. It appears that returning soldiers brought back with them many cases of this disease—as also a large number of cases of trench mouth.

#### TUBERCULOSIS

Death rate from tuberculosis has been reduced from 37.9 per 100,000 population in 1926 to 35.9 in 1927.

Better economic conditions have supplemented the efforts of physicians and various agencies—both official and voluntary—in securing this reduction.

#### CANCER

Cancer is now the second highest cause of death in Iowa. The unfortunate part of it is that most of it is unnecessary. Deaths

from cancer as shown by Chart III have been on the increase for a number of years. During 1927 there were 2,689 deaths from this cause as compared with 873 from tuberculosis. In spite of these figures the public is contributing considerable—but not too large—sums for the fight against tuberculosis, whereas, practically nothing is done to educate people regarding methods of reducing the mortality from cancer.

#### FLOOD SANITATION

During the fall of 1926 several severe floods occurred chiefly in the Northwestern and Southeastern parts of the State. Floods menace health chiefly by contaminating the water supply of wells. The department working in co-operation with the Red Cross supplied typhoid vaccine to the several affected communities. Unfortunately the personnel was not available at some of these communities to persuade all persons to receive the protective treatment. As a result the town of Hawarden was visited by a typhoid fever epidemic which affected 39 persons and caused 4 deaths.

#### SMALLPOX AT MINING CAMPS

Buxton and other mining camps were visited by an epidemic of smallpox in the winter of 1927-28. Because of strike conditions the people did not have funds to even secure the vaccine for their protection. It was accordingly supplied by the Department at State expense.

#### ANTITOXIN AND OTHER BIOLOGICS, Etc.

Biologics have been supplied in cases of emergency; to secure effective co-operation from certain clinics and to stimulate the campaigns to eradicate diphtheria. In addition a large amount has been supplied at actual cost. Antitoxins to do good must be readily and promptly available. In this respect a great service has been rendered.

#### STREAM POLLUTION

The polluted condition of Lime Creek and Shell Rock River below Mason City, which, a few years ago, caused the destruction of enormous numbers of fish is being rapidly cleared away.

The solution of the problem has been materially aided by research work carried on under the direction of the staff of the Engineering Experiment Station at Ames.

There are still some unsolved problems in connection with the treatment of beet sugar wastes.

Studies on the condition of the Cedar River were conducted during the past year. The department is, however, greatly handicapped in these studies by the absence of a laboratory and a bacteriologist. Further details of the Stream Pollution work will be found in the report of the Division of Sanitary Engineering.

#### LAKE SANITATION

Special attention has been given to the maintenance of sanitary conditions at the few but beautiful lakes which Iowa possesses. Many menaces to health and pleasurable recreation have been removed or corrected.

Complete details of the work done will be found in Vol. XLI, No. 3 (Oct., Nov., Dec., 1927) of the Department's "Iowa Health Bulletin."

#### SANITARY SURVEYS

During the past biennium a member of the engineering division staff has made a rather complete study of the sanitary conditions of almost every city in the State. The data has already proved to be of great value in connection with the solution of many problems. A summary of the findings will soon be published.

#### BIRTHS AND DEATHS

The birth rate has considerably exceeded the death rate during the past biennium. During the year 1927 there were 44,296 birth and 24,532 deaths. The birth rate per 1,000 population during that year was 18.3 and the death rate 10.1.

Detailed Vital Statistics will be found in the appropriate section.

#### MARRIAGES AND DIVORCES

During the year 1927 there were 21,048 marriages and 4,226 divorces. This compares with 20,966 marriages and 4,080 divorces during the previous year.

#### LABORATORY

The bulk of the public health laboratory work is done at the State Hygienic Laboratory at Iowa City. Certain branch laboratories serve their respective communities. A detailed report will be found in the appropriate section.

#### CHILD HYGIENE

The department has made an earnest effort to carry out a portion of the program in child hygiene required by law. It records births; sends out birth notification cards, supplies silver nitrate

for the prevention of blindness, pamphlets on Infant Care and the Communicable Diseases of childhood which are especially prevalent early in life. There is great need in the department for a child hygiene division such as is found in the State Department of Health of practically every state in the Union and which is regarded by most State Health Commissioners as representing their most important division—the one in which most constructive work is done.

In connection with child hygiene, consideration must also be given to maternal hygiene. The maternity death rate continues to remain high. Proper organization of this important public health work will result in the saving of the lives of many mothers during the child bearing and child birth periods.

#### INVESTIGATIONS LEADING TO LAW ENFORCEMENT

The department is almost helpless when it comes to making investigations necessary to adequate law enforcement. Neither it nor the Attorney General's Office have the necessary staff to make investigations of more than a very few of the many complaints received regarding violations of the law pertaining to public health and, except for barbering and cosmetology, violations of the practice acts of the several "professions affecting the public health" whose members are licensed by the department. There is very great need for an effective inspection division in the department.

#### NURSING EDUCATION

The last legislature provided for this very important division of work. The standards of many of the fifty Nurses' Training Schools have been materially raised and the quality of nurses greatly improved. Further details will be found in the appropriate section.

#### BARBERING

The last legislature provided for the licensing of the barbers of the state and the inspection of shops relative to sanitary conditions. The staff of this division includes one Chief Inspector who is in immediate charge of the division and three field inspectors who aim to visit each barber shop of the State two or three times a year. The great good that has already been accomplished proves the wisdom of this legislation.

#### COSMETOLOGY

The last legislature also provided for the licensing of cosmetologists and the prescribing by the department of rules govern-

ing the sanitation of cosmetology establishments. With only one inspector in the field this division is very much handicapped in its work. In spite of such, however, a great deal has been accomplished to protect the public from inefficient and careless operators. The division deserves to be materially strengthened.

#### LOCAL HEALTH ADMINISTRATION

Local health work as conducted in Iowa is on a very inefficient and unsatisfactory basis. What is needed is a revision of the laws, a strengthening of the State Department of Health so that it may serve as an advisory body in each of the fields of public health work and the placing of health officers on a full time basis with units of operation large enough to enable the work to be done on an efficient and economical basis. Such units are counties.

A general outline of the work of a County Health Unit is contained in "Iowa Health Bulletin" No. 4, 1927.

The department rendered a valuable service to local communities by issuing a bulletin on "Suggested Outline of a Sanitary Code suitable for the towns and cities of Iowa."

#### CO-OPERATION WITH OTHER HEALTH AGENCIES

The department has co-operated in its health work with many agencies. Among these may be mentioned, The State University; The State College; The State Medical Society; The State Association of Registered Nurses; The Iowa Tuberculosis Association; The Iowa Congress of Parents and Teachers; The State Federation of Women's Clubs; The Farm Bureau; and many of the departments of the State Government.

#### PUBLIC HEALTH EDUCATION

The major portion of the health work of the department is educational work. Laws and rules are of little value and will not be observed unless the reasons for such are understood and appreciated. An average of about 200 letters and 2,500 pieces of second class mail leave the department every day.

In addition to letters, circulars, pamphlets, bulletins, charts, etc., the department sends out a timely "Weekly Health Message," films and lantern slides. It also has a full time lecturer. Various members of the staff also appear on various special programs.

#### HEALTH CONSCIOUSNESS

The efforts made during the past biennium have, we believe, contributed materially to the development of a Health Consciousness

throughout the state. People have learned to appreciate that sickness is expensive in money, time, diminished efficiency, less enjoyment of living and in shortening the span of life. They have also learned that much of present day sickness is preventable; that better health is possible and greater average length of life attainable.

#### COST VERSUS RESULTS

Most people do not object to reasonable expenditures for the work of preventing disease, provided commensurate results are obtained. Many states have found that an annual appropriation of ten cents per capita for the State Department of Health and 50 cents per capita for Local Health Administration is well worth while.

In Iowa the annual per capita appropriation for the State Department of Health for health work is only two and one-half cents—the lowest of any state in the Union while that for Local Boards of Health does not exceed 10 cents. This is the chief reason for the low fundamental basis on which public health work is done in Iowa.

Including such state appropriations to other organizations for health work which is so coordinated with that of the State Department of Health so as to make it serviceable for public health purposes, the appropriation for state public health work is still less than half that contributed by the average of the states of the Union.

#### COORDINATION OF ACTIVITIES AND CONCENTRATION OF RESPONSIBILITY

The work of preventing disease will never be on a satisfactory basis until all State organized work pertaining to the prevention of disease, and related public health work, is properly coordinated and concentrated in one State Department. The one and only department officially charged with the duties of carrying on public health work in the larger sense of that term is the State Department of Health.

#### RECOMMENDATIONS

1. That the State Department of Health be strengthened by additional appropriations and by having it serve as the administrative head of all official state public health work and all work connected with the licensing of all members of occupations and professions "affecting the public health."
2. That the next legislature be asked to make provision for



definite divisions of "Communicable Diseases," "Child Hygiene" and "Inspection Service."

3. That a law be passed permitting counties or groups of counties to organize as Health Units so that they may employ a Health Officer on a full time basis.

4. That a law be passed providing for the revocation of the license to practice any of the professions "affecting the public health" for "grossly dishonorable conduct of a character likely to mislead or defraud the public."

5. That the funds received from the members of the several professions licensed by the Department of Health for examination, reciprocity and renewal of licenses be placed in a "trust fund" to be used only for the administration of such practice acts.

6. That the cosmetology law be amended providing for (a) raising the annual renewal fees from one to three dollars. (b) The licensing of the managers of cosmetology establishments.

7. That the standards of admission to certain of the "professions affecting the public health" be raised.

8. That the law be changed permitting qualified persons who have served as local health officers to be appointed to membership on the State Board of Health.

## FINANCIAL STATEMENT

For the Iowa State Department of Health there is appropriated for each year of the biennium beginning July 1, 1926, and ending June 30, 1928, amounts as follow:

FIRST HALF BIENNium	
July 1, 1926, to June 30, 1927	
RECEIPTS AND EXPENDITURES	
<i>Salaries—</i>	
General Department .....	\$34,160.00
Sanitary Engineering and Housing Division.....	9,900.00
Transferred from Quarantine.....	
Expense Fund to General.....	
Salaries for Investigator.....	400.00
	<u>\$44,460.00</u>
There was transferred from the salary funds to the Printing Board on Order No. 92.....	\$ 1,500.00
Salaries Paid During the Year.....	41,960.21
Leaving a Balance to be charged off.....	990.79
	<u>\$44,460.00</u>

<i>Quarantine Expense—</i>		\$ 5,254.21
Available July 1, 1926.....		
There was transferred from this fund to Consulting Engineers Special Appropriation.....	\$ 95.44	
Transferred to the Printing Board.....	1,060.00	
Transferred to Antitoxin Fund.....	1,000.00	
Transferred to Engineering Traveling Expense.....	2,000.00	
There was paid for Salaries, Traveling Expenses and Supplies.....	1,144.22	
Leaving a Balance to be charged off.....	14.55	
		<u>\$ 5,254.21</u>
<i>Antitoxin—</i>		\$ 2,037.14
Available July 1, 1926.....		
There was Transferred from the Quarantine Expense to this Fund.....	1,000.00	
		<u>\$ 3,037.14</u>
Paid for Antitoxin and Vaccines.....	\$ 3,027.17	
Paid for Printing.....	7.36	
Leaving a Balance to be charged off.....	2.61	
		<u>\$ 3,037.14</u>
<i>Laboratory Supplies, Medication—</i>		\$ 2,532.55
Available July 1, 1926.....		
There was paid for Salaries, Supplies, Expenses, etc.....	\$ 2,517.05	
Leaving a Balance to be charged off.....	15.50	
		<u>\$ 2,532.55</u>
<i>Miscellaneous Traveling—</i>		\$ 2,400.69
Available July 1, 1926.....		
There was Transferred from the Fund to the Investigator Fund.....	\$ 400.00	
Transferred to the Engineering Equipment and Laboratory Fund.....	300.00	
Paid for Traveling Expenses for this period.....	1,502.34	
Leaving a Balance to be charged off.....	198.35	
		<u>\$ 2,400.69</u>
<i>Engineering and Housing Traveling—</i>		\$ 1,189.17
Available July 1, 1926.....		
Transferred from Quarantine Fund.....	\$ 3,232.95	
Paid for Traveling Expenses, etc.....	43.78	
Making an Overdraft of.....		
<i>Equipment and Laboratory—</i>		\$ 587.96
Available July 1, 1926.....		500.00
Transferred from Traveling Expense.....		
		<u>\$ 587.96</u>
Paid for Traveling and Other Expenses.....	\$ 863.04	
Balance to be charged off.....	24.92	
		<u>\$ 887.96</u>
<i>Special—Consulting Engineer—</i>		\$ 136.18
Available July 1, 1926.....		95.44
Transferred from Quarantine Fund.....		
		<u>\$ 231.62</u>
Paid for Traveling Expenses of Earl Waterman....	\$ 231.62	

The eleven sources from which the department receives fees are as follows:

	Receipts	Expenses
Nurses Examiners .....	\$10,010.00	\$ 1,258.29
Embalmers Examiners .....	2,521.00	676.23
Podiatry Examiners .....	78.00	64.40
Medical Examiners .....	5,540.00	1,944.04
Dental Hygienist Examiners .....	53.00	
Dental Examiners .....	3,299.00	1,904.78
Optometry Examiners .....	1,937.00	196.26
Vital Statistics .....	281.50	
Cosmetology Examiners .....	72.00	349.24
Chiropractic Examiners .....	4,541.00	533.88
Osteopathic Examiners .....	2,629.00	2,530.79
	<u>\$33,961.50</u>	<u>\$ 8,951.91</u>

#### SECOND HALF BIENNIUM

July 1, 1927 to June 30, 1928

During the second half of the biennium the department operated under appropriations made by the Forty-second General Assembly, as follows:

ANNUAL APPROPRIATIONS	
For Salaries and Wages .....	\$39,500.00
Miscellaneous Travelling Expenses .....	3,000.00
Quarantine Expenses .....	4,000.00
Antitoxin .....	5,000.00
Equipment and Laboratory Engineering .....	1,000.00
Travelling Expenses Engineering .....	5,000.00
State Exams. Board Membership Fees in National Organization .....	200.00
Total .....	<u>\$57,800.00</u>
<i>Salaries—</i>	
General Department .....	\$29,700.00
Sanitary Engineering and Housing Division .....	9,900.00
	<u>\$39,600.00</u>
Salaries Paid During the Year .....	\$39,160.57
Leaving a Balance to be charged off .....	439.33
	<u>\$39,600.00</u>
<i>Quarantine Expense—</i>	
Available July 1, 1927 .....	\$ 4,000.00
There was Paid for Salaries, Traveling Expenses and Supplies .....	\$ 2,852.03
Leaving a Balance to be carried forward .....	1,147.97
	<u>\$ 4,000.00</u>
<i>Antitoxin—</i>	
Available July 1, 1927 .....	\$ 5,000.00
There was Paid for Antitoxin and Other Prophylactics .....	\$ 3,641.42
Leaving a Balance to be carried forward .....	1,358.58
	<u>\$ 5,000.00</u>

<i>Miscellaneous Travelling—</i>	
Available July 1, 1927 .....	\$ 2,000.00
Paid Travelling Expenses for this Period .....	\$ 1,459.35
Leaving a Balance to be carried forward .....	1,540.65
	<u>\$ 3,000.00</u>
<i>Engineering and Housing Travelling—</i>	
Available July 1, 1927 .....	\$ 5,000.00
Paid Travelling Expenses for this Period .....	\$ 3,851.94
Leaving a Balance carried forward .....	1,148.06
	<u>\$ 5,000.00</u>
<i>Equipment and Laboratory—</i>	
Available July 1, 1927 .....	\$ 1,000.00
Paid Travelling Expenses for this Period .....	\$ 392.08
Leaving a Balance carried forward .....	6.92
	<u>\$ 1,000.00</u>
<i>Examining Board Membership—</i>	
Available July 1, 1927 .....	\$ 200.00
Paid Dues .....	\$ 146.00

The eleven sources from which the department receives fees are as follows:

	Receipts	Expenses
Nurses Examiners .....	\$ 9,155.73	\$ 1,508.64
Embalmers Examiners .....	2,555.00	792.14
Podiatry Examiners .....	35.00	128.35
Medical Examiners .....	7,202.00	524.92
Medical Examiners .....	42,788.00	19,043.48
Barber Examiners .....	3,753.00	
Dental Examiners .....	2,122.00	331.61
Optometry Examiners .....	9,970.00	6,411.64
Cosmetology Examiners .....	2,505.20	
Chiropractic Examiners .....	2,055.00	1,966.58
Osteopathic Examiners .....	212.50	
Vital Statistics .....		
Total .....	<u>\$82,383.48</u>	<u>\$31,007.36</u>

All fees collected by each examining board and division of State Department of Health are turned over to State Treasurer to be credited to general revenue. The payment of per diem and traveling expense of the members of the various examining boards is provided for in Section 2462, Code of 1927.

## DIVISION OF SANITARY ENGINEERING AND HOUSING

A. H. WIETERS, CHIEF ENGINEER

### PERSONNEL

At the beginning of the biennium the staff personnel consisted of H. V. Pederson, Chief Engineer, L. A. Christenson, M. J. Lonergan, and H. D. Peters, assistant engineers, and Christie Christin, stenographer. Mr. Pederson resigned Sept. 1, 1926, and this vacancy was not filled until Dec. 7, 1926, the present Chief Engineer taking Mr. Pederson's place. On Dec. 1, 1926, Mr. Peters resigned, his place being taken by M. D. Johnson in January, 1927. About Oct. 1, 1927, Mr. Johnson resigned, W. W. Towne filling the vacancy in November, 1927. Mr. Christenson resigned in February, 1928, and was replaced in April by Wm. R. Mark.

The work of the division has been seriously impeded by the frequent changes in personnel and much time was lost by not being able to immediately fill the vacancies as they occurred. The salaries offered are such that only young, inexperienced men can be obtained, and this results in a loss of efficiency in that too much time is consumed in training new personnel.

### GENERAL

The work of the division was carried on along the same lines as during the preceding biennium, not much in the way of new work being added. This was due to the fact that the duties of the division as prescribed by law, are already so great, that many of them can be administered only superficially, with the present personnel and funds that are available. Changes were made in the methods, in some instances, to meet new and changing conditions. Projects started by the previous chief were carried to completion and these projects consumed much of the time of the available personnel.

The outstanding new projects carried out during the biennium were the complete sanitary survey of the two major lake districts in Iowa, and the institution of complete investigations including field laboratory examination of sewage disposal plants. This is along the general line of the policy of service adopted by the division. In all of the investigations the matter of service has been always kept uppermost in mind and the development of the division has been along those lines. This policy will no doubt result in actually covering less territory than was formerly

covered with the present personnel, but it is felt that a smaller number of thorough investigations which will really prove of value to municipalities will produce better results than a larger number of superficial investigations which are often of little service to the municipalities.

Following is a general tabulation of the field work done during the biennium.

### FIELD INVESTIGATIONS July 1, 1926, to June 30, 1928

Water .....	155
Sewerage .....	124
Miscellaneous .....	86
Railroad .....	180
Typhoid .....	2
Major Stream Pollution Studies .....	4
Major Lake Surveys .....	2
Talks and Papers by Chief Engineer .....	27
Talks and Papers by Assistant Engineer .....	8
Plans and Specifications Approved .....	49
Plans and Specifications Not Approved .....	9
Specifications Approved .....	2

### STREAM POLLUTION STUDIES

Stream pollution studies begun in the previous biennium were continued. Two of the assistant engineers have devoted practically their entire time to this work. The following projects were carried out. A resurvey of Lime Creek and the Shell Rock river in the winter of 1926-27, a second resurvey of the same streams in the winter of 1927-28. These surveys covered the same portion of the streams covered in the original survey of 1925-1926, results of which have been published in a special report, and were made to check progress that was made by the industries in elimination of the pollution of these streams.

On the basis of the results of the survey an order was issued early in this biennium, requiring the American Beet Sugar Co., the Decker Packing Co., both located at Mason City, and the city of Mason City to cease the pollution of Lime Creek and the Shell Rock river before Jan. 1, 1927. This order was issued during the administration of the previous Commissioner and Chief Engineer of the Department.

Further studies indicated that the order could not be met without closing down the industries in question, whereupon the order was modified in March, 1927. Under the modified order, both the American Beet Sugar Co. and the Decker Packing Company, established experimental plants and for the first time really made a thorough scientific study of the problems. Good prog-



A badly polluted stream. Note floating scum.

ress was made in 1927-28 and as a result a further modified order was issued by the Department, and approved by the Executive Council, requiring still further progress during the remainder of 1928.

The studies that were carried on through the year 1927 and 1928 have borne fruit, and as a result, the packing plant will have completed by Dec. 1, 1928, a treatment works capable of treating all of the wastes from the plant, and the Beet Sugar Company will be able, during the 1928 campaign, to reduce the oxygen consuming constituents in their wastes by 85-90%, on the basis of the wastes that are produced in the plant. The Beet Sugar problem is not yet solved and the company will continue the studies through the 1928 campaign with a view of determining an economical method of further reducing the pollution of Lime Creek.

The city of Mason City has appropriated funds for the reconstruction of portions of their sewer system which is responsible for a large amount of the infiltration causing their greatest problem.

It appears that this problem, which is the most serious stream pollution problem in Iowa, is well on the way to a final solution.

In conjunction with the field studies on Lime Creek and Shell Reek river in the fall and winter of 1926-27, the engineers made numerous trips to that portion of the Iowa River from Belmond to Iowa Falls. These examinations were to determine the effect of beet sugar wastes discharged into the stream at Belmond. Serious results were not noted during the period, consequently a complete study of the Iowa River was postponed until a later date when some of the studies on the more seriously polluted streams have been completed. The Iowa River project will be taken up on the completion of the Des Moines River survey.

A second project was the study of the upper Cedar River from a point about ten miles above Waverly to a point below LaPorte City, including studies of the wastes from municipalities and industries contributing to the pollution of the stream. This section of the stream included only one large city, namely, Waterloo, which, with its industries, contributed about 85% of the total wastes discharged into this portion of the river. Reports of the findings were submitted to the municipalities and industries involved and conferences were held, but no definite action was taken to require treatment of wastes. The data indicated that for the greatest portion of the year the stream is carrying about as much organic material as it can without causing destruction of fish life and causing nuisance below Waterloo. Actual conditions of negative oxygen balance were encountered on several occasions.

The pollution from Waterloo is significant from the fact that Cedar Rapids derives its water supply from the river.

The third project studied was that of the Cedar River from LaPorte City to a point below the junction of the Cedar and Iowa Rivers, including a detailed investigation of the wastes from the municipalities and industries discharging into the stream. The most important of these was the City of Cedar Rapids with its two big industries contributing wastes, namely, the Snelair Packing Co. and Peniek & Ford Corn Products factory. This was by far the largest project that has been attempted, in the territory that was covered, and consequently consumed a great amount of time.

It may be said in passing, that unless samples are frequently taken and unless they are taken over an extended period of time, such surveys are practically worthless. It is impossible to predict when worst conditions will occur, owing to the great influ-

ence of stream flow and weather conditions, and unless the survey is extended over all seasons of the year, the results might be misleading.

An innovation was introduced on this project in that bacteriological samples were collected and analyzed in the field laboratory. Total plate counts and colon bacillus determinations were made. The chief reason for this was to determine the bacterial pollution of the river with the view to using river water as a source of drinking and domestic water supply. Results were very gratifying and it is proposed to continue these examinations in future surveys.

A survey was made previously of the upper portion of the Cedar River and this latter project completed the Cedar River survey for the time being. Reports were submitted and conferences held with the offending municipalities and industries, and in the case of Cedar Rapids a further study of the local conditions is now under way with a view of designing and constructing of sewage treatment works to take care of the wastes from this city. Waterloo, the other principal municipality on this stream, has as yet taken no steps to remedy their situation.

A third major project got under way during the latter part of the biennium, namely, a study of the Des Moines River. That portion of the stream from a point above Fort Dodge to a point below Farmington is being studied. This project will continue throughout the year and into 1929 before it is completed.

Complete reports have been made on all of the projects completed and copies have been submitted to the industries and municipalities concerned. These reports have not been printed, due to the lack of funds, and hence are not available for distribution.

In addition to these major projects which have been carried on over extensive portions of streams and over extended periods of time, the engineers have been frequently called out to investigate minor cases of stream pollution where a situation was becoming acute. The Chief has spent a great deal of time on conferences and at meetings, both in the office and in the field, involving stream pollution difficulties.

#### SURVEY OF IOWA CITIES AND TOWNS

A survey of Iowa cities and towns was begun during the previous biennium. Information concerning public water supply,

sewerage, sewage disposal, garbage disposal, tourist camps, industrial wastes and swimming pools was obtained. Sixty counties had been previously surveyed and during this biennium the remaining thirty-nine counties were completed. An attempt was made to make a more complete survey than had previously been made, and where serious defects were noted, reports were written to the municipal officials calling their attention to these defects. A portion of the data collected on the survey was published in



A poorly located city well. Note privies at right and left within few feet of well. Well is under brick building.

the last biennial report and will not be repeated here. There are, under preparation, special bulletins setting forth the status of public water supplies, sewerage systems and sewage disposal plants in Iowa. These bulletins will be published during the coming winter and will be available for general distribution.

Following are some general tabulations of data collected in the survey.

	No.	Pop. 1920
Cities and towns having water works .....	515	1,281,456
Cities and towns having shallow wells .....	177	230,799
Cities and towns having deep wells .....	275	544,477
Cities and towns having both shallow and deep wells..	11	26,109
Cities and towns having surface water .....	36	317,747
Cities and towns having surface and infiltration .....	8	158,952
Cities and towns having springs and infiltration .....	7	3,372
Cities and towns with water works but no data.....	920	1,401,665
Incorporated cities and towns having no water works..	7	9,458
Cities and towns having untreated surface water .....	25	264,971
Cities and towns having filtered surface water .....	27	305,543
Cities and towns having chlorinated surface water.....		

Cities and towns having softening .....	5	9,123
Cities and towns having iron removal .....	2	26,200
Cities and towns having chlorinated supplies .....	76	758,254
Cities and towns having public sewer systems .....	319	1,185,924
Cities and towns having no treatment .....	103	802,368
Cities and towns having primary only .....	41	50,600
Cities and towns having primary and secondary .....	169	224,370
Cities and towns having S. S. but no data .....	6	5,359
Cities and towns having public water supplies but no sewers .....	196	91,969

#### APPROVAL OF PLANS AND SPECIFICATIONS

The work under approval of plans and specifications was carried out as usual during the biennium. The accompanying tabulation will show a slight decrease in the number of plans and specifications for new work and extensions during the past biennium over the preceding biennium, and a great decrease over the biennium ending June 30, 1924. This is no doubt due, for the most part, to the general economic conditions and to the rather general tendency during the economic depression to postpone new construction until it becomes absolutely necessary. An innovation was introduced in that before plans were reviewed for approval, in most instances a field investigation was made. This was due to the fact that several instances have been encountered in comparatively recent work where wells or sewage treatment plants have been improperly located. It is also proposed that a final inspection be made before the works is finally accepted. This seems desirable in view of the fact that several works have been encountered where actual construction has not been in accordance with the approved plans and specifications.

Work is under way to completely revise the specifications covering the plans that are submitted to the department for approval. Due to the innovations introduced from time to time, especially as regards sewage disposal, some details of the specifications become obsolete in a few years. It is proposed in the new regulation to cover only the general features, and to supplement the regulations from time to time with department policies covering the details. These policies will be used as a guide to the designing engineers, in making the designs. The practicing engineers in the State will be consulted and their advice sought before this regulation is adopted.

Following is the list of plans and specifications of new work submitted to the department for approval. While this list is fairly complete for major new works, there have no doubt been

many extensions for which no plans were submitted. Likewise there have been numerous new wells drilled for which no plans were submitted.

#### WATER WORKS PLANS AND SPECIFICATIONS

Audubon—Filtration plant—gravity main—W. E. Buell & Co. Approved Mar. 2, 1925.
Carlisle—System of mains, well, elevated tank—W. E. Buell Engineering Co. Approved Apr. 25, 1924.
Charles City—New well and main extensions—J. E. Dawson, City Engineer. Approved Apr. 21, 1925.
Cresco—Main extensions—J. W. Howe, City Engineer. Approved May 27, 1927.
Delmar—Water improvements—J. O. Thorne. Approved March 15, 1927.
Emerson—System of mains, wells, tank, etc.—Henningson Engineering Co. Approved Oct. 8, 1924.
Gilman—Main extensions, well—Currie Engineering Co. Approved July 13, 1927.
Harlan—Iron removal plant, pumps, etc.—Nixon & Reynolds. Approved June 13, 1928.
Iowa City—New clear well, settling basin, mains—George Keller. Approved Feb. 21, 1927.
Jewell—New well, tank, main extensions—Henningson Engineering Co. Approved Jan. 24, 1927.
Kossel—Complete waterworks system—Currie Engineering Co. Approved 12, 1927.
Lohrville—Water softening plant—Graber Corporation. Approved Aug. 30, 1924.
Manchester—Deep well.
Marengo—New wells, main extension, Lafayette Higgins. Approved June 14, 1927.
Mason—Complete waterworks system—W. E. Buell Engineering Co. Approved July 7, 1927.
Newton—New wells, force mains, Lafayette Higgins. Approved May, 1927.
Newton—Main extension, Lafayette Higgins. Approved July 2, 1927.
Osceola—Softening plant—Graber Corporation. Approved July 22, 1926.
Varina—Waterworks—Currie Engineering Co. Approved Sept. 22, 1926.
Webster City—Aerators, settling tanks, reservoir—J. H. Long. Approved April 25, 1928.

#### SEWERS AND SEWAGE DISPOSAL

Auburn—Sewer system and sewage disposal—W. E. Buell & Co. Not approved. Not constructed.
Charles City—Sewer extension—J. E. Dawson. Approved Aug., 1926.
Charles City—Sewer extension—J. E. Dawson. Approved April 25, 1928.
Cresco—Sewer extension—J. W. Howe. Approved July 14, 1927.
Cresco—Sewer extension—Lafayette Higgins. Approved Aug. 24, 1926.
Desh Moines County—Sewage disposal—C. H. Waterhouse. Approved Sept. 16, 1926.
Doneson—Sewer system and sewage disposal works—Brown & Cook. Not approved. Not constructed.
Dyersville—Sewer extension—Barber & Schenk. Approved Sept. 15, 1927.
Fort Madison—Sewer extension—R. J. Lewis. Approved Aug. 16, 1924.
Fort Madison—Sewer extension—R. J. Lewis. Approved Aug. 30, 1927.
Grinnell—Sewage disposal plant—Hilphey Engineering Co. Approved May 13, 1928.
Johnson Station—Sewage disposal—John Burrett. Approved 1926.
Lewis—Sewer system and sewage disposal—H. B. Green Engineering Co. Not approved. Not constructed.
Manchester—Sewer extension—Barber & Schenk. Approved July, 1928.
Maxwell—Sewer and sewage disposal—Currie Engineering Co. Approved July 4, 1927.
Mitchellville—Sewage disposal, State Industrial School—Lafayette Higgins. Approved Feb. 8, 1928.
Nothing Bar—Sewer system and sewage disposal (1928)—Brown & Cook. Not approved. Not constructed.
Nonda—Sewer system and sewage disposal plant—Nixon & Reynolds. Approved Aug. 21, 1924. (Not constructed.)
Nonda—Sewer system and sewage disposal plant (1928)—Nixon & Reynolds. Not approved.
New Hampton—Sewer extension—J. E. Dawson. Approved Sept. 16, 1926.
New Hampton—Sewer extension—J. E. Dawson. Approved June 15, 1927.
Newtown—Sewage disposal—Lafayette Higgins. Approved Feb. 14, 1927.
Osceola—Sewer extension—Barber & Schenk. Approved July 14, 1926.
Osceola—Sewer extension—D. B. Russell. Approved July 2, 1927.
Oskaloosa—Sewer system and sewage disposal—W. E. Buell & Co. Approved Sept. 6, 1926.
Storm Lake—Outfall sewer and sewage disposal—Currie Engineering Co. Approved July 21, 1926.
Washington—Sewage disposal plant—Green Engineering Co. Approved April 14, 1928.

Waterloo—Sewer extension—Nathan Barber. Approved Sept. 7, 1926.  
 Waterloo—Sewer extension—Nathan Barber. Approved Oct. 10, 1927.  
 Waverly—Sewer extension—Barber & Schonk. Approved Mar. 22, 1928.

#### MISCELLANEOUS PLANS

Ames—Swimming pool—Stark & Perkins. Approved July 22, 1928.  
 Denison—Swimming pool—Henningson & Perkins. Approved July 23, 1928.  
 Des Moines—Garbage incinerator—Rales Co. Not approved.  
 Des Moines—Swimming pool—Henningson Eng. Co. Approved 1928.  
 Estherville—Swimming pool—H. R. Green Engineering Co. Approved Oct. 12, 1927.  
 Estherville—Bath house—H. R. Green Eng. Co. Approved Nov. 11, 1927.  
 Estherville—Filters—H. R. Green Eng. Co. Approved Feb. 8, 1928.  
 Ottumwa—Swimming pool (1928)—Brown & Cook. Not approved.

#### RAILROAD WATER INSPECTIONS

Under a co-operative agreement with the United States Public Health Service, all water supplies used by interstate carriers engaged in interstate traffic are inspected once annually. Under a state regulation those carriers engaging in intra-state traffic only are also included. These inspections involve: (1) Investigations of source of water supply, including treatment; (2) Investigations of facilities and methods of handling of water and ice; and (3) Analysis of a sample of water. After inspection and analysis recommendations are made to the Surgeon General of the United States Public Health Service for either favorable or unfavorable certification.

There are 131 railroad watering points in Iowa located in 81 different cities or towns. Each individual watering point is inspected under the present plan, making 131 inspections annually.

A discrepancy is noted between the number of railroad watering points listed and the number that were inspected during the biennial period. This is accounted for by the fact that our fiscal year runs from July 1st to the following June 30th, whereas, the fiscal year of the U. S. P. H. S. corresponds with the calendar year, and the railroad examinations are made on the latter basis.

Railroad water supplies inspected .....	180
Railroad water favorably certified .....	152
Railroad water unfavorably certified .....	7
Railroad water not certified .....	21

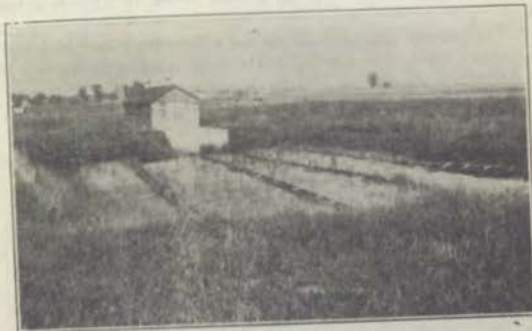
The U. S. P. H. S. regulations also provide for the inspection and certification of water supplies used aboard vessels plying in interstate traffic. Only one such vessel was listed in Iowa and this was inspected and unfavorably certified.

#### WATER WORKS AND SEWERAGE INSPECTIONS

Due to the lack of personnel and funds no attempt has been made during the biennium to introduce a program of systematic routine inspections of water works and sewage disposal plants, al-

though such a program has been seriously considered and is deemed advisable and necessary.

The investigations of water works and sewage facilities have, therefore, been confined to those that have been specifically requested by local officials. Wherever such investigations have been made, recommendations are made verbally and a meeting of the city council is held whenever it is possible. In addition, writ-



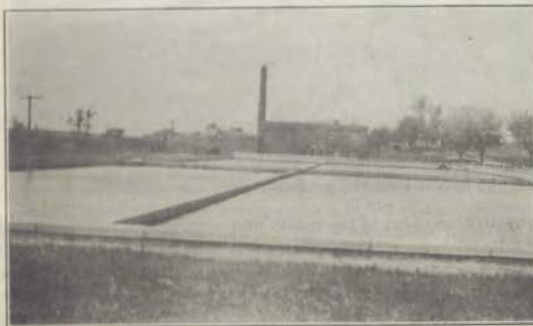
A badly neglected sewage treatment plant. Note weeds on sand filters, disarrangement at distribution troughs and general ramshackle condition.

ten reports are sent to the mayor and council, making the verbal recommendations a matter of record. This service has not been rendered as satisfactorily as is desirable. Oftentimes it is necessary to postpone such an investigation longer than should be necessary, due to the fact that all of the engineers are engaged elsewhere.

Late in the biennium a new policy relative to these investigations, especially those involving sewage treatment work, was introduced. Instead of superficial investigations, such as have been made in the past, the engineer has spent several days at a plant, checking up the operation, making the necessary laboratory tests and otherwise assisting the local operator to straighten out the difficulties. Sewage treatment is so complex in its nature that often a casual examination will not be of much value. In such instances, the Chief has felt justified in devoting more time to an investigation with a view of being able to render a real service to the municipality.

At the present time all analyses of water are made at the State Hygienic Laboratory at Iowa University. Analyses are reported and interpretations are made directly from the laboratory, whereas by law this division is responsible for the supervision of water works. This arrangement is not satisfactory and not conducive to the best service to the municipalities in that there is too much loss of time and the laboratory is too far from the division headquarters to maintain a close check on what is going on.

At the present time there is no state laboratory in which municipalities can secure mineral analyses of samples of water. If municipalities desire this service they must obtain it from commercial chemists where often exorbitant fees are charged. With the growing demand of water that is satisfactory from the standpoint of mineral constituents and the increasing demand for



A modern water treatment plant in Iowa. Settling basins in foreground. Filter and pump house in background.

water softening plants, a state laboratory filling these needs is of growing importance.

It is obvious that, the engineering staff and the laboratory should be located at the same place so that a closer co-operation could be maintained.

## WATER INSPECTIONS

Afton, June 5, '27.	Kirkman, July 27, '26.
Albia, July 11, '27.	Kiron, June 6, '27.
Alton, Oct. 24, '27.	Lansing, Oct. 17, '27.
Anita, April 23, '28.	Larrabee, Oct. 24, '27.
Anthony, July 26, '26.	Lawton, July 28, '27.
Arcadia, Feb. 1, '28.	Lenox, June 27, '27.
Arlington, March 27, '28.	Logan, July 29, '26.
Auburn, May 17, '27.	Lost Nation, March 13, '28.
Audubon, March 19, '28.	Low Moor, Sept. 21, '27.
Audubon, Jan. 21 and Feb. 1, '28.	McGregor, Nov. 21, '27.
Bedford, June 24, '27.	Malvern, June 16, '27.
Bettendorf, Sept. 20, '27.	Manchester, March 16, '28.
Bianchard, June 17, '27.	Manson, June 7, '28.
Bloomfield, July 13, '27.	Mapleton, July 22, '26.
Bonmarie, Sept. 15, '27.	Marble Rock, Sept. 15, '27.
Brandon, March 17, '28.	Marquette, Nov. 21, '27.
Burlington, Sept. 15, '27.	Massena, April 4, '27.
Calmar, Nov. 17, '27.	Massena, June 12, '27.
Carson, April 25, '28.	Maynard, March 27, '28.
Cascade, Nov. 26, '27.	Mediapolis, Sept. 17, '28.
Castana, July 23, '26.	Minden, April 29, '28.
Centerville, July 12, '27.	Missouri Valley, July 29, '26.
Charlotte, March 12, '28.	Modale, July 23, '26.
Cherokee (State Institution), June 6, '28.	Monona, Nov. 21, '27.
Charlton, June 15, '27.	Moorhead, July 22, '26.
Clermont, Nov. 18, '27.	Moulton, July 12, '27.
Clinton, Sept. 22, '27.	Moyle, July 26, '26.
Coia, June 16, '27.	Mt. Airy, June 28, '27.
Columbus Junction, May 5, '27.	Mt. Pleasant, Sept. 10, '27.
Corning, June 23, '27.	Mt. Pleasant (State Institution), Sept. 19, '27.
Correccionville, July 26, '26.	New Albin, Nov. 29, '27.
Creston, June 11, '27.	New London, Sept. 10, '27.
Cromwell, June 19, '27.	New Vienna, Nov. 22, '27.
Cushing, July 20, '27.	Oelwein, Oct. 15, '27.
Dallas Center, April 25, '28.	Oelwein, March 26, '28.
Danbury, July 26, '26.	Ogawa, July 29, '26.
Davenport, Sept. 19, '27.	Ossian, Nov. 19, '27.
Defiance, Oct. 1, '27.	Oto, July 20, '26.
Decorah, July 27, '26.	Ottumwa, July 15, '27.
DeWitt, Sept. 21, '27.	Panama, July 27, '26.
Diagonal, June 28, '27.	Perry, Aug. 28, '27.
Donnellson, Sept. 13, '27.	Peterson, Jan. 14, '27.
Dubuque, Nov. 25, '27.	Pierson, July 20, '26.
Dunlap, July 28, '26.	Portsmouth, July 27, '26.
Dyersville, Nov. 23, '27.	Postville, Nov. 14, '27.
Earling, July 27, '26.	Redfield, Jan. 10, '27.
Earville, Nov. 23, '27.	Red Oak, June 23, '27.
Earville, March 14, '28.	Ryan, March 15, '27.
Edgewood, Nov. 23, '27.	Rockwell City (Women's Reforma- tory), June 8, '28.
Eldon, June 16, '27.	Saltix, July 24, '26.
Eldon, July 14, '27.	Sergeant Bluff, July 24, '26.
Eldora, Sept. 14, '27.	Sheldahl, July 16, '26.
Eldora (State Institution), May 31, '28.	Sheldon, April 28, '27.
Egin, March 21, '28.	Shenandoah, June 17, '27.
Egkader, Nov. 22, '27.	Sidney, June 15, '27.
Elliott, June 22, '27.	Sioux City, July 21, '26.
Emerson, June 18, '27.	Shoan, July 24, '26.
Essex, June 18, '27.	Smithland, July 24, '26.
Fairbanks, March 28, '28.	Soldier, July 25, '28.
Fairfield, Sept. 9, 20, 21, 22, '27.	Springville, April 28, '27.
Fairfield, Sept. 9, '27.	Stanton, June 23, '27.
Farley, March 14, '28.	Strawberry Point, Nov. 22, '27.
Farrington, Sept. 12, '27.	Tabor, June 17, '27.
Farragut, June 15, '28.	Therman, June 16, '27.
Fayette, March 22, '28.	Tyrose, June 2, '27.
Port Madison, Sept. 14, '27.	Uto, July 29, '26.
Clinton, June 29, '27.	Villisca, June 23, '27.
Glenwood, June 14, '27.	Viola, April 28, '27.
Grand Mount, Sept. 31, '27.	Wankon, Nov. 21, '27.
Grimes, July 17, '27.	West Burlington, Sept. 16, '27.
Guttenberg, Aug. 23, '27.	West Point, Sept. 15, '27.
Hamburg, June 15, '27.	West Union, Nov. 18, '27.
Harian, July 27, '26.	What Cheer, Oct. 11, '27.
Hawkey's, March 21, '28.	Whatsland, Sept. 22, '27.
Hedrick, June 30, '27.	Whitland, Sept. 10, '28.
Holy Cross, Nov. 22, '27.	Winfield, Sept. 15, '27.
Independence, March 19, '28.	Winthrop, March 15, '28.
Independence (State Institution), May 9, '28.	Woodbine, July 29, '26.
Keokuk, Sept. 13, '27.	Woodbine, Jan. 21, '28.
Kronauqua, July 13, '27.	



## SEWERAGE INSPECTIONS

Afton, June 8, '27.	Logan, July 29, '26.
Albert City, July 16, '28.	Lost Nation, March 19, '28.
Anthon, July 24, '28.	Lowden, Feb. 23, '27.
Arlington, March 23, '27.	McGregor, Nov. 21, '27.
Ashton, April 29, '27.	Madrid, May 7, '28.
Bedford, June 24, '27.	Madrid, June 15, '28.
Beitendorf, Sept. 20, '27.	Malvern, June 16, '27.
Bloomfield, July 15, '27.	Manchester, March 15, '28.
Boone, Jan. 29, '27.	Mapleton, July 22, '28.
Brandon, March 11, '28.	Marquette, Nov. 21, '27.
Brighton, Sept. 8, '27.	Maxwell, Sept. 5, '27.
Burlington, Sept. 14, '27.	Medapolis, Sept. 17, '27.
Burlington, Sept. 17, '27.	Missouri Valley, July 29, '26.
Hurt, Jan. 11, '28.	Mitchellville, July 9, '27.
Calmar, Nov. 17, '27.	Monona, Nov. 21, '27.
Carroll, June 2, '27.	Moulton, July 19, '27.
Cascade, Nov. 26, '27.	Moyle, July 20, '28.
Centerville, July 12, '27.	Mt. Airy, June 28, '27.
Centerville, Sept. 7, '27.	Mt. Pleasant (State Institution), Sept. 10, '27.
Charles City, Nov. 15 and 19, '27.	Mt. Pleasant, Sept. 10, '27.
Cherokee (State Institution), June 6, '28.	Mt. Vernon, May 20, '27.
Clarinda, June 25, '27.	Neola, May 23, '28.
Corning, June 23, '27.	New London, Sept. 19, '27.
Correctionville, July 29, '26.	Newton, Oct. 7, '27.
Cresco, Oct. 15, '27.	Newton, Sept. 10, '27.
Creston, June 16, '27.	Newton, March 17, '27.
Crownwell, June 14, '27.	Oelwein, Oct. 13, 14, 15, '27.
Cushing, July 20, '26.	Oelwein, March 26, '28.
Danbury, July 26, '28.	Onawa, July 29, '28.
Davenport, Sept. 15, '27.	Orange City, Oct. 24, '27.
Decorah, Oct. 17, '27.	Ossian, Nov. 18, '27.
DeWitt, Sept. 21, '27.	Ottumwa, July 15, '27.
Dubuque, Nov. 25, '27.	Ottumwa, Sept. 8, '27.
Dunlap, July 25, '26.	Ottumwa, Sept. 18, '27.
Dyersville, Nov. 23, '27.	Perry, Aug. 22, '27.
Eldon, July 14, '27.	Pierson, July 20, '27.
Eldora (State Institution), May 31, '28.	Postville, Nov. 18, '27.
Elkader, Nov. 22, '27.	Red Oak, June 22, '27.
Elliott, June 23, '27.	Rockwell City (Woman's Reforma- tory), June 8, '28.
Emmettsburg, May 18, '27.	Shenandoah, June 17, '27.
Essex, June 18, '27.	Sidney, June 15, '27.
Exira, June 13, '27.	Sidney, April 24, '28.
Fairfield, Sept. 19, 21, 22, '27.	SIOUX CITY, July 23, '26.
Farley, March 14, '28.	Solon, May 16, '27.
Farrington, Sept. 12, '27.	Spencer, June 6, '28.
Farragut, June 15, '27.	Stanton, June 23, '27.
Fayette, March 22, '28.	Stratford, May 21, '27.
Fort Madison, Sept. 14, '27.	Strawberry Point, Nov. 22, '27.
Glenwood, June 14, '27.	Sutherland, July 18, '27.
Grand Mount, Sept. 21, '27.	Ute, July 29, '26.
Griswold, April 23, '28.	Villisca, June 23, '27.
Guthrie Center, Oct. 10, '27.	Viola, April 28, '27.
Hamburg, June 15, '27.	Washington, Feb. 22, '27.
Harlan, July 27, '26.	Washington, Feb. 10, '28.
Hawkeye, March 21, '27.	Waukon, Nov. 21, '27.
Hazleton, March 22, '28.	Wellburg, Oct. 18, '27.
Independence, March 19, '28.	West Burlington, Sept. 16, '27.
Independence (State Hospital), May 9, '28.	West Union, Sept. 18, '27.
Iowa Falls, May 17, '27.	West Union, Nov. 18, '27.
Keokuk, Sept. 13, '27.	What Cheer, Oct. 11, '27.
Lansing, Oct. 17, '27.	Winfield, Sept. 10, '27.
Lenox, June 27, '27.	Woodbine, July 29, '24.

## NUISANCES

The division is flooded with complaints of nuisances. During the spring and summer often as high as ten complaints a day are received, involving as many different kinds of conditions and coming from the four corners of the state. When a complaint is of a major nature involving some technical phase of engineering, or when the assistance of the division is invoked by the local

authorities or when a petition, as prescribed by law, is forwarded with the complaint, inspections were made by the division. It can readily be seen that if investigations were made of all complaints, the present division staff would have time for nothing else.

Attempt is always made to have the problem settled by the local Board of Health, and in most instances this is accomplished. However, this feature of the work consumes a great amount of time in the office as often a complaint will involve a series of letters before it is satisfactorily handled. The actual number of complaints received has increased over the last biennium, but the



Such conditions should not exist in Iowa. Note mature rubbish, raw privies and well at foot of shops before driveway.

field investigations on nuisances have decreased. It has been the policy of the division to have these matters settled locally wherever possible. The state law charges the local boards of health with this duty and ample legal provisions have been made so that most of these complaints can be handled locally.

## MISCELLANEOUS INVESTIGATIONS

Miscellaneous investigations made during the biennium include the following:

Two detailed typhoid fever investigations were made in conjunction with the Division of Communicable Diseases with a view of determining the cause of the epidemic. Ordinarily such investigations are made by the Epidemiologist of the State University. However, on these two special cases the assistance of this division was requested.

Numerous inspections of rendering plants have been made during the biennium. The licensing of rendering plants is by law under the jurisdiction of the Department of Agriculture. The Department of Agriculture has requested the assistance of this division on the numerous instances cited above. The most notable case of rendering plant nuisance is the one at West Okobojo, on the south shore of Lake Okobojo. The Department of Health, following several inspections and following attempts to secure the abatement of nuisance by persuasion, issued an order for abatement in May, 1928. The department was temporarily enjoined from enforcing its order and final hearing on the injunction proceedings has not been held. This is the only case during the biennium, where a formal order has been issued for the abatement of a nuisance. In several instances, a formal direction to the local board of health to secure the abatement of a nuisance was issued and actual orders for abatement were issued by the local board of health.

Other miscellaneous investigations include swimming pools, housing, plumbing, camps, etc.

Following is a list of the towns in the state in which miscellaneous inspections were made:

#### MISCELLANEOUS INSPECTIONS

Arlape, June 8, '27.  
 Belle Plaine, Oct. 18, '27.  
 Belle Plaine, Oct. 18, '27.  
 Bonmarie, Sept. 15, '27.  
 Burlington, Sept. 17, '27.  
 Canoele, Nov. 24, '27.  
 Cedar Rapids, Oct. 15, '27.  
 Cedar Rapids, Jan. 24, 25, '28.  
 Centerville, July 15, '27.  
 Charles City, Nov. 15, '27.  
 Clarinda, June 28, '27.  
 Clarion, Aug. 16, '27.  
 Clear Lake, June 19, '27.  
 Clinton, June 1, 2, '27.  
 Correctionville, July 29, '26.  
 Creston, June 11, '27.  
 Cronwell, June 19, '27.  
 Cushing, July 29, '26.  
 Davenport, Sept. 15, '27.  
 Decora, Oct. 17, '27.  
 Des Moines, Aug. 23, '27.  
 Dornellson, Sept. 12, '27.  
 Dubuque, Nov. 20, '27.  
 Dunlap, July 28, '26.  
 Eagle Grove, June 7, '28.  
 Elkader, Nov. 22, '27.  
 Elkader, Nov. 22, '27.  
 Emerson, June 14, '27.  
 Estherville, June 4, '28.  
 Fairfield, Sept. 9, '27.  
 Farmington, Sept. 19, '27.  
 Fort Des Moines, Oct. 2, '27.  
 Glenwood, June 14, '27.  
 Grand Junction, April 27, '27.  
 Granger, June 7, '27.  
 Gravity, March 25, '27.  
 Great Lake Region, June 4, 5, '28.  
 Guttenberg, Nov. 22, '27.

Hamburg, June 15, '27.  
 Harrah, July 27, '26.  
 Independence, June 17, '27.  
 Jefferson, Aug. 25, '27.  
 Lenox, June 27, '27.  
 Logan, July 29, '28.  
 Lovinor, June 9, '27.  
 Motregor, Nov. 21, '27.  
 Malvern, June 15, '27.  
 Mason, Aug. 17, '27.  
 Mapleton, July 22, '26.  
 Marshalltown, June 15, '27.  
 Mason City, Jan. 20, 21, 22, '27.  
 Mason City, Feb. 24, 25, '28.  
 Missouri Valley, July 29, '26.  
 Modale, July 24, '26.  
 Moorhead, July 23, '26.  
 Mt. Airy, June 28, '27.  
 Mt. Pleasant, Sept. 19, '27.  
 Muscatine, Nov. 30, '27.  
 New London, Sept. 19, '27.  
 Newton, Aug. 23, '27.  
 Newton, Sept. 19, '27.  
 Osceola, Oct. 15, '27.  
 Onawa, July 29, '26.  
 Okaloosa, Sept. 9, '27.  
 Ottumwa, July 15, '27.  
 Red Oak, June 22, '27.  
 Shenandoah, June 17, '27.  
 Sidney, June 15, '27.  
 Sloan, July 24, '26.  
 Soldier, July 29, '26.  
 Tama, Oct. 18, '27.  
 Ute, July 28, '26.  
 Valley Junction, May 4, '27.  
 Valley Junction, April 27, '27.  
 Villisca, June 21, '27.  
 Waterloo, July 29, '27.

Waterloo, Jan. 29, 31, 32, '27.  
 Waukon, Nov. 21, '27.  
 Webster City, Dec. 14, '26.  
 Webster City, Feb. 29, '28.  
 West Liberty, Sept. 22, '27.  
 Wheatland, Sept. 22, '27.  
 Winfield, Sept. 16, '27.  
 Winterset, April 3, '28.  
 Woodbine, July 29, '26.  
 Woodward, July 22, '27.

#### SWIMMING POOLS

In August, 1927, the department adopted a regulation requiring the submission, for approval, of plans and specifications for artificial swimming pools. Under this regulation very few plans have been submitted. Several inspections on swimming pools have been made upon request, but with the present personnel routine inspections have not been attempted. During the survey of cities and towns, swimming pool data was collected, and this information discloses the fact that there are many swimming pools in the state that are very unsatisfactory from a sanitary standpoint and require attention.

With the increasing pollution of streams and with the increasing knowledge of the people of Iowa, that most of our streams are not adaptable to bathing or swimming, due to the hazard of drowning as well as the health hazard, artificial swimming pool construction is receiving a new impetus and much work along this line is anticipated in the near future. It, therefore, seems imperative that the State Department of Health should guide the construction and operation of these pools along lines presenting the least health hazard to the bather. This is one of the projects that should receive more attention in the future.

#### CAMPS

Summer and tourist camp inspections have been made upon request. Included in the survey of cities was a compilation of tourist camp data, but the personnel has not been available for follow-up work or routine inspection. A few camps were inspected where such inspections could be made in conjunction with other work. An innovation in camp sanitation was introduced during the past year. Where a camp meets the requirements of the department regulation, a placard showing such approval is posted. This method has been found satisfactory, but not a sufficiently large number of camps have been placarded to do much good.

Camp sanitation is an important phase of community sanitation. Not only is it necessary for the protection of the visitors who stop at the camps, but also is it necessary to prevent those visitors from introducing and spreading communicable disease in our communities.

A system of camp inspection, coupled with semi-public roadside water supply and comfort station control is anticipated for the next year and provision is made for it in the budget requests.

#### LAKE SURVEY

During the summer of 1927, complete sanitary surveys were made of Iowa's two principal recreation centers, namely, the Okoboji Lakes in Dickinson County and Clear Lake in Cerro Gordo County. Complete reports are on file in the office of the division, copies of which were forwarded to the principal resorts and municipalities involved. An abstracted report was published in the quarterly Bulletin of the Department. (See Quarterly Bulletin Vol. XLI No. 3 (Oct., Nov., Dec., 1927.) The survey revealed that:

1. Lake water is not fit for domestic and drinking purposes unless it is treated.
2. Private wells at these congested resorts are for the most part unsafe.
3. Toilet facilities must be improved.
4. Inadequate garbage facilities exist.
5. Food and milk were not properly handled.

The survey, followed by the report and numerous conferences has, in our opinion, accomplished a great deal. All resorts and municipalities, except one, now chlorinate the water where the source of supply is from a lake. Toilet facilities and garbage removal have been very much improved in some instances. There is, however, still need for further improvement.

The survey of Clear Lake resulted in an order prohibiting further discharge of wastes from the gas plant into or on the shores of Clear Lake. This order was necessary to prevent the pollution of the lake with tar and phenol wastes, and was issued only after a careful survey of the entire situation was made. The order became effective May 1, 1928, and was complied with. Orders were also issued to several owners of residences on Clear Lake requiring them to cease the discharging of septic tank effluent directly into the lake.

#### PLUMBING

The enforcement of the State Plumbing Code has been confined largely to, the acting as an intermediary in the case of disputes between plumbers and the local inspectors, and in furnishing local officials with interpretation of sections of the code, con-

cerning which there was some doubt. No time was available for much in the way of field work. With two or three exceptions, cities of 6,000 and more have plumbing ordinances in compliance with the state law and have personnel for licensing of plumbers and the inspection of plumbing. Many of the smaller cities, which are not required to do so by law, have adopted plumbing codes conforming with the State Code.

A meeting of the Code Committee, consisting of the Chief Engineer, Dr. Henry Albert, W. H. Rhoden and W. C. Shanley, was held in December, 1926, as required by law, at which time several minor revisions of the code were adopted.

There appears to be two serious defects in the present plumbing law.

First. The adoption of a plumbing ordinance requiring licensing of plumbers and inspection of plumbing is compulsory only in cities of 6,000 population or more. From a health standpoint, poor plumbing is just as much a hazard in a small city or town or even in a rural community as it is in a city of 6,000 population.

Second. Under the present law, plumbers are licensed by local boards and when so licensed may ply their trade anywhere within the borders of the state. This has been the source of much confusion and conflict, due to lack of uniformity in the requirements of the local boards.

It appears that the only solution would be the establishment of a State Board of Plumbing Licensure and to require all plumbers who practice in the state to secure a license from such board.

#### HOUSING

The administration of the State Housing Law has been carried on as in the previous biennium, since there have been no funds appropriated for that purpose. Administration has been confined to checking of plans when requested to do so by a local inspector, the rendering of final decisions in cases of disputes between a local inspector and builder or architect, and the interpretation of portions of the laws when requested.

In addition monthly reports are received from the local inspectors and the compiled report has been released for publication to the press of the state each month.

During the biennium it has not been necessary to call a formal hearing on a housing dispute, all such disputes having been settled by conferences.

Some conflict exists in the present laws relative to the jurisdiction in some cases involving housing. For instance, in the matter of hotels, rooming houses, etc., the Department of Agriculture has jurisdiction. In the matter of fire escapes the Department of Labor has jurisdiction, while in both above matters, the Department of Health has jurisdiction under the Housing Law. This seeming conflict of authority should be corrected by further legislation.

#### RURAL SANITATION

Work under the head of rural sanitation consists of the preparation and distribution of plans of wells, cisterns, sanitary toilets, sewage disposal lay-outs for individual residences, and advice either by correspondence or conference on the matter of water supply and sewage disposal. Time has not permitted the making of field investigations involving rural sanitation except in special instances where some communicable disease which was possibly water borne, existed.

#### MEETINGS AND TALKS

During the eighteen months of incumbency, the Chief has delivered twenty-seven papers or talks on subjects pertaining to sanitary engineering at society and other meetings. Assistant engineers have appeared on eight programs.

The director served as a staff member at the annual "Sewage Conference" in November, 1927, at Ames and the "Waterworks School" held at Iowa City in April, 1928, and the assistants also appeared on these programs.

Publications include a "Report on Pollution of Lime Creek and the Shell Rock River," quarterly Bulletins on "Lake Sanitation" and "Activities of the Division of Sanitary Engineer" and numerous weekly Health Messages, newspapers and magazine articles.

Several special reports, such as the stream pollution reports, have been prepared for publication but funds are not at present available. Special bulletins covering the survey of cities, and such subjects as farm water supply, sewage disposal, etc., have been prepared and will be published as soon as funds become available.

#### CONFERENCES

The director has made numerous trips for conferences in connection with water supply, sewerage, stream pollution and other major activities. Much time is also consumed in the office on

such conferences with municipal officials, consulting engineers and private citizens. These conferences cover all of the varied phases of the work and are time consuming, but are believed to be very much worth while.

#### OFFICE ROUTINE

Work is ordinarily so arranged that one of the staff is in the office all of the time to take care of correspondence, conferences and other routine work. On numerous occasions it has been necessary that all of the engineers were out in the field at the same time. This is very undesirable, in view of the fact that many people from out of the city call at the office for conferences.

The director has spent as much time in the office as field duties would permit. The assistant engineers spent the most of their time in the field. When in the office they were engaged chiefly in the preparation of reports and assisting the Chief in the routine office duties, which consist of answering correspondence, conference, preparation of bulletins and other publications, compilation of data, checking of plans and specifications, preparing plans for general distribution, and other routine tasks.

A new system of office records was introduced during the biennium. A card index system was started whereby all of the information regarding salient features of public water supplies, sewerage, camps, swimming pools and like information is transferred to cards for ready reference. This card system also applies to inspections and plans and specifications and other data which might be needed for quick reference.

#### CO-OPERATION WITH OTHER STATE DEPARTMENTS AND AGENCIES

Co-operative arrangements have been made with other State Departments and assistance has been mutually exchanged upon request as follows: Department of Agriculture, on rendering plants; State Board of Conservation, on sanitation in State Parks; State Board of Control, on sanitation in State Institutions; State Department of Education, on school house sanitation; State Department of Labor, on housing; State College at Ames, on research on industrial waste disposal and laboratory work.

#### CO-OPERATION WITH INDUSTRIES

An attempt has been made to secure the co-operation of groups of related industries in the matter of studying the problems of

waste disposal. This work has not progressed very far but looks promising.

Already one meat packing plant has thoroughly studied its problem and will complete this year, a waste treatment works, the design of which is based upon the data obtained from their studies. A beet sugar factory is making definite progress in the study of their wastes with a similar end in view.

Conferences have been held and meetings attended in an effort to induce the meat packers, the canners, and the creameries to institute a research program for the study of their particular problem. No definite arrangements have as yet been made, but it is hoped that results will be forthcoming in the near future. Gas plants, corn products plants, straw board factories are other industries which contribute to stream pollution and these will be urged to organize for the purpose of research studies in the near future.

The survey of the municipalities included a survey of industries contributing wastes to the streams. This data has been compiled and filed and will be of value for future work along this line.

It is the policy of the division to carry out this idea of co-operation to the fullest extent and to resort to legal measures only when all other means fail. Particularly in the field of industrial waste disposal, there are many baffling problems which require study. For instance, very little is known about satisfactory economical treatment of beet sugar wastes, but such problems are probably amenable to solution. Thorough research is, however, first necessary and legislation or orders without this research will fail to solve the problems unless shutting down the industries is considered a solution.

Co-operation between the units of industry having the same problem, and co-operation of these groups which the governmental agencies seems to be the greatest hope for a speedy solution to most of these problems.

#### CONCLUSION

The division is as yet small and is not rendering the service which such a division could render if it were properly manned and had sufficient facilities. This service would include assistance to municipal officials in helping them with their sanitary engineering problems, the industries, in co-operating with them in their attempt to solve their respective waste disposal prob-

lems, and last and most important, the citizens of Iowa, in assuring them safer water supplies, more adequate sewerage facilities, cleaner communities, more healthful housing conditions and cleaner streams.

The laws covering these salient features are fairly adequate. Some people believe that the State Department should have and should exercise greater police powers. Our attitude is that we should adhere more strictly to a policy of co-operation and helpfulness and exert police powers only as a last resort.

The appropriations for such a program are grossly inadequate and should be built up so that the State of Iowa can have such an Engineering Division to which it is entitled by virtue of its population, its wealth, and the high character of its inhabitants. Such a division cannot be built up at once and the recommendations following cover only the salient features of the work to which immediate attention should be given.

#### RECOMMENDATIONS

The following recommendations are made:

- (1) Provision for a portable laboratory for field work.
- (2) The adding of personnel with adequate appropriation for equipment and expenses for the purpose of carrying out more completely the duties now imposed by law, particularly with regard to supervision of water supply and sewage disposal plant construction, maintenance and operation. This and other work is now being done very superficially due to the lack of personnel.
- (3) Appropriations for the supervision of swimming pools, resorts and camps, semi-public roadside water supplies, and roadside comfort stations.
- (4) An appropriation for stream pollution made specifically for that purpose.
- (5) Closer co-operation with existing agencies, in the matter of sanitation of milk.

## DIVISION OF VITAL STATISTICS

R. L. McLAREN, Assistant Registrar

### INTRODUCTION

The Division of Vital statistics was created by the Legislature of 1921 and became effective July 4th of that year. It was created to keep a perpetual record of every BIRTH, DEATH, MARRIAGE and DIVORCE reported to the division so that they may be preserved for legal, sanitary and statistical purposes. It is provided by law that the Commissioner of Public Health shall be the State Registrar of Vital Statistics.

### ACTIVITIES

1. General supervision of the registration of Vital Statistics—i. e., the reports of births, deaths, marriages and divorces.
2. Supervisory power over local registrars, deputy registrars, and sub-registrars, and clerks of the district court in the enforcement of the law relative to the disposal of dead bodies and the registration of Vital Statistics.
3. Furnishes blank certificates of birth, death and other forms and record books required, to all persons concerned with the administration of the Vital Statistics Law.
4. Carefully examines the certificates received from local registrars and clerks of district court and if any are incomplete or unsatisfactory requires additional information to be supplied.
5. Systematically arranges, binds and deposits in the State Historical Building, at the seat of government, the original certificates of births, deaths and marriages; also the duplicate divorce records.
6. Prepares and maintains a comprehensive and continuous card index of all births and deaths. Marriage and divorce records are arranged alphabetically.
7. Compiles and publishes statistical reports deemed of public interest.
8. Issues disinterment permits to licensed embalmers for the removal and re-interment of dead bodies.
9. Investigates irregularities or violations of the law relative to Vital Statistics and the disposal of dead bodies.
10. Prepares and issues, upon application, certified copies of all records in the custody of the division.
11. Sends to the mother of each child born in the State of Iowa

a "Notification of Birth Registration" certificate and a copy of a bulletin on "Care of the Infant".

### FUNCTION

This division records an average of 47,000 births, 23,000 deaths, 21,000 marriages and 4,000 divorces annually. The keeping of accurate records of the most important events in the lives of our people is proving of great importance for social, financial and health benefits of the citizens.

*Is your baby's birth certificate registered with the State Department of Health?*

It is very important that it should be. A certificate of birth may be needed—

To prove legal age:

- For inheritance of property,
- For claims of widow and orphans,
- For settlement of insurance,
- For settlement of pensions,
- For right to serve on a jury,
- For entering military service,
- For entrance to school,
- For right to vote,
- For right to marry,
- For legal dependency,
- For irresponsibility of children,
- For employment.

To prove American Citizenship:

- For passports,
- For exemption of military service in foreign countries,
- For criminal courts in foreign countries,
- For immigration,
- For right to hold certain offices,
- For right to admission to certain professions,
- For collecting compensation from the Government.

For deaths a record may be necessary to:

- Establish facts in court,
- Establish fact and cause of death for life insurance,
- Establish rights to a pension,
- Establish rights to an inheritance,
- Establish property rights.

### IOWA RECORDS ARE OFFICIAL

The birth and death records of Iowa are accepted by the Census Bureau of the U. S. Department of Commerce. Test made by that Department proved that ninety per cent (90%) of all births and deaths occurring in the State were properly recorded. Iowa was admitted into the Death Registration Area of the United States in 1923 and the following year, 1924, was admitted into the Birth Registration Area.

## THE REGISTRATION AREAS

The Birth Registration Area is made of entire states whose registration laws are regarded by the United States Census Bureau as satisfactory and in which at least 90% of births are registered. This area in 1927 consisted of forty (40) States and the District of Columbia which represents 87.3 per cent of the population of the United States. Five states were admitted to this area in 1927, namely: Alabama, Arkansas, Louisiana, Missouri and Tennessee.

The Death Registration Area is made up of entire States and in addition certain cities in states which are not as a whole in the area. Inclusion in this area depends upon satisfactory registration laws and assurance that at least 90% of all deaths are registered. It is possible for a city to be in the Death Registration Area and yet not be in the Birth Registration Area. A state must be in the Death Registration Area before admission to the Birth Registration Area. In 1927 the Death Registration Area comprised 42, the District of Columbia and 21 cities in five non-registration states, and represented 91.3 per cent of the population of the United States. One state, Arkansas, was added to the Death Registration Area in 1927.

## ACKNOWLEDGMENT

The State Department of Health wishes to commend the Local Registrars, Physicians, Funeral Directors and others for their continued support and co-operation. Your efforts are also appreciated by those who have benefited by the correct information contained on these legal records.

## POPULATION

The estimated population for Iowa in 1926 was 2,423,425 consisting of 658,527 persons for urban population and 1,764,898 for rural, while for 1927 it was 2,426,371 divided as follows: Urban—667,520, Rural—1,758,851.

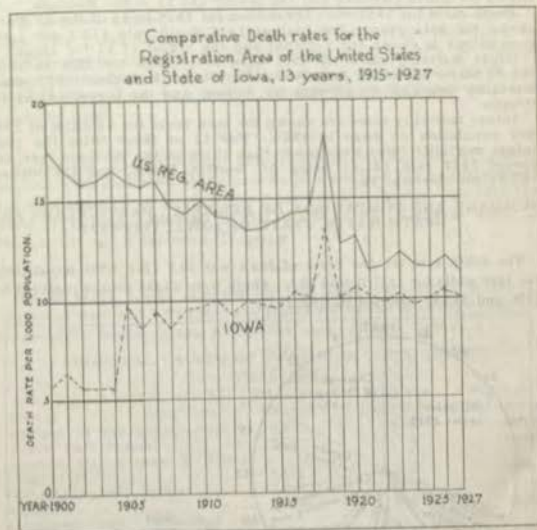
## CLASSIFICATION OF CAUSE OF DEATHS

The classification of causes of deaths used in this report have been tabulated in accordance with the Manual of the International List of Causes of Death, Third Revision—Paris, 1920.

## METHOD OF COMPUTING RATES

The Birth, Death and Infant Mortality rates for the State, Counties and the eighteen cities over 10,000 population are based upon the total number of births, deaths and deaths under one year of age occurring in each, irrespective of residence of parents

at time of birth or residence of deceased at time of death. This will increase the birth and death rates of counties and cities having State Institutions or Hospitals.



## SUMMARY OF PROVISIONAL BIRTH, DEATH, AND INFANT MORTALITY FIGURES IN THE BIRTH REGISTRATION AREA: 1926

Birth rates for 1926 were lower than for 1925 in 26 of the 28 states for which figures for the two years are shown in the following summary. The highest 1926 birth rate (26.4 per 1,000 population) is shown for Florida and the lowest (14.2) is for Montana.

Death rates for 1926 were higher than for 1925 in 23 of the 28 states shown for both years. The highest 1926 death rate (15.3 per 1,000 population) is shown for Florida and the lowest (7.5) for Montana.

Infant Mortality rates for 1926 were generally higher than those for 1925, as 21 of the 28 states show higher rates in 1926. For states the highest 1926 infant mortality rate (92.9) appears for Delaware and the lowest (51.6) for Oregon.

Infant Mortality rates are shown for both years for 48 cities of 100,000 population or more in 1926. For 27 of those cities the 1926 infant mortality rates were higher than those of the previous year, the highest 1926 rate (167.4) being for Richmond, Va., and the lowest (25.7) for Portland, Oregon.

### SUMMARY OF PROVISIONAL BIRTH, DEATH, AND INFANT MORTALITY FIGURES IN THE BIRTH REGISTRATION AREA, 1927

Birth rates for 1927 were lower than for 1926 in 23 of the 33 States for which figures for the two years are shown in the following summary. The highest 1927 birth rate (28.8 per 1,000 population) is shown for North Carolina and the lowest (13.6) is for Montana.

Death rates for 1927 were lower than for 1926 in 28 of the 33 States shown for both years. The highest 1927 death rate (13.9 per 1,000 population) is shown for Vermont and the lowest (7.1) for Idaho.

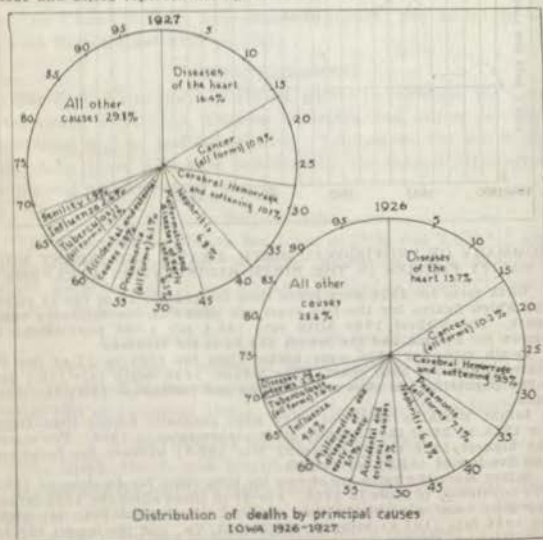
Infant mortality rates for 1927 were lower than for 1926 in 30 of the 33 States shown for both years. For States the highest 1927 infant mortality rate (125.3) appears for Arizona and the lowest (47.5) for Oregon.

Infant mortality rates are shown for both years for 48 cities of 100,000 population or more in 1920. For 42 of these cities the 1927 infant mortality rates were lower than those of the previous year, the lowest 1927 rate (41.4) being for Seattle, Wash., and the highest (87.1) for Norfolk, Va.

### SUMMARY AND COMPARISON OF PERSONAL PARTICULARS AND DEATH RATES, STATE OF IOWA, 1926-1927

#### RATES

The death rate for the State of Iowa was 19.4 (per 1,000 population) for 1926 while for 1927 it was 16.1. There were 25,466 deaths reported for 1926 and 24,532 reported during 1927.



Johnson County with a rate of 20.6 (per 1,000 population) had the highest death rate for 1927. It was also highest for 1926 with a rate of 20.9. Shelby County showed the lowest rate (6.2) for 1927 while Humboldt County had the lowest rate (5.6) for 1926.

#### SEX

The greatest number of deaths for 1927 occurred in the male sex as there were 13,349 deaths reported compared with 11,183 females or the male deaths exceeded the female deaths by 2,166 while for 1926 the male deaths numbered 13,610 or 1,754 more than female deaths which were 11,856. For the two year period the male deaths exceeded the female deaths by 3,920.

#### MARITAL STATE

During the year 1927 there were 10,490 deaths reported for married persons, 6,792 deaths for single persons followed by 5,723 for the widowed, 427 were recorded as being divorced and 100 as unknown. For 1926 they were as follows: Married—11,011, Single—7,044, Widowed—6,846, Divorced—394 and Unknown—171.

#### COLO

Out of 24,532 deaths reported for 1927 there were 24,195 White—316 Black—17 Red, and 1 Yellow. For the 25,466 deaths reported during 1926 there were: White—25,120, Black—328, Red—14, and Yellow—4.

### PRINCIPAL CAUSES OF DEATHS IN IOWA, 1926-1927

DISEASE	YEAR 1926		PER CENT OF TOTAL DEATHS
	NUMBER OF DEATHS	RATE PER 100,000 POP.	
Diseases of the heart.....	3,970	163.8	15.75
Cancer (All Forms).....	2,593	107.0	10.29
Cerebral Hemorrhage & Softening.....	2,516	102.8	9.98
Pneumonia (All forms).....	1,811	74.7	7.18
Nephritis.....	1,719	70.9	6.82
Accidental and unspecified external causes.....	1,465	60.5	5.81
Malformations and diseases of early infancy.....	1,456	60.4	5.77
Influenza.....	1,118	46.1	4.43
Tuberculosis (All forms).....	918	37.9	3.54
Diseases of the Arteries.....	565	22.9	2.2
Total.....	18,121		71.87

DISEASE	YEAR 1927		PER CENT OF TOTAL DEATHS
	NUMBER OF DEATHS	RATE PER 100,000 POP.	
Diseases of the Heart.....	4,036	165.9	16.45
Cancer (All Forms).....	2,689	110.5	10.90
Cerebral Hemorrhage & Softening.....	2,496	102.6	10.15
Nephritis.....	1,690	69.6	6.88
Malformations and Diseases of Early Infancy.....	1,512	62.3	6.15
Pneumonia (All Forms).....	1,508	62.1	6.14



Accidental and unspecified external causes	1,446	59.6	5.89
Tuberculosis (All Forms)	572	35.9	3.55
Influenza	648	36.7	2.64
Senility	489	29.1	1.99
Total	17,380		70.75

#### DEATHS REPORTED BY SEX, AGE GROUPS, COLOR AND CONJUGAL CONDITION FOR YEARS, 1927-1926

(a) SEX	1927	1926		
Male	13,349	13,610		
Female	11,183	11,856		
Total	24,532	25,466		
(b) AGE	1927	1926		
Male	Female	Male	Female	
Under one year	1,407	1,071	1,558	1,125
1 to 4 years	465	342	467	389
5 to 9 years	225	189	223	195
10 to 14 years	176	131	187	132
15 to 19 years	250	206	215	185
20 to 24 years	268	259	233	268
25 to 29 years	246	263	250	316
30 to 34 years	269	265	276	324
35 to 39 years	333	317	316	343
40 to 44 years	421	378	412	363
45 to 49 years	497	427	468	467
50 to 54 years	628	489	623	629
55 to 59 years	797	611	863	709
60 to 64 years	1,078	776	994	859
65 to 69 years	1,398	1,079	1,385	1,097
70 to 74 years	1,506	1,206	1,483	1,173
75 to 79 years	1,421	1,232	1,471	1,177
80 to 84 years	1,147	1,011	1,240	1,095
85 to 89 years	596	620	660	683
90 to 94 years	234	250	241	283
95 to 99 years	41	51	40	46
100 years and over	5	7	4	7
Unknown	1	1	0	1
(c) COLOR	1927	1926		
White	24,198	25,120		
Black	316	328		
Red	17	14		
Yellow	1	4		
(d) MARITAL STATE	1927	1926		
Single	6,792	7,044		
Married	10,490	11,011		
Widowed	6,723	6,546		
Divorced	427	394		
Unknown	100	171		

#### CAUSES OF DEATHS

Number	1927	1926	
Int. List			
Number	1927	1926	
EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES			
1. Typhoid and Paratyphoid fever	54	52	
2. Typhus Fever	1	0	
3. Malta Fever	1	0	
4. Malaria	1	0	
5. Smallpox	2	2	
.....(Group 1) 2,457 2,842			

7. Measles	225	63	
8. Scarlet Fever	41	48	
9. Whooping Cough	163	162	
10. Diphtheria	121	111	
11. Influenza	648	1,114	
12. Mumps	1	1	
13. Cholera nostrans	2	5	
14. Dysentery	24	44	
15. Erysipelas	23	15	
16. Acute poliomyelitis	16	26	
17. Leishmaniasis	21	17	
18. Meningococcus meningitis	1	0	
19. Other epidemic and endemic diseases	1	0	
20. Rabies	41	40	
21. Tetanus	18	32	
22. Mycoses	873	915	
TUBERCULOSIS (ALL FORMS)			
23. T. B. Respiratory System	729	774	
24. T. B. Meninges and central nervous system	47	34	
25. T. B. Intestines and peritoneum	21	46	
26. T. B. of vertebral column	2	7	
27. T. B. of the joints	24	21	
28. T. B. of other organs	16	20	
29. Disseminated tuberculosis	13	23	
(a) Acute	3	5	
(b) Chronic	117	161	
30. Syphilis	12	16	
31. Gonococcus infection	39	34	
32. Purulent infection - septicaemia	0	2	
33. Other infectious diseases	0	2	
GENERAL DISEASES NOT INCLUDED IN GROUP 1.....(Group 2) 3,785 3,398			
CANCER (ALL FORMS) 2,683 2,593			
34. Cancer and other malignant tumors of the buccal cavity	81	72	
35. Cancer and other malignant tumors of the stomach and liver	1,024	1,007	
36. Cancer and other malignant tumors of peritoneum, intestines and rectum	415	388	
37. Cancer and other malignant tumors of female genital organs	272	278	
38. Cancer and other malignant tumors of the breast	233	218	
39. Cancer and other malignant tumors of the skin	75	67	
40. Cancer and other malignant tumors of other unspecified organs	569	663	
41. Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)	12	33	
42. Acute rheumatism	61	59	
43. Chronic rheumatism, osteoarthritis, gout	8	44	
44. Scurvy	2	5	
45. Pellagra	5	2	
46. Rickets	423	481	
47. Diabetes Mellitus	324	310	
48. Anemia, Chlorosis	2	2	
49. Diseases of the pituitary gland	120	236	
50. Diseases of the thyroid gland	111	113	
(a) Exophthalmic goiter	19	18	
(b) Other diseases of the thyroid gland	92	95	
51. Diseases of the parathyroid glands	2	2	
52. Diseases of the thymus gland	16	14	
53. Diseases of the adrenals (Addison's Disease)	3	4	
54. Diseases of the spleen	111	113	
55. Leukemia and Hodgkin's disease	85	86	
(a) Leukemia	27	24	
(b) Hodgkin's disease	58	62	
56. Alcoholism (acute or chronic)	1	2	
57. Chronic poisoning by mineral substances	1	1	
(a) Chronic lead poisoning	0	1	
(b) Others under this title	1	0	
58. Chronic poisoning by organic substances	4	4	
59. Other general diseases	29	46	
DISEASES OF NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE 3,328 3,379			
60. Epilepsia	45	43	
71. Meningitis (not meningococcal, tuberculous or rheumatic, etc.)	55	56	
(a) Simple meningitis	45	48	
(b) Nonpurulent cerebrospinal meningitis	10	7	
72. Tabes dorsalis ( locomotor ataxia)	100	100	
73. Other diseases of the spinal cord	0	0	

74. Cerebral hemorrhage, apoplexy.....	2,476	1,941	125. Acute nephritis (including unspecified under 19 years of age).....	81	82
(a) Cerebral hemorrhage.....	2,380	1,821	126. Chronic nephritis (including unspecified 10 years and over).....	1,609	1,637
(b) Cerebral thrombosis and embolism.....	96	120	127. Other diseases of the kidneys and annexa (diseases of kidneys in pregnancy excepted).....	74	51
75. Paralysis without specified cause.....	75	109	128. Calculi of urinary passages.....	21	16
76. General paralysis of the insane.....	92	92	129. Diseases of the bladder.....	27	32
77. Other forms of mental alienation.....	71	34	130. Diseases of urethra, urinary abscess, etc.....	216	221
78. Epilepsy.....	21	31	131. Diseases of the prostate.....	1	4
79. Convulsions (non puerperal) (5 years and over).....	1	21	132. Non-venerereal diseases of the male genital organs.....	21	15
80. Infantile convulsions (under 5 years of age).....	1	21	133. Cysts and other benign tumors of the ovary.....	45	50
81. Chorea.....	12	22	134. Salpingitis and pelvic abscess.....	19	21
82. Neuralgia and neuralgia.....	124	122	135. Benign tumors of the uterus.....	9	9
83. Softening of the brain.....	128	128	136. Non-puerperal uterine hemorrhages.....	19	21
84. Other diseases of nervous system.....	5	5	137. Other diseases of female genital organs.....	543	574
85. Diseases of the eye and of the mastoid process.....	117	91	<b>THE PUERPERAL STATE..... (Group 8)</b>	26	31
86. Diseases of the ear and of the mastoid process.....	47	47	144. Accidents of pregnancy.....	27	26
(a) Diseases of the ear.....	60	40	144. Puerperal hemorrhage.....	25	29
(b) Diseases of mastoid process.....	11	7	145. Other accidents of labor.....	118	97
<b>DISEASES OF THE CIRCULATORY SYSTEM..... (Group 4)</b>	4,795	4,641	146. Puerperal puerperia alba dolens, embolus, nodosa.....	19	15
87. Pericarditis.....	24	21	147. Puerperal albuminuria and convulsions.....	46	75
88. Endocarditis and myocarditis (acute).....	153	102	148. Puerperal albuminuria and convulsions.....	19	15
89. Angina pectoris.....	404	383	149. Following childbirth (not otherwise defined).....	46	2
90. Other diseases of the heart.....	2,463	2,355	<b>DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE..... (Group 9)</b>	89	82
91. Diseases of the arteries.....	165	37	151. Gangrene.....	47	38
92. Embolism and thrombosis (not cerebral).....	165	37	152. Furuncle.....	11	11
93. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	36	21	153. Acute abscess.....	7	11
94. Diseases of the lymphatic system (lymphangitis, etc.).....	5	2	154. Other diseases of skin and annexa.....	15	22
95. Hemorrhage without specified cause.....	1	1	<b>DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION..... (Group 10)</b>	40	22
96. Other diseases of circulatory system.....	4	2	155. Diseases of bones (osteomyelitis excepted).....	34	27
<b>DISEASES OF THE RESPIRATORY SYSTEM..... (Group 5)</b>	1,823	1,570	156. Diseases of joints (T. B. and rheumatism excepted).....	5	4
97. Diseases of the nasal fossae and their annexa.....	2	2	157. Other diseases of the organs of locomotion.....	343	343
(a) Diseases of the nasal fossae.....	23	20	<b>MALFORMATIONS..... (Group 11)</b>	24	46
(b) Others under this title.....	21	21	(a) Hydrocephalus.....	188	174
98. Diseases of the larynx.....	110	117	(b) Congenital malformations of the heart.....	124	123
99. Bronchitis.....	22	24	(c) Others under this title.....	1,169	1,113
(a) Acute.....	55	54	<b>EARLY INFANCY..... (Group 12)</b>	131	139
(b) Chronic.....	33	25	160. Congenital debility, intercus and sclerema.....	952	891
(c) & (d) Not otherwise defined.....	682	710	161. Premature birth, injury at birth.....	246	208
100. Bronchopneumonia (including capillary bronchitis).....	672	804	(a) Premature birth.....	196	185
(a) Capillary bronchitis.....	19	24	(b) Injury at birth.....	75	82
101. Pneumonia.....	805	899	162. Other diseases peculiar to early infancy.....	489	527
(a) Lobar.....	21	82	163. Lack of care.....	489	527
(b) Not otherwise defined.....	41	84	<b>OLD AGE..... (Group 13)</b>	489	527
102. Pleurisy.....	44	42	164. Senility.....	422	367
103. Congestion and hemorrhagic infarct of the lung.....	1	2	<b>EXTERNAL CAUSES..... (Group 14)</b>	1,941	1,889
104. Gangrene of the lung.....	4	5	<b>SUICIDE (FATAL).....</b>	29	29
105. Asthma.....	7	7	165. Suicide by solid or liquid poisons (corrosive substances excepted).....	36	31
106. Pulmonary emphysema.....	15	25	166. Suicide by corrosive substances.....	57	57
107. Other diseases, respiratory system (T. B. excepted).....	15	25	167. Suicide by poisonous gas.....	134	108
<b>DISEASES OF THE DIGESTIVE SYSTEM..... (Group 6)</b>	1,833	1,570	168. Suicide by hanging or strangulation.....	112	129
108. Diseases of the mouth and annexa.....	18	21	169. Suicide by drowning.....	21	18
109. Diseases of pharynx and tonsils (including adenoid vegetations).....	73	84	170. Suicide by firearms.....	6	6
(a) Adenoid vegetations.....	0	0	171. Suicide by jumping from high places.....	3	3
(b) Others under this title.....	73	84	172. Suicide by crushing.....	3	3
110. Disease of the esophagus.....	159	167	173. Suicide by other means.....	19	5
111. Ulcer of stomach and duodenum.....	112	101	174. Other suicides.....	1	1
(a) Ulcer of the stomach.....	57	45	175. Poisoning by food.....	39	28
(b) Ulcer of the duodenum.....	55	56	176. Poisoning by venomous animals.....	22	21
112. Other diseases of the stomach (cancer excepted).....	84	37	177. Other acute accidental poisonings (gas excepted).....	25	24
113. Diarrhea and enteritis (2 year of age).....	195	193	178. Congenital.....	21	24
114. Diarrhea and enteritis (2 years and over).....	1	4	179. Accidental burns (conflagration excepted).....	21	24
115. Diseases due to other intestinal parasites.....	293	303	180. Accidental mechanical suffocation.....	47	24
116. Appendicitis and typhlitis.....	265	304	181. Accidental absorption of irresorbable poisons.....	94	92
117. Appendicitis and typhlitis.....	265	304	182. Accidental drowning.....	49	44
118. Hernia, intestinal obstruction.....	22	59	183. Accidental traumatism by firearms (accidents of war excepted).....	15	15
(a) Hernia.....	174	209	184. Accidental traumatism by cutting or piercing instruments.....	417	389
(b) Intestinal obstruction.....	21	31	185. Accidental traumatism by falls.....	20	21
119. Other diseases of the intestines.....	31	31	186. Accidental traumatism in mines and quarries.....	1	1
120. Acute yellow atrophy of the liver.....	1	2	(a) Mines.....	1	1
121. Hydatid tumor of liver.....	14	17	(b) Quarries.....	1	1
122. Cirrhosis of the liver.....	144	137			
123. Biliary calculi.....	110	103			
124. Other diseases of the liver.....	14	14			
125. Diseases of the pancreas.....	143	103			
126. Peritonitis without specified cause.....	35	41			
<b>NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA..... (Group 7)</b>	2,157	2,161			

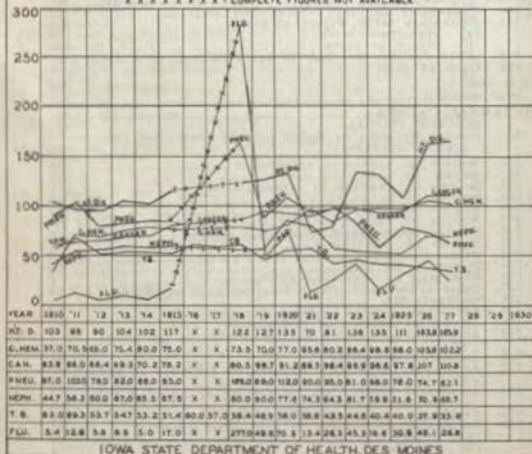
187. Accidental traumatism by machines.....	41	42
188. Accidental traumatism by other crushing (vehicles, railroads, landslides, etc.).....	469	493
(a) Railroad accidents.....	129	143
(b) Street car accidents.....	8	11
(c) Automobile.....	284	244
(d) Aeroplane and balloon accidents.....	6	3
(e) Injuries by other vehicles.....	42	32
(f) Landslides, other crushing.....	14	21
(g) Injuries by animals (not poisoning).....	21	21
189. Excessive cold.....	5	5
194. Excessive heat.....	15	8
196. Lighting.....	8	1
196. Other accidental electric shocks.....	16	22
HOMICIDE (TOTAL).....	59	57
197. Homicide by firearms.....	35	44
198. Homicide by cutting or piercing instruments.....	2	2
199. Homicide by other means.....	22	7
201. Fracture (cause not specified).....	0	0
202. Other external violence (cause specified).....	52	92
ILL-DEFINED DISEASES.....(Group 15)	145	146
204. Sudden death.....	28	32
205. Not specified or ill-defined.....	117	114
TOTAL.....	24,522	25,466

NOTE: Figures for 1927 are provisional and subject to revision.

GENERAL DEATH RATES, DEATHS FROM ALL CAUSES (PER 1,000 POPULATION) BY COUNTIES AND CITIES (OVER 10,000) FOR YEARS, 1926-1927

Counties—The death rate per 1,000 population in the State of Iowa for the year 1926 was 10.4 or .3 higher than for 1927 which was 10.1. The three counties with the highest rates for 1926 were: Johnson\*—20.4,

MAIN CAUSES OF DEATH IN IOWA.  
DEATH RATES PER 100,000 POPULATION FROM SOME OF THE MAIN CAUSES OF DEATH, VIZ: HEART DISEASE, CEREBRAL HEMORRHAGE AND STROKING, CANCER, PNEUMONIA (ALL FORMS), ACUTE AND CHRONIC NEPHRITIS, TUBERCULOSIS (ALL FORMS) AND INFLUENZA, 1910-1927  
X X X X X X X X X COMPLETE FIGURES NOT AVAILABLE.



IOWA STATE DEPARTMENT OF HEALTH, DES MOINES

Henry\*—18.4 and Buchanan\*—17.0. For 1927 the counties having the highest rates were: Johnson—20.6, Henry—18.6 and Buchanan—18.8.

The three counties having the lowest rates for the year 1926 were: Humboldt—5.6, Grundy—6.5 and Cassola—6.3. For 1927 the counties with the lowest rates were: Shelby—6.2, Grundy—6.4 and Winnebago—6.5.

\*There is a state institution located in each of these counties and as a result they show a higher death rate than other counties with like population. If the deaths occurring in the institutions were charged back to the county from which patient was admitted these three counties would show an average rate.

Cities—The three cities having the highest rates for 1926 were: Iowa City (26.1), Keokuk (18.1), and Marshalltown (17.4). For 1927 they were: Iowa City (28.8), Keokuk (18.7) and Fort Madison (17.3).

The three cities having the lowest death rates for 1926 were: Cedar Rapids (10.6), Des Moines (11.7) and Mason City (10.4), Des Moines (11.0) and Sioux City (11.2).

For the year 1926 the total number of deaths reported was 25,466 of which 8,831 occurred in the 18 cities for which returns are kept separate. The rate for the cities for 1926 was 13.3 compared with the rate of 12.9 for 1927. For the year 1927 out of 24,522 deaths reported 8,643 occurred in the 18 cities over 10,000 population.

The rate for the counties (exclusive of the 18 cities) for 1926 was 9.4 compared with 8.9 for the year 1927.

NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY COUNTIES, 1926-1927

(Cities Included Within Counties)

Area	Deaths		Rates	
	1926	1927	1926	1927
Total for the State.....	25,466	24,522	10.4	10.1
Adair.....	199	197	9.6	7.9
Adams.....	186	70	2.4	0.8
Allamakee.....	185	144	11.1	8.5
Allaukee.....	276	369	9.8	9.6
Appanoosh.....	94	91	7.9	7.4
Audubon.....	318	199	9.4	8.7
Benton.....	659	504	11.4	8.8
Black Hawk.....	325	367	16.9	19.5
Boone.....	174	185	10.4	11.9
Bremer.....	317	394	17.0	18.8
Buchanan.....	167	166	8.9	8.9
Buena Vista.....	143	143	7.9	7.9
Butler.....	322	328	6.9	7.9
Calhoun.....	368	398	16.7	16.8
Carroll.....	307	389	16.9	16.9
Cass.....	145	130	8.6	10.3
Cedar.....	385	379	10.4	9.1
Cerro Gordo.....	329	311	14.2	15.3
Chickasaw.....	122	139	8.8	9.3
Clarke.....	125	104	12.3	10.5
Clay.....	109	124	9.6	7.9
Clayton.....	307	259	9.8	9.0
Clinton.....	601	523	16.0	11.5
Crawford.....	175	147	8.5	7.7
Dallas.....	343	317	9.6	8.5
Davis.....	99	117	8.3	9.8
Decatur.....	265	189	10.7	6.8
Des Moines.....	192	189	10.8	10.9
Delaware.....	425	477	12.8	12.4
Des Moines.....	84	99	7.7	8.2
Dickinson.....				

NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY COUNTIES, 1926-1927—Continued

Area	Deaths		Rates	
	1926	1927	1926	1927
	Dubuque.....	747	789	12.4
Emmet.....	125	110	9.5	8.2
Fayette.....	976	850	9.5	8.5
Floyd.....	102	100	10.2	10.1
Franklin.....	130	148	8.3	9.1
Fremont.....	102	105	8.9	7.8
Greene.....	169	114	6.8	7.1
Grundy.....	92	89	6.6	6.4
Guthrie.....	154	126	9.5	7.9
Hamilton.....	210	180	10.9	9.6
Hancock.....	109	101	7.5	7.0
Hardin.....	223	212	9.5	9.1
Harrison.....	202	185	8.6	7.9
Henry.....	312	313	18.4	18.8
Howard.....	137	129	10.4	9.8
Humboldt.....	76	84	5.6	6.5
Iowa.....	105	105	9.1	9.8
Jackson.....	173	165	8.5	8.5
Jasper.....	193	225	10.9	12.5
Jessie.....	300	306	10.5	10.6
Jefferson.....	190	167	11.8	10.1
Johnson.....	626	642	20.4	20.6
Jones.....	188	185	10.6	10.4
Keokuk.....	182	190	9.1	9.5
Kossuth.....	170	170	6.9	6.9
Lee.....	556	522	14.6	14.1
Linn.....	897	870	10.1	10.1
Louis.....	133	126	11.6	10.9
Lucas.....	145	147	9.3	9.2
Lyon.....	114	105	7.4	6.7
Madison.....	122	141	9.1	9.1
Maquoketa.....	296	284	10.7	10.4
Marietta.....	265	271	10.7	8.6
Marshall.....	333	421	15.9	12.7
Mills.....	145	146	10.8	11.3
Mitchell.....	120	116	8.5	8.3
Monona.....	143	169	8.6	6.6
Montgomery.....	228	236	11.5	10.2
Montrose.....	172	177	10.4	10.3
Muscatine.....	305	273	12.5	12.8
O'Brien.....	129	133	9.4	7.6
Osceola.....	96	80	6.8	8.1
Page.....	322	326	14.3	14.6
Palo Alto.....	234	99	6.9	6.8
Plymouth.....	197	164	8.3	6.9
Pocahontas.....	122	106	8.7	7.9
Polk.....	1,823	1,826	11.1	10.5
Pottawattamie.....	727	709	12.5	10.5
Poweshiek.....	182	195	10.2	11.1
Ringgold.....	117	100	9.9	8.6
Sac.....	145	150	8.4	9.1
Scott.....	460	479	12.5	12.9
Shelby.....	125	101	7.7	6.3
Sioux.....	307	303	7.0	7.4
Story.....	286	243	9.7	7.8
Tama.....	301	187	9.1	8.5
Taylor.....	136	134	10.3	8.9
Union.....	190	176	11.7	10.4
Van Buren.....	127	134	9.4	10.0
Wapello.....	492	462	11.6	10.4

NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY COUNTIES, 1926-1927—Continued

Area	Deaths		Rates	
	1926	1927	1926	1927
	Warren.....	158	155	9.1
Washington.....	194	204	10.1	10.6
Wayne.....	124	145	9.3	9.8
Webster.....	404	365	9.9	8.9
Winnebago.....	97	87	7.3	6.5
Winneshiek.....	216	178	10.1	8.4
Woodbury.....	1,109	1,039	11.3	10.4
Worth.....	65	84	8.5	7.5
Wright.....	162	133	7.9	7.3

NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY CITIES OVER 10,000 POPULATION, YEAR, 1926-1927

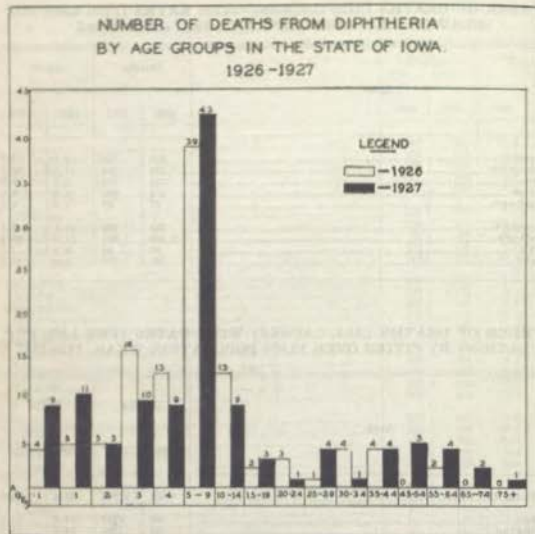
Area	Deaths		Rates	
	1926	1927	1926	1927
	Total for Cities.....	8,831	8,042	13.4
Boone.....	165	169	12.6	12.9
Burlington.....	387	385	14.2	14.0
Cedar Rapids.....	552	600	10.6	11.4
Clinton.....	625	534	12.7	12.9
Council Bluffs.....	745	799	14.7	17.1
Davenport.....	1,746	1,628	11.7	11.0
Des Moines.....	810	658	14.8	14.9
Dubuque.....	381	390	12.5	11.8
Fort Dodge.....	181	182	16.2	16.7
Fort Madison.....	438	481	20.1	28.8
Iowa City*.....	202	271	28.1	19.7
Keokuk.....	390	356	17.4	14.4
Marshalltown.....	377	359	11.8	10.5
Mason City.....	254	231	12.6	14.1
Muscatine.....	378	358	13.7	12.9
Ottumwa.....	976	883	12.4	11.9
Sioux City.....	632	579	11.8	10.2
Waterloo.....				

\*State University Hospital located at Iowa City.  
Estimated population for 13 cities for year 1926 was 658,527 and for 1927 it was 667,230.

## SUMMARY OF RATES FOR DIPHTHERIA AND SCARLET FEVER IN STATE OF IOWA, 1926-1927

## DIPHTHERIA

Counties—The death rate per 100,000 population in the State of Iowa for 1926 was 4.6 compared with 4.8 for 1927. The three counties showing the highest rates for 1926 were: Bremer (23.8), Boone (17.0) and Dubuque (16.6). Those with the highest rates for 1927 were: Johnson (25.9), Palo Alto (20.1) and Audubon (17.0).



*Cities*—The three cities with the highest rates for 1926 were: Boone (31.0), Fort Madison (27.2) and Iowa City (250) while for 1927 they were: Iowa City (53.6), Council Bluffs (16.9) and Dubuque (14.4).

#### SCARLET FEVER

*Counties*—The death rate per 100,000 population in the State of Iowa for 1926 was 1.9 compared with 1.7 for 1927. There were 46 deaths reported in 1926 and 41 reported in 1927. The three counties with the highest rates for 1926 were: Cass (15.3), Cherokee (12.2) and Guthrie (11.8). For 1927 they were: Washington (21.2), Audubon (17.0) and Crawford (14.7).

*Cities*—The three cities with the highest rates for 1926 were: Marshalltown (5.8), Sioux City (4.8) and Davenport (3.8). For 1927 they were: Fort Madison (18.6), Mason City (8.4) and Iowa City (5.9). The cities of Boone, Burlington, Cedar Rapids, Council Bluffs, Fort Dodge, Keokuk, Muscatine, Ottumwa and Waterloo reported no deaths from Scarlet Fever for the two years, 1926-1927.

### NUMBER OF DEATHS CAUSED BY DIPHTHERIA AND SCARLET FEVER WITH RATES (PER 100,000 POPULATION) BY COUNTIES FOR YEARS, 1926-1927

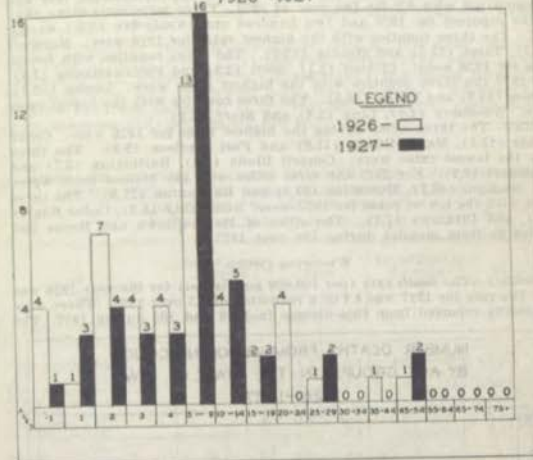
(Cities Included Within Counties)

Area	No. of Deaths Diphtheria		Rates		No. of Deaths Scarlet Fever		Rates	
	1925	1927	1926	1927	1926	1927	1926	1927
Total for the State	111	121	4.5	4.8	46	41	1.9	1.7
Adair	1			7.4				
Adams	1			9.9				
Alamakee	1			6.1				
Appanoose	4	1	14.2		1		8.5	
Audubon		2		17.0		2		17.0
Benton	1			4.4		1		4.4
Black Hawk		2		2.4		1		3.7
Boone	5	3	17.0	16.3				
Bremser	4		23.8					
Buchanan	1	2	5.0	17.1		1		3.7
Boona Vista	1		5.4			1		5.4
Butler		1				1		5.6
Calhoun						1		5.6
Carroll	1	1	4.5	4.5			15.2	
Cass								
Cedar	2	1	17.9	6.0	2		16.8	
Cerro Gordo	2	1	5.2	2.6		2		5.2
Cherokee	1		6.1		2	2	12.2	12.4
Chickasaw	1		6.6					6.7
Clarke								
Clay		1		6.5				
Clayton	1	1	4.1	4.1			6.2	
Clinton	1	2	2.1	4.3	1		2.1	14.7
Crawford		1		4.5		2		14.7
Dallas	2		7.9			1		3.9
Davis						1		8.5
Decorah	1	1	6.6	6.3				
Delaware	1		5.6			1		5.6
Des Moines	2	4	7.4	10.3				
Dickinson								
Dubuque	10	8	16.6	13.2	3		4.8	
Emmet		2		12.2				
Fayette		2		6.8			10.2	
Floyd								
Franklin	1		6.2			1		6.5
Freestone	1		6.7					
Greene		2		12.6				
Grundy	1			7.2				
Guthrie	1		5.9				11.8	14.7
Hamilton		3		14.3				
Hancock						1		6.9
Hardin	2		8.9			1		4.5
Harrison		1		4.3				4.5
Henry	1		5.9		1		5.9	
Howard	1		7.6					
Humboldt		1		7.9		1		7.9
Iowa	1	1	5.5	5.6				
Jackson	2	2	10.4	10.5	1		5.2	
Jasper	4	1	13.9	3.6		2		7.0

NUMBER OF DEATHS CAUSED BY DIPHTEHRIA AND SCARLET FEVER BY COUNTIES, 1926-1927.—Continued

Area	No. of Deaths Diphtheria		Rates		No. of Deaths Scarlet Fever		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Jefferson	1			6.1				
Johnson	5	9	36.4	36.9	2	1	6.6	2.2
Jones	1	1	15.0	5.1				5.6
Kookuk	1	5	3.9	11.9	1		2.9	
Kossuth								
Lee	2		7.8			2		2.2
Linn	2	8	2.4	9.7	1		1.2	
Louis	2		17.2					
Loras						1		6.3
Lyon								
Madison								
Mahaska	2		11.2					
Marion		1		4.3		1		4.1
Marshall	1		5.9		1	1	5.0	2.9
Mills	1		7.5		1		7.5	
Mitchell								
Monona						2		6.9
Monroe	1	1	6.0	6.0				
Montgomery								
Muscatine	1		2.4		1		2.4	
O'Brien								
Oswell						1		5.5
Page		1		4.2				
Palo Alto		2		16.1				
Plymouth								
Pocahontas	1			6.6	1		6.0	
Polk	6	7	7.6	3.4	2	1	1.7	1.6
Pottawattamie	7	1	1.5	10.9	1		1.3	
Poweshiek						1		5.7
Ringgold	1			8.6				
Sar	1		5.8					
Scott	6	9	8.7	13.2	2	1	2.8	1.8
Shelby	1			6.2	1		6.1	
Sioux	2	2	7.8	2.7				
Story				6.5		1		2.2
Tama	1	2	4.5	9.0				
Taylor	1		6.5					
Union								
Van Buren								
Wapello	1		2.2					
Warren	2		11.4					
Washington	1		5.2			4		11.2
Wayne								
Webster	2	2	4.9	7.3	1		2.9	
Winneshago	1	1	7.5	7.6				
Winneshiek	1		4.6					
Woodbury	1	1	3.0	1.0	4	3	4.6	2.8
Worth								
Wright	1		4.9		1		4.9	

NUMBER DEATHS FROM SCARLET FEVER BY AGE GROUPS IN THE STATE OF IOWA 1926-1927



NUMBER OF DEATHS CAUSED BY DIPHTEHRIA AND SCARLET FEVER WITH RATES (PER 100,000 POPULATION) FOR CITIES OVER 10,000 POPULATION, YEARS, 1926-1927

Area	No. of Deaths Diphtheria		Rates		No. of Deaths Scarlet Fever		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Boone	4		21.6					
Burlington	2	2	7.4	7.4				
Cedar Rapids	1	5	1.9	9.5				
Union	1	1	2.7	2.7	1		3.7	
Council Bluffs					26.9			
Davenport	5	7	9.7	13.9	2	1	2.8	1.5
Des Moines	12	6	8.2	4.1		1		2.6
Dubuque	8	6	21.7	14.4	1		2.6	3.7
Fort Dodge	2	2	9.0	8.8				
Fort Madison	2	2	27.2			2		12.6
Iowa City	4	9	25.0	39.2				5.9
Kookuk								
Marshalltown					1	1	2.5	2.4
Mason City	1	1	4.2	4.2				
Muscatine	1		5.9					
Ottumwa			2.7					
Sioux City		1	2.3	1.2	4	2	4.5	2.6
Waterloo	2		2.4					

SUMMARY OF RATES FOR MEASLES AND WHOOPING COUGH IN  
STATE OF IOWA, YEAR, 1926-1927

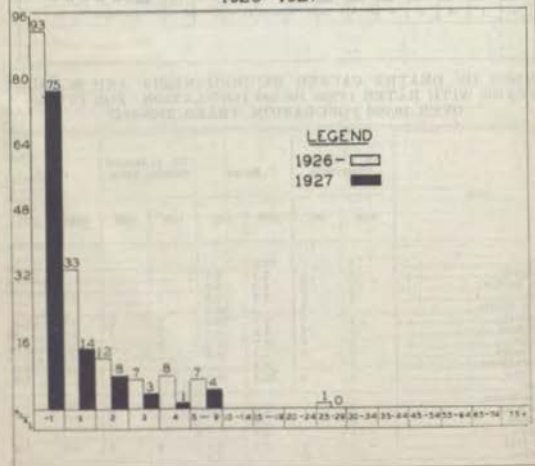
## MEASLES

*Counties*—The death rate (per 100,000 population) for the year 1926 was 2.4 compared with 9.2 for the year of 1927. There were sixty-three (63) deaths reported for 1926 and two hundred and twenty-five (225) during 1927. The three counties with the highest rates for 1926 were: Marshall (27.3), Tama (22.5) and Hardin (15.5). The three counties with lowest rates for 1926 were: Clinton (2.1), Scott (2.9) and Pottawattamie (3.0). For 1927 the three counties with the highest rates were: Louisa (52.2), Marion (44.9) and Union (35.5). The three counties with the lowest rates were: Woodbury (1.6), Linn (2.4) and Story (3.2).

*Cities*—The three cities having the highest rates for 1926 were: Cedar Rapids (15.5), Marshalltown (11.8) and Fort Madison (9.9). The three with the lowest rates were: Council Bluffs (3.0), Burlington (2.7) and Davenport (3.9). For 1927 the three cities with the highest rates were: Fort Madison (46.3), Muscatine (29.3) and Burlington (21.9). The three cities with the lowest rates for 1927 were: Sioux City (1.3), Cedar Rapids (1.9), and Ottumwa (7.2). The cities of Marshalltown and Boone had no deaths from measles during the year 1927.

## WHOOPING COUGH

*Counties*—The death rate (per 100,000 population) for the year 1926 was 6.7. The rate for 1927 was 4.4 or a reduction of 2.3 over 1926. There were 163 deaths reported from this disease in 1926 and 105 during 1927. The

NUMBER DEATHS FROM WHOOPING COUGH,  
BY AGE GROUPS IN THE STATE OF IOWA,  
1926-1927

(three counties showing the highest rates for 1926 were: Louisa (25.8), Ringgold (25.2) and Marshall (24.2). For 1927 the three with the highest rates were: Warren (28.9), Hancock (20.5) and Monona (18.0). For 1926 the three counties with the lowest rates were: Linn (2.4), Dubuque (3.2) and Black Hawk and Fayette with (3.4) each. For 1927 those showing the lowest rates were: Linn (1.2), Pottawattamie (1.5) and Wapello (2.3).

*Cities*—The three cities with the highest rates for 1926 were: Marshalltown (29.0), Council Bluffs (27.1) and Fort Dodge (27.0), while for 1927 they were: Fort Madison (27.7), Clinton (11.1) and Mason City (8.4). The three cities with the lowest rates for 1926 were: Dubuque (2.4), Waterloo (2.7) and Davenport (5.7). For 1927 they were: Cedar Rapids (1.9), Ottumwa (3.6) and Burlington (3.7).

NUMBER OF DEATHS CAUSED BY MEASLES AND WHOOPING  
COUGH WITH RATES (PER 100,000 POPULATION) BY  
COUNTIES FOR YEARS, 1926-1927

(Cities Included Within Counties)

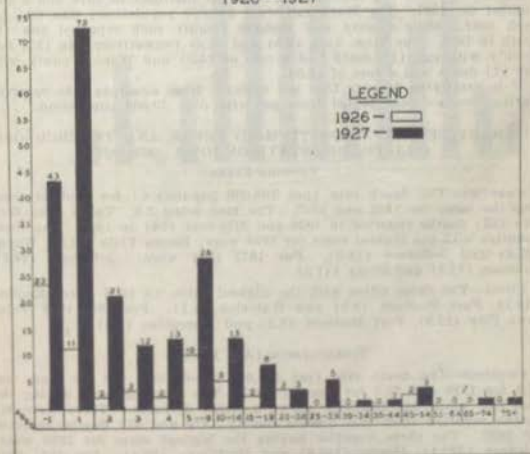
Area	No. of Deaths Measles		Rates		No. of Deaths Whooping Cough		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Total for the State.....	63	225	2.6	9.2	163	105	6.7	4.4
Adair.....	1			7.4	2		34.6	
Adams.....								
Adamsake.....								
Appanoose.....	1	4	3.5	14.4	2	1	7.0	3.2
Audubon.....	1			8.5	1		8.4	
Benton.....	1	1	4.3	4.4		1		4.4
Black Hawk.....	2	2	3.4	5.2	2	2	3.4	3.4
Boone.....	1			3.4	1		3.4	
Brewer.....	1			6.9	1			6.9
Buchanan.....					1		3.5	
Buena Vista.....	1	1	5.4	5.4			5.4	5.4
Buier.....	1			5.5	1	2	5.5	11.1
Calhoun.....	1			5.6				
Carroll.....	1			4.6	1	1	4.5	4.5
Cass.....	1			5.5				
Cedar.....	1	1	5.4	6.9	2	2	17.9	22.6
Cerro Gordo.....		2		6.1	1	2	7.9	7.8
Cherokee.....	1			6.7	1		6.1	
Chickasaw.....	1			6.7				
Clarke.....	1			30.4				
Clay.....	1	2	6.4	13.0	1	1	6.4	6.5
Clayton.....	1			4.1				
Clinton.....	3	3	2.1	10.8	5	5	11.1	10.9
Crawford.....				9.9				
Dallas.....				9.9				
Davis.....	4			34.0				
Decorah.....					1		6.6	
Delaware.....				26.2	1		6.6	
Des Moines.....	2	5	5.2	25.9		2		7.7
Dickinson.....						1		9.2
Dubuque.....	9			14.0	2	2	3.2	4.9
Fayette.....	1			3.4	1	1	21.1	7.6
Floyd.....	1			2.3	1	2	2.4	6.8
Franklin.....		1		15.0				

NUMBER OF DEATHS CAUSED BY MEASLES AND WHOOPING  
COUGH BY COUNTIES, 1926-1927—Continued

Area	No. of Deaths Measles		Rates		No. of Deaths Whooping Cough		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Freemont					1		6.7	
Greene	1		6.3			1		6.3
Grundy	1		7.5					
Guthrie	1		5.9		1	1	5.9	5.9
Hamilton	1		4.4					
Hancock	2	2	12.8	12.8	2	2	20.7	20.7
Hardin	2	1	13.5	6.8			9.9	
Harrison				8.6	1	4	4.7	17.2
Henry	2			17.7				
Howard						1		7.5
Humboldt		1		7.9	1		7.9	
Ide						2		17.4
Iowa	1	2	16.3	11.2	1	2	2.5	11.2
Jackson	1	2	6.2	10.3	1	1	5.2	5.2
Jasper	2	6	6.8	21.0	4	4	13.6	13.6
Jefferson								
Johnson	1	2	5.3	16.1	2		11.2	
Jones		2		11.4		1		5.1
Keokuk						2		11.7
Kossuth					2	1	11.7	5.9
Leo	2	10	4.2	26.2	1	4	7.8	29.5
Linn	2	2	4.8	2.4	2	1	2.4	1.2
Louis	2	4		22.3	3		25.8	
Lucas	2	2		6.5				
Lyon					1	2	6.4	12.9
Madison				20.7				
Mahaska	1	2	3.7	29.9	2	1	7.4	3.8
Marion		11		41.9	5	1	12.0	4.1
Marshall	9			27.3	8	1	24.2	7.9
Miller		1		7.8	3	1	22.5	7.8
Mitchell						1		6.9
Monona		1		6.0	1	3	6.0	18.0
Monroe	1		8.0		3	1	12.0	3.5
Montgomery		1		6.1				
Muscatine		6		24.1	2		6.9	
O'Brien	1		5.5		1	1	5.5	5.5
Oceola		1		10.1	1		10.1	
Page		4		17.4	1		4.3	
Palo Alto						1		6.7
Plymouth		1		4.2	5	1	21.0	4.2
Pocahontas	1		6.5		1	2	6.5	12.2
Polk	7	18	4.0	10.0	13	12	7.5	6.3
Pottawattamie	2	11	3.0	16.5	12	1	14.1	1.2
Poweshiek					1	2	5.6	11.0
Ringgold		1		8.6	2		25.2	
Sac	2	2		11.7	2	1	11.4	5.8
Scott	2	2		5.8	2		5.7	
Shelby	1	1	6.1	6.2	1		6.1	
Sioux	2			7.5	2	2	11.1	11.7
Story	1			3.2	1		3.2	
Tama	2	2	22.5	3.0	1		4.2	
Taylor					1		6.5	
Union		6		25.5	1		6.8	
Van Buren	1		7.4					
Wapello	1	4	2.2	9.0		1		2.2

NUMBER OF DEATHS CAUSED BY MEASLES AND WHOOPING  
COUGH BY COUNTIES, 1926-1927—Continued

Area	No. of Deaths Measles		Rates		No. of Deaths Whooping Cough		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Warren	1	4	6.7	22.1	1	2	5.7	20.9
Washington		2		15.9	1	2	5.2	10.8
Wayne		1		6.9		1		6.9
Webster		1		12.2	2	1	21.6	5.4
Winnebago					2		15.0	
Winneshek		1		4.7	1	1	4.6	4.7
Woodbury		1		3.0	2	2	8.6	3.0
Worth								
Wright		1		4.9	1	1	4.9	4.9

NUMBER OF DEATHS FROM MEASLES  
BY AGE GROUPS IN THE STATE OF IOWA  
1926-1927



NUMBER OF DEATHS CAUSED BY MEASLES AND WHOOPING  
COUGH WITH RATES (PER 100,000 POPULATION) BY CITIES  
OVER 10,000 POPULATION, YEARS, 1926-1927

Area	No. of Deaths Measles		Rates		No. of Deaths Whooping Cough		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Boone.....						1		7.7
Burlington.....						1		2.7
Cedar Rapids.....	1	1	15.3	1.9				1.9
Clinton.....	2	2	3.0	23.8	11			27.1
Council Bluffs.....	2	2	3.9	11.4	2			5.7
Davenport.....	2	16	4.9	36.5	12	11	2.5	7.3
Des Moines.....	4	4	10.5	10.5	1	2	2.4	4.9
Dubuque.....	4	4	17.2	6	1		27.0	4.4
Fort Dodge.....	1	5	9.0	46.3				27.7
Fort Madison.....					17.4			
Iowa City.....					13.8	5	1	20.4
Keokuk.....					5	5	2	29.0
Marshalltown.....	2		11.8		1	2	12.9	8.4
Mason City.....	2			9.4	1			5.9
Muscatine.....				7.2		1		2.6
Ottumwa.....				1.3	8	3	0.6	5.8
Sioux City.....	1	3	3.4	8.1	1	2	2.7	2.4
Waterloo.....	2							

SUMMARY OF RATES FOR SMALLPOX, STATE OF IOWA, 1926-1927

There were two (2) deaths reported from smallpox in 1926 and a like number for 1927. The death rate (per 100,000 population) was (.1) for each year. Mills County and Monona County each reported one (1) death in 1926. The rates were (7.5) and (6.0) respectively. In 1927 Sar County with one (1) death had a rate of (5.8) and Worth County with one (1) death had a rate of (8.9).

It is gratifying to note that not a death from smallpox was reported during the two year period from any city over 10,000 population.

SUMMARY OF RATES FOR TYPHOID FEVER AND TUBERCULOSIS  
(ALL FORMS) STATE OF IOWA, 1926-1927

TYPHOID FEVER

*Counties*—The death rate (per 100,000 population) for typhoid fever was the same for 1926 and 1927. The rate being 2.1. There were fifty-two (52) deaths reported in 1926 and fifty-four (54) in 1927. The three counties with the highest rates for 1926 were: Buena Vista (21.5), Wayne (20.5) and Jefferson (18.3). For 1927 they were: Jefferson (24.5), Johnson (12.9) and Sioux (11.2).

*Cities*—The three cities with the highest rates for 1926 were: Keokuk (13.7), Fort Madison (9.6) and Waterloo (8.1). For 1927 they were: Iowa City (17.9), Fort Madison (9.2) and Muscatine (5.3).

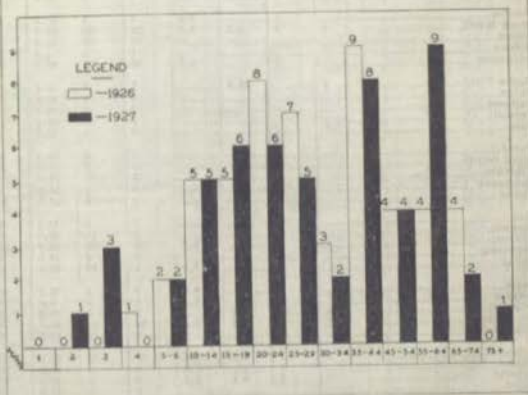
TUBERCULOSIS (ALL FORMS)

*Counties*—The death rate (per 100,000 population) for the state was 37.9 for 1926 and 35.9 for year of 1927. The rate for Iowa during the past few years has annually shown a slight decrease. There were 915 deaths reported from this disease during 1926 and 873 deaths reported for 1927. The three counties having the highest rates for 1926 were: Johnson (342.1), Henry (130.0) and Buchanan (89.4). For 1927 they were: Johnson (299.0), Henry (137.7) and Scott (86.9).

*Cities*—The three cities with the highest rates for 1926 were: Iowa City (124.0), Davenport (104.5) and Fort Madison (90.6). For 1927 they were: Davenport (110.9), Iowa City (107.1) and Fort Madison (83.3).

NOTE: The State Sanitarium for Tuberculosis is located at Oakdale, Johnson county.

NUMBER OF DEATHS FROM TYPHOID  
BY AGE GROUPS  
IN THE STATE OF IOWA, 1926-27.



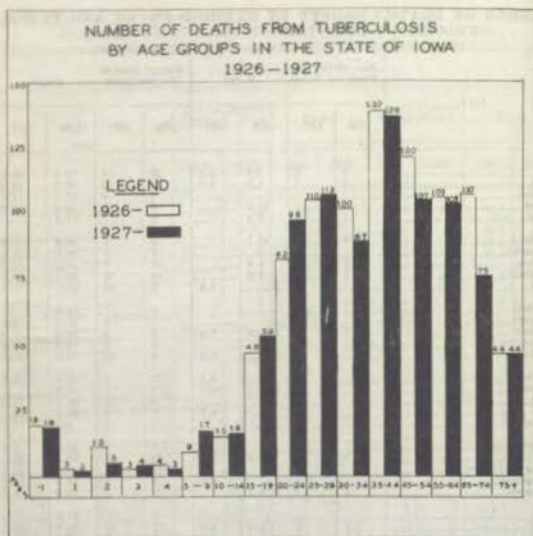
NUMBER OF DEATHS CAUSED BY TYPHOID FEVER AND TUBERCULOSIS (ALL FORMS) WITH RATES (PER 100,000 POPULATION) BY COUNTIES—YEAR 1926-1927

(Cities Included Within Counties)

Area	No. of Deaths Typhoid Fever		Rates		No. of Deaths Tuberculosis		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Total for the State.....	12	34	2.1	2.1	918	873	27.9	25.3
Adair.....	1		7.4		3	4	22.0	29.6
Adams.....					4	5	20.1	40.0
Allamakee.....	1		6.5		6	6	20.2	20.6
Appanoose.....	1		3.2		4	14	14.1	44.8
Audubon.....	1		8.5		2	2	16.8	17.0
Benton.....		1		4.4	4	5	17.2	21.9
Black Hawk.....	2	1	5.2	2.9	29	16	50.7	27.3
Boone.....					12	15	44.3	51.1
Bremer.....					1	3	5.9	17.9
Buchanan.....		1		5.7	15	12	89.4	68.4
Buena Vista.....					1	5	5.4	27.0
Butler.....	4		21.5		3	4	16.6	22.2
Calhoun.....					2	6	11.2	33.9
Carroll.....					4	9	18.0	41.2
Cass.....					2	1	10.3	5.3
Cedar.....					3	6	16.2	26.1
Cerro Gordo.....					12	9	34.3	25.5
Cherokee.....					12	10	39.3	32.1
Chickasaw.....					5	2	35.0	12.4
Clarke.....					3	5	20.1	31.2
Clay.....					3	3	19.2	19.3
Clayton.....					5	11	29.5	45.6
Clinton.....		1		2.2	16	21	52.0	45.1
Crawford.....					7	4	34.6	19.8
Dallas.....		2		7.9	6	10	23.4	42.3
Davis.....		1		8.5	2	5	25.1	42.3
Decatur.....				6.3	1	3	6.6	20.2
Delaware.....	1		6.6		3	4	19.8	22.8
Des Moines.....	1	1	2.6	2.6	16	15	41.6	39.5
Dickinson.....					2	3	18.9	27.5
Dubuoque.....	1	1	1.6	1.6	27	22	43.2	33.2
Emmet.....		1		7.6	4	2	46.1	24.4
Fayette.....		1		2.4	6	8	20.4	27.2
Floyd.....					2	1	17.0	5.7
Franklin.....					1	2	6.2	13.0
Frederick.....					6	2	40.2	13.2
Greene.....					2	2	43.7	18.9
Grundy.....					2	2	21.9	14.3
Guilford.....					3	4	17.6	23.1
Hamilton.....	3		14.2		8	3	27.6	14.2
Hancock.....					3		24.0	
Hardin.....					10	10	22.6	44.9
Harrison.....					3	3	11.2	12.9
Henry.....		1		5.9	22	22	120.0	137.7
Howard.....				7.6	7	5	53.0	38.2
Humboldt.....					1	1	7.9	7.9
Ia.....					2	1	17.1	8.7
Iowa.....	1		8.9		2	3	11.9	11.4
Jackson.....					4	4	12.6	20.9
Jasper.....	1	1	2.4	2.4	2	7	6.5	24.3
Jefferson.....	2	4	18.2	24.5	4	6	24.4	30.8
Johnson.....		4		12.9	104	94	342.1	209.9
Jones.....	1		5.6		5	9	28.9	11.4
Keokuk.....	1	1	2.0	2.1	2	2	35.0	25.2
Kossuth.....	2		7.9		2	2	11.9	7.9

NUMBER OF DEATHS CAUSED BY TYPHOID FEVER AND TUBERCULOSIS BY COUNTIES—1926-1927—Continued

Area	No. of Deaths Typhoid Fever		Rates		No. of Deaths Tuberculosis		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Lee.....	2	2	7.8	5.2	25	19	50.1	38.0
Linn.....	1	1	1.1	1.2	19	25	22.3	40.0
Louis.....					2	4	17.2	34.8
Lyon.....	2		12.8		6	5	28.4	23.9
Madison.....	1		6.4		2		12.8	
Mahaska.....	2		13.7		6	2	46.5	17.8
Marietta.....	1		4.9		8	8	26.6	26.5
Marshall.....	1		2.0		14	10	42.4	39.1
Mills.....		1		7.8	9	10	67.5	70.7
Mitchell.....					2		12.8	
Monroe.....		2		19.0	5	4	25.0	27.9
Montgomery.....					3	4	18.2	32.9
Muscatine.....		1		2.4	6	12	20.6	41.2
O'Brien.....		1		3.5	3	2	14.6	11.1
Osceola.....		1		10.1	4	2	40.4	
Page.....					9	12	38.7	73.9
Palo Alto.....					5	5	20.0	20.1
Plymouth.....					2	2	8.4	12.7
Pocahontas.....					2	1	13.1	6.6
Folk.....	5	6	9.9	5.9	40	32	45.4	45.5
Polk.....	1				14	15	27.3	27.5
Polkwaitable.....					8	8	44.8	45.7
Poweshock.....					3	1	25.2	8.8
Ringgold.....	1		8.4		3	1	25.2	8.8
Sac.....					3		11.6	
Scott.....	1	2	1.4	2.9	37	29	82.7	86.9
Schley.....		1		11.3	1	5	5.7	18.7
Shoer.....	1				10	9	33.0	29.0
Story.....					12	13	58.5	58.4
Tama.....		1		4.5	13	13	58.5	58.4
Taylor.....	1		6.5		5	5	25.2	19.5
Union.....					6	2	35.2	11.9
Van Buren.....					3	7	17.0	22.4
Wapello.....					28	22	64.9	51.8
Warren.....					4	2	22.5	11.6
Washington.....	1	1	5.2	5.3	2	2	11.2	13.9
Wayne.....		3		20.6	5	2	24.5	13.9
Webster.....		1		2.4	17	15	41.9	26.8
Winneshago.....					2	4	22.5	20.1
Winneshiek.....					9	5	41.4	25.6
Woodbury.....	2	2	6.3	2.9	29	28	43.5	28.1
Worth.....					2	2	17.6	26.3
Wright.....					10	1	49.2	4.9



NUMBER OF DEATHS CAUSED BY TYPHOID FEVER AND TUBERCULOSIS (ALL FORMS) WITH RATES (PER 100,000 POPULATION)—YEAR, 1926-1927.

Area	No. of Deaths Typhoid Fever		Rates		No. of Deaths Tuberculosis		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
	Boone					8	7	61.2
Burlington					12	10	48.7	34.5
Cedar Rapids	1	1	2.7	3.7	10	22	39.0	45.8
Clinton					10	17	37.9	65.5
Council Bluffs					21	11	50.4	26.7
Davenport					36	36	104.5	110.9
Des Moines	4	5	2.7	3.4	70	77	51.8	51.6
Dubuque	1	1	2.4	2.4	19	29	45.6	69.6
Fort Dodge					11	12	49.5	55.1
Fort Madison	1	1	9.0	9.2	10	9	90.0	82.5
Iowa City					30	18	124.0	107.3
Keokuk	2		19.7		9	6	62.0	41.4
Marshalltown					9	10	32.2	38.8
Mason City					10	4	43.0	16.9
Muscatine					4	3	25.6	20.2
Ottumwa					24	10	88.8	68.6
Sioux City	2	2	2.8	3.4	23	22	42.6	39.0
Waterloo	2	1	8.1	2.9	26	10	70.6	29.0

SUMMARY OF RATES FOR PNEUMONIA (ALL FORMS) AND CANCER (ALL FORMS) IN STATE OF IOWA, 1926-1927

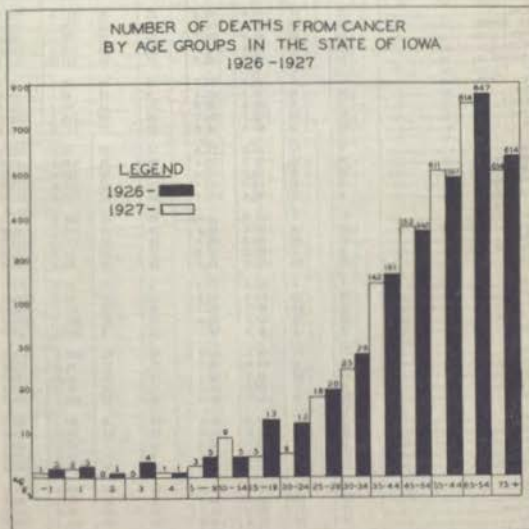
PNEUMONIA (ALL FORMS)

*Counties*—The death rate per 100,000 population in the state of Iowa for 1926 was 74.7 compared with a rate of 62.1 for 1927. There were 1,811 deaths reported from this cause during 1926 while 1,568 deaths were reported for 1927. The three counties with the highest rates for 1926 were: Montgomery (176.8), Johnson (167.9) and Franklin (149.7). Lucas county (12.9) had the lowest rate. For 1927 Henry county with a rate of 179.6 was the highest followed by Poweshiek and Johnson with rates of 126.8 and 125.4 respectively. Shelby had the lowest rate (12.4) for 1927.

*Cities*—The three cities having the highest rates for 1926 were: Iowa City (225.0), Fort Madison (145.5) and Davenport (139.0). For 1927 they were: Iowa City (208.3), Marshalltown (137.2) and Council Bluffs (116.5). Cedar Rapids had the lowest rate for the two-year period, 1926-1927, with a rate of 46.6 and 46.7 respectively.

CANCER (ALL FORMS)

*Counties*—During the year 1926 there were 2,593 deaths reported in Iowa, the rate per 100,000 population being 107.9. For 1927 there were 2,689 deaths reported which gives a rate of 110.8. The three counties with the highest rates for 1926 were: Johnson (208.8), Clarke (180.8) and Lee (167.5). For 1927 they were: Johnson (250.8), Union (171.6) and Jeffer-





NUMBER OF DEATHS CAUSED BY PNEUMONIA (ALL FORMS) AND  
CANCER (ALL FORMS) WITH RATES (PER 100,000 POPULA-  
TION) FOR CITIES OVER 10,000 POPULATION, YEARS 1926-1927

Area	No. of Deaths Pneumonia		Rates		No. of Deaths Cancer		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Boone	16	7	77.5	54.2	13	30	106.7	155.9
Burlington	16	21	59.7	76.6	44	43	164.2	157.5
Cedar Rapids	24	24	46.6	45.7	53	65	105.7	125.7
Clinton	29	29	74.2	106.2	45	25	167.9	129.5
Council Bluffs	54	48	133.2	116.5	47	62	116.9	156.3
Davenport	72	69	139.9	99.0	78	82	147.5	160.4
Des Moines	166	161	108.0	68.5	199	199	133.9	128.9
Dubuque	49	39	119.6	71.9	31	24	208.5	128.2
Fort Dodge	16	8	145.5	74.1	26	15	226.3	128.8
Fort Madison	23	12	104.1	52.1	49	69	306.3	428.7
Iowa City	36	25	225.0	208.2	49	59	151.7	127.8
Keokuk	29	13	127.9	69.7	22	21	132.2	121.4
Marshalltown	23	22	135.2	127.2	29	21	96.2	86.6
Mason City	14	12	69.3	59.5	29	21	124.3	141.2
Muscatine	11	11	63.1	64.5	21	21	149.7	152.6
Ottumwa	29	28	74.1	70.1	33	43	124.0	152.4
Sioux City	72	44	92.2	60.1	96	66	124.0	122.4
Waterloo	46	27	125.0	72.2	44	49	112.5	127.4

SUMMARY OF RATES FOR DISEASES OF THE HEART IN  
STATE OF IOWA, 1926-1927

Counties—The death rate for diseases of the heart in 1926 was 163.8 per 100,000 population, compared with 165.9 for the year 1927. The increase of 1927 over 1926 was 2.1 per 100,000 population. There were 3,970 deaths reported from this cause in 1926 and 4,036 deaths reported for 1927. The three counties with the highest rates for 1926 were: Iowa (269.7), Johnson (253.2) and Jones (250). For 1927 they were: Mahaska (265.9), Iowa (254.2) and Lucas (251.6).

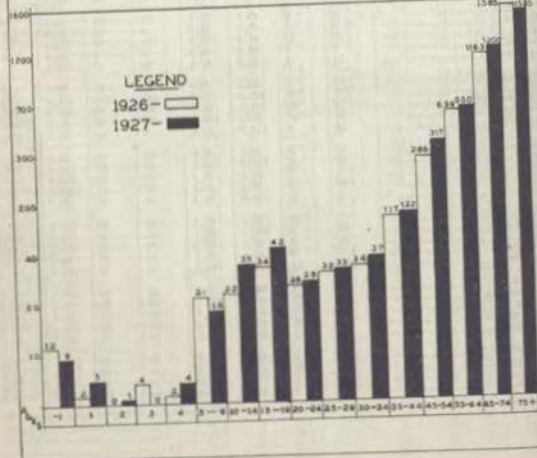
Cities—The three cities with the highest rates for 1926 were: Iowa City (362.5), Davenport (263.3) and Keokuk (255.1) while for 1927 they were: Keokuk (317.2), Burlington (304.0) and Davenport (291.3).

NUMBER OF DEATHS CAUSED BY DISEASES OF THE HEART WITH  
RATES (PER 100,000 POPULATION) BY COUNTIES, STATE  
OF IOWA, YEARS 1926-1927

(Cities Included Within Counties)

Area	No. of Deaths Diseases of Heart		Rate	
	1926	1927	1926	1927
Total for the State	3,970	4,006	163.8	166.9
Adair	19	18	189.7	122.3
Adams	11	10	107.8	80.0
Albany	39	34	215.6	208.5
Albion	41	51	145.4	183.5
Appanoose	24	30	117.0	149.5
Audubon	43	41	199.7	192.9
Benton	67	86	167.8	149.8
Black Hawk	56	67	201.4	196.2
Boone	23	29	145.2	171.6
Bremer	44	36	245.8	205.7
Buchanan	38	35	151.4	140.7
Buena Vista	19	22	105.0	125.2
Butler	25	34	124.3	192.0
Calhoun	36	24	219.5	120.1
Carroll	49	41	201.9	229.6
Cass	12	22	61.8	122.1
Cedar	63	59	184.9	174.0
Cerro Gordo	27	31	171.7	192.0
Cherokee	16	29	109.7	194.6
Chickasaw	19	29	101.1	204.1
Clarke	21	14	201.3	99.9
Clay	45	44	185.9	182.5
Clayton	56	104	217.1	228.1
Clinton	35	14	128.7	69.2
Crawford	41	29	169.5	114.7
Dallas	9	9	75.5	184.1
Davis	29	28	192.1	189.7
Decatur	26	29	202.2	229.1
Delaware	84	87	228.2	247.4
Des Moines	15	12	138.9	119.1
Dekinson	101	123	268.4	217.4
Dubuque	14	17	167.7	129.4
Emmet	61	53	107.7	186.2
Fayette	29	26	164.2	204.5
Floyd	17	27	156.3	268.2
Franklin	39	22	127.9	149.6
Fremont	16	17	160.9	196.9
Greene	19	13	136.7	86.9
Grundy	22	22	195.2	229.2
Guthrie	29	22	129.4	132.2
Hamilton				

NUMBER DEATHS FROM DISEASE OF THE HEART  
BY AGE GROUPS IN THE STATE OF IOWA  
1926-1927



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## NUMBER OF DEATHS CAUSED BY DISEASES OF THE HEART, BY COUNTIES—1926-1927—Continued

Area	No. of Deaths Diseases of Heart		Rate	
	1926	1927	1926	1927
Hancock	15	8	104.2	55.4
Hardin	33	22	105.1	142.5
Harrison	36	26	135.2	154.5
Henry	22	27	185.3	221.3
Howard	10	15	121.2	114.3
Humboldt	9	16	71.4	128.9
Ia	13	8	112.1	69.5
Iowa	48	45	269.7	254.2
Jackson	45	46	224.5	240.8
Jasper	62	65	216.3	224.8
Jefferson	24	26	147.2	159.5
Johnson	27	30	232.2	256.7
Jones	44	22	250.0	122.9
Keokuk	30	28	150.2	131.9
Kossuth	19	22	75.7	117.5
Lee	85	69	222.5	185.4
Linn	166	168	264.3	269.7
Louis	27	27	146.4	154.8
Lucas	27	29	174.2	201.6
Lyon	19	18	129.9	116.1
Madison	9	21	62.1	144.8
Mahaska	56	71	209.7	265.9
Marion	29	31	158.3	176.5
Marshall	28	46	135.3	188.6
Mills	15	23	112.7	178.3
Mitchell	17	14	118.3	96.6
Monroe	15	6	90.4	38.1
Moore	29	32	146.5	178.8
Montgomery	31	34	189.0	208.6
Muscatine	57	43	196.7	147.8
O'Brien	9	21	49.7	117.5
Osceola	5	5	20.5	20.5
PAGE	43	30	181.0	130.4
Paid Alto	21	16	140.9	107.4
Plymouth	45	30	189.9	124.5
Pocahontas	18	11	118.4	72.8
Polk	267	224	249.2	185.9
Pottawattamie	161	126	135.7	107.5
Potosi	34	29	124.8	105.7
Ringgold	23	10	177.9	86.1
Sa	17	24	96.8	140.4
Scott	157	171	227.9	248.3
Shelby	24	22	148.1	137.5
Sioux	28	26	97.4	92.2
Story	56	38	184.8	122.6
Tama	29	26	151.5	142.9
Taylor	18	20	119.3	171.5
Union	29	28	170.8	163.7
Van Buren	31	30	229.6	226.9
Wapello	68	50	155.6	113.8
Warren	20	33	166.7	190.8
Washington	21	31	127.5	161.0
Wayne	28	26	121.1	126.6
Webster	55	50	133.3	121.9
Winneshaw	12	10	90.2	75.8
Winneshiek	42	30	197.1	141.5
Woodbury	152	143	154.2	143.4
Worth	18	12	160.7	118.1
Wright	27	24	123.0	118.2

## NUMBER OF DEATHS CAUSED BY DISEASES OF THE HEART WITH RATES (PER 100,000 POPULATION) BY CITIES OVER 10,000 POPULATION, YEARS 1926-1927

Area	No. of Deaths Diseases of Heart		Rate	
	1926	1927	1926	1927
Boone	29	26	178.3	201.5
Burlington	67	82	226.9	294.0
Cedar Rapids	100	108	194.3	203.7
Clinton	72	57	272.4	208.6
Council Bluffs	71	72	175.8	174.8
Davenport	103	159	263.3	291.3
Des Moines	257	262	164.1	161.0
Dubuque	87	115	210.4	270.9
Fort Dodge	35	35	140.8	140.0
Fort Madison	23	24	230.1	222.0
Iowa City	56	47	262.5	217.2
Keokuk	17	46	225.1	279.8
Marshalltown	49	32	225.3	184.9
Mason City	40	32	198.2	158.0
Muscatine	29	29	117.5	122.1
Ottumwa	42	43	192.6	195.1
Sioux City	128	110	193.4	151.8
Waterloo	46	60	149.2	202.0

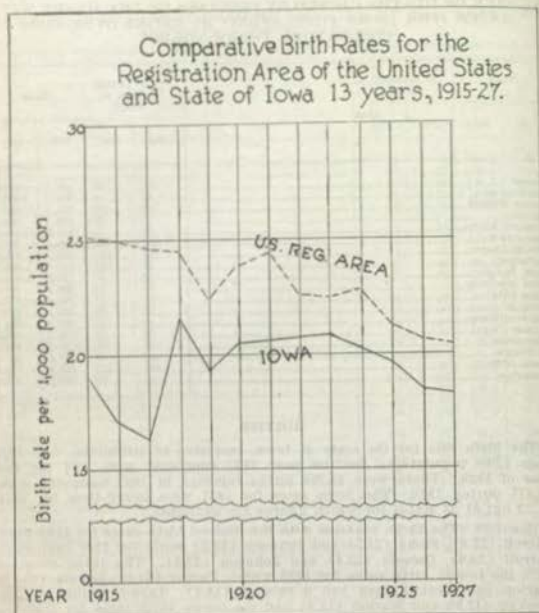
## BIRTHS

The birth rate for the state of Iowa, exclusive of stillbirths, was 18.3 (per 1,000 population) for the year 1927 compared with 18.4 for the year of 1926. There were 44,296 births reported in 1927 compared with 44,477 during 1926. The birth rates for 1927 were lower than for 1926 in 25 out of 33 states for which figures are available.

Counties—The three counties with the highest birth rates for 1926 were Carroll (25.6), Sioux (23.5) and Johnson (23.2) while for 1927 they were Carroll (24.6), Osceola (23.4) and Johnson (23.2). The three counties with the lowest birth rates for 1926 were Taylor (11.9), Louisa (13.1), Marion and Keokuk each had a rate of (14.1). Taylor County (11.3), Marion and Keokuk (12.9) and Marion (12.9) had the lowest birth rates for 1927.

Cities—In the cities of 10,000 population and over Iowa City had the highest birth rate for the two years, 1926-1927. For the year of 1926 the rate was 28.3 while for 1927 it increased to 30.9. The three cities having the highest birth rates for 1926 were Iowa City (28.3), Fort Madison (24.5) and Keokuk (24.1). The same three cities in the order named viz: Iowa City (30.9), Fort Madison (25.7) and Keokuk (25.4) had the highest birth rates for 1927.

The cities with the lowest birth rates for 1926 were Clinton (14.6), Cedar Rapids (16.8), Marshalltown and Davenport were the third lowest, with 17.8. For 1927 again Clinton with a rate of 16.0 was the lowest, Cedar Rapids was next with 16.5 and Muscatine with rate of 17.4 had the third lowest rate.



NUMBER OF BIRTHS WITH RATES (PER 1,000 POPULATION) BY  
COUNTIES FOR YEARS, 1926-1927  
(Cities Included Within Counties)

Area	No. of Births		Rate	
	1926	1927	1926	1927
Total for the State.....	44,477	44,296	18.4	18.2
Adair.....	337	311	19.0	22.9
Adams.....	166	302	16.4	26.9
Adair.....	220	268	15.3	14.4
Adair.....	542	554	15.9	19.2
Adair.....	250	248	21.9	21.0
Adair.....	423	397	18.5	17.3
Adair.....	1,000	1,104	19.0	19.2
Adair.....	830	829	18.1	18.1
Adair.....	232	228	17.7	20.7
Adair.....	232	248	18.6	19.4

NUMBER OF BIRTHS BY COUNTIES—1926-1927—Continued

Area	No. of Births		Rate	
	1926	1927	1926	1927
Buena Vista.....	217	208	17.1	16.1
Buena Vista.....	283	274	16.5	15.2
Buena Vista.....	324	328	18.3	18.3
Buena Vista.....	539	527	25.8	24.6
Buena Vista.....	227	222	17.5	16.9
Buena Vista.....	276	280	16.7	16.9
Buena Vista.....	264	255	19.1	18.2
Buena Vista.....	352	353	21.8	22.7
Buena Vista.....	291	258	19.2	17.3
Buena Vista.....	145	191	14.7	19.2
Buena Vista.....	201	226	19.5	20.8
Buena Vista.....	427	489	17.9	16.8
Buena Vista.....	626	678	25.8	14.6
Buena Vista.....	280	297	18.8	19.7
Buena Vista.....	279	416	14.9	16.4
Buena Vista.....	203	219	17.4	18.6
Buena Vista.....	273	278	18.6	18.8
Buena Vista.....	396	378	22.2	20.7
Buena Vista.....	702	699	18.1	16.7
Buena Vista.....	213	180	19.8	16.9
Buena Vista.....	1,122	1,128	18.6	18.4
Buena Vista.....	292	270	21.9	20.5
Buena Vista.....	518	526	17.5	17.9
Buena Vista.....	296	306	16.2	17.4
Buena Vista.....	344	323	21.3	20.2
Buena Vista.....	284	294	19.2	19.9
Buena Vista.....	284	233	18.9	15.9
Buena Vista.....	240	204	17.5	14.8
Buena Vista.....	304	313	17.0	18.5
Buena Vista.....	396	381	18.3	18.1
Buena Vista.....	276	303	19.1	21.0
Buena Vista.....	297	359	17.8	18.6
Buena Vista.....	441	512	18.9	22.4
Buena Vista.....	321	359	15.9	16.5
Buena Vista.....	322	365	19.2	20.2
Buena Vista.....	344	306	16.2	16.3
Buena Vista.....	249	221	21.6	19.2
Buena Vista.....	256	248	15.1	14.6
Buena Vista.....	330	353	18.2	18.6
Buena Vista.....	369	372	17.3	19.8
Buena Vista.....	307	276	18.5	16.9
Buena Vista.....	706	722	28.2	27.3
Buena Vista.....	274	222	21.2	19.3
Buena Vista.....	281	257	14.1	12.9
Buena Vista.....	367	346	22.5	20.6
Buena Vista.....	296	312	20.9	16.9
Buena Vista.....	121	175	12.1	15.2
Buena Vista.....	262	240	17.0	14.8
Buena Vista.....	217	200	20.5	16.8
Buena Vista.....	222	215	16.0	14.8
Buena Vista.....	366	420	14.6	16.8
Buena Vista.....	248	241	14.1	13.9
Buena Vista.....	249	410	16.4	18.4
Buena Vista.....	229	214	16.8	16.4

TWENTY-THIRD BIENNIAL REPORT OF THE

NUMBER OF BIRTHS BY COUNTIES—1926-1927—Continued

Area	No. of Births		Rate	
	1926	1927	1926	1927
Mitchell.....	275	271	18.9	18.7
Monona.....	297	275	17.8	16.2
Monroe.....	333	292	16.9	15.1
Montgomery.....	275	260	16.7	16.2
Muscatine.....	325	405	18.1	17.9
O'Brien.....	329	275	18.1	15.3
Osceola.....	228	222	21.9	21.4
Page.....	400	413	17.2	17.9
Palo Alto.....	228	333	21.8	31.1
Plymouth.....	448	500	18.9	21.1
Pocahontas.....	307	348	20.2	22.1
Polk.....	2,293	2,292	19.0	18.8
Pottawattamie.....	1,236	1,286	20.2	20.0
Poweshick.....	339	322	18.3	18.9
Ringgold.....	258	201	20.9	17.2
Sac.....	344	314	20.0	18.4
Scott.....	1,168	1,094	16.7	16.2
Shelby.....	284	292	17.5	16.9
Sioux.....	628	685	25.5	27.8
Story.....	507	546	16.5	17.6
Tama.....	286	265	17.4	17.0
Taylor.....	196	170	10.9	11.5
Union.....	244	299	14.3	17.2
Van Buren.....	222	201	16.4	15.9
Wapello.....	768	704	17.5	15.7
Warren.....	206	287	16.9	26.6
Washington.....	309	241	16.2	18.4
Wayne.....	241	244	16.6	16.9
Weber.....	827	814	20.4	19.9
Winnebago.....	176	200	20.7	21.9
Winnechok.....	422	404	19.8	19.1
Woodbury.....	2,060	2,115	21.2	21.1
Worth.....	303	194	18.1	17.3
Wright.....	283	400	18.8	29.3

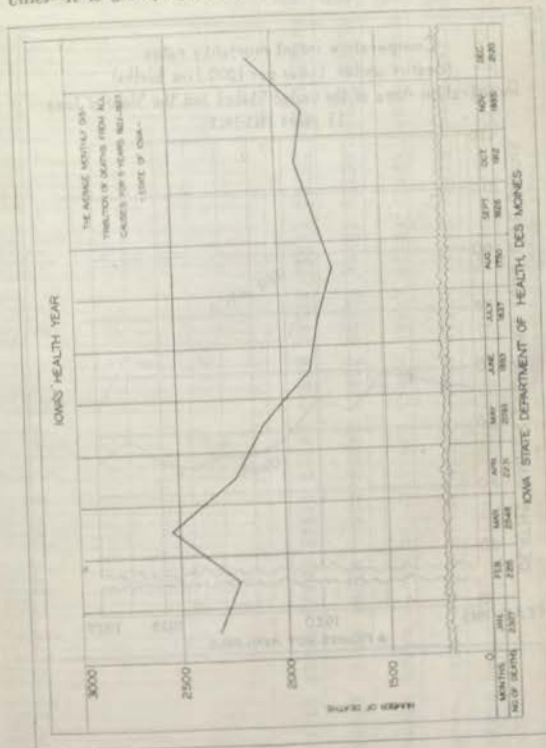
NUMBER OF BIRTHS WITH RATES (PER 1,000 POPULATION) FOR CITIES OVER 10,000 POPULATION, YEARS 1926-1927

Area	No. of Births		Rate	
	1926	1927	1926	1927
Boone.....	234	256	18.1	19.0
Burlington.....	568	547	21.0	20.9
Cedar Rapids.....	825	808	16.8	16.5
Clinton.....	292	437	14.6	16.9
Council Bluffs.....	964	792	22.1	19.1
Davenport.....	958	871	17.8	16.5
Des Moines.....	2,369	2,069	20.9	18.8
Delaware.....	595	821	19.4	29.6
Fort Dodge.....	362	490	22.4	21.7
Fort Madison.....	275	279	24.5	24.7
Iowa City.....	467	494	28.3	29.9
Kerrick.....	249	368	24.1	35.4
Marshalltown.....	280	259	17.5	16.6
Mason City.....	167	478	21.6	19.9
Muscatine.....	322	297	18.9	17.4
Ottumwa.....	564	516	20.6	18.4
Sioux City.....	1,701	1,479	21.8	21.2
Waterloo.....	743	774	20.1	20.3

SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS), STATE OF IOWA, 1926-1927

**Counties.**—The Infant Mortality rates (deaths under one year per 1,000 live births) for the State of Iowa for the years 1926 and 1927 were 59.4 and 55.7 respectively. The three counties with the highest rates for 1926 and 55.7 respectively. The three counties with the highest rates for 1926 were: Clarke (137.9), Monroe (104.5) and Marshall (101.9). The three counties with the lowest rate for 1926 were: Adams (18.4), Buchanan (21.5) and Greene (23.8). The counties of Iowa (80.6), Warren (80.1) and Louisa (80.0) had the highest rates for 1927. The counties with the lowest rates for 1927 were: Humboldt (13.4), Poweshick (24.1) and Van Buren (24.9).

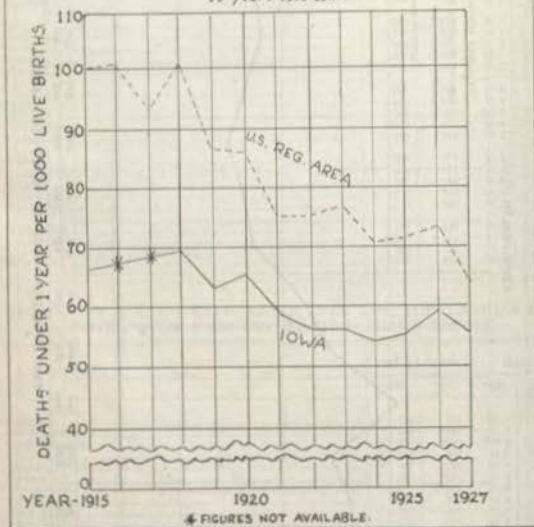
**Cities.**—It is gratifying to note that of the eighteen cities of 10,000





population and over eleven (11) of them showed a reduction in their Infant Mortality Rates for 1927 over their 1926 rates. The three cities with the highest rates for 1926 were: Marshalltown (134.0), Iowa City (94.2) and Fort Dodge (91.8). The three highest for 1927 were: Iowa City (97.2), Fort Dodge (89.8) and Muscatine (80.8). The cities of Cedar Rapids (56.0), Davenport (56.6) and Keokuk (57.3) had the lowest rates for 1926 while for 1927 they were: Keokuk (38.0), Waterloo (45.2) and Cedar Rapids (50.4).

Comparative infant mortality rates  
(deaths under 1 year per 1,000 live births)  
Registration Area of the United States and the State of Iowa  
13 years 1915-1927.



SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR, PER 1,000 LIVE BIRTHS) BY COUNTIES FOR THE YEARS, 1926-1927

(Cities Included Within Counties)

Area	No. of Births		Deaths Under One Year		Rates	
	1926	1927	1926	1927	1926	1927
Total for the State	44,477	44,596	2,648	2,478	59.4	55.7
Adair	257	311	12	11	50.6	35.1
Adams	198	307	3	7	18.1	22.7
Adams	269	369	21	12	78.2	44.7
Appanoose	542	554	25	22	64.6	67.8
Ashtabula	259	248	11	8	42.5	28.6
Benton	423	397	22	22	32.9	55.8
Black Hawk	1,206	1,194	69	47	61.9	41.7
Boone	509	520	33	29	38.5	32.8
Bremser	588	539	15	21	31.2	38.7
Buchanan	823	549	7	11	21.5	20.4
Buena Vista	517	598	17	26	33.7	52.5
Butler	251	274	25	16	51.2	35.1
Calhoun	324	328	10	20	29.5	69.9
Carroll	539	537	42	33	76.9	61.3
Cass	227	221	16	17	48.9	33.6
Cedar	278	280	13	15	46.8	53.6
Cerro Gordo	264	235	46	54	60.3	73.5
Coshocton	358	365	17	12	48.1	33.6
Chickasaw	991	928	13	16	44.1	49.0
Clarke	149	191	20	12	137.9	63.8
Clay	291	320	11	17	37.8	53.2
Clayton	422	400	10	21	37.9	51.3
Clinton	636	779	26	43	56.6	64.2
Crawford	280	227	26	19	68.4	47.8
Dallas	379	416	13	16	54.3	38.2
Davis	303	319	11	12	54.2	54.8
Decatur	273	278	20	12	72.7	43.2
Delaware	296	378	25	24	58.1	63.5
Des Moines	708	799	41	60	58.2	71.9
Dickinson	315	185	10	9	46.5	49.0
Dubuque	1,129	1,166	73	83	64.7	71.1
Emmett	259	270	11	14	26.1	31.5
Fayette	316	328	28	24	54.3	49.5
Floyd	396	395	17	17	50.4	55.6
Franklin	344	325	17	22	49.4	70.8
Fremont	284	294	21	16	73.9	54.4
Greene	294	253	7	16	23.8	62.2
Grundy	240	204	9	13	37.5	63.7
Guthrie	294	313	15	16	49.3	51.3
Hamilton	306	281	24	19	59.9	49.8
Hancock	276	302	13	11	47.0	36.5
Harlin	307	329	12	16	45.6	44.6
Harrison	441	322	27	27	61.2	51.8
Henry	221	253	6	12	27.2	37.9
Howard	229	265	13	13	51.6	49.1
Humboldt	244	206	14	9	57.4	39.4
Ia	242	221	12	7	69.5	36.2
Iowa	308	348	14	20	52.2	60.8
Jackson	220	205	17	21	43.7	61.9
Jasper	569	572	37	25	72.5	61.2
Jefferson	302	238	11	7	36.1	29.2
Johnson	740	722	56	32	78.5	44.4
Jones	274	321	22	16	58.5	48.0
Keokuk	297	227	12	12	40.3	46.7
Kossuth	267	246	18	15	31.9	34.9

SUMMARY OF INFANT MORTALITY, BY COUNTIES—1926-1927—  
Continued

Area	No. of Births		Deaths Under One Year		Rates	
	1926	1927	1926	1927	1926	1927
Linn	799	812	44	37	55.1	45.6
Linn	1,295	1,215	68	58	52.5	47.8
Linn	181	173	15	14	89.3	80.9
Louis	362	240	13	17	49.6	79.8
Lyon	317	390	16	18	51.6	69.2
Madison	232	215	14	14	60.3	65.1
Madison	389	459	21	30	79.7	66.7
Marion	348	341	27	30	77.6	88.7
Marshall	540	619	55	49	101.9	81.6
Mills	230	214	18	16	81.8	74.8
Mitchell	273	271	20	16	73.2	59.9
Mitchell	397	275	24	17	80.3	61.8
Monona	353	392	25	15	104.5	38.4
Monroe	275	263	8	12	29.1	49.9
Montgomery	338	495	28	36	83.3	73.7
Muscatine	329	275	21	13	62.8	47.2
O'Brien	228	222	9	12	39.5	56.9
Osceola	400	413	13	18	32.5	43.6
Pager	328	315	14	12	42.7	38.1
Plymouth	448	500	22	26	51.3	52.0
Pocahontas	307	348	19	15	61.9	43.1
Polk	3,288	3,203	228	198	71.8	63.9
Pottawattomie	1,231	1,176	91	75	68.1	58.5
Poweshook	330	323	16	8	48.5	24.1
Ringgold	338	301	18	11	75.6	34.7
Sac	344	314	20	24	58.1	76.4
Sac	1,168	1,104	65	67	55.7	60.6
Scott	284	292	17	15	59.5	51.9
Shelby	628	583	39	35	47.8	59.2
Sioux	501	546	23	26	45.3	47.6
Story	386	355	21	13	54.4	36.9
Tama	169	170	9	5	54.1	29.4
Taylor	344	290	14	12	40.4	44.8
Union	223	201	9	5	40.5	24.9
Van Buren	768	794	57	56	74.2	70.3
Wapello	295	287	19	23	64.4	80.1
Warren	359	341	14	20	45.2	58.7
Washington	341	244	9	14	27.3	57.0
Wayne	827	814	62	53	74.9	75.1
Webster	276	290	15	8	54.3	27.6
Winneshago	422	404	23	20	54.5	49.5
Winneshook	2,195	3,113	164	152	67.5	61.5
Woodbury	393	394	14	9	69.9	46.4
Worth	383	409	19	18	50.1	44.9
Wright						

## SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR, PER 1,000 LIVE BIRTHS) BY CITIES OVER 10,000 POPULATION, YEARS, 1926-1927

Area	No. of Births		Deaths Under One Year		Rates	
	1926	1927	1926	1927	1926	1927
Forest	524	526	39	15	83.5	28.9
Harlington	568	547	26	40	46.4	73.1
Cedar Rapids	875	863	43	42	56.9	50.4
Clinton	297	437	20	22	67.9	73.2
Cassard Falls	394	792	44	34	25.8	49.2
Davenport	314	871	21	56	66.6	66.6
Des Moines	2,619	2,949	202	175	63.2	59.3
Des Moines	806	873	57	60	70.7	79.1
Dubuque	301	489	45	44	91.8	89.4
Fort Dodge	467	494	44	48	94.2	97.2
Fort Madison	349	368	20	14	57.3	38.0
Iowa City	275	779	22	17	134.9	78.7
Keokuk	307	472	35	28	69.0	60.5
Marshalltown	336	359	41	30	124.9	83.9
Mason City	322	597	19	24	59.0	80.8
Muscatine	564	516	47	38	85.3	73.6
Ottumwa	1,701	1,679	141	135	83.9	79.3
Sioux City	745	774	51	35	68.7	45.3
Waterloo						

## SUMMARY OF MARRIAGE AND DIVORCE FOR IOWA, 1926-1927

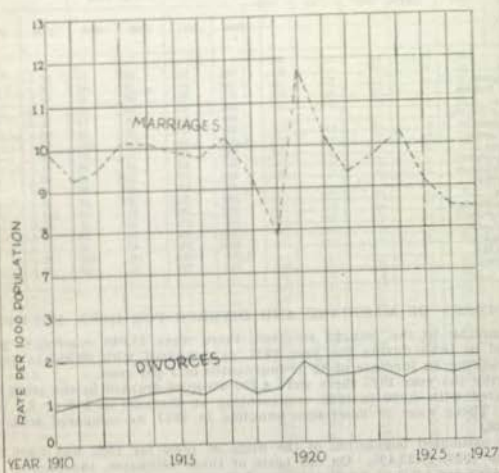
According to the returns received, there were 21,048 marriages performed in Iowa during the year 1927, as compared with 20,966 in 1926, representing an increase of 82 or four-tenths of 1 per cent.

During the year 1927 there were 4,225 divorces granted in the state, as compared with 4,080 in 1926, representing an increase of 146 or 3.6 per cent. There were 20 marriages annulled in 1927, as compared with 22 in 1926.

The estimated population of the State of Iowa for 1927 was 2,426,371 and for 1926, 2,423,425. On the basis of those estimates, the number of marriages per 1,000 of population was 8.68 in 1927 as against 8.65 in 1926; and the number of divorces per 1,000 of the population was 1.74 in 1927, as against 1.68 in 1926.

The number of marriages performed and the number of divorces and annulments granted were furnished the State Department of Health by the County Clerks. The figures for 1927 are preliminary and subject to correction.

Marriage and Divorce Rates per 1,000 population  
State of Iowa 1910-1927



SUMMARY OF MARRIAGE AND DIVORCE FOR IOWA, 1926-1927—  
Continued

Area	Marriages		Divorces		Annulments	
	1927	1926	1927	1926	1927	1926
Total for the State	31,048	30,906	4,238	4,080	3	22
Number per 1,000 population	5.68	5.65	1.74	1.68		
Adair	71	72	9	10		
Adams	71	61	16	9		
Allamakee	95	109	2	2		
Appanoose	130	224	34	22	1	
Auburn	69	59	6	6		
Benton	136	128	15	36	1	1
Black Hawk	561	570	171	145	2	
Boone	264	254	54	22		
Bridge	147	144	10	8		
Burbank	182	181	13	21		

SUMMARY OF MARRIAGE AND DIVORCE FOR IOWA, 1926-1927—  
Continued

Area	Marriages		Divorces		Annulments	
	1927	1926	1927	1926	1927	1926
Buena Vista	122	137	5	17		
Butler	118	204	9	9		
Calhoun	116	122	26	9		
Carroll	284	172	36	13		
Cass	139	164	24	19		
Cedar	64	72	7	9		
Cerro Gordo	221	247	82	90	2	
Cherokee	87	102	16	15	1	
Chickasaw	267	311	8	7		
Clarke	106	95	19	12		
Clay	145	128	14	20		
Clayton	154	265	14	25		
Clinton	282	402	28	72	2	
Crawford	163	166	16	12		
Dallas	281	274	27	27		
Davis	109	151	10	11		
Decatur	107	102	14	18		
Delaware	125	147	19	8		
Des Moines	226	352	82	106		
Dickinson	78	91	14	15		
Dubuoque	609	528	26	25	1	
Emmet	102	104	18	26		
Fayette	226	202	17	20		
Floyd	145	126	30	28		
Franklin	117	87	18	19		
Fremont	288	194	20	19		
Greene	115	129	21	11	1	
Grundy	93	94	4	5		
Guthrie	90	88	19	12		
Hamilton	161	149	15	19		
Hancock	102	95	5	5		
Hardin	120	167	8	12		
Harrison	228	189	29	26		
Henry	107	108	12	16	2	
Howard	91	123	5	9		
Humboldt	83	60	14	5		1
Ia	79	62	4	7		
Iowa	308	322	6	11		
Jackson	127	127	12	14		
Jasper	242	260	64	43	1	
Jefferson	154	120	12	20		
Johnson	291	212	62	27		
Jones	198	129	22	18		
Knox	38	161	15	17		
Kossuth	164	155	12	8		
Lee	439	241	115	87		2
Linn	744	702	264	249	1	
Lodges	42	41	8	8		
Louis	199	151	26	19		
Lyon	122	111	7	5		
Madison	112	207	20	7		
Mahaska	223	222	42	23		
Marion	148	148	24	23		
Marshall	282	221	25	29		
McA	275	226	23	8	1	

SUMMARY OF MARRIAGE AND DIVORCE FOR IOWA, 1926-1927—  
Continued

Area	Marriages		Divorces		Annulments	
	1927	1926	1927	1926	1927	1926
Mitchell	81	62	5	8		
Monroe	121	157	20	20		
Montgomery	119	96	36	9		
Muscatine	123	157	19	14		1
Muscatine	302	270	102	88	1	
O'Brien	87	90	15	7		
Osceola	71	71	7	5		
Page	308	173	60	34		
Palo Alto	90	80	10	8		
Plymouth	165	164	16	13		
Pocahontas	91	79	11	6		
Polk	1,574	1,800	825	861	5	4
Polk	1,900	1,387	195	190	2	1
Poweshok	118	69	13	9		
Ringgold	82	75	11	15		
Sac	191	87	12	14		
Scott	673	607	264	256	2	
Shelby	115	104	12	10		
Sioux	177	191	8	10		
Story	287	256	26	28		
Tama	117	120	10	25		
Taylor	107	87	10	17		
Union	124	170	23	27		1
Van Buren	52	62	13	11		
Wapello	425	303	116	107		
Warren	202	243	7	7		
Washington	160	137	20	15		
Wayne	28	35	11	18		1
Weister	328	324	67	60		4
Winnebago	80	76	5	5		
Winneshek	128	124	13	13		
Woodbury	963	862	350	350	2	3
Worth	90	96	4	4		
Wright	120	125	15	15		

REPORT OF CERTIFIED COPIES ISSUED (BY MONTHS)  
FOR YEARS, 1926-1927

Month	1926			1927			Grand total
	Fee received	Government compensation	Total	Fee received	Government compensation	Total	
January, 1926	4	22	26	51	43	94	120
January, 1927	0	8	8	35	42	77	85
February, 1926	6	22	28	40	28	68	126
February, 1927	2	16	18	28	48	106	127
March, 1926	11	23	34	47	50	97	141
March, 1927	2	12	14	46	50	96	108
April, 1926	10	27	37	60	44	84	122
April, 1927	3	17	20	49	36	85	105
May, 1926	2	29	31	47	49	96	127
May, 1927	2	11	13	37	30	67	83
June, 1926	2	28	30	24	29	53	126
June, 1927	2	17	19	41	27	78	98
July, 1926	4	26	30	41	22	63	95
July, 1927	2	16	18	49	29	82	100
August, 1926	5	37	42	25	26	51	141
August, 1927	2	14	17	42	41	84	101
September, 1926	2	21	23	47	24	71	112
September, 1927	11	9	20	45	27	82	102
October, 1926	10	18	28	44	26	70	108
October, 1927	6	13	19	44	41	85	106
November, 1926	12	20	32	41	22	63	126
November, 1927	4	14	18	42	29	71	99
December, 1926	2	14	16	26	14	40	106
December, 1927	2	16	18	47	22	72	98
Total, 1926	77	317	394	490	527	1,017	1,437
Total, 1927	48	163	211	523	473	1,004	1,215
Total for two years	125	480	605	1,013	1,000	2,017	2,652

NUMBER OF DISINTERMENT PERMITS ISSUED, BY MONTHS,  
STATE OF IOWA, 1926-1927

Months	1926	1927
	January	15
February	26	19
March	25	28
April	25	28
May	112	92
June	62	92
July	66	87
August	67	84
September	69	25
October	85	87
November	65	73
December	24	20
Total	691	794

## DIVISION OF COMMUNICABLE DISEASES

D. C. STEELSMITH, M. D., in Charge.

### MINOR DISEASES

Of the minor communicable diseases chicken pox, German measles, and mumps, there has been a marked increase in the number of cases reported. This increase has, no doubt, been due to more efficient and prompt reporting and a change in the rules of the State Department of Health so that but very little inconvenience is noted by families affected by these diseases.

These are minor ailments and generally leave no serious complications therefore, but little stress is laid upon their occurrence.

Chicken pox is of little interest or consequence except that severe cases may be confused with the more serious disease smallpox.

German measles are frequently confused with scarlet fever and red measles.

Mumps is sometimes serious but the disease is easily diagnosed.

Almost as many cases of chicken pox were reported the first six months of 1928 as were reported during the whole year of 1927, and almost twice as many as for the last half of 1926.

This, as stated, is due to better reporting rather than to an increase in the number of cases which occurred.

German measles continues to be poorly reported.

### TYPHOID FEVER

A marked reduction in this serious disease has been noted, especially the first half of 1928.

### DIPHTHERIA

A very interesting reduction in the number of cases of diphtheria has occurred. Approximately one-half as many cases were reported during the last half of 1926 as during the corresponding period of 1927.

During the first half of 1928 only about one-fourth as many as occurred during the whole year of 1927.

Diphtheria has been reduced approximately in proportion to the number of susceptible children immunized with toxin-antitoxin.

### DIPHTHERIA IMMUNIZATION

The state wide program of immunization against diphtheria was started in the fall of 1925. At the close of school in 1926 approxi-

mately 40,000 children had been immunized. At the close of the school year, June 30, 1928, approximately 350,000 or more than half the child population of Iowa had been treated.

Four hundred ninety-one communities, including all but two of our larger cities had completed a campaign of immunization.

Both deaths and cases of diphtheria have been reduced in almost exact proportion to the extent of immunization completed.

The slogan "No Diphtheria in Iowa by 1930" seems to be coming to fulfillment.

### SMALLPOX

Iowa has more smallpox than need be. The disease has been quite local and of mild form.

With the preventive vaccination available, it is of moment to consider the quite common occurrence of smallpox. Some school boards and local boards of health have availed themselves of their right of exacting vaccination as a condition of admission to school in case of an epidemic or impending epidemic of smallpox.

An epidemic of smallpox can easily develop in any community where this disease has not occurred for a period of several years and when no systematic campaign of vaccination has been carried out for several years.

### MEASLES

The cyclic appearance of measles struck Iowa during the year 1927. Epidemics of measles occur about every three or four years.

Little may be done to prevent the epidemic owing to the early infectivity of the patient. Measles may be contracted from a person 12 to 24 hours before the patient has any signs or symptoms of the disease.

One attack generally confers immunity. An extensive epidemic does not usually occur until there is an accumulation of three or four years of susceptible children. This makes a fertile field for the exceedingly contagious disease measles. This accounts for the cycle or periodicity of measles epidemics.

### UNDULANT (MALTA) FEVER

This disease is known by two names. It was first called Malta fever because first discovered on the Isle of Malta and traced directly to goats (goat's milk).

The disease takes a peculiar course, the fever alternately rising and falling, giving it the undulant waving course because of which it is now usually named undulant fever.

The type of undulant fever found in Iowa has not been associated with goats nor the Isle of Malta but is associated with the causative agent that produces abortion in hogs or cattle on our Iowa farms.

It is believed that a large proportion of our herds are harboring one or more head of stock affected by the disease.

The disease may be contracted by drinking milk or handling the flesh of infected animals.

#### RABIES

There has been an increase of rabies in domestic animals in Iowa the past year.

One person, a boy of 14 succumbed to the disease.

The department has had daily reports from both the state laboratory at Iowa City and the laboratory at Ames on animal heads examined and found positive for rabies.

These include wild animals as well as domestic animals.

Upon receiving a report of a rabid animal, we write at once to ascertain if a person may have been infected and if so, solicit that the Pasteur treatment be given.

Over 200 Pasteur or Semple treatments were sent out from the State Department of Health for the treatment of persons that may have been infected by a rabid animal.

The animals found to have had rabies were as follows: Cats, dogs, rats, skunks, squirrels, and the domestic animals.

Rabies causes the loss of many sheep, hogs, cattle, horses and other domestic animals. Therefore the question of the control of dogs not only concerns the human being, but also seriously effects animal husbandry.

#### VENEREAL DISEASES

The State Department of Health has not been able to do all that we would have liked to have done in the control of these incapacitating diseases.

We have endeavored to stimulate the active treatment of cases through publicly supported clinics and by the private practitioner of medicine.

Many of these people are unable to pay the necessary fee for their treatment which extends occasionally, over a long period of time.

Iowa has today, we believe, less venereal disease than it had a few years ago, but probably no money could be spent by the state that would bring better returns than by furnishing drugs and

biologicals for the treatment of indigents who, sooner or later, will likely become inmates of one of our county alms houses, state insane hospitals, penitentiaries or hospitals.

A careful estimate shows that Iowa has about 16,000 persons under treatment for venereal disease at all times.

If we had 16,000 people afflicted with any other serious disease at one time, the people would "rise up in arms" and a large appropriation would be made and reasonable, enforceable laws would be demanded to control the menace.

#### DISTRIBUTION OF SILVER NITRATE

(For the Prevention of Blindness.)

In accordance with the requirements of the venereal disease law, an effort has been put forth to have the use of silver nitrate in the eyes of the newborn for the prevention of blindness made general. As a means to that end, ampuls of silver nitrate are now distributed free to all physicians and hospitals doing obstetrical work. Since this free distribution was begun there has been a great demand for these ampuls.

#### PUBLIC HEALTH EDUCATION

Many addresses have been given to medical societies and agencies interested in public health problems. A great deal of literature pertaining to various diseases has been distributed.

#### EPIDEMIOLOGY

A total of 23 field investigations were made by the epidemiologist.

Nine of these were of typhoid fever epidemics, three of scarlet fever, two of smallpox, two of diphtheria, and one each of the following diseases: Chicken pox, tularemia, venereal disease, paratyphoid fever, gastro-enteritis, and poliomyelitis.

The greatest service is, of course, rendered in connection with the prevention of epidemics. Scarcely a day goes by when there is no correspondence about the prevention of several pending, or possible epidemics.

#### ANTITOXIN AND OTHER PROPHYLACTICS

The following shows the extent of operations in the distribution of antitoxin and other prophylactics.

No. of packages diphtheria antitoxin .....	9,209
No. of packages diphtheria toxin antitoxin .....	94,680
No. of packages tetanus antitoxin .....	5,547
No. of tubes smallpox vaccine .....	44,851
No. of packages typhoid vaccine .....	4,332
No. of treatments for rabies .....	248
No. of ampuls silver nitrate .....	48,000

COMPARATIVE MONTHLY DISTRIBUTION OF CASES OF REPORTABLE DISEASE REPORTED TO THE STATE DEPARTMENT OF HEALTH FOR THE LAST HALF OF 1926 ALL OF 1927 AND THE FIRST HALF OF 1928

		Chickpox	C. S. Meningitis	Chancroid	Diphtheria	Erysipelas	Leptospirosis	Scarlet fever	Staphylococcus	German measles	Whooping cough	Measles	Scarlet fever	Typhoid fever	Trachoma	Tuberculosis	Vincennes angina	Whooping cough	
July, 1926	19	2	0	27	0	0	14	168	0	0	0	72	2	1	0	76	100	0	48
1927	39	2	0	0	0	0	0	128	0	0	0	74	19	0	0	77	86	0	36
August, 1926	8	10	2	59	1	1	4	192	0	0	0	20	5	2	2	34	20	109	0
1927	12	8	3	42	1	2	0	113	0	0	0	16	9	0	0	37	35	0	66
September, 1926	16	2	0	43	0	4	2	230	0	0	0	30	2	0	0	60	158	0	21
1927	11	2	0	20	1	1	0	145	0	0	0	16	9	0	0	22	86	0	19
October, 1926	98	1	2	114	0	5	0	146	0	0	1	28	11	0	1	177	12	63	0
1927	76	4	1	59	1	1	0	184	0	0	0	12	43	7	0	148	84	122	0
November, 1926	359	2	1	173	0	2	0	180	0	0	0	82	21	0	0	230	27	70	0
1927	306	2	4	96	0	1	0	112	0	0	4	7	143	7	4	17	227	180	65
December, 1926	267	2	2	123	0	3	1	95	0	0	0	218	40	0	7	0	280	54	76
1927	306	2	1	78	0	4	0	179	1	0	2	31	98	9	10	14	214	450	88
January, 1927	222	1	1	139	1	7	0	153	0	0	0	1,170	37	0	10	2	310	43	81
February, 1927	234	12	1	85	0	7	0	103	0	0	2	284	168	0	19	6	368	359	66
1928	210	10	6	66	1	3	0	83	0	0	0	2,545	82	0	2	1	330	38	62
March, 1927	93	5	0	93	2	7	0	3	158	1	0	3,284	171	0	5	0	377	116	101
1928	244	4	0	56	1	4	2	7	99	0	5	173	236	8	18	0	643	237	97
April, 1927	170	1	0	118	2	1	0	19	170	0	0	1,680	147	0	0	0	197	70	77
1928	117	1	11	20	0	12	6	0	136	0	10	109	247	7	16	0	274	199	108
May, 1927	111	0	0	84	0	4	0	0	80	0	0	1,287	146	0	0	1	115	20	61
1928	132	1	1	28	0	2	6	0	105	1	0	81	250	19	4	0	233	317	53
June, 1927	95	1	1	63	0	0	1	115	0	0	0	438	84	0	2	0	115	91	66
1928	149	1	1	26	0	0	0	125	1	0	0	20	119	8	0	0	125	140	88
Total Last 6 mo. 1926	761	30	7	520	1	15	0	251,602	1	0	1	440	83	0	12	17	867	182	576
All of 1927	1,390	30	17	1,015	14	40	0	451,627	2	0	7	19,004	965	44	57	109	2,218	1,275	967
First 6 mo. 1928	1,377	30	20	297	2	35	14	28	749	0	23	9	840	1,607	48	68	61,800	1,838	543

## DIVISION OF LABORATORIES AND EPIDEMIOLOGY

A. V. HARDY, M. D., Acting Head and Director.

During the first half of the biennium, Dr. Don M. Griswold was director of laboratories and state epidemiologist. From June 1, 1927, Dr. Hardy has been in charge of this work.

The laboratory of the State Department of Health is located at Iowa City, and the epidemiological work is carried on from the same place. In addition to the work of the divisions, the senior members of the staff constitute the department of Preventive Medicine and Hygiene of the Medical College. Instruction is given to graduates and undergraduates in the colleges of medicine, nursing, liberal arts, and engineering. The members of the staff also co-operate in public health education. From time to time requests are received from various organizations for addresses on health topics. In as far as possible these invitations are accepted and used as opportunities for presenting public health instruction.

The Division of Laboratories and Epidemiology is now housed in the New Medical Laboratories Building. The offices and laboratories are located on the second floor, occupying the major portion of the south side. There are four laboratories; the bacteriological, the serological and two for water examination, one a bacteriological and one a chemical laboratory. In addition there is a media room, and a sterilizing room, and there are three offices used by the records section and also private offices for the senior staff members. In the basement there is in addition a store room, a receiving and shipping room, and a wash room, well equipped for handling the glassware. On the fourth floor the laboratory has one large animal room and three communicating small rooms. These three are used as a feed room, isolation room, and operating room.

With the laboratories located closely together, a reorganization of the work has been possible. The preparation of media, sterilization, the washing of glassware, the shipping and receiving, as well as the work of the record section has been centralized and is cared for as a unit. This has enabled the present staff to carry an increasing amount of work.

Throughout the latter half of the biennium a greater emphasis has been laid upon research and special investigations. It was felt that here these divisions had both an opportunity, and a responsibility to contribute toward a better knowledge of the infectious diseases which occur in the state. Special interest throughout the biennium has been given two newly recognized diseases; tularaemia and undulant or Malta fever. In the water and bacteriological divisions, in addition research, aiming to develop more accurate laboratory procedures, has also been undertaken. With the large amount of routine work, research is irregu-

lar and interrupted, but it is hoped that in the future the chiefs of the divisions may be enabled to supervise routine work, and give more time to a study of the special problems which are constantly presenting themselves.

The Division of Laboratories and Epidemiology for administrative purposes are organized in five sections or divisions. These are as follows:

1. Bacteriological Laboratory. Chief, C. S. Linton, M. S.
2. Water Laboratory. Chief, J. J. Haman, Jr., M. S.
3. Serological Laboratory. Chief, Zelma Zentgraf, M. S.
4. Laboratory Records. Chief, Minnie Hamilton.
5. Epidemiology. State Epidemiologist, A. V. Hardy, M. D.  
Assistant State Epidemiologist, C. F. Jordan, M. D.

The work of each division will be described and shown in tabular form.

### I. BACTERIOLOGICAL LABORATORY

C. S. LINTON, M. S., Chief.

The personnel in this division has been somewhat variable but in addition to the chief bacteriologist, there has been regularly employed an assistant bacteriologist, two technicians, full time, one part-time technician and a helper.

#### DIPHTHERIA EXAMINATIONS

As might naturally be expected, since the prophylactic value of toxin-antitoxin has been well established, the number of examinations for this disease has dropped off about 17%. This rate of decrease in examinations corresponds very closely to the diphtheria case incidence decrease reported for the registration area of the United States during the four years, 1923-1926 inclusive. Only 61% as many cases occurred in 1926 as were reported in 1923. It would be possible for physicians to make better use of the virulence test. This test requires four to seven days for completion, but many times it could be used to shorten the period of quarantine. Convalescent carriers who have been in quarantine more than twenty-eight days, or carriers who have failed to show symptoms at any time, are suitable subjects for this test.

#### TYPHOID, TULARAEMIA, AND UNDULANT FEVER EXAMINATIONS

The bulk of these consists of examinations for typhoid. The increase in Widal examinations is quite noticeable, and the number of positives as compared with the previous biennium corresponds very closely to the relative number of specimens examined. During the past two years considerable work has been done toward developing a suitable preservative medium for the collection of



typhoid feces. A brilliant-green-glycerine-bile medium has been adopted and has been found to give very good results.

Within the past two years, two entirely new diseases, namely undulant fever (Malta fever) and tularaemia have been discovered in the state and this laboratory has been the chief instrument in their detection. Practically all of the cases of undulant fever have been discovered within the past twelve months. In September, 1927, the laboratory began running routine tests for this disease on all blood specimens received for agglutination reactions. A total of 1,851 examinations have been made and 213 of these found to be positive. It is noteworthy that forty-one cases have been discovered as the result of routine tests.

Tularaemia is a disease commonly contracted from rabbits. It was not known to be present in the state until about two years ago. These examinations, until the past year, were classed under the miscellaneous heading. During the past year sixty-one examinations were made and five of these found to be positive. Nine were found in the previous year.

The laboratory is contemplating changing the type of report card used for agglutination reactions and along with this change desire to encourage the sending of wet blood specimens in place of the less reliable dry specimens. A technique has been adopted which enables us to make titrations on dry blood specimens.

#### TUBERCULOSIS EXAMINATIONS

The examinations for this disease were practically the same as in the previous biennium. In sending in specimens for animal inoculation, it is desired to point out the need of selecting a clean boiled jar or bottle which has not contained disinfectant. If our regular sputum jars are used for this purpose, there is often enough phenol remaining in the jar to kill the bacteria present. It is necessary to have live organisms for this purpose. Microscopic examinations are made on fecal and urine specimens upon request, but we feel that animal inoculation is the only reliable way to examine these specimens.

Many laboratories are using a type of sputum jar containing a "You-Press-It" lid. This is a more satisfactory type of jar but the laboratory has been unable to make the change on account of a lack of funds.

#### RABIES EXAMINATIONS

The number of examinations for this disease has fallen off appreciably as compared with the 1924-26 biennium, but the num-

ber of positives are very much increased. Within the past few months the increase in number of positive examinations has been very noticeable.

#### MISCELLANEOUS EXAMINATIONS

In this group of examinations there has been the most noticeable increase. In 1924-26 there were 384 miscellaneous specimens and in 1926-28, 702. These examinations oftentimes require a great deal of work on the part of the laboratory. During the first year of the biennium, tularaemia and undulant fever examinations were included under this heading.

#### OUTFITS

The laboratory has always been confronted with the problem of getting back outfits which are distributed free of charge. We recently began keeping a definite record of returned empty outfits and with these figures it will be possible to know our loss. In the course of time it may seem desirable to place a small charge on outfits, if the loss continues.

#### RESEARCH

The research in this division has been confined largely to typhoid and undulant fever. Bacteriological work in typhoid has always been subject to error since the organism may die while the specimen is being mailed to the laboratory. To overcome this possible error a medium has been sought in which the organisms in feces or urine will live for relatively long periods. Though progress may be reported, still additional work along this line is clearly indicated.

Undulant fever has added a great deal of work to the bacteriological division. A part of this has been done as regular routine. For investigation purposes however, all cases which have been recognized have been as carefully studied in the laboratory as was possible. As many as ten laboratory examinations on one patient have been made. Valuable information is being accumulated but much work must still be done. The State Bacteriological Laboratory has a peculiar opportunity and obligation in the further study of this disease.

#### II. WATER LABORATORY

JACK J. HINMAN, JR., M. S., Chief.

The staff of this division consists of the chief, an assistant, and a part time assistant. In addition to its routine work, the per-

sonnel of the Water Laboratory Division is called upon to do a considerable amount of teaching, and also exercises supervision over local water supplies and the swimming pools belonging to the university.

Biennial summaries of the routine work of the Water Laboratory Division indicate the growth of the work:

Biennium	1914-1916	2488	Samples examined.
1916-1918	2967		
1918-1920	3991		
1920-1922	6364		
1922-1924	6465		
1924-1926	7520		
1926-1928	7987		

A summary of the work of the laboratory from the standpoint of the quality of the specimens examined is as follows:

#### SUMMARY OF RESULTS OF WATER LABORATORY DIVISION

Type of Source	Percentage of Samples Found Satisfactory.			
	Public Supplies		Private Supplies	
	1914-1928	1926-1928	1914-1928	1926-1928
Shallow Wells	39.41	40.13	15.52	12.48
Deep Wells	70.43	81.08	61.27	59.07
Springs	39.65	52.94	27.28	30.00
Treated Waters	87.59	94.97	.....	.....
Swimming Pools	82.01	88.31	.....	.....
Cisterns	.....	.....	25.00	9.52
Total	62.70	69.24	24.13	20.01
Grand Total of Supplies of all sorts: 1914-1928, 54.90% satisfactory; 1926-1928, 59.03% satisfactory.				

This summary shows a number of interesting facts. To begin with, it will be seen that public supplies show a much higher percentage of satisfactory samples than do private supplies. This is due to the fact that a large number of treated waters are examined and that these show a very high percentage of good specimens. It will be seen however, that there is a material difference in the quality of public shallow wells and private shallow wells, public deep wells and private deep wells, public springs and private springs. In general it is believed that the sense of responsibility of public officials, the periodic inspection which many supplies receive, and the greater care bestowed upon public supplies of most communities, account for the very great difference in the quality of public and private specimens analyzed.

It cannot be considered surprising that many shallow wells are bad. So many of the shallow wells are poorly located, near to sources of contamination, and poorly cased and covered that it is inevitable that they should fail to pass a rigid test for purity. Deep wells are good as a rule, if surface waters are effectively

kept out. Pollution through the top of the well, imperfect casings, and insanitary conditions in well pits are to blame for most of the contaminations observed in deep wells. Spring waters often have an undeserved reputation for purity. Frequently the water is contaminated after emergence into the spring basin, but sometimes the water is apparently contaminated before emergence by nearby sources of pollution, such as privies, barnyards, cesspools and the like. Usually these polluting agencies are located on the upland back of the spring.

Waters which are subjected to purification processes are almost always known to have been unsatisfactory as originally obtained, otherwise they could be used without treatment. Consequently the operators of treatment plants are usually anxious to insure the adequacy of the purification processes applied and have frequent examinations made to determine the quality of the product of the plant. These treated supplies are therefore watched somewhat more closely than are supplies of other sorts. Unsatisfactory results are obtained at times, it is true, but the operators change their treatment processes promptly when anything suspicious is noted. The unsatisfactory condition is apt to be corrected much more quickly than a similar condition in a well water and the latter may be used unsuspected for an extended period.

The cities and towns of Iowa are not making the use of the Water Laboratory Division which they should make. Neither are the people of Iowa using the Water Laboratory Division in the examination of private supplies to the extent which is advisable. Simple addition of personnel would enable the division to care for many more specimens per month.

The greatest obstacle to the use of the Water Laboratory Division is the fee which is required to be charged. Small as it is, the fee of one dollar per sample renders a surprising number of individuals and communities slow to take advantage of the facilities offered them. The fee also interferes with the examinations which should be conducted by the State Department of Health as a routine measure and for investigational purposes. It interferes with the conduct of the research work of the division itself. It would be in the best interest on public health protection in Iowa to do away with the fee and allow gratuitous investigation of all water supplies to determine if they are fit to drink. Any private or public well in the state may be the focus of a wide spread ty-

phoid epidemic. This is especially true of water supplies on main lines of automobile travel.

More definite information about the mineral characteristics of the water supplies of the state of Iowa is urgently required. Important work has been done through the agency of the State Geological Survey but the available results are nearly twenty years old and water supply conditions change from time to time. The Water Laboratory Division could supply information of the mineral characteristics of their water supplies to cities and institutions with comparatively little increase in its equipment. Additional qualified personnel would be all that would be required. Such investigations need not be made available for the individual private supply, but it is important that the supplies of cities and institutions be examined for their mineral characteristics at reasonably regular intervals.

The chief of the division has co-operated in the program of public health education and has done much to popularize information connected with water supply control. During the current biennium thirteen addresses of this nature have been given in the state, including six radio talks.

Research work in connection with the examination of waters and the operation of treatment plants for water and sewage is in progress in the Water Laboratory Division most of the time, the assistants carrying on investigations under the direction of the chief of the division. Mr. Kenneth C. Beeson conducted an extensive investigation during 1926 and 1927 on the subject of the use of chloramines in the sterilization of water. At the present time, his successor, Mr. S. D. Paarch is working on the determination of cyanides in water and sewage. Mr. William T. Bailey also conducted an investigation on the use of hydrogen ion concentration indicators in the softening of water by the lime process.

The water laboratory has for a number of years been associated with the research work carried on under the direction of the American Water Works Association. Mr. Hinman, the chief of the division, has acted as chairman of Committee No. 1, on Standard Methods of Water Analysis, for this association. During the biennium, research work has been conducted on the use of brilliant-green-lactose-bile medium in the detection of organisms of the colon group. The value of the medium in the routine work of the Water Laboratory Division has been established, and it is now regularly employed.

### III. SEROLOGICAL LABORATORY

ZELMA ZENTMIRE, M. S. Chief.

The staff consisted of the serologist, assistant serologist, two technicians and one part time assistant.

The number of specimens examined by this division was approximately the same as during the preceding biennium. During the first year of the biennium there was, however, an increase of ten percent over the preceding year. Since, however, the Forty-second General Assembly made no appropriation for this division, to maintain the laboratory it became necessary to charge a small fee for the examinations. For Wassermann specimens sent by private practitioners, a fee of fifty cents was charged, while for those sent from public clinics the fee was twenty-five cents per test. These have been adequate to make the laboratory self-supporting. There has been in 1927-28, a decrease in the number of specimens received, amounting to 16% of the previous year's total. This decrease is explained partly by the fact that since the fee was charged certain large institutions and clinics are doing their own serological work. This does not, however, account for all of the decrease. It may be assumed, therefore, that the serological test for syphilis is not done as frequently as in previous years. Obviously it would be omitted chiefly on indigent patients cared for by private practitioners. Since the failure to do this examination may result in the disease not being recognized, and in treatment being delayed till irreparable damage has occurred, it is evident that the state may eventually be required to care for indigent patients with an incurable disease for a number of years. It is obvious, therefore, that an economy which might result in the treatment of even one case being delayed, is no true economy. Throughout the United States it is recognized that the control of syphilis represents one of the major health problems. Of first importance in this public health activity is the work of the serological laboratory. It cannot be too strongly urged, therefore, that the appropriation for this work be again made.

Owing to the economy demanded in making the laboratory self-supporting, it was not possible to carry out during the year any constructive research. When it was found, however, that the income would allow an adequate staff, plans were at once laid to begin investigation. At an early date the Kahn test will be made on blood specimens sent for the Wassermann test. This Kahn test has been adopted in some states in preference to the Wasser-

mann test. The physicians of the state will be given an opportunity to decide which they consider the more reliable, and the investigation may lead to the adoption of a new laboratory routine which would prove a marked economy.

Table No. 9 summarizes the work of the laboratory during the biennium.

#### IV. LABORATORY RECORDS

MINNIE HAMILTON, Chief.

This division is responsible for the recording of specimens received and the results of the laboratory examinations and of reporting the latter to the physicians. Assistance is also given with the large amount of correspondence involved in the laboratory and epidemiological work and also in the business administration of the division. During the latter half of the biennium there was a marked increase in the amount of clerical and stenographic work, due chiefly to the accounting involved in handling the fees charged for the Wassermann tests. This demanded the full time of one worker. During the period when this system was being initiated, the amount of work was much more than could be expected of the staff. Their loyalty, however, in this situation deserves much commendation. The division deserves much credit for making the serology laboratory a self-supporting division and of doing this with as little inconvenience to the physicians as possible. The investigations of undulant fever has demanded much secretarial assistance and an increase in the number of publications by members of the department has also given added work to the secretarial staff. The work of the members of this division has added much in efficiency to the work of the laboratory and epidemiological divisions.

#### V. EPIDEMIOLOGY

A. V. HARDY, M. D., State Epidemiologist.

C. F. JORDAN, M. D., Assistant State Epidemiologist.

The work undertaken by this division is shown in tabular form in table 11. This in no way indicates, however, the epidemiological work which should be done in the state. At the present time no funds are available for traveling expenses. Investigations can be made only when the local community is prepared to pay the expenses incurred. The epidemiologist is the one who should see where an epidemic is developing and his activity should bring about its control, before it reaches any serious proportions. At

the present time this cannot be done. Investigations are undertaken after the epidemic has become well established. Control measures may be instituted; the spread of the epidemic may be prevented; but there is little hope of measures being taken which would prevent the development of epidemics. It cannot be too strongly urged that the epidemiological work of the State Department of Health will continue to be hampered, and in some measure ineffective, until additional funds are appropriated to allow the epidemiologist to travel to those districts where he considers a communicable disease is presenting definite health hazards to the community.

Much time has been given to epidemiological research. This has been confined almost wholly to the investigation of undulant fever. The map in Figure 1 represents the distribution of the undulant fever cases which occurred during the biennium. In

Map of Iowa showing locations where cases of Undulant (Molts) Fever have occurred and been investigated.



Figure 1.

seventy-eight instances, epidemiological investigations were made by Dr. Hardy. This was made possible through the co-operation of the United States Public Health Service. By a grant they provided for the traveling expenses of the epidemiologist. Information of importance in the state has been obtained, and a contribution to a knowledge of this disease in the United States has been made. This experience with undulant fever again emphasizes the importance of the epidemiological work of the State

Department of Health. This contribution however, could not have been made without traveling expenses having been provided at public expense. Other diseases, from time to time, undoubtedly will occur demanding similar investigations. It may therefore, be urgently insisted that provision be made for the State Department of Health to carry on this type of work.

TABLE 1.—SPECIMENS RECEIVED FOR THE EXAMINATION OF DIPHTHERIA

	Positive	Negative	Diagnosis Reserved	Specimens Unsuitable for Exam.	Total
<b>Diagnosis—</b>					
1936-1937.....	1,359	9,808	505	145	11,817
1937-1938.....	681	3,038	309	90	4,118
<b>Total.....</b>	<b>2,040</b>	<b>12,846</b>	<b>715</b>	<b>239</b>	<b>15,840</b>
<b>Release—</b>					
1936-1937.....	1,274	2,394	75	73	3,716
1937-1938.....	970	3,165	30	53	3,218
<b>Total.....</b>	<b>2,244</b>	<b>4,459</b>	<b>105</b>	<b>126</b>	<b>6,834</b>
<b>Carrier—</b>					
1936-1937.....	300	624	35	19	878
1937-1938.....	193	400	14	7	614
<b>Total.....</b>	<b>493</b>	<b>1,024</b>	<b>49</b>	<b>26</b>	<b>1,492</b>
<b>Virulence—</b>					
1936-1937.....	8	10	0	0	18
1937-1938.....	10	8	0	0	18
<b>Total.....</b>	<b>18</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>36</b>
<b>Undesignated—</b>					
1936-1937.....					
1937-1938.....	448	4,330	182	43	4,903
<b>Total.....</b>	<b>448</b>	<b>4,330</b>	<b>182</b>	<b>43</b>	<b>4,903</b>
<b>Total.....</b>	<b>5,032</b>	<b>22,880</b>	<b>1,051</b>	<b>434</b>	<b>29,117</b>

Grand total for the biennial period, 29,117.

TABLE 2.—SPECIMENS RECEIVED FOR THE EXAMINATION OF TYPHOID FEVER

	Positive	Negative	Weak Reaction	Specimens Unsuitable for Exam.	Total
<b>Widal—</b>					
1936-1937.....	330	1,202	86	9	1,427
1937-1938 (Dry).....	101	1,123	75	4	1,303
1937-1938 (Wet).....	27	413	19	5	464
<b>Feces and Urine—</b>					
1936-1937.....	7	427	0	1	435
1937-1938.....	0	144	0	5	149
<b>Blood Cultures—</b>					
1936-1937.....	5	27	0	0	32
1937-1938.....	1	24	0	0	25
<b>Total.....</b>	<b>466</b>	<b>3,203</b>	<b>181</b>	<b>28</b>	<b>3,878</b>

Grand total for the biennial period, 3,878.

TABLE 3.—SPECIMENS RECEIVED FOR THE EXAMINATION OF TUBERCULOSIS

	Positive	Negative	Diagnosis Reserved	Specimens Unsuitable for Exam.	Total
<b>Sputum—</b>					
1936-1937.....	478	3,848	0	32	4,358
1937-1938.....	415	3,844	1	11	4,274
<b>Total.....</b>	<b>893</b>	<b>7,692</b>	<b>1</b>	<b>43</b>	<b>8,630</b>
<b>Feces and Urine—</b>					
1936-1937.....	0	34	0	1	35
1937-1938.....	0	31	0	0	31
<b>Total.....</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>1</b>	<b>66</b>
<b>Spinal Fluid—</b>					
1936-1937.....	1	36	1	5	43
1937-1938.....	1	19	0	0	20
<b>Total.....</b>	<b>2</b>	<b>55</b>	<b>1</b>	<b>5</b>	<b>63</b>
<b>Pleural Fluid—</b>					
1936-1937.....	0	0	0	0	0
1937-1938.....	0	14	0	0	14
<b>Total.....</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Other—</b>					
1936-1937.....	0	0	0	0	0
1937-1938.....	1	22	0	0	23
<b>Total.....</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>23</b>
<b>Total.....</b>	<b>893</b>	<b>7,829</b>	<b>2</b>	<b>48</b>	<b>8,772</b>

Grand total for the biennial period, 8,772.

TABLE 4.—SPECIMENS RECEIVED FOR THE EXAMINATION OF RABIES

	Positive	Negative	Diagnosis Reserved	Specimens Unsuitable for Exam.	Total
<b>Dog Heads—</b>					
1936-1937.....	36	66	0	6	108
1937-1938.....	27	56	0	8	91
<b>Total.....</b>	<b>113</b>	<b>122</b>	<b>0</b>	<b>14</b>	<b>249</b>
<b>Heads of Cat, Hog, Cow, Squirrel, Horse, Rabbit—</b>					
1936-1937.....	15	14	0	2	31
1937-1938.....	11	37	0	0	48
<b>Total.....</b>	<b>26</b>	<b>51</b>	<b>0</b>	<b>2</b>	<b>79</b>
<b>Total.....</b>	<b>139</b>	<b>173</b>	<b>0</b>	<b>16</b>	<b>328</b>

Grand total for the biennial, 328.

TABLE 5.—SPECIMENS RECEIVED FOR EXAMINATION OF UN-DULANT FEVER

(Note: During 1926-27 Examination included with Miscellaneous)

	Positive	Negative	Diagnosis Reserved	Rejected	Total
Requested Examinations—					
1926-1927					
1927-1928	173	429	41	15	658
Total	173	429	41	15	658
Examinations performed routinely on Widal specimens.					
1926-1927	41	1,136	16	1	1,194
1927-1928	41	1,136	16	1	1,194
Total	82	2,272	32	2	2,386

Grand total for the biennial period, 1,851.

TABLE 6.—SPECIMENS RECEIVED FOR THE EXAMINATION OF TULARAEMIA

(Note: During 1926-27 Examinations included with Miscellaneous)

	Positive	Negative	Diagnosis Reserved	Rejected	Total
1926-1927					
1927-1928	5	53	1	2	61
Total	5	53	1	2	61

Grand total for the biennial period, 61.

TABLE 7.—SPECIMENS RECEIVED FOR EXAMINATION OF MISCELLANEOUS MATERIAL

	Positive	Negative	Diagnosis Reserved	Rejected	Total
Smears, Etc.—					
1926-1927	104	305	8	77	494
1927-1928	58	135	4	11	208
Total	162	440	12	88	702

Grand total for the biennial period, 702.

TABLE 8.—OUTFITS DISTRIBUTED

	Diphtheria	Tuberculosis	Typhoid	Wassermann	Gonococcus	Blood	Feces	Miscellaneous	Water	Total
1926-7	38,174	7,703	2,460	42,020	4,754	117	319	16	2,113	97,865
1927-8	54,560	7,930	2,008	36,872	4,519	81	100	9	2,194	117,628
Total	92,734	14,633	4,468	78,892	9,273	198	419	25	4,307	215,493

Grand total for the biennial period, 119,567.

TABLE 9.—SPECIMENS RECEIVED BY SEROLOGICAL DIVISION

	1926-27	1927-28
<b>BLOOD—</b>		
Cholest. Antig. Positive	5,754	5,177
Aleb. Antig. Positive		
Cholest. Antig. Negative	40,801	22,909
Aleb. Antig. Negative		
Cholest. Antig. Positive	808	833
Aleb. Antig. Negative		
Cholest. Antig. Positive	642	569
Aleb. Antig. Doubtful		
Cholest. Antig. Doubtful	246	131
Aleb. Antig. Negative		
Specimens unsuitable for examination	1,732	2,003
Anticomplementary	50	30
Doubtful Cholest. Antig.	258	117
Doubtful Aleb. Antig.		
<b>SPINAL FLUID—</b>		
Aleb. Antig. Positive	260	180
Aleb. Antig. Negative	1,173	1,082
Doubtful	54	26
Anticomplementary	22	17
Specimens unsuitable for examination	19	15
<b>GONORRHEA—</b>		
Positive	623	617
Negative	234	285
Doubtful	1,966	1,872
Specimens unsuitable for examination	17	13
<b>BACILLES OF DECUREY</b>	2	2
<b>SPIROCHAETES</b>	10	19
Total	56,642	46,870

Grand total 1926-1928, 103,512.

TABLE 10—REPORT FOR 1926-27, 1927-28; WATER DIVISION

Public	1926-1927	1927-1928	1926-1927	1927-1928	1926-1927	1927-1928	1926-1927	1927-1928
	Good	Bad	Doubtful	Total	Good	Bad	Doubtful	Total
Shallow wells.....	395	167	372	934	144	348	59	551
Deep wells.....	558	492	1,490	2,540	101	169	33	303
Springs.....	7	2	9	18	6	7	1	14
Treated.....	671	700	1,290	2,661	50	27	56	133
Raw streams.....	0	1	1	2	414	810	0	1,224
Lakes, etc.....	0	1	7	8	1	6	0	7
Ice.....	1	2	3	6	0	0	0	0
Cisterns.....	0	0	0	0	0	0	0	0
Miscellaneous.....	1	3	4	8	1	8	0	9
Sewage.....	0	0	0	0	11	26	27	64
Swimming pools.....	103	970	1,560	2,633	43	49	94	186
Total.....	2,033	1,933	4,288	8,254	786	2,080	300	3,166
Private—								
Shallow wells.....	94	72	167	333	447	464	911	1,822
Deep wells.....	68	54	149	271	47	69	12	128
Springs.....	2	4	6	12	9	3	12	24
Streams, etc.....	4	1	5	10	2	2	1	5
Ice.....	1	2	3	6	3	2	0	5
Cisterns.....	1	1	2	4	10	16	0	26
Miscellaneous.....	0	1	1	2	1	0	1	2
Total.....	188	136	334	658	568	1,018	132	1,718
Ownership not stated—								
Shallow wells.....	0	0	0	0	0	0	0	0
Deep wells.....	0	0	0	0	0	0	0	0
Springs.....	0	0	0	0	0	0	0	0
Streams.....	0	0	0	0	0	0	0	0
Ice.....	0	0	0	0	0	0	0	0
Cisterns.....	0	0	0	0	0	0	0	0
Miscellaneous.....	0	0	0	0	0	0	0	0
No data.....	0	2	3	5	17	12	20	49
Total.....	0	2	3	5	17	12	20	49
Total.....	2,221	2,491	4,714	9,426	1,361	3,080	342	4,783

Grand total for the biennial period, 7,987.

TABLE 11.—The following list shows the places that were visited and the particular purpose of such visit. This covered the period from July 1, 1926 to June 30, 1928.

Date	Type of Investigation	Town or City	Disease	Probable Mode of Spread	By Whom Investigated
1926					
July 11-16	Field	Albert City	Typhoid	Contact	Bushy
Aug. 14-17	Field	Waterloo	Typhoid	Milk	Bushy
Aug. 18-21	Field	Fairfield	Typhoid	Milk	Bushy
Aug. 22-25	Field	Iowa City	Scarlet fever	Contact	Bushy
Oct. 4	Field	Altoona	Typhoid	Contact	Wallace
Oct. 11	Field	Polk	Typhoid	Contact	Wallace
Nov. 11-12	Field	Keosauqua	Typhoid	Contact	Harley
Nov. 13	Field	Udell	Chickpox	Contact with rabbits	Harley
Nov. 24	Field	Des Moines	Tularaemia	Contact	Harley
Dec. 1	Field	Des Moines	Scarlet fever	Contact	Harley
1927					
Jan. 11-14	Field	Modale	Scarlet fever	Contact	Harley
Jan. 15	Field	Way Township	Scarlet fever	Contact	Harley
Jan. 16	Field	Modale	Scarlet fever	Contact	Harley
Jan. 17	Field	Modale	Scarlet fever	Contact	Harley
Feb. 11-18	Field	Hawarden	Typhoid	Milk	Harley
March 1	Field	Ferry	Paratyphoid	Water	Harley
March 2-4	Field	Oakdale	Scarlet fever	Milk and carrier	Harley
March 5-6	Field	Camden	Typhoid	Water	Harley
March 7-8	Field	Camden	Typhoid	Water	Harley
March 9-10	Field	Postville	Diphtheria	Carrier	Harley
March 11-12	Field	Yucca	Diphtheria	Milk and carrier	Harley
March 13-14	Field	Yucca	Diphtheria	Contact and carrier	Harley
March 15-16	Field	Buena Vista	Diphtheria	Contact	Harley
March 17-18	Field	Way Township	Scarlet fever	Contact	Harley
March 19-20	Field	Way Township	Scarlet fever	Contact	Harley
March 21-22	Field	Way Township	Scarlet fever	Contact	Harley
March 23-24	Field	Way Township	Scarlet fever	Contact	Harley
March 25-26	Field	Way Township	Scarlet fever	Contact	Harley
March 27-28	Field	Way Township	Scarlet fever	Contact	Harley
March 29-30	Field	Way Township	Scarlet fever	Contact	Harley
March 31	Field	Way Township	Scarlet fever	Contact	Harley
April 1	Field	Way Township	Scarlet fever	Contact	Harley
April 2	Field	Way Township	Scarlet fever	Contact	Harley
April 3	Field	Way Township	Scarlet fever	Contact	Harley
April 4	Field	Way Township	Scarlet fever	Contact	Harley
April 5	Field	Way Township	Scarlet fever	Contact	Harley
April 6	Field	Way Township	Scarlet fever	Contact	Harley

No investigations made from Iowa City in the months 3-6, variant. Chubbuck fever investigations were conducted by Dr. Harley, under a grant from the United States Public Health Service, during the entire year, 1927-28. The locations of these investigations are shown in Map—Figure 1.

## BRANCH OR APPROVED LABORATORIES

In table 12 the examinations made by affiliated laboratories is shown.

It is highly advisable that more definite requirements be formulated governing the approved or branch laboratories. As far as can be determined, in the past, branch laboratories have been established almost solely on the recommendation of the director of laboratories. There are no fixed requirements and the equipment and personnel appears to vary widely in the different laboratories. The department appreciates the co-operation which has been given by the affiliated laboratories, and deems it desirous to establish on a firmer footing, approved laboratories of a desirable type throughout the state. For this to be done, definite requirements must be drawn up by the State Department of Health. It is also recommended that an appropriation be made allowing the State Department of Health to give financial assistance to deserving laboratories doing public health work. Provision should also be made to allow the central laboratory to have some supervision over public health laboratory work performed by approved laboratories. The division appreciates the necessity of having well-manned and well-equipped laboratories in different districts in the state, and desires to be able to co-operate more closely with private laboratories and through this co-operation to be able to improve throughout the state the laboratory service available to physicians.

TABLE 12.—EXAMINATIONS MADE AT AFFILIATED LABORATORIES  
July, 1925-June, 30, 1925

Laboratory	Diphtheria	Tuberculosis	Typhoid	Miscellaneous	Total
Ames.....	635	13	23	572	36
Atkale.....	337	13	1	39	27
Burlington.....	719	161	115	594	1,389
Cedar Rapids.....	474	21	5	178	772
Clinton.....	24	5	1	0	5
Council Bluffs.....	5,254	53	2	392	5,697
Des Moines.....	5,635	31	8	136	5,810
Dubuque.....	7,740	41	5	474	8,260
Fort Dodge.....	183	14	6	87	39
Grinnell.....	146	76	60	128	310
Keokuk.....	61	30	38	45	134
Mason City.....	7,140	64	57	562	7,823
Sheffield.....	0	0	0	74	74
Sioux City.....	5,242	308	175	4,264	9,989
Washington.....	567	35	0	40	742
Total.....	15,889	882	461	7,104	23,736

Grand total for the biennial period, 23,736.

SUMMARY OF THE WORK OF THE BIENNIUM  
State Hygienic Laboratories  
(Branch Laboratories Not Included)

	1925-7	1927-8	Summation	Total
<b>I. Diagnostic Division—</b>				
<b>a. Specimens received:</b>				
Diphtheria.....	16,454	17,683	34,137	
Typhoid.....	1,519	1,052	2,571	
Tuberculosis.....	4,423	4,359	8,782	
Typhus.....	159	159	318	
Undulant fever.....	.....	1,831	1,831	
Typhosaemia.....	494	208	702	
Miscellaneous.....	61	61	122	
<b>b. Outfits distributed.....</b>	49,978	54,055	104,033	
<b>Total.....</b>	75,417	85,232	Summation	177,749
<b>II. Serological Division—</b>				
<b>a. Specimens received:</b>				
Blood.....	50,301	41,940	92,241	
Spinal fluids.....	1,540	1,329	2,869	
Gonorrhoea.....	2,300	2,465	4,765	
Hae. of Ducrey.....	2	2	4	
Hydrocele.....	10	19	29	
<b>b. Outfits distributed.....</b>	46,774	45,351	92,125	
<b>Total.....</b>	102,417	88,307	Summation	190,624
<b>III. Water Analysis Division—</b>				
<b>a. Water.....</b>	5,836	4,105	9,941	
<b>b. Ice.....</b>	4	7	11	
<b>c. Sewage.....</b>	2,113	2,134	4,247	
Containers sent out.....	.....	.....	.....	
<b>Total.....</b>	5,964	6,250	Summation	12,214
<b>IV. Epidemiological Division—</b>				
<b>Investigations:</b>				
Field.....	15	88	103	
<b>Total.....</b>	15	88	Summation	103
<b>Grand Total.....</b>	189,811	149,948	.....	339,759

## PUBLIC HEALTH LECTURE WORK

MRS. D. PIRIE-BEVYEA, R. N., Lecturer.

## NATURE OF WORK

Lectures, conferences and demonstrations.

The value of a lecturer as a means of disseminating to the public knowledge of health and health rules and regulations as well as the policies of health departments in protecting the health and well being of the commonwealth has been recognized by state health departments for many years.

That the people of Iowa are intensely interested in a definite program of health is proved by the popularity of the lecturer for the State Health Department. The demand for the lecturer has grown to such proportions that there is a constant waiting list



from the many communities desiring this service, some communities having waited for more than two years for acceptable dates for the lecturer to appear before their groups.

The interest seems to be very wide-spread, as is indicated by the various types of organizations requesting this service. The following groups have been reached during the last two years: Women's clubs, parent-teacher organizations, teachers' institutes, men's civic groups, Farm Bureau men and women's organizations, Four-H clubs, high and junior high schools, colleges, universities, business and professional women's clubs, Y. W. C. A., Camp Fire Girls, Girl and Boy Scout troops, American Legion posts, Legion Auxiliary and many others.

During the summer of 1927 Mrs. Beyea was granted a leave of absence and the work of lecturer was carried on by Miss Helen M. Needles.

#### SUMMARY—ACTIVITIES OF PUBLIC HEALTH LECTURER

	Number Towns Visited	Number Talks Given	Number of Pupils Addressed	Number of Adults Addressed
<b>1926</b>				
October.....	1	1		36
November.....	7	11	500	22
December.....	4	32	4,700	1,060
<b>1927</b>				
January.....	8	16	1,600	86
February.....	12	20	3,200	1,37
March.....	11	34	3,945	2,35
April.....	14	28	1,760	1,83
May.....	4	9	1,250	71
June.....	5	11	608	2,23
Total.....	66	175	17,713	11,81
<b>1927</b>				
July.....	14	27	1,748	1,22
August.....	12	26	1,922	62
September.....	11	14	2,375	1,50
October.....	13	14		1,22
November.....	14	29	2,000	2,27
December.....	15	19	2,630	83
<b>1928</b>				
January.....	16	21	1,900	2,15
February.....	12	17	950	79
March.....	3	17	1,230	1,32
April.....	22	41	4,265	2,86
May.....	3	9	2,250	58
June.....	13	20	3,462	30
Total.....	161	366	25,918	16,59
Sum Total.....	227	441	43,631	28,28

## DIVISION OF EXAMINATIONS AND LICENSURES

H. W. GREFE, Director.

Under the provisions of Section 2186, Code 1924, there was created a Division of Examinations and Licensures for the practice of certain professions named in Section 2439, as follows:

Medicine and surgery, "osteopathy," "osteopathy and surgery," chiropractic, nursing, dentistry, dental hygiene, optometry, pharmacy, cosmetology, barbering, and embalming.

No person shall engage in the practice of any of the above named professions unless he shall have obtained from the State Department of Health a license for that purpose, excepting pharmacists, who come under the exceptions of Section 2529. The examinations of chiropractors and osteopaths come under the exceptions provided for in Section 2535, but the department issues the licenses to applicants whose names are certified to it by these boards.

The following boards served during the biennial period:

#### MEDICAL:

Wm. Jepson, M. D., chairman, Sioux City,  
Frank M. Fuller, M. D., secretary, Keokuk,  
Frank T. Launder, M. D., Garwin.

#### NURSES:

Frances G. Hutchinson, R. N., chairman, Council Bluffs,  
Marianne Zichy, R. N., secretary, Marshalltown,  
Margaret M. Stoddard, R. N., Mt. Pleasant.

#### DENTAL:

J. J. Booth, D. D. S., chairman, Marion,  
H. D. Coy, D. D. S., secretary, Hamburg,  
H. J. Altschlich, D. D. S., Dubuque,  
Hardy F. Pool, D. D. S., Mason City,  
Frederick H. Waters, D. D. S., Ames.

#### OPTOMETRY:

Alfred J. Mayer, chairman, Davenport,  
Fred Beauchamp, secretary, Rockwell City,  
E. W. Martin, Carroll.

#### CHIROPRACTIC:

S. E. Julander, D. C., chairman, Des Moines,  
Myrtle E. Long, D. C., secretary, Des Moines,  
J. E. Slocum, D. C., Webster City.

#### OSTEOPATHY:

Shertman Opp, D. O., chairman, Creston,  
D. E. Hannan, D. O., secretary, Perry,  
Rolla Hook, D. O., Logan.

#### EMBALMING:

Carrie E. Snider, L. E., chairman, West Liberty,  
F. W. Alexander, L. E., secretary, Conrad,  
J. A. West, L. E., Sioux City.

## PODIATRY:

Wm. von M. Gerard, chairman, Cedar Rapids,  
S. J. Olson, secretary, Des Moines,  
Paul M. Hawk, Waterloo.

## COSMETOLOGY:

Mabel Hart, chairman, Ames,  
Grace Shinn, secretary, Des Moines,  
Lillian Kostomiatsky, Sloux City.

## BARBERING:

F. C. Sloan, chairman, Waterloo,  
Frank O. Moffitt, secretary, Sloux City,  
John T. McGruder, Iowa City.

Each examining board may meet for the purpose of giving examinations at such times as the department may fix, not exceeding four in any one year. Each board makes rules for conducting examinations and issuing licenses by reciprocity for that profession, also prepares the examination questions and grades the answers thereto.

All communications relating to examinations and registration by reciprocity, together with credentials and fees, should be sent to the State Department of Health, at least fifteen days prior to date of meetings and examinations. (See. 2466.) (Exceptions, See. 2529 and 2535.)

## BOARD OF MEDICAL EXAMINERS

Number of examinations and meetings held.....	6
Number of applicants examined.....	215
Number of applicants failed.....	0
Number of licenses issued upon examination.....	161
Number of licenses issued upon reciprocity.....	61
Number of licenses issued upon recognition of National Board of Medical Examiners' certificates.....	5
Total number of licenses issued during biennial period.....	227
Number of Itinerants' licenses issued.....	8
Number of annual renewal fees received.....	5,972

## BOARD OF OSTEOPATHIC EXAMINERS

Number of applicants certified to practice osteopathy.....	40
Number of applicants certified to practice osteopathy and surgery.....	6
Number of applicants certified by reciprocity.....	14
Total number of licenses issued during biennial period.....	60
Number of annual renewal fees received.....	976

## BOARD OF CHIROPRACTIC EXAMINERS

Number of licenses certified upon examination.....	314
Number of licenses certified upon reciprocity.....	16
Total number of licenses issued during biennial period.....	330
Number of annual renewal fees received.....	1,536

## BOARD OF PODIATRY EXAMINERS

Number of licenses issued upon examination.....	1
Number of licenses issued upon reciprocity.....	0
Total number of licenses issued during biennial period.....	1
Number of annual renewal fees received.....	97

## BOARD OF OPTOMETRY EXAMINERS

Number of licenses issued upon examination.....	5
Number of licenses issued upon reciprocity.....	1
Total number of licenses issued during biennial period.....	6
Number of Itinerants' licenses issued during biennial period.....	12
Number of annual renewal fees received.....	1,925

## BOARD OF EMBALMER EXAMINERS

Number of licenses issued upon examination.....	197
Number of licenses issued upon reciprocity.....	1
Total number of licenses issued during biennial period.....	198
Number of annual renewal fees received.....	3,206

## BOARD OF NURSE EXAMINERS

Number of licenses issued upon examination.....	1,049
Number of licenses issued upon reciprocity.....	91
Total number of licenses issued during biennial period.....	1,140
Number of annual renewal fees received.....	5,969

## BOARD OF DENTAL EXAMINERS

Number of licenses issued upon examination.....	135
Number of licenses issued upon reciprocity.....	0
Total number of licenses issued during biennial period.....	135
Number of annual renewal fees received.....	3,098
Number of Dental Hygienists' licenses issued upon examination.....	6
Number of annual renewal fees received.....	18

## BOARD OF COSMETOLOGY EXAMINERS

Number of licenses issued by exemption.....	3,700
Number of licenses issued upon examination.....	181
Total number of licenses issued during biennial period.....	3,881
Number of annual renewal fees received.....	2,911

## BOARD OF BARBER EXAMINERS

Number of licenses issued by exemption.....	6,663
Number of licenses issued upon examination.....	255
Total number of licenses issued during biennial period.....	6,918
Number of annual renewal fees received.....	6,314
Total number of licenses issued during biennial period.....	12,825

The following statement gives the total number of licenses issued by the State Department of Health in force June 30, 1928:

Physicians.....	2,236
Nurses.....	2,329
Dentists.....	1,661
Dental Hygienists.....	19
Optometrists.....	542

Chiropractors .....	1,331
Osteopaths .....	433
Embalmers .....	1,674
Podiatrists .....	57
Cosmetologists .....	3,392
Barbers .....	6,586
Total .....	22,261

## DIVISION OF NURSING EDUCATION

MAUDE E. SUTTON, Director

The history of the Division of Nursing Education is the history of a dream and its fulfillment. From the time the State Association of Registered Nurses was organized in 1904 its members had seen the need for such a division and had dreamed that it might some day be a reality.

With the rapid increase in the number of nurses' training schools in Iowa the need became more apparent and, not wishing to wait until action could be taken by the legislature, the State Association of Registered Nurses assumed the responsibility of financing the work of training school inspection in the fall of 1926, in the hope that their demonstration would influence the legislators by furnishing proof of the need for such a division.

In January, 1927, the division was created by an act of the Forty-second General Assembly.

The nurses' state association continued to finance the work of the division until the appropriation was available, July 1, 1927.

Two acting directors served from October 1, 1926, to January 1, 1927, and from January 1, 1927, to July 1, 1927, respectively. During the period July 1, 1927, to January 1, 1928, there was no division head owing to the difficulty encountered in securing a permanent director.

The division functions under the State Department of Health. An advisory committee has been voluntarily formed. This committee is composed of the State Health Commissioner, the three members of the Board of Nurse Examiners, the president of the State League of Nursing Education, two superintendents of nurses (appointed by the league), the president of the State Association of Registered Nurses and the director of nursing education.

## PERSONNEL

Professional: The director, who is also secretary to the Advisory Committee.

Non-professional: One stenographer.

Report of the activities of the Division of Nursing Education and the director from October, 1926, to July 1, 1928:

The credentials of all applicants for training in all schools have been reviewed by the director and approval given if all entrance requirements were met. A card file of all students in training October 1, 1926, and all students since admitted, giving a resume of their credentials, has been maintained in the division.

There is no shortage of students in the schools of nursing of Iowa:

## TRAINING SCHOOL INSPECTIONS

January 1, 1927, to July 1, 1927 .....	33
January 1, 1928, to July 1, 1928 .....	41

There have been numerous conferences with hospital board members and superintendents of nurses not in connection with regular training school inspection.

An effort was made to make a preliminary survey during 1927 to ascertain the number of schools that were actually meeting requirements for accredited schools as formulated by the Board of Nurse Examiners.

After this survey the accredited list was changed by the removal of five schools; two closed voluntarily, two were removed by the board and one closed by mutual consent.

Total number of accredited schools January, 1927 .....	54
Total number accredited schools July, 1927 .....	49
Total number accredited schools January, 1928 .....	51
Total number accredited schools July, 1928 .....	51
Number hospitals affiliating for certain services January 1, 1928 .....	12
Pediatrics including Milk Laboratory .....	12
Medical nursing .....	5
Eye, ear, nose and throat .....	5
Psychiatry .....	11
Communicable .....	10
(Affiliation for contagion has been discontinued because of insufficient number of cases.)	
Orthopedics .....	11

Arrangements have been made wherever possible to give public health nursing experience on Visiting Nurse Association staffs to student nurses.

More complete data in regard to Iowa training schools are given in Iowa Health Bulletin, issued by State Department of Health, Des Moines, Vol. XLII, No. 4, October, November, December, 1928.

## ADVISORY COMMITTEE ON NURSING EDUCATION

The committee on nursing education was organized in January, 1928. Meetings were held in January and April following the state board examinations.

The committee is attempting to gather information which will enable it to make recommendations as to what might be a fair minimum requirement of pediatric cases in an accredited school.

The reports record all student dismissals and resignations:

Reasons for failure to complete training:

Illness	192
Misconduct	218
Dislike for work	72
Unfitness for work	75
Marriage	78
Inability to master theory	42
Homesick	17
Unforeseen conditions at home	58
Dishonesty	19
Disobedience	22
Family moved	6
To enter another school	9
To enter Convent	2
Financial	4
Insubordination	8
Deaths	1

## CHANGES IN SUPERINTENDENTS OF NURSES

Frequent changes in superintendents of nurses is of great importance. There have been sixteen changes between January 1, 1928, and July 1, 1928. In three instances more than one change has occurred in the same hospital during this period.

There are obvious reasons for some of these changes; the fault lying with the superintendent of nurses and management of the hospital in about equal proportions.

Necessary records for training schools are also being considered.

## ANALYSIS OF STATE BOARD EXAMINATIONS

Examinations, July, 1926, to July, 1927. Number of candidates 463 with preliminary education as follows:

Over high school*	49
High school	211
Three to four years	47
Two to three years	54
One to two years	91
Equivalent	11

\*Does not include normal training.

Examinations, July, 1927, to July, 1928. Number of candidates 471 with preliminary education as follows:

Over high school	47
High school	275
Three to four years	29
Two to three years	51
One to two years	61

Educational advantages of students now in training:

Over high school	58
High school	1,728
Three to four years	78
Two to three years	122
One year	58

2,044

## MONTHLY REPORTS

Monthly reports of changes in nursing personnel are required from every accredited training school.

These reports emphasize the fact that too many changes occur in hospital executive positions.

Some changes, those in the Catholic hospitals, are due to the policy of the order maintaining the hospital.

A more careful selection of persons for the position and a better understanding of the position by boards of directors and mother houses would tend to lessen the number of changes.

## SALARY SCHEDULE

Study of salaries paid in various hospital executive positions:

Position	Maximum	Minimum
Nurse Superintendent	\$250.00	\$125.00
Superintendent of Nurses	175.00	100.00
Night Supervisor	135.00	85.00
Instructress	150.00	75.00
Surgical Supervisor	150.00	90.00
Obstetrical Supervisor	140.00	90.00
Floor Supervisor	100.00	95.00

## CONCLUSION

The division should:

1. Make such studies as are necessary for a complete understanding of the training school situation in Iowa with the idea of grading the schools.
2. Attempt to spend more time in the schools.
3. Stress the keeping of necessary records for individual students.
4. Urge every school to secure a full-time instructor.
5. Educate hospital boards and superintendents with regard to training school requirements and the advisability of discontinuing some of the smaller schools.

## PUBLIC HEALTH NURSING

EDITH S. COUNTRYMAN, R. N., Director.

The State Department of Health has, during the past biennium, maintained an all year around service for the public health nurses of Iowa and for such boards and associations as employ nurses

or committees interested in nursing services through its Division of Public Health Nursing. Because of the absence of a state appropriation this service is made possible through the Iowa Tuberculosis Association which from its share of Christmas Seal funds throughout the state pays the salary of the director.

Following is a classification of the public health nurses of Iowa.

There are 213 employed in this state. Their salaries are paid either by official or non-official groups or by both.

Official groups or employing boards include county boards of supervisors, boards of education, city councils and federal agencies. Non-official or voluntary groups including visiting nurse associations, social service leagues, Red Cross chapters, public health associations, Christmas Seal committees and industrial concerns.

County-wide public health nursing services entirely paid by board of supervisors are as follows:

Webster, Des Moines, Scott, Jones and Polk.

Other counties employing nurses where the public service is paid partly by boards of supervisors and supplemented by funds from non-official groups are as follows:

Delaware, Hardin, Jasper and Monona.

Counties entirely supported by non-official groups:

Clinton, Johnson, Lyon, Palo Alto, Plymouth, Sac and Madison.

School nurses entirely supported by boards of education (Figure opposite indicates number of nurses employed):

Centerville .....	1	Waterloo .....	3	Boone .....	1
Waverly .....	1	Tripoli .....	1	Lamont .....	1
Independence .....	1	Mason City .....	1	Cherokee .....	1
Clinton .....	1	Lyons .....	1	Burlington .....	2
Charles City .....	1	Dubuque .....	4	Oelwein .....	1
Corwith .....	1	Newton .....	1	Fairfield .....	1
Cedar Rapids .....	2	Pt. Madison .....	1	Keokuk .....	1
Marshalltown .....	1	Chariton .....	1	Clarinda .....	1
Council Bluffs .....	3	Des Moines .....	22	Le Mars .....	1
Grinnell .....	1	Davenport .....	3	Ames .....	1
Nevada .....	1	Muscatine .....	1	Traer .....	1
Creighton .....	1	Ottumwa .....	1	Indianola .....	1
Fort Dodge .....	2	Eagle Grove .....	1	Sioux City .....	3
Glenwood .....	1	Clarion .....	1	Humboldt .....	1
				Algona .....	1

Other towns in the state where school nurses are supported by official and non-official groups are:

Cedar Falls .....	1	Manning .....	1	Perry .....	1
Jefferson .....	1	Oskaloosa .....	1	Knoxville .....	1
Albia .....	1	Mt. Ayr .....	1	Bedford .....	1
Council Bluffs .....	1				

There are ten nurses employed by industrial concerns in Sioux City, Cedar Rapids, Waterloo and Des Moines.

Visiting nurse associations providing bedside care for the sick in their homes are supported largely by funds from community chests, social welfare leagues and Christmas Seal sale funds. These services are well organized and maintained in the following cities:

Waterloo .....	1	Mason City .....	2	Clinton .....	3
Burlington .....	3	Dubuque .....	5	Iowa City .....	1
Pt. Madison .....	1	Cedar Rapids .....	5	Marshalltown .....	2
Council Bluffs .....	3	Des Moines .....	18	Muscatine .....	1
Grinnell .....	1	Davenport .....	6	Ottumwa .....	1
Fort Dodge .....	1	Sioux City .....	9		

Visiting nursing care by these organizations is given only where a physician is in attendance on a case. The nurses respond to new calls but do not continue on a case unless given permission by a medical attendant. In addition to bedside care these nurses also instruct the family regarding the nursing care, health measures and disease prevention.

Other nurses employed and supported entirely by funds from city health centers (3), city boards of health (3), federal (2), colleges (2), life insurance companies (2), parochial schools (1), Sheppard-Towner (4).

There are five nurses supplied for itinerant nursing service through the Iowa Tuberculosis Association. These nurses are supplied for short time school inspections and communicable disease work. The following counties have had such services in their rural schools:

Bremner, Page and Worth.

Below are listed towns having had such short time school nursing services during 1928:

Stuart .....	Gray .....	Leon .....
Scranton .....	Peterson .....	Pertile .....
Cedar Heights .....	Exira .....	Viola .....
Joice .....	Hudson .....	Corning .....
Garden Grove .....	Northwood .....	Audubon .....
Spencer .....	Kimballton .....	Dunkerton .....
Greenfield .....	Bedford .....	Hanlontown .....
Bayard .....	Viola .....	Exira .....

Nearly all of these towns have had a second visit for follow-up work.

During the year 1928, the director visited sixty-five counties and cities in the interest of public health nursing.

#### QUALIFICATIONS

The graduate nurse who wishes to do public health nursing needs some special preparation for the work. She may enter the field through staff work under supervision and instruction. Courses

leading to a certificate in public health nursing are available in a number of colleges and universities in various parts of the United States. For executive and advisory positions not only is this additional study needed but also, a background of experience and a special ability to direct the work of others.

The phases of the work covered by each public health nurse employed depends upon the community's needs and the program and policies of the organization employing her. She may be emphasizing any one of the following phases on her full time job. Bedside nursing, prenatal, maternity, infant welfare, child welfare, tuberculosis, communicable disease, school, home hygiene and first aid classes and industrial nursing.

Teaching disease prevention and health promotion are the outstanding duties of every public health nurse.

### BARBER DIVISION

JOHN T. McGRUDER, Chief Inspector

In conformity with Chapter 124-B2 of Title VIII, Code of Iowa, 1927, the barber division, directly connected with the Department of Health, was established for the purpose of issuing licenses and prescribing sanitation rules for barber shops. This division consists of a Board of Examiners, namely J. E. Bales, chairman, Cedar Rapids; Lew W. Skinner, secretary, Council Bluffs; and A. E. Pierce, Tipton; and four inspectors, namely, John T. McGruder, chief inspector, Des Moines, and G. T. Clark, Carroll; F. O. Moffitt, Sioux City; F. C. Sloan, Waterloo, field inspectors.

#### SANITARY RULES

The State Board of Health, authorized by Section 2585-b15, prescribed reasonable rules providing for the sanitation of barber shops. With the issuance of each certificate from this department, a copy of these are sent and are required to be displayed in a conspicuous place in every shop for the information and guidance of the persons employed therein and the patrons.

These sanitary rules pertain to proper quarters, shop in connection with business, sterilization of instruments, clean towels, cleanliness of barbers' hands, the use of alum lump and styptic pencil to stop flow of blood, the method of applying creams, and communicable diseases of both the barber and his patron.

It is the barber's duty to exercise the greatest care in keeping his person and his tools in the cleanest possible condition. He

should also have some knowledge of the communicable diseases which he is liable to meet with in the conduct of his business.

#### INSPECTION STAFF

The state maintains three field men who are employed on a full time basis in the inspection of barber shops throughout the state. It also provides for a chief inspector who acts in the capacity of an executive and who plans minutely each step of procedure in the department.

Practically every barber shop is visited at least two times a year and most of them, depending on various conditions, three or four times. There are approximately 2,700 shops in the state. The visits of the inspectors have served not only to correct wrong conditions and point out rule violations, but to educate the barbers in the need of living up to the rules and making the shops safer and more attractive for the patrons. Through their insistence upon the observance of the rules and regulations adopted by the State Department of Health, the influence of the barber inspectors is having marked effect in raising the standards of all barber shops.

#### PURPOSE OF INSPECTORS AND HOW THEY PROCEED

The purpose of the three field men is to visit every barber shop in the state, making certain that all barbers employed in the shops have a license to practice in Iowa and that all employers observe the sanitary rules set forth by the State Department of Health.

Failure to comply with the law regarding illegal practice, forgeries in procuring license and violations of the sanitary rules will result in legal proceedings by the attorney general upon the request of the State Department of Health, or the county attorney, who shall prosecute such action when brought in his county.

#### SCHOOLS

The accredited barber schools in the state that received a rating of "A" based upon equipment and course of study, are:

Iowa Barber College, Des Moines.  
Palmer Barber College, Cedar Rapids.  
Sioux City Barber College, Sioux City.  
Tri-City Barber College, Davenport.

The graduates of these four accredited colleges, after having completed the additional eight-month apprenticeship under the supervision of a licensed barber are eligible for an examination.

Students learning the profession in private shops are required to serve a two-year apprenticeship. Each apprentice works on an apprentice permit, dated from the time he begins his training

and to expire in one year if he completes the four months college course prescribed by the Board of Examiners, or to expire in two years if he serves as an apprentice in a private shop.

#### NUMBER OF LICENSED BARBERS

Up to June 30, 1928, there were 6,918 barbers licensed in Iowa. Of these, 6,663 received a license under the exemption clause of the law and 255 by successfully passing the examination given by the Board of Barber Examiners. Of the 204 applicants for examination, 39 failed to receive the passing grade.

#### EDUCATION

A decided improvement has been noticed in the sanitary conditions of the shops since the passage of the barber law. Generally speaking, the barbers have been eager to grasp suggestions given by the inspectors and the State Department of Health in its bulletins of instruction and newspaper articles. The department sends quarterly bulletins and one annual bulletin to every licensed barber in the state. The average barber is familiar with the law and sanitary rules and knows what is expected of him.

### COSMETOLOGY DIVISION

WANDA LONG, Secretary

The law governing the practice of cosmetology was passed April 5, 1927, by the Forty-second General Assembly.

Briefly, the cosmetology law provides for the licensing of all persons practicing any branch or combination of the branches of cosmetology. The text of the law defines the practice of cosmetology as follows:

"Persons who, for compensation, engage in any one or any combination of the following practices: cutting, dressing, curling, waving, bleaching, coloring and similar work, on the hair of any woman or child by any means whatsoever.

"Persons who, with hands or mechanical or electrical apparatus or appliances, or by the use of cosmetic preparations, antiseptics, tonics, lotions, or creams, engage for compensation in any one or any combination of the following practices; massaging, cleansing, stimulating, manipulating, exercising, beautifying, or similar work, the scalp, face, neck, arms, bust or upper part of the body, or the removing of superfluous hair by the use of electricity or otherwise on or about the body of any woman or child."

All cosmetologists who were practicing at the time the law was passed could, by filing their application and one dollar fee before July 8, 1927, obtain an exemption certificate. Since that date, however, licenses can be procured only by examination. To date,

4,052 licenses have been issued, 351 by examination and the remainder under the exemption clause.

Examinations are conducted by a board of three members especially appointed for that purpose. At present the members of the Cosmetology Examining Board are Mrs. Mabel Hart, chairman, Ames, Iowa; Mrs. Lillian Kostomlatsky, vice chairman, Sioux City, Iowa; and Miss Grace Shinn, secretary, Des Moines, Iowa. Formal applications and fees for examination should be filed with this department at least fifteen days before the date set for examination.

The Cosmetology Examiners have prescribed the following course of study for all persons who desire to take the state examination to obtain a license to practice cosmetology in the state of Iowa. Eight hundred twenty-five hours or four months training is the minimum amount of training required and should be apportioned as follows:

Shampooing .....	40 hours
Marcelling .....	135 "
Facial Massage and Electrical Devices .....	150 "
Scalp Treatment and Electrical Devices .....	75 "
Manicuring and Hand and Arm Manipulation .....	49 "
Hair Tinting and Coloring .....	75 "
Permanent Waving .....	75 "
Water Waving, Finger Waving, Round Curling, and Hair Dressing .....	65 "
Scissor Hair Dressing .....	20 "
Sanitation and Use of Antiseptics .....	50 "
Lecturers on Skin and Scalp .....	50 "
Written and Oral Tests on Work .....	50 "
Total .....	825 hours

Of the 327 applicants for examination there have been 57 failures.

No reciprocal relations with any other state have been established. The board feels that until cosmetology licensure becomes more general and the requirements for examination more rigid, it would be very unwise to establish reciprocity.

To date, legal proceedings for prosecution have been started in only one circumstance. The department has endeavored to educate the operators in Iowa through personal visits, bulletins and circular letters, rather than by the imposition of fines and sentences.

The sanitary rules compiled by the health commissioner aim to regulate hygienic conditions and sanitation as well as providing for the posting of license certificate and annual renewal card, reporting students and apprentices, displaying of signs, and prescribing rules regarding home establishments.

The cosmetology division has one inspector, Mrs. Goldie Cessna of Nevada, Iowa. Her duties include helpful suggestions and criticisms on all cosmetology establishments as well as a careful survey of all sanitary conditions. Up to and including June, 1928, Mrs. Cessna has inspected 1,732 shops, 1,086 of which were home shops. The total number of shops inspected employ 3,232 licensed operators. Three hundred forty-two have discontinued work since the law went into effect because of the more rigid sanitary requirements. Two hundred eighty-one have given up the practice of cosmetology in Iowa because they felt they were unable to pass the state board examination. Mrs. Cessna has inspected practically all of the shops in 554 towns and cities in Iowa and during these inspections has found 271 unlicensed operators practicing cosmetology. There are 161 cosmetology establishments located in barber shops.

Miss Wanda Long, secretary, has charge of the immediate work at the office such as telephone conferences, correspondence, and the recording of licenses.

The State Board of Cosmetology Examiners and the health commissioner have rated the various schools of cosmetology in the state of Iowa. The ratings and the general meaning of the ratings are as follows: "A" class—good; "B" class—fair; "C" class—should be improved. The schools and their classification are as follows:

#### "A" CLASS

- Iowa School of Beauty Culture, 615½ Walnut Street, Des Moines, Iowa.
- Kennedy's School of Beauty Culture, 822 Walnut Street, Des Moines, Iowa.
- Samuels' School of Cosmetology, 606 Insurance Exchange Bldg., Sioux City, Iowa.
- Skinner's School of Beauty Culture, Marshalltown, Iowa.
- Thompson's School of Beauty Culture, 616 Locust Street, Des Moines, Iowa.
- Waterloo School of Beauty Culture, 226 East 5th Street, Waterloo, Iowa.

#### "B" CLASS

- Matthews' Hair Dressing Academy, 756 Main Street, Dubuque, Iowa.

#### "C" CLASS

- Baldwin School of Beauty Culture, 401 Frankel Bldg., Des Moines, Iowa.
- Dale School of Beauty Culture, 202 Securities Bldg., Davenport, Iowa.
- Excel Academy of Beauty Culture, 113½ E. Second St., Davenport, Iowa.
- Madame Wall's School of Beauty Culture, 312½ Jefferson, Burlington, Iowa.
- Milady's School of Beauty Culture, 138½ Main Street, Maquoketa, Iowa.
- Paris Academy of Beauty Culture, 213 S. 2nd St. East, Cedar Rapids, Iowa.
- Peacock School of Beauty Culture, 404 Putnam Bldg., Davenport, Iowa.
- Rex School of Beauty Culture, 211 S. 3rd St., East, Cedar Rapids, Iowa.
- Williams and Lewis School of Beauty Culture, 256 K. P. Block, Des Moines, Iowa.

## BOARD OF PAROLE

BIENNIAL PERIOD ENDING JUNE 30, 1928

CRIMINAL STATISTICS FOR EACH COUNTY OF THE STATE