

REPORT OF THE  
STATE BOARD OF HEALTH



IOWA

1928

State of Iowa  
1928

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REPORT OF THE  
**STATE DEPARTMENT OF HEALTH**

FOR THE  
BIENNIAL PERIOD ENDING JUNE 30, 1928

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HENRY ALBERT, M. D.  
Commissioner

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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  
Records and Accounts  
Barber Inspectors  
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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.

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# 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.

## 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
Auditing, 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 .....	\$9,300.00

## RECEIPTS AND EXPENDITURES BY BOARD

Board	Receipts	Expenditures			Un- expended Receipts
		By Board as Such	Estimated Proportion of General	Total	
Medical .....	\$ 8,228.00	\$ 1,043.47	\$ 3,600.00	\$ 4,643.47	\$ 3,584.53
Dental .....	3,753.00	2,763.41	1,500.00	4,263.41	-510.41
Dental Hygiene .....	63.00				63.00
Nurses .....	8,302.00	1,906.12	1,400.00	3,306.42	1,414.43
Division Nurses Education:					
Traveling .....		381.15		381.15	
Director Salary .....		2,000.00		2,000.00	
Stenographer .....		1,200.00		1,200.00	
Optometry .....	2,430.00	409.91	800.00	1,209.91	1,226.09
Osteopathic .....	1,550.00	1,966.58	100.00	2,066.58	-516.58
Chiropractic .....	1,763.00	2,450.16	100.00	2,550.16	-787.16
Podiatry .....	122.00	188.50	50.00	238.50	-116.50
Embalming .....	1,407.32	662.90	850.00	1,512.90	-105.67
			General Expense	Total	Unex- pended Receipts
Cosmetology .....	9,970.00	1,239.25	*5,172.39	*6,411.64	13,558.36
Barbers .....	23,846.00	1,812.58	*17,230.90	*20,543.48	3,302.52
Not including duplicate renewals			†1,500.00		
Total .....	\$ 61,446.32	\$ 18,024.42	\$ 32,303.29	\$ 50,327.71	\$ 11,118.61

\*Actual, by division.

†Part of general department.

‡Printing to be charged off, \$644.14.

Minus 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

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

#### Salaries—

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
	<hr/>
	\$44,460.00

There was transferred from the salary funds to the

Printing Board on Order No. 92.....	\$ 1,500.00
Salaries Paid During the Year.....	41,969.21
Leaving a Balance to be charged off of.....	990.79

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\$44,460.00

*Quarantine Expense—*

Available July 1, 1926.....		\$ 5,254.21
There was transferred from this fund to Consulting Engineers Special Appropriation.....	\$ 95.44	
Transferred to the Printing Board.....	1,000.00	
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>

*Antitoxin—*

Available July 1, 1926.....		\$ 2,037.14
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>

*Laboratory Supplies, Medication—*

Available July 1, 1926.....		\$ 2,532.55
There was paid for Salaries, Supplies, Expenses, etc. ....	\$ 2,517.05	
Leaving a Balance to be charged off of.....	15.50	
		<u>\$ 2,532.55</u>

*Miscellaneous Traveling—*

Available July 1, 1926.....		\$ 2,400.69
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>

*Engineering and Housing Traveling—*

Available July 1, 1926.....		\$ 1,189.17
Transferred from Quarantine Fund.....		
Paid for Traveling Expenses, etc.....	\$ 3,232.95	
Making an Overdraft of.....		43.78

*Equipment and Laboratory—*

Available July 1, 1926.....		\$ 587.96
Transferred from Traveling Expense.....		300.00
		<u>\$ 887.96</u>
Paid for Traveling and Other Expenses.....	\$ 863.04	
Balance to be charged off.....	24.92	
		<u>\$ 887.96</u>

*Special—Consulting Engineer—*

Available July 1, 1926.....		\$ 136.18
Transferred from Quarantine Fund.....		95.44
		<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 .....	8,540.00	1,044.04
Dental Hygienist Examiners.....	53.00	
Dental Examiners .....	3,299.00	1,904.78
Optometry Examiners .....	1,937.00	190.26
Vital Statistics .....	281.50	
Cosmetology Examiners .....	72.00	349.24
Chiropractic Examiners .....	4,541.00	833.88
Osteopathic Examiners .....	2,629.00	2,630.79
	<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.....	\$39,600.00
Miscellaneous Traveling Expenses.....	3,000.00
Quarantine Expenses .....	4,000.00
Antitoxin .....	5,000.00
Equipment and Laboratory Engineering.....	1,000.00
Traveling 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.....	\$39,160.67
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 Propy- lactics .....	\$ 3,641.42
Leaving a Balance to be carried forward.....	1,358.58
	<u>\$ 5,000.00</u>

*Miscellaneous Traveling—*

Available July 1, 1927.....		\$ 3,000.00
Paid Traveling Expenses for this Period.....	\$ 1,459.35	
Leaving a Balance to be carried forward.....	1,540.65	
		<u>\$ 3,000.00</u>

*Engineering and Housing Traveling—*

Available July 1, 1927.....		\$ 5,000.00
Paid Traveling Expenses for this Period.....	\$ 3,851.94	
Leaving a Balance carried forward.....	1,148.06	
		<u>\$ 5,000.00</u>

*Equipment and Laboratory—*

Available July 1, 1927.....		\$ 1,000.00
Paid Traveling Expenses for this Period.....	\$ 993.08	
Leaving a Balance carried forward.....	6.92	
		<u>\$ 1,000.00</u>

*Examining Board Membership—*

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 .....	\$ 9,185.78	\$ 1,808.64
Embalmers Examiners .....	2,555.00	792.14
Podiatry Examiners .....	35.00	128.35
Medical Examiners .....	7,202.00	524.92
Barber Examiners .....	42,788.00	19,043.48
Dental Examiners .....	3,753.00	
Optometry Examiners .....	2,122.00	331.61
Cosmetology Examiners .....	9,970.00	6,411.64
Chiropractic Examiners .....	2,505.20	
Osteopathic Examiners .....	2,055.00	1,966.58
Vital Statistics .....	212.50	
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 Chrispin, 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 .....	159
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 Rock 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 Sinclair 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 .....	276	644,477
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 springs and infiltration .....	8	158,952
Cities and towns with water works but no data.....	7	3,372
Incorporated cities and towns having no water works..	920	1,401,665
Cities and towns having untreated surface water .....	7	9,458
Cities and towns having filtered surface water .....	25	264,971
Cities and towns having chlorinated surface water.....	27	305,543



Cities and towns having softening .....	5	9,128
Cities and towns having iron removal .....	2	26,200
Cities and towns having chlorinated supplies .....	76	758,256
Cities and towns having public sewer systems.....	319	1,189,926
Cities and towns having no treatment .....	103	802,368
Cities and towns having primary only .....	41	50,603
Cities and towns having primary and secondary.....	169	324,370
Cities and towns having S. S. but no data.....	6	5,358
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. 3, 1928.  
 Carlisle—System of mains, well, elevated tank—W. E. Buell Engineering Co. Approved Apr. 25, 1928.  
 Charles City—New well and main extensions—J. S. Dawson, City Engineer. Approved Apr. 24, 1928.  
 Cresco—Main extensions—J. W. Howe, City Engineer. Approved May 27, 1927.  
 Delmar—Water improvements—J. G. Thorne. Approved March 15, 1927.  
 Emerson—System of mains, wells, tank, etc.—Henningson Engineering Co. Approved Oct. 6, 1926.  
 Gilman—Main extensions, well—Currie Engineering Co. Approved July 12, 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.  
 Kenset—Complete waterworks system—Currie Engineering Co. Approved July 12, 1927.  
 Lehrville—Water softening plant—Graber Corporation. Approved Aug. 30, 1926.  
 Manchester—Deep well.  
 Marengo—New wells, main extension. Lafayette Higgins. Approved June 14, 1927.  
 Massena—Complete waterworks system—W. E. Buell Engineering Co. Approved July 7, 1927.  
 Newton—New wells, force mains. Lafayette Higgins. Approved May, 1927.  
 Newton—Main extensions—Lafayette Higgins. Approved June 15, 1927.  
 Sibley—Softening plant—Graber Corporation. Approved July 3, 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 extensions—J. E. Dawson. Approved April 25, 1928.  
 Cresco—Sewer extensions—J. H. Howe. Approved July 14, 1927.  
 Denison—Sewer extensions—Lafayette Higgins. Approved Aug. 24, 1926.  
 Des Moines County—Sewage disposal—C. H. Waterhouse. Approved Sept. 16, 1926.  
 Donnellson—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 May 16, 1928.  
 Fort Madison—Sewer extension—R. J. Lewis. Approved Aug. 30, 1927.  
 Grinnell—Sewage disposal plant—Slipsey Engineering Co. Approved May 19, 1928.  
 Johnson Station—Sewage disposal—John Burress. Approved 1926.  
 Lowden—Sewer system and sewage disposal—H. R. Green Engineering Co. Not approved. Not constructed.  
 Manchester—Sewer extensions—Barber & Schenk. Approved July, 1926.  
 Maxwell—Sewer and sewage disposal—Currie Engineering Co. Approved July 6, 1927.  
 Mitchellville—Sewage disposal, State Industrial School—Lafayette Higgins. Approved Feb. 8, 1928.  
 Morning Sun—Sewer system and sewage disposal (1928)—Brown & Cook. Not approved. Not constructed.  
 Neola—Sewer system and sewage disposal plant—Nixon & Reynolds. Approved Aug. 31, 1926. (Not constructed.)  
 Neola—Sewer system and sewage disposal plant (1928)—Nixon & Reynolds. Not approved.  
 New Hampton—Sewer extensions—J. E. Dawson. Approved Sept. 10, 1926.  
 New Hampton—Sewer extensions—J. E. Dawson. Approved June 18, 1927.  
 Newton—Sewage disposal—Lafayette Higgins. Approved Feb. 14, 1927.  
 Oelwein—Sewer extension—Barber & Schenk. Approved July 14, 1926.  
 Oskaloosa—Sewer extensions—D. B. Russell. Approved July 9, 1927.  
 Sidney—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 31, 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 & Schenk. Approved Mar. 22, 1928.

#### MISCELLANEOUS PLANS

Ames—Swimming pool—Stark & Perkins. Approved July 22, 1928.  
 Denison—Swimming pool—Henningson & Perkins. Approved July 23, 1926.  
 Des Moines—Garbage incinerator—Bales Co. Not approved.  
 Des Moines—Swimming pool—Henningson Eng. Co. Approved 1926.  
 Estherville—Swimming pool—H. R. Green Engineering Co. Approved Oct. 13, 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

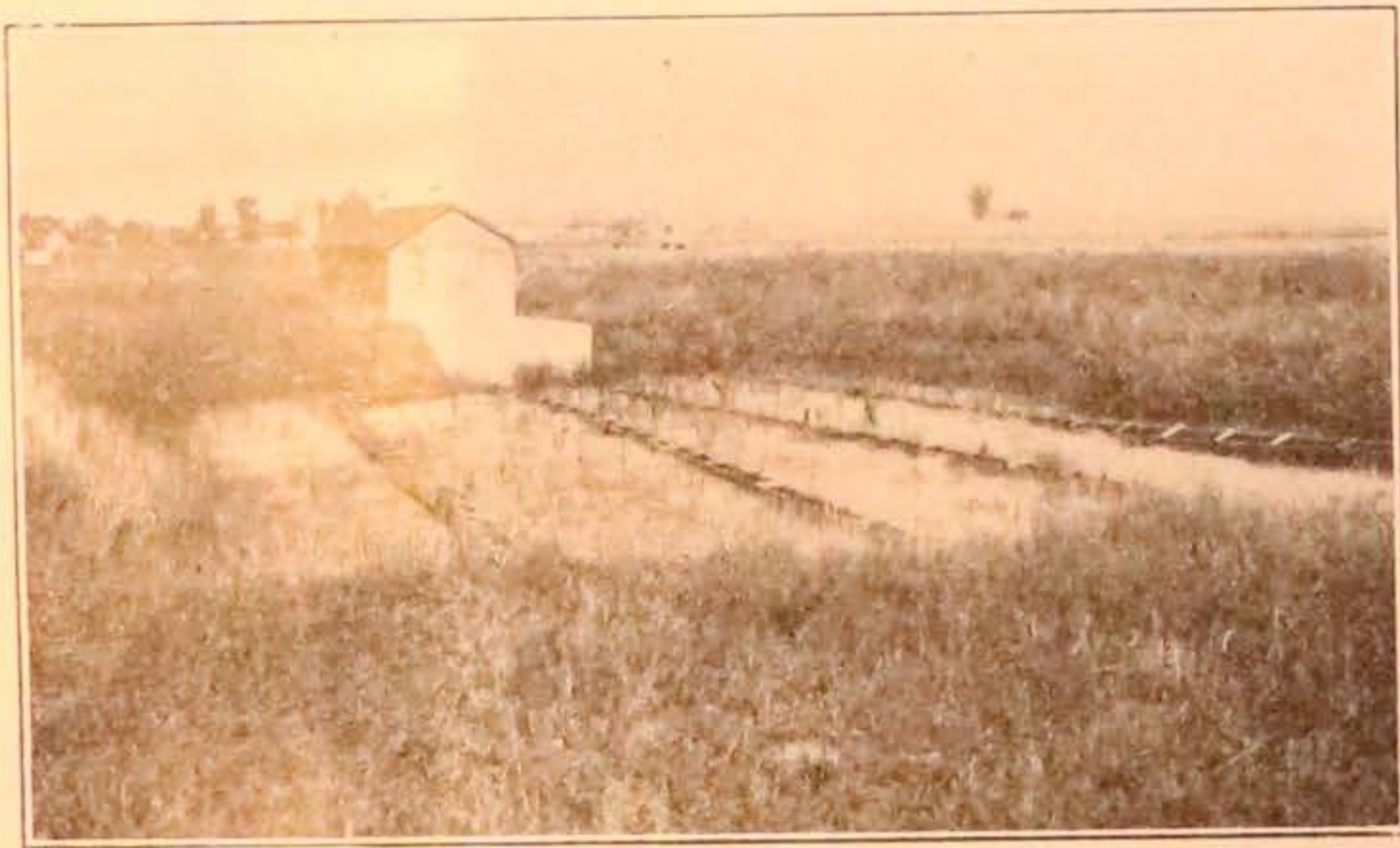
The U. S. P. H. S. regulations also provide for the inspection and certification of water supplies used aboard vessels plying in interstate traffic. Only one such vessel was listed in Iowa and this was inspected and unfavorably certified.

#### 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-



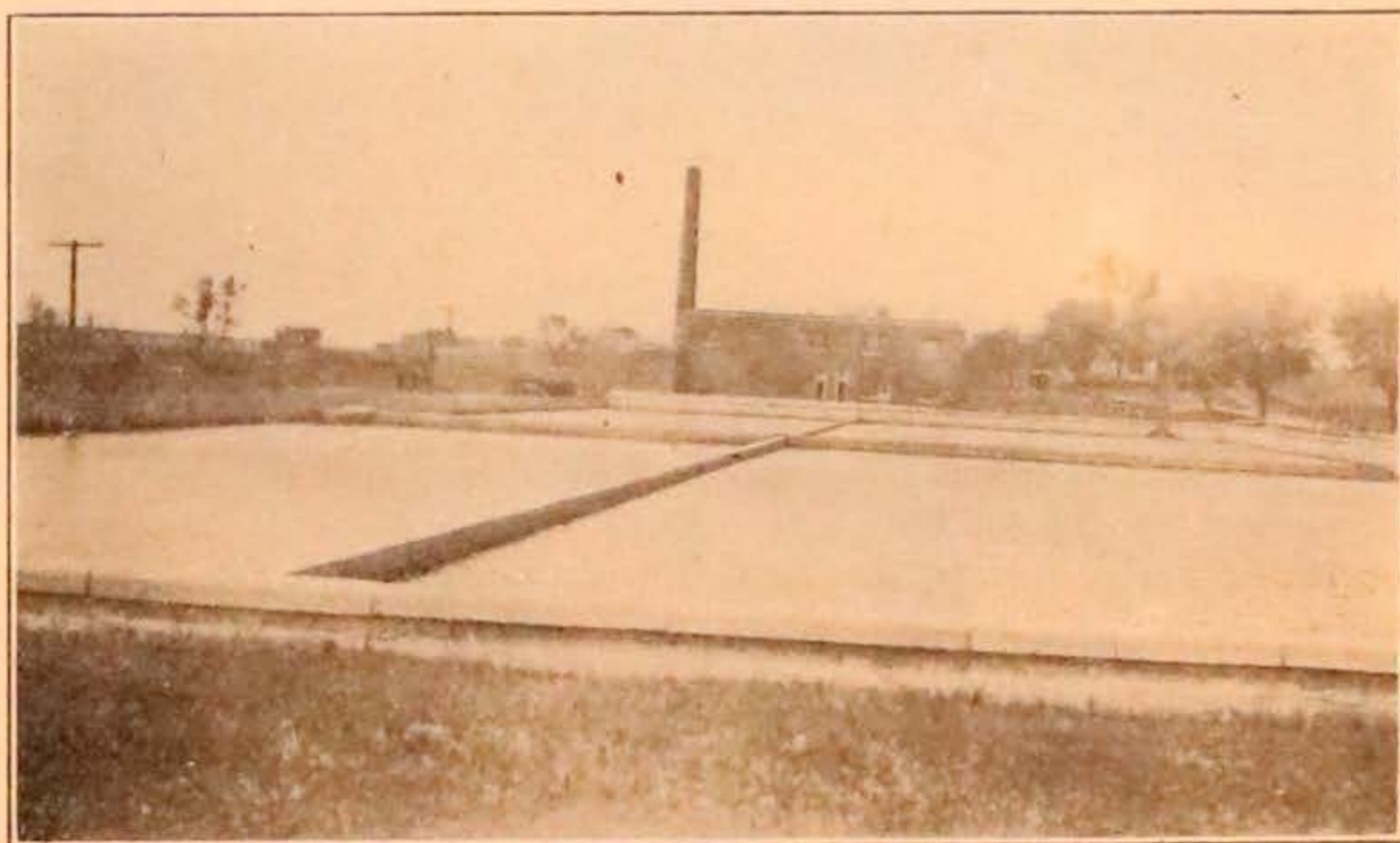
A badly neglected sewage treatment plant. Note weeds on sand filters, disarrangement at distribution troughs and general rundown condition.

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 8, '27.  
 Albia, July 11, '27.  
 Alton, Oct. 24, '27.  
 Anita, April 23, '28.  
 Anthon, July 26, '28.  
 Arcadia, Feb. 1, '27.  
 Arlington, March 23, '28.  
 Auburn, May 17, '27.  
 Audubon, March 19, '28.  
 Audubon, Jan. 31 and Feb. 1, '28.  
 Bedford, June 24, '27.  
 Bettendorf, Sept. 20, '27.  
 Blanchard, June 17, '27.  
 Bloomfield, July 13, '27.  
 Bonaparte, Sept. 12, '27.  
 Brandon, March 17, '28.  
 Burlington, Sept. 17, '27.  
 Calmar, Nov. 17, '27.  
 Carson, April 25, '28.  
 Cascade, Nov. 26, '27.  
 Castana, July 23, '26.  
 Centerville, July 12, '27.  
 Charlotte, March 12, '28.  
 Cherokee (State Institution), June 6, '28.  
 Clarinda, June 25, '27.  
 Clermont, Nov. 18, '27.  
 Clinton, Sept. 22, '27.  
 Coin, June 16, '27.  
 Columbus Junction, May 5, '27.  
 Corning, June 23, '27.  
 Correctionville, July 20, '26.  
 Creston, June 11, '27.  
 Cromwell, June 19, '27.  
 Cushing, July 20, '26.  
 Dallas Center, April 23, '28.  
 Danbury, July 26, '26.  
 Davenport, Sept. 19, '27.  
 Decorah, Oct. 17, '27.  
 Defiance, July 27, '26.  
 DeWitt, Sept. 21, '27.  
 Diagonal, June 28, '27.  
 Donnellson, Sept. 12, '27.  
 Dubuque, Nov. 25, '27.  
 Dunlap, July 28, '26.  
 Dyersville, Nov. 23, '27.  
 Earling, July 27, '26.  
 Earlville, Nov. 23, '27.  
 Earlville, March 14, '28.  
 Edgewood, Nov. 23, '27.  
 Eldon, June 16, '27.  
 Eldon, July 14, '27.  
 Eldora, Sept. 14, '27.  
 Eldora (State Institution), May 31, '28.  
 Elgin, March 21, '28.  
 Elkader, Nov. 22, '27.  
 Elliott, June 22, '27.  
 Emerson, June 16, '27.  
 Essex, June 18, '27.  
 Fairbanks, March 28, '28.  
 Fairfield, Sept. 9, 20, 21, 22, '27.  
 Fairfield, Sept. 9, '27.  
 Farley, March 14, '28.  
 Farmington, Sept. 12, '27.  
 Farragut, June 15, '28.  
 Fayette, March 22, '28.  
 Fort Madison, Sept. 14, '27.  
 Gilman, June 29, '27.  
 Glenwood, June 14, '27.  
 Grand Mound, Sept. 21, '27.  
 Grimes, July 17, '27.  
 Guttenberg, Nov. 22, '27.  
 Hamburg, June 15, '27.  
 Harlan, July 27, '26.  
 Hawkeye, March 21, '28.  
 Hedrick, June 30, '27.  
 Holy Cross, Nov. 22, '27.  
 Independence, March 19, '28.  
 Independence (State Institution), May 9, '28.  
 Keokuk, Sept. 12, '27.  
 Keosauqua, July 13, '27.  
 Kirkman, July 27, '26.  
 Kiron, June 6, '27.  
 Lansing, Oct. 17, '27.  
 Larrabee, Oct. 24, '27.  
 Lawton, July 20, '26.  
 Lenox, June 27, '27.  
 Logan, July 29, '26.  
 Lost Nation, March 12, '28.  
 Low Moor, Sept. 21, '27.  
 McGregor, Nov. 21, '27.  
 Malvern, June 16, '27.  
 Manchester, March 15, '28.  
 Manson, June 7, '28.  
 Mapleton, July 22, '26.  
 Marble Rock, Sept. 15, '27.  
 Marquette, Nov. 21, '27.  
 Massena, April 4, '27.  
 Massena, June 13, '27.  
 Maynard, March 22, '28.  
 Mediapolis, Sept. 17, '27.  
 Minden, April 29, '28.  
 Missouri Valley, July 29, '26.  
 Modale, July 28, '26.  
 Monona, Nov. 21, '27.  
 Moorhead, July 23, '26.  
 Moulton, July 12, '27.  
 Moville, July 20, '26.  
 Mt. Ayr, June 28, '27.  
 Mt. Pleasant, Sept. 10, '27.  
 Mt. Pleasant (State Institution), Sept. 10, '27.  
 New Albin, Nov. 29, '27.  
 New London, Sept. 10, '27.  
 New Vienna, Nov. 22, '27.  
 Oelwein, Oct. 15, '27.  
 Oelwein, March 26, '28.  
 Onawa, July 29, '26.  
 Ossian, Nov. 18, '27.  
 Oto, July 20, '26.  
 Ottumwa, July 15, '27.  
 Panama, July 27, '26.  
 Perry, Aug. 23, '27.  
 Peterson, Jan. 14, '27.  
 Pierson, July 20, '26.  
 Portsmouth, July 27, '26.  
 Postville, Nov. 11, '27.  
 Redfield, Jan. 10, '27.  
 Red Oak, June 22, '27.  
 Ryan, March 15, '28.  
 Rockwell City (Women's Reformatory), June 8, '28.  
 Sallix, July 24, '26.  
 Sergeant Bluff, July 24, '26.  
 Sheldahl, July 16, '26.  
 Sheldon, April 28, '27.  
 Shenandoah, June 17, '27.  
 Sidney, June 15, '27.  
 Sioux City, July 23, '26.  
 Sloan, July 24, '26.  
 Smithland, July 24, '26.  
 Soldier, July 29, '26.  
 Springville, April 28, '27.  
 Stanton, June 23, '27.  
 Strawberry Point, Nov. 22, '27.  
 Tabor, June 17, '27.  
 Thurman, June 16, '27.  
 Tyrone, June 3, '27.  
 Ute, July 29, '26.  
 Villisca, June 23, '27.  
 Viola, April 28, '27.  
 Waukon, Nov. 21, '27.  
 West Burlington, Sept. 16, '27.  
 West Point, Sept. 15, '27.  
 West Union, Nov. 18, '27.  
 What Cheer, Oct. 11, '27.  
 Wheatland, Sept. 22, '27.  
 Wheatland, March 10, '28.  
 Winfield, Sept. 10, '27.  
 Winthrop, March 15, '28.  
 Woodbine, July 29, '26.  
 Woodbine, Jan. 31, '28.

## SEWERAGE INSPECTIONS

Afton, June 8, '27.	Logan, July 29, '26.
Albert City, July 16, '26.	Lost Nation, March 10, '28.
Anthon, July 26, '26.	Lowden, Feb. 25, '27.
Arlington, March 23, '28.	McGregor, Nov. 21, '27.
Ashton, April 29, '27.	Madrid, May 7, '28.
Bedford, June 24, '27.	Madrid, June 15, '28.
Bettendorf, Sept. 20, '27.	Malvern, June 16, '27.
Bloomfield, July 13, '27.	Manchester, March 15, '28.
Boone, Jan. 29, '27.	Mapleton, July 22, '26.
Brandon, March 17, '28.	Marquette, Nov. 21, '27.
Brighton, Sept. 8, '27.	Maxwell, Sept. 5, '27.
Burlington, Sept. 14, '27.	Mediapolis, Sept. 17, '27.
Burlington, Sept. 17, '27.	Missouri Valley, July 29, '26.
Burt, Jan. 11, '28.	Mitchellville, July 8, '27.
Calmar, Nov. 17, '27.	Monona, Nov. 21, '27.
Carroll, June 2, '27.	Moulton, July 13, '27.
Cascade, Nov. 26, '27.	Moville, July 20, '26.
Centerville, July 12, '27.	Mt. Ayr, 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. 10, '27.
Correctionville, July 20, '26.	Newton, Oct. 7, '27.
Cresco, Oct. 15, '27.	Newton, Sept. 10, '27.
Creston, June 10, '27.	Newton, March 17, '27.
Cromwell, June 19, '27.	Oelwein, Oct. 13, 14, 15, '27.
Cushing, July 20, '26.	Oelwein, March 26, '28.
Danbury, July 26, '26.	Onawa, July 29, '26.
Davenport, Sept. 19, '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 28, '26.	Ottumwa, Sept. 18, '27.
Dyersville, Nov. 23, '27.	Perry, Aug. 23, '27.
Eldon, July 14, '27.	Pierson, July 20, '28.
Eldora (State Institution), May 31, '28.	Postville, Nov. 18, '27.
Elkader, Nov. 22, '27.	Red Oak, June 22, '27.
Elliott, June 22, '27.	Rockwell City (Woman's Reforma- tory), June 8, '28.
Emmetsburg, 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. 20, 21, 22, '27.	Sioux City, July 23, '26.
Farley, March 14, '28.	Solon, May 16, '27.
Farlington, Sept. 12, '27.	Spencer, June 6, '28.
Farragut, June 15, '27.	Stanton, June 23, '27.
Fayette, March 22, '28.	Stratford, May 21, '28.
Fort Madison, Sept. 14, '27.	Strawberry Point, Nov. 22, '27.
Glenwood, June 14, '27.	Sutherland, July 18, '27.
Grand Mound, 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.
Hazelton, March 23, '28.	Wellsburg, Oct. 18, '27.
Independence, March 19, '28.	West Burlington, Sept. 16, '27.
Independence (State Hospital), May 9, '28.	West Union, Sept. 15, '27.
Iowa Falls, May 17, '27.	West Union, Nov. 18, '27.
Keokuk, Sept. 12, '27.	What Cheer, Oct. 11, '27.
Lansing, Oct. 17, '27.	Winfield, Sept. 10, '27.
Lenox, June 27, '27.	Woodbine, July 29, '26.

## 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 manure rubbish, row privies and well at foot of slope below privies.

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 Okoboji, on the south shore of Lake Okoboji. 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

Arispe, June 8, '27.	Hamburg, June 15, '27.
Belle Plaine, Oct. 18, '27.	Harlan, July 27, '26.
Belle Plaine, Oct. 18, '27.	Independence, June 17, '27.
Bonaparte, Sept. 12, '27.	Jefferson, Aug. 25, '27.
Burlington, Sept. 17, '27.	Lenox, June 27, '27.
Cascade, Nov. 26, '27.	Logan, July 29, '26.
Cedar Rapids, Oct. 15, '27.	Lorimor, June 9, '27.
Cedar Rapids, Jan. 24, 25, '28.	McGregor, Nov. 21, '27.
Centerville, July 12, '27.	Malvern, June 16, '27.
Charles City, Nov. 15, '27.	Manson, Aug. 17, '27.
Clarinda, June 25, '27.	Mapleton, July 22, '26.
Clarion, Aug. 16, '27.	Marshalltown, June 15, '27.
Clear Lake, June 20, '27.	Mason City, Jan. 20, 21, 22, '27.
Clinton, June 1, 2, '27.	Mason City, Feb. 24, 25, '28.
Correctionville, July 20, '26.	Missouri Valley, July 29, '26.
Creston, June 11, '27.	Modale, July 28, '26.
Cromwell, June 19, '27.	Moorhead, July 23, '26.
Cushing, July 20, '26.	Mt. Ayr, June 28, '27.
Davenport, Sept. 19, '27.	Mt. Pleasant, Sept. 10, '27.
Decorah, Oct. 17, '27.	Muscatine, Nov. 30, '27.
Des Moines, Aug. 23, '27.	New London, Sept. 10, '27.
Donnellson, Sept. 12, '27.	Newton, Aug. 23, '27.
Dubuque, Nov. 25, '27.	Newton, Sept. 10, '27.
Dunlap, July 28, '26.	Oelwein, Oct. 15, '27.
Eagle Grove, June 7, '28.	Onawa, July 29, '26.
Elkader, Nov. 22, '27.	Oskaloosa, Sept. 9, '27.
Elkader, Nov. 22, '27.	Ottumwa, July 15, '27.
Emerson, June 16, '27.	Red Oak, June 22, '27.
Estherville, June 4, '28.	Shenandoah, June 17, '27.
Fairfield, Sept. 9, '27.	Sidney, June 15, '27.
Farmington, Sept. 10, '27.	Sloan, July 24, '26.
Fort Des Moines, Oct. 3, '27.	Soldier, July 29, '26.
Glenwood, June 14, '27.	Tama, Oct. 18, '27.
Grand Junction, April 10, '28.	Ute, July 29, '26.
Granger, June 7, '27.	Valley Junction, May 4, '27.
Gravity, March 25, '27.	Valley Junction, April 27, '27.
Great Lake Region, June 4, 5, '28.	Villisca, June 23, '27.
Guttenberg, Nov. 22, '27.	Waterloo, July 20, '27.

Waterloo, Jan. 20, 21, 22, '27.  
Waukon, Nov. 21, '27.  
Webster City, Dec. 18, '26.  
Webster City, Feb. 20, '28.  
West Liberty, Sept. 23, '27.

Wheatland, Sept. 22, '27.  
Winfield, Sept. 10, '27.  
Winterset, April 4, '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 group 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 with 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 as 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.

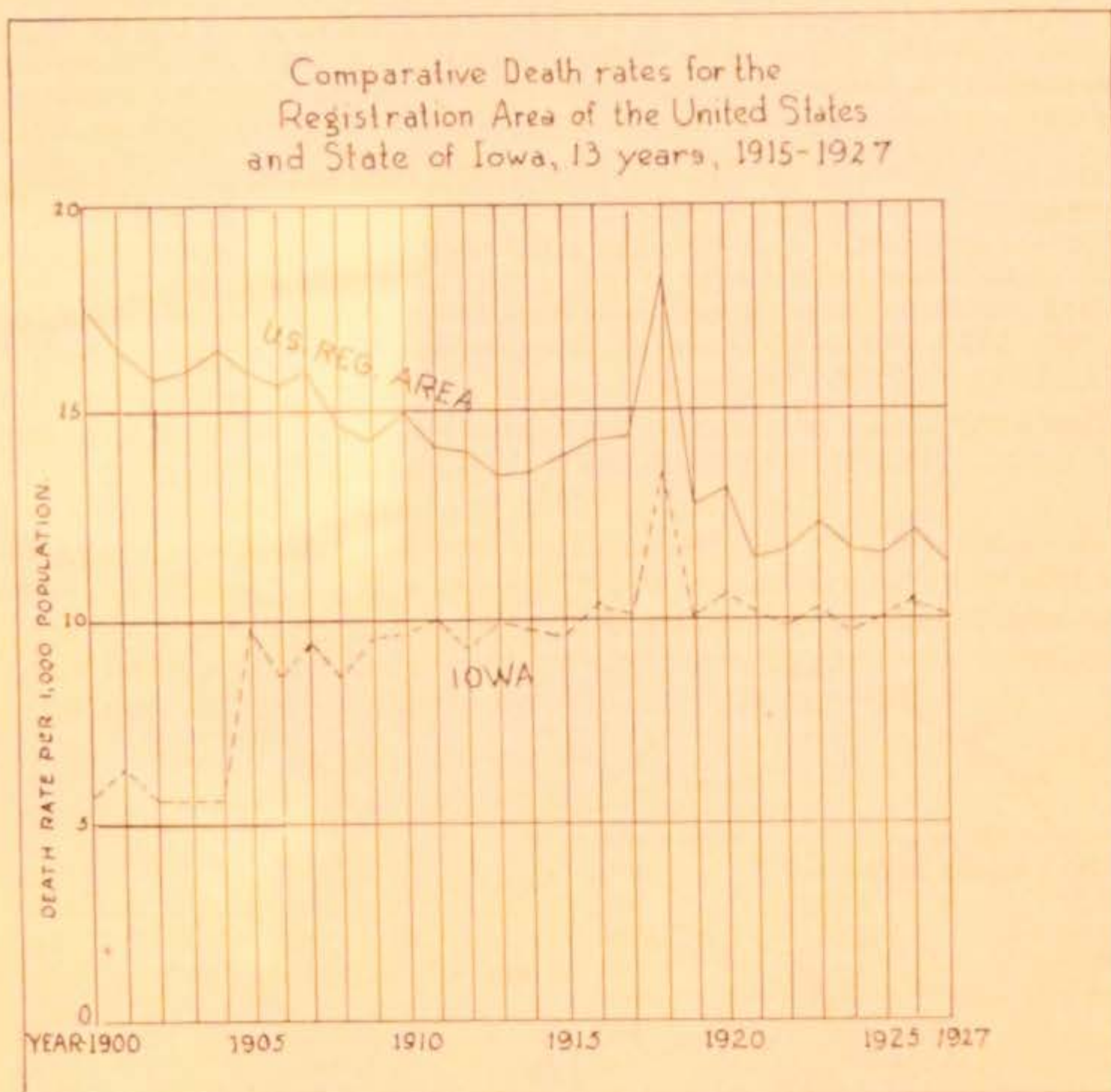
## CLASSIFICATION OF CAUSE OF DEATHS

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 (7.8) 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 1920. For 27 of those cities the 1926 infant mortality rates were higher than those of the previous year, the highest 1926 rate (107.4) being for Richmond, Va., and the lowest (38.7) 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.

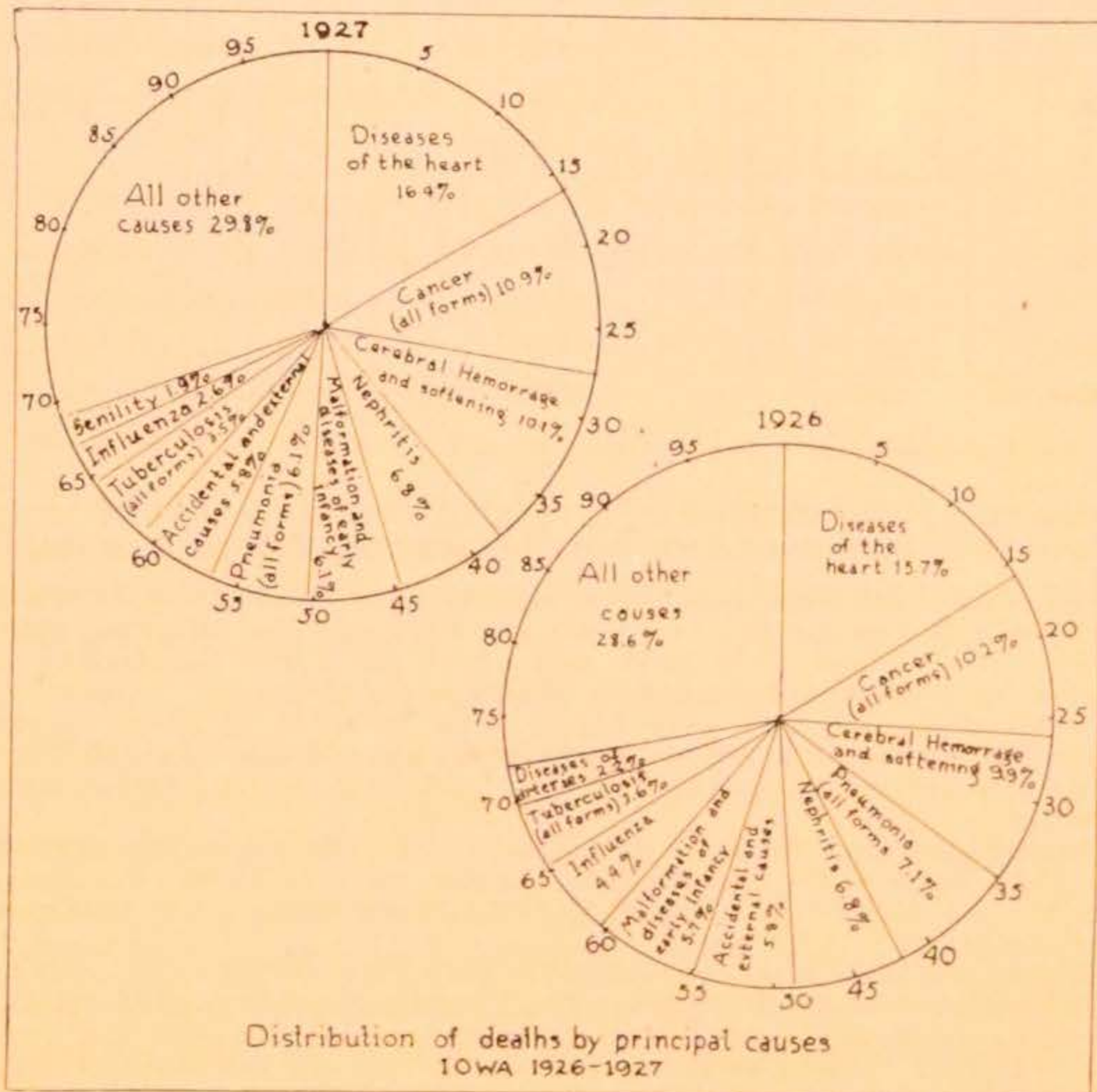
Death rates for 1927 were lower than for 1926 in 28 of the 33 States shown for both years. The highest 1927 death rate (13.9 per 1,000 population) is shown for Vermont and the lowest (7.1) for Idaho.

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 (125.8) 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 10.4 (per 1,000 population) for 1926 while for 1927 it was 10.1. 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 6,723 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.

## COLOR

Out of 24,532 deaths reported for 1927 there were 24,198 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  
YEAR 1926

DISEASE	NUMBER OF DEATHS	RATE PER 100,000 POP.	PER CENT OF TOTAL DEATHS
Diseases of the heart.....	3,970	163.8	15.75
Cancer (All Forms).....	2,593	107.0	10.29
Cerebral Hemorrhage & Softening .....	2,516	103.8	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	3.64
Diseases of the Arteries.....	555	22.9	2.2
Total.....	18,121		71.87

## YEAR 1927

DISEASE	NUMBER OF DEATHS	RATE PER 100,000 POP.	PER CENT OF TOTAL DEATHS
Diseases of the Heart.....	4,036	165.9	16.45
Cancer (All Forms).....	2,689	110.8	10.90
Cerebral Hemorrhage & Softening .....	2,490	102.6	10.15
Nephritis .....	1,690	69.6	6.88
Malformations and Diseases of Early Infancy .....	1,512	62.3	6.16
Pneumonia (All Forms) .....	1,508	62.1	6.14

Accidental and unspecified external causes .....	1,446	59.6	5.89
Tuberculosis (All Forms).....	873	35.9	3.55
Influenza .....	648	26.7	2.64
Senility .....	489	20.1	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.....	405	342	467	389
5 to 9 years.....	225	180	223	199
10 to 14 years.....	176	131	187	132
15 to 19 years.....	250	206	215	186
20 to 24 years.....	268	250	233	268
25 to 29 years.....	246	283	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	368
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	1,096
85 to 89 years.....	596	620	660	683
90 to 94 years.....	234	250	241	263
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				
Single .....	6,792	7,044		
Married .....	10,490	11,011		
Widowed .....	6,723	6,846		
Divorced .....	427	394		
Unknown .....	100	171		

CAUSES OF DEATHS

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

7.	Measles .....	225	63
8.	Scarlet Fever .....	41	46
9.	Whooping Cough .....	195	163
10.	Diphtheria .....	121	111
11.	Influenza .....	648	1,118
13.	Mumps .....	3	1
15.	Cholera nostras .....	2	5
16.	Dysentery .....	24	44
21.	Erysipelas .....	63	59
22.	Acute poliomyelitis .....	28	12
23.	Lethargic encephalitis .....	16	26
24.	Meningococcus meningitis .....	21	17
25.	Other epidemic and endemic diseases .....	7	6
28.	Rabies .....	1	0
29.	Tetanus .....	41	40
30.	Mycoses .....	4	3
TUBERCULOSIS (ALL FORMS) .....		873	918
31.	T. B. Respiratory System .....	739	774
32.	T. B. Meninges and central nervous system .....	47	34
33.	T. B. Intestines and peritoneum .....	31	40
34.	T. B. of vertebral column .....	14	12
35.	T. B. of the joints .....	2	7
36.	T. B. of other organs .....	24	21
37.	Disseminated tuberculosis .....	16	30
	(a) Acute .....	13	25
	(b) Chronic .....	3	5
38.	Syphilis .....	117	101
40.	Gonococcus infection .....	15	15
41.	Purulent infection, septicemia .....	39	34
42.	Other infectious diseases .....	0	2
GENERAL DISEASES NOT INCLUDED IN GROUP 1 .....			
..... (Group 2)		3,785	3,898
CANCER (ALL FORMS) .....		2,689	2,593
43.	Cancer and other malignant tumors of the buccal cavity .....	81	72
44.	Cancer and other malignant tumors of the stomach and liver .....	1,024	1,007
45.	Cancer and other malignant tumors of peritoneum, intestines and rectum .....	415	388
46.	Cancer and other malignant tumors of female genital organs .....	272	278
47.	Cancer and other malignant tumors of the breast .....	233	218
48.	Cancer and other malignant tumors of the skin .....	75	67
49.	Cancer and other malignant tumors of other or unspecified organs .....	589	563
50.	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted) .....	12	32
51.	Acute rheumatic fever .....	51	59
52.	Chronic rheumatism, osteoarthritis, gout .....	36	44
53.	Scurvy .....	0	1
54.	Pellagra .....	2	5
56.	Rickets .....	5	2
57.	Diabetes Mellitus .....	433	488
58.	Anemia, Chlorosis .....	234	310
59.	Diseases of the pituitary gland .....	2	3
60.	Diseases of the thyroid gland .....	130	236
	(a) Exophthalmic goiter .....	111	118
	(b) Other diseases of the thyroid gland .....	19	18
61.	Diseases of the parathyroid glands .....	0	1
62.	Diseases of the thymus gland .....	23	25
63.	Diseases of the adrenals (Addison's Disease) .....	10	14
64.	Diseases of the spleen .....	3	4
65.	Leukemia and Hodgkin's disease .....	88	80
	(a) Leukemia .....	61	56
	(b) Hodgkin's disease .....	27	24
66.	Alcoholism (acute or chronic) .....	53	51
67.	Chronic poisoning by mineral substances .....	1	3
	(a) Chronic lead poisoning .....	1	2
	(b) Others under this title .....	0	1
68.	Chronic poisoning by organic substances .....	4	1
69.	Other general diseases .....	29	46
DISEASES OF NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE .....			
..... (Group 3)		3,326	3,379
70.	Encephalitis .....	46	43
71.	Meningitis (not meningococcal, tuberculous or rheumatic, etc.) .....	55	56
	(a) Simple meningitis .....	45	48
	(b) Non-epidemic cerebrospinal meningitis .....	10	7
72.	Tabes dorsalis (locomotor ataxia) .....	30	17
73.	Other diseases of the spinal cord .....	100	105



74.	Cerebral hemorrhage, apoplexy.....	2,476	1,494
	(a) Cerebral hemorrhage .....	2,380	1,391
	(b) Cerebral thrombosis and embolism.....	96	103
75.	Paralysis without specified cause.....	75	109
76.	General paralysis of the insane .....	92	105
77.	Other forms of mental alienation .....	59	62
78.	Epilepsy .....	71	84
79.	Convulsions (non puerperal) (5 years and over).....	2	4
80.	Infantile convulsions (under 5 years of age).....	23	31
81.	Chorea .....	1	1
82.	Neuralgia and neuritis .....	12	13
83.	Softening of the brain .....	14	22
84.	Other diseases of nervous system.....	158	140
85.	Diseases of the eye and annexa.....	5	1
86.	Diseases of the ear and of the mastoid process.....	117	93
	(a) Diseases of the ear.....	47	44
	(b) Diseases of mastoid process.....	60	49
DISEASES OF THE CIRCULATORY SYSTEM....(Group 4)		4,705	4,643
87.	Pericarditis .....	24	21
88.	Endocarditis and myocarditis (acute).....	139	108
89.	Angina pectoris .....	404	385
90.	Other diseases of the heart.....	3,469	3,456
91.	Diseases of the arteries.....	521	555
92.	Embolism and thrombosis (not cerebral).....	108	83
93.	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.) .....	30	21
94.	Diseases of the lymphatic system (lymphangitis, etc.) .....	5	6
95.	Hemorrhage without specified cause.....	1	2
96.	Other diseases of circulatory system.....	4	6
DISEASES OF THE RESPIRATORY SYSTEM....(Group 5)		1,833	1,970
97.	Diseases of the nasal fossae and their annexa.....	26	26
	(a) Diseases of the nasal fossae.....	3	6
	(b) Others under this title.....	23	20
98.	Diseases of the larynx .....	9	21
99.	Bronchitis .....	110	117
	(a) Acute .....	22	34
	(b) Chronic .....	55	54
	(c) & (d) Not otherwise defined.....	33	29
100.	Bronchopneumonia (including capillary bronchitis)	682	830
	(a) Bronchopneumonia .....	672	806
	(b) Capillary bronchitis .....	10	24
101.	Pneumonia .....	826	981
	(a) Lobar .....	805	899
	(b) Not otherwise defined.....	21	82
102.	Pleurisy .....	41	54
103.	Congestion and hemorrhagic infarct of the lung..	44	55
104.	Gangrene of the lung.....	1	6
105.	Asthma .....	44	45
106.	Pulmonary emphysema .....	1	2
107.	Other diseases, respiratory system (T. B. excepted)	15	25
DISEASES OF THE DIGESTIVE SYSTEM....(Group 6)		1,833	1,970
108.	Diseases of the mouth and annexa.....	18	21
109.	Diseases of pharynx and tonsils (including adenoid vegetations) .....	79	84
	(a) Adenoid vegetations .....	0	0
	(b) Others under this title.....	79	84
110.	Disease of the esophagus.....	0	3
111.	Ulcer of stomach and duodenum.....	169	153
	(a) Ulcer of the stomach.....	112	108
	(b) Ulcer of the duodenum.....	57	45
112.	Other diseases of the stomach (cancer excepted)..	94	95
113.	Diarrhea and enteritis (2 year of age).....	195	259
114.	Diarrhea and enteritis (2 years and over).....	145	155
116.	Diseases due to other intestinal parasites.....	1	0
117.	Appendicitis and typhlitis .....	399	385
118.	Hernia, intestinal obstruction.....	266	308
	(a) Hernia .....	92	99
	(b) Intestinal obstruction .....	174	209
119.	Other diseases of the intestines.....	31	34
120.	Acute yellow atrophy of the liver.....	4	7
121.	Hydatid tumor of liver .....	1	0
122.	Cirrhosis of the liver .....	144	137
123.	Biliary calculi .....	110	111
124.	Other diseases of the liver.....	148	163
125.	Diseases of the pancreas.....	14	14
126.	Peritonitis without specified cause.....	35	41
NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA....(Group 7)		2,157	2,163

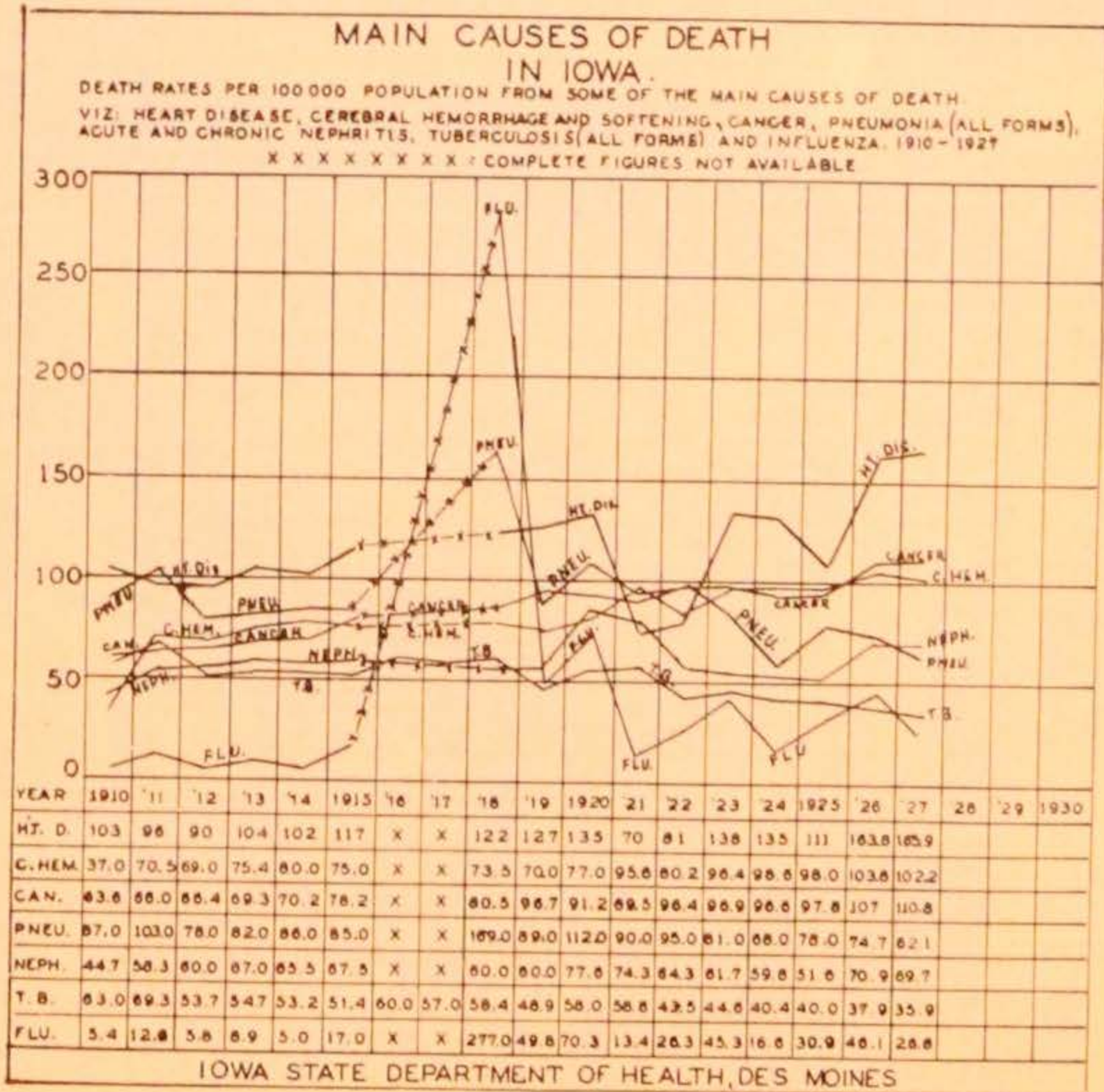
128.	Acute nephritis (including unspecified under 10 years of age) .....	81	82
129.	Chronic nephritis (including unspecified 10 years and over) .....	1,609	1,637
131.	Other diseases of the kidneys and annexa (diseases of kidneys in pregnancy excepted).....	74	51
132.	Calculi of urinary passages .....	31	16
133.	Diseases of the bladder .....	27	32
134.	Diseases of urethra, urinary abscess, etc.....	5	5
135.	Diseases of the prostate.....	216	221
136.	Non-venereal diseases of the male genital organs..	1	4
137.	Cysts and other benign tumors of the ovary.....	21	15
138.	Salpingitis and pelvic abscess.....	25	28
139.	Benign tumors of the uterus.....	48	50
140.	Non-puerperal uterine hemorrhage.....	0	1
141.	Other diseases of female genital organs.....	19	21
<b>THE PUERPERAL STATE.....(Group 8)</b>			
143.	Accidents of pregnancy.....	26	31
144.	Puerperal hemorrhage .....	27	26
145.	Other accidents of labor.....	25	29
146.	Puerperal septicemia .....	118	97
147.	Puerperal phlegmasia alba dolens, embolus, sudden death .....	19	15
148.	Puerperal albuminuria and convulsions.....	46	75
149.	Following childbirth (not otherwise defined).....	2	3
<b>DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.....(Group 9)</b>			
151.	Gangrene .....	43	38
152.	Furuncle .....	12	11
153.	Acute abscess .....	7	11
154.	Other diseases of skin and annexa .....	18	22
<b>DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION.....(Group 10)</b>			
155.	Diseases of bones (tuberculosis excepted).....	34	27
156.	Diseases of joints (T. B. and rheumatism excepted)	5	2
158.	Other diseases of the organs of locomotion.....	1	4
<b>MALFORMATIONS.....(Group 11)</b>			
159.	Congenital malformations (stillbirths not included)		
	(a) Hydrocephalus .....	34	46
	(b) Congenital malformations of the heart.....	188	174
	(c) Others under this title .....	121	123
<b>EARLY INFANCY.....(Group 12)</b>			
160.	Congenital debility, icterus and sclerema.....	131	139
*161.	Premature birth; injury at birth.....	952	891
	(a) Premature birth .....	756	706
	(b) Injury at birth .....	196	185
162.	Other diseases peculiar to early infancy.....	85	82
163.	Lack of care .....	1	1
<b>OLD AGE.....(Group 13)</b>			
164.	Senility .....	489	527
<b>EXTERNAL CAUSES.....(Group 14)</b>			
<b>SUICIDE (TOTAL).....</b>			
165.	Suicide by solid or liquid poisons (corrosive substances excepted) .....	422	367
166.	Suicide by corrosive substances .....	30	29
167.	Suicide by poisonous gas .....	36	31
168.	Suicide by poisonous gas .....	57	37
169.	Suicide by hanging or strangulation.....	115	108
170.	Suicide by drowning .....	17	15
171.	Suicide by firearms .....	132	120
172.	Suicide by cutting or piercing instruments.....	21	18
173.	Suicide by jumping from high places .....	6	2
174.	Suicide by crushing .....	3	4
175.	Other suicides .....	5	3
176.	Poisoning by food .....	10	9
177.	Poisoning by venomous animals.....	1	2
178.	Other acute accidental poisonings (gas excepted)..	30	28
179.	Conflagration .....	23	21
180.	Accidental burns (conflagration excepted) .....	55	94
181.	Accidental mechanical suffocation .....	21	24
182.	Accidental absorption of irrespirable or poisonous gas .....	47	34
183.	Accidental drowning .....	94	93
184.	Accidental traumatism by firearms (wounds of war excepted) .....	49	44
185.	Accidental traumatism by cutting or piercing instruments .....	15	15
186.	Accidental traumatism by fall.....	417	389
	(a) Mines .....	21	24
	(b) Quarries .....	20	21
		1	3

187.	Accidental traumatism by machines.....	41	42
188.	Accidental traumatism by other crushing (vehicles, railways, landslides, etc.).....	460	493
	(a) Railroad accidents.....	120	169
	(b) Street car accidents.....	8	11
	(c) Automobile.....	284	264
	(d) Aeroplane and balloon accidents.....	6	3
	(e) Injuries by other vehicles.....	42	35
	(f) Landslides, other crushing.....	14	13
189.	Injuries by animals (not poisoning).....	31	25
193.	Excessive cold.....	5	4
194.	Excessive heat.....	15	8
195.	Lightning.....	8	5
196.	Other accidental electric shocks.....	16	19
	HOMICIDE (TOTAL).....	59	57
197.	Homicide by firearms.....	35	44
198.	Homicide by cutting or piercing instruments.....	2	6
199.	Homicide by other means.....	22	7
201.	Fracture (cause not specified).....	5	7
202.	Other external violence (cause specified).....	82	82
	ILL DEFINED DISEASES.....(Group 15)	145	146
204.	Sudden death.....	28	32
205.	Not specified or ill-defined.....	117	114
	TOTAL.....	24,532	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,



Henry\*—18.4 and Buchanan\*—17.0. For 1927 the counties having the highest rates were: Johnson—20.6, Henry—18.6 and Buchanan—16.8.

The three counties having the lowest rates for the year 1926 were: Humboldt—5.6, Grundy—6.6 and Osceola—6.8. 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 (17.9).

The three cities having the lowest death rates for 1926 were: Cedar Rapids (10.6), Des Moines (11.7) and Mason City and Waterloo with (11.8) each. For 1927 they were: 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 13.4 compared with the rate of 12.9 for 1927. For the year 1927 out of 24,532 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	24,532	10.4	10.1
Adair.....	129	107	9.6	7.9
Adams.....	86	70	8.4	6.8
Allamakee.....	183	144	11.1	8.8
Appanoose.....	276	268	9.8	9.6
Audubon.....	94	91	7.0	7.4
Benton.....	218	199	9.4	8.7
Black Hawk.....	650	564	11.4	9.8
Boone.....	322	327	10.9	10.5
Bremer.....	174	185	10.4	11.0
Buchanan.....	317	294	17.0	16.8
Buena Vista.....	167	166	9.0	8.9
Butler.....	142	143	7.9	7.9
Calhoun.....	122	139	6.9	7.9
Carroll.....	233	230	10.7	10.6
Cass.....	207	189	10.9	10.0
Cedar.....	145	159	8.6	10.5
Cerro Gordo.....	393	379	10.4	9.1
Cherokee.....	232	251	14.2	15.5
Chickasaw.....	132	139	8.8	9.3
Clarke.....	123	104	12.3	10.5
Clay.....	139	124	9.0	7.9
Clayton.....	237	219	9.8	9.0
Clinton.....	501	532	10.9	11.5
Crawford.....	173	147	8.6	7.2
Dallas.....	243	217	9.6	8.5
Davis.....	99	117	8.3	9.8
Decatur.....	162	149	10.7	9.8
Delaware.....	192	180	10.8	10.0
Des Moines.....	492	477	12.8	12.2
Dickinson.....	84	90	7.7	8.2

## 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	780	12.4	12.9
Emmet.....	123	110	9.5	8.3
Fayette.....	276	250	9.5	8.5
Floyd.....	162	189	9.2	10.7
Franklin.....	133	148	8.3	9.2
Fremont.....	132	105	8.9	7.0
Greene.....	109	114	6.8	7.1
Grundy.....	92	89	6.6	6.4
Guthrie.....	154	136	9.2	7.9
Hamilton.....	210	189	10.0	9.0
Hancock.....	108	101	7.5	7.0
Hardin.....	213	212	9.5	9.5
Harrison.....	202	185	8.6	7.9
Henry.....	312	313	18.4	18.6
Howard.....	137	129	10.4	9.8
Humboldt.....	70	84	5.6	6.6
Ida.....	105	105	9.1	9.0
Iowa.....	173	165	9.7	9.3
Jackson.....	193	239	10.0	12.5
Jasper.....	303	306	10.5	10.6
Jefferson.....	193	167	11.8	10.2
Johnson.....	626	643	20.4	20.6
Jones.....	188	183	10.6	10.4
Keokuk.....	182	190	9.1	9.5
Kossuth.....	175	173	6.9	6.9
Lee.....	558	552	14.6	14.5
Linn.....	827	870	10.1	10.5
Louisa.....	135	126	11.6	10.9
Lucas.....	145	147	9.3	9.3
Lyon.....	114	105	7.4	6.7
Madison.....	132	141	9.1	9.7
Mahaska.....	286	284	10.7	10.6
Marion.....	265	211	10.7	8.6
Marshall.....	525	421	15.9	12.7
Mills.....	145	146	10.8	11.3
Mitchell.....	123	116	8.5	8.0
Monona.....	143	109	8.6	6.6
Monroe.....	228	186	11.5	10.2
Montgomery.....	172	177	10.4	10.8
Muscatine.....	365	373	12.5	12.8
O'Brien.....	170	135	9.4	7.6
Osceola.....	66	89	6.8	8.1
Page.....	332	336	14.3	14.6
Palo Alto.....	104	99	6.9	6.6
Plymouth.....	197	164	8.3	6.9
Pocahontas.....	132	106	8.7	7.0
Polk.....	1,923	1,856	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	156	8.4	9.1
Scott.....	866	879	12.6	12.9
Shelby.....	125	101	7.7	6.2
Sioux.....	207	203	7.9	7.6
Story.....	293	243	9.7	7.8
Tama.....	201	187	9.1	8.5
Taylor.....	156	134	10.3	8.9
Union.....	199	176	11.7	10.4
Van Buren.....	127	134	9.4	10.0
Wapello.....	482	463	11.0	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	8.9
Washington.....	194	204	10.1	10.8
Wayne.....	134	142	9.2	9.8
Webster.....	404	305	9.9	8.9
Winneshiek.....	97	87	7.3	6.5
Winneshiek.....	216	178	10.1	8.4
Woodbury.....	1,109	1,039	11.2	10.4
Worth.....	93	84	8.3	7.5
Wright.....	162	153	7.9	7.5

## 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	8,643	13.4	12.9
Boone.....	162	166	12.6	12.9
Burlington.....	387	385	14.3	14.2
Cedar Rapids.....	552	600	10.6	11.4
Clinton.....	369	361	13.5	13.0
Council Bluffs.....	525	534	12.7	12.9
Davenport.....	745	760	14.7	17.1
Des Moines.....	1,716	1,628	11.7	11.0
Dubuque.....	619	625	14.8	14.9
Fort Dodge.....	283	266	12.5	11.8
Fort Madison.....	181	182	16.3	16.7
Iowa City*.....	438	483	26.1	28.8
Keokuk.....	263	271	18.1	18.7
Marshalltown.....	299	255	17.4	14.4
Mason City.....	277	259	11.8	10.5
Muscatine.....	234	251	13.6	14.1
Ottumwa.....	376	358	13.7	12.9
Sloux City.....	970	881	12.4	11.2
Waterloo.....	435	378	11.8	10.2

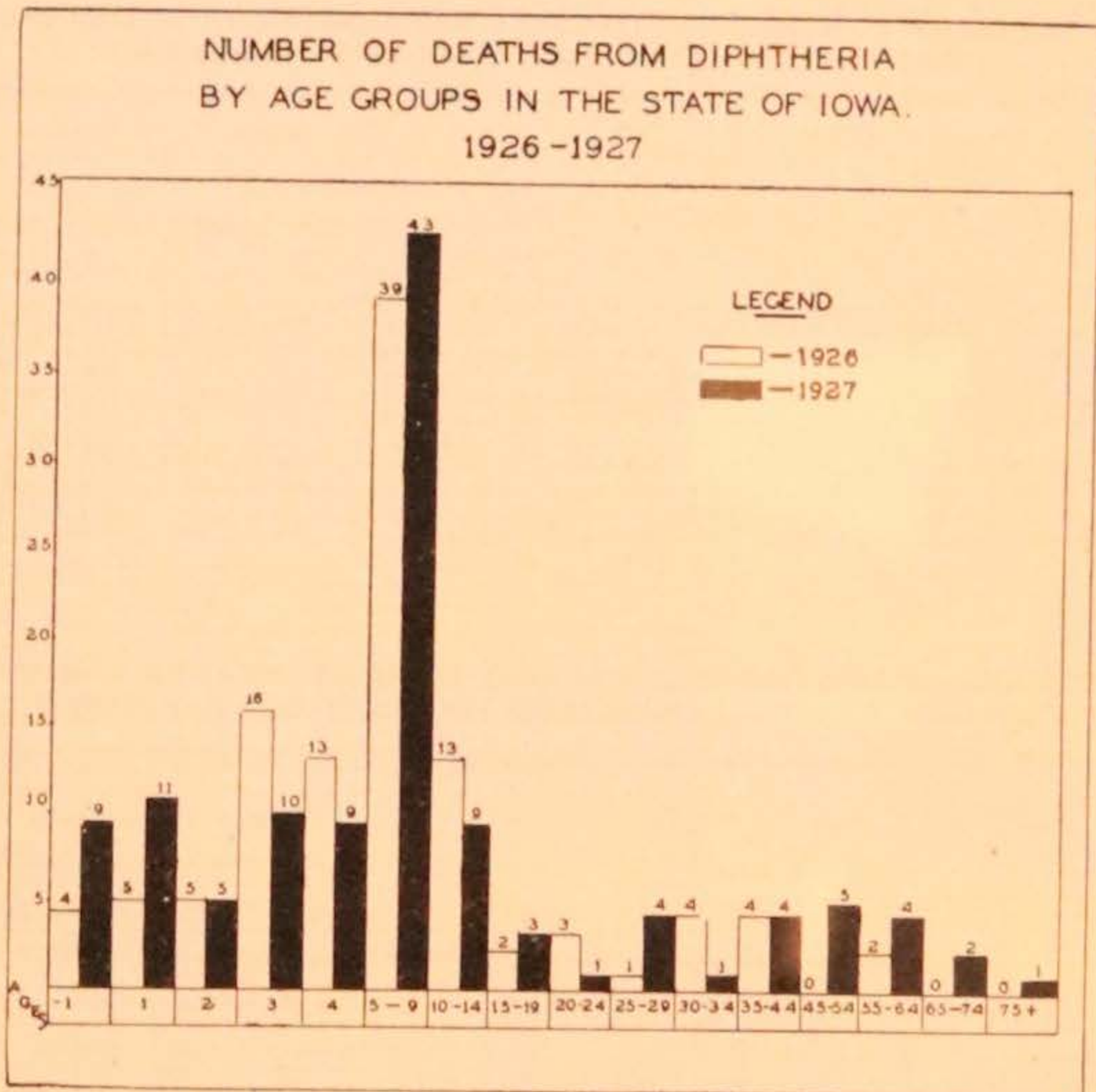
\*State University Hospital located at Iowa City.

Estimated population for 18 cities for year 1926 was 658,527 and for 1927 it was 667,530.

## 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 (28.9), 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 (25.0) 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

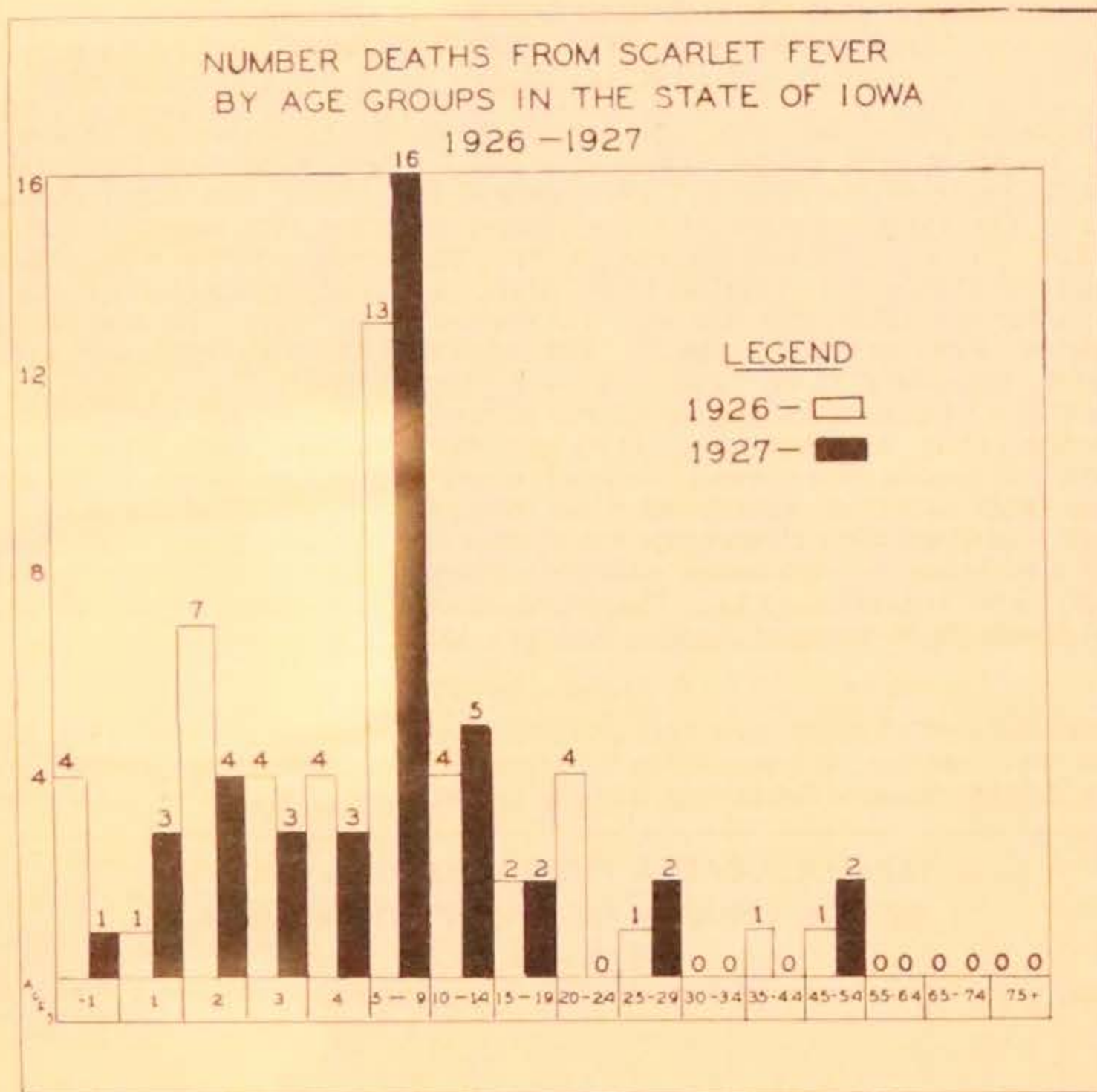
(Cities Included Within Counties)

Area	No. of Deaths Diphtheria		Rates		No. of Deaths Scarlet Fever		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Total for the State	111	121	4.6	4.8	46	41	1.9	1.7
Adair		1		7.4				
Adams		1		9.9				
Allamakee		1		6.1				
Appanoose	4	1	14.2	3.2	1		3.5	
Audubon		2		17.0		2		17.0
Benton		1		4.4		1		4.4
Black Hawk		2		3.4		1		1.7
Boone	5	3	17.0	10.3				
Bremer	4		23.8					
Buchanan	1	3	5.5	17.1		1		5.7
Buena Vista	1		5.4			1		5.4
Butler								
Calhoun						1		5.6
Carroll	1	1	4.5	4.5				
Cass					3		15.3	
Cedar	3	1	17.9	6.9	2		10.8	
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			1		6.7
Clarke								
Clay		1		6.5				
Clayton	1	1	4.1	4.1	2		8.2	
Clinton	1	2	2.1	4.3	1		2.1	
Crawford		1		4.5		3		14.7
Dallas	2		7.9			1		3.9
Davis						1		8.5
Decatur	1	1	6.6	6.5				
Delaware		1		5.6		1		5.6
Des Moines	2	4	7.4	10.3				
Dickinson								
Dubuque	10	8	16.6	13.3	3		4.8	
Emmet		2		15.2				
Fayette		2		6.8	3		10.2	
Floyd								
Franklin	1		6.2			1		6.5
Fremont	1		6.7					
Greene		2		12.6				
Grundy		1		7.2				
Guthrie		1		5.9	2		11.8	
Hamilton		3		14.3				
Hancock					1		6.9	
Hardin	2		8.9		1	1	4.5	4.5
Harrison		1		4.3				
Henry		1		5.9	1		5.9	
Howard		1		7.6				
Humboldt		1		7.9		1		7.9
Ida								
Iowa	1	1	5.5	5.6				
Jackson	2	2	10.4	10.5	1		5.2	
Jasper	4	1	13.9	3.5		2		7.0



## NUMBER OF DEATHS CAUSED BY DIPHTHERIA 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	16.4	28.9	2	1	6.6	3.2
Jones		1		5.7	1		5.6	
Keokuk	3	1	15.0	5.1				
Kossuth	1	3	3.9	11.9	1		3.9	
Lee	3		7.8			2		5.3
Linn	2	8	2.4	9.7	1		1.2	
Louisa	2		17.2					
Lucas						1		6.5
Lyon								
Madison								
Mahaska	3		11.2					
Marion		1		4.1		1		4.1
Marshall	1		3.0		1	1	3.0	3.0
Mills	1		7.5		1		7.5	
Mitchell					1		6.9	
Monona	1	1	6.0	6.0				
Monroe								
Montgomery								
Muscatine	1		3.4		1		3.4	
O'Brien						1		5.5
Osceola								
Page		1		4.3				
Palo Alto		3		20.1				
Plymouth								
Pocahontas		1		6.6	1		6.6	
Polk		2	7.6	3.4	2	1	1.7	.06
Pottawattamie		7	1.5	10.5	1		1.3	
Poweshiek						1		5.7
Ringgold		1		8.6				
Sac	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	1	7.8	3.7				
Story		2		6.5		1		3.2
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		21.2
Wayne								
Webster	2	3	4.9	7.3	1		2.9	
Winnebago	1	1	7.5	7.6				
Winneshiek	1		4.6					
Woodbury	2	1	3.0	1.0	4	3	4.0	3.0
Worth			8.8					
Wright		1		4.9	1		4.9	



NUMBER OF DEATHS CAUSED BY DIPHTHERIA 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		31.0					
Burlington	2	2	7.4	7.4				
Cedar Rapids	1	5	1.9	9.5				
Clinton	1	1	3.7	3.7	1		3.7	
Council Bluffs		7		16.9				
Davenport	5	7	9.7	13.9	2	1	3.8	1.9
Des Moines	12	6	8.3	4.1	3	1	2.0	.07
Dubuque	9	6	21.7	14.4	1		2.4	
Fort Dodge	2	2	9.0	8.8				
Fort Madison	3		27.2			2		18.6
Iowa City	4	9	25.0	53.3		1		5.9
Keokuk								
Marshalltown					1		5.8	
Mason City	1	1	4.3	4.2		2		8.4
Muscatine	1		5.9					
Ottumwa	1		3.7					
Sioux City		1	3.8	1.3	4	2	4.8	2.6
Waterloo		2		5.8				

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

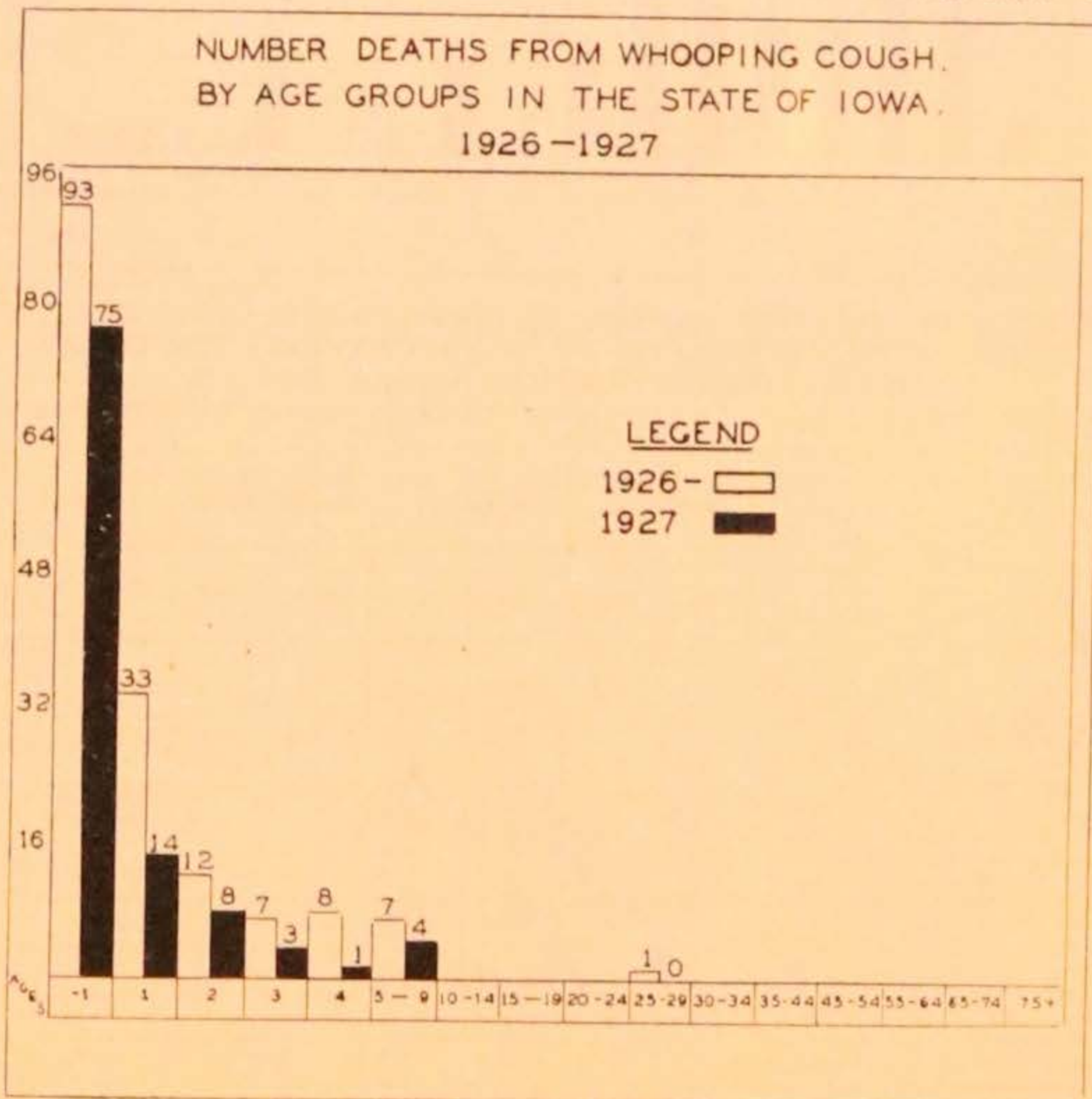
## MEASLES

*Counties*—The death rate (per 100,000 population) for the year 1926 was 2.6 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 (13.5). 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 (1.0), 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 (9.0). The three with the lowest rates were: Council Bluffs (3.0), Burlington (3.7) 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



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 (20.3) 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 (2.2).

*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		14.6	
Adams.....								
Allamakee.....								
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	3	3.4	5.2	2	2	3.4	3.4
Boone.....		1		3.4		1		3.4
Bremer.....		1		5.9	1		5.9	
Buchanan.....					1		5.5	
Buena Vista.....	1	1	5.4	5.4	1		5.4	
Butler.....		1		5.5	1	2	5.5	11.1
Calhoun.....		1		5.6				
Carroll.....		1		4.6	1	1	4.5	4.6
Cass.....		1		5.3		1		5.3
Cedar.....	1	1	5.4	6.0	3		17.9	
Cerro Gordo.....		3		7.8	3	3	7.8	7.8
Cherokee.....			6.1		1		6.1	
Chickasaw.....		1		6.7				
Clarke.....		3		30.4				
Clay.....	1	2	6.4	13.0	1	1	6.4	6.5
Clayton.....		1		4.1				
Clinton.....		5	2.1	10.8	5	5	11.1	10.8
Crawford.....						2		9.8
Dallas.....		1		3.9		1		3.9
Davis.....		4		34.0				
Decatur.....					1		6.6	
Delaware.....		5		28.0	1		6.6	
Des Moines.....	2	10	5.2	25.8		3		7.7
Dickinson.....						1		9.2
Dubuque.....		9		14.9	2	3	3.2	4.9
Emmet.....					3	1	23.1	7.6
Fayette.....	1		3.4		1	2	3.4	6.8
Floyd.....		1		5.8				
Franklin.....		2		13.0				

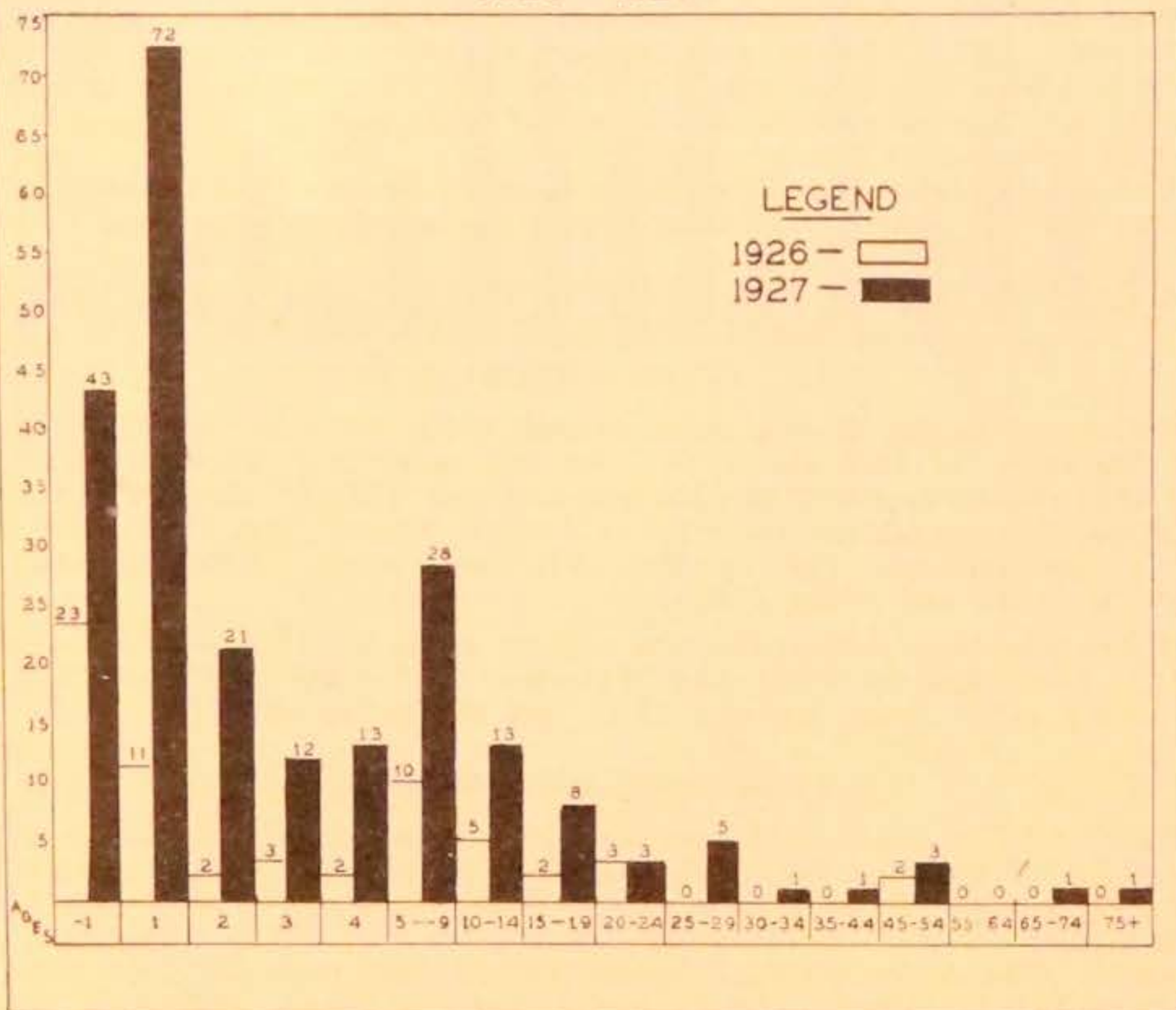
NUMBER OF DEATHS CAUSED BY MEASLES AND WHOOPING  
COUGH BY COUNTIES, 1926-1927—Continued

Area	No. of Deaths Measles		Rates		No. of Deaths Whooping Cough		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Fremont					1		6.7	
Greene		1		6.3		1		6.3
Grundy		1		7.2				
Guthrie		1		5.9	1	1	5.9	5.9
Hamilton		1		4.8				
Hancock		2		13.8	3	3	20.7	20.8
Hardin	3	1	13.5	4.5	2		9.0	
Harrison		2		8.6	1	4	4.2	17.2
Henry		3		17.7				
Howard						1		7.3
Humboldt		1		7.9	1		7.9	
Ida						2		17.4
Iowa		3		16.8	1	2	5.5	11.2
Jackson	1	2	5.2	10.5	1	1	5.2	5.2
Jasper	2	6	6.8	21.0	4	4	13.6	13.6
Jefferson								
Johnson	1	5	3.2	16.1				
Jones		2		11.4	2		11.2	
Keokuk		3		15.3		1		5.1
Kossuth					3	1	11.7	3.9
Lee	2	10	6.2	26.3	3	4	7.8	10.5
Linn	8	2	9.8	2.4	2	1	2.4	1.2
Louisa		6		52.2	3		25.8	
Lucas		*		6.5				
Lyon					1	2	6.4	12.0
Madison		3		20.7				
Mahaska	1	8	3.7	29.9	2	1	7.4	3.6
Marion		11		44.9	3	1	12.0	4.1
Marshall	2		27.3		8	1	24.2	2.0
Mills		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		5.0		3	1	15.0	5.5
Montgomery		1		6.1				
Muscatine		6		24.1	2		6.9	
O'Brien	1		5.5		1	1	5.5	5.5
Osceola		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	13.2
Polk	7	18	4.0	10.0	13	12	7.5	6.8
Pottawattamie	2	11	3.0	16.5	12	1	18.1	1.5
Poweshiek					1	2	5.6	11.0
Ringgold		1		8.6	3		25.2	
Sac		2		11.7	2	1	11.6	5.8
Scott	2	6	2.9	8.8	6		8.7	
Shelby	1	1	6.1	6.2	1		6.1	
Sioux		2		7.5	3	3	11.1	11.2
Story		1		3.2	1		3.3	
Tama	5	2	22.5	5.0	1		4.5	
Taylor					1		6.5	
Union		6		35.5	1		5.8	
Van Buren	1		7.4					
Wapello	1	4	2.2	8.0		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	5.7	23.1	1	5	5.7	28.9
Washington.....		3		15.9	1	2	5.2	10.6
Wayne.....		1		6.9		1		6.9
Webster.....		5		12.2	9	1	21.6	2.4
Winnebago.....					2		15.0	
Winneshiek.....		1		4.7	1	1	4.6	4.7
Woodbury.....		1		1.0	8	3	8.0	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	6	3.7	21.9		1		3.7
Cedar Rapids	8	1	15.5	1.9		1		1.9
Clinton		3		10.9	4	3	14.8	11.1
Council Bluffs	2	9	3.0	21.8	11		27.1	
Davenport	2	6	3.9	11.4	3		5.7	
Des Moines	5	16	4.0	10.8	12	11	8.3	7.5
Dubuque		8		19.2	1	2	2.4	4.8
Fort Dodge		4		17.2	6	1	27.0	4.4
Fort Madison	1	5	9.0	46.3		3		27.7
Iowa City		5		17.8				
Keokuk		2		13.8	3	1	20.4	6.9
Marshalltown	2		11.8		5	3	29.0	
Mason City		2		8.4	3	2	12.9	8.4
Muscatine		5		29.3	1		5.9	
Ottumwa		2		7.2		1		3.6
Sioux City		1	1	1.3	8	3	9.6	3.8
Waterloo	2	3	5.4	8.1	1	2	2.7	3.4

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 Sac 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 (20.6) 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 (9.0) and Waterloo (8.1). For 1927 they were: Iowa City (17.9), Fort Madison (9.2) and Muscatine (5.8).

TUBERCULOSIS (ALL FORMS)

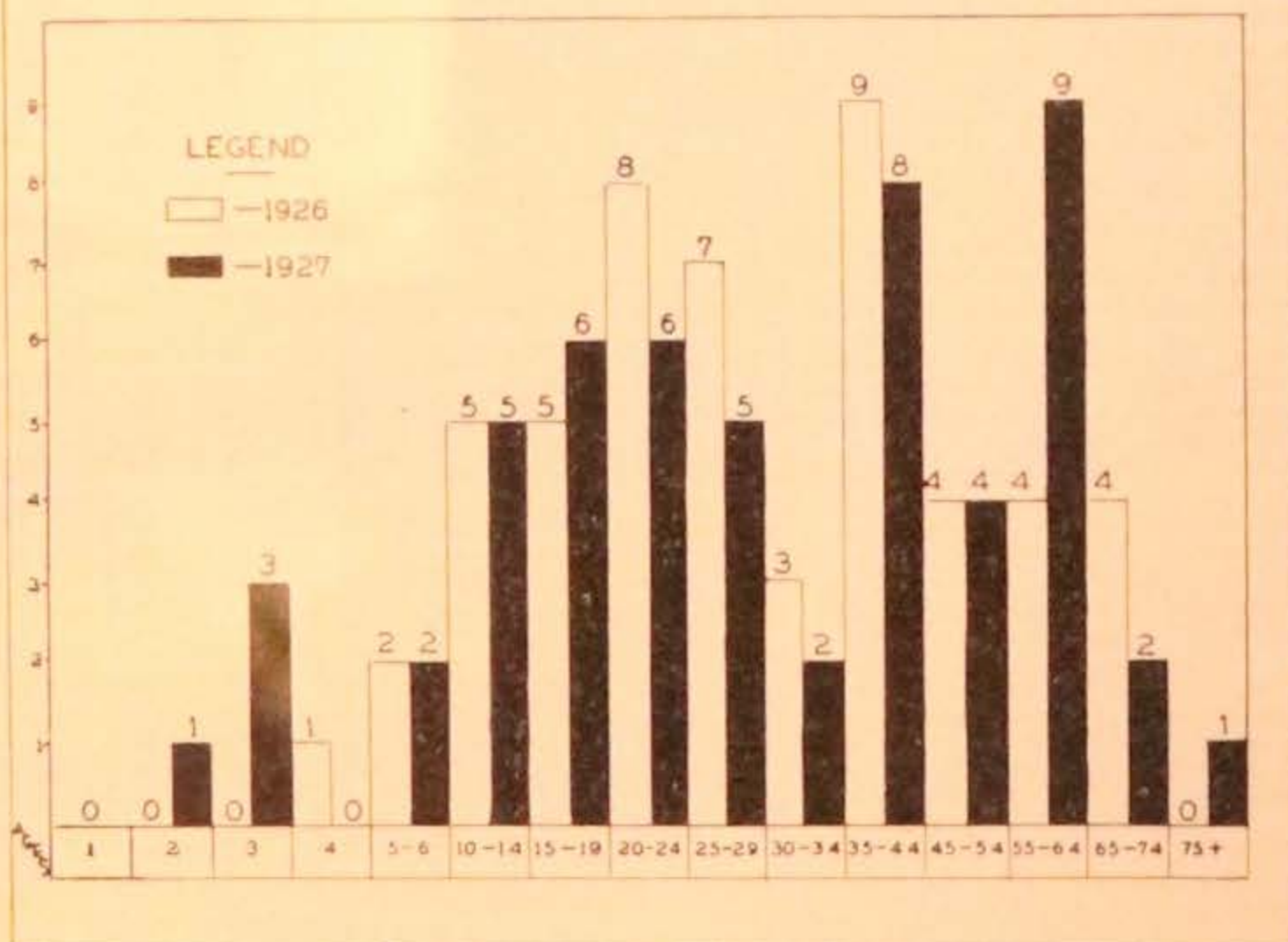
*Counties*—The death rate (per 100,000 population) for the state was 37.9 for 1926 and 35.9 for year of 1927. The rate for Iowa during the past few years has annually shown a slight decrease. There were 918 deaths reported from this disease during 1926 and 873 deaths reported for 1927. The three counties 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 (90.0). 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.





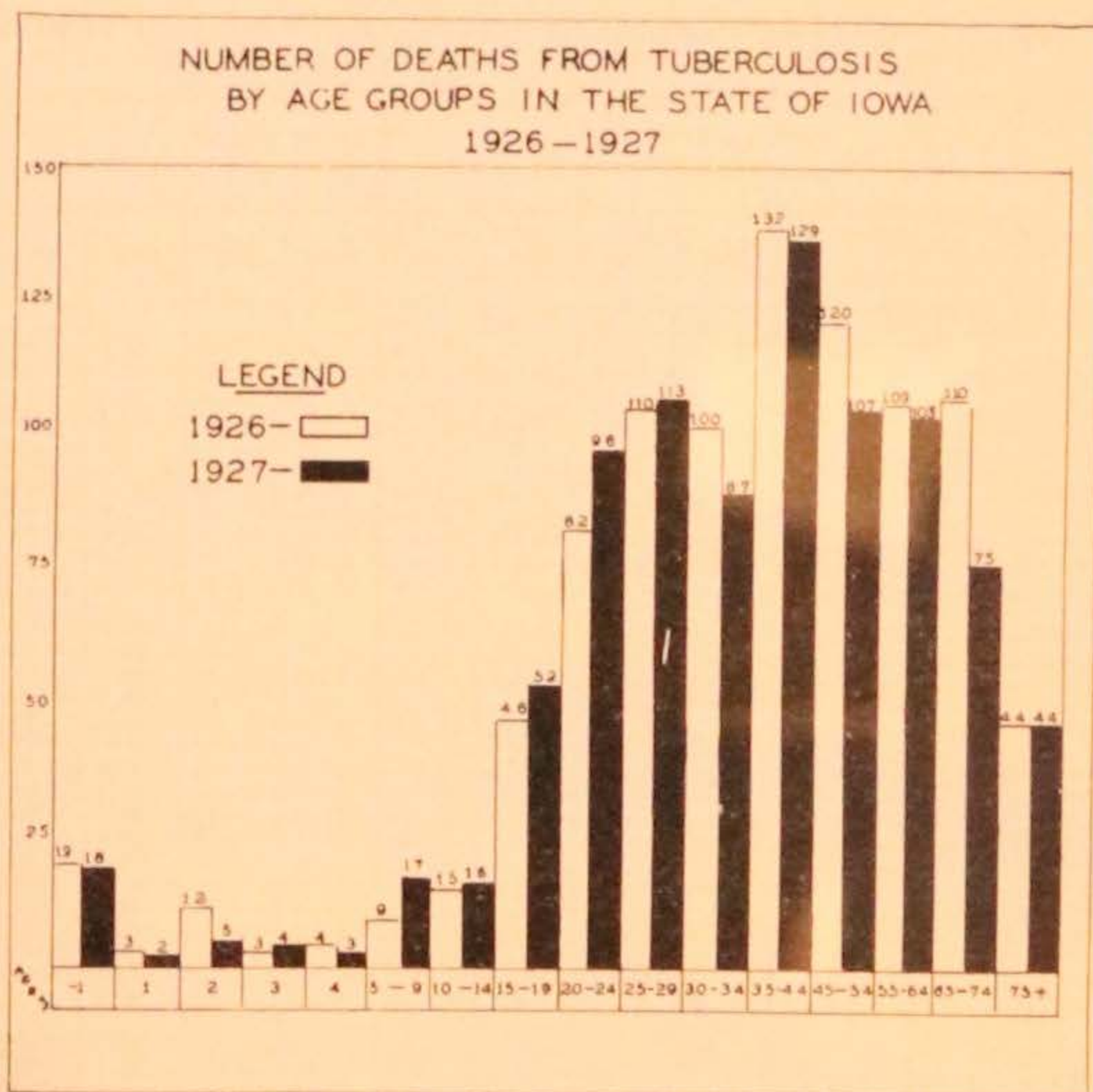
NUMBER OF DEATHS CAUSED BY TYPHOID FEVER AND TUBERCULOSIS (ALL FORMS) WITH RATES (PER 100,000 POPULATION) BY COUNTIES—YEAR 1926-1927

(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.....	52	54	2.1	2.1	918	873	37.9	35.9
Adair.....		1		7.4	3	4	22.0	29.6
Adams.....					4	5	39.1	40.0
Allamakee.....		1		6.1	5	6	30.3	36.6
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	17.3	21.9
Black Hawk.....	3	1	5.2	2.9	29	16	50.7	27.2
Boone.....					13	15	44.3	51.4
Bremer.....					1	3	5.9	17.9
Buchanan.....		1		5.7	16	12	89.4	68.4
Buena Vista.....	4		21.5		1	5	5.4	27.0
Butler.....					3	4	16.6	22.2
Calhoun.....					2	6	11.3	33.9
Carroll.....					4	9	18.0	41.3
Cass.....					2	1	10.5	5.3
Cedar.....					3	6	16.2	36.1
Cerro Gordo.....					13	9	34.3	23.5
Cherokee.....					13	10	79.3	62.1
Chickasaw.....					5	2	33.0	13.4
Clarke.....					3	5	30.1	51.2
Clay.....					3	3	19.2	19.5
Clayton.....					5	11	20.5	45.6
Clinton.....		1		2.2	16	21	33.6	45.7
Crawford.....					7	4	34.6	19.8
Dallas.....		2		7.9	6	10	23.4	42.3
Davis.....		1		8.5	3	5	25.1	42.3
Decatur.....		1		6.8	1	3	6.6	20.3
Delaware.....	1		6.6		3	4	19.8	22.5
Des Moines.....	1	1	2.6	2.6	16	13	41.6	33.5
Dickinson.....					2	3	18.5	27.5
Dubuque.....	1	1	1.6	1.6	27	32	43.2	53.2
Emmet.....		1		7.6	6	3	46.1	22.8
Fayette.....	2	1	6.8	3.4	6	8	20.4	27.2
Floyd.....					3	1	17.0	5.7
Franklin.....					1	3	6.2	18.8
Fremont.....					6	2	40.2	13.5
Greene.....					7	3	43.7	18.9
Grundy.....					3	2	21.5	14.5
Guthrie.....					3	4	17.6	23.7
Hamilton.....	3		14.3		8	3	37.6	14.3
Hancock.....					3		24.0	
Hardin.....					5	10	22.5	44.9
Harrison.....					5	3	21.2	12.9
Henry.....		1		5.9	22	23	130.0	137.7
Howard.....		1		7.6	7	5	53.0	38.2
Humboldt.....					1	1	7.9	7.9
Ida.....					2	1	17.1	8.7
Iowa.....	1		5.5		2	2	11.0	11.4
Jackson.....					3	4	15.6	20.9
Jasper.....	1	1	3.4	3.4	2	7	6.8	24.2
Jefferson.....	3	4	18.3	24.5	4	6	24.4	36.8
Johnson.....		4		12.9	104	94	342.1	299.0
Jones.....	1		5.6		5	2	28.0	11.4
Keokuk.....	1	1	5.0	5.1	7	5	35.0	25.3
Kossuth.....	2		7.9		3	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	3	2	7.8	5.3	22	19	56.1	50.0
Linn	1	1	1.2	1.2	19	33	23.3	40.0
Louisa					2	4	17.2	34.8
Lucas	2		12.8		6	2	38.4	12.9
Lyon	1		6.4		2		12.8	
Madison	2		13.7		6	2	40.8	13.8
Mahaska					8	8	29.6	29.5
Marion	1		4.0		12	8	48.0	32.2
Marshall	1		3.0		14	10	42.4	30.1
Mills		1		7.8	9	10	67.5	76.7
Mitchell					2		13.8	
Monona					3	2	17.9	12.4
Monroe	2	1	10.0	5.5	5	4	25.0	31.9
Montgomery					3	4	18.2	24.5
Muscatine		1		3.4	6	12	20.6	41.2
O'Brien		1		5.5	3	2	16.6	11.1
Osceola		1		10.1	4		40.4	
Page					9	17	38.7	73.9
Palo Alto		1		6.7	3	3	20.0	20.1
Plymouth					2	3	8.4	12.7
Pocahontas					2	1	13.1	6.6
Polk	5	5	2.9	2.9	80	82	46.4	46.3
Pottawattamie					24	15	36.3	22.5
Poweshiek		1		5.7	8	8	44.8	45.7
Ringgold	1		8.4		3	1	25.2	8.6
Sac					2		11.6	
Scott	1	2	1.4	2.9	57	59	82.7	86.9
Shelby		1		6.2	1	1	6.1	6.2
Sioux	1	3	3.7	11.2	1	5	3.7	18.7
Story					10	9	33.0	29.0
Tama		1		4.5	13	13	58.5	58.8
Taylor	1		6.5		5	3	32.5	19.5
Union					6	2	35.2	11.9
Van Buren					5	3	37.0	22.4
Wapello					28	23	64.9	51.5
Warren					4	2	22.8	11.6
Washington	1	1	5.2	5.3	6	3	31.2	15.9
Wayne	5		20.6		5	2	34.5	13.9
Webster		1		2.4	17	15	41.9	36.6
Winnebago					3	4	22.5	30.3
Winneshiek					9	5	41.4	23.6
Woodbury	2	2	2.5	2.0	39	28	40.5	28.1
Worth					2	3	17.6	26.8
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	54.3
Burlington	1	1	3.7	3.7	13	10	48.1	34.2
Cedar Rapids	1	1	1.9	1.9	10	23	19.0	43.8
Clinton					10	17	37.0	62.3
Council Bluffs					21	11	50.4	26.7
Davenport	1	2	1.9	3.8	55	56	104.5	110.9
Des Moines	4	5	2.7	3.4	75	77	51.8	51.6
Dubuque	1	1	2.4	2.4	19	29	45.6	69.6
Fort Dodge					11	12	49.5	53.1
Fort Madison	1	1	9.0	9.2	10	9	90.0	83.3
Iowa City		3		17.9	20	18	124.0	107.1
Keokuk	2		13.7		9	6	62.0	41.4
Marshalltown					9	10	52.2	58.8
Mason City					10	4	43.0	16.9
Muscatine		1		5.8	4	12	23.6	70.2
Ottumwa					24	19	88.8	68.6
Sioux City	2	2	2.5	2.4	33	22	42.6	28.0
Waterloo	3	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)

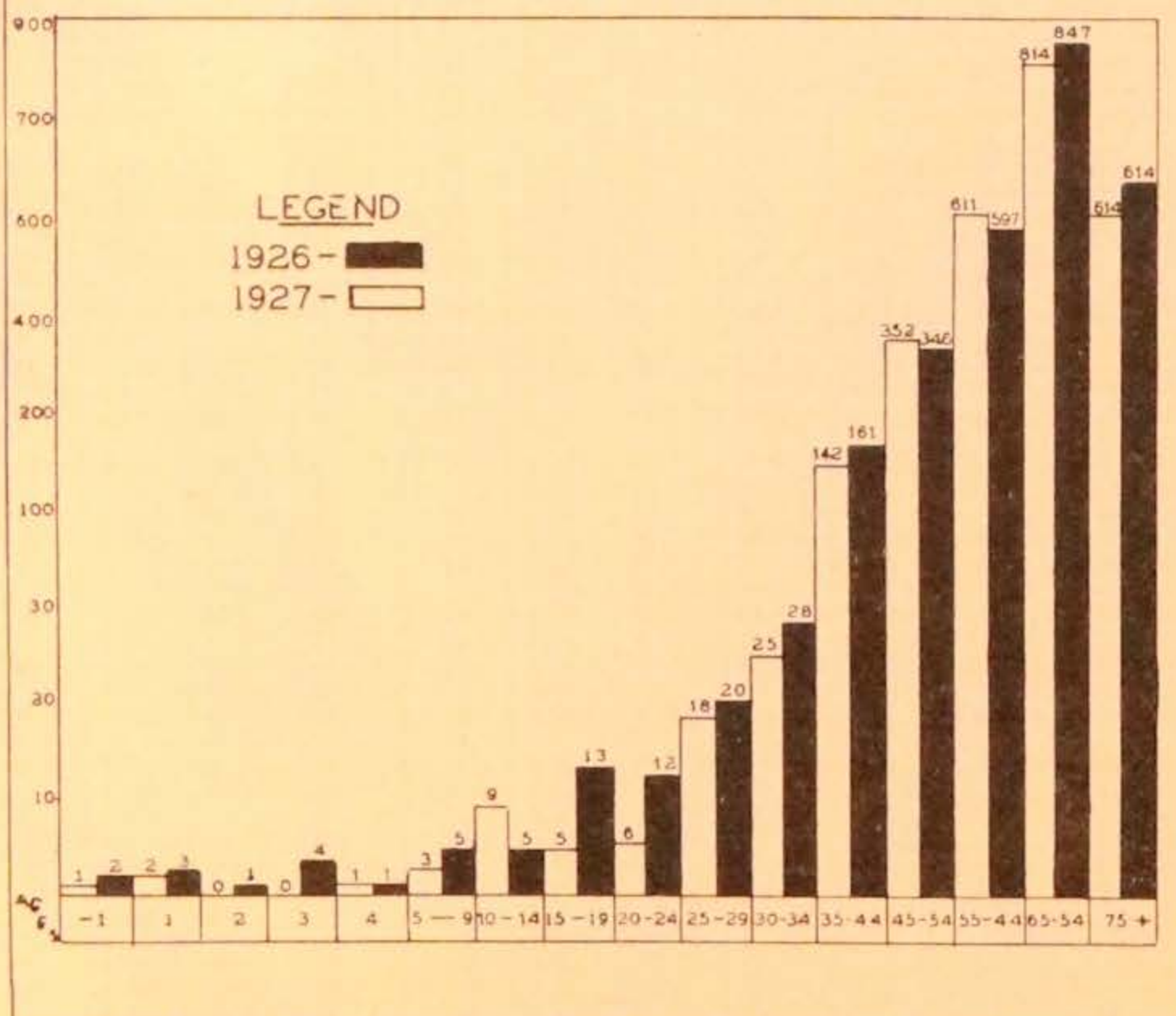
*Counties*—The death rate per 100,000 population in the state of Iowa for 1926 was 74.7 compared with a rate of 62.1 for 1927. There were 1,811 deaths reported from this cause during 1926 while 1,508 deaths were reported for 1927. The three counties with the highest rates for 1926 were: Montgomery (176.8), Johnson (157.9) 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 125.8 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 (127.2) 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 45.7 respectively.

CANCER (ALL FORMS)

*Counties*—During the year 1926 there were 2,593 deaths reported in Iowa, the rate per 100,000 population being 107.0. 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 (208.6), Clarke (180.8) and Lee (167.5). For 1927 they were: Johnson (250.8), Union (171.6) and Jeffer-

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



son (165.7). Davis county with a rate of 42.0 had the lowest rate for 1926 while for 1927 Adams county with a rate of 49.5 was the lowest.

*Cities*—For 1926 Iowa City (306.3), Fort Madison (236.3) and Dubuque (196.1) had the highest rates. For 1927 they were: Iowa City (410.7), Muscatine (181.3) and Dubuque (175.0). Mason City with a rate of 86.2 (1926) and 88.6 (1927) had the lowest rate for the two years.

NUMBER OF DEATHS CAUSED BY PNEUMONIA (ALL FORMS) AND  
CANCER (ALL FORMS) WITH RATES (PER 100,000 POPULA-  
TION), BY COUNTIES, STATE OF IOWA, YEARS—1926 and 1927.

(Cities Included Within Counties)

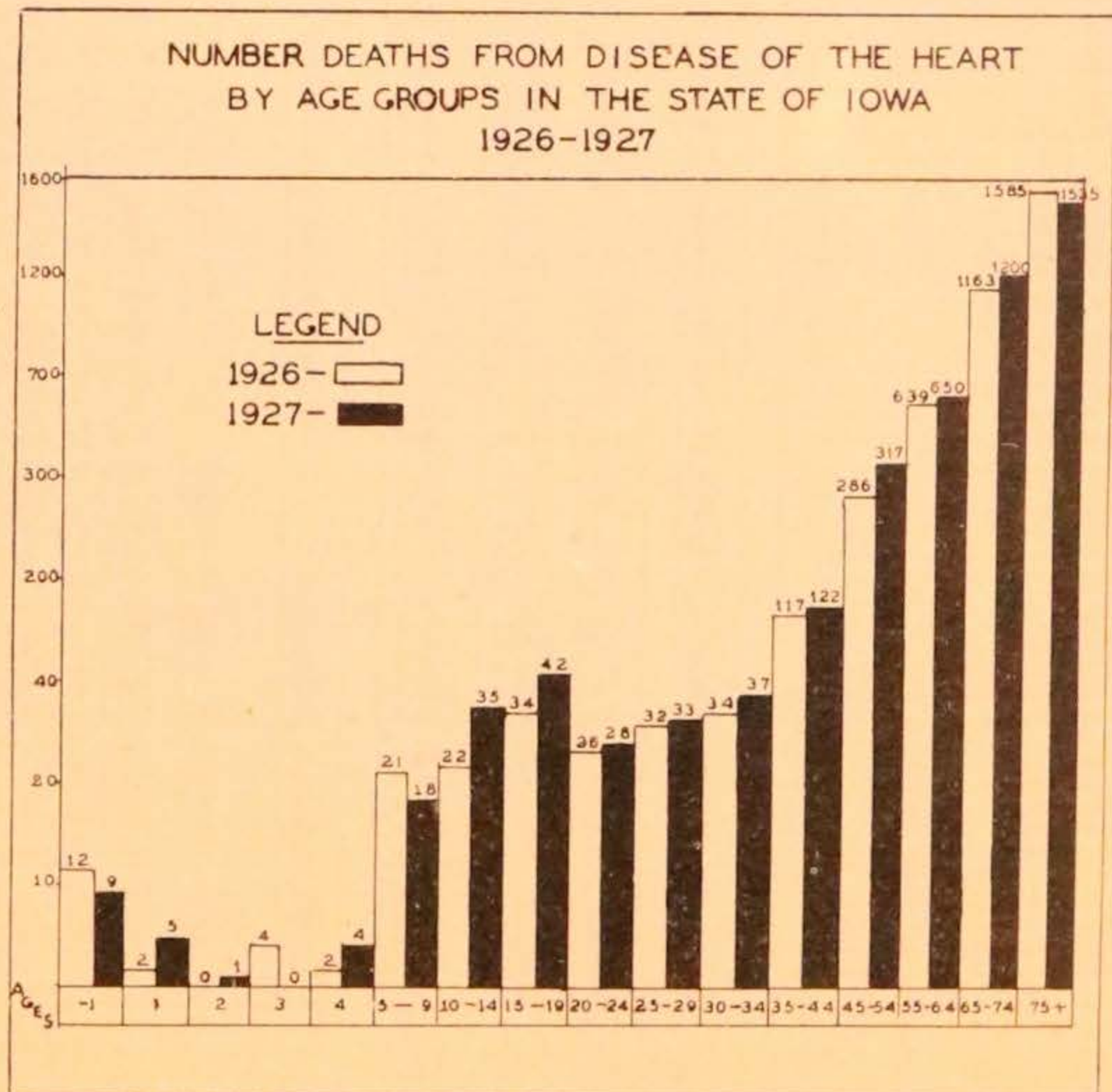
Area	No. of Deaths Pneumonia		Rates		No. of Deaths Cancer		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Total for the State.....	1,811	1,508	74.7	62.1	2,593	2,689	107.0	110.8
Adair.....	6	7	44.1	51.9	16	13	117.6	96.3
Adams.....	3	2	29.3	19.8	10	5	98.0	49.5
Allamakee.....	11	10	66.7	61.4	22	12	134.1	73.6
Appanoose.....	22	27	77.8	96.4	33	31	117.0	111.5
Audubon.....	7	4	58.4	34.0	8	13	67.1	110.1
Benton.....	22	11	95.6	48.2	27	26	117.4	114.0
Black Hawk.....	61	38	107.7	64.5	71	74	123.9	128.9
Boone.....	24	16	81.9	54.7	28	29	95.5	99.3
Bremer.....	10	14	59.4	83.3	23	24	136.9	142.9
Buchanan.....	15	15	83.7	85.8	21	23	117.3	131.4
Buena Vista.....	15	11	80.9	59.5	18	15	97.4	81.1
Butler.....	16	8	88.7	44.4	8	17	44.4	94.4
Calhoun.....	7	9	39.3	50.8	16	11	90.4	62.1
Carroll.....	22	14	100.7	64.2	26	22	119.2	100.9
Cass.....	12	9	62.9	47.6	28	22	147.3	116.4
Cedar.....	6	13	35.8	78.3	16	17	95.8	102.4
Cerro Gordo.....	20	15	52.9	38.4	38	34	100.5	88.8
Cherokee.....	12	5	73.2	31.0	18	26	110.4	161.5
Chickasaw.....	3	9	19.9	60.4	19	11	126.6	73.8
Clarke.....	9	11	90.4	112.2	18	12	180.8	122.4
Clay.....	10	3	64.0	19.5	16	11	103.8	71.4
Clayton.....	22	14	90.6	58.1	26	24	107.4	99.6
Clinton.....	32	40	70.2	86.9	60	56	131.5	121.7
Crawford.....	6	2	29.5	9.8	11	16	54.0	79.2
Dallas.....	13	19	51.2	74.8	24	20	94.8	78.7
Davis.....	7	8	59.4	67.8	5	12	42.0	101.7
Decatur.....	13	13	85.8	87.8	13	19	85.8	128.4
Delaware.....	16	17	89.5	95.5	18	20	101.1	112.4
Des Moines.....	25	25	62.7	64.4	52	51	135.7	131.4
Dickinson.....	5	7	46.1	64.2	13	6	120.3	55.0
Dubuque.....	55	42	93.5	69.7	94	86	158.6	142.9
Emmet.....	7	9	53.8	68.1	11	10	84.6	75.8
Fayette.....	13	13	44.1	44.1	24	29	81.6	98.6
Floyd.....	9	11	50.9	62.5	16	29	90.9	153.4
Franklin.....	24	9	149.7	56.3	16	10	100.0	62.5
Fremont.....	7	6	46.9	40.5	10	9	67.1	60.8
Greene.....	7	7	43.6	44.0	15	12	93.7	75.5
Grundy.....	5	5	35.8	36.2	6	7	43.1	50.7
Guthrie.....	10	8	58.8	47.2	9	14	53.2	82.8
Hamilton.....	12	10	57.5	47.0	24	29	115.3	138.1
Hancock.....	7	7	48.3	48.6	10	19	69.4	131.9
Hardin.....	13	12	58.2	53.8	21	20	94.1	89.7
Harrison.....	12	11	50.9	47.2	17	25	72.3	107.3
Henry.....	13	30	76.6	179.6	23	20	136.0	119.8
Howard.....	3	9	22.6	68.7	19	11	143.9	83.9

NUMBER OF DEATHS CAUSED BY PNEUMONIA BY COUNTIES—  
1926-1927—Continued

Area	No. of Deaths Pneumonia		Rates		No. of Deaths Cancer		Rates	
	1926	1927	1926	1927	1926	1927	1926	1927
Humboldt.....	8	4	63.2	31.7	6	11	47.6	87.3
Ida.....	5	11	43.0	95.7	9	9	77.5	78.3
Iowa.....	9	18	50.3	101.7	17	16	95.5	90.4
Jackson.....	8	16	41.5	83.8	20	28	104.3	146.6
Jasper.....	22	29	76.6	100.3	24	39	83.6	134.9
Jefferson.....	10	8	61.3	49.1	15	27	92.0	165.7
Johnson.....	48	39	157.9	125.4	64	78	208.6	250.8
Jones.....	12	10	68.1	57.1	29	28	113.6	100.0
Keokuk.....	11	12	50.2	60.6	17	25	85.4	126.3
Kossuth.....	17	6	67.7	23.9	18	25	71.7	99.6
Lee.....	43	27	112.6	71.0	64	44	167.5	115.8
Linn.....	42	37	51.7	44.8	87	97	197.1	117.6
Louisia.....	5	7	43.1	60.8	12	15	103.4	130.4
Lucas.....	2	7	12.9	45.2	11	16	70.9	103.2
Lyon.....	12	9	77.9	58.1	6	17	38.9	100.7
Madison.....	4	13	27.6	89.7	15	12	103.4	82.8
Mahaska.....	16	18	59.9	67.4	16	26	59.9	97.4
Marion.....	21	18	85.3	73.5	29	15	117.8	61.2
Marshall.....	32	34	96.9	102.4	35	39	106.1	117.5
Mills.....	16	11	120.3	85.3	8	13	60.1	100.8
Mitchell.....	6	5	41.6	34.5	20	15	138.8	100.4
Monona.....	16	9	96.3	54.1	16	11	96.3	60.2
Monroe.....	28	18	141.4	98.9	18	22	90.9	120.9
Montgomery.....	29	12	176.8	73.6	17	20	103.6	122.7
Muscatine.....	17	19	58.5	65.2	35	40	120.0	158.1
O'Brien.....	9	6	49.7	33.5	18	10	99.5	55.8
Osceola.....	2	2	20.0	20.2	9	13	90.9	130.6
Page.....	11	17	47.4	73.9	35	19	159.8	82.6
Palo Alto.....	4	7	26.6	46.9	7	8	46.6	53.7
Plymouth.....	14	8	59.0	33.8	24	17	101.2	71.3
Pocahontas.....	13	8	85.5	52.9	11	21	72.3	139.7
Polk.....	176	120	102.3	68.5	209	207	121.4	118.2
Pottawattamie.....	74	58	111.7	86.7	68	78	102.9	116.8
Poweshiek.....	17	22	95.5	125.8	15	26	84.2	145.6
Ringgold.....	14	3	118.6	25.8	7	14	59.3	120.6
Sac.....	10	9	58.1	52.6	14	19	81.3	111.1
Scott.....	38	56	127.7	82.3	89	97	129.1	140.6
Shelby.....	5	2	30.8	12.4	17	13	104.9	80.2
Sioux.....	10	11	37.4	41.2	33	22	123.5	82.4
Story.....	23	11	75.9	35.5	24	29	79.2	87.1
Tama.....	12	10	54.2	45.2	26	27	117.6	122.2
Taylor.....	16	5	105.9	33.1	15	18	94.3	119.2
Union.....	10	4	58.8	23.7	20	29	117.6	171.6
Van Buren.....	6	8	44.4	59.7	13	11	96.2	82.0
Wapello.....	28	31	64.7	69.3	50	56	114.4	125.3
Warren.....	11	6	63.1	34.7	19	21	109.1	121.4
Washington.....	19	11	99.4	58.2	18	26	94.6	137.5
Wayne.....	11	11	75.8	76.4	13	18	89.6	125.0
Webster.....	34	16	83.9	39.0	45	40	111.1	97.6
Winnebago.....	4	5	30.0	37.9	13	12	97.7	90.9
Winneshiek.....	13	6	61.0	28.3	30	12	140.8	56.6
Woodbury.....	77	56	78.1	56.2	109	112	110.5	112.3
Worth.....	2	8	17.8	71.4	8	6	71.4	53.6
Wright.....	9	8	44.3	39.4	19	10	93.5	78.8

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.....	10	7	77.5	54.3	13	20	100.7	155.0
Burlington.....	16	21	59.7	76.6	44	43	164.2	157.5
Cedar Rapids.....	24	24	46.6	45.7	55	66	106.7	125.7
Clinton.....	20	29	74.6	106.2	45	35	167.9	128.2
Council Bluffs.....	54	48	133.3	116.5	47	62	116.0	150.5
Davenport.....	72	50	139.0	99.0	76	82	147.5	160.4
Des Moines.....	156	101	108.0	68.5	189	190	130.9	128.9
Dubuque.....	49	30	118.6	71.9	81	73	196.1	175.0
Fort Dodge.....	23	12	104.1	53.1	24	29	108.6	128.3
Fort Madison.....	16	8	145.5	74.1	26	15	236.3	138.8
Iowa City.....	36	35	225.0	208.3	49	69	306.3	410.7
Keokuk.....	20	13	137.9	89.7	22	20	151.7	137.8
Marshalltown.....	23	22	135.3	127.2	23	21	135.2	121.4
Mason City.....	14	12	60.3	50.6	20	21	86.2	88.6
Muscatine.....	11	11	65.1	64.3	21	31	124.3	181.3
Ottumwa.....	20	28	74.1	101.1	38	43	140.7	155.6
Sioux City.....	72	44	93.2	56.1	96	96	124.0	122.4
Waterloo.....	46	27	125.0	73.2	44	49	119.5	132.8



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 (253.3) 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 (258.3) 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	4,036	163.8	165.9
Adair.....	19	18	139.7	133.3
Adams.....	11	10	107.8	99.0
Allamakee.....	36	34	219.6	208.5
Appanoose.....	41	51	145.4	183.5
Audubon.....	14	20	117.6	169.5
Benton.....	45	44	195.7	192.9
Black Hawk.....	97	86	167.8	149.8
Boone.....	59	57	201.4	195.2
Bremer.....	25	29	148.8	172.6
Buchanan.....	44	36	245.8	205.7
Buena Vista.....	28	35	151.4	189.2
Butler.....	19	22	105.5	122.2
Calhoun.....	22	34	124.3	192.9
Carroll.....	26	24	119.3	110.1
Cass.....	40	44	201.0	230.6
Cedar.....	12	22	61.8	132.5
Cerro Gordo.....	62	59	164.0	154.0
Cherokee.....	27	31	171.7	192.5
Chickasaw.....	16	29	106.7	194.6
Clarke.....	19	20	101.1	204.1
Clay.....	31	14	201.3	90.9
Clayton.....	45	44	185.9	182.6
Clinton.....	99	104	217.1	226.1
Crawford.....	26	14	128.7	69.3
Dallas.....	41	29	162.5	114.2
Davis.....	9	22	75.6	184.4
Decatur.....	29	28	192.1	189.2
Delaware.....	36	39	202.2	219.1
Des Moines.....	84	97	219.2	247.4
Dickinson.....	15	12	138.9	110.1
Dubuque.....	101	131	168.6	217.6
Emmet.....	14	17	107.7	128.8
Fayette.....	61	53	197.7	180.3
Floyd.....	29	36	164.8	204.5
Franklin.....	17	27	106.3	168.8
Fremont.....	28	22	187.9	148.6
Greene.....	16	17	100.0	106.9
Grundy.....	19	12	136.7	86.9
Guthrie.....	33	22	195.3	130.2
Hamilton.....	29	32	139.4	152.3



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	55.6
Hardin.....	23	32	103.1	143.5
Harrison.....	36	36	153.2	154.5
Henry.....	32	37	189.3	221.5
Howard.....	16	15	121.2	114.5
Humboldt.....	9	16	71.4	126.9
Ida.....	13	8	112.1	69.5
Iowa.....	48	45	269.7	254.2
Jackson.....	45	46	234.5	240.8
Jasper.....	62	65	216.	224.8
Jefferson.....	24	26	147.2	159.5
Johnson.....	77	59	253.3	189.7
Jones.....	44	32	250.0	182.9
Keokuk.....	30	38	150.3	191.9
Kossuth.....	19	32	75.7	127.5
Lee.....	85	89	222.5	185.4
Linn.....	166	168	204.2	203.7
Louisa.....	17	27	146.6	234.8
Lucas.....	27	39	174.2	251.6
Lyon.....	19	18	129.9	116.1
Madison.....	9	21	62.1	144.8
Mahaska.....	56	71	209.7	265.9
Marion.....	39	31	158.5	126.5
Marshall.....	58	46	175.8	138.6
Mills.....	15	23	112.7	178.3
Mitchell.....	17	14	118.1	96.6
Monona.....	15	6	90.4	36.1
Monroe.....	29	32	146.5	175.8
Montgomery.....	31	34	189.0	208.6
Muscatine.....	57	43	196.6	147.8
O'Brien.....	9	21	49.7	117.3
Osceola.....	3	5	30.3	50.5
Page.....	42	30	181.0	130.4
Palo Alto.....	21	16	140.0	107.4
Plymouth.....	45	39	189.9	164.5
Pocahontas.....	18	11	118.4	72.8
Polk.....	267	324	149.3	185.0
Pottawattamie.....	103	105	155.7	157.2
Poweshiek.....	24	29	134.8	165.7
Ringgold.....	21	10	177.9	86.2
Sac.....	17	24	98.8	140.4
Scott.....	157	171	227.9	248.2
Shelby.....	24	23	148.1	141.9
Sioux.....	26	26	97.4	97.2
Story.....	56	38	184.8	122.6
Tama.....	29	36	131.2	162.9
Taylor.....	18	26	119.3	171.5
Union.....	29	28	170.8	165.7
Van Buren.....	31	30	229.6	223.9
Wapello.....	68	50	155.6	111.9
Warren.....	29	33	166.7	190.8
Washington.....	32	31	167.5	164.0
Wayne.....	28	26	193.1	180.6
Webster.....	55	50	133.3	121.9
Winnebago.....	12	10	90.2	75.8
Winneshiek.....	42	30	197.1	141.5
Woodbury.....	152	143	154.2	143.4
Worth.....	18	13	160.7	116.1
Wright.....	37	24	133.0	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.....	23	26	178.3	201.5
Burlington.....	67	83	250.0	304.0
Cedar Rapids.....	100	108	194.3	205.7
Clinton.....	73	57	272.4	208.8
Council Bluffs.....	71	72	175.3	174.8
Davenport.....	133	150	285.3	291.3
Des Moines.....	237	282	164.1	191.3
Dubuque.....	87	113	210.6	270.9
Fort Dodge.....	31	33	140.3	146.0
Fort Madison.....	23	24	209.1	222.2
Iowa City.....	58	47	362.5	279.8
Keokuk.....	37	46	255.1	317.2
Marshalltown.....	40	32	235.3	184.9
Mason City.....	46	32	198.2	135.0
Muscatine.....	30	26	177.5	152.1
Ottumwa.....	52	43	192.6	155.1
Sioux City.....	128	119	165.4	151.8
Waterloo.....	55	60	149.5	162.6

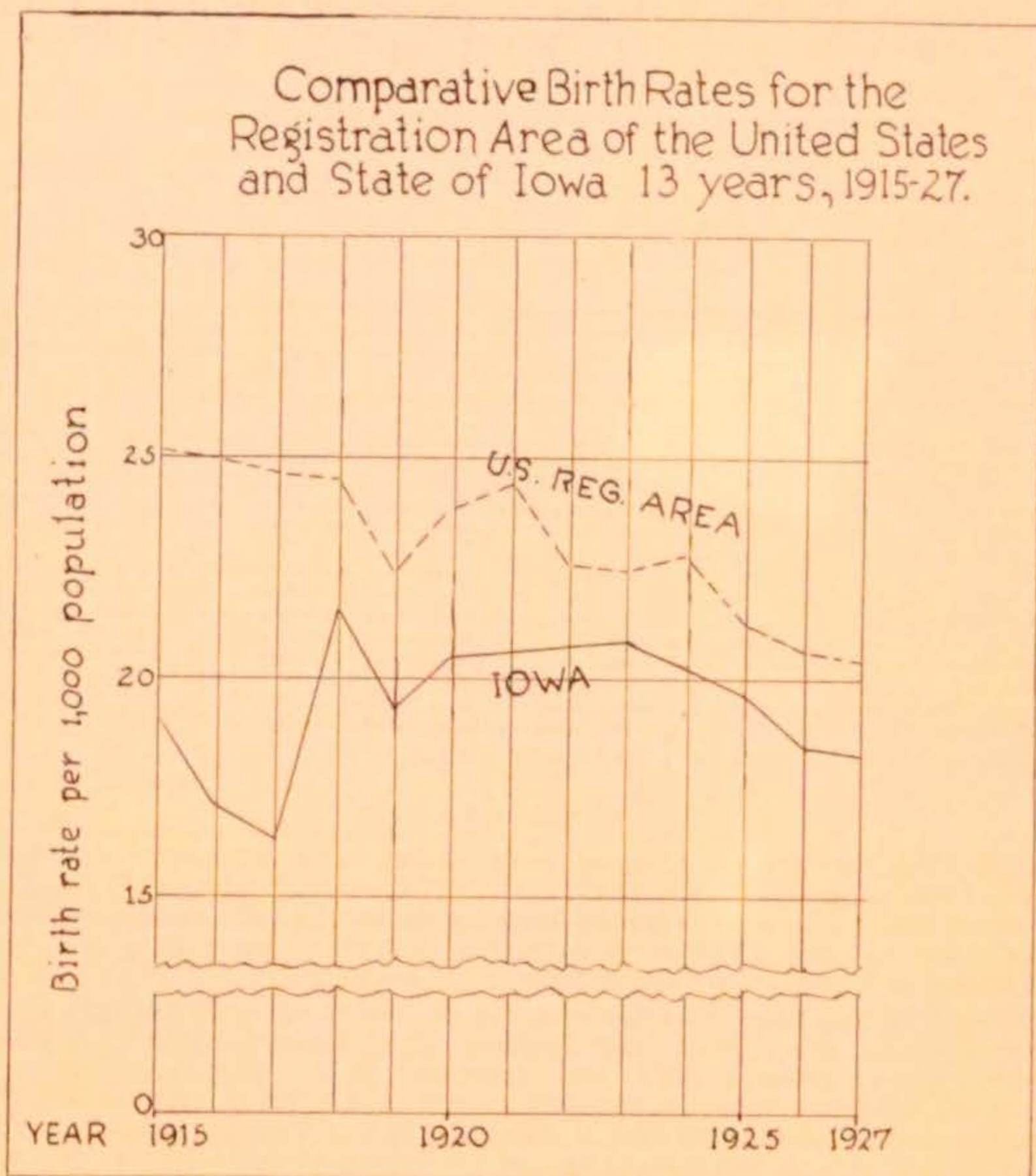
### BIRTHS

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 23 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 (11.0), Louisa (13.1), Marion and Keokuk each had a rate of (14.1). Taylor County (11.3), Keokuk (12.9) and Marion (13.9) 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 30.0. 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 (30.0), 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	18.3
Adair.....	257	311	19.0	23.0
Adams.....	166	202	16.4	20.0
Allamakee.....	299	268	18.3	16.4
Appanoose.....	542	534	15.9	19.2
Audubon.....	259	248	21.9	21.0
Benton.....	423	397	18.5	17.3
Black Hawk.....	1,093	1,104	19.0	19.3
Boone.....	530	530	18.1	18.1
Bremer.....	293	339	17.7	20.2
Buchanan.....	325	340	18.6	19.4

## NUMBER OF BIRTHS BY COUNTIES—1926-1927—Continued

Area	No. of Births		Rate	
	1926	1927	1926	1927
Buena Vista.....	317	298	17.1	16.1
Butler.....	293	274	16.2	15.2
Calhoun.....	334	328	18.8	18.5
Carroll.....	559	537	25.6	24.6
Cass.....	327	321	17.3	16.9
Cedar.....	278	280	16.7	16.9
Cerro Gordo.....	764	735	19.1	19.2
Cherokee.....	352	365	21.8	22.7
Chickasaw.....	291	258	19.5	17.3
Clarke.....	145	191	14.7	19.5
Clay.....	291	320	19.5	20.8
Clayton.....	422	409	17.9	16.6
Clinton.....	626	670	13.8	14.6
Crawford.....	380	397	18.8	19.7
Dallas.....	379	416	14.9	16.4
Davis.....	203	219	17.4	18.6
Decatur.....	275	278	18.6	18.8
Delaware.....	396	378	22.2	20.7
Des Moines.....	703	699	18.1	15.7
Dickinson.....	215	185	19.8	16.9
Dubuque.....	1,132	1,168	18.6	19.4
Emmet.....	289	270	21.9	20.5
Fayette.....	516	526	17.5	17.9
Floyd.....	286	306	16.3	17.4
Franklin.....	344	325	21.5	20.3
Fremont.....	284	294	19.2	19.9
Greene.....	294	253	18.9	15.9
Grundy.....	240	204	17.5	14.8
Guthrie.....	304	313	17.9	18.5
Hamilton.....	396	381	18.8	18.1
Hancock.....	276	303	19.1	21.0
Hardin.....	397	359	17.8	15.8
Harrison.....	441	523	18.9	22.4
Henry.....	251	259	15.0	15.5
Howard.....	252	265	19.2	20.2
Humboldt.....	244	206	19.2	16.3
Ida.....	249	221	21.6	19.2
Iowa.....	268	248	15.1	14.0
Jackson.....	350	355	18.2	18.6
Jasper.....	509	572	17.3	19.8
Jefferson.....	302	276	18.5	16.9
Johnson.....	706	722	23.2	23.2
Jones.....	374	333	21.3	19.0
Keokuk.....	281	257	14.1	12.9
Kossuth.....	567	516	22.5	20.6
Lee.....	799	812	20.9	16.9
Linn.....	1,225	1,215	15.1	14.7
Louisa.....	151	175	13.1	15.2
Lucas.....	262	240	17.0	14.8
Lyon.....	317	260	20.5	16.8
Madison.....	232	215	16.0	14.8
Mahaska.....	389	450	14.6	16.8
Marion.....	348	341	14.1	13.9
Marshall.....	540	610	16.4	18.4
Mills.....	220	214	16.5	16.6

## 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	16.5
Monroe.....	335	292	16.9	16.1
Montgomery.....	275	293	16.7	18.2
Muscatine.....	525	495	18.1	17.0
O'Brien.....	329	275	18.1	15.3
Osceola.....	238	232	23.0	23.4
Page.....	400	413	17.2	17.9
Palo Alto.....	328	315	21.8	21.1
Plymouth.....	448	500	18.9	21.1
Pocahontas.....	307	348	20.2	23.1
Polk.....	3,289	3,293	19.0	18.8
Pottawattamie.....	1,336	1,286	20.2	19.0
Poweshiek.....	330	332	18.5	18.9
Ringgold.....	238	201	20.9	17.3
Sac.....	344	314	20.0	18.4
Scott.....	1,168	1,004	16.7	16.2
Shelby.....	284	262	17.5	16.0
Sioux.....	628	585	23.5	21.5
Story.....	501	546	16.5	17.6
Tama.....	386	395	17.4	17.9
Taylor.....	166	170	10.0	11.3
Union.....	244	290	14.3	17.2
Van Buren.....	222	201	16.4	15.0
Wapello.....	768	704	17.5	15.7
Warren.....	295	287	16.9	16.6
Washington.....	309	341	16.2	18.4
Wayne.....	241	244	16.6	16.9
Webster.....	827	814	20.4	19.9
Winnebago.....	276	290	20.7	21.9
Winneshiek.....	422	404	19.8	19.1
Woodbury.....	2,090	2,113	21.2	21.1
Worth.....	203	194	18.1	17.3
Wright.....	383	409	18.8	20.3

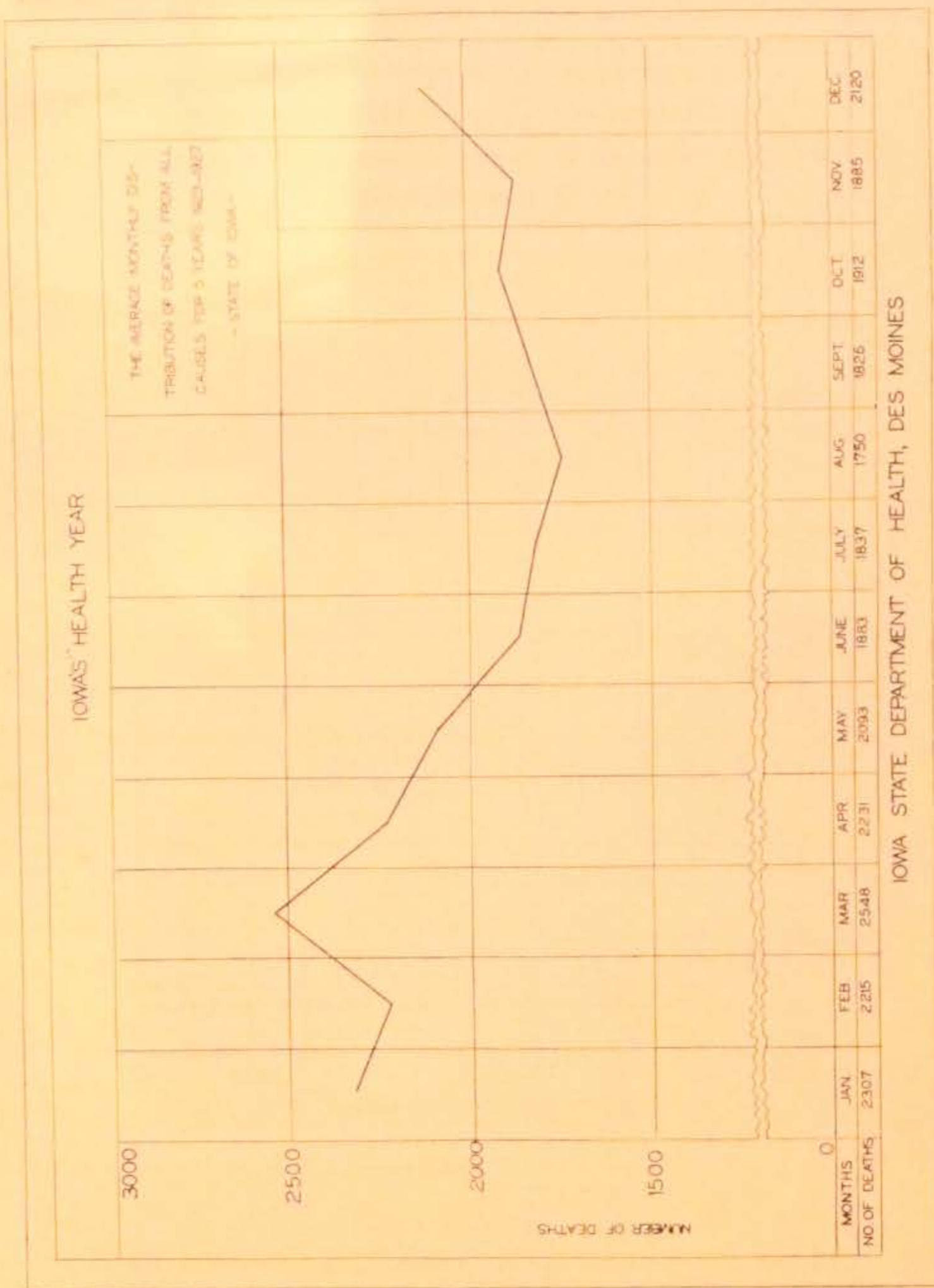
## NUMBER OF BIRTHS WITH RATES (PER 1,000 POPULATION) FOR CITIES OVER 10,000 POPULATION, YEARS 1926-1927

Area	No. of Births		Rate	
	1926	1927	1926	1927
Boone.....	234	256	18.1	19.0
Burlington.....	568	547	21.0	20.0
Cedar Rapids.....	875	803	16.8	15.5
Clinton.....	397	437	14.6	16.0
Council Bluffs.....	904	792	22.1	19.1
Davenport.....	918	871	17.8	16.9
Des Moines.....	2,919	2,949	20.0	19.8
Dubuque.....	806	821	19.4	19.6
Fort Dodge.....	501	490	22.4	21.7
Fort Madison.....	275	279	24.5	25.7
Iowa City.....	467	494	28.3	30.0
Keokuk.....	349	368	24.1	25.4
Marshalltown.....	306	339	17.8	19.6
Mason City.....	507	472	21.6	19.9
Muscatine.....	322	297	18.9	17.4
Ottumwa.....	564	516	20.6	18.6
Sioux City.....	1,701	1,679	21.8	21.3
Waterloo.....	742	774	20.1	20.9

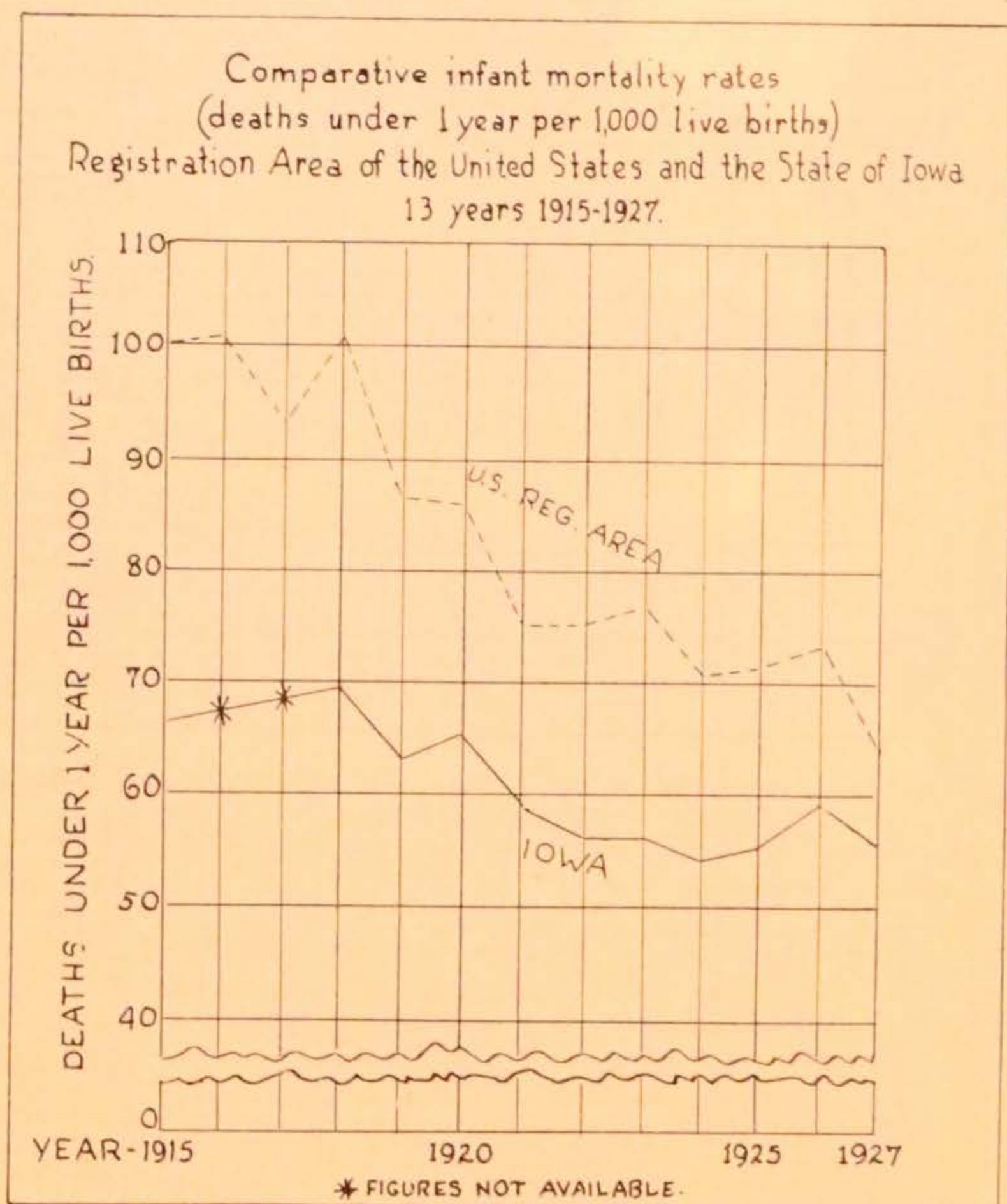
SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS), STATE OF IOWA, 1926-1927

*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 were: Clarke (137.9), Monroe (104.5) and Marshall (101.9). The three counties with the lowest rate for 1926 were: Adams (18.6), 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 (19.4), Poweshiek (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).



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	44,296	2,644	2,478	59.4	55.7
Adair.....	257	311	13	11	50.6	32.1
Adams.....	166	202	3	7	18.1	29.7
Allamakee.....	290	268	21	13	70.2	44.7
Appanoose.....	542	534	35	35	64.6	63.5
Audubon.....	259	248	11	8	42.5	28.6
Benton.....	423	397	22	22	52.0	52.9
Black Hawk.....	1,093	1,104	69	47	64.0	41.7
Boone.....	530	530	33	29	58.5	52.8
Bremer.....	293	339	15	21	51.2	58.7
Buchanan.....	325	340	7	11	21.5	29.4
Buena Vista.....	317	298	17	20	53.7	63.8
Butler.....	293	274	25	16	85.3	58.4
Calhoun.....	334	328	10	20	29.9	60.9
Carroll.....	559	537	43	33	76.9	61.5
Cass.....	327	321	16	17	48.9	53.6
Cedar.....	278	280	13	15	46.8	53.6
Cerro Gordo.....	764	735	46	54	60.3	73.5
Cherokee.....	352	365	17	12	48.3	32.6
Chickasaw.....	291	258	13	16	44.7	62.0
Clarke.....	145	191	20	12	137.9	62.8
Clay.....	291	320	11	17	37.8	53.2
Clayton.....	422	409	16	21	37.9	51.3
Clinton.....	636	770	36	43	56.6	64.2
Crawford.....	380	397	26	19	68.4	47.8
Dallas.....	379	416	13	16	34.3	38.5
Davis.....	203	219	11	12	54.2	54.8
Decatur.....	275	278	20	12	72.7	43.2
Delaware.....	396	378	23	24	58.1	63.5
Des Moines.....	703	799	41	50	58.3	71.5
Dickinson.....	215	185	10	9	46.5	48.6
Dubuque.....	1,132	1,168	73	83	64.7	71.1
Emmet.....	289	270	11	14	38.1	51.8
Fayette.....	516	526	28	24	54.3	45.5
Floyd.....	286	306	17	17	59.4	55.6
Franklin.....	344	325	17	23	49.4	70.8
Fremont.....	284	294	21	16	73.9	54.4
Greene.....	294	253	7	16	23.8	63.2
Grundy.....	240	204	9	13	37.5	63.7
Guthrie.....	304	313	15	16	49.3	51.1
Hamilton.....	306	381	34	19	85.9	49.8
Hancock.....	276	303	13	11	47.0	36.6
Hardin.....	397	359	18	16	45.6	44.6
Harrison.....	441	323	27	27	61.2	51.8
Henry.....	251	259	6	15	23.9	57.9
Howard.....	252	265	13	13	51.6	49.1
Humboldt.....	244	206	14	9	57.4	19.4
Ida.....	249	221	15	8	60.2	36.2
Iowa.....	208	248	14	20	52.2	80.6
Jackson.....	350	355	16	22	45.7	61.9
Jasper.....	509	572	37	35	72.7	61.2
Jefferson.....	302	276	11	7	36.4	25.3
Johnson.....	706	722	56	53	79.3	73.4
Jones.....	374	333	22	16	58.8	48.0
Keokuk.....	281	257	13	12	46.3	46.7
Kossuth.....	567	516	18	18	31.6	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
Lee.....	799	812	44	37	55.1	45.6
Linn.....	1,225	1,215	68	58	55.5	47.8
Louisa.....	151	175	15	14	99.3	80.0
Lucas.....	262	240	13	17	49.6	70.8
Lyon.....	317	260	10	18	31.6	69.2
Madison.....	232	215	14	14	60.3	65.1
Mahaska.....	389	450	31	30	79.7	66.7
Marion.....	348	341	27	29	77.6	58.7
Marshall.....	540	610	55	40	101.9	65.6
Mills.....	220	214	18	16	81.8	74.8
Mitchell.....	273	271	20	10	73.2	36.9
Monona.....	297	275	24	17	80.8	61.8
Monroe.....	335	292	35	15	104.5	51.4
Montgomery.....	275	293	8	12	29.1	40.9
Muscatine.....	525	495	28	36	53.3	72.7
O'Brien.....	329	275	21	13	63.8	47.3
Osceola.....	228	232	9	13	39.5	56.0
Page.....	400	413	13	18	32.5	43.6
Palo Alto.....	328	315	14	12	42.7	38.1
Plymouth.....	448	500	23	26	51.3	52.0
Pocahontas.....	307	348	19	15	61.9	43.1
Polk.....	3,289	3,293	236	198	71.8	60.0
Pottawattamie.....	1,336	1,276	91	75	68.1	58.8
Poweshiek.....	330	332	16	8	48.5	24.1
Ringgold.....	238	201	18	11	75.6	54.7
Sac.....	344	314	20	24	58.1	76.4
Scott.....	1,168	1,104	65	67	55.7	60.6
Shelby.....	284	262	17	15	59.5	57.3
Sioux.....	628	585	30	35	47.8	59.8
Story.....	501	546	23	26	45.5	47.6
Tama.....	386	355	21	13	54.4	32.9
Taylor.....	166	170	9	5	54.1	29.4
Union.....	244	290	14	13	57.4	44.8
Van Buren.....	222	201	9	5	40.5	24.9
Wapello.....	768	704	57	56	74.2	79.5
Warren.....	295	287	19	23	64.4	80.1
Washington.....	309	341	14	20	45.3	58.7
Wayne.....	241	244	9	14	37.3	57.3
Webster.....	827	814	62	53	74.9	75.1
Winnebago.....	276	290	15	8	54.3	27.6
Winneshiek.....	422	404	23	20	54.5	49.5
Woodbury.....	2,190	2,113	164	151	67.5	61.5
Worth.....	293	194	14	9	68.9	46.4
Wright.....	383	409	10	18	26.1	44.0

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
Boone.....	234	356	20	15	85.5	58.6
Burlington.....	568	547	26	40	36.4	33.1
Cedar Rapids.....	875	893	49	45	56.0	50.4
Clinton.....	397	437	23	32	57.9	73.2
Council Bluffs.....	904	792	64	54	70.8	68.2
Davenport.....	918	871	52	58	56.6	66.6
Des Moines.....	2,919	2,949	202	175	69.2	59.3
Dubuque.....	806	821	57	63	70.7	73.1
Fort Dodge.....	501	490	40	44	91.8	89.8
Fort Madison.....	275	279	22	17	80.8	60.9
Iowa City.....	467	494	44	48	94.2	97.2
Keokuk.....	349	368	20	14	57.3	38.0
Marshalltown.....	306	339	41	26	134.0	76.7
Mason City.....	507	472	35	38	69.0	80.5
Muscatine.....	322	297	19	24	59.0	80.8
Ottumwa.....	564	516	47	38	83.3	73.6
Sioux City.....	1,701	1,679	141	103	82.9	79.2
Waterloo.....	742	774	51	35	68.7	45.2

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 4,226 divorces granted in the state, as compared with 4,080 in 1926, representing an increase of 146 or 3.6 per cent. There were 30 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.....	21,048	20,966	4,226	4,080	37	22
Number per 1,000 population.....	8.68	8.65	1.74	1.68		
Adair.....	71	72	9	10		
Adams.....	71	61	18	9		
Allamakee.....	95	109	8	5		
Appanoose.....	190	234	34	25	1	
Audubon.....	68	59	6	6		
Benton.....	126	123	13	36	1	1
Black Hawk.....	561	570	171	145	2	
Boone.....	264	224	54	22		
Bremer.....	147	144	10	8		
Buchanan.....	183	191	13	21		

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

Area	Marriages		Divorces		Annulments	
	1927	1926	1927	1926	1927	1926
Buena Vista.....	133	137	5	12		
Butler.....	118	104	9	9		
Calhoun.....	116	133	16	9		
Carroll.....	184	173	16	13		
Cass.....	159	164	24	19		
Cedar.....	64	72	7	9		
Cerro Gordo.....	321	347	83	90	2	
Cherokee.....	87	103	16	15	1	
Chickasaw.....	567	511	8	7		
Clarke.....	105	95	10	13		
Clay.....	145	138	14	20		
Clayton.....	154	163	14	15		
Clinton.....	382	402	73	58	1	
Crawford.....	163	168	16	12		
Dallas.....	381	274	32	27		
Davis.....	109	131	10	11		
Decatur.....	107	102	14	18		
Delaware.....	133	147	19	8		
Des Moines.....	328	355	82	106		
Dickinson.....	78	91	14	15		
Dubuque.....	606	558	56	53	1	
Emmet.....	102	104	15	26		
Fayette.....	136	162	12	26		
Floyd.....	143	156	30	28		
Franklin.....	117	87	13	19		
Fremont.....	188	124	20	19		
Greene.....	113	139	21	11	1	
Grundy.....	93	94	4	5		
Guthrie.....	90	88	19	13		
Hamilton.....	193	149	15	19		
Hancock.....	102	95	5	5		
Hardin.....	139	167	8	15		
Harrison.....	222	199	20	26		1
Henry.....	107	138	15	16	2	
Howard.....	92	122	5	5		
Humboldt.....	83	80	14	5		1
Ida.....	79	62	4	7		
Iowa.....	108	123	5	11		
Jackson.....	127	127	15	14		
Jasper.....	243	290	64	43	1	
Jefferson.....	134	139	13	20		
Johnson.....	291	312	63	37		
Jones.....	108	129	22	16		
Keokuk.....	98	101	18	17		
Kossuth.....	164	155	12	8		
Lee.....	459	341	115	87		2
Linn.....	744	702	284	249	1	
Louisa.....	45	41	8	8		
Lucas.....	109	121	28	19		
Lyon.....	123	111	7	8		
Madison.....	112	107	10	7		
Mahaska.....	221	235	63	46		
Marion.....	148	148	24	20		
Marshall.....	283	295	63	78		
Mills.....	375	356	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		
Monona.....	134	157	20	20		
Monroe.....	119	98	16	9		
Montgomery.....	173	157	10	14		1
Muscatine.....	262	270	102	88	1	
O'Brien.....	87	90	15	7		
Osceola.....	71	71	7	5		
Page.....	208	173	60	34		
Palo Alto.....	90	89	10	8		
Plymouth.....	165	164	16	13		
Pocahontas.....	91	79	11	6		
Polk.....	1,574	1,850	823	861	5	6
Pottawattamie.....	1,360	1,387	195	193	3	1
Poweshiek.....	118	99	13	9		
Ringgold.....	82	75	11	15		
Sac.....	101	87	12	14		
Scott.....	673	637	264	256	2	
Shelby.....	115	104	13	10		
Sioux.....	177	191	8	10		
Story.....	287	256	26	28		
Tama.....	117	120	10	25		
Taylor.....	107	87	10	17		
Union.....	154	170	20	37		1
Van Buren.....	53	52	13	11		
Wapello.....	425	393	116	107		
Warren.....	302	242	7	7		
Washington.....	103	127	20	15		
Wayne.....	88	85	11	18		1
Webster.....	328	354	67	80		4
Winnebago.....	89	76	5	5		
Winneshiek.....	128	124	13	13		
Woodbury.....	863	882	350	350	3	3
Worth.....	90	86	4	4		
Wright.....	126	123	15	16		

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

	Births			Deaths			Grand total
	Fee received	Government compensation	Total	Fee received	Government compensation	Total	
January, 1926.....	4	22	26	51	43	94	120
1927.....	0	8	8	35	42	77	85
February, 1926.....	6	22	28	40	58	98	126
1927.....	5	16	21	58	48	106	127
March, 1926.....	11	33	44	47	50	97	141
1927.....	3	12	15	48	50	98	103
April, 1926.....	10	27	37	40	44	84	121
1927.....	3	17	20	49	36	85	105
May, 1926.....	9	29	31	47	49	96	127
1927.....	3	11	14	37	30	67	81
June, 1926.....	5	38	43	34	59	93	136
1927.....	3	17	20	41	37	78	98
July, 1926.....	4	26	30	41	22	63	93
1927.....	2	16	18	43	39	82	100
August, 1926.....	5	37	42	33	36	69	141
1927.....	3	14	17	43	41	84	101
September, 1926.....	5	31	36	42	34	76	112
1927.....	11	9	20	45	37	82	102
October, 1926.....	10	18	28	44	36	80	108
1927.....	8	13	21	44	41	85	106
November, 1926.....	13	20	33	41	52	93	126
1927.....	4	14	18	42	39	81	99
December, 1926.....	2	14	16	36	54	90	106
1927.....	3	16	19	47	32	79	98
Total, 1926.....	77	317	394	496	537	1,063	1,457
1927.....	48	163	211	532	472	1,004	1,205
Total for two years.....	125	480	605	1,028	1,009	2,067	2,662

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

Months	1926	1927
January.....	15	15
February.....	26	10
March.....	33	28
April.....	75	58
May.....	112	93
June.....	63	92
July.....	59	67
August.....	67	84
September.....	69	75
October.....	83	87
November.....	65	75
December.....	24	20
Total.....	691	704

## 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 REPORT-  
 ABLE DISEASE REPORTED TO THE STATE DEPARTMENT  
 OF HEALTH FOR THE LAST HALF OF 1926 ALL OF  
 1927 AND THE FIRST HALF OF 1928

		Chickenpox	C. S. Meningitis	Chancroid	Diphtheria	Encephalitis Lethargica	Erysipelas	Endameba Histolytica	German measles	Gonorrhea	Infect mononucleosis	Influenza	Impetigo	Measles	Mumps	Malta fever	Pneumonia	Pollomyelitis	Scarlet fever	Smallpox	Syphilis	Septic sore throat	Tuberculosis	Typhoid fever	Trachoma	Tularemia	Vincent's angina	Whooping cough	
July,	1926	19	2	0	37	0	0	0	14	168	0	0	0	72	2	0	1	0	76	59	100	0	70	10	0	0	0	0	48
	1927	39	2	2	62	3	1	0	0	128	0	0	0	74	19	7	5	1	73	87	88	0	77	14	0	0	0	0	96
August,	1926	8	10	2	59	1	1	0	4	193	0	0	0	20	5	0	2	2	54	20	109	0	45	35	0	0	0	0	66
	1927	12	8	3	42	1	2	0	2	113	0	0	0	16	9	9	8	9	45	37	28	0	51	29	0	0	0	0	64
September,	1926	10	2	0	45	0	4	0	2	220	0	0	2	20	2	0	0	8	60	10	158	0	64	13	0	0	0	0	21
	1927	11	2	3	80	2	1	0	0	145	0	0	0	16	9	7	0	28	48	32	86	0	54	15	0	0	0	0	29
October,	1926	98	1	2	114	0	5	0	4	146	0	0	1	28	11	0	1	1	177	12	63	0	51	33	0	0	1	1	30
	1927	76	4	1	59	1	1	0	0	184	0	0	0	12	40	7	0	36	148	84	122	0	37	14	0	0	1	1	34
November,	1926	299	3	1	132	0	2	0	0	180	0	0	0	82	21	0	0	1	220	27	70	0	28	12	1	0	0	0	25
	1927	96	3	4	96	0	1	0	7	112	0	5	4	7	143	7	4	17	227	185	65	2	39	12	0	0	0	0	25
December,	1926	267	2	2	133	0	3	0	1	95	0	6	0	218	40	0	7	0	280	54	76	0	61	5	0	0	0	0	33
	1927	206	3	1	78	0	4	0	5	179	1	0	2	51	98	9	10	14	314	455	88	0	31	12	0	0	0	0	32
January,	1927	252	1	1	139	1	7	0	5	153	0	0	0	1,179	57	0	10	2	310	45	81	0	36	17	0	1	1	1	48
	1928	224	12	1	85	0	7	0	23	103	0	0	2	284	168	0	19	6	368	359	66	0	21	11	0	0	0	0	42
February,	1927	235	3	1	101	2	9	0	3	82	0	0	0	2,545	62	0	2	1	339	38	62	3	52	19	0	0	0	0	52
	1928	310	10	6	66	1	3	0	8	118	0	17	6	193	218	14	9	0	416	295	132	1	25	9	0	0	0	0	40
March,	1927	93	5	0	93	2	7	0	3	158	1	0	0	3,284	171	0	5	0	377	116	101	0	58	25	1	0	0	0	99
	1928	244	4	0	56	1	4	2	7	99	0	5	0	173	395	8	18	0	343	257	97	0	114	4	0	0	1	1	33
April,	1927	170	1	0	118	2	1	0	19	170	0	0	1	1,680	147	0	4	0	197	70	77	1	43	24	1	0	1	1	70
	1928	117	1	11	26	0	12	6	0	199	0	10	1	109	247	7	16	0	274	190	108	0	66	9	0	0	1	1	26

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## 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. Hinman, Jr., M. S.
3. Serological Laboratory. Chief, Zelma Zentmire, M. S.
4. Laboratory Records. Chief, Minnie Hamilton.
5. Epidemiology. State Epidemiologist, A. V. Hardy, M. D.  
Assitant 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	3957	
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	12.68
Deep Wells .....	70.43	81.08	61.37	59.07
Springs .....	39.63	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. Poarch 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 II. 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



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
Diagnosis—					
1926-1927.....	1,359	9,808	506	149	11,822
1927-1928.....	681	3,038	209	90	4,018
Total.....	2,040	12,846	715	239	15,840
Release—					
1926-1927.....	1,274	2,294	75	73	3,716
1927-1928.....	970	2,165	30	53	3,218
Total.....	2,244	4,459	105	126	6,934
Carrier—					
1926-1927.....	200	624	35	19	878
1927-1928.....	102	403	14	7	526
Total.....	302	1,027	49	26	1,404
Virulence—					
1926-1927.....	8	10	0	0	18
1927-1928.....	10	8	0	0	18
Total.....	18	18	0	0	36
Undesignated—					
1926-1927.....					
1927-1928.....	448	4,230	182	43	4,903
Total.....	448	4,230	182	43	4,903
Total.....	5,052	22,580	1,051	434	29,117

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
Widal—					
1926-1927.....	255	1,102	86	9	1,452
1927-1928 (Dry).....	101	1,123	76	4	1,304
1927-1928 (Wet).....	37	413	19	5	474
Feces and Urine—					
1926-1927.....	7	427	0	1	435
1927-1928.....	0	144	0	5	149
Blood Cultures—					
1926-1927.....	5	27	0	0	32
1927-1928.....	1	24	0	0	25
Total.....	406	3,260	181	24	3,871

Grand total for the biennial period, 3,871.

TABLE 3.—SPECIMENS RECEIVED FOR THE EXAMINATION OF TUBERCULOSIS

	Positive	Negative	Diagnosis Reserved	Specimens Unsuitable for Exam.	Total
<b>Sputum—</b>					
1926-1927.....	478	3,846	0	32	4,356
1927-1928.....	418	3,844	1	11	4,274
Total.....	896	7,690	1	43	8,630
<b>Feces and Urine—</b>					
1926-1927.....	0	34	0	1	35
1927-1928.....	0	31	0	0	31
Total.....	0	65	0	1	66
<b>Spinal Fluid—</b>					
1926-1927.....	1	26	1	5	33
1927-1928.....	1	13	0	0	14
Total.....	2	39	1	5	47
<b>Pleural Fluid—</b>					
1926-1927.....	0	0	0	0	0
1927-1928.....	0	14	0	0	14
Total.....	0	14	0	0	14
<b>Other—</b>					
1926-1927.....	0	9	0	0	9
1927-1928.....	1	22	0	0	23
Total.....	1	31	0	0	32
Total.....	899	7,839	2	49	8,789

Grand total for the biennial period, 8,789.

TABLE 4.—SPECIMENS RECEIVED FOR THE EXAMINATION OF RABIES

	Positive	Negative	Diagnosis Reserved	Specimens Unsuitable for Exam.	Total
<b>Dog Heads—</b>					
1926-1927.....	56	66	0	6	128
1927-1928.....	57	56	0	8	121
Total.....	113	122	0	14	249
<b>Heads of Cat, Hog, Cow, Squirrel, Horse, Rabbit—</b>					
1926-1927.....	15	14	0	2	31
1927-1928.....	11	27	0	0	38
Total.....	26	41	0	2	69
Total.....	139	163	0	16	318

Grand total for the biennial, 318.



TABLE 5.—SPECIMENS RECEIVED FOR EXAMINATION OF UNDULANT FEVER

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

	Positive	Negative	Diagnosis Reserved	Rejected	Total
Requested Examinations—					
1926-1927.....					
1927-1928.....	172	429	41	15	657
Total.....	172	429	41	15	657
Examinations performed routinely on Widal specimens.					
1926-1927.....	41	1,136	16	1	1,194
Total.....	41	1,136	16	1	1,194
1927-1928.....					
Total.....	213	1,565	57	16	1,851

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	155	4	11	298
Total.....	162	440	12	88	702

Grand total for the biennial period, 702.

TABLE 8.—OUTFITS DISTRIBUTED

	Diph- theria	Tuber- culosis	Typh- oid	Was- ser- mann	Gono- coccus	Blood	Feces	Miscel- lan- eous	Water	Total
1926-7	38,174	7,703	2,460	42,020	4,754	112	519	10	2,113	97,865
1927-8	24,560	7,209	2,008	36,872	4,519	81	195	0	2,104	77,638
Total	62,734	14,912	4,468	78,892	9,273	193	714	10	4,217	175,503

Grand total for the biennial period, 175,503.

TABLE 9.—SPECIMENS RECEIVED BY SEROLOGICAL DIVISION

	1926-27	1927-28
<b>BLOOD—</b>		
Cholest. Antig. Positive	5,754	5,177
Alch. Antig. Positive		
Cholest. Antig. Negative	40,891	32,000
Alch. Antig. Negative		
Cholest. Antig. Positive	808	833
Alch. Antig. Negative		
Cholest. Antig. Positive	643	580
Alch. Antig. Doubtful		
Cholest. Antig. Doubtful	240	151
Alch. Antig. Negative		
Specimens unsuitable for examination	1,732	2,001
Anticomplementary	56	83
Doubtful Cholest. Antig.	278	117
Doubtful Alch. Antig.		
<b>SPINAL FLUID—</b>		
Alch. Antig. Positive	203	189
Alch. Antig. Negative	1,172	1,082
Doubtful	54	36
Anticomplementary	32	17
Specimens unsuitable for examination	19	15
<b>GONORRHEA—</b>		
Positive	673	617
Negative	934	983
Doubtful	1,906	1,872
Specimens unsuitable for examination	17	13
<b>BACILLUS OF DUCREY</b>		
	2	2
<b>SPIROCHAETES</b>		
	10	19
Total	55,643	46,816

Grand total 1926-1928, 102,419.

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

Public	1926- 1927	1927- 1928	1926- 1928	1926- 1927	1927- 1928	1926- 1928	1926- 1927	1927- 1928	1926- 1928	1926- 1927	1927- 1928	1926- 1928
	Good			Bad			Doubtful			Total		
Shallow wells.....	205	167	372	204	144	348	99	108	207	508	419	927
Deep wells.....	558	492	1,050	68	101	169	33	43	76	659	636	1,295
Springs.....	7	2	9	1	6	7	1	0	1	9	8	17
Treated.....	671	709	1,380	29	27	56	5	12	17	705	748	1,453
Raw streams.....	0	1	1	396	414	810	0	0	0	396	415	811
Lakes, etc.....	0	7	7	1	5	6	0	0	0	1	12	13
Ice.....	1	2	3	0	0	0	0	0	0	1	2	3
Cisterns.....	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous.....	1	3	4	1	8	9	0	0	0	2	11	13
Sewage.....	0	0	0	11	26	37	0	0	0	11	26	37
Swimming pools.....	592	970	1,562	45	49	94	71	41	112	708	1,060	1,768
Total.....	2,035	2,353	4,388	756	789	1,545	209	204	413	3,000	3,337	6,337
Private—												
Shallow wells.....	94	73	167	447	464	911	118	121	239	659	658	1,317
Deep wells.....	86	54	140	43	26	69	12	16	28	141	96	237
Springs.....	2	4	6	0	3	12	1	1	2	12	8	20
Streams, etc.....	4	1	5	0	2	2	1	0	1	5	3	8
Ice.....	1	2	3	2	3	5	0	0	0	3	5	8
Cisterns.....	1	1	2	8	10	18	0	1	1	9	12	21
Miscellaneous.....	0	1	1	1	0	1	0	1	1	1	2	3
Total.....	188	196	324	510	508	1,018	132	140	272	830	784	1,614
Ownership not stated—												
Shallow wells.....	0	0	0	0	0	0	0	0	0	0	0	0
Deep wells.....	0	0	0	0	0	0	0	0	0	0	0	0
Springs.....	0	0	0	0	0	0	0	0	0	0	0	0
Streams.....	0	0	0	0	0	0	0	0	0	0	0	0
Ice.....	0	0	0	0	0	0	0	0	0	0	0	0
Cisterns.....	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous.....	0	0	0	0	0	0	0	0	0	0	0	0
No data.....	0	2	2	17	12	29	4	1	5	21	15	36
Total.....	0	2	2	17	12	29	4	1	5	21	15	36
Total.....	2,223	2,491	4,714	1,283	1,309	2,593	345	345	690	2,851	4,136	7,987

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	Field	Albert City	Typhoid	Contact	Busby
Aug. 11-13	Field	Waterloo	Typhoid	Milk	Busby
Aug. 16-17	Field	Fairfield	Typhoid	Contact	Busby
Aug. 19-21	Field	Iowa City	Scarlet fever	Contact	Busby
Aug. 27	Field				
Sept.	Field	Altoona	Typhoid	Contact	Wallace
Oct. 4	Field	Mapleton	Scarlet fever	Contact	Wallace
Nov. 13	Field	Fairfield, Glasgow	Typhoid	Contact	Hardy
Nov. 11-19	Field	Tama	Chickenpox	Contact	Griswold
Nov. 19	Field	Davenport	Tularaemia	Contact with rabbits	Hardy
Nov. 24	Field				
Dec. 1927					
Jan. 11-14	Field	Modale	Smallpox	Contact	Hardy
Jan. 13	Field	Clay Township	Ven. Dis.	Contact	Hardy
Jan. 13	Field	Modale	Relative to breaking quarantine		Hardy
Feb.					
March					
April 11-18	Field	Hawarden	Typhoid	Milk	Hardy
May					
June					
July					
Aug. 3-4	Field	Perry	Paratyphoid	Water	Hardy
Aug. 5	Field	Oakdale	Gastro Entr.		Hardy
Sept. 10	Field	Fairfield	Typhoid	Milk and carrier	Hardy
Oct. 26-27	Field	Council Bluffs	Typhoid	Varied	Hardy
Nov. 3-5	Field	Postville	Diphtheria	Carrier	Hardy
Nov. 8-12	Field	Vincent	Typhoid	Milk and carrier	Hardy
Nov. 23	Field	Pella	Diphtheria	Contact and carrier	Hardy
Nov. 14-27	Field	Bussey	Pollomyelitis		Hardy
1928					
Jan. 19-29	Field	Stratford	Smallpox	Contact	Hardy
Feb. 2-11	Field	Lynnville	Scarlet fever		Hardy
March					
April					
May					
June					

No investigations made from Iowa City in the months left vacant. Undulant fever investigations were conducted by Dr. Hardy, under a grant from the United States Public Health Service, during the entire year, 1927-8. 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 desirable 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, 1926-June, 30, 1928

Laboratory	Diph-theria	Tuber-culosis	Typhoid	Miscel-laneous	Total
Ames.....	653	13	23	512	901
Atlantic.....	337	13	1	20	371
Burlington.....	710	161	115	594	1,580
Cedar Rapids.....	474	51	9	178	712
Clinton.....	24	6	1	0	25
Council Bluffs.....	2,224	85	2	292	2,603
Des Moines.....	2,636	51	8	136	2,831
Dubuque.....	3,740	41	5	474	4,260
Fort Dodge.....	183	14	6	87	290
Grinnell.....	146	76	60	128	410
Keokuk.....	63	30	38	43	174
Mason City.....	1,140	64	21	562	1,787
Sheffield.....	0	0	0	74	74
Sioux City.....	2,242	258	175	4,264	6,939
Washington.....	957	25	0	40	1,022
Total.....	15,529	882	464	7,104	23,979

Grand total for the biennial period, 23,979.

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

	1926-7	1927-8	Summation	Total
<b>I. Diagnostic Division—</b>				
a. Specimens received:				
Diphtheria.....	16,434	12,683	29,117	
Typhoid.....	1,919	1,952	3,871	
Tuberculosis.....	4,433	4,350	8,783	
Rabies.....	159	159	318	
Undulant fever.....		1,851	1,851	
Tularaemia.....		61	61	
Miscellaneous.....	494	208	702	
b. Outfits distributed.....	48,978	34,053	83,031	
<b>Total.....</b>	<b>72,417</b>	<b>55,323</b>	<b>Summation</b>	<b>127,740</b>
<b>II. Serological Division—</b>				
a. Specimens received:				
Blood.....	50,501	41,980	92,481	
Spinal fluids.....	1,540	1,329	2,869	
Gonorrhoea.....	3,590	3,485	7,075	
Bac. of Durey.....	2	3	5	
Spirochete.....	10	19	29	
b. Outfits distributed.....	46,774	41,391	88,165	
<b>Total.....</b>	<b>102,417</b>	<b>88,207</b>	<b>Summation</b>	<b>190,624</b>
<b>III. Water Analysis Division—</b>				
a. Water.....				
b. Ice.....	4	7	11	
c. Sewage.....	11	26	37	
Containers sent out.....	2,113	2,194	4,307	
<b>Total.....</b>	<b>5,964</b>	<b>6,330</b>	<b>Summation</b>	<b>12,294</b>
<b>IV. Epidemiological Division—</b>				
Investigations:				
Field.....	13	88	101	
<b>Total.....</b>	<b>13</b>	<b>88</b>	<b>Summation</b>	<b>101</b>
<b>Grand Total.....</b>	<b>180,811</b>	<b>149,948</b>		<b>330,759</b>

## PUBLIC HEALTH LECTURE WORK

MRS. D. PIRIE-BEYEA, 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
1926				
October.....	1	1		200
November.....	7	11	500	925
December.....	4	32	4,700	1,000
1927				
January.....	8	16	1,600	985
February.....	12	33	3,250	1,817
March.....	11	34	3,945	2,205
April.....	14	28	1,760	1,485
May.....	4	9	1,350	475
June.....	5	11	608	2,679
Total.....	60	175	17,713	11,831
1927				
July.....	14	27	1,748	1,520
August.....	18	38	1,927	430
September.....	11	14	2,375	1,050
October.....	11	14		1,975
November.....	14	29	2,050	2,570
December.....	15	19	3,030	850
1928				
January.....	16	21	1,960	2,125
February.....	12	17	930	754
March.....	3	17	1,520	1,765
April.....	23	41	4,565	2,068
May.....	5	9	2,350	850
June.....	19	20	3,403	963
Total.....	161	266	25,918	16,950
Sum Total.....	227	441	43,631	28,781

## 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. Altfillisch, 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:

Sherman 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 Kostomlatsky, Sioux City.

## BARBERING:

F. C. Sloan, chairman, Waterloo,  
Frank O. Moffitt, secretary, Sioux 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. (Sec. 2466.) (Exceptions, Sec. 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.....	1,936

## BOARD OF PODIATRY EXAMINERS

Number of licenses issued upon examination.....	1
Number of licenses issued upon reciprocity.....	0
	<hr/>
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
	<hr/>
Total number of licenses issued during biennial period.....	6
Number of Itinerants' licenses issued during biennial period.....	12
Number of annual renewal fees received.....	1,025

## BOARD OF EMBALMER EXAMINERS

Number of licenses issued upon examination.....	107
Number of licenses issued upon reciprocity.....	1
	<hr/>
Total number of licenses issued during biennial period.....	108
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
	<hr/>
Total number of licenses issued during biennial period.....	1,140
Number of annual renewal fees received.....	5,959

## BOARD OF DENTAL EXAMINERS

Number of licenses issued upon examination.....	135
Number of licenses issued upon reciprocity.....	0
	<hr/>
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
	<hr/>
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
	<hr/>
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.....	12,828

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

Physicians.....	3,236
Nurses.....	3,329
Dentists.....	1,661
Dental Hygienists.....	10
Optometrists.....	543

Chiropractors .....	1,333
Osteopaths .....	438
Embalmers .....	1,676
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 .....	103
Misconduct .....	210
Dislike for work.....	72
Unfitness for work .....	75
Marriage .....	76
Inability to master theory.....	43
Homesick .....	17
Unforeseen conditions at home.....	36
Dishonesty .....	10
Disobedience .....	23
Family moved .....	6
To enter another school.....	9
To enter Convent .....	2
Financial .....	4
Insubordination .....	8
Deaths .....	3

## 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 465 with preliminary education as follows:

Over high school*.....	40
High school .....	212
Three to four years.....	47
Two to three years.....	56
One to two years.....	91
Equivalent .....	19

\*Does not include normal training.

Examinations, July, 1927, to July, 1928. Number of candidates 475 with preliminary education as follows:

Over high school .....	47
High school .....	275
Three to four years.....	39
Two to three years.....	51
One to two years.....	63

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	Ft. 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
Creston . . . . .1	Ottumwa . . . . .1	Indianola . . . . .1
Fort Dodge . . . . .2	Eagle Grove . . . . .1	Sioux City . . . . .3
Glenwood . . . . .1	Clarion . . . . .1	Humboldt
		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
Ft. 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:

Bremer, Page and Worth.

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

Stuart	Gray	Leon
Scranton	Peterson	Fertile
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 294 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.....	40	"
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.

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