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State of Iowa

1926

REPORT OF THE

## STATE DEPARTMENT OF HEALTH

FOR THE

BIENNIAL PERIOD ENDING JUNE 30, 1926

HENRY ALBERT, M. D.

Commissioner

Published by  
THE STATE OF IOWA  
Des Moines

# IOWA STATE DEPARTMENT OF HEALTH

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Julia Clarke, Clerk  
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Frank Yost, Shipping Clerk  
Zelma Zentmire, Serologist

Ethel Beyatt, Assistant Serologist  
Frances Bender, Technician  
George Bauer, Attendant  
George Hollingsworth, Attendant.

### DIVISIONS

Administration  
Communicable Diseases  
Sanitary Engineering and Housing  
Examinations and Licenses  
Lecturing

Vital Statistics  
Laboratories (at Iowa City)  
Don M. Griswold, M. D., Director  
Nursing  
Records and Accounts

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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, 1924, I have the honor to present the twenty-second biennial report of the State Department of Health for the period commencing July 1, 1924, and ending June 30, 1926.

HENRY ALBERT, M. D., Commissioner.

Des Moines, October 8, 1926.

NOTE: The above are names of members holding office at date of report.

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## REPORT OF STATE DEPARTMENT OF HEALTH

### DIVISION OF ADMINISTRATION

Early in the biennium represented by this report a reorganization was effected by the enactment of code commissioners' bills Nos. 260 and 262, which were drawn by the code commission, to rewrite, resectionize, and rechapterize all the laws relating to public health.

### REORGANIZATION

Bill 260 now known as Title VII, Chapter 105, Code of Iowa, 1924, provided for the consolidation of the offices of the State Board of Health, the State Hotel Inspector, the Board of Medical Examiners, Podiatry Examiners, Osteopathic Examiners, Chiropractic Examiners, Nurses' Examiners, Dental Examiners and Optometry Examiners into one department to be known as the State Department of Health.

These bills not only simplified and harmonized a large number of conflicting and overlapping statutes, but they also effected economy through the establishment of a system of co-operation and co-ordination in the discharge of similar governmental functions. This was done by centralizing the administration of the work of a number of boards and divisions—thus doing away with certain unnecessary overhead expenses. The elimination of certain salaried positions effected a saving of over \$12,000.00 per year.

Under the reorganization plan, the position of Secretary of the State Board of Health was changed to Commissioner of the State Department of Health.

Dr. Rodney P. Fagen, secretary of the old State Board of Health was the first Commissioner of Public Health appointed. He served as commissioner from October 28, 1924, until July 1, 1925.

Dr. Don M. Griswold served in that capacity from July 1, 1925, until June 30, 1926.

### THE STATE BOARD OF HEALTH

Under Chapter 106 of Title VII, Code of Iowa, 1924, provision was made for a State Board of Health to be composed of the Commissioner of Public Health, the members of the Executive Council and five health officers to be appointed by the governor,



prior to the second Tuesday in January, 1925, to serve for a period of two years.

The five health officers who were appointed are: H. L. Saylor, M. D., Des Moines; E. Marsh Williams, M. D., Oskaloosa; H. R. Sugg, M. D., Clinton; W. D. Hayes, C. P. H., Sioux City, and C. W. Stewart, M. D., of Washington. They receive no compensation for their services. Among other duties as set out in the law, the Board advises the Commissioner regarding health rules and procedures.

#### GENERAL PROGRESS

During the last biennium the Iowa State Department of Health has, we believe, not hidden the talent entrusted to it, but has used to the advantage of the people of Iowa the appropriation or talent committed to it by the legislature of the state of Iowa. Marked progress has been made in certain features of our work and many new methods and new activities have been put into operation within the last two years.

#### FINANCIAL AID OBTAINED

In addition to the appropriation from the legislature this department was successful in obtaining aid during the biennium from the International Health Board to assist in recording and tabulating the vital statistics of the state, and also financial aid for furthering rural sanitation and general administration. This aid has made it possible to initiate campaigns of prevention and education that we anticipate will have far reaching results.

#### MORBIDITY AND MORTALITY

The morbidity and mortality rates for the two years have remained about, or a little under, the average for the last ten years. The diseases that now take the highest toll are some of those not usually classed as communicable, but are, nevertheless, in a large measure preventable. Many of the diseases definitely known to be communicable are receding, because of the application of public health methods of prevention and control. Through more adequate means of conveying information and getting it acted upon many cases of cancer, heart disease and other diseases associated with middle or old age could be just as readily prevented.

#### VITAL STATISTICS

The Division of Vital Statistics has recorded and filed all reports of births, deaths and divorces forwarded to the depart-

ment, and from time to time, compiled statistics and made tabulations for the information of the public. The division has forwarded to every home from which a birth was reported, a free certificate of birth registration—a certificate that may prove of great value to the child as it grows older and finds it necessary to have its age certified to for different purposes. With this certificate there has also been included an authoritative book of information on infant care.

#### SANITARY ENGINEERING AND HOUSING

The Division of Sanitary Engineering has carried on the regular routine work of investigating and advising communities in the matter of safe water supplies, disposal of sewage, avoidance and abatement of nuisances, ventilation and many other features of housing requirements.

#### STREAM POLLUTION

In addition to this routine work, this division began during the biennium a very special piece of work in connection with stream pollution. The results of the special investigations on the Shell Rock and Lime creek streams have been published elsewhere and reference will be made to them in the report of the Sanitary Engineering Division, but it should be here stated that it is a great satisfaction to see very definite indications that a solution of the stream pollution problem on the above and other streams is near at hand, and that nuisances which have been a source of debate and rankling for years are about to cease. Much time had to be devoted to these studies, but the department feels that the time and expense entailed were more than justified by the results.

#### CONTROL OF COMMUNICABLE DISEASE

During this biennium the state has not been visited by any widespread epidemic, but wherever any disease assumed more than an ordinary degree of prevalence, efforts were made to determine the source of infection and give such information and aid as would terminate the outbreak, and if possible eradicate the disease. Most communicable diseases, as the reports to follow will show, are declining in prevalence, if not in virulence. Diphtheria is gradually waning through the use being made of diphtheria toxin-antitoxin.



## DIPHTHERIA IMMUNIZATION

In the fall of 1925 a program of immunization against diphtheria was initiated. This program has been largely confined to the schools, but within six months about 20,000 pupils were reported as having been immunized. At the closing of the schools for summer vacation in June, 1926, it was estimated that in the fifty-five communities where the program had been taken up, upwards of 40,000 pupils had been immunized against Diphtheria. In the county of Osceola, for example, ninety-eight per cent of the average attendance at school for the whole county, was immunized during the campaign. Other counties, while not equaling Osceola in percentage, greatly exceeded it in the actual numbers treated. It has been the policy of this department to encourage the use, by the people, of the local medical services, hence undoubtedly, great numbers of children have been immunized by the family physicians of whom we have no record. The department feels that the small expense incurred in providing free toxin-antitoxin for the first two hundred pupils in each community, as was done by the department, perhaps, brought greater definite practical returns, than an expenditure of a like sum could have brought in any other way. In addition to the material supplied, the department furnished free literature, and in many cases a representative of the department aided the campaign by giving addresses.

## SMALLPOX AND RABIES

In comparison with other diseases there has been a disproportionate number of cases of smallpox and rabies. In regard to the former, with vaccination so readily available, there is no excuse for any person contracting smallpox. The experience of the state has been that satisfactory vaccination has given almost complete protection from the disease. With these facts so evident, it is not surprising that some people advocate doing away with quarantine for smallpox and say "let those who want smallpox have it, we can protect ourselves against it by vaccination."

Judging from the number of cases of rabies among dogs and other animals and the number of anti-rabic treatments that have to be supplied for people who have been bitten, it would seem wise either to require dogs to be vaccinated against rabies or have more stringent laws regarding dogs running at large and unmuzzled. A method adopted in some places when rabies develops, is to have a whole county or township declared a "con-

tagious area" and to require all dogs to be vaccinated, tied up, or muzzled.

## EPIDEMIOLOGICAL INVESTIGATIONS

The reports on epidemiological investigations and on laboratory service appear under their own sections in this report. These reports indicate that there is a growing recognition on the part of the people of the value of laboratory service and that such service is indispensable for the proper carrying on of public health work.

## VENEREAL DISEASE WORK

The State Department of Health has not been able to do all it would have liked to do in the control of venereal disease, but it has done considerable. Through lack of funds it was not possible to continue supplying arsenicals free for the medication of venereal cases, but the department has made these available for clinics and hospitals at the lowest possible cost.

Encouragement has been given local clinics, and the department has endeavored to locate and follow up all sources of known infection, and has sought to have all infected persons submit themselves to their physicians for treatment.

## DISTRIBUTION OF SILVER NITRATE

In accordance with the requirements of the Venereal Disease law, an effort has been put forth to have the use made general of silver nitrate in the eyes of the newborn for the prevention of blindness. 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.

The Division of Vital Statistics checks up the number of birth certificates filed by each individual physician and compares the number of certificates filed by him with the issues of silver nitrate made to him.

## PUBLIC HEALTH EDUCATION

Many addresses have been given to medical societies and agencies interested in public health problems. A very great deal of literature for free distribution has been prepared. The leaflets on different diseases already existing were revised while many new ones have been added. A list of available literature appears elsewhere in this report.

There has been an increasing demand for literature and in-

formation, and in the first three months of 1926, there were issued upwards of 50,000 pieces of literature by this department to persons living in different parts of the state.

The Quarterly Bulletins have been published, and for some of the numbers we have had hundreds of requests from states other than Iowa, and many requests for copies have come from foreign countries.

A news letter has also been issued every few weeks, dealing briefly with some phase of public health activity. Judging from the communications received in regard to these letters, they have been appreciated and have proven helpful.

#### SURVEYS

This department was instrumental in having surveys made in the city of Des Moines by Dr. Drake, and in a number of other cities of the state by Miss Amy Tapping. The purpose of the surveys was to make an inventory of the local facilities for doing health work, and to point out where improvements might be made.

The reports submitted by these surveyors from the American Child Health Association have been of assistance to many of the municipalities in pointing out where special efforts should be made to strengthen their departments, and how to make the best use of such organizations as already exist.

#### PUBLIC HEALTH NURSING

During 1926, provision was made whereby the supervisor of Public Health Nursing might be directly connected with the State Department of Health. During the brief time the supervisor has been in office, she has conducted investigations and has made available a great deal of information on the nursing service of the state.

Maternity hospitals and all hospitals where nurses' training schools exist, have been inspected and a report made upon them. As there are great possibilities in this division, it is expected that with the continuation of it, much may be accomplished, not only for the state nurses, but for the state as a whole, by the establishment of a more comprehensive public health nursing service.

#### EXAMINATIONS AND LICENSES

This department is charged with the duty of recording results of examinations, collecting of registration fees and the issuing of licenses to practice the different professions connected with the healing art. This involves a great amount of correspondence, as

so many of the professions are grouped under this Division. The department however, has tried to carry out faithfully the duties entrusted to it by the Legislature, and has on file a complete record of all transactions in connection with the working of the division. The statistical report from this division will appear in the body of the report.

#### FINANCIAL REPORT

The financial statement is set forth in detail elsewhere in this report, showing the sources of revenue and the disposition made of it. All moneys received from fees and licenses are turned over to the State Treasurer, so that with the exception of fees received that have to be returned to applicants because of, say, failure to appear at an examination, such moneys are transferred within ten days after being received, to the general fund of the State.

#### LEGAL DECISIONS

The State Department of Health has in very few instances been called upon to prosecute offenders of the State Health laws. One very important decision was given by a presiding judge and confirmed by the supreme court in reference to the rights of a parent to demand that his unvaccinated child be admitted to school. The decision given was that under the circumstances the parent could not compel the school board to admit his child.

#### COUNTY HEALTH ORGANIZATION

Iowa's population is largely rural. Statistics show 36.4% urban and 63.6% rural, or in other words, there is almost twice as many of the population living in rural sections as in the cities. Until the last few years the country or rural part of our states was the safest place in which to live, so far as freedom from disease was concerned; but the relative positions of town and country have been reversed, and urban communities now show lower rates for morbidity and mortality than the country. This is not due to natural conditions, but to the marked recent improvements in the sanitation of cities. At the present time, water, milk and the disposal of sewage are given more attention in the cities than in the country, and above all the urban districts have better health organization than the rural.

There is no inherent reason why the health of rural dwellers should not be as adequately protected as the health of the city



folk, and so far as Iowa is concerned, unless such provision is made, the great mass of the population is placed at a disadvantage.

#### COUNTY HEALTH UNITS

In many states an effort is being made to overcome this handicap, and to establish for the country just as complete an organization for health protection and activities as enjoyed by any city. Experience shows that the most effective way to do this is by establishing County Health Units. Such a unit consists of a full time health officer and a sufficient number of nurses or aides to satisfactorily care for the public health needs of the county. The county is taken as the unit because it is sufficiently large to justify the employment of full time service. The political unit of a township is too small to take as the unit for a health program, as the expenditure of a sum of money sufficient to provide full time service would not be justified for such a small area.

The political unit for health administration should be enlarged because people are not isolated in small sections as they once were. The means of intercommunication are now so great that what was geographically the unit of our community life has greatly extended. For this reason among others, two-thirds of all states in the union have enlarged this political unit for health administration to make it coextensive with the county. The great advantage of this is that it gives a sufficiently large area to warrant the expenditure of a sum of money that will provide full time service in matters of health, for all the people of the county. This means also that the rural part of the county gets the same protection and the same advantages in a health program that the urban part has enjoyed, and in this way the present disability and disadvantages of living in the country, so far as health privileges are concerned, is removed. This principle properly applied will give the country again its rightful place of being the healthiest place in which to live.

#### COUNTY BOARD OF HEALTH

A natural preparatory step toward enlarging the present political health unit would be the appointment in all counties of a *County Board of Health*. The State Department of Health is convinced of the advisability of having such a board. About thirty states in the union already have such a county board and a number of others where there is no such board, have made provision for the employment of a county health officer. Such

county boards should be appointed in Iowa, because it is seldom that a health problem is wholly limited to the boundaries of a township, and when problems that affect contiguous or adjoining counties exist, it would be of distinct advantage to have County Boards of Health that they might confer with one another.

#### COUNTY UNIT AND FINANCIAL SUPPORT

While in some localities commendable progress has been made under part time service, this department is of the opinion that the greatest single factor in improving sanitation and promoting rural health throughout the state, will be the establishment of full time health units, at the head of which will be a full time health officer. The counties of Iowa are sufficiently large to warrant the employment of full time service, so there should be in each county a full time health unit, to be composed of a full time health officer and one or more public health nurses.

It is possible to obtain some financial aid from outside agencies to assist in establishing these county units. Most of the outside aid is contingent upon the state giving aid to the counties where units are established. It is hoped that the legislature will see the advisability of encouraging the establishment of these county health units, by giving all counties that wish to establish them, the right to do so, and also by aiding financially those that qualify for assistance from outside agencies. A number of counties are contemplating establishing a unit for their county and some of them already have qualified for the aid.

#### STANDARD PRACTICE

During 1926 a standard practice has been prepared and put into operation whereby any one of the office staff knows exactly what measures to pursue and what information and literature to send to the local or adjacent territory immediately on the receipt of a report of a case of communicable disease. This method insures immediate action and is a great conservator of time.

#### REVISION OF RULES

During the biennium the rules and regulations governing reportable diseases were revised and rewritten in an effort to bring them up to date, and in accordance with the best public health practice. They have been issued in a succinct form, made as uniform as possible and contain a ready reference index.

## SUMMER ROUNDUP

This department has co-operated with the Parent-Teachers' Association in an effort to get all children that were about to enter school for the first time in September, 1926, examined and all defects found, corrected. From the preventive standpoint this department was anxious to have all such children immunized against diphtheria before they entered school, and as an inducement to get this done, the department offered the toxin-antitoxin free for the immunization of children entering school for the first time.

## CO-OPERATION WITH OTHER AGENCIES

The State Department of Health has recognized that the promotion and protection of health are so important and have such wide ramifications, that every possible agency must be enlisted if the work is to be overtaken in anything like an adequate manner. For this reason an effort has been made to co-operate with existing volunteer health agencies, and all groups such as Parent-Teachers' Association and Women's Federated Clubs that have as a part of their program, the promotion of health activities.

By such co-operation many projects of immunization and other means of prevention of disease have been made possible. It will be the constant aim of the incoming commissioner and his staff, not only to co-operate with such agencies, but to individually assist all persons in health promotion, and thus render the maximum of service to the state as a whole.

## RECOMMENDATIONS

(1) That legal provision be made for the establishment of County Boards of Health. The reasons for this have already been set forth.

(2) That legal provision be made for the establishment of County Health Units in such counties as may wish to adopt this method of administering their health work.

(3) That financial aid be made available by the state for the establishment of a number of County Health Units (1) to assist counties to demonstrate the effectiveness of this form of health organization, and (2) to qualify them for financial aid from the International Health Board or from other sources.

(4) That the department be authorized to have its Sanitary Engineering Division continue, and extend its investigation on stream pollution within the state.

(5) That it be a legal requirement that where rabies develop in a county, an area may be defined by the State Department of Health in which all dogs must be vaccinated against rabies, tied or shut up, or satisfactorily muzzled.

(6) That provision may be made that the department may further extend its work on prophylaxis against disease by providing a portion, if not all, of the biologics necessary for initiating campaigns for the prevention of those diseases for which we have specific vaccines and sera.

(7) That provision be made in the State Department of Health for a Division of Nursing.

(8) That the budget for the Department of Health be increased in order that it may, more adequately than is possible at present, serve the state in the prevention of disease.

## FINANCIAL STATEMENT

The statement following herewith is given by separate years due to the fact that the department operated under different appropriations during the period pending the consolidation under Code Commissioners' Bills Nos. 260 and 262. Temporary and Special Provisions were also made by the Fortieth G. A. for carrying on expense during the transfer and pending appropriations by the Forty-first G. A.

The statement shows all receipts and disbursements for the individual fiscal years rather than by grouping them for the whole biennium.

FIRST HALF BIENNium  
July 1, 1924, to June 30, 1925.  
RECEIPTS AND EXPENDITURES

| SALARIES               |             |             |
|------------------------|-------------|-------------|
| Appropriated .....     |             | \$15,274.20 |
| Expended .....         | \$15,274.16 |             |
| Returned to G. R. .... | \$ .04      |             |
| CONTINGENT             |             |             |
| Appropriated .....     |             | 10,000.00   |
| Expended .....         | 8,999.74    |             |
| Returned to G. R. .... | 1,000.26    |             |
| ANTITOXIN              |             |             |
| Appropriated .....     |             | 2,000.00    |
| Expended .....         | 1,922.15    |             |
| Returned to G. R. .... | 77.85       |             |



## VITAL STATISTICS

|                                      |             |
|--------------------------------------|-------------|
| Appropriated .....                   | 10,000.00   |
| Expended (salaries and expense)..... | 9,692.14    |
| Returned to G. R.....                | 307.86      |
| <b>HOUSING</b>                       |             |
| Appropriated .....                   | 5,000.00    |
| Expended (salaries and expense)..... | 4,999.44    |
| Returned to G. R.....                | .56         |
| <b>VENEREAL DISEASE CONTROL</b>      |             |
| Appropriated .....                   | 25,000.00   |
| Federal Aid .....                    | 568.54      |
| Expended .....                       | 25,568.54   |
| Total appropriation .....            | \$67,274.20 |
| Total Federal Aid.....               | 568.54      |
| Total expended.....                  | \$66,456.17 |
| Total returned to G. R.....          | \$ 1,386.57 |

## FEES REMITTED TO STATE TREASURER BY FEE EARNING DIVISIONS

|   |                    |
|---|--------------------|
| Medical Examiners .....                 | \$ 8,245.00        |
| Embalmers .....                         | 2,420.00           |
| Optometry .....                         | 3,400.00           |
| Podiatry .....                          | 172.00             |
| Chiropractors *10-28-24 to 6-30-25..... | 680.00             |
| Osteopaths *10-28-24 to 6-30-25.....    | 405.83             |
| Nurses .....                            | 4,853.00           |
| Dental .....                            | 3,317.00           |
| Plumbing .....                          | 9.00               |
| Mattress Inspection .....               | 60.00              |
| Vital Statistics .....                  | 439.25             |
| <b>Total .....</b>                      | <b>\$24,001.08</b> |

## EXPENDED BY FEE EARNING DIVISIONS

|                                  |                    |
|----------------------------------|--------------------|
| Chiropractors .....              | \$ 3,250.12        |
| Medical Examiners .....          | 933.78             |
| Dental *10-28-24 to 6-30-25..... | 978.25             |
| Embalmers .....                  | 1,077.14           |
| Nurses .....                     | 1,716.68           |
| Optometry .....                  | \$33.76            |
| Plumbing .....                   | 79.16              |
| Podiatry .....                   | 137.43             |
| <b>Total Expenses .....</b>      | <b>\$ 9,006.37</b> |

\*See 2462 Code of 1924.

## SECOND HALF BIENNIAL

July 1, 1925, to June 30, 1926.

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

## BIENNIAL APPROPRIATIONS

|   |                     |
|---|---------------------|
| For salaries and wages.....               | \$ 88,120.00        |
| Miscellaneous traveling expenses.....     | 3,700.00            |
| Quarantine expenses .....                 | 10,000.00           |
| Antitoxin .....                           | 4,000.00            |
| Laboratory supplies, medication .....     | 9,000.00            |
| Equipment and laboratory engineering..... | 2,000.00            |
| Traveling expenses engineering.....       | 6,000.00            |
| <b>Total .....</b>                        | <b>\$122,820.00</b> |

## FEES RECEIVED

|                      | Fees Rec'd         | Paid Refunds    | Paid State Treasurer | Due St. Treasurer | Overpaid       |
|----------------------|--------------------|-----------------|----------------------|-------------------|----------------|
| Bd. of Health.....   | \$ 316.75          | .....           | \$ 297.25            | \$ 19.50          | .....          |
| Embalmers .....      | 2,406.00           | \$ 80.00        | 2,225.00             | 101.00            | .....          |
| Optometry .....      | 2,542.00           | .....           | 2,505.00             | 37.00             | .....          |
| Podiatry .....       | 59.00              | .....           | 56.00                | 3.00              | .....          |
| Nurses' Dept.....    | 8,094.00           | 30.00           | 7,928.00             | 136.00            | .....          |
| Dental Fees.....     | 3,968.00           | 95.00           | 3,936.00             | .....             | \$65.00        |
| Medical Exam. ....   | 8,367.00           | 25.00           | 8,271.00             | 71.00             | .....          |
| Osteopathic Bd.....  | 1,235.00           | .....           | 1,235.00             | .....             | .....          |
| Chiropractor Bd..... | 4,945.00           | .....           | 4,945.00             | .....             | .....          |
| <b>Total .....</b>   | <b>\$31,932.75</b> | <b>\$230.00</b> | <b>\$31,398.25</b>   | <b>\$304.50</b>   | <b>\$65.00</b> |

There were balances in the hands of the Department July 1, 1925, as follows, which have been remitted to the Treasurer of State:

|                           |           |
|---------------------------|-----------|
| Medical Examiners .....   | \$ 195.00 |
| Dental Examiners .....    | 67.00     |
| Nurses Examiners .....    | 305.00    |
| Optometry Examiners ..... | \$ 315.00 |
| Embalmers Examiners ..... | 291.00    |
| Chiropractor Board .....  | 1,626.00  |
| Podiatry .....            | 30.00     |
| Laboratory fees .....     | 167.80    |
| U. S. Bank—Embalmers..... | 389.75    |

|  |                    |
|--|--------------------|
| Making a grand total remitted to State Treasurer of..... | \$34,784.80        |
| Total receipts and balances.....                         | \$55,319.30        |
| Total remitted to Treasurer.....                         | \$34,784.80        |
| Total Refunds .....                                      | 230.00             |
| Total due Treasurer of State.....                        | 304.50             |
| <b>Total .....</b>                                       | <b>\$35,319.30</b> |

## SALARIES

|   |                    |
|---|--------------------|
| For salaries there was appropriated for the department of health for the year ending June 30, 1926..... | \$34,160.00        |
| For Sanitary Engineering and Housing Division—Salaries .....  | 9,900.00           |
| Transferred to salaries from Quarantine Enforcement .....   | 1,000.00           |
| <b>Total .....</b>  | <b>\$45,060.00</b> |

|  |                    |
|--|--------------------|
| From this amount there was transferred to Workmen's Compensation for various purposes..... | \$ 3,300.00        |
| Salaries of Department paid.....   | 40,611.74          |
| Leaving a balance to be charged off of.....  | 1,148.26           |
| <b>Total .....</b>   | <b>\$45,060.00</b> |

## TRAVELING

|  |                    |
|--|--------------------|
| For traveling expenses appropriated for the biennium ..... | \$ 3,700.00        |
| Traveling expenses paid for the first year.....            | \$ 1,299.31        |
| <b>Balance June 30, 1926.....</b>                          | <b>2,400.69</b>    |
| <b>Total .....</b>   | <b>\$ 3,700.00</b> |

## QUARANTINE ENFORCEMENT

|   |             |
|---|-------------|
| For Quarantine expenses appropriated for biennium | \$10,000.00 |
| Transferred to salary account.....                | \$ 1,000.00 |
| Transferred to printing account.....              | 3,000.00    |
| Traveling and other expenses paid.....            | 745.79      |
| Balance June 30, 1926.....                        | 5,254.21    |

\$10,000.00

## ANTITOXIN

|  |             |
|--|-------------|
| For antitoxin expenses appropriated for biennium.. | \$ 4,000.00 |
| Paid for antitoxin.....                            | \$ 1,935.72 |
| Paid for printing.....                             | 27.14       |
| Balance June 30, 1926.....                         | 2,037.14    |

\$ 4,000.00

## LABORATORY SUPPLIES AND MEDICATION

|  |            |
|--|------------|
| For laboratory supplies, medication appropriated for biennium .....  | \$9,000.00 |
| Received for medication .....  | 167.80     |
| Paid for supplies, extra help, freight medication animals, etc. .... | \$6,635.25 |
| Balance June 30, 1926.....   | 2,532.55   |

\$9,167.80 \$9,167.80

## ENGINEERING HOUSING TRAVELING

|  |            |
|--|------------|
| Engineering housing traveling appropriation..... | \$6,000.00 |
| Paid for traveling expenses.....                 | \$4,310.83 |
| Transferred to special consulting engineers..... | 500.00     |
| Balance June 30, 1926.....                       | 1,189.17   |

\$6,000.00 \$6,000.00

## SPECIAL CONSULTING ENGINEERING

|  |           |
|--|-----------|
| Special consulting engineers transfer..... | \$ 500.00 |
| Paid consulting engineers.....             | \$ 363.82 |
| Balance June 30, 1926.....                 | 136.18    |

\$ 500.00 \$ 500.00

## ENGINEERING EQUIPMENT

|   |            |
|---|------------|
| Sanitary housing—equipment and laboratory appropriation ..... | \$2,000.00 |
| Paid for two Ford cars.....                                   | \$ 896.20  |
| Paid miscellaneous supplies .....                             | 515.84     |
| Balance June 30, 1926.....                                    | 587.96     |

\$2,000.00 \$2,000.00

No appropriation was set out in the State Budget, Chapter 218—41st G. A. for payment of per diem and travelling expense of the various medical boards acting under the Department of Health. The appropriation for this purpose is taken care of in section 2462, Code of 1924 and is as follows:

|  |            |
|--|------------|
| Dental examiners .....                 | \$1,604.50 |
| Medical examiners .....                | 483.29     |
| Medical examiners—expenses .....       | 450.24     |
| Medical examiners—prior expenses ..... | 74.34      |
| Nurses examiners .....                 | 959.78     |
| Embalmers examiners .....              | 754.83     |
| Optometry examiners .....              | 208.56     |
| Optometry examiners—prior .....        | 77.58      |

|                                  |          |
|----------------------------------|----------|
| Podiatry examiners .....         | 277.37   |
| Plumbing Code .....              | 222.71   |
| Chiropractor—clerical help ..... | 1,655.64 |
| Chiropractor examiners .....     | 754.70   |

## VITAL STATISTICS FEES

July 1, 1925 to June 30, 1926

|   |          |
|---|----------|
| 1925  |          |
| July—Birth and death certificates.....      | \$ 16.50 |
| August—Birth and death certificates.....    | 33.50    |
| September—Birth and death certificates..... | 29.50    |
| October—Birth and death certificates.....   | 27.00    |
| November—Birth and death certificates.....  | 27.50    |
| November—Search for Iowa City doctor.....   | 3.25     |
| December—Birth and death certificates.....  | 29.00    |

|  |       |
|--|-------|
| 1926                                       |       |
| January—Birth and death certificates.....  | 28.00 |
| February—Birth and death certificates..... | 23.00 |
| March—Birth and death certificates.....    | 30.50 |
| April—Birth and death certificates.....    | 25.00 |
| May—Birth and death certificates.....      | 24.50 |
| June—Birth and death certificates.....     | 19.50 |

Paid State Treasurer.....\$ 297.25

Due State Treasurer.....19.50

\$ 316.75 \$ 316.75

## PRINTING

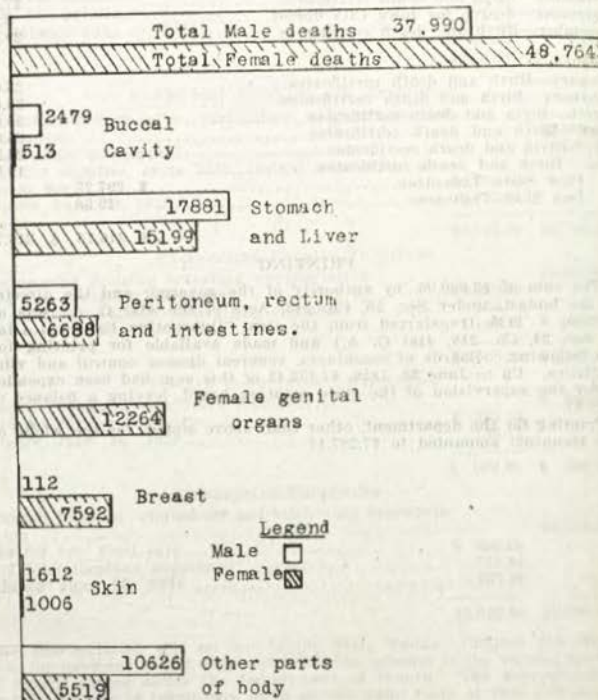
The sum of \$3,000.00, by authority of the governor and the director of the budget, under Sec. 56, Ch. 218, Acts of the 41st G. A., was on October 9, 1925, transferred from the item "Quarantine Expenses (line 42 Sec. 24, Ch. 218, 41st G. A.) and made available for printing for the following: Boards of examiners, venereal disease control and vital statistics. Up to June 30, 1926, \$2,132.43 of this sum had been expended under the supervision of the state printing board, leaving a balance of \$867.57.

Printing for the department, other than above stated, for the whole of the biennium amounted to \$7,287.17.



## CANCER AND OTHER MALIGNANT GROWTHS

Total number of deaths from Cancer among males and females, together with proportionate distribution in different parts of the body, for the Registration Area, U. S. A. in 1923.



## DIVISION OF PUBLIC HEALTH EDUCATION

As there is as yet no provision for a separate Division of Public Health Education in the State Department of Health, the functions of the division are carried out by the Division of Administration. The Divisions of Sanitary Engineering, Public Health Nursing and Vital Statistics have done a great deal in giving information to the people by talks and addresses, and appeals have repeatedly come to the commissioner or his deputy to address public meetings. During the first six months of 1926 the latter gave eighteen addresses to medical societies and other organizations interested in matters of public health.

A vast quantity of literature has been sent out to individuals, for example in one period of three months, over 50,000 pieces were mailed out to as many persons, as the policy of the department is not to send out literature in bulk, but only to individuals who make request for it.

Films illustrating methods of combating disease have been lent to communities making request, and have had a wide circulation.

The quarterly bulletins with a circulation of 14,000 and the news letters have been issued regularly and have been appreciated by the people. A list of literature, available upon application, is appended:

## A. LITERATURE DEALING WITH SPECIFIC DISEASE

## I. Cerebrospinal Fever (Epidemic Meningitis)

1. Leaflet on Cerebrospinal Fever, prepared by the Department.
2. Chart—Prevention and Control of Communicable Diseases.
3. Chart—Administrative Control of Communicable Diseases.
4. State Department of Health Bulletin Number 3—1925.

## II. Chicken Pox

1. Leaflet on "So-called Minor Communicable Diseases."
2. Chart—Prevention and Control of Communicable Diseases.
3. Chart—Administrative Control of Communicable Diseases.
4. State Department of Health Bulletin Number 3—1925.

## III. Diphtheria

1. Leaflet on "What Is Diphtheria," prepared by the Department.
2. Leaflet on "Diphtheria in Schools," prepared by the Department.
3. Leaflet on "Diphtheria Antitoxin," prepared by the Department.
4. Leaflet on the "Schick Test," prepared by the Department.
5. Health News Letter Number 7.
6. Chart—Prevention and Control of Communicable Diseases.
7. Chart—Administrative Control of Communicable Diseases.
8. State Department of Health Bulletin Number 3—1925.
9. Film—"Diphtheria Prevention."
10. Health News Letter Number 11.
11. Folder to Parents and Teachers.

## IV. German Measles

1. Leaflet on "So-called Minor Communicable Diseases."
2. Chart—Prevention and Control of Communicable Diseases.
3. Chart—Administrative Control of Communicable Diseases.
4. State Department of Health Bulletin Number 3—1925.

**V. Götter**

1. Leaflet on Götter prepared by the Department.

**VI. Measles**

1. Leaflet on Measles prepared by the Department.
2. Chart—Prevention and Control of Communicable Diseases.
3. Chart—Administrative Control of Communicable Diseases.

**VII. Mumps**

1. Leaflet on "So-called Minor Communicable Diseases."
2. Chart—Prevention and Control of Communicable Diseases.
3. Chart—Administrative Control of Communicable Diseases.
4. State Department of Health Bulletin Number 3—1925.

**VIII. Ophthalmia Neonatorum**

1. Law on Prevention of Blindness.

**IX. Influenza**

1. Leaflet on Influenza prepared by the Department.

**X. Paratyphoid**

1. Leaflet—"Typhoid Fever."
2. Chart—Administrative Control of Communicable Diseases.

**XI. Poliomyelitis (Acute Anterior)**

1. Pamphlet—"Poliomyelitis."
2. Health News Letter Number 6.
3. Chart—Administrative Control of Communicable Diseases.

**XII. Rabies**

1. Leaflet—"Rabies."
2. Health News Letter Number 4.
3. Rabies—Bulletin Number 3—1925.
4. Chart—Administrative Control of Communicable Diseases.

**XIII. Scarlet Fever**

1. Leaflet—"Scarlet Fever."
2. Health News Letter on Scarlet Fever Number 14.
3. State Department of Health Bulletin Number 3—1925.
4. Chart—Prevention and Control of Communicable Diseases.
5. Chart—Administrative Control of Communicable Diseases.

**XIV. Smallpox**

1. Leaflet—"Smallpox."
2. Pamphlet—"Smallpox."
3. Health News Letter Number 13.
4. "Vaccination and Re-vaccination"—Bulletin No. 26, Oct. 1923.
5. "Vaccination"—Bulletin No. 27, Jan. 1924.
6. Chart—Prevention and Control of Communicable Diseases.
7. Chart—Administrative Control of Communicable Diseases.
8. Poster—"Smallpox."

**XV. Tuberculosis**

1. Pamphlet—"What You Should Know About Tuberculosis." (on the press)
2. "Tuberculosis in Iowa"—Bulletin No. 22, Oct. 1922.
3. Chart—Administrative Control of Communicable Diseases.

**XVI. Tularemia**

1. "Report on Two Cases in Iowa."

**XVII. Typhoid Fever**

1. Leaflet—"Typhoid Fever."
2. Leaflet—"Safe Drinking Water."
3. "What YOU Should Know About Typhoid Fever," Bulletin No. 21, July 1922.

4. "Cause of Typhoid Fever," Bulletin No. 27, Jan. 1924.
5. Report form for typhoid case.
6. Chart—Administrative Control of Communicable Diseases.

**XVIII. Venereal Diseases (See Social Problems)**

1. Circular of Information concerning Venereal Diseases.
2. Pamphlet—"The Interpretation of the Wassermann Test."
3. Health News Letter Number 9.
4. "Come Clean"—Bulletin No. 8, July 1918.
5. "The State in the Control of Venereal Diseases," Bulletin No. 18, 1921.
6. Chart—Administrative Control of Communicable Diseases.
7. Posters—"Venereal Disease Menace."
8. Film—"Fit to Fight."

**XIX. Vincent's Angina**

1. Pamphlet on "So-called Minor Communicable Diseases."

**XX. Whooping Cough**

1. Leaflet—"Whooping Cough."
2. State Department of Health Bulletin Number 3—1925.
3. Chart—Administrative Control of Communicable Diseases.
4. Chart—Prevention and Control of Communicable Diseases.

**XXI. Cancer**

1. "Cancer"—Bulletin Number 21 July 1922.
2. "Cancer in Iowa"—Bulletin Number 22, October 1922. Bulletin Number 2, 1926.
3. "Age Occurrence of Cancer"—Bulletin Number 25, 1923.
4. "Cancer Control"—Bulletin Number 27, January 1924.

**XXII. Heart Disease**

1. State Department Health Bulletin Number 2 1926.

**XXIII. Nephritis**

1. Iowa Health Bulletin Number 2, 1926.

**XXIV. Apoplexy**

1. Iowa Health Bulletin Number 2, 1926.

**B. MATERIAL RELATING TO GENERAL HEALTH****I. Child Health**

1. Pamphlet—"Prenatal Care" (Children's Bureau)
2. Pamphlet—"Infant Care" (Children's Bureau)
3. Pamphlet—"The Pre-School Child" (Children's Bureau)
4. Baby Week Campaigns (Children's Bureau)
5. Film—"The Health Twins at Work."

**II. Flies and Mosquitoes**

1. Leaflet dated April 1, 1924.
2. "Flies"—Bulletin Number 17, April 1921.
3. Film—"The Fly as a Disease Carrier."

**III. Personal Hygiene**

1. Pamphlet—"Foot Derelicts of Industrial Armies."
2. "Foot Ills Spell Disaster"—Bulletin Number 21, July 1922.
3. "Physical Examination"—Bulletin Number 24, April 1923.
4. "Communicable Disease in Schools"—Bulletin Number 3—1925.
5. Film—"The Health Twins at Work."
6. Film—"Personal Hygiene for Young Women."
7. Film—"Personal Hygiene for Young Men."
8. Film—"General Personal Hygiene."
9. Film—"How Disease is Spread."
10. Film—"How to Prevent Disease."



## IV. Sanitation

1. Housing Law of Iowa.
2. State Plumbing Code.
3. "Sewage Treatment Plants for Rural Schools"—Bulletin Number 18, July 1921.
4. "Healthful Tourists' Camps"—Bulletin Number 2, 1925.
5. Communicable Disease in Schools—Bulletin Number 3—1925.
6. Health News Letter Number 15.
7. Film—"The Fly as a Disease Carrier."
8. Outline—"Community Organization toward Elimination of the Fly."

## V. Social Hygiene

1. Pamphlet—"Sex Education in the Home."
2. Pamphlet—"Sex Education in the Schools."
3. Pamphlet—"Wonderful Story of Life for Girls."
4. Pamphlet—"Wonderful Story of Life for Boys."
5. Pamphlet—"Healthy, Happy Womanhood."
6. Pamphlet—"The Girl's Part."
7. Pamphlet—"The Parent's Part."
8. Pamphlet—"Man Power."
9. "Keeping Fit"—Supplement to Bulletin Number 9, April 1919.
10. Posters—"Youth and Life Exhibit for Girls."
11. Posters—"Keeping Fit for Boys."
12. Posters—"Keeping Fit for Colored Boys."
13. Film—"How Life Begins."
14. Film—"Reproduction in the Higher Forms."
15. Film—"End of the Road."

## VI. Vital Statistics

3. Leaflet—"General Information on Vital Statistics."
2. Health News Letter Number 12.
2. History of Vital Statistics in Iowa—Bulletin Number 18, July 1921.
4. Film—"Error of Omission—Birth Registration."

## VII. Water Supplies

1. Leaflet—"Safe Drinking Water."
2. Pamphlet—"Protection of Well Water Supplies."
3. Pamphlet—"Oily Wastes from Garages."
4. "The Health Officer and Water Supplies"—Bulletin Number 21, July, 1922.
5. "Control of Iowa Stream Pollution"—Bulletin Number 25, July 1923.
6. "Stream Pollution"—Bulletin Number 26, October, 1923.
7. "Water Supplies for Schools"—Bulletin Number 1, 1925.
8. "Healthful Tourists' Camps"—Bulletin Number 2, 1925.

## C. FILMS, POSTERS, SLIDES

The following can be loaned for public health educational purposes to women's clubs, Parent-teacher's association, and other responsible organizations.

## I. Films

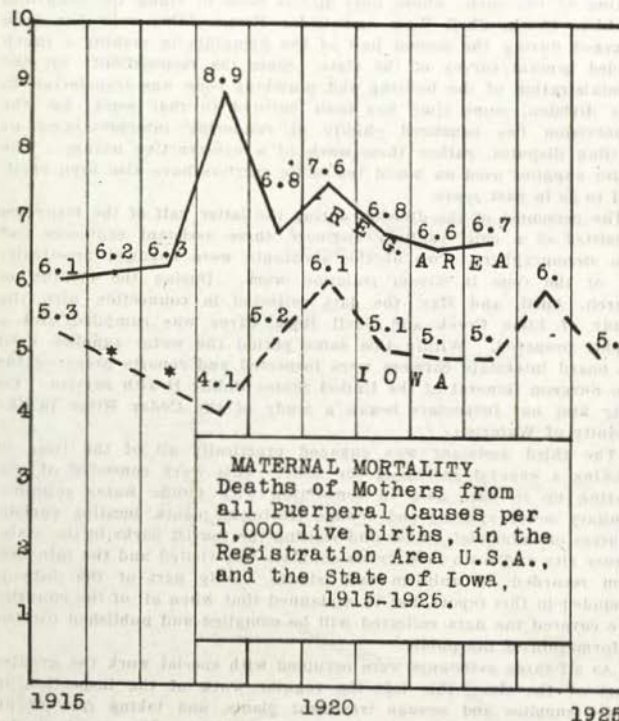
1. "The Health Twins at Work."
2. "How Life Begins."
3. "Reproduction in the Higher Forms."
4. "Personal Hygiene for Young Women."
5. "Personal Hygiene for Young Men."
6. "General Personal Hygiene."
7. "Fit to Fight."

8. "The End of the Road."
9. "How Disease is Spread."
10. "How to Prevent Disease."
11. "Diphtheria Prevention."
12. "The Fly as a Disease Carrier."

## II. Posters

1. "Venereal Disease Menace"—50 posters (for adults)
2. "Keeping Fit"—48 posters (for young men)
3. "Life and Youth"—48 posters (for young women)

## III. Attractoscope with Slides



## DIVISION OF SANITARY ENGINEERING AND HOUSING

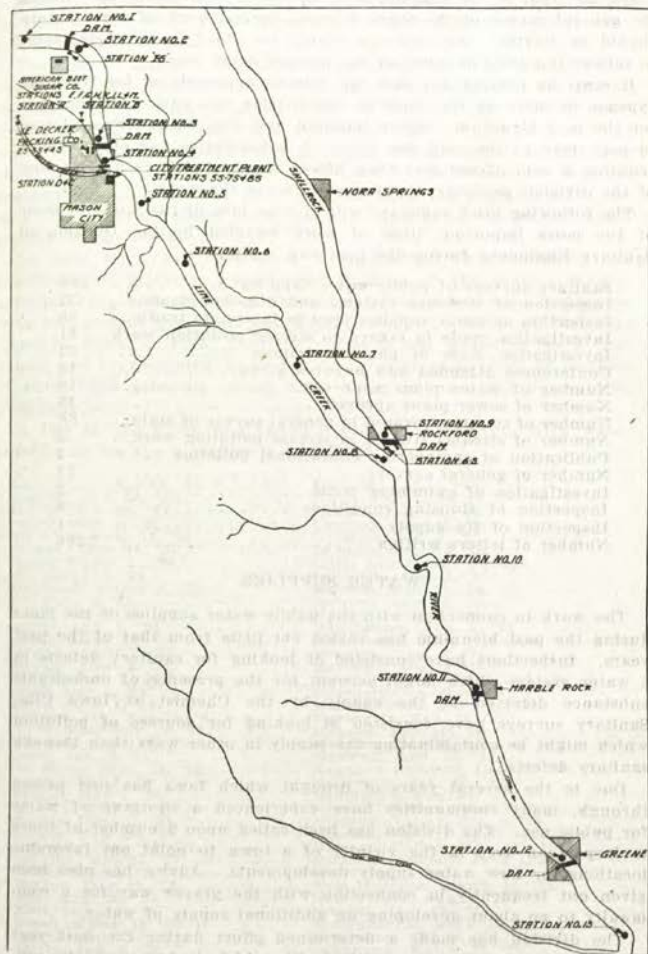
### INTRODUCTION

The Division of Sanitary Engineering due to assuming special investigation duties has passed through a biennial period of increased activity. In addition to the regular work of inspecting public water supplies and sewage treatment plants, writing reports and answering correspondence, the division has had to maintain a field party consisting of two men, whose duty it has been to study the condition of Lime Creek, Shell Rock and Cedar Rivers. One man has been engaged during the second half of the biennium in making a much needed general survey of the state. Since the responsibility for the administration of the housing and plumbing code was transferred to this division, some time has been devoted to that work, but the supervision has consisted chiefly of rendering interpretations or settling disputes, rather than work of a constructive nature. The water supplies used on board interstate carriers have also been certified to as in past years.

The personnel of the division during the latter half of the biennium consisted of a chief sanitary engineer, three assistant engineers and one stenographer. Two of the assistants were engaged practically all of the time in stream pollution work. During the months of March, April, and May, the data collected in connection with the study of Lime Creek and Shell Rock River was compiled and a report prepared. Within this same period the water supplies used on board interstate carriers were inspected and reports prepared for the Surgeon General of the United States Public Health Service. On May first our inspectors began a study of the Cedar River in the vicinity of Waterloo.

The third assistant was engaged practically all of the time in making a general survey of the state. This work consisted of collecting up to date data in connection with public water supplies, sanitary sewer systems and sewage treatment plants, locating various sources of industrial wastes and visiting the tourist parks in the state. Every city and town in sixty-six counties was visited and the information recorded on uniform data sheets. Only part of the data is included in this report, but it is planned that when all of the counties are covered the data collected will be compiled and published for the information of the public.

As all three assistants were occupied with special work the greater part of the time, this left the regular work of the inspection of water supplies and sewage treatment plants, and taking care of all manner of complaints to the chief of the division. Many requests for assistance have been denied or delayed, because it was impossible to take care of them. During the past biennium, requests for assistance on the part of the community have increased until it has become





necessary to increase the division in order to take care of them. The two engineers engaged in stream pollution studies might continue for years, so great is the magnitude of the work confronting us. When the general survey of the State is made, special work of other nature should be started. An assistant should be added to the department to relieve the chief of much of the present detail work.

It must be pointed out that the moneys appropriated for traveling expense to carry on the work of the division was entirely inadequate for the past biennium. Seven hundred and fifty dollars was allotted to each man of the staff per year. A conservative use of the funds requires a sum of not less than fifteen hundred dollars per member of the division per year, to completely cover the work.

The following brief summary will give an idea of the scope of some of the more important lines of work handled by the Division of Sanitary Engineers during the past two years.

|   |      |
|---|------|
| Sanitary surveys of public water supplies.....              | 114  |
| Inspection of sewerage systems and disposal plants....      | 52   |
| Inspection of water supplies used in interstate traffic.... | 86   |
| Investigation made in regard to stream pollution work       | 41   |
| Investigation made of public nuisances.....                 | 32   |
| Conferences attended and lectures given.....                | 13   |
| Number of water plans approved.....                         | 18   |
| Number of sewer plans approved.....                         | 35   |
| Number of counties covered in general survey of state....   | 66   |
| Number of streams studied in stream pollution work..        | 3    |
| Publication of engineering educational bulletins.....       | 3    |
| Number of general surveys.....                              | 11   |
| Investigation of swimming pools.....                        | 2    |
| Inspection of Housing conditions.....                       | 4    |
| Inspection of Ice supply.....                               | 1    |
| Number of letters written.....                              | 2206 |

### WATER SUPPLIES

The work in connection with the public water supplies of the State during the past biennium has varied but little from that of the past years. Inspections have consisted of looking for sanitary defects in a water system which might account for the presence of undesirable substance detected in the supply by the Chemist at Iowa City. Sanitary surveys have consisted of looking for sources of pollution which might be contaminating the supply in other ways than through sanitary defects.

Due to the several years of drought which Iowa has just passed through, many communities have experienced a shortage of water for public use. The division has been called upon a number of times to inspect an area in the vicinity of a town to point out favorable locations for new water supply developments. Advice has also been given out frequently in connection with the proper way for a community to go about developing an additional supply of water.

The division has made a determined effort during the past year to impress upon all communities with which it has come in contact, that it should make a thorough investigation of all the possible sources of water before any particular supply is chosen for develop-

ment. Several of the towns having acted upon the advice of the division have located very satisfactory shallow water sands that were heretofore unknown, and have been able to develop the new supply in such a way as to effect a material saving over that which they had expected to spend.

The general sanitary condition of the majority of the public water supplies of the State are not bad. The bacteriological tests of the various supplies made at Iowa City indicate a slight improvement over past years, although there are considerable numbers of supplies which occasionally contain the presence of *B. Aerogenes*. Continuous supervision and diligent effort on the part of the division to impress the necessity of protecting water supplies upon the public mind is the only way to bring about better sanitary quality of the public water supplies of the State.

No field work has been done in connection with improving the conditions of privately owned well supplies of the State. Several bulletins have been issued on the subject, but it has been impossible with the present personnel and appropriations to carry on real constructive work in rural districts. This is one phase of work that should not be neglected as by far the greater percentage of samples of water from privately owned wells tested at Iowa City prove to be unsatisfactory.

A list of the cities and towns visited in connection with water supplies during the biennium is as follows:

|                             |                                 |
|-----------------------------|---------------------------------|
| Albert City, Aug. 25, '24.  | Keokuk, Feb. 2, '25.            |
| Anamosa, Feb. 28, '25.      | Kiron, Oct. 1, '24.             |
| Aurelia, Nov. 18, '24.      | Lakota, Feb. 18, '25.           |
| Bedford, May 6, '25.        | Laurens, July 15, '24.          |
| Belle Plaine, June 17, '25. | Le Mars, Jan. 7, '25.           |
| Belmond, Sept. 18, '24.     | Le Mars, Feb. 13, '25.          |
| Bellvue, March 21, '25.     | Little Cedar, May 11, '26.      |
| Bode, Aug. 17, '24.         | Lohrville, Aug. 6, '24.         |
| Burlington, March 4, '25.   | Malcom, Sept. 29, '24.          |
| Burt, June 2, '25.          | Malcom, Aug. 14, '24.           |
| Calmar, March 19, '25.      | Malvern, July 9, '24.           |
| Cascade, Aug. 7, '24.       | Manchester, Aug. 5, '24.        |
| Cascade, June 18, '25.      | Manchester, June 17, '25.       |
| Chariton, April 7, '25.     | Manning, Aug. 6, '24.           |
| Churdan, Aug. 5, '24.       | Marengo, Aug. 4, '25.           |
| Clarence, Feb. 4, '25.      | Marshalltown, Dec. 9, '24.      |
| Clarion, Dec. 8, '24.       | Marshalltown, March 4, '25.     |
| Clinton, June 2, '25.       | Marshalltown, June 16, '25.     |
| Columbus Jct., Aug. 4, '25. | Marquette, Feb. 26, '25.        |
| Coon Rapids, May 17, '26.   | Maurice, Dec. 19, '24.          |
| Davis City, April 20, '26.  | Maurice, July 31, '25.          |
| Dayton, Jan. 6, '25.        | Maxwell, Sept. 25, '24.         |
| Deep River, Sept. 28, '25.  | Maynard (School), Dec. 12, '24. |
| Denison, Oct. 2, '24.       | McGregor, Feb. 26, '25.         |
| Diagonal, May 2, '25.       | Mediapolis, Aug. 16, '24.       |
| Dow City, July 1, '24.      | Missouri Valley, Sept. 5, '24.  |
| Dubuque, Dec. 11, '24.      | Missouri Valley, Jan. 8, '25.   |
| Dubuque, Feb. 25, '25.      | Missouri Valley, April 19, '25. |
| Dyersville, June 18, '25.   | Missouri Valley, May 17, '26.   |
| Dyersville, May 11, '26.    | Mitchell (School), June 5, '25. |
| Fairfield, March 11, '25.   | Mt. Vernon, Oct. 4, '24.        |
| Farragut, July 29, '24.     | New Hampton, March 17, '25.     |
| Fonda, Aug. 26, '24.        | New Vienne, Aug. 7, '24.        |
| Gilbert, Oct. 20, '24.      | Norway, Oct. 22, '24.           |
| Grinnell, March 11, '25.    | Norwoodville, Sept. 16, '24.    |
| Hampton, July 17, '24.      | Ocheyedan, Oct. 4, '24.         |
| Holstein, Jan. 7, '25.      | Oskaloosa, March 13, '25.       |
| Ida Grove, July 31, '24.    | Ottumwa, March 12, '25.         |
| Iowa City, Sept. 12, '25.   | Panora, Dec. 12, '24.           |
| Ireton, Dec. 11, '24.       | Petersen, July 29, '25.         |
| Kamrar, Feb. 11, '25.       | Pocahontas, April 19, '26.      |
| Kellogg, Sept. 26, '25.     | Postville, Aug. 12, '24.        |



Prairieburg, May 20, '25.  
 Prescott (School), Nov. 14, '24.  
 Red Oak, July 8, '24.  
 Red Oak, April 8, '24.  
 Remsen, July 30, '25.  
 Rudd, March 16, '25.  
 Schaller, Oct. 3, '24.  
 Searsboro (School), March 12, '26.  
 Sibley, Jan. 3, '25.  
 Spencer, July 28, '25.  
 Summer, March 18, '25.  
 Tabor, April 9, '25.  
 Tama, July 8, '24.  
 Tama, March 2, '25.  
 Tama, April 26, '26.  
 Tipperary, Aug. 31, '25.

Toledo, March 3, '25.  
 Tracy, Aug. 22, '24.  
 Traer, Sept. 26, '24.  
 Valley Junction, May 25, '25.  
 Walnut, Jan. 21, '25.  
 Washington, March 9, '25.  
 Waverly, Dec. 10, '24.  
 Wapello, Feb. 4, '25.  
 Webster City, Oct. 30, '24.  
 Webster City, Feb. 12, '25.  
 Wesley, Feb. 13, '25.  
 West Liberty, Dec. 24, '24.  
 West Union, Aug. 1, '24.  
 West Union, March 18, '25.  
 Total..... 114

# INVESTIGATION OF WATER SUPPLIES USED FOR DRINKING AND CULINARY PURPOSES BY COMMON CARRIERS ENGAGED IN INTERSTATE TRAFFIC

| Watering Point    | Ownership of Supply | Carriers Using Supply | Dates of Survey | Latest Recommendation for Certification |
|-------------------|---------------------|-----------------------|-----------------|---|
| Albia             | Railroad            | C. B. & Q.            | May 29, 1924    | Favorable                               |
| Albia             | Railroad            | C. B. & Q.            | March 15, 1926  | Favorable                               |
| Albia             | City                | M. & St. L.           | Jan. 2, 1925    | Favorable                               |
| Alden             | Private             | C. & N. W.            | Feb. 4, 1926    | Unfavorable                             |
| Ares              | City                | C. & N. W.            | Oct. 28, 1924   | Favorable                               |
| Atlantic          | City                | F. D., D. M. & S.     | Feb. 19, 1924   | Favorable                               |
|                   |                     | C. R. I. & P.         | Jan. 23, 1925   | Favorable                               |
|                   |                     | C. R. I. & P.         | March 23, 1926  | Favorable                               |
| Avoca             | Private             | C. R. I. & P.         | Jan. 22, 1925   | Favorable                               |
|                   |                     | C. R. I. & P.         | Jan. 22, 1926   | Favorable                               |
| Belle Plaine      | City                | C. & N. W.            | June 17, 1925   | Favorable                               |
|                   |                     | C. & N. W.            | March 25, 1926  | Favorable                               |
| Bellevue          | City                | C. M. & St. P.        | March 21, 1925  | Favorable                               |
|                   |                     | C. & N. W.            | April 30, 1926  | Favorable                               |
| Bcone             | City                | C. & N. W.            | July 24, 1925   | Favorable                               |
|                   |                     | F. D., D. M. & S.     | May 7, 1926     | Favorable                               |
| Burlington        | City                | C. B. & Q.            | Feb. 4, 1925    | Favorable                               |
|                   |                     | C. R. I. & P.         | April 8, 1926   | Favorable                               |
|                   |                     | T. P. & W.            | April 8, 1926   | Favorable                               |
| Calmar            | Railroad            | C. M. & St. P.        | March 19, 1925  | Favorable                               |
|                   |                     | C. M. & St. P.        | April 25, 1926  | Favorable                               |
| Carroll           | Railroad            | C. B. & Q.            | July 22, 1925   | Favorable                               |
|                   |                     | C. & N. W.            | April 8, 1926   | Favorable                               |
| Cedar Rapids      | City                | C. & N. W.            | Sept. 15, 1925  | Favorable                               |
|                   |                     | W. C. R. & N.         | Sept. 15, 1925  | Favorable                               |
|                   |                     | C. M. & St. P.        | Sept. 15, 1925  | Favorable                               |
|                   |                     | C. R. I. & P.         | Sept. 15, 1925  | Favorable                               |
|                   |                     | C. R. & I. C.         | Sept. 15, 1925  | Favorable                               |
| Centerville       | City                | C. B. & Q.            | Feb. 2, 1925    | Favorable                               |
|                   |                     | C. B. & Q.            | March 16, 1926  | Favorable                               |
| Chariton          | City                | C. B. & Q.            | July 7, 1925    | Favorable                               |
|                   |                     | C. B. & Q.            | March 3, 1926   | Favorable                               |
| Cherokee          | City                | I. C.                 | April 16, 1925  | Favorable                               |
| Clarinda          | City                | C. B. & Q.            | Feb. 5, 1925    | Favorable                               |
|                   |                     | C. B. & Q.            | March 25, 1926  | Favorable                               |
| Clarion           | City                | C. G. W.              | June 18, 1925   | Favorable                               |
|                   |                     | C. & N. W.            | May 6, 1926     | Favorable                               |
| Clinton           | City                | C. & N. W.            | Feb. 6, 1925    | Favorable                               |
|                   |                     | C. R. I. & P.         | April 19, 1926  | Favorable                               |
| Columbus Junction | City                | C. R. I. & P.         | April 14, 1926  | Favorable                               |
| Council Bluffs    | City                | C. & N. W.            | April 12, 1925  | Favorable                               |
|                   |                     | C. M. & St. P.        | Jan. 21, 1926   | Favorable                               |
|                   |                     | C. R. I. & P.         | Jan. 21, 1926   | Favorable                               |
|                   |                     | C. R. I. & P.         | Jan. 21, 1926   | Favorable                               |
|                   |                     | C. G. W.              | Jan. 21, 1926   | Favorable                               |
|                   |                     | I. C.                 | Jan. 21, 1926   | Favorable                               |
| Creston           | City                | C. B. & Q.            | Feb. 6, 1925    | Favorable                               |
|                   |                     | C. B. & Q.            | March 24, 1926  | Favorable                               |

## INVESTIGATION OF WATER SUPPLIES—Continued

| Watering Point  | Ownership of Supply | Carriers Using Supply | Dates of Survey | Latest Recommendation for Certification |
|-----------------|---------------------|-----------------------|-----------------|---|
| Davenport       | City                | C. M. & St. P.        | Feb. 5, 1925    | Favorable                               |
|                 |                     | C. R. N. W.           | April 9, 1926   | Favorable                               |
| Des Moines      | City                | C. R. I. & P.         | Jan. 30, 1926   | Favorable                               |
|                 |                     | C. M. & St. P.        | Jan. 30, 1926   | Favorable                               |
|                 |                     | C. B. & Q.            | Jan. 30, 1926   | Favorable                               |
|                 |                     | F. D., D. M. & S.     | Jan. 30, 1926   | Favorable                               |
|                 |                     | C. G. W.              | Jan. 30, 1926   | Favorable                               |
|                 |                     | C. M. & St. L.        | Jan. 30, 1926   | Favorable                               |
| Denison         | Railroad            | C. & N. W.            | April 8, 1926   | Favorable                               |
| Dubuque         | City                | C. M. & St. P.        | April 20, 1926  | Favorable                               |
|                 |                     | C. G. W.              | April 20, 1926  | Favorable                               |
|                 |                     | I. C.                 | April 20, 1926  | Favorable                               |
| Eagle Grove     | Railroad            | C. & N. W.            | Dec. 8, 1924    | Favorable                               |
|                 |                     | C. & N. W.            | May 3, 1926     | Favorable                               |
| Elkton          | City                | C. R. I. & P.         | March 17, 1926  | Favorable                               |
| Estherville     | City                | C. R. I. & P.         | Aug. 16, 1924   | Favorable                               |
|                 |                     | C. R. I. & P.         | April 28, 1926  | Favorable                               |
| Fort Dodge      | City                | F. D., D. M. & S.     | June 19, 1925   | Favorable                               |
|                 |                     | I. C.                 | April 5, 1926   | Favorable                               |
|                 |                     | M. & St. L.           | April 5, 1926   | Favorable                               |
|                 |                     | C. G. W.              | April 5, 1926   | Favorable                               |
| Fort Madison    | Corporation         | C. B. & Q.            | Feb. 3, 1925    | Favorable                               |
|                 |                     | C. B. & Q.            | April 6, 1926   | Favorable                               |
| Gowrie          | City                | C. R. I. & P.         | April 5, 1926   | Favorable                               |
| Grinnell        | City                | M. & St. L.           | July 7, 1924    | Favorable                               |
| Guthrie Center  | City                | C. R. I. & P.         | Jan. 19, 1925   | Favorable                               |
|                 |                     | C. R. I. & P.         | March 3, 1926   | Favorable                               |
| Hampton         | City                | C. R. I. & P.         | June 6, 1925    | Favorable                               |
|                 |                     | M. & St. L.           | April 19, 1926  | Favorable                               |
| Hawarden        | City                | C. & N. W.            | May 11, 1926    | Favorable                               |
| Iowa City       | City                | C. R. I. & P.         | March 20, 1926  | Favorable                               |
| Iowa Falls      | City                | C. R. I. & P.         | June 16, 1925   | Favorable                               |
|                 |                     | C. R. I. & P.         | Feb. 6, 1926    | Favorable                               |
| Jewell          | City                | C. & N. W.            | May 4, 1926     | Favorable                               |
| Keokuk          | City                | C. B. & Q.            | Feb. 3, 1925    | Favorable                               |
|                 |                     | C. R. I. & P.         | April 12, 1926  | Favorable                               |
| Lake Park       | Railroad            | C. R. I. & P.         | April 19, 1926  | Favorable                               |
| Macedonia       | City                | C. B. & Q.            | March 23, 1926  | Favorable                               |
| McGregor        | City                | Freeman Ferry Co.     | Feb. 20, 1925   | Favorable                               |
|                 |                     | C. B. & Q.            | April 23, 1926  | Favorable                               |
| Manilla         | City                | C. M. & St. P.        | April 8, 1926   | Favorable                               |
| Manilla         | Railroad            | C. M. & St. P.        | July 21, 1925   | Favorable                               |
| Manly           | Railroad            | C. R. I. & P.         | Feb. 17, 1926   | Favorable                               |
| Marion          | City                | C. M. & St. P.        | March 24, 1926  | Favorable                               |
| Marquette       | City                | C. M. & St. P.        | Feb. 20, 1925   | Favorable                               |
|                 |                     | C. M. & St. P.        | April 23, 1926  | Favorable                               |
| Marshalltown    | City                | M. & St. L.           | April 3, 1925   | Favorable                               |
|                 |                     | C. & N. W.            | March 24, 1926  | Favorable                               |
| Mason City      | City                | C. & N. W.            | Feb. 16, 1926   | Favorable                               |
|                 |                     | C. M. & St. P.        | Feb. 16, 1926   | Favorable                               |
|                 |                     | C. R. I. & P.         | Feb. 16, 1926   | Favorable                               |
|                 |                     | C. G. W.              | Feb. 16, 1926   | Favorable                               |
| Mason City      | Railroad            | C. M. & St. P.        | Feb. 10, 1926   | Favorable                               |
| Mason City      | Railroad            | M. & St. L.           | Feb. 10, 1926   | Favorable                               |
| Missouri Valley | City                | C. & N. W.            | May 11, 1926    | Favorable                               |
| Monticello      | City                | C. M. & St. P.        | March 23, 1926  | Favorable                               |
| Moulton         | Railroad            | Wabash                | Feb. 3, 1925    | Favorable                               |
|                 |                     | C. B. & Q.            | March 16, 1926  | Favorable                               |
| Muscantine      | City                | C. R. I. & P.         | Feb. 3, 1925    | Favorable                               |
|                 |                     | C. R. I. & P.         | March 5, 1926   | Favorable                               |
| Newton          | City                | C. R. I. & P.         | March 3, 1925   | Favorable                               |
| Osceola         | City                | C. G. W.              | March 26, 1926  | Favorable                               |
|                 |                     | C. G. W.              | Feb. 20, 1925   | Favorable                               |
| Oskaloosa       | City                | C. B. & Q.            | Feb. 9, 1926    | Favorable                               |
|                 |                     | C. R. I. & P.         | March 18, 1926  | Favorable                               |
|                 |                     | M. & St. L.           | March 18, 1926  | Favorable                               |
| Ottumwa         | City                | C. M. & St. P.        | March 12, 1925  | Favorable                               |
|                 |                     | C. B. & Q.            | March 17, 1926  | Favorable                               |
| Perry           | City                | C. M. & St. P.        | Aug. 6, 1925    | Favorable                               |
|                 |                     | M. & St. L.           | April 5, 1926   | Favorable                               |



TWENTY-SECOND BIENNIAL REPORT OF THE  
INVESTIGATION OF WATER SUPPLIES—Continued

| Watering Point  | Ownership of Supply | Carriers Using Supply | Dates of Survey | Latest Recommendation for Certification |
|-----------------|---------------------|-----------------------|-----------------|---|
| Perry           | Railroad            | C., M. & St. P.       | Aug. 6, 1925    | Favorable                               |
| Red Oak         | City                | C., B. & Q.           | April 5, 1926   | Favorable                               |
| Rock Rapids     | City                | C., St. P., M. & O.   | April 8, 1925   | Favorable                               |
| Rockwell City   | City                | C., M. & St. P.       | March 27, 1926  | Favorable                               |
| Shenandoah      | City                | P. D., D. M. & S.     | Nov. 11, 1921   | Favorable                               |
| Shopton         | Railroad            | C., B. & Q.           | May 14, 1926    | Favorable                               |
| Sibley          | Railroad            | A., T. & S. F.        | July 6, 1925    | Favorable                               |
| Sioux City      | City                | C., R. I. & P.        | April 9, 1926   | Favorable                               |
| Sioux City      | Railroad            | C., M. & St. P.       | March 25, 1926  | Favorable                               |
| Sioux City      | Railroad            | C., B. & Q.           | Feb. 3, 1925    | Favorable                               |
| Spencer         | City                | I. C.                 | April 7, 1926   | Favorable                               |
| Spirit Lake     | City                | C., St. P., M. & O.   | April 28, 1926  | Favorable                               |
| Storm Lake      | City                | C., M. & St. P.       | May 12, 1926    | Favorable                               |
| Stuart          | City                | C., B. & Q.           | May 12, 1926    | Favorable                               |
| Summer          | City                | I. C.                 | May 12, 1926    | Favorable                               |
| Tama            | Railroad            | C., M. & St. P.       | May 12, 1926    | Favorable                               |
| Tipton          | City                | C., N. W.             | May 12, 1926    | Favorable                               |
| Titonka         | Railroad            | C., R. I. & P.        | May 12, 1926    | Favorable                               |
| Valley Junction | City                | C., M. & St. P.       | May 12, 1926    | Favorable                               |
| Van Wert        | Railroad            | C., B. & Q.           | July 7, 1925    | Favorable                               |
| Wall Lake       | City                | C., N. W.             | April 17, 1926  | Favorable                               |
| Waterloo        | Railroad            | W., C. P. & N.        | April 29, 1926  | Favorable                               |
| Waterloo        | City                | W., C. P. & N.        | July 6, 1925    | Favorable                               |
| West Union      | City                | I. C.                 | April 16, 1926  | Favorable                               |
|                 |                     | C., M. & St. P.       | Jan. 19, 1925   | Favorable                               |
|                 |                     |                       | March 25, 1926  | Favorable                               |
|                 |                     |                       | March 2, 1925   | Favorable                               |
|                 |                     |                       | March 21, 1926  | Favorable                               |
|                 |                     |                       | March 18, 1925  | Favorable                               |
|                 |                     |                       | April 21, 1926  | Favorable                               |

## SEWER SYSTEMS AND SEWAGE TREATMENT PLANTS

Outside of collecting data in connection with sanitary sewer systems and sewage treatment plants, while making the general survey of the State, very little constructive work has actually been done on this phase of sanitary engineering work. The reason for this is, that the limited personnel of this division has made it impossible.

To be most effective the State should be divided into two or three districts, with a district sanitary engineer assigned to each district. It should be the duty of each district engineer to visit each sewage treatment plant in his district as many times each year as possible for the purpose of inspecting its working condition and also to instruct the care taker.

All of the plants visited at the request of the councils were found in more or less run down condition due chiefly to lack of attention. It has been generally understood by the average citizen that a sewage treatment plant is automatic; that is, that it can take care of itself or that the less attention given it the better it will function. Incorrect as this idea is, it has been difficult with the limited personnel of the division to change people's opinion. Just about as soon as one council begins to learn that a sewage treatment plant must be given systematic attention, a new council takes office and another course of instruction is necessary.

The Division of Sanitary Engineering has endeavored through an educational bulletin published at Ames, to bring about better operation of sewage treatment plants and by urging attendance at the three days' school or sewage treatment plant operators, but the results have been negligible. Eastern states have solved the problem by thorough state supervision and it is the opinion of the Engineering Division of Iowa that no improvement in the condition of the sewage treatment plants of the state will result until some better means of state control is perfected.

It has been suggested that operators be licensed by the State Department of Health, and that failure on the part of the operator to perform his duties should result in the annulment of his license. It is believed that if better state supervision could be effected the communities of the state would be saved a considerable amount of money within a period of a year. When a town neglects its plant for several months it usually takes more money to put it back in good condition than it would take to keep it in good condition at all times. It is believed that the money saved each community would more than pay the costs of state supervision.

A list of the towns having sewage treatment plants that requested aid of the division are as follows. It will be noted that fifty-two towns were visited during the two years, an average of twenty-five each year. As there are approximately two hundred municipal sewage treatment plants in the State, it can readily be seen that it would take eight years at the present rate, to cover the State.



# INSPECTION OF SEWAGE SYSTEMS AND SEWAGE TREATMENT PLANTS

Algona, July 11, '25.  
 Alton, May 17, '26.  
 Belmond, Sept. 18, '24.  
 Calmar, March 15, '25.  
 Calmar, April 17, '26.  
 Chariton, April 7, '25.  
 Coon Rapids, July 20, '25.  
 Creston, Nov. 14, '24.  
 DeWitt, Feb. 24, '25.  
 Fairfield, March 11, '25.  
 Fonda, Aug. 26, '24.  
 Ft. Dodge (Gypsum Co.), July 30, '24.  
 Grinnell, July 7, '24.  
 Grinnell, June 10, '25.  
 Griswold, May 28, '26.  
 Hull, Dec. 10, '24.  
 Humeston, May 29, '26.  
 Jewell, Oct. 20, '24.  
 Kenwood Park, April 17, '26.  
 Kingsley, June 10, '26.  
 Lake City, April 15, '25.  
 Leon (County Home), Aug. 6, '25.  
 Leon, Oct. 22, '26.  
 Madrid, May 6, '26.  
 Malcom (Private), Sept. 29, '24.  
 Maynard (School), Dec. 12, '24.

Millerton (School), Oct. 26, '25.  
 Mt. Pleasant, March 10, '25.  
 New Hampton, March 17, '25.  
 Newton, March 3, '25.  
 Ocheysian, Oct. 4, '24.  
 Orange City, Feb. 13, '25.  
 Orange City, May 17, '26.  
 Osage, Feb. 20, '25.  
 Oskaloosa, March 13, '25.  
 Ottosen (School), May 25, '26.  
 Polk County Home, Nov. 24, '24.  
 Preston, Oct. 13, '25.  
 Primghar, Sept. 19, '25.  
 Schaller, April 20, '26.  
 Schleswig, Nov. 30, '25.  
 Sibley, Jan. 9, '25.  
 Sibley, July 9, '25.  
 Sioux Center, Sept. 21, '25.  
 Stuart, June 15, '26.  
 Stratford, May 7, '26.  
 Sumner, March 17, '25.  
 Tipton, Feb. 24, '25.  
 Toledo, March 3, '25.  
 Washington (Co. Home), Sept. 10, '24.  
 West Branch, April 26, '26.  
 West Union, April 18, '26.

## STREAM POLLUTION

The division has been very actively engaged during the last half of the biennium in studying the condition of Lime Creek, Shell Rock River and the Cedar River in the vicinity of Waterloo. This study was made possible when the Forty-first General Assembly appropriated \$7,000.00. When this appropriation became available in July, 1925, a field party consisting of two men was organized to study the condition of Lime Creek in the vicinity of Mason City.

Lime Creek and Shell Rock River were chosen as the first subject of study because the problems in connection with these streams were of long standing and the conditions were very acute. Active field study began July 21, 1925, and continued until February 15, 1926. A great many samples were collected during this period in order to make the dissolved oxygen and the five day biochemical oxygen demand tests.

When the field work was complete the data collected was compiled and a report was prepared by the division. This report has been published and should be distributed before this biennial report is published. Anyone wishing a copy of the report of the investigation of Lime Creek and Shell Rock River can secure same by making a request to the department.

During the month of June the Beet Sugar Company at Mason City permitted the discharge of a very concentrated and peculiarly fish destructive water into Lime Creek, which caused the death of a great number of fish down stream. This destruction of fish life so enraged the citizens living in Marble Rock, Rockford, Greene and others to the extent that a demand was made for immediate action to bring about relief and to insure against a recurrence of the destruction. At a hearing held July 12, 1926, in the office of the State Executive Council the following order was discussed and adopted.

*In the matter of preventing the pollution of Lime Creek and Shell Rock River by the City of Mason City, the American Beet Sugar Company and by the Jacob E. Decker Packing Company at Mason City.*

## ORDER

**WHEREAS:** A scientific study of Lime Creek and Shell Rock River made by the State Department of Health from July 22, 1925, to February 15, 1926, shows that the waters of these streams were

grossly polluted during the months of November and December 1925 and January 1926 and

**WHEREAS:** This grossly polluted condition was traced as a direct result of the sewage and waste products discharged into Lime Creek by the municipality of Mason City, the American Beet Sugar Plant and Jacob E. Decker Packing Plant of Mason City and

**WHEREAS:** There should always be present in the waters of Lime Creek and Shell Rock River not less than 3 P. P. M. of dissolved oxygen to sustain fish life and there should always be enough oxygen to equal or exceed the biochemical oxygen demand of said water for five days when incubated at 20°C. and

**WHEREAS:** The average results of the tests made during the months of December 1925 and January 1926, when the conditions were the worst, shows that there is a limited amount of oxygen available at extremely low stages of Lime Creek that can safely be utilized for the oxidation of domestic and industrial wastes.

Therefore, it is the order of this Executive Council of the State of Iowa that the City of Mason City treat its domestic wastes to a degree of purity so that the total oxygen demand of the 24 hours flow will not exceed 42.5 pounds. This is equivalent to a total flow of 1.5 M. G. D. having a five day biochemical oxygen demand of 3.4.

It is further ordered that the American Beet Sugar Plant at Mason City treat its waste product to the degree of purity so that the total oxygen demand of the 24 hours flow will not exceed 182.5 pounds. This is equivalent to a total flow of 4.5 M. G. D. having a five day biochemical oxygen demand of 4.9.

It is further ordered that the Jacob E. Decker Packing Plant of Mason City treat its waste product to the degree of purity so that the total oxygen demand for the 24 hours flow will not exceed 68.5 pounds. This is equivalent to a total flow of 0.7 M. G. D. having a five day biochemical oxygen demand of 11.8.

It is further ordered that the City of Mason City, The American Beet Sugar Corporation and the Jacob E. Decker Packing Company begin at once to work out their several problems in connection with their treatment plants so that they may be able to obtain the necessary degree of purification within a reasonable time. This order is to be followed by a resolution from the State Executive Council of the State of Iowa, defining definitely what is considered to be a reasonable time for the corporations named above to comply with this order.

This order is made subject to such further orders as may be made by the Executive Council of the State of Iowa upon recommendation of the State Department of Health from time to time as occasion may arise.

Beginning with the first of May, 1926, the same field party which collected the data in regard to the pollution of Lime Creek, was located at Waterloo and engaged, during the nuisance period in making a study of the condition of the Cedar River in this vicinity. At the writing of this report this study is still incomplete and the data will probably not be ready for publication until early winter.

The seven thousand dollars appropriated for stream pollution work was practically all used up in one year's time, so it will not be possible to continue this important work. A request for appropriations should be made at the next Legislature and it should be impressed upon the minds of the public and members of the Izaak Walton League that an amount necessary to carry on a proper study must be secured before the department can hope for results. It is estimated that an appropriation of not less than twenty thousand



dollars for the biennium is necessary to maintain one field party so as to carry on the work to the best of advantage.

It should be pointed out here that in order to reach proper conclusions in connection with various stream pollution problems, it is imperative that proper stream flow records be available. The U. S. Department of Geology has maintained a number of gauging stations in Iowa for a number of years, but are now threatening to abandon the work unless State aid is secured. The State Legislature should be impressed with the importance of this work, not only in connection with stream pollution work, but for flood control reasons and for many other reasons too numerous to mention here. Stream gauging should continue if future generations are to cope with the industrial problems and problems involving the conservation of Iowa water resources.

During the biennium it was necessary for the Chief Engineer to make a great many field trips in connection with stream pollution work, as the numerous complaints were received and as requests for inspections were filed with the Chief Engineer, who made a preliminary investigation. After each investigation, a report was made which usually closed by stating that no definite result could be obtained or no opinion could be formed until a thorough scientific study could be made. After the field party was organized it was necessary for the Chief Engineer to make numerous trips in directing the work and to see that the best results were obtained in the least possible time. A list of the field trips are as follows:

|                              |                                    |
|------------------------------|------------------------------------|
| Ames, Dec. 30, '24.          | Marble Rock, Aug. 14, '24.         |
| Anamosa, Feb. 28, '25.       | Marble Rock, Feb. 15, '25.         |
| Belmond, Oct. 31, '24.       | Mason City, Sept. 25, '24.         |
| Boone, Jan. 6, '25.          | Mason City, Nov. 17, 18 & 19, '24. |
| Cedar Rapids, Oct. 3, '24.   | Mason City, Feb. 13, '25.          |
| Cedar Rapids, Oct. 23, '24.  | Mason City, May 13, '25.           |
| Cedar Rapids, Nov. 6, '24.   | Mason City, July 21, 22 & 23, '25. |
| Cedar Rapids, Jan. 22, '25.  | Monticello, Feb. 27, '25.          |
| Cedar Rapids, April 15, '25. | Nora Springs, Aug. 15, '24.        |
| Clarksville, Aug. 15, '24.   | Norwood, Nov. 24, '24.             |
| Clinton, Feb. 6, '25.        | Ottumwa, Jan. 21, '25.             |
| Des Moines, Jan. 14, '25.    | Rockford, Aug. 13, '24.            |
| Des Moines, May 27, '25.     | Shell Rock, Aug. 15, '24.          |
| Emmetsburg, July 10, '25.    | Storm Lake, March 5, '26.          |
| Fort Dodge, Jan. 7, '25.     | Tama, March 2, '25.                |
| Fort Dodge, Sept. 18, '25.   | Tracy, Jan. 20, '25.               |
| Fraser, March 8, '25.        | Vinton, Oct. 2, '24.               |
| Greene, Feb. 12, '25.        | Waterloo, Oct. 1, '24.             |
| Harvey, Jan. 20, '25.        | Waterloo, Nov. 5, '24.             |
| Iowa City, June 29-30, '25.  | Waterloo, April 2, '25.            |
| Iowa Falls, Oct. 31, '24.    |                                    |

### SWIMMING POOLS

The installation of outdoor community swimming pools in the State is on the increase. During the past summer the installation of at least six such pools was reported to this division, and it is not definitely known how many others were installed, of which no report was received.

Up to the present date the State Department of Health has not adopted a set of rules and regulations relating to the sanitary control of water in bathing pools of either the natural or artificial type. The sanitary control of water of swimming pools has been recognized

by public health authorities as important, and so it is recommended that a set of rules and regulations be adopted in Iowa.

The regulations should provide for the approval of the plan of all proposed swimming pools, and the rules should cover important structural features which make for the safety of the bathers and should also establish a standard for the quality of the water in the pool. The rules should also cover important features relative to the bath house, the enclosure and all other points which enter in to the best sanitary control of swimming pools.

### NUISANCES

According to statutory law all nuisances can be abated by action of local officials. The law further provides, however, that whenever a petition signed by five citizens of a community is received by the State Department of Health, requesting an investigation of a nuisance, that such investigation should be made. Occasionally it happens that disagreements arise in a community as to what constitutes a nuisance. Some times councils are divided as to what action they should take, and therefore take no action at all. Because of one reason or another, the Sanitary Engineering Division is called upon to make frequent trips of investigation in connection with nuisance complaints.

It has been the custom of the division when called upon to settle disputes in connection with nuisances to first of all pass an opinion as to whether the condition as found actually constitutes a nuisance. If a nuisance actually exists, advice is then given as to how to overcome it with the least friction or damage to anyone. Bad odors can be abated only by removing the cause. This is especially true with the small, so-called, rendering plant. Odors from such plants penetrate the atmosphere for a long distance, and when they become a nuisance to the people, the only relief is by removing the plant. Outdoor privies are usually considered a nuisance because of the odors. The odors in this case can be controlled to a great extent by proper maintenance, and if it were not for the danger of the contents of a privy contaminating the well water drinking supplies the cause for the request of the removal of privies would often be unjustified. Most public nuisances can be corrected or abated with little or no effort if proper sanitary ordinances are adopted and enforced by each community. The abatement of nuisances is strictly a local duty and the people of the State should be warned not to call in the State Department of Health, unless every local effort has failed.

A list of the towns visited, during the biennium, where investigations were made in connection with nuisances is as follows:

|                            |                             |
|----------------------------|-----------------------------|
| Albert City, Aug. 25, '24. | Harlan, Sept. 4, '24.       |
| Arnolds Park, July 8, '25. | Laurens, May 26, '25.       |
| Bedford, May 6, '25.       | Leon, March 25, '25.        |
| Burlington, March 21, '25. | Lidderdale, July 23, '25.   |
| Cedar Falls, July 13, '24. | Mackaburg, July 30, '24.    |
| Clinton, Sept. 27, '24.    | Mapleton, June 24, '26.     |
| Davis City, May 13, '25.   | Marshalltown, Aug. 28, '24. |
| Des Moines, May 6, '26.    | Marengo, Aug. 15, '25.      |
| Des Moines, March 20, '25. | Mediapolis, Dec. 27, '24.   |
| Dixon, May 21, '25.        | Melbourne, Sept. 25, '24.   |
| Earlham, May 12, '25.      | McViney, Jan. 7, '25.       |
| Fayette, Aug. 1, '24.      | Mt. Pleasant, Dec. 26, '24. |

Muscatine, July 8, '25.  
Okoboji, Aug. 16, '24.  
Olin, Nov. 13, '24.  
Ottawa Township, Oct. 13, '25.

Shenandoah, July 29, '24.  
Storm Lake, Sept. 19, '24.  
Stratford, Sept. 20, '24.  
Whiting, Aug. 27, '24.

## GENERAL SURVEY

In July 1925, the division began a general survey of the State in order to collect up-to-date information relative to public water systems, sewage treatment plants, the method of disposing of garbage, where the tourist camps were located and just how many small industries there are that are contributing to the pollution of streams. The survey was made by one of the assistant engineers, equipped with a Ford roadster.

All the towns and cities were visited by counties to ascertain the nature of the public improvements. Facts pertaining to each water system were recorded on data sheets prepared for that purpose, which sheets are classified by counties and filed in the office of the division. Likewise a great mass of facts have been collected in regard to sewage treatment plants, methods of disposing of garbage, tourist camps, etc.

At the close of this biennium, sixty-six counties had been covered. It is hoped that the survey can be continued as soon as the financial situation of the department will permit, so that all the data can be compiled and published in a special engineering bulletin for the information of the public.

A survey of this nature was deemed advisable for the reason that no good record of the various public improvements relating to public health has ever been published in the State. In fact, it has not been possible in the past for the division to collect sufficient reliable data to make up such a bulletin. Most of the data on file has been compiled over a period of fifteen to twenty years and some of it is quite incomplete. When all this data is brought up to date it will not be so difficult to keep it that way. The following table contains some of the information collected and is representative of the way it will be compiled for bulletin purposes when the survey is complete:

PUBLIC IMPROVEMENTS IN CITIES AND TOWNS COVERED IN GENERAL SURVEY

| County      | Town         | Population | Source of Public Water Supply | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                     |
|-------------|--------------|------------|-------------------------------|--------|--------------------------------|-------------------|--|
| Audubon     | Audubon      | 2,100      | 1 deep and 1 dug well         | Yes    | Imhoff & trickling filters     | None              | Canning factory, creamery                    |
|             | Exira        | 540        | 6 shallow wells               | Yes    | Imhoff and sand filters        | None              | Creamery                                     |
|             | Gray         | 400        | 2 dug wells                   | None   | None                           | None              | None   |
|             | Kimballton   | 382        | 7 sand points                 | None   | None                           | None              | Creamery                                     |
|             | Belle Plaine | 3,600      | 4 shallow wells               | Yes    | None                           | None              | Canning and ice cream factory, gas plant     |
| Benton      | Blairtown    | 600        | 1 deep well                   | Yes    | Septic and sand                | None              | None   |
|             | Keystone     | 560        | 1 deep well                   | None   | None                           | None              | None   |
|             | Shellburg    | 600        | 1 dug well                    | None   | None                           | Yes               | Canning factory, creamery                    |
|             | Urbana       | 477        | 1 deep well                   | None   | None                           | None              | None   |
|             | Van Horne    | 525        | 1 deep well                   | None   | None                           | None              | Canning factory                              |
| Black Hawk  | Vinton       | 3,400      | 2 deep wells                  | Yes    | None                           | Yes               | 2 canning factories, gas plant               |
|             | Cedar Falls  | 7,000      | 3 deep wells                  | Yes    | None                           | Yes               | Cry., 2 laundries, gas plant, canning facty. |
|             | Hudson       | 1,500      | 1 deep well                   | Yes    | Septic tank only               | Yes               | Creamery                                     |
|             | LaPorte City | 1,500      | 1 deep well                   | Yes    | Septic tank only               | Yes               | Creamery and canning factory                 |
|             | Waterloo     | 36,000     | 4 deep wells                  | Yes    | None                           | Yes               | Canning, packing, gas plants and laundries   |
| Boone       | Boone        | 12,500     | 12 shallow wells              | Yes    | Imhoff & trickling filter      | Yes               | 2 creameries, 1 laundry                      |
|             | Luther       | 200        | 3 dug wells                   | None   | None                           | None              | None   |
|             | Madrid       | 2,200      | 1 deep well                   | Yes    | Septic and trickling           | None              | None   |
|             | Odgen        | 1,500      | 1 deep well                   | Yes    | Septic and trickling           | Yes               | None   |
| Bremer      | Denver       | 600        | 1 deep well                   | Yes    | Septic tank only               | Yes               | Creamery                                     |
|             | Readlyn      | 500        | 1 deep well                   | None   | None                           | None              | Creamery                                     |
|             | Sumner       | 1,600      | 1 deep well                   | Yes    | Septic and trickling           | Yes               | Canning factory                              |
|             | Tripola      | 914        | 2 deep wells                  | Yes    | Septic tank only               | None              | Canning factory, creamery                    |
|             | Waverly      | 3,500      | 1 deep well                   | Yes    | None                           | Yes               | Can. & sugar fact'y, Carn. Milk Prod. Co.    |
| Buena Vista | Albert City  | 567        | 1 deep well                   | None   | None                           | None              | Creamery                                     |
|             | Alta         | 1,200      | 2 dug and 1 deep well         | Yes    | Septic and sand                | Yes               | Creamery                                     |
|             | Linn Grove   | 433        | 1 dug well                    | Yes    | None                           | Yes               | Ice cream factory                            |
|             | Marathon     | 600        | 1 deep well                   | None   | None                           | None              | None   |
|             | Newell       | 950        | 2 deep wells                  | Yes    | Imhoff and trickling           | Yes               | Creamery                                     |
| Butler      | Sioux Rapids | 1,100      | 1 dug well                    | Yes    | None                           | Yes               | Ice cream factory                            |
|             | Storm Lake   | 3,658      | Storm Lake                    | Yes    | Septic and sand                | Yes               | 2 prod. co's, gas plant, can. facty, 2 crmy. |
| Butler      | Allison      | 550        | 1 deep well                   | None   | None                           | Yes               | Creamery                                     |
|             | Applington   | 300        | 1 deep well                   | None   | None                           | None              | None   |



## PUBLIC IMPROVEMENTS IN CITIES AND TOWNS COVERED IN GENERAL SURVEY—Continued

| County      | Town          | Population | Source of Public Water Supply                | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                    |
|-------------|---------------|------------|--|--------|--------------------------------|-------------------|---|
| Calhoun     | Bristow       | 300        | 1 deep well                                  | None   | None                           | None              | None  |
|             | Clarksville   | 1,015      | 1 deep well                                  | Yes    | Septic tank only               | Yes               | Creamery and canning factory                |
|             | Dumont        | 696        | 6 shallow wells                              | Yes    | Imhoff and trickling           | None              | Creamery                                    |
|             | Greene        | 1,500      | 1 dug well                                   | Yes    | Septic tank only               | Yes               | Creamery                                    |
|             | New Hartford  | 475        | 1 deep well                                  | None   | None                           | Yes               | Creamery                                    |
|             | Parkersburg   | 1,200      | 3 deep wells                                 | Yes    | None                           | Yes               | Creamery                                    |
|             | Shellrock     | 900        | 3 deep wells                                 | Yes    | None                           | Yes               | Creamery                                    |
| Carroll     | Farnhamville  | 400        | 1 deep well                                  | None   | None                           | None              | None  |
|             | Lake City     | 2,110      | 2 deep wells                                 | Yes    | Imhoff and trickling           | None              | None  |
|             | Lohrville     | 750        | 2 deep wells                                 | Yes    | Imhoff and sand                | Yes               | Creamery                                    |
|             | Manson        | 1,200      | 1 deep well (soft water)                     | Yes    | Imhoff and sand                | Yes               | Creamery                                    |
|             | Pomeroy       | 1,000      | 1 deep well                                  | Yes    | Septic and trickling           | Yes               | Creamery                                    |
|             | Rockwell City | 2,940      | 2 deep wells                                 | Yes    | Septic and trickling           | Yes               | Creamery                                    |
| Cedar       | Arcadia       | 375        | 2 dug wells                                  | None   | None                           | None              | None  |
|             | Breda         | 420        | 1 deep well                                  | None   | None                           | None              | Creamery                                    |
|             | Carroll       | 5,000      | 4 deep wells                                 | Yes    | Septic and sand                | Yes               | Creamery and gas plant                      |
|             | Coon Rapids   | 1,200      | 1 deep well                                  | Yes    | Septic and sand                | Yes               | Creamery                                    |
|             | Dedham        | 300        | Sand point                                   | None   | None                           | None              | Creamery                                    |
|             | Glidden       | 870        | 1 deep well                                  | Yes    | Imhoff and sand                | Yes               | None  |
|             | Halbur        | 190        | 1 dug well                                   | None   | None                           | None              | Creamery                                    |
|             | Manning       | 1,870      | 2 dug wells                                  | Yes    | None                           | None              | Creamery and Produce Co.                    |
|             | Templeton     | 373        | 1 dug well                                   | None   | None                           | None              | Creamery                                    |
| Cerro Gordo | Bennett       | 348        | 2 deep wells                                 | None   | None                           | None              | Creamery                                    |
|             | Clarence      | 800        | 2 deep wells                                 | None   | None                           | Yes               | Creamery                                    |
|             | Durant        | 800        | 1 dug well                                   | Yes    | Septic and trickling           | Yes               | Creamery                                    |
|             | Lowden        | 700        | 1 deep well                                  | None   | None                           | None              | Creamery                                    |
|             | Mechanville   | 800        | 1 deep well                                  | None   | None                           | Yes               | None  |
|             | Stanwood      | 600        | 1 deep well                                  | None   | None                           | Yes               | None  |
|             | Tipton        | 2,300      | 2 deep wells                                 | Yes    | Septic and sand                | Yes               | Canning factory and Creamery                |
|             | West Branch   | 750        | 1 shallow well                               | Yes    | Septic and sand                | None              | Creamery                                    |
| Cherokee    | Clear Lake    | 3,000      | Clear Lake                                   | Yes    | Septic and trickling           | Yes               | None  |
|             | Mason City    | 30,000     | Deep wells                                   | Yes    | Imhoff and trickling           | Yes               | Beet sugar, er'miries, indries, pkg. plant  |
| Cherokee    | Rockwell      | 800        | 3 deep wells                                 | None   | None                           | None              | None  |
|             | Asaoka        | 700        | 3 deep wells                                 | Yes    | Septic and sand                | Yes               | None  |
| Chickasaw   | Cherokee      | 5,500      | 2 deep wells                                 | Yes    | None                           | Yes               | Creamery, laundries, gas plant              |
|             | Marcus        | 1,000      | 1 deep well                                  | Yes    | Septic tank only               | None              | None  |
|             | Quimby        | 300        | 1 deep well                                  | Yes    | Septic tank only               | None              | None  |
|             | Washta        | 300        | 1 dug well                                   | Yes    | Septic tank only               | None              | None  |
|             | Alta Vista    | 365        | 1 deep well                                  | None   | None                           | None              | Creamery                                    |
| Clarke      | Fredricksburg | 800        | 1 deep well                                  | Yes    | Imhoff and sand                | Yes               | Creamery                                    |
|             | Lawler        | 1,000      | 1 deep well                                  | None   | None                           | None              | Creamery                                    |
|             | Nashua        | 1,500      | 1 deep, 1 shallow well                       | Yes    | None                           | Yes               | None  |
|             | New Hampton   | 5,000      | 2 deep wells                                 | Yes    | Imhoff and trickling           | None              | Creamery                                    |
|             | Oscola        | 2,684      | Impounding reservoir, not used for drinking. | Yes    | 2 Sep. tanks & sand fl.        | None              | None  |
| Clay        | Everly        | 400        | 1 dug well                                   | Yes    | Imhoff tank only               | None              | None  |
|             | Peterson      | 580        | 1 dug and 1 deep well                        | Yes    | None                           | None              | None  |
|             | Spencer       | 4,000      | 4 dug wells                                  | Yes    | None                           | Yes               | Bottling wks., creamery and laundry         |
|             | Arion         | 300        | 1 shallow well                               | None   | None                           | Yes               | None  |
| Crawford    | Charter Oak   | 750        | 2 dug wells                                  | Yes    | Septic and sand                | Yes               | None  |
|             | Denison       | 5,580      | 1 dug and 2 deep wells                       | Yes    | None                           | Yes               | Creamery, laundry, bottling works           |
|             | Dow City      | 400        | 1 shallow well                               | Yes    | None                           | Yes               | None  |
|             | Kiron         | 300        | 1 dug well                                   | None   | None                           | None              | None  |
|             | Manilla       | 1,300      | 2 shallow wells                              | Yes    | Septic and sand                | Yes               | None  |
|             | Ricketts      | 100        | 6 sand points                                | None   | None                           | None              | None  |
|             | Schleswig     | 650        | 3 dug wells                                  | Yes    | Imhoff and trickling           | Yes               | None  |
|             | Vail          | 635        | 1 dug well                                   | Yes    | None                           | Yes               | None  |
|             | West Side     | 400        | 1 dug well                                   | None   | None                           | None              | None  |
|             | Adel          | 1,500      | Raccoon River                                | Yes    | None                           | Yes               | None  |
| Dallas      | Adel          | 800        | 2 dug wells                                  | Yes    | Septic and sand                | None              | Canning factory and creamery                |
|             | Granger       | 324        | 1 deep well                                  | None   | None                           | None              | None  |
|             | Perry         | 5,650      | Deep well                                    | Yes    | Septic tank only               | Yes               | Canning and milk factory, gas plant         |
|             | Redfield      | 770        | 1 dug well                                   | Yes    | None                           | Yes               | None  |
|             | Davis City    | 650        | 1 shallow and 1 deep well                    | None   | None                           | None              | None  |
| Decatur     | Lamoni        | 1,700      | Impounding reservoir, not used for drinking. | Yes    | Septic and contact             | None              | None  |
|             | Leon          | 2,100      | 2 deep wells                                 | Yes    | Imhoff and sand                | None              | Produce Co. and creamery                    |
|             | Arnolds Park  | 300        | West Okoboji Lake                            | Yes    | Imhoff and sand                | Yes               | None  |
| Dickinson   | Lake Park     | 700        | Silver Lake (not used for drinking)          | Yes    | Imhoff and sand                | None              | Creamery                                    |
|             | Millford      | 1,085      | West Okoboji Lake                            | Yes    | Septic and sand                | Yes               | Creamery                                    |
|             | Orleans       | 300        | City of Spirit Lake                          | None   | None                           | Yes               | None  |
|             | Spirit Lake   | 1,700      | 10 sand pts., 1 dug well                     | None   | Imhoff and sand                | Yes               | Bottling wks., ice cream & prod. Co., indry |
|             | Terrill       | 550        | 1 shallow well                               | None   | None                           | None              | None  |
|             | Armstrong     | 820        | 2 deep wells                                 | Yes    | None                           | Yes               | None  |
| Emmet       | Dolliver      | 170        | 1 deep well                                  | None   | None                           | None              | Creamery                                    |

## PUBLIC IMPROVEMENTS IN CITIES AND TOWNS COVERED IN GENERAL SURVEY—Continued

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| County     | Town            | Population | Source of Public Water Supply | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                    |
|------------|-----------------|------------|-------------------------------|--------|--------------------------------|-------------------|---|
| Floyd      | Estherville     | 4,700      | 2 dug wells                   | Yes    | None                           | Yes               | Btting. wks., gas plant, lndry. & Prod. Co. |
|            | Bingsted        | 600        | 2 deep wells                  | None   | None                           | None              | Creamery                                    |
|            | Charles City    | 7,500      | 1 deep well                   | Yes    | Imhoff and trickling           | Yes               | None  |
|            | Marble Rock     | 500        | 1 deep well                   | None   | None                           | Yes               | None  |
| Franklin   | Nora Springs    | 1,104      | 1 deep well                   | Yes    | None                           | Yes               | None  |
|            | Rockford        | 1,000      | 1 deep well                   | None   | None                           | Yes               | None  |
|            | Budd            | 500        | 1 deep well                   | None   | None                           | None              | None  |
|            | Ackley          | 1,400      | 2 deep wells                  | Yes    | Septic and sand                | Yes               | Creamery and canning factory                |
| Greene     | Alexander       | 300        | 1 deep well                   | None   | None                           | None              | Creamery                                    |
|            | Coulter         | 300        | 1 deep well                   | None   | None                           | None              | Creamery                                    |
|            | Dows            | 1,250      | 2 deep wells                  | Yes    | Septic and sand                | Yes               | None  |
|            | Hampton         | 3,000      | 1 deep well and springs       | Yes    | Imhoff and trickling           | Yes               | Canning factory and creamery                |
| Grundy     | Latimer         | 300        | 1 deep well                   | None   | None                           | None              | Creamery                                    |
|            | Sheffield       | 1,100      | 1 dug well                    | Yes    | Septic and sand                | Yes               | Creamery                                    |
|            | Churdan         | 900        | 2 deep wells                  | Yes    | Septic and sand                | None              | None  |
|            | Grand Jet       | 1,100      | 1 deep well                   | None   | None                           | None              | None  |
| Guthrie    | Jefferson       | 3,500      | 2 deep wells                  | Yes    | Septic and contact             | None              | Creamery and laundry                        |
|            | Paton           | 450        | 1 shallow well                | None   | None                           | None              | None  |
|            | Rippey          | 500        | 1 deep well                   | None   | None                           | None              | None  |
|            | Scranton        | 1,000      | 1 deep well                   | None   | None                           | Yes               | None  |
| Hamilton   | Conrad          | 675        | 1 deep well                   | Yes    | Septic and sand                | Yes               | Creamery                                    |
|            | Dike            | 450        | 1 deep well                   | None   | None                           | Yes               | Creamery                                    |
|            | Grundy Center   | 1,800      | 2 deep wells                  | Yes    | Septic tank only               | Yes               | Creamery and canning factory                |
|            | Reinbeck        | 1,500      | 2 deep wells                  | Yes    | Septic tank only               | Yes               | Canning factory                             |
| Hancock    | Wellburg        | 450        | 2 deep wells                  | Yes    | Imhoff and sand                | None              | 2 creameries                                |
|            | Bagley          | 650        | 1 shallow well                | Yes    | Septic tank only               | None              | None  |
|            | Bayard          | 750        | 1 deep well                   | None   | None                           | Yes               | None  |
|            | Casey           | 900        | 2 dug wells                   | None   | None                           | Yes               | Creamery                                    |
| Hardin     | Guthrie Center  | 2,000      | 6 shallow wells               | Yes    | Septic and sand                | Yes               | 2 creameries                                |
|            | Panora          | 500        | 1 dug well                    | Yes    | None                           | Yes               | None  |
|            | Sauert          | 2,000      | 1 deep well                   | Yes    | Imhoff and sand                | None              | Creamery                                    |
|            | Yale            | 300        | 1 deep well                   | None   | None                           | None              | None  |
| Harrison   | Elsworth        | 500        | 3 deep wells                  | None   | None                           | None              | Creamery                                    |
|            | Jewell          | 1,200      | 1 deep well                   | Yes    | Imhoff and sand                | Yes               | Creamery                                    |
|            | Kamarar         | 250        | 1 deep well                   | None   | None                           | None              | None  |
|            | Stanhope        | 400        | 2 deep wells                  | Yes    | Imhoff and sand                | None              | None  |
| Howard     | Stratford       | 600        | 1 deep well                   | Yes    | Septic and sand                | Yes               | Creamery, gas plant, laundry                |
|            | Webster City    | 5,600      | 1 deep well                   | Yes    | Septic and sand                | Yes               | Creamery                                    |
|            | Williams        | 567        | 2 deep wells                  | Yes    | Septic and sand                | Yes               | Creamery                                    |
|            | Britt           | 1,750      | 1 deep well                   | None   | None                           | Yes               | Creamery                                    |
| Humboldt   | Garner          | 1,500      | 1 deep well                   | Yes    | Septic and sand                | Yes               | Creamery                                    |
|            | Klemme          | 500        | 1 deep well                   | Yes    | Imhoff and trickling           | None              | None  |
|            | Alden           | 900        | 1 deep well                   | Yes    | Septic tank only               | None              | Creamery                                    |
|            | Eldora          | 3,300      | 4 deep wells                  | Yes    | None                           | Yes               | 2 creameries                                |
| Hutchinson | Hubbard         | 700        | 1 deep well                   | None   | None                           | Yes               | Creamery                                    |
|            | Iowa Falls      | 4,000      | 3 deep wells                  | Yes    | None                           | Yes               | Gas plant and Produce Co.                   |
|            | Radcliffe       | 700        | 2 deep wells                  | None   | None                           | None              | None  |
|            | Union           | 700        | 4 shallow wells               | Yes    | Septic and sand                | None              | None  |
| Harrison   | Dunlap          | 1,500      | 4 shallow wells               | Yes    | None                           | Yes               | None  |
|            | Logan           | 1,000      | 1 deep, 1 shallow well        | Yes    | None                           | Yes               | None  |
|            | Modale          | 380        | 1 shallow well                | None   | None                           | Yes               | None  |
|            | Missouri Valley | 4,300      | 2 shallow wells               | Yes    | None                           | Yes               | Creamery and Produce Co.                    |
| Howard     | Woodbine        | 1,400      | 3 shallow wells               | Yes    | None                           | Yes               | None  |
|            | Chester         | 300        | 1 deep well                   | Yes    | None                           | None              | 1 creamery                                  |
|            | Cresco          | 2,300      | 2 deep wells                  | Yes    | Septic and sand                | Yes               | 2 creameries and produce cos.               |
|            | Elma            | 850        | 1 deep well                   | Yes    | Septic and sand                | None              | 2 creameries                                |
| Humboldt   | Lane Springs    | 650        | 1 deep well                   | None   | None                           | None              | None  |
|            | Protivin        | 250        | 1 shallow well                | None   | None                           | None              | Creamery                                    |
|            | Bode            | 300        | 1 deep well                   | Yes    | Septic and sand                | None              | Creamery                                    |
|            | Dakota City     | 450        | 1 deep well                   | None   | None                           | Yes               | None  |
| Ida        | Gilmore City    | 950        | 1 deep well                   | Yes    | Septic and trickling           | Yes               | None  |
|            | Humboldt        | 2,230      | 2 springs                     | None   | None                           | Yes               | Creamery and bottling wks.                  |
|            | Livermore       | 650        | 1 deep well                   | Yes    | Imhoff and trickling           | Yes               | None  |
|            | Renwick         | 300        | 1 deep well                   | None   | None                           | None              | None  |
| Ida        | Arthur          | 200        | 2 dug wells                   | Yes    | Septic and sand                | None              | Pop corn factory                            |
|            | Battle Creek    | 800        | 12 sand points                | Yes    | None                           | Yes               | None  |
|            | Galva           | 700        | 22 sand points                | Yes    | None                           | Yes               | None  |
|            | Holstein        | 1,250      | 1 deep well                   | Yes    | Septic and trickling           | Yes               | Produce Co.                                 |
| Iowa       | Ida Grove       | 2,100      | 10 dug wells                  | Yes    | None                           | Yes               | Laundry                                     |
|            | Homestead       | 200        | 1 deep well                   | None   | None                           | Yes               | None  |
|            | Ladora          | 350        | 1 shallow well                | None   | None                           | None              | None  |
|            | Marengo         | 2,100      | 1 dug, 2 shallow wells        | Yes    | None                           | Yes               | Canning factory and creamery                |
| Iowa       | North English   | 908        | 1 deep well                   | Yes    | Septic and sand                | None              | None  |
|            | Victor          | 900        | 1 dug well                    | Yes    | Septic tank only               | Yes               | Creamery                                    |
|            | Williamsburg    | 1,300      | 3 deep wells                  | Yes    | Septic and sand                | Yes               | Creamery                                    |

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| County   | Town          | Population | Source of Public Water Supply         | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                      |
|----------|---------------|------------|---------------------------------------|--------|--------------------------------|-------------------|---|
| Jasper   | Baxter        | 650        | 1 deep well                           | Yes    | Septic and trickling           | Yes               | None  |
|          | Colfax        | 2,500      | 6 shallow wells                       | Yes    | None                           | Yes               | Bottling wks.                                 |
|          | Kellogg       | 600        | 3 sand points                         | None   | None                           | Yes               | None  |
|          | Monroe        | 936        | 2 deep wells                          | None   | None                           | Yes               | None  |
|          | Newton        | 6,000      | 7 shallow wells                       | Yes    | 2 Imhoff and sand              | Yes               | Creamery and gas plant                        |
| Johnson  | Prairie City  | 800        | 1 deep well                           | None   | 1 septic and sand              | None              | None  |
|          | Sully         | 500        | 1 deep and 1 dug well                 | None   | None                           | Yes               | None  |
|          | Iowa City     | 15,000     | Galleries and Iowa river              | Yes    | None                           | Yes               | 2 creameries, gas plant, canning factory      |
|          | Lone Tree     | 700        | 2 deep wells                          | None   | None                           | Yes               | None  |
|          | Oxford        | 700        | 2 deep wells                          | None   | None                           | None              | None  |
| Kossuth  | Solon         | 500        | 1 deep well                           | None   | None                           | None              | None  |
|          | Algona        | 3,800      | 3 deep wells                          | Yes    | None                           | Yes               | Laundry and creamery                          |
|          | Bancroft      | 1,000      | 1 deep well                           | Yes    | Imhoff and sand                | None              | Creamery                                      |
|          | Burt          | 800        | 1 deep well                           | Yes    | Septic and sand                | None              | None  |
|          | Fenton        | 380        | 1 deep well                           | None   | None                           | None              | Creamery                                      |
| Linn     | Irrington     | 200        | 1 deep well                           | None   | None                           | None              | None  |
|          | Ledyard       | 240        | 1 deep well                           | None   | None                           | None              | Creamery                                      |
|          | Lakota        | 470        | 1 deep well                           | None   | None                           | None              | None  |
|          | Lone Rock     | 200        | 1 deep well                           | None   | None                           | None              | None  |
|          | Luverne       | 610        | 1 deep well                           | None   | None                           | None              | None  |
| Lucas    | Swea City     | 690        | 1 deep well                           | Yes    | Imhoff and trickling           | None              | None  |
|          | Wesley        | 440        | 2 deep wells                          | None   | None                           | Yes               | Creamery                                      |
|          | Whittemore    | 650        | 1 deep well                           | None   | None                           | None              | Creamery                                      |
|          | Cedar Rapids  | 46,000     | 1 deep well, Cedar River              | Yes    | None                           | Yes               | Packing and gas plant, starch wks., etc.      |
|          | Center Point  | 773        | 28 sand points                        | None   | None                           | Yes               | Canning factory                               |
| Mahaska  | Central City  | 830        | 2 deep wells                          | Yes    | Septic tank only               | Yes               | Creamery                                      |
|          | Coggon        | 550        | 1 deep well                           | None   | None                           | None              | None  |
|          | Kenwood Park  | 1,000      | 1 deep well                           | Yes    | 2 septic and sand              | None              | None  |
|          | Lisbon        | 600        | 1 dug and 1 deep well                 | Yes    | Septic and sand                | Yes               | Creamery                                      |
|          | Marion        | 5,500      | 3 springs                             | Yes    | Septic and sand                | Yes               | Creamery                                      |
| Marion   | Mt. Vernon    | 2,000      | 2 deep wells                          | Yes    | Septic and sand                | Yes               | None  |
|          | Prairieburg   | 200        | 1 deep well                           | None   | None                           | None              | None  |
|          | Springville   | 700        | 1 deep well                           | None   | None                           | None              | Creamery                                      |
|          | Walker        | 454        | 1 deep well                           | None   | None                           | Yes               | Creamery                                      |
| Lyon     | Columbus Jet. | 1,000      | 4 shallow wells                       | Yes    | None                           | Yes               | Canning factory                               |
|          | Morning Sun   | 1,000      | 1 deep well                           | None   | None                           | Yes               | None  |
|          | Wapello       | 1,500      | 10 shallow wells                      | Yes    | None                           | Yes               | Canning factory                               |
|          | Chariton      | 5,000      | Impounding reservoir                  | Yes    | 4 Imhoff and sand              | Yes               | Gas plant                                     |
|          | Alford        | 350        | 1 shallow well                        | None   | None                           | None              | None  |
| Madison  | Doon          | 500        | 1 dug well                            | Yes    | Imhoff tank only               | None              | None  |
|          | George        | 1,100      | 1 dug well                            | Yes    | Septic and sand                | None              | Creamery                                      |
|          | Inwood        | 746        | 1 dug and deep well                   | Yes    | Imhoff and sand                | Yes               | Creamery                                      |
|          | Lester        | 350        | 1 dug well                            | None   | None                           | Yes               | None  |
|          | Little Rock   | 373        | 1 dug well                            | Yes    | Imhoff and trickling           | None              | None  |
| Mahaska  | Rock Rapids   | 2,400      | 2 dug wells                           | Yes    | None                           | Yes               | Creamery                                      |
|          | Earlham       | 800        | 1 deep well                           | None   | None                           | None              | None  |
|          | Winterset     | 3,000      | 3 shallow wells                       | None   | None                           | None              | 2 creameries                                  |
|          | New Sharon    | 1,300      | 2 deep wells                          | Yes    | Imhoff and sand                | None              | None  |
|          | Oskaloosa     | 9,400      | 38 shallow wells, Sk. R.              | Yes    | Imhoff & Con. S. tanks         | Yes               | Creamery, gas plant, canning factory, etc.    |
| Marion   | Knoxville     | 3,700      | 3 shallow wells                       | Yes    | Septic, Imhoff and sand        | None              | Creamery                                      |
|          | Pella         | 3,000      | 3 infiltration galleries              | Yes    | Septic only                    | None              | Canning factory                               |
|          | Pleasantville | 850        | 1 deep well                           | Yes    | Imhoff and trickling           | None              | None  |
|          | Gilman        | 500        | 6 shallow wells                       | None   | None                           | None              | Canning factory                               |
|          | Marshalltown  | 16,500     | 4 deep and shallow well               | Yes    | None                           | Yes               | Creameries, l'ndries, canning factories, etc. |
| Marshall | Rhodes        | 450        | 1 deep well                           | None   | None                           | None              | None  |
|          | State Center  | 1,000      | Shallow wells                         | Yes    | Septic and sand                | Yes               | Creamery                                      |
|          | Osage         | 3,000      | 2 deep wells                          | Yes    | Imhoff and sand                | Yes               | None  |
|          | Riceville     | 900        | 1 deep well                           | Yes    | Septic and sand                | Yes               | None  |
|          | St. Ansgar    | 1,000      | 1 deep well                           | Yes    | Imhoff and trickling           | Yes               | None  |
| Mitchell | Stacyville    | 512        | 1 deep well                           | None   | None                           | Yes               | None  |
|          | Castana       | 300        | 3 sand points                         | None   | None                           | None              | None  |
|          | Mapleton      | 1,700      | 12 sand points                        | Yes    | Septic and sand                | Yes               | Gas plant                                     |
|          | Moorhead      | 2,250      | 6 sand points                         | None   | None                           | Yes               | None  |
|          | Onawa         | 2,250      | 2 deep wells                          | Yes    | Imhoff and sand                | Yes               | Laundry                                       |
| Monroe   | Soldier       | 300        | 1 deep well                           | None   | None                           | Yes               | None  |
|          | Ute           | 600        | 10 sand points                        | Yes    | Septic and sand                | Yes               | None  |
|          | Atbia         | 5,067      | 2 impounding reservoirs               | Yes    | 2 Imhoff and sand              | Yes               | Laundry and gas plant                         |
|          | Hartley       | 1,500      | 1 deep well (not used for drinking)   | Yes    | Septic and sand                | None              | Creamery                                      |
|          | Paulina       | 987        | 1 dug well                            | Yes    | Septic tank only               | None              | None  |
| Monroe   | Pringhar      | 1,000      | 17 dug wells and infiltration gallery | Yes    | Imhoff and sand                | None              | None  |
|          | Sanborn       | 1,497      | 2 dug and 1 deep well                 | Yes    | Septic and sand                | None              | None  |

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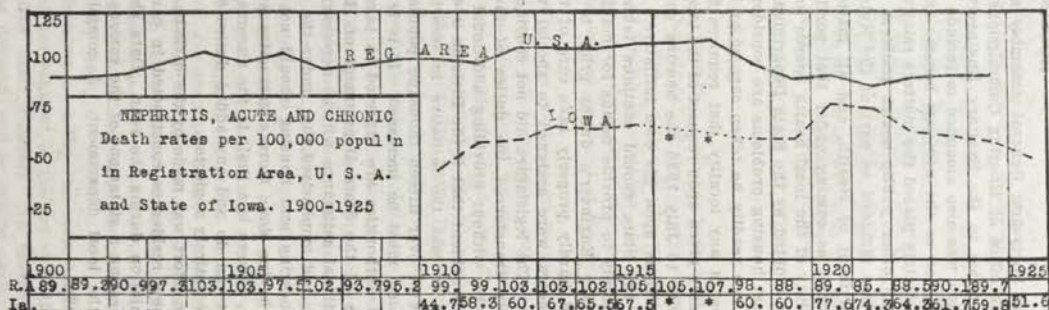
| County     | Town          | Population | Source of Public Water Supply | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                   |
|------------|---------------|------------|-------------------------------|--------|--------------------------------|-------------------|--|
| Osceola    | Sheldon       | 1,600      | 4 dug wells                   | Yes    | Septic and sand                | Yes               | 2 creameries, gas plant, bottling wks.     |
|            | Sutherland    | 876        | 1 deep well                   | Yes    | Septic and sand                | Yes               | None                                       |
|            | Ashton        | 600        | 1 bored well                  | Yes    | Septic tank only               | None              | None                                       |
|            | Harris        | 500        | 1 shallow and 1 dug well      | Yes    | Imhoff and sand                | Yes               | None                                       |
|            | Ocheyedan     | 800        | 1 deep and 1 dug well         | Yes    | Imhoff and trickling           | None              | None                                       |
| Palo Alto  | Sibley        | 2,000      | 3 deep and 1 dug well         | Yes    | Septic and sand                | None              | Creamery                                   |
|            | Ayrshire      | 361        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Emmetsburg    | 3,000      | 1 dug well                    | Yes    | None                           | Yes               | Creamery and Produce Co.                   |
|            | Graettinger   | 780        | 1 dug well                    | None   | None                           | None              | Creamery                                   |
|            | Mallard       | 431        | 1 dug well                    | None   | None                           | None              | Creamery                                   |
| Plymouth   | Ruthven       | 800        | 1 deep well                   | Yes    | Septic and sand                | None              | Creamery                                   |
|            | West Bend     | 969        | 1 deep well                   | None   | None                           | None              | Creamery                                   |
|            | Akron         | 1,327      | 2 dug wells                   | Yes    | None                           | Yes               | None                                       |
|            | Hinton        | 300        | 8 shallow wells               | Yes    | None                           | None              | None                                       |
|            | Kingsley      | 1,300      | 1 dug well                    | Yes    | Septic and sand                | None              | None                                       |
| Pocahontas | LeMars        | 4,083      | 2 Kelley wells                | Yes    | None                           | Yes               | Produce Co., gas plant, bottling works     |
|            | Merrill       | 700        | 1 Kelley well                 | Yes    | None                           | Yes               | None                                       |
|            | Remsen        | 1,200      | 3 dug wells                   | Yes    | Septic and sand                | None              | None                                       |
|            | Havelock      | 330        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Ponda         | 1,200      | 1 deep well                   | Yes    | Imhoff and sand                | None              | None                                       |
| Polk       | Laurens       | 1,600      | 1 deep well                   | Yes    | Septic tank only               | None              | Creamery                                   |
|            | Palmer        | 730        | 1 bored well                  | None   | None                           | None              | Creamery                                   |
|            | Plover        | 246        | 1 shallow well                | None   | None                           | None              | None                                       |
|            | Pocahontas    | 1,302      | 1 deep well                   | Yes    | Imhoff and trickling           | None              | Creamery                                   |
|            | Rolfe         | 1,100      | 2 deep wells                  | Yes    | Imhoff and sand                | None              | None                                       |
| Pocahontas | Ankeny        | 600        | 1 deep well                   | Yes    | Imhoff and sand                | Yes               | None                                       |
|            | Bondurant     | 274        | 2 deep wells                  | None   | None                           | None              | None                                       |
|            | Des Moines    | 120,468    | Infiltration galleries        | Yes    | None                           | Yes               | Gas, creameries, laundries, etc.           |
|            | Grimes        | 600        | 1 bored well                  | None   | None                           | Yes               | None                                       |
|            | Mitchellville | 752        | 4 deep wells                  | None   | None                           | Yes               | None                                       |
| Pocahontas | Polk City     | 300        | 1 shallow well                | None   | None                           | None              | None                                       |
|            | Sheldahl      | 250        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Valley Jet    | 4,300      | Dug wells                     | Yes    | To Des Moines sewers           | None              | None                                       |
| Poweshiek  | Brooklyn      | 1,500      | 1 deep well                   | Yes    | Imhoff and sand                | None              | Creamery                                   |
|            | Deep River    | 504        | 1 dug well                    | None   | None                           | None              | None                                       |
|            | Grinnell      | 5,362      | 2 deep wells                  | Yes    | Imhoff and sand                | Yes               | Creameries, laundries, canning factory     |
|            | Malcolm       | 400        | 3 dug wells                   | None   | None                           | None              | None                                       |
|            | Montezuma     | 1,273      | 2 deep wells                  | Yes    | Imhoff and sand                | Yes               | None                                       |
| Sac        | Auburn        | 500        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Early         | 568        | 1 spring                      | Yes    | Septic and sand                | None              | None                                       |
|            | Lake View     | 875        | 3 dug wells                   | Yes    | Septic and sand                | Yes               | None                                       |
|            | Lytton        | 278        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Ocholtz       | 1,400      | 5 dug wells                   | Yes    | Septic and sand                | Yes               | Pop corn factory                           |
| Shelby     | Sac City      | 2,630      | 8 springs                     | Yes    | None                           | Yes               | Produce Co., canning factory, creamery     |
|            | Schaller      | 850        | 5 dug and 1 shallow well      | Yes    | Imhoff and trickling           | None              | None                                       |
|            | Wall Lake     | 800        | 1 dug well                    | Yes    | Septic and sand                | None              | None                                       |
|            | Defiance      | 500        | 3 sand points                 | None   | None                           | None              | None                                       |
|            | Earling       | 300        | 6 dug wells                   | None   | None                           | None              | None                                       |
| Sioux      | Harlan        | 3,100      | 22 shallow wells              | Yes    | None                           | Yes               | Creamery and canning                       |
|            | Kirkman       | 200        | 2 dug wells                   | None   | None                           | None              | None                                       |
|            | Panama        | 300        | 5 sand points                 | None   | None                           | None              | None                                       |
|            | Portsmouth    | 350        | 14 sand points                | None   | None                           | None              | None                                       |
|            | Alton         | 1,000      | 2 dug wells                   | Yes    | Septic and sand                | Yes               | Creamery                                   |
| Story      | Boyd          | 400        | 3 dug wells                   | Yes    | Imhoff and sand                | None              | None                                       |
|            | Granville     | 358        | 2 dug wells                   | Yes    | Imhoff and sand                | None              | None                                       |
|            | Hawarden      | 2,000      | 1 dug and 1 shallow well      | Yes    | None                           | Yes               | Creameries, bottling wks., laundries, etc. |
|            | Hosper        | 570        | 1 dug well                    | Yes    | Septic tank only               | None              | Creamery                                   |
|            | Hull          | 721        | 1 deep well                   | Yes    | Septic and sand                | None              | Creamery                                   |
| Story      | Ireton        | 730        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Maurice       | 329        | 1 dug well                    | Yes    | Imhoff tank only               | None              | None                                       |
|            | Orange City   | 1,632      | 2 deep wells                  | Yes    | Septic and sand                | None              | Creamery                                   |
|            | Rock Valley   | 1,347      | 1 dug well                    | Yes    | Septic and sand                | Yes               | Creamery                                   |
|            | Sioux Center  | 1,880      | 1 deep well                   | Yes    | Imhoff and trickling           | None              | Creamery                                   |
| Story      | Ames          | 6,270      | 2 deep wells                  | Yes    | Imhoff and trickling           | Yes               | Creamery, gas plant, canning factory       |
|            | Cambridge     | 739        | 2 deep wells                  | None   | None                           | None              | Canning factory                            |
|            | Collins       | 500        | 1 deep well                   | None   | None                           | Yes               | None                                       |
|            | Colo.         | 650        | 1 deep well                   | None   | None                           | Yes               | None                                       |
|            | Gilbert       | 250        | 1 deep well                   | None   | None                           | None              | None                                       |
| Story      | Huxley        | 368        | 1 deep well                   | None   | None                           | None              | Creamery                                   |
|            | Kelley        | 100        | 1 deep well                   | None   | None                           | None              | None                                       |
|            | Maxwell       | 811        | 1 deep well                   | None   | None                           | Yes               | None                                       |
|            | Nevada        | 3,300      | 2 deep wells                  | Yes    | Septic and sand                | None              | Creameries                                 |
|            | Boiland       | 800        | 5 shallow wells               | Yes    | Septic and trickling           | None              | Canning and produce company                |
| Story      | Slater        | 650        | 1 deep well                   | None   | None                           | None              | Creamery                                   |
|            | Story City    | 1,600      | 4 deep wells                  | Yes    | Septic and sand                | Yes               | Creamery and canning factory               |
|            | Zealand       | 500        | 1 deep well                   | None   | None                           | None              | Creamery                                   |



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| County     | Town            | Population | Source of Public Water Supply               | Sewers | Kind of Sewage Treatment Plant | City Tourist Park | Kind of Industrial Waste                    |
|------------|-----------------|------------|---|--------|--------------------------------|-------------------|---|
| Tama       | Chelsea         | 650        | 2 shallow wells                             | None   | None                           | None              | None  |
|            | Clutier         | 500        | 1 deep well                                 | None   | None                           | None              | None  |
|            | Dysart          | 1,000      | 2 deep wells                                | Yes    | Imhoff and sand                | Yes               | Canning factory                             |
|            | Elberon         | 400        | 2 deep wells                                | None   | None                           | None              | None  |
|            | Garwin          | 700        | 1 deep well                                 | Yes    | Septic and sand                | None              | None  |
|            | Gladbrook       | 1,000      | 2 deep wells                                | Yes    | None                           | None              | None  |
|            | Tama            | 3,000      | 1 dug well                                  | Yes    | None                           | None              | Paper mill and creamery                     |
|            | Toledo          | 1,500      | 6 shallow wells                             | Yes    | Septic and sand                | None              | Canning factory                             |
|            | Traer           | 1,300      | 2 deep wells                                | Yes    | Septic tank only               | Yes               | Creamery                                    |
| Warren     | Indianola       | 3,600      | 2 dug wells                                 | Yes    | Imhoff Sep. & trickling        | None              | Creamery and laundry                        |
| Washington | Alinsworth      | 400        | 1 deep well                                 | None   | None                           | Yes               | None  |
|            | Brighton        | 900        | 1 deep well                                 | Yes    | Imhoff and sand                | Yes               | Canning factory                             |
|            | Crawfordsville  | 337        | 2 deep wells                                | None   | None                           | Yes               | None  |
|            | Riverside       | 700        | 2 deep wells                                | Yes    | None                           | None              | None  |
|            | Wellman         | 900        | 1 deep well                                 | None   | None                           | Yes               | None  |
|            | Washington      | 4,700      | 2 deep wells                                | Yes    | None                           | Yes               | Gas plant                                   |
|            |                 |            |   |        |                                |                   |   |
| Wayne      | Corydon         | 1,567      | Impounding reservoirs                       | Yes    | 2 septic tanks only            | Yes               | None  |
|            | Humeston        | 1,214      | Impounding reservoirs not used for drinking | None   | None                           | None              | None  |
|            | Seymour         | 1,746      | Impounding reservoir not used for drinking  | Yes    | 2 Imhoff and sand              | None              | None  |
|            |                 |            |   |        |                                |                   |   |
| Webster    | Clare           | 259        | 1 deep well not for drink                   | None   | None                           | None              | None  |
|            | Dayton          | 886        | 1 deep well                                 | Yes    | Imhoff tank only               | Yes               | None  |
|            | Duncumbe        | 442        | 1 deep well                                 | None   | None                           | None              | None  |
|            | Fl. Dodge       | 19,347     | 4 deep wells                                | Yes    | None                           | Yes               | Creameries, was plant, laundries, etc.      |
|            | Gowrie          | 895        | 1 deep well                                 | None   | None                           | None              | Creamery                                    |
|            | Lehigh          | 1,090      | 1 dug well                                  | Yes    | None                           | None              | None  |
| Winnebago  | Buffalo Center  | 900        | 1 deep well                                 | None   | None                           | None              | None  |
|            | Forest City     | 2,100      | 3 deep wells                                | Yes    | None                           | Yes               | None  |
|            | Lake Mills      | 1,700      | 1 deep well                                 | Yes    | Septic and sand                | Yes               | None  |
|            | Thompson        | 500        | 2 deep wells                                | None   | None                           | Yes               | None  |
| Woodbury   | Anthony         | 800        | 1 deep well                                 | Yes    | Septic tank only               | None              | None  |
|            | Correctionville | 1,016      | 1 deep well                                 | Yes    | Imhoff tank only               | Yes               | Creamery                                    |
| Cushing    | Cushing         | 300        | 10 sand points                              | Yes    | Septic and sand                | Yes               | None  |
|            | Danbury         | 677        | 8 sand points                               | Yes    | None                           | None              | None  |
|            | Lawton          | 250        | 2 shallow wells                             | None   | None                           | None              | None  |
|            | Moville         | 800        | 1 dug well                                  | Yes    | Septic tank only               | Yes               | None  |
|            | Oto             | 383        | 5 sand points                               | None   | None                           | None              | None  |
|            | Pierson         | 500        | 5 dug well                                  | Yes    | Imhoff and sand                | Yes               | None  |
|            | Salix           | 396        | 2 deep wells                                | None   | None                           | None              | None  |
|            | Sergeant Bluffs | 500        | 1 deep well                                 | None   | None                           | None              | None  |
|            | Sioux City      | 76,000     | 12 deep wells                               | Yes    | None                           | Yes               | Packing plants, creameries, laundries, etc. |
|            | Sloan           | 700        | 4 sand points                               | None   | None                           | Yes               | None  |
|            | Smithland       | 400        | 6 shallow wells                             | None   | None                           | Yes               | None  |
|            |                 |            |   |        |                                |                   |   |
|            |                 |            |   |        |                                |                   |   |
| Worth      | Manly           | 1,470      | 2 deep wells                                | None   | None                           | None              | None  |
|            | Northwood       | 1,721      | 1 shallow well                              | Yes    | Septic and cinders             | Yes               | None  |
| Wright     | Belmond         | 1,800      | 1 deep well                                 | Yes    | Septic tank only               | None              | Sugar plant                                 |
|            | Clarion         | 3,000      | 1 deep well                                 | Yes    | Imhoff and sand                | None              | None  |
|            | Eagle Grove     | 4,333      | 1 dug well                                  | Yes    | None                           | Yes               | None  |
|            | Goldfield       | 800        | 6 deep wells                                | None   | None                           | Yes               | None  |
|            |                 |            |   |        |                                |                   |   |



TWENTY-SECOND BIENNIAL REPORT OF THE

IOWA STATE DEPARTMENT OF HEALTH

49

## HOUSING

The Forty-first General Assembly abolished what was then known as the office of Housing Commissioner and transferred the duties of that office to the Sanitary Engineering Division. The title of this division was also amended to include the words "and Housing".

As soon as the new law became effective on July 1st, the division immediately placed the matters relative to housing on the same basis as any other public health problem. That means that the housing law was included as part of the Rules and Regulations of the State Department of Health, and all matters pertaining to housing were classified as coming under that portion of the law, which makes it the duty of the local health boards to enforce all the regulations and rules adopted by the State Department of Health.

Most housing problems are considered as being purely local affairs that can readily be taken care of by local officials. If some problem arises in any locality that requires State assistance, such assistance is gladly given upon request of the local officials.

Prior to July 1925 the housing commissioner made a great many inspections upon his own initiative. If it was the intent of the law that the State should continue taking the initiative, then it failed absolutely to provide means for making such inspections. The Chief Sanitary Engineer's duties prior to July 1925 were such that he could hardly properly take care of them and the assistant sanitary engineers were assigned to special work that required all of their time. The legislature did not consider this already full program, but simply transferred the duties of the housing commissioner to the division without providing additional help to carry on the work. It is self evident that if the Division is expected to do more constructive work or take the initiative in securing better housing conditions in cities of over fifteen thousand population, then the personnel of the division must be increased. If it is the intent of the law that the local authorities are expected to take the initiative and enforce the rules of the State Department of Health in regard to housing, no additional assistance will be necessary. It must be pointed out however, and emphasized that under the present situation the division of engineering and housing should not be criticized for its failure of not having done more constructive work than it did during the past year. There is a limit to the amount of work any division or department can do and any added duties beyond that are bound to suffer or be entirely neglected.

An effort was made by the division to keep a record of the number of new residences constructed in each city of over fifteen thousand population during the year. Data sheets were sent out each month, requesting a statement of the various kind of building permits issued by the local department. A compiled list of permits issued is as follows:

| Town            | No. Permits | Value of Residential Construction | Value of Residential Remodeling | Value of Minor Residential | Total Valuation |
|-----------------|-------------|-----------------------------------|---------------------------------|----------------------------|-----------------|
| Cedar Rapids    | 1411        | \$ 856,906.00                     | \$ 165,325.00                   | \$ 1,721,302.00            | \$ 2,743,692.00 |
| *Council Bluffs | 462         | 606,700.00                        | 116,650.00                      | 32,819.00                  | 844,669.00      |
| *Dubuque        | 352         | 281,915.00                        | 211,516.50                      | 22,819.00                  | 495,431.00      |
| *Davenport      | 400         | 495,530.00                        | 104,783.00                      | -----                      | 597,313.00      |
| *Des Moines     | 1317        | 2,319,151.00                      | 127,336.00                      | 113,854.00                 | 2,560,242.00    |
| *Fort Dodge     | 230         | 469,870.00                        | 65,285.00                       | 13,845.00                  | 549,000.00      |
| *Keokuk         | 152         | 455,694.00                        | 38,599.00                       | 9,500.00                   | 506,784.00      |
| *Marshalltown   | 239         | 152,290.00                        | 79,740.00                       | 29,802.00                  | 243,832.00      |
| *Mason City     | 243         | 497,150.00                        | 30,007.00                       | 30,355.00                  | 467,392.00      |
| *Muscatine      | -----       | -----                             | -----                           | -----                      | -----           |
| *Ottumwa        | 198         | 371,535.00                        | 59,750.00                       | 37,805.00                  | 469,090.00      |
| *Shoer City     | 838         | 1,028,650.00                      | 62,455.00                       | 116,496.00                 | 1,207,510.00    |
| *Waterloo       | 385         | 509,790.00                        | 45,275.00                       | 35,830.00                  | 590,895.00      |

\*From seven to eleven months failed to mail all of reports.

## PLUMBING

The administration of the State Plumbing Code has been a part of the regular duties of the State Department of Health ever since the plumbing law became effective in 1919. Although the present law requires the State Department of Health to establish and enforce a state plumbing code, it has done very little other than to establish the code, due to the fact that the limited personnel of the Department did not make it possible.

According to the law, all cities of over six thousand population are required to pass a plumbing ordinance not inconsistent with the state code and shall provide a plumbing license board for the licensing of plumbers. The majority of cities of over six thousand population have complied with the law, but there are a number of cities who have failed. In the strict sense of the word, the State Department of Health should see to it that the plumbing law is properly enforced, but unless the proper means of enforcement are provided, little can be done.

The relationship of plumbing to public health is not very well understood. Even many sanitarians are doubtful as to just how much stress should be placed upon defective plumbing. To settle doubt as to the real value of flawless plumbing, an introductory paragraph of the recommended minimum requirements for plumbing in dwellings as put out by the Bureau of Standards follows:

"The committee believes that good plumbing is a matter which concerns health. Health may be influenced by factors which do not cause specific diseases, for there are chemical and physiological, as well as bacteriological factors involved." When a group of prominent men, such as those who made up the committee which drafted the minimum requirements, believe that it is best to be on the safe side in matters relating to plumbing, it is not for any one person, city or town in Iowa, to take a contrary view.

Good plumbing should be classified as being the most important part of any dwelling. Men who are engaged in the art of installing plumbing should thoroughly know their business. To insure competency, all plumbers should be licensed, and to insure against the



installation of defective and poor grade plumbing, all new installations should be inspected by a competent inspector.

According to the law at the present time, it seems that good plumbing is only necessary in cities of over six thousand population. If there is any reason for installing plumbing in cities of six thousand population according to the minimum requirement, the self same reasons must apply to any community regardless of its size. Although it would not be possible or practicable for every town to maintain a plumbers licensing board, plumbers could easily secure a state license at the nearest large city and if it would not be possible for a community to employ a regular plumber as an inspector, the inspection could be made by some regular local official, such as a street commissioner or town constable.

There is no excuse for permitting defective or inferior plumbing to be installed in some communities and to enforce strict minimum requirements in others. If good plumbing is a matter relative to health the same law should apply to every community, regardless of its size.

It is recommended that the plumbing law be amended so that the same minimum requirements or State Plumbing Code will apply all over the state. It is further recommended that a man especially trained in public health work and who understands plumbing be added to the personnel of the Division of Sanitary Engineering and Housing, for the purpose of looking after the administration of the State Plumbing Code. Such a person could also take over the duties connected with the administration of the Housing Code. If the present plumbing and housing laws have any value at all they should be enforced and if the State Department of Health is ever to get anywhere in the matter of enforcement, adequate means of enforcement must be provided. The present organization is not able with its many duties to devote the time necessary to enforce the plumbing or housing code, so if the means of enforcement are not provided the department can not be held responsible for non-enforcement.

#### APPROVAL OF PLANS AND SPECIFICATIONS

When plans and specifications of sewerage systems, water work systems and swimming pools are received by the division of Sanitary Engineering, they are carefully checked over to see whether or not they provide for the various essential requirements. If they do they are approved. The granting of this approval does not mean that the plans are the very best that can be designed, but only means that they contain the essential requirements and that the system when built will do the work intended of it. It means that the designer has complied with good sanitary engineering practice, and that the plant when constructed may be expected to perform satisfactorily.

When the plans are checked, the question of economical design is not taken into account. If any plan is submitted which is considered an expensive installation, the city officials are generally notified, but this fact does not necessarily influence the granting of an approval. The town or city council is expected to use judgment in the question of costs, and it is not to rely on the approval of the State Department

of Health. The approval simply means that the essentials of the design are correct, and that the system when built will function properly.

#### APPROVED PLANS AND SPECIFICATIONS

ATKINS, Benton County, population 202. March 6, 1925. Plans and specifications for sanitary sewerage system provided for sewerage of town into one district. Treatment plant consists of septic tank, dosing chamber and intermittent sand filters. Plans submitted by H. R. Green, Cedar Rapids, Iowa.

AUDUBON, Audubon County, population 2,108. January 18, 1926. Plans and specifications for sewage treatment plant. Treatment plant consists of Imhoff tank, siphon chamber, sludge bed and trickling filters. Submitted by W. E. Buell Engineering Company, Sioux City, Iowa.

BOONE, Boone County, population 12,451. April 2, 1926. Plans and specifications for sewage treatment plant. Treatment plant consists of Imhoff tank, siphon chamber, sludge bed and trickling filters. Submitted by C. H. Currie Co., Webster City, Iowa.

CALMAR, Winnebago County, population 1,039. June 15, 1926. Plans and specifications for two sewage treatment plants, consisting of septic tank, siphon chamber, sludge bed and sand filters. Submitted by H. R. Green, Cedar Rapids, Iowa.

CALUMET, O'Brien County, population 266. September 18, 1925. Plans and specifications for a complete sewage work system consisting of pumps, pump house, distributing system, steel tank and 500 foot deep well.

CARROLL, Carroll County, population 4,254. June 18, 1926. Plans and specifications for sewage treatment plant improvement consisting of additional septic tank and resanding of filter beds. Submitted by W. D. Toyne, City Engineer.

CEDAR FALLS, Black Hawk County, July 2, 1925. Plans and specifications for sewage treatment plant for the Evangelical Association Camp Ground. Plant consists of septic tank and intermittent sand filters. Submitted by R. B. Slippy Engineering Co., Waterloo, Iowa.

CENTERVILLE, Appanoose County, population 8,456. January 30, 1925. Plans and specifications for the reconstruction of sewage treatment plant, including remodeling of Cameron into a Imhoff tank, also, new sprinkling filter bed and sludge bed. Submitted by M. G. Hall Engineering Co., Centerville, Iowa.

CLINTON, Clinton County, population 24,151. January 18, 1926. Plans and specification for the improvement of water work system including covering of large open reservoir. Submitted by the Clinton Water Work Company.

COIN, Page County, population 606. December 23, 1924. Plans and specifications for sanitary sewer system including collection system and treatment plant, consists of Imhoff tank, sludge bed, trickling filter and secondary settling tank. Submitted by Henningson Engineering Co., Omaha, Neb.

CORRICKSVILLE, Woodbury County, population 1,016. November 15, 1924. Plans and specifications for sanitary sewer system, including collection system, Imhoff tank, pump pit and pumping equipment, sludge bed and trickling filter. Submitted by W. E. Buell Engineering Co., Sioux City, Iowa.

CRESCO, Howard County, population 3,195. August 2, 1924. Plans and specifications for addition to sewage treatment plant consisting of filter area and outfall sewer line. Submitted by Cresco, City Engineer.

CRESCO, Howard County, population 3,195. June 1, 1925. Plans and specifications for sanitary sewer extension consisting of 1215 feet of 8 inch tile. District sewer is in the south part of town. Submitted by city engineer.

CRESCO, Howard County, population 3,195. May 25, 1925. Plans and specifications for sewer extension on 2nd street between B. & D., on 8th Street between D & E and on Iowa Street, between 2nd and 4th Streets. Submitted by city engineer.

CRESCO, Howard County, population 3,195. June 22, 1925. Specifications for 4-inch water extension on 4th avenue, between 2nd and 3rd and on 2nd between 3rd and 4th. Submitted by City Engineer.

CRESCO, Howard County, population 3,195. October 14, 1925. Specifications for 4 inch water extension. Submitted by City Engineer.

DELMAR, Clinton County, population 527. April 18, 1925. Plans and specifications for complete sanitary sewerage system to cover the entire town in one district. The treatment plant consists of septic tank and three intermittent sand filters. Submitted by H. R. Green, Cedar Rapids, Iowa.

DES MOINES, Polk County, population 126,468. April 6, 1926. Plans and specifications for Ashworth Swimming Pool, 325,000 gallon pool with pressure filters. Rated capacity of filters 18,000 gallons per hour. Submitted by Henningson Engineering Company, Omaha, Neb.

DIAGONAL, Ringgold County, population 579. January 23, 1926. Plans and specifications for complete water work system. Source of supply, one deep well. Submitted by W. D. Rolling Engineering Company, Kansas City, Mo.



**DUBUQUE**, Dubuque County, population 39,141. January 5, 1925. Plans for sanitary sewer extensions on the following streets: Southern Ave., Loretta Ave., Grand View, Quinn St., Rush St., Rowan Street, Dubuque and Cascade Road. Submitted by City Engineer.

**EARLHAM**, Madison County, population 893. October 31, 1925. Plans and specifications for complete sewer system. Town to be served by one district. Plans consist of underground sewer pipe system, Imhoff tank, sludge bed, and trickling filters. Submitted by Capper Engineering Co., Earlham, Iowa.

**FARRAGUT**, Fremont County, population 494. September 12, 1924. Plans and specifications for sewer system consisting of collection system, Imhoff tank, sludge bed, trickling filters and secondary sedimentation tank. Submitted by Henningson Engineering Company, Omaha, Nebr.

**FORT DODGE**, Webster County, August 23, 1924. Plans and specifications for sewage treatment plant for treatment of domestic wastes from U. S. Gymnasium Co. plant. Plans provide for septic tank and sand filters.

**GRUNDY CENTER**, Grundy County, population 1,749. November 1, 1924. Plans and specifications for sewer extension on "F" Avenue. Submitted by City Engineer.

**HAMPTON**, Franklin County, population 2,992. July 1, 1925. Plans and specifications for new septic well. Submitted by C. H. Currie Engineering Co., Webster City, Iowa.

**HAZELTON**, Buchanan County, population 517. October 27, 1924. Plans and specifications for complete sewer system serving the town in two districts. Consists of collection tile, septic tanks and sand filters. Submitted by H. E. Buell & Co., Cedar Rapids, Iowa.

**HAZELTON**, Buchanan County, population 518. October 8, 1924. Plans and specifications for water work system including 150 feet well, pumping equipment, 40,000 gallon steel tank and distribution system. Submitted by H. R. Green Engineering Co., Cedar Rapids.

**HUMESVILLE**, Wayne County, population 1,214. June 16, 1925. Plans and specifications for sewage treatment plant. Consist of Imhoff tank with trickling filters and sand filters. Submitted by M. G. Hall, Centerville, Iowa.

**INDEPENDENCE**, Buchanan County, population 3,617. March 29, 1926. Plans and specifications for extension of water work system and new 200,000 gallon tank.

**INDIANOLA**, Warren County, population 3,628. September 20, 1924. Plans and specifications for sewage treatment plant in north end of town, consists of Imhoff tank, sludge bed and trickling filters. Submitted by Lyle Higgins, sanitary engineer, Des Moines, Iowa.

**MARSHALLTOWN**, Marshall County, population 15,731. July 26, 1924. Plans and specifications for iron removal plant to be installed in connection with present water work system. Plans provide for sedimentation tank, filters and buildings. Submitted by A. T. Luce, general manager.

**MITCHELLVILLE**, Polk County, population 750. September 8, 1925. Plans and specifications for complete sanitary sewer system, providing the town into one district. Consists of collection system, Imhoff tank, sludge bed and trickling filters.

**MT. Ayr**, Ringgold County, population 1,738. June 10, 1925. Plans and specifications for water purification plant.

**OELWEIN**, Fayette County, population 7,455. September 21, 1925. Plans and specifications for new trickling filter. Submitted by E. B. Tourtellot, Oelwein, Iowa.

**OELWEIN**, Fayette County, population 7,455. December 22, 1925. Plans and specifications for new trickling filter plant. Submitted by J. A. Dunbar and C. H. Currie.

**PANORA**, Guthrie County, population 966. May 24, 1926. Plans and specifications for new well, pump house and extension of mains. Submitted by Lyle Higgins, Des Moines, Iowa.

**PELLA**, Marion County, population 3,338. September 19, 1925. Plans and specifications for sanitary sewer extension. Submitted by C. H. Currie Engineering Co., Webster City, Iowa.

**PLOVER**, Pocahontas County, population 246. December 15, 1924. Plans and specifications for water work system, including deep well, distribution system, deep well pump and pump house, 30,000 gallon elevated steel tank. Submitted by W. E. Buell Co., Sioux City, Iowa.

**POCAHONTAS**, Pocahontas County, population 1,302. June 15, 1926. Plans and specifications for circular concrete reservoir, 35 feet in diameter, 11 feet deep. Submitted by C. H. Currie Engineering Co., Webster City, Iowa.

**SCHALLER**, Sac County, population 731. December 12, 1925. Plans and specifications for new sewage treatment plant, consisting of Imhoff tank and trickling filters. Submitted by W. E. Buell Engineering Co., Sioux City, Iowa.

**SCHLESWIG**, Crawford County, population 655. July 10, 1924. Plans and specifications for dug well, pump house and equipment, and distribution system. Submitted by Lafayette Higgins, Des Moines.

**SCHLESWIG**, Crawford County, October 8, 1924. Plans and specifications for sewer system and sewage treatment plant, providing for sewerage of the town into one district and treating with Imhoff tank, sludge bed and trickling filters. Submitted by Price & McCormick.

**TAMA**, Tama County, population 2,601. July 25, 1924. Plans and specifications for 16-inch diameter well, 52 feet deep. Submitted by Chas. L. Pillsbury Co., Minneapolis, Minnesota.

**TAMA**, Tama County, population 2,601. September 9, 1924. Plans and specifications for new elevated and eight-inch main leading to reservoir. Submitted by Chas. L. Pillsbury Co., Minneapolis, Minnesota.

**VALLEY JUNCTION**, Polk County, population 3,631. September 14, 1925. Plans and specifications for four new tubular ten-inch wells. Submitted by Lafayette Higgins, Des Moines, Iowa.

**VAN HORNE**, Benton County, population 524. October 13, 1925. Plans and specifications for complete sanitary sewer system, consisting of collection tile, septic tank, sludge bed and sand filters.

**WAPELO**, Louisa County, population 1,480. July 19, 1924. Plans and specifications for extension to combined sewer system. Submitted by city clerk (no approval given).

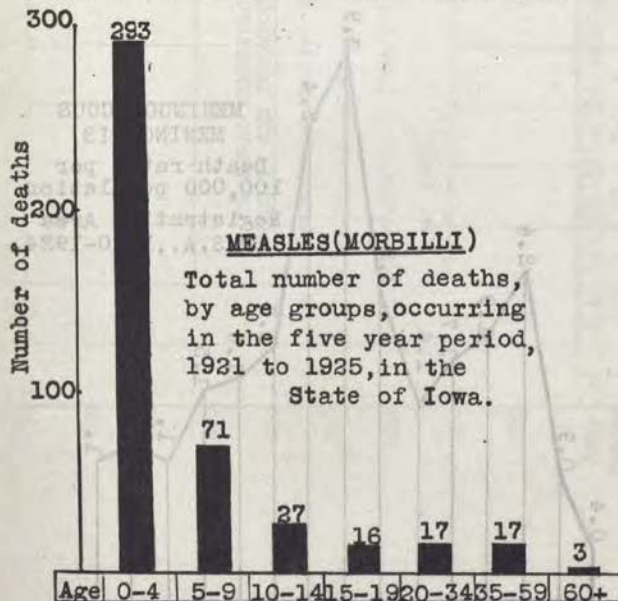
**WAVERLY**, Bremer County, population 3,352. July 2, 1924. Plans and specifications for sanitary sewer extension, Orange St., and Fremont St. Submitted by R. B. Slippy Engineering Co., Waterloo, Iowa.

**WAVERLY**, Bremer County, July 15, 1925. Plans and specifications for extension to sanitary sewer system, Linn, Jefferson and Lime streets. Submitted by R. B. Slippy, Waterloo, Iowa.

**WEST UNION**, Fayette County, population 1,777. July 5, 1924. Plans and specifications for an addition to trickling filters of the sewage treatment plant. Submitted by W. E. Buell & Co., Sioux City, Iowa.

**WINTERSETT**, Madison County, population 2,906. May 10, 1926. Plans and specifications for complete sanitary sewer system, consisting of collection tile, separate digestion chamber, pumping station and trickling filters. Submitted by Burns & McDonald, Kansas City, Missouri.

**WOODWARD**, Dallas County, population 585. February 9, 1925. Plans and specifications for water work system improvement including pressure mains, concrete reservoir and pumping equipment. Submitted by Lafayette Higgins, Des Moines, Iowa.





## DIVISION OF VITAL STATISTICS

## ACTIVITIES

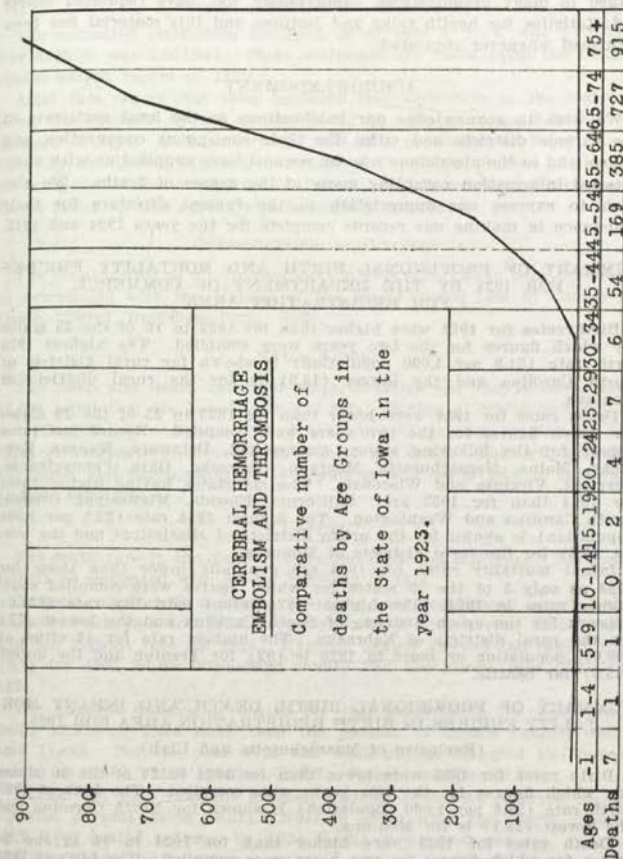
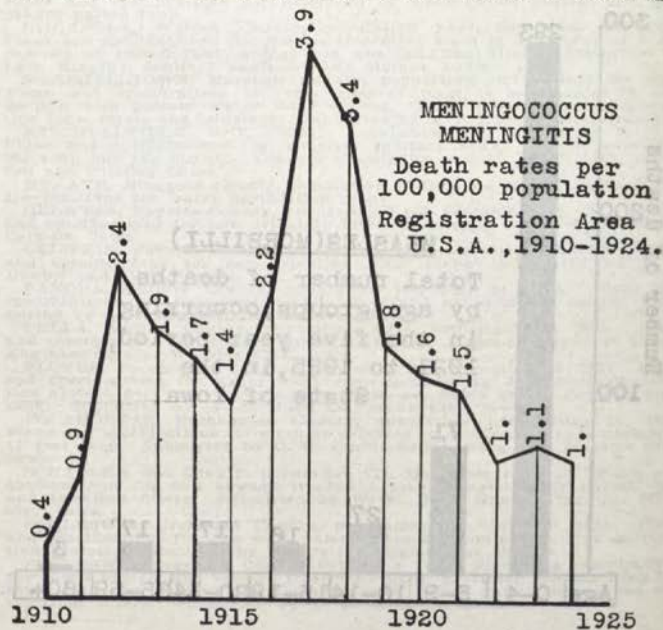
The Division of Vital Statistics during the biennium 1924-1925 has had many demands made upon it for information and certification from a vast number of sources. The services afforded by this division for those who are engaged in public health work have been many and varied; but the valuable material prepared on matters of vital statistics has had a much wider distribution than to those who are especially engaged in public health activities.

## NOTIFICATION OF BIRTH REGISTRATION CERTIFICATES

In July, 1924, the division began the sending of Notifications of Birth Registration certificates to the parents of each child born in the state of Iowa after July 1, 1924, and this service has been continued throughout the biennial period. With the certificate there has been included a booklet on infant care, prepared by a specialist of national reputation.

## STATISTICS AND CHARTS AVAILABLE

The Division of Vital Statistics has a great number of charts and



tabulations of statistics available for fairs, public health meetings, Parent-Teacher Association meetings and educational charts for safety campaigns. During the biennial period these charts and tabulations were loaned to many organizations. Individuals, too, have requested charts and statistics for health talks and lectures and this material has been furnished whenever requested.

#### ACKNOWLEDGMENT

We wish to acknowledge our indebtedness to the local registrars of the various districts and cities for their continuous co-operation and efforts and to the physicians who on request have supplied us with more detailed information regarding many of the causes of deaths. We also wish to express our appreciation to the funeral directors for their assistance in making our records complete for the years 1924 and 1925.

#### SUMMARY OF PROVISIONAL BIRTH AND MORTALITY FIGURES FOR 1924 BY THE DEPARTMENT OF COMMERCE FOR REGISTRATION AREA

Birth rates for 1924 were higher than for 1923 in 16 of the 25 states for which figures for the two years were compiled. The highest 1924 birth rate (31.9 per 1,000 population) is shown for rural districts of North Carolina and the lowest (14.9) is for the rural districts of Montana.

Death rates for 1924 were lower than for 1923 in 23 of the 29 states for which figures for the two years were compiled. Record low rates appear for the following states: Connecticut, Delaware, Kansas, Kentucky, Maine, Massachusetts, Montana, Nebraska, Ohio, Pennsylvania, Vermont, Virginia and Wisconsin. The six states having higher rates for 1924 than for 1923 are: California, Florida, Mississippi, Oregon, South Carolina and Washington. The highest 1924 rate (22.1 per 1,000 population) is shown for the urban districts of Mississippi and the lowest (6.5) for the rural districts of Montana.

Infant mortality rates for 1924 are generally lower than those for 1923 as only 3 of the 25 states for which figures were compiled show higher rates in 1924. The highest 1924 infant mortality rate (121.6) appears for the urban districts of South Carolina and the lowest (51) for the rural districts of Nebraska. The highest rate for 44 cities of 100,000 population or more in 1920 is (92) for Trenton and the lowest (45.3) for Seattle.

#### SUMMARY OF PROVISIONAL BIRTH, DEATH AND INFANT MORTALITY FIGURES IN BIRTH REGISTRATION AREA FOR 1925

(Exclusive of Massachusetts and Utah)

Birth rates for 1925 were lower than for 1924 in 26 of the 30 states for which figures for the two years were compiled. The highest 1925 birth rate (28.8 per 1,000 population) is shown for North Carolina and the lowest (15.1) is for Montana.

Death rates for 1925 were higher than for 1924 in 16 of the 30 states for which figures for two years were compiled. The highest 1925 death rate (14.6 per 1,000 population) is shown for Vermont and the lowest (7.7) for Montana and North Dakota.

Infant mortality rates for 1925 were generally higher than those for 1924 as 19 of the 30 states show higher rates in 1925. The highest infant mortality rate (90.4) appears for Maryland and the lowest (51.2) for Oregon. The highest rate for cities of 100,000 population was (96.7) for Norfolk and the lowest (44.9) for Seattle.

#### SUMMARY OF PROVISIONAL MORTALITY FIGURES FOR STATE OF IOWA, 1924-1925\*

##### POPULATION

The estimated population for Iowa as of July 1, 1924, was 2,475,721. For 1925 it was 2,503,546. These estimates are based upon the United States census report of 1920.

After this report had been prepared the population of the state of Iowa was released by the Census Board of Iowa as being 2,419,927 on January 1, 1925. It is understood that this population is being recognized by the United States Department of Commerce, Bureau of Census as being the official census for that year. If this is true the rates used in all tables in this report will be slightly increased.

##### CLASSIFICATION OF DISEASES

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

##### TABLE RATES

The birth and death rates for state, counties and the 18 cities over 10,000 population are based upon the total number of births and deaths occurring in each, irrespective of residence of parents at time of the birth or residence of deceased at time of the death. This will increase the birth and death rates of the counties and cities having hospitals or state sanatoria.

##### DEATHS

The death rate in the state of Iowa for 1925 was 10.0 (per 1,000 population) as compared with 9.5 for the year of 1924.

Johnson county with a rate of 23.1 (per 1,000 population) reported the highest death rate for 1925. Johnson county with a rate of 20.8 also had the highest rate for 1924. Hancock county showed the lowest rate (5.7) for 1925 while Winnebago county had the lowest rate (5.3) for 1924.

The greatest number of deaths for 1925 occurred in the male sex—being 12,938 or 1,456 more than the number of female deaths, which was 11,482. For the year 1924 the male deaths exceeded the female deaths by 1,680. Male deaths—12,658. Female deaths—10,970.

During the year 1925 the greatest number of deaths occurred among married persons being 10,311. Next in order were the single persons with 7,008 deaths followed by 6,524 deaths of widowed persons. During the year 1924 deaths among married persons numbered 10,069. The next highest were the single persons with 7,072 deaths followed by 6,017 deaths of widowed persons.

Out of 24,420 deaths reported for 1925 colored deaths numbered 300. For the year 1924, out of 23,620 deaths reported, 294 were colored.

\*Note: All figures used in this report for 1925 are provisional and subject to revision.



The eight diseases causing the greatest number of deaths in 1924 were: cancer (all forms)—2,345, cerebral hemorrhage—2,269, diseases of the heart—2,019, pneumonia (all forms)—1,280, chronic nephritis (including unspecified 10 years and over)—1,267, senility—982, tuberculosis (all forms)—977, premature birth; injury at birth—821. For 1925 they were: diseases of the heart—2,781, cancer (all forms)—2,496, cerebral hemorrhage—2,318, pneumonia (all forms)—1,894, chronic nephritis (including unspecified 10 years and over)—1,162, tuberculosis (all forms)—970, influenza—844, senility—823.

GENERAL DEATH RATES, DEATHS FROM ALL CAUSES (PER 1,000 POPULATION) BY COUNTIES AND CITIES (OVER 10,000 POPULATION) FOR THE YEARS 1924-1925

**Counties**—The death rate per 1,000 population in the state of Iowa for the year 1925 was 10.0 or .5 higher than for year of 1924 which was 9.5. The three counties with the highest rates for 1925 were: Johnson (23.1), Henry (14.8) and Page (13.7). For 1924 the counties having the highest rates were: Johnson\* (20.8), Buchanan\* (14.4) and Page\* (14.2).

**Cities**—The three cities showing the highest rates for 1925 were: Iowa City (37.5), Keokuk (18.6) and Marshalltown (18.1). For 1924 they were: Iowa City (31.8), Keokuk (17.1) and Marshalltown (17.0).

For the year 1924 the total number of deaths reported was 23,620 of which 8,019 occurred in the 18 cities for which returns are kept separate. The rate for the cities for 1924 was 11.9 compared with the rate of 12.3 for 1925. For the year 1925 out of 24,420 deaths reported 8,388 occurred in the 18 cities over 10,000 population. The rate for the counties (exclusive of the 18 cities) for 1924 was 8.6 as compared with the rate of 8.8 for 1925.

\*There is a state institution located in each of these counties and as a result they show a higher rate than other counties with like population.

TABLE 1—NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY COUNTIES, 1924-1925

(Cities included within Counties)

| County                   | Deaths |        | Rates |      |
|--------------------------|--------|--------|-------|------|
|                          | 1924   | 1925   | 1924  | 1925 |
| Total for the State..... | 23,620 | 24,420 | 9.5   | 10.0 |
| Adair.....               | 115    | 116    | 8.1   | 7.8  |
| Adams.....               | 73     | 72     | 6.9   | 6.3  |
| Allamakee.....           | 161    | 158    | 9.3   | 8.8  |
| Appanoose.....           | 324    | 284    | 10.2  | 8.8  |
| Audubon.....             | 100    | 96     | 8.0   | 6.5  |
| Benton.....              | 237    | 190    | 9.6   | 7.5  |
| Black Hawk.....          | 563    | 578    | 9.0   | 9.2  |
| Boone.....               | 295    | 303    | 9.4   | 9.6  |
| Bremer.....              | 164    | 161    | 9.5   | 9.0  |
| Buchanan.....            | 288    | 225    | 14.4  | 11.0 |
| Buena Vista.....         | 140    | 153    | 7.0   | 7.4  |
| Butler.....              | 148    | 147    | 8.2   | 7.8  |
| Calhoun.....             | 141    | 163    | 7.8   | 8.7  |
| Carroll.....             | 215    | 233    | 9.6   | 10.1 |
| Cass.....                | 168    | 185    | 8.5   | 9.2  |
| Cedar.....               | 134    | 144    | 7.6   | 8.0  |
| Cerro Gordo.....         | 370    | 380    | 9.3   | 8.0  |
| Cherokee.....            | 246    | 244    | 13.4  | 13.0 |
| Chickasaw.....           | 188    | 150    | 8.9   | 8.4  |
| Clarke.....              | 111    | 138    | 10.5  | 12.6 |
| Clay.....                | 124    | 127    | 7.2   | 7.1  |
| Clayton.....             | 212    | 257    | 8.4   | 10.0 |
| Clinton.....             | 483    | 559    | 11.1  | 12.7 |
| Crawford.....            | 142    | 158    | 6.9   | 7.3  |
| Dallas.....              | 182    | 228    | 7.1   | 9.7  |
| Davis.....               | 104    | 241    | 8.3   | 10.8 |
| Decatur.....             | 169    | 124    | 10.1  | 7.2  |
| Delaware.....            | 151    | 176    | 8.2   | 9.3  |
| Des Moines.....          | 439    | 482    | 12.3  | 12.6 |
| Dickinson.....           | 81     | 80     | 7.2   | 6.5  |
| Dubuque.....             | 743    | 754    | 12.6  | 12.7 |
| Emmet.....               | 108    | 99     | 7.7   | 6.8  |
| Fayette.....             | 225    | 212    | 7.5   | 6.9  |
| Floyd.....               | 159    | 171    | 8.1   | 8.3  |
| Franklin.....            | 145    | 160    | 8.9   | 9.5  |
| Fremont.....             | 138    | 141    | 8.9   | 8.9  |
| Greene.....              | 113    | 125    | 6.8   | 7.3  |
| Grundy.....              | 91     | 77     | 6.1   | 4.9  |
| Guthrie.....             | 156    | 133    | 7.2   | 7.3  |
| Hamilton.....            | 162    | 184    | 8.2   | 9.1  |
| Hancock.....             | 95     | 90     | 6.1   | 5.7  |
| Hardin.....              | 237    | 197    | 9.6   | 7.8  |
| Harrison.....            | 301    | 220    | 7.9   | 8.9  |
| Henry.....               | 283    | 276    | 15.5  | 14.8 |
| Howard.....              | 117    | 133    | 8.3   | 9.1  |
| Humboldt.....            | 105    | 97     | 7.9   | 6.9  |
| Ida.....                 | 99     | 88     | 8.3   | 7.0  |
| Iowa.....                | 150    | 145    | 8.1   | 7.5  |
| Jackson.....             | 172    | 204    | 8.6   | 10.0 |
| Jasper.....              | 216    | 202    | 7.6   | 9.1  |
| Jefferson.....           | 167    | 199    | 10.0  | 11.6 |
| Johnson.....             | 565    | 638    | 20.8  | 23.1 |
| Jones.....               | 186    | 204    | 10.0  | 10.7 |
| Keokuk.....              | 180    | 189    | 8.6   | 8.8  |

TABLE 1—Continued

| County             | Deaths |       | Rates |      |
|--------------------|--------|-------|-------|------|
|                    | 1924   | 1925  | 1924  | 1925 |
| Kossuth.....       | 170    | 173   | 6.4   | 6.5  |
| Lee.....           | 511    | 541   | 12.3  | 12.9 |
| Linn.....          | 832    | 779   | 9.9   | 9.4  |
| Louis.....         | 92     | 122   | 7.6   | 9.7  |
| Lucas.....         | 153    | 135   | 9.1   | 7.7  |
| Lyon.....          | 91     | 127   | 5.7   | 7.7  |
| Madison.....       | 134    | 144   | 8.9   | 9.3  |
| Mahaska.....       | 241    | 226   | 9.2   | 8.8  |
| Marion.....        | 247    | 220   | 9.5   | 9.6  |
| Marshall.....      | 336    | 443   | 11.4  | 12.9 |
| Mills.....         | 126    | 111   | 8.1   | 6.9  |
| Mitchell.....      | 129    | 127   | 9.1   | 8.6  |
| Monona.....        | 140    | 135   | 8.1   | 7.7  |
| Monroe.....        | 180    | 226   | 7.7   | 9.5  |
| Montgomery.....    | 156    | 173   | 9.0   | 9.7  |
| Muscatine.....     | 302    | 357   | 13.3  | 12.0 |
| O'Brien.....       | 108    | 117   | 5.4   | 5.6  |
| Osceola.....       | 68     | 83    | 6.2   | 7.2  |
| Page.....          | 345    | 337   | 14.2  | 13.7 |
| Palo Alto.....     | 89     | 121   | 5.4   | 7.1  |
| Plymouth.....      | 183    | 185   | 7.6   | 7.6  |
| Pocahontas.....    | 101    | 107   | 6.3   | 6.4  |
| Polk.....          | 1,740  | 1,748 | 9.9   | 9.6  |
| Pottawattamie..... | 691    | 660   | 10.5  | 10.4 |
| Poweshiek.....     | 187    | 181   | 9.4   | 8.8  |
| Ringgold.....      | 92     | 112   | 7.1   | 8.6  |
| Sac.....           | 125    | 138   | 6.9   | 7.5  |
| Scott.....         | 786    | 821   | 9.7   | 9.9  |
| Shelby.....        | 111    | 112   | 6.9   | 6.7  |
| Sioux.....         | 194    | 184   | 7.2   | 7.1  |
| Story.....         | 248    | 253   | 9.1   | 9.1  |
| Tama.....          | 206    | 191   | 9.5   | 9.0  |
| Taylor.....        | 141    | 152   | 9.1   | 9.7  |
| Union.....         | 186    | 207   | 10.6  | 11.5 |
| Van Buren.....     | 148    | 145   | 10.5  | 10.7 |
| Wapello.....       | 464    | 479   | 12.1  | 12.4 |
| Warren.....        | 165    | 171   | 9.1   | 9.2  |
| Washington.....    | 180    | 203   | 8.7   | 9.6  |
| Wayne.....         | 150    | 181   | 9.8   | 8.3  |
| Webster.....       | 264    | 494   | 9.2   | 10.0 |
| Winnebago.....     | 75     | 88    | 5.3   | 5.8  |
| Winnebush.....     | 194    | 206   | 8.6   | 9.0  |
| Woodbury.....      | 1,011  | 1,078 | 9.5   | 10.0 |
| Worth.....         | 104    | 99    | 8.3   | 6.8  |
| Wright.....        | 159    | 172   | 7.3   | 7.7  |

TABLE 2—NUMBER OF DEATHS (ALL CAUSES) WITH RATES (PER 1,000 POPULATION) BY CITIES OVER 10,000 POPULATION, YEARS 1924-1925

| City                  | Deaths |       | Rates |      |
|-----------------------|--------|-------|-------|------|
|                       | 1924   | 1925  | 1924  | 1925 |
| Total for cities..... | 8,019  | 8,388 | 11.9  | 12.3 |
| Boone.....            | 136    | 147   | 10.0  | 9.6  |
| Burlington.....       | 337    | 387   | 13.9  | 16.1 |
| Cedar Rapids.....     | 322    | 549   | 10.0  | 10.3 |
| Clinton.....          | 349    | 338   | 14.4  | 16.5 |
| Council Bluffs.....   | 326    | 328   | 13.3  | 13.1 |
| Davenport.....        | 659    | 685   | 10.3  | 10.6 |
| Des Moines.....       | 1,510  | 1,517 | 10.3  | 10.1 |
| Dubuque.....          | 600    | 616   | 15.2  | 15.5 |
| Fort Dodge.....       | 248    | 271   | 10.2  | 13.2 |
| Fort Madison.....     | 162    | 170   | 11.8  | 12.2 |
| Iowa City.....        | 376    | 451   | 31.8  | 37.5 |
| Keokuk.....           | 251    | 272   | 17.1  | 18.6 |
| Marshalltown.....     | 228    | 311   | 17.0  | 18.1 |
| Mason City.....       | 254    | 234   | 10.3  | 8.8  |
| Muscatine.....        | 250    | 230   | 15.5  | 14.7 |
| Ottumwa.....          | 352    | 355   | 15.9  | 15.1 |
| Sioux City.....       | 840    | 904   | 10.1  | 10.6 |
| Waterloo.....         | 389    | 376   | 9.5   | 8.9  |

\*State University Hospital located at Iowa City.  
Estimated population for 18 cities for year 1924 was 609,064 and for year 1925 it was 681,847.

## DEATHS REPORTED BY SEX, AGE GROUPS, COLOR AND CONJUGAL CONDITION FOR YEARS 1924-1925

(Number of certificates reported during years 1924-1925 including delayed certificates for years 1922 and 1923).

| (a) SEX      |  | 1924   | 1925   |
|--------------|--|--------|--------|
| Male .....   |  | 12,650 | 13,078 |
| Female ..... |  | 10,970 | 11,342 |
| Total.....   |  | 23,620 | 24,420 |

| (b) AGE              |  | 1924  |        | 1925  |        |
|----------------------|--|-------|--------|-------|--------|
|                      |  | Male  | Female | Male  | Female |
| Under one year ..... |  | 1,464 | 1,129  | 1,579 | 1,115  |
| 1 to 2 years.....    |  | 370   | 272    | 284   | 201    |
| 3 to 4 years.....    |  | 148   | 153    | 175   | 140    |
| 5 to 9 years.....    |  | 247   | 231    | 202   | 204    |
| 10 to 14 years.....  |  | 181   | 154    | 197   | 128    |
| 15 to 19 years.....  |  | 252   | 164    | 240   | 225    |
| 20 to 24 years.....  |  | 255   | 291    | 269   | 274    |
| 25 to 29 years.....  |  | 254   | 308    | 252   | 329    |
| 30 to 34 years.....  |  | 318   | 302    | 299   | 303    |
| 35 to 39 years.....  |  | 378   | 378    | 347   | 357    |
| 40 to 44 years.....  |  | 388   | 355    | 409   | 398    |
| 45 to 49 years.....  |  | 463   | 447    | 486   | 409    |
| 50 to 59 years.....  |  | 1,314 | 1,151  | 1,378 | 1,170  |
| 60 to 69 years.....  |  | 2,222 | 1,678  | 2,220 | 1,891  |
| 70 to 79 years.....  |  | 2,570 | 2,153  | 2,767 | 2,112  |



|                     |       |       |       |       |
|---------------------|-------|-------|-------|-------|
| 80 to 89 years..... | 1,587 | 1,484 | 1,674 | 1,782 |
| 90 to 99 years..... | 236   | 308   | 286   | 333   |
| 100 years.....      | 3     | 10    | 8     | 12    |
| Unknown.....        | 0     | 2     | 6     | 9     |

## (c) COLOR

|              |        |        |
|--------------|--------|--------|
| White.....   | 1924   | 1925   |
| Colored..... | 23,326 | 24,120 |
|              | 294    | 300    |

## (d) MARITAL STATE

|               |        |        |
|---------------|--------|--------|
| Single.....   | 1924   | 1925   |
| Married.....  | 7,702  | 7,008  |
| Widowed.....  | 10,069 | 10,311 |
| Divorced..... | 6,017  | 6,534  |
| Unknown.....  | 363    | 396    |
|               | 99     | 171    |

## CAUSES OF DEATHS

| Int. List Number  | 1924  | 1925  |
|---|-------|-------|
| 1. (a) Typhoid fever.....   | 59    | 75    |
| 2. (b) Paratyphoid fever.....   | 14    | 5     |
| 3. Malaria.....   | 0     | 0     |
| 4. Smallpox.....  | 11    | 41    |
| 5. Measles.....   | 234   | 10    |
| 6. Scarlet fever.....   | 74    | 46    |
| 7. Whooping cough.....  | 119   | 73    |
| 8. Diphtheria.....  | 151   | 121   |
| 9. Influenza.....   | 479   | 814   |
| 10. Mumps.....  | 6     | 5     |
| 11. Cholera nostras.....  | 0     | 0     |
| 12. Dysentery.....  | 14    | 40    |
| 13. (a) Amebic.....   | 2     | 2     |
| 14. (b) Bacillary.....  | 2     | 4     |
| 15. (c) Unspecified or due to other causes.....                                 | 10    | 31    |
| 16. Spirochaetal hemorrhagic jaundice.....                                      | 1     | 0     |
| 17. Erysipelas.....   | 67    | 65    |
| 18. Acute mellemyelitis.....  | 12    | 29    |
| 19. Lethargic encephalitis.....   | 6     | 28    |
| 20. Meningococcus meningitis.....   | 4     | 2     |
| 21. Other epidemic and endemic diseases.....                                    | 2     | 1     |
| 22. (a) Chicken pox.....  | 0     | 1     |
| 23. (b) German measles.....   | 0     | 1     |
| 24. Rabies.....   | 2     | 2     |
| 25. Tetanus.....  | 38    | 82    |
| 26. Mycoses.....  | 2     | 2     |
| TUBERCULOSIS (All forms)  |       |       |
| 27. T. B. respiratory system.....   | 977   | 988   |
| 28. T. B. meninges and central nervous system.....                              | 825   | 526   |
| 29. T. B. intestines and peritoneum.....  | 82    | 58    |
| 30. T. B. of vertebral column.....  | 54    | 90    |
| 31. T. B. of the joints.....  | 4     | 0     |
| 32. T. B. of other organs.....  | 1     | 0     |
| 33. (a) T. B. of the skin.....  | 0     | 1     |
| 34. (b) T. B. bone (excepting vertebral column).....                            | 2     | 2     |
| 35. (c) T. B. genitourinary system.....   | 2     | 5     |
| 36. (d) T. B. Other organs than above.....                                      | 2     | 5     |
| 37. Disseminated tuberculosis.....  | 2     | 5     |
| 38. (a) Acute.....  | 1     | 1     |
| 39. (b) Chronic.....  | 1     | 1     |
| 40. Syphilis.....   | 124   | 107   |
| 41. Gonococcus infection.....   | 7     | 0     |
| 42. Purulent infection, septicemia.....   | 177   | 192   |
| 43. Other infectious diseases.....  | 3     | 0     |
| CANCER (ALL FORMS)  |       |       |
| 44. Cancer and other malignant tumors of the buccal cavity.....                 | 2,345 | 2,498 |
| 45. Cancer and other malignant tumors of the stomach and liver.....             | 197   | 31    |
| 46. Cancer and other malignant tumors of peritoneum, intestines and rectum..... | 1,065 | 1,008 |
| 47. Cancer and other malignant tumors of female genital organs.....             | 465   | 508   |
| 48. Cancer and other malignant tumors of the breast.....                        | 200   | 230   |
| 49. Cancer and other malignant tumors of the skin.....                          | 182   | 146   |
|   | 5     | 0     |

## CAUSES OF DEATH—Continued

| Int. List Number   | 1924  | 1925  |
|--|-------|-------|
| 49. Cancer and other malignant tumors of other or unspecified organs.....                                  | 321   | 573   |
| 50. Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)..... | 11    | 3     |
| 51. Acute rheumatic fever.....   | 11    | 2     |
| 52. Chronic rheumatism, osteoarthritis, gout.....  | 40    | 59    |
| 53. Pellagra.....  | 2     | 3     |
| 54. Rickets.....   | 2     | 3     |
| 55. Diabetes Mellitus.....   | 351   | 382   |
| 56. Anemia, chlorosis.....   | 302   | 319   |
| 57. (a) Pernicious anemia.....   | 212   | 313   |
| 58. (b) Other anemias and chlorosis.....   | 90    | 6     |
| 59. Diseases of the pituitary gland.....   | 5     | 1     |
| 60. Diseases of the thyroid gland.....   | 66    | 83    |
| 61. (a) Exophthalmic goiter.....   | 27    | 65    |
| 62. (b) Other diseases of the thyroid gland.....   | 33    | 18    |
| 63. Diseases of the parathyroid glands.....  | 3     | 15    |
| 64. Diseases of the thymus gland.....  | 9     | 15    |
| 65. Diseases of the adrenals (Addison's disease).....  | 0     | 6     |
| 66. Diseases of the spleen.....  | 4     | 1     |
| 67. Leukemia and Hodgkin's disease.....  | 63    | 64    |
| 68. (a) Leukemia.....  | 53    | 50    |
| 69. (b) Hodgkin's disease.....   | 10    | 14    |
| 70. Alcoholism (acute or chronic).....   | 65    | 55    |
| 71. Chronic poisoning by mineral substances.....   | 4     | 5     |
| 72. (a) Chronic lead poisoning.....  | 4     | 5     |
| 73. (b) Chronic poisoning by organic substances.....   | 3     | 0     |
| 74. Other general diseases.....  | 27    | 22    |
| DISEASES OF NERVOUS SYSTEM AND OF ORGANS OF SPECIAL SENSE  |       |       |
| 75. Encephalitis.....  | 78    | 56    |
| 76. Meningitis (not meningococcus, tuberculous or rheumatic, etc.).....                                    | 132   | 138   |
| 77. (a) Simple meningitis.....   | 121   | 138   |
| 78. (b) Non-epidemic cerebrospinal meningitis.....   | 11    | 0     |
| 79. Tabes dorsalis ( locomotor ataxia).....  | 29    | 34    |
| 80. Other diseases of the spinal cord.....   | 25    | 81    |
| 81. Cerebral hemorrhage, apoplexy.....   | 2,269 | 2,318 |
| 82. (a) Cerebral hemorrhage.....   | 2,231 | 2,255 |
| 83. (b) Cerebral thrombosis and embolism.....  | 38    | 63    |
| 84. Paralysis without specific cause.....  | 241   | 199   |
| 85. (a) Hemiplegia.....  | 184   | 195   |
| 86. (b) Others under this title.....   | 57    | 4     |
| 87. General paralysis of the insane.....   | 306   | 245   |
| 88. Other forms of mental alienation.....  | 10    | 10    |
| 89. Epilepsy.....  | 99    | 69    |
| 90. Convulsions (not epileptic) (years and over).....  | 12    | 19    |
| 91. Infantile convulsions (under 5 years of age).....  | 49    | 65    |
| 92. Chorea.....  | 3     | 5     |
| 93. Neuralgia and neuritis.....  | 18    | 13    |
| 94. Softening of the brain.....  | 17    | 40    |
| 95. Other diseases of nervous system.....  | 49    | 68    |
| 96. Diseases of the eye and annexa.....  | 3     | 0     |
| 97. Diseases of the ear and of the mastoid process.....  | 52    | 62    |
| 98. (a) Diseases of the ear.....   | 52    | 62    |
| DISEASES OF THE CIRCULATORY SYSTEM   |       |       |
| 99. Pericarditis.....  | 8     | 6     |
| 100. Endocarditis and myocarditis (acute).....   | 226   | 235   |
| 101. Angina pectoris.....  | 315   | 348   |
| 102. Diseases of the heart.....  | 1,478 | 2,204 |
| 103. Diseases of the arteries.....   | 757   | 654   |
| 104. (a) Aneurysm.....   | 7     | 3     |
| 105. (b) Arteriosclerosis.....   | 750   | 651   |
| 106. Embolism and thrombosis (not cerebral).....   | 126   | 93    |
| 107. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....                                    | 2     | 5     |
| 108. Diseases of the lymphatic system (lymphangitis, etc.).....  | 3     | 1     |
| 109. Hemorrhage without specified cause.....   | 0     | 1     |
| 110. Other diseases of the circulatory system.....   | 7     | 4     |
| DISEASES OF THE RESPIRATORY SYSTEM   |       |       |
| 111. Diseases of the nasal fossae and their annexa.....  | 6     | 1     |
| 112. (a) Diseases of the nasal fossae.....   | 4     | 1     |
| 113. (b) Others under this title.....  | 2     | 0     |
| 114. Diseases of the larynx.....   | 11    | 3     |
| 115. Bronchitis.....   | 160   | 118   |
| 116. (a) Acute.....  | 155   | 106   |
| 117. (b) Chronic.....  | 5     | 12    |

## CAUSES OF DEATH—Continued

| Int. List Number  | 1924  | 1925  |
|---|-------|-------|
| 100. Bronchopneumonia (including capillary bronchitis)                                    | 631   | 640   |
| (a) Bronchopneumonia  | 626   | 639   |
| (b) Capillary bronchitis  | 5     | 1     |
| 101. Pneumonia  | 1,280 | 1,324 |
| (a) Lobar   | 1,123 | 1,162 |
| (b) Not otherwise defined   | 157   | 162   |
| 102. Pleurisy   | 10    | 14    |
| 103. Congestion and hemorrhagic infarct of the lung                                       | 36    | 8     |
| 104. Gangrene of the lung   | 9     | 4     |
| 105. Asthma   | 72    | 66    |
| 106. Pulmonary emphysema  | 61    | 5     |
| 107. Other diseases respiratory system (T. B. excepted)                                   | 126   | 168   |
| DISEASES OF THE DIGESTIVE SYSTEM  |       |       |
| 108. Diseases of the mouth and annexa   | 16    | 5     |
| 109. Diseases of pharynx and tonsils  | 99    | 101   |
| 110. Diseases of the esophagus  | 4     | 1     |
| 111. Ulcer of stomach and duodenum  | 146   | 144   |
| (a) Ulcer of the stomach  | 145   | 142   |
| (b) Ulcer of the duodenum   | 1     | 2     |
| 112. Other diseases of the stomach (cancer excepted)                                      | 58    | 23    |
| 113. Diarrhea and enteritis (2 years of age)  | 200   | 236   |
| 114. Diarrhea and enteritis (2 years and over)  | 221   | 242   |
| 116. Diseases due to other intestinal parasites   | 6     | 6     |
| (f) Parasites not specified   | 392   | 358   |
| 117. Appendicitis and typhlitis   | 332   | 423   |
| 118. Hernia, intestinal obstruction   | 85    | 79    |
| (a) Hernia  | 247   | 264   |
| (b) Intestinal obstruction  | 12    | 7     |
| 119. Other diseases of the intestines   | 12    | 6     |
| 120. Acute yellow atrophy of the liver  | 5     | 6     |
| 121. Hydatid tumor of the liver   | 117   | 119   |
| 122. Cirrhosis of the liver   | 2     | 5     |
| (a) Specified as alcoholic  | 115   | 117   |
| (b) Not specified as alcoholic  | 33    | 72    |
| 123. Biliary calculi  | 33    | 42    |
| 124. Other diseases of the liver  | 19    | 13    |
| 125. Diseases of the pancreas   | 25    | 38    |
| 126. Peritonitis without specified cause  | 75    | 2     |
| 127. Other diseases of digestive system (cancer and T. B. excepted)                       | 75    | 2     |
| NON-VENEREAL DISEASES OF THE GENITOURINARY SYSTEM AND ANNEXA                              |       |       |
| 128. Acute nephritis (including unspecified under 10 yrs. of age)                         | 85    | 129   |
| 129. Chronic nephritis (including unspecified 10 years and over)                          | 1,267 | 1,162 |
| 131. Other diseases of the kidneys and annexa (diseases of kidneys in pregnancy excepted) | 358   | 327   |
| 132. Calculi of urinary passages  | 4     | 2     |
| 133. Diseases of the bladder  | 5     | 1     |
| 134. Diseases of urethra, urinary abscess, etc.   | 4     | 195   |
| 135. Diseases of the prostate   | 211   | 195   |
| 136. Non-venerae diseases of the male genital organs                                      | 17    | 21    |
| 137. Cysts and other benign tumors of the ovaries   | 44    | 37    |
| 138. Salpingitis and pelvic abscess   | 41    | 35    |
| 139. Benign tumors of the uterus  | 15    | 6     |
| 140. Non-puerperal uterine hemorrhage   | 15    | 7     |
| 141. Other diseases of female genital organs  | 1     | 8     |
| 142. Non-puerperal diseases of breast (cancer excepted)                                   | 1     | 8     |
| THE PUERPERAL STATE   |       |       |
| 143. Accidents of pregnancy   | 115   | 51    |
| (a) Abortion  | 34    | 34    |
| (b) Ectopic gestation   | 10    | 8     |
| (c) Others under this title   | 71    | 11    |
| 144. Puerperal hemorrhage   | 4     | 4     |
| 145. Other accidents of labor   | 27    | 26    |
| (a) Cesarean section  | 9     | 15    |
| (b) Other surgical operations and instrumental delivery                                   | 1     | 2     |
| (c) Others under this title   | 17    | 9     |
| 146. Puerperal septicemia   | 43    | 51    |
| 147. Puerperal pylephlebitis, alba dolens, embolus, sudden death                          | 73    | 57    |
| 148. Puerperal albuminuria and convulsions  | 33    | 68    |
| 149. Following childbirth (not otherwise defined)   | 1     | 9     |
| DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE   |       |       |
| 151. Gangrene   | 97    | 161   |

## CAUSES OF DEATH—Continued

| Int. List Number  | 1924 | 1925 |
|---|------|------|
| 152. Furuncle   | 0    | 7    |
| 153. Acute abscess  | 1    | 8    |
| 154. Other diseases of skin and annexa  | 5    | 6    |
| DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION                               |      |      |
| 155. Diseases of bones (tuberculosis excepted)                                      | 27   | 27   |
| 156. Diseases of joints (tuberculosis and rheumatism excepted)                      | 0    | 2    |
| 157. Amputations  | 2    | 0    |
| MALFORMATIONS   |      |      |
| 159. Congenital malformations (stillbirths not included)                            | 59   | 10   |
| (a) Protruding alar   | 5    | 0    |
| (b) Congenital malformations of the heart   | 9    | 4    |
| (c) Others under this title   | 45   | 6    |
| EARLY INFANCY   |      |      |
| 160. Congenital debility, icterus and sclerema                                      | 211  | 139  |
| 161. Premature birth; injury at birth   | 821  | 810  |
| (a) Premature birth   | 789  | 808  |
| (b) Injury at birth   | 32   | 2    |
| 162. Other diseases peculiar to early infancy                                       | 638  | 611  |
| 163. Lack of care   | 0    | 1    |
| OLD AGE   |      |      |
| 164. Senility   | 982  | 823  |
| EXTERNAL CAUSES   |      |      |
| 165. Suicide by solid or liquid poisons (corrosive substances excepted)             | 38   | 65   |
| 166. Suicide by corrosive substances  | 34   | 15   |
| 167. Suicide by poisonous gas   | 21   | 22   |
| 168. Suicide by hanging or strangulation  | 90   | 102  |
| 169. Suicide by drowning  | 14   | 7    |
| 170. Suicide by firearms  | 127  | 115  |
| 171. Suicide by cutting or piercing instruments                                     | 19   | 14   |
| 172. Suicide by jumping from high places  | 1    | 5    |
| 173. Other suicides   | 5    | 2    |
| 174. Poisoning by food  | 10   | 21   |
| 175. Poisoning by venomous animals  | 0    | 0    |
| 176. Poisoning by venomous animals (wasps excepted)                                 | 28   | 28   |
| 177. Other acute accidental poisonings (wasps excepted)                             | 58   | 28   |
| 178. Conflagration  | 51   | 78   |
| 179. Accidental burns (conflagration excepted)                                      | 45   | 22   |
| 180. Accidental mechanical suffocation  | 43   | 16   |
| 181. Accidental absorption of irrespirable or poisonous gas                         | 56   | 95   |
| 182. Accidental drowning  | 43   | 49   |
| 183. Accidental traumatism by firearms (wounds of war excepted)                     | 4    | 4    |
| 184. Accidental traumatism by cutting or piercing instruments                       | 286  | 261  |
| 185. Accidental traumatism by fall  | 20   | 23   |
| 186. Accidental traumatism in mines and quarries                                    | 17   | 23   |
| (a) Mines   | 3    | 0    |
| (b) Quarries  | 38   | 20   |
| 187. Accidental traumatism by machines  | 370  | 429  |
| 188. Accidental traumatism by other crushing (vehicles, railways, landslides, etc.) | 140  | 144  |
| (a) Railroad accidents  | 15   | 16   |
| (b) Street car accidents  | 260  | 261  |
| (c) Automobile accidents  | 1    | 1    |
| (d) Aeroplane and balloon   | 1    | 1    |
| (e) Injuries by other vehicles  | 11   | 6    |
| (f) Landslide, other crushing   | 26   | 40   |
| 189. Injuries by animals (not poisoning)  | 0    | 1    |
| 190. Wounds of war  | 4    | 0    |
| 191. Starvation (deprivation of food or water)                                      | 2    | 2    |
| 192. Excessive cold   | 2    | 35   |
| 193. Excessive heat   | 14   | 7    |
| 194. Lightning  | 26   | 28   |
| 195. Other accidental electric shocks   | 42   | 43   |
| 196. Homicide by firearms   | 10   | 7    |
| 197. Homicide by cutting or piercing instruments                                    | 9    | 8    |
| 198. Homicide by other means  | 0    | 1    |
| 199. Infanticide (murder of infants less than 1 yr. of age)                         | 0    | 0    |
| 200. Fracture (cause not specified)   | 10   | 0    |
| 201. Other external violence (cause specified)                                      | 53   | 0    |
| 202. Other external violence (cause not specified)                                  | 370  | 370  |
| ILL-DEFINED DEATHS  |      |      |
| 203. Cause of death not specified or ill-defined                                    | 47   | 0    |
| 204. Not specified or unknown   | 47   | 0    |





# SUMMARY OF RATES FOR DIPHTHERIA AND SCARLET FEVER IN THE STATE OF IOWA, 1924-1925.

## DIPHTHERIA

**Counties**—The death rate per 100,000 population in the State of Iowa for the year of 1925 was 4.8 compared with 5.9 for 1924 or a decrease of 1.1. The three counties showing the highest rates for 1925 were: Jefferson (29.9), Clarke (19.0) and Clinton (18.4). Those with the highest rates for 1924 were: Decatur (23.6), Dubuque (22.1) and Van Buren (21.3).

**Cities**—The three cities with the highest rates for 1925 were: Iowa City (23.6), Dubuque (15.6) and Clinton (12.4). For 1924 they were: Dubuque (27.5), Iowa City (25.2) and Keokuk (13.6).

## SCARLET FEVER

**Counties**—The death rate per 100,000 population in the State of Iowa for the year 1925 was 1.5 compared with 2.8 for 1924 or a decrease of 1.3. The three counties showing the highest rates for 1925 were: Emmet (13.9), Chickasaw (12.9) and Shelby (12.4). For 1924 they were: Bremer (46.4), Calhoun (16.5) and Benton (14.1).

**Cities**—The three cities with the highest rates for 1925 were: Iowa City (8.4), Marshalltown (5.7) and Boone (4.1). For 1924 they were: Mason City (16.0), Fort Dodge (4.7) and Burlington (4.1).

TABLE 3—NUMBER OF DEATHS CAUSED BY DIPHTHERIA AND SCARLET FEVER WITH RATES (PER 100,000 POPULATION) BY COUNTIES FOR YEARS, 1924-1925.  
(Cities Included Within Counties)

| County               | No. of Deaths<br>Diphtheria |      | Rates |      | No. of Deaths<br>Scarlet Fever |      | Rates |      |
|----------------------|-----------------------------|------|-------|------|--------------------------------|------|-------|------|
|                      | 1924                        | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Total for State..... | 148                         | 117  | 6.1   | 4.8  | 71                             | 43   | 2.8   | 1.5  |
| Adair.....           | 1                           | 1    | 7.0   | 7.0  |                                | 1    |       | 7.0  |
| Adams.....           |                             |      |       |      |                                |      |       |      |
| Allamakee.....       |                             |      |       |      |                                |      |       |      |
| Appanoose.....       | 3                           | 1    | 9.3   | 3.1  |                                | 1    |       | 3.0  |
| Audubon.....         |                             |      |       |      |                                |      |       |      |
| Benton.....          |                             | 1    |       | 4.0  | 3                              |      | 14.1  |      |
| Black Hawk.....      | 1                           | 1    | 1.5   | 1.8  | 2                              |      | 3.2   |      |
| Boone.....           | 3                           |      | 11.5  |      |                                |      |       |      |
| Bremer.....          |                             |      |       |      | 8                              |      | 46.4  |      |
| Buchanan.....        |                             |      |       |      | 1                              |      | 5.0   |      |
| Buena Vista.....     |                             |      |       |      |                                |      |       |      |
| Butler.....          |                             |      |       |      | 1                              |      | 5.5   |      |
| Calhoun.....         | 1                           |      | 5.5   |      | 8                              |      | 16.5  |      |
| Carroll.....         |                             |      |       | 4.4  |                                |      |       |      |
| Cass.....            |                             | 1    |       | 5.0  | 1                              |      | 5.1   |      |
| Cedar.....           |                             | 1    |       | 5.7  |                                |      |       |      |
| Cerro Gordo.....     | 5                           | 2    | 12.6  | 4.9  | 4                              |      | 10.1  |      |
| Cherokee.....        | 1                           | 1    | 5.4   |      |                                |      |       |      |
| Chickasaw.....       |                             | 1    |       | 6.4  |                                |      |       | 12.9 |
| Clarke.....          |                             | 2    |       | 19.0 |                                | 2    |       |      |
| Clay.....            | 1                           | 1    | 5.8   | 5.8  |                                |      |       |      |
| Clayton.....         |                             |      |       | 3.9  |                                | 1    |       | 3.9  |
| Clinton.....         |                             | 8    |       | 18.4 |                                |      |       |      |
| Crawford.....        | 1                           |      | 4.7   |      | 2                              |      | 9.4   |      |
| Dallas.....          | 2                           |      | 7.6   |      |                                |      |       |      |
| Davis.....           |                             |      |       |      |                                |      |       |      |
| Decatur.....         | 4                           | 2    | 23.6  | 12.0 |                                |      |       |      |
| Delaware.....        |                             | 2    |       | 19.8 | 1                              |      | 5.4   |      |
| Des Moines.....      | 4                           | 2    | 11.2  | 4.4  | 1                              | 1    | 2.8   | 2.3  |
| Dickinson.....       |                             |      |       |      | 1                              | 1    | 8.8   | 8.6  |

TABLE 3—Continued

| County             | No. of Deaths<br>Diphtheria |      | Rates |      | No. of Deaths<br>Scarlet Fever |      | Rates |      |
|--------------------|-----------------------------|------|-------|------|--------------------------------|------|-------|------|
|                    | 1924                        | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Dubuque.....       | 13                          | 6    | 22.1  | 9.6  |                                | 1    |       | 1.6  |
| Emmet.....         |                             |      |       |      |                                | 2    |       | 13.9 |
| Fayette.....       |                             |      |       |      | 1                              | 1    | 3.3   | 3.3  |
| Floyd.....         | 2                           |      | 10.0  |      |                                |      |       |      |
| Franklin.....      | 1                           |      | 6.0   |      |                                | 2    |       | 12.0 |
| Fremont.....       |                             |      |       |      | 1                              |      | 6.4   |      |
| Greene.....        | 1                           | 2    | 5.9   | 11.9 |                                |      |       |      |
| Grundy.....        |                             |      |       |      | 1                              |      | 6.7   |      |
| Harrison.....      |                             |      | 11.2  |      | 2                              | 1    | 11.2  | 5.6  |
| Hamilton.....      | 1                           |      | 5.0   |      | 1                              |      | 5.0   |      |
| Hancock.....       |                             |      |       |      |                                | 1    |       | 6.2  |
| Hardin.....        | 1                           | 1    | 4.0   | 4.0  |                                | 1    |       | 4.0  |
| Harrison.....      | 1                           | 3    | 3.9   | 12.3 | 2                              | 1    | 7.8   | 3.9  |
| Henry.....         |                             |      |       |      |                                |      |       |      |
| Howard.....        |                             |      |       |      |                                |      |       |      |
| Humboldt.....      |                             | 1    |       | 7.4  |                                | 1    |       | 7.4  |
| Ia.....            | 1                           |      | 8.3   |      |                                |      |       |      |
| Iowa.....          | 2                           |      | 10.6  |      |                                |      |       |      |
| Jackson.....       |                             | 3    |       | 15.1 |                                |      |       |      |
| Jasper.....        | 1                           | 2    | 3.5   | 7.0  |                                |      |       |      |
| Jefferson.....     | 1                           | 5    | 5.9   | 29.9 |                                |      |       |      |
| Johnson.....       | 3                           | 4    | 11.0  | 14.6 |                                | 2    |       | 7.3  |
| Jones.....         | 2                           | 3    | 10.6  | 16.1 |                                |      |       |      |
| Keokuk.....        |                             |      |       |      |                                |      |       |      |
| Kossuth.....       |                             | 1    |       | 3.7  | 1                              | 1    | 4.7   | 3.7  |
| Lee.....           | 4                           | 1    | 9.6   | 2.4  | 1                              |      | 2.4   |      |
| Linn.....          | 2                           | 1    | 2.3   | 1.2  | 4                              | 1    | 4.6   | 1.2  |
| Louisia.....       | 1                           |      | 8.2   |      |                                |      | 8.2   |      |
| Lucas.....         |                             |      |       |      |                                |      |       |      |
| Lyon.....          | 1                           | 2    | 6.3   | 12.5 | 1                              |      | 6.3   |      |
| Madison.....       |                             | 2    |       | 13.4 | 1                              |      | 6.6   |      |
| Mahaska.....       | 2                           | 1    | 7.6   | 3.8  | 1                              |      | 3.8   |      |
| Marion.....        | 2                           |      | 7.6   |      | 2                              | 1    | 7.6   |      |
| Marshall.....      | 1                           |      | 2.9   |      | 2                              | 2    | 5.8   | 5.8  |
| Mills.....         | 1                           |      | 6.4   |      | 1                              |      | 6.4   |      |
| Mitchell.....      | 1                           |      | 7.0   |      |                                |      |       |      |
| Monona.....        | 3                           | 2    | 17.1  | 11.4 | 1                              |      | 5.7   |      |
| Monroe.....        | 4                           |      | 16.8  |      | 1                              | 1    | 4.2   | 4.2  |
| Montgomery.....    | 1                           |      | 5.7   |      | 1                              |      | 5.7   |      |
| Muscatine.....     | 2                           |      | 6.8   |      |                                |      |       |      |
| O'Brien.....       |                             |      |       |      |                                |      |       |      |
| Osceola.....       |                             | 1    |       | 9.1  |                                |      |       |      |
| Page.....          |                             |      |       |      |                                | 1    |       | 4.1  |
| Palo Alto.....     | 1                           | 1    | 6.1   | 6.1  |                                |      |       |      |
| Plymouth.....      | 2                           |      | 8.2   |      |                                |      | 4.1   |      |
| Pocahontas.....    |                             |      |       |      | 1                              | 1    | 6.2   | 6.2  |
| Polk.....          | 21                          | 17   | 11.3  | 9.7  | 3                              | 1    | 1.7   | .5   |
| Pottawattamie..... | 3                           | 1    | 4.6   | 1.5  |                                | 2    |       | 3.0  |
| Poweshiek.....     | 1                           |      | 4.9   |      |                                |      |       |      |
| Ringgold.....      | 1                           |      | 7.6   |      |                                |      |       |      |
| Sac.....           |                             |      |       |      |                                |      |       |      |
| Scott.....         | 6                           | 6    | 7.4   | 7.2  |                                |      |       |      |
| Shelby.....        | 1                           | 1    | 6.2   |      |                                | 2    |       | 12.4 |
| Sioux.....         | 1                           | 1    | 3.0   | 3.6  | 2                              | 1    | 7.2   | 3.6  |
| Story.....         | 1                           | 3    | 10.7  |      |                                |      |       |      |
| Tama.....          |                             |      |       |      |                                |      |       |      |
| Taylor.....        | 1                           |      | 4.5   |      |                                | 1    |       | 4.5  |
| Union.....         |                             |      |       |      | 1                              |      | 6.4   |      |
| Van Buren.....     | 3                           |      |       |      |                                |      |       |      |
|                    |                             |      | 21.3  |      |                                |      |       |      |



TABLE 3—Continued

| County          | No. of Deaths<br>Diphtheria |      | Rates |      | No. of Deaths<br>Scarlet Fever |      | Rates |      |
|-----------------|-----------------------------|------|-------|------|--------------------------------|------|-------|------|
|                 | 1924                        | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Wapello.....    | 4                           | 2    | 15.1  | 5.2  |                                |      |       |      |
| Warren.....     | 3                           | 1    | 16.5  | 5.5  | 1                              |      | 5.5   |      |
| Washington..... | 1                           | 1    | 4.8   | 4.8  | 1                              | 1    | 4.8   | 4.8  |
| Wayne.....      | 1                           | 1    | 6.5   | 6.5  |                                |      |       |      |
| Webster.....    | 1                           | 1    | 2.5   | 2.5  | 1                              |      | 2.5   |      |
| Winnebago.....  |                             | 1    |       | 6.9  | 2                              |      | 14.0  |      |
| Winneshek.....  | 3                           | 3    | 13.4  | 13.4 | 1                              | 1    | 4.4   | 4.4  |
| Woodbury.....   | 9                           | 4    | 8.4   | 3.7  | 1                              | 2    | 9     | 1.8  |
| Worth.....      |                             |      |       |      |                                |      |       |      |
| Wright.....     | 1                           | 1    | 4.6   | 4.6  |                                | 1    |       | 4.6  |

TABLE 4—NUMBER OF DEATHS CAUSED BY DIPHTHERIA AND SCARLET FEVER WITH RATES (PER 100,000 POPULATION) FOR CITIES OVER 10,000 POPULATION YEARS, 1924-1925.

| City                | No. of Deaths<br>Diphtheria |      | Rates |      | No. of Deaths<br>Scarlet Fever |      | Rates |      |
|---------------------|-----------------------------|------|-------|------|--------------------------------|------|-------|------|
|                     | 1924                        | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Boone.....          | 1                           |      | 7.9   |      |                                |      |       |      |
| Burlington.....     | 2                           | 2    | 12.3  | 8.3  | 1                              | 1    | 4.1   | 4.1  |
| Cedar Rapids.....   | 1                           | 1    | 1.9   | 1.8  | 1                              | 1    | 1.9   | 1.8  |
| Clinton.....        | 3                           | 2    | 12.4  | 8.3  |                                |      |       |      |
| Council Bluffs..... | 3                           | 1    | 7.5   | 2.3  |                                |      |       |      |
| Davenport.....      | 4                           | 6    | 6.0   | 7.2  |                                |      |       |      |
| Des Moines.....     | 23                          | 15   | 13.2  | 9.9  | 2                              | 1    | 1.3   | .6   |
| Dubuque.....        | 11                          | 6    | 27.5  | 15.0 |                                | 1    |       | 2.5  |
| Fort Dodge.....     |                             |      |       |      | 1                              |      | 4.7   |      |
| Fort Madison.....   | 1                           | 1    | 7.3   | 7.3  |                                |      |       |      |
| Iowa City.....      | 3                           | 4    | 25.2  | 33.6 |                                | 1    |       | 8.4  |
| Keokuk.....         | 2                           | 1    | 13.6  | 6.8  |                                |      |       |      |
| Marshalltown.....   | 1                           |      | 6.9   |      | 4                              | 1    | 5.7   |      |
| Mason City.....     | 2                           | 2    | 8.0   | 7.9  |                                |      | 16.0  |      |
| Muscatine.....      | 1                           |      | 6.2   |      |                                |      |       |      |
| Ottumwa.....        | 3                           |      | 13.5  | 4.2  |                                |      |       |      |
| Sioux City.....     | 6                           | 3    | 7.2   | 3.3  | 1                              | 1    | 1.2   | 1.1  |
| Waterloo.....       |                             | 1    |       | 2.4  | 1                              |      | 2.4   |      |

## SUMMARY OF RATES FOR SMALLPOX AND TYPHOID FEVER IN THE STATE OF IOWA, 1924-1925.

## SMALLPOX

*Counties*—The death rate per 100,000 population in the State of Iowa for the year 1925 was 1.7 compared with (.44) for the year 1924 or an increase of 1.26. The three counties having the highest rates for 1925 were: Butler (38.3), Linn and Story each had rate of (18.3) and Worth (15.8). For 1924 they were: Cerro Gordo (15.1), Lyon (6.5) and Allamakee (5.7).

*Cities*—The three cities showing highest rates for 1925 were: Cedar Rapids (28.3), Mason City (19.5) and Burlington (4.1). For 1924 they were: Mason City (24.0), Council Bluffs (2.5) and Waterloo (2.4).

## TYPHOID FEVER

*Counties*—The death rate per 100,000 population in the State of Iowa for the year of 1924 was 2.5 compared with 3.2 for year 1925 or an increase of .7 over year 1924. The three counties having the highest rates for 1925 were:

Franklin (30.4), Jefferson (23.9) and Davis (16.9). For year 1924 they were: Winnebago (21.0), Webster (15.1) and Lee (14.4).

*Cities*—The three cities having the highest rates for 1925 were: Keokuk (34.3), Muscatine (12.5) and Burlington (8.2). For 1924 they were: Keokuk (27.2), Dubuque (15.6) and Fort Madison (14.6).

TABLE 5—NUMBER OF DEATHS CAUSED BY SMALLPOX AND TYPHOID FEVER WITH RATES (PER 100,000 POPULATION) BY COUNTIES FOR YEARS, 1924-1925. (Cities Included Within Counties)

| County               | No. of Deaths<br>Smallpox |      | Rates |      | No. of Deaths<br>Typhoid Fever |      | Rates |      |
|----------------------|---------------------------|------|-------|------|--------------------------------|------|-------|------|
|                      | 1924                      | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Total for State..... | 11                        | 41   | .5    | 1.7  | 63                             | 79   | 2.5   | 3.2  |
| Adair.....           |                           | 1    |       | 7.0  |                                |      |       |      |
| Adams.....           |                           |      |       |      |                                |      |       |      |
| Allamakee.....       | 1                         | 1    | 5.8   | 5.8  |                                |      |       |      |
| Appanoose.....       |                           |      |       |      | 1                              | 3    | 8.1   | 6.4  |
| Audubon.....         |                           |      |       |      |                                |      |       |      |
| Benton.....          |                           |      |       |      |                                | 2    |       | 8.1  |
| Black Hawk.....      | 1                         |      | 1.5   |      | 3                              | 2    | 4.1   | 3.1  |
| Boone.....           |                           |      |       |      | 1                              | 1    | 3.8   | 3.2  |
| Bremer.....          |                           |      |       |      |                                | 1    |       | 5.8  |
| Buchanan.....        |                           |      |       |      | 1                              |      | 5.0   |      |
| Buena Vista.....     |                           |      |       |      | 1                              |      | 5.0   |      |
| Butler.....          |                           | 7    |       | 88.2 |                                |      |       |      |
| Calhoun.....         |                           |      |       |      | 1                              |      | 5.3   |      |
| Carroll.....         |                           |      |       |      | 1                              | 2    | 4.4   | 8.9  |
| Cass.....            |                           |      |       |      |                                |      |       |      |
| Cedar.....           |                           |      |       | 5.7  |                                |      |       |      |
| Cerro Gordo.....     | 8                         | 5    | 15.1  | 12.3 |                                |      |       |      |
| Cherokee.....        |                           |      |       |      | 1                              |      | 5.4   |      |
| Chickasaw.....       |                           |      |       |      |                                | 1    |       | 6.5  |
| Clarke.....          |                           |      |       |      | 1                              | 1    | 9.5   | 9.5  |
| Clay.....            |                           |      |       |      |                                |      |       |      |
| Clayton.....         |                           |      |       |      |                                |      |       |      |
| Clinton.....         |                           |      |       |      |                                | 1    |       | 2.3  |
| Crawford.....        |                           |      |       |      |                                |      |       |      |
| Dallas.....          |                           |      |       |      | 1                              |      | 3.8   |      |
| Davis.....           |                           |      |       |      |                                | 2    |       | 16.0 |
| Decatur.....         |                           |      |       |      |                                |      |       |      |
| Delaware.....        |                           |      |       |      |                                |      |       |      |
| Des Moines.....      | 1                         |      | 2.2   |      | 2                              | 2    | 5.6   | 4.4  |
| Dickinson.....       |                           |      |       |      |                                |      |       |      |
| Dubuque.....         |                           |      |       |      | 3                              | 1    | 5.1   | 1.7  |
| Emmet.....           |                           |      |       |      |                                |      |       |      |
| Payette.....         |                           |      |       |      | 2                              | 1    | 6.6   | 3.3  |
| Floyd.....           |                           |      |       |      |                                |      |       |      |
| Franklin.....        |                           |      |       |      |                                | 5    |       | 30.4 |
| Fremont.....         |                           |      |       |      |                                |      |       |      |
| Greene.....          |                           |      |       |      | 1                              |      | 5.9   |      |
| Grundy.....          |                           |      |       |      |                                |      |       |      |
| Guthrie.....         |                           |      |       |      |                                |      |       |      |
| Hamilton.....        |                           |      |       |      |                                |      |       |      |
| Hancock.....         | 1                         |      | 6.2   |      |                                |      |       |      |
| Hardin.....          |                           |      |       |      | 2                              | 1    | 8.0   | 4.0  |
| Harrison.....        | 1                         |      | 2.9   |      |                                |      |       |      |
| Henry.....           |                           |      |       |      | 1                              | 1    | 6.4   | 5.4  |
| Howard.....          |                           |      |       |      |                                |      |       |      |
| Humboldt.....        |                           |      |       |      | 1                              |      | 7.5   |      |

TABLE 5—Continued

| County        | No. of Deaths<br>Smallpox |      | Rates |      | No. of Deaths<br>Typhoid Fever |      | Rates |      |
|---------------|---------------------------|------|-------|------|--------------------------------|------|-------|------|
|               | 1924                      | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Ida.          |                           |      |       |      | 1                              |      | 8.3   |      |
| Iowa          |                           |      |       |      | 1                              | 2    | 5.0   | 10.0 |
| Jackson       |                           |      |       |      |                                |      |       |      |
| Jasper        |                           |      |       |      |                                |      |       |      |
| Jefferson     |                           |      |       |      | 1                              | 4    | 5.9   | 23.9 |
| Johnson       |                           |      |       |      |                                |      |       |      |
| Jones         |                           |      |       |      |                                |      |       |      |
| Keokuk        |                           |      |       |      |                                |      |       |      |
| Kossuth       |                           |      |       |      |                                |      |       |      |
| Lee           |                           |      |       |      | 6                              | 5    | 14.4  | 12.0 |
| Lincoln       |                           | 15   |       | 18.2 | 2                              |      | 2.4   |      |
| Louis         |                           |      |       |      | 1                              |      | 8.2   |      |
| Lucas         |                           |      |       |      |                                |      |       |      |
| Lyon          | 1                         |      | 6.8   |      | 1                              |      | 6.2   |      |
| Madison       |                           |      |       |      |                                |      |       |      |
| Mahaska       | 1                         |      | 3.8   |      |                                |      |       |      |
| Marion        |                           |      |       |      | 1                              | 1    | 3.8   |      |
| Marshall      |                           |      |       |      | 1                              |      | 2.9   |      |
| Mills         |                           |      |       |      | 1                              |      | 6.4   |      |
| Mitchell      |                           |      |       |      |                                | 1    |       | 7.0  |
| Monona        |                           |      |       |      |                                |      |       |      |
| Monroe        |                           |      |       |      | 1                              |      | 4.2   |      |
| Montgomery    |                           |      |       |      |                                | 3    |       | 10.3 |
| Muscatine     |                           |      |       |      |                                |      |       |      |
| O'Brien       |                           |      |       |      | 1                              |      | 5.0   |      |
| Osceola       |                           |      |       |      | 1                              | 1    | 9.1   |      |
| Page          |                           |      |       |      | 1                              | 3    | 4.1   | 4.1  |
| Palo Alto     |                           |      |       |      |                                |      |       |      |
| Plymouth      |                           | 1    |       | 4.1  |                                |      |       |      |
| Pocahontas    |                           |      |       |      |                                |      |       |      |
| Polk          |                           |      |       |      | 4                              | 7    | 2.2   | 3.8  |
| Pottawattamie | 1                         |      | 1.5   |      | 1                              | 3    | 1.5   | 4.5  |
| Poweshiek     |                           |      |       |      |                                | 1    |       | 4.9  |
| Ringgold      |                           |      |       |      |                                |      |       |      |
| Sac           |                           |      |       |      |                                |      |       |      |
| Scott         |                           |      |       |      | 2                              | 5    | 2.4   | 6.0  |
| Shelby        |                           |      |       |      |                                |      |       |      |
| Sioux         |                           |      |       |      |                                |      |       |      |
| Story         |                           | 5    |       | 18.2 |                                |      |       |      |
| Tama          |                           |      |       |      |                                |      |       |      |
| Taylor        |                           |      |       |      | 2                              |      | 12.0  |      |
| Union         |                           |      |       |      |                                |      |       |      |
| Van Buren     |                           |      |       |      |                                |      |       |      |
| Wapello       |                           |      |       |      | 1                              |      | 2.6   |      |
| Warren        |                           |      |       |      |                                |      |       |      |
| Washington    |                           |      |       |      |                                |      |       |      |
| Wayne         |                           |      |       |      |                                |      |       |      |
| Webster       |                           |      |       |      | 6                              | 2    | 15.1  | 5.0  |
| Winnebago     |                           |      |       |      | 8                              |      | 21.0  |      |
| Winnebuck     |                           |      |       |      | 1                              |      | 4.3   |      |
| Woodbury      |                           |      |       |      | 7                              | 4    | 6.6   | 2.7  |
| Worth         |                           | 2    |       | 15.8 |                                |      |       |      |
| Wright        |                           |      |       |      |                                |      |       |      |

TABLE 6—NUMBER OF DEATHS CAUSED BY SMALLPOX AND TYPHOID FEVER WITH RATES (PER 100,000 POPULATION) FOR CITIES OVER 10,000 POPULATION YEARS, 1924-1925.

| City           | No. of Deaths<br>Smallpox |      | Rates |      | No. of Deaths<br>Typhoid Fever |      | Rates |      |
|----------------|---------------------------|------|-------|------|--------------------------------|------|-------|------|
|                | 1924                      | 1925 | 1924  | 1925 | 1924                           | 1925 | 1924  | 1925 |
| Boone          |                           |      |       |      | 1                              |      | 7.9   |      |
| Burlington     |                           |      |       |      | 2                              | 2    | 8.2   | 8.2  |
| Cedar Rapids   |                           | 14   |       | 4.1  | 2                              | 2    | 3.7   | 3.7  |
| Clinton        |                           |      |       | 29.3 |                                |      |       | 4.1  |
| Council Bluffs | 1                         |      | 2.5   |      | 1                              | 2    | 2.5   | 4.9  |
| Davenport      |                           |      |       |      | 2                              | 4    | 3.0   | 6.1  |
| Des Moines     |                           |      |       |      | 4                              | 6    | 2.7   | 3.5  |
| Dubuque        |                           |      |       |      | 3                              | 1    | 7.5   | 2.5  |
| Fort Dodge     |                           |      |       |      | 3                              | 1    | 14.1  | 4.8  |
| Fort Madison   |                           |      |       |      | 2                              |      | 14.6  |      |
| Iowa City      |                           |      |       |      |                                |      |       |      |
| Keokuk         |                           |      |       |      | 4                              | 5    | 27.2  | 34.3 |
| Marshalltown   |                           |      |       |      | 1                              |      | 6.9   |      |
| Mason City     | 6                         | 5    | 24.0  | 19.5 |                                |      |       |      |
| Muscatine      |                           |      |       |      |                                |      |       |      |
| Ottumwa        |                           |      |       |      |                                | 2    |       | 12.5 |
| Sioux City     |                           |      |       |      | 5                              | 4    | 6.0   | 4.6  |
| Waterloo       | 1                         |      | 2.4   |      | 3                              | 2    | 7.2   | 4.7  |

## SUMMARY OF RATES FOR WHOOPING COUGH AND MEASLES IN THE STATE OF IOWA, 1924-1925.

## WHOOPING COUGH

*Counties*—The death rate per 100,000 population in the State of Iowa for the year 1924 was 4.7 compared with 2.9 for the year 1925 or a decrease of 1.8 over 1924. The three counties having the highest rates for 1925 were: Fremont (19.4), Jones (16.1) and Dallas (15.2). For 1924 they were: Audubon and Davis (23.7), Lyon (18.9) and Appanoose (18.6).

*Cities*—The three cities having highest rates for 1925 were: Council Bluffs (12.4), Des Moines (9.9) and Iowa City (8.4). For 1924 they were: Fort Madison (29.2), Clinton (8.2) and Marshalltown (6.9).

## MEASLES

*Counties*—The death rate per 100,000 population in the State of Iowa for the year 1925 was 3.9 compared with 8.1 for 1924 or a decrease of 4.2. The three counties with the highest rates for 1925 were: Clarke (9.5), Wapello (6.8) and Johnson (6.4). The three highest for 1924 were: Monroe (33.6), Taylor and Worth (32.0) and Lucas (29.5).

*Cities*—The three cities having highest rates for 1925 were: Sioux City (2.2), Cedar Rapids (1.8) and Des Moines (.66). These three cities were the only cities which had deaths from Measles in 1925. The three cities having highest rates for 1924 were: Keokuk (47.6), Mason City (44.0) and Fort Madison (36.5).



TABLE 7—NUMBER OF DEATHS CAUSED BY WHOOPING COUGH AND MEASLES  
WITH RATES (PER 100,000 POPULATION) BY COUNTIES  
FOR YEARS, 1924-1925.  
(Cities Included Within Counties)

| County               | No. of Deaths<br>Whooping<br>Cough |      | Rates |      | No. of Deaths<br>Measles |      | Rates |      |
|----------------------|------------------------------------|------|-------|------|--------------------------|------|-------|------|
|                      | 1924                               | 1925 | 1924  | 1925 | 1924                     | 1925 | 1924  | 1925 |
| Total for State..... | 110                                | 72   | 4.8   | 2.9  | 234                      | 10   | 8.1   | 3.9  |
| Adair.....           | 2                                  |      | 14.0  |      |                          |      |       |      |
| Adams.....           |                                    |      |       |      |                          |      |       |      |
| Allamakee.....       | 2                                  |      | 11.6  |      | 1                        |      | 5.7   |      |
| Appanoose.....       | 6                                  |      | 18.6  |      | 6                        | 1    | 18.6  | 3.8  |
| Arden.....           | 3                                  | 1    | 23.7  | 7.7  | 1                        |      | 7.9   |      |
| Benton.....          | 1                                  |      | 4.7   |      | 3                        |      | 14.1  |      |
| Black Hawk.....      | 2                                  |      | 2.6   |      | 2                        |      | 2.6   |      |
| Boone.....           |                                    | 1    |       | 3.1  |                          |      |       |      |
| Bremer.....          |                                    |      |       |      | 2                        |      | 11.6  |      |
| Buchanan.....        | 1                                  |      | 5.0   |      |                          |      |       |      |
| Buena Vista.....     |                                    |      |       |      | 2                        |      | 10.0  |      |
| Butler.....          |                                    |      |       |      |                          |      |       |      |
| Calhoun.....         | 3                                  |      | 16.5  |      |                          | 1    | 5.5   |      |
| Carroll.....         | 3                                  | 2    | 13.2  | 8.8  | 2                        |      | 8.8   |      |
| Cass.....            | 1                                  | 1    | 5.1   | 5.0  |                          |      |       |      |
| Cedar.....           |                                    |      |       |      |                          |      |       |      |
| Cerro Gordo.....     |                                    |      |       |      | 12                       |      | 30.0  |      |
| Cherokee.....        | 1                                  |      | 5.4   |      | 2                        |      | 10.8  |      |
| Chickasaw.....       |                                    |      |       |      | 2                        |      | 12.0  |      |
| Clarke.....          |                                    |      |       |      |                          | 1    | 9.5   |      |
| Clay.....            | 1                                  |      | 5.8   |      |                          |      |       |      |
| Clayton.....         | 1                                  | 1    | 3.9   | 3.9  | 2                        |      | 7.8   |      |
| Clinton.....         | 2                                  | 1    | 4.6   | 2.3  | 6                        |      | 13.8  |      |
| Crawford.....        |                                    |      |       |      |                          |      |       |      |
| Dallas.....          | 1                                  | 2    | 3.8   | 7.6  |                          |      |       |      |
| Davis.....           | 3                                  | 1    | 23.7  | 8.0  | 3                        |      | 23.7  |      |
| Decatur.....         | 3                                  |      | 17.7  |      |                          |      |       |      |
| Delaware.....        | 2                                  |      | 16.2  |      | 1                        |      | 5.4   |      |
| Des Moines.....      | 9                                  |      | 5.6   |      |                          |      |       |      |
| Dickinson.....       | 2                                  |      | 17.6  |      | 1                        |      | 8.8   |      |
| Dubique.....         |                                    |      |       |      |                          |      |       |      |
| Emmet.....           | 2                                  | 1    | 3.4   | 1.6  |                          |      |       |      |
| Fayette.....         | 1                                  |      | 7.1   |      | 1                        |      | 7.1   |      |
| Floyd.....           | 2                                  |      | 6.8   |      |                          |      |       |      |
| Franklin.....        |                                    |      |       |      | 1                        |      | 6.0   |      |
| Fremont.....         | 2                                  | 3    | 12.8  | 19.4 | 2                        |      | 12.8  |      |
| Greene.....          |                                    |      |       |      |                          |      |       |      |
| Grundy.....          |                                    |      |       |      |                          |      |       |      |
| Guthrie.....         |                                    | 1    |       | 5.6  | 1                        |      | 5.6   |      |
| Hamilton.....        |                                    | 2    |       | 10.0 | 1                        | 1    | 5.0   | 5.0  |
| Hancock.....         | 2                                  |      | 12.8  |      | 1                        |      | 6.4   |      |
| Hardin.....          |                                    |      |       |      | 2                        |      | 8.0   |      |
| Harrison.....        |                                    | 1    |       | 3.9  | 7                        |      | 26.6  |      |
| Henry.....           | 2                                  |      | 10.8  |      | 1                        |      | 5.4   |      |
| Howard.....          | 1                                  |      | 7.7   |      | 1                        |      | 7.7   |      |
| Humboldt.....        |                                    |      |       |      |                          |      |       |      |
| Ia.....              |                                    |      |       |      | 1                        |      | 8.3   |      |
| Iowa.....            |                                    |      |       |      |                          |      |       |      |
| Jackson.....         | 2                                  |      | 10.0  |      |                          |      |       |      |
| Jasper.....          |                                    | 3    |       | 10.6 |                          |      |       |      |
| Jefferson.....       |                                    |      |       |      | 1                        |      | 5.0   |      |
| Johnson.....         |                                    | 1    |       | 3.6  | 3                        | 1    | 9.6   | 3.6  |

TABLE 7—Continued

| County             | No. of Deaths<br>Whooping<br>Cough |      | Rates |      | No. of Deaths<br>Measles |      | Rates |      |
|--------------------|------------------------------------|------|-------|------|--------------------------|------|-------|------|
|                    | 1924                               | 1925 | 1924  | 1925 | 1924                     | 1925 | 1924  | 1925 |
| Jones.....         |                                    | 3    |       | 16.1 |                          |      |       |      |
| Keokuk.....        | 1                                  | 1    | 4.7   | 4.7  |                          |      |       |      |
| Kossuth.....       | 4                                  | 1    | 14.5  | 3.7  |                          |      |       |      |
| Lee.....           | 5                                  | 1    | 12.0  | 2.4  | 12                       |      | 29.9  |      |
| Linn.....          | 5                                  |      | 5.9   |      | 9                        | 1    | 10.7  | 1.2  |
| Louisa.....        |                                    |      |       |      |                          |      |       |      |
| Lucas.....         | 3                                  | 1    | 17.7  | 5.8  | 5                        |      | 29.3  |      |
| Lyon.....          | 3                                  |      | 18.9  |      | 4                        |      | 24.2  |      |
| Madison.....       |                                    |      |       |      | 1                        |      | 6.6   |      |
| Mahaska.....       |                                    | 1    |       | 3.8  |                          |      |       |      |
| Marion.....        | 1                                  |      | 2.9   |      | 6                        |      | 22.8  |      |
| Marshall.....      |                                    |      |       |      |                          |      |       |      |
| Mills.....         |                                    |      |       |      | 2                        |      | 12.8  |      |
| Mitchell.....      | 2                                  |      | 14.0  |      | 3                        |      | 21.0  |      |
| Monona.....        |                                    |      |       |      | 2                        |      | 11.4  |      |
| Monroe.....        |                                    | 3    |       | 12.6 |                          |      | 31.4  |      |
| Montgomery.....    |                                    | 2    |       | 11.5 | 5                        |      | 27.5  |      |
| Muscatine.....     | 3                                  |      | 10.2  |      | 2                        |      | 6.8   |      |
| O'Brien.....       |                                    |      |       |      | 2                        |      | 10.0  |      |
| Osceola.....       | 1                                  |      | 9.2   |      |                          |      |       |      |
| Page.....          | 1                                  |      | 6.1   |      | 6                        |      | 24.6  |      |
| Palo Alto.....     | 1                                  |      | 6.1   |      | 2                        |      | 12.2  |      |
| Plymouth.....      | 1                                  | 1    | 4.1   | 4.1  | 2                        |      | 8.2   |      |
| Pocahontas.....    |                                    | 1    |       | 6.2  |                          |      |       |      |
| Polk.....          | 6                                  | 13   | 3.4   | 8.7  | 25                       | 1    | 11.6  | 5    |
| Pottawattamie..... | 4                                  | 5    | 6.1   | 9.1  | 16                       |      | 24.4  |      |
| Poweshiek.....     |                                    |      |       |      |                          |      |       |      |
| Ringgold.....      | 1                                  |      | 7.6   |      | 1                        |      | 7.6   |      |
| Sac.....           | 1                                  |      | 5.5   |      | 1                        |      | 5.5   |      |
| Scott.....         | 1                                  | 1    | 1.2   | 1.2  | 6                        |      | 7.8   |      |
| Shelby.....        | 1                                  |      | 6.2   |      |                          |      |       |      |
| Sioux.....         | 2                                  |      | 7.2   |      | 3                        |      | 10.8  |      |
| Story.....         | 2                                  | 1    | 7.2   | 3.6  | 2                        |      | 7.2   |      |
| Tama.....          |                                    |      |       |      | 1                        |      | 4.5   |      |
| Taylor.....        | 1                                  |      | 6.4   |      | 5                        |      | 32.0  |      |
| Union.....         | 2                                  |      | 11.2  |      |                          |      |       |      |
| Van Buren.....     |                                    |      |       |      | 2                        |      | 14.2  |      |
| Wapello.....       | 2                                  |      | 5.2   |      | 2                        | 1    | 5.2   | 2.6  |
| Warren.....        | 2                                  |      | 11.0  |      | 1                        |      | 5.5   |      |
| Washington.....    | 1                                  |      |       |      | 1                        |      | 4.8   |      |
| Wayne.....         |                                    |      |       |      | 1                        |      | 6.5   |      |
| Webster.....       | 1                                  | 1    | 2.5   | 2.5  | 3                        |      | 7.5   |      |
| Winnebago.....     |                                    |      |       |      |                          |      |       |      |
| Winnebuck.....     |                                    |      |       |      | 1                        |      | 4.3   |      |
| Woodbury.....      | 4                                  | 2    | 3.7   | 1.8  | 9                        | 2    | 8.4   | 1.8  |
| Worth.....         |                                    | 1    |       | 7.9  | 4                        |      | 32.0  |      |
| Wright.....        | 1                                  | 3    | 4.6   | 13.8 | 4                        |      | 18.4  |      |

TABLE 8—NUMBER OF DEATHS CAUSED BY WHOOPING COUGH AND MEASLES  
WITH RATES (PER 100,000 POPULATION) FOR CITIES  
OVER 10,000 POPULATION.

| City           | No. of Deaths<br>Whooping Cough |      | Rates |      | No. of Deaths<br>Measles |      | Rates |      |
|----------------|---------------------------------|------|-------|------|--------------------------|------|-------|------|
|                | 1924                            | 1925 | 1924  | 1925 | 1924                     | 1925 | 1924  | 1925 |
| Boone          | 1                               |      | 4.1   |      |                          |      |       |      |
| Burlington     | 1                               | 1    | 1.9   | 1.8  | 5                        | 1    | 9.5   | 1.8  |
| Cedar Rapids   | 2                               | 1    | 8.2   | 4.1  | 4                        |      | 16.4  |      |
| Clinton        | 1                               |      | 2.5   |      | 13                       |      | 22.5  |      |
| Council Bluffs |                                 |      |       |      | 2                        |      | 3.9   |      |
| Davenport      | 4                               | 15   | 2.7   | 9.9  | 17                       | 1    | 10.2  | .6   |
| Des Moines     | 1                               |      | 2.5   |      |                          |      |       |      |
| Dubuque        |                                 |      |       |      | 1                        |      | 4.7   |      |
| Port Dodge     | 4                               |      | 29.2  |      | 5                        |      | 36.5  |      |
| Port Madison   |                                 | 1    |       | 8.4  | 3                        |      | 25.2  |      |
| Iowa City      |                                 | 1    |       | 6.8  | 7                        |      | 47.6  |      |
| Keokuk         | 1                               |      | 6.9   |      |                          |      |       |      |
| Marshalltown   |                                 |      |       |      | 11                       |      | 44.0  |      |
| Mason City     |                                 |      |       |      | 2                        |      | 12.4  |      |
| Muscatine      | 1                               |      | 6.2   |      | 1                        |      | 4.5   |      |
| Ottumwa        | 4                               |      | 4.8   |      | 5                        | 2    | 6.0   | 2.2  |
| Sioux City     |                                 |      |       |      | 1                        |      | 2.4   |      |
| Waterloo       |                                 |      |       |      |                          |      |       |      |

### DISEASES OF THE HEART

(EXPLANATORY TO TABLES NUMBERED 9 TO 12.)

For the interest of those who may desire to study them, tables are submitted which are based on special studies of heart disease in the State of Iowa. These figures are of interest, because Heart Disease is now the greatest single cause of death, both in the State of Iowa and in the United States as a whole. From the public health standpoint what has to be borne in mind is that a large proportion of the deaths ascribed to heart disease, the cause of the heart condition was due to some previous infection, such as rheumatism, syphilis, etc., infections which we now class as communicable and preventable.

The figures as presented for the year 1925 indicate that while heart disease in the very young (under 1 year) is often fatal, it is not usually so, until middle life or later. The death rates under one year are higher than for any other age group until after the age of thirty-five years. It is however, after sixty years of age that the death rates begin to increase most rapidly. For each ten year group after sixty the death rates treble the preceding group, so that for those who reached ninety years of age, or over, from seven to twenty per cent of them died from some form of heart disease. Males show higher death rates than females, in the proportion of about five to four. It is significant that almost the only period in which the rates for females exceed those of males is during the child bearing period, for the female, viz; fifteen to forty years. This indicates the definite relationship and the hazard of pregnancy in conjunction with heart disease.

Studies of tables 10, 11, and 12, show, as we might expect, that Angina Pectoris is not ordinarily a disease of young or early middle life, but is

largely restricted to those who are fifty years of age or over, and that to this form of heart disease, twice as many males succumbed as females. The acute forms of endocarditis and myocarditis are more evenly distributed throughout the different age groups, and affect males and females almost equally. The chronic forms of heart disease and those types grouped under number 90 in the International List of causes of death, with the exception of the age group under one year, which is doubly fatal for males, show a consistently increasing rise in the rates, as people approach middle life and advance to old age.

All the tables submitted indicate that it is in advanced life that heart disease takes its heaviest toll, nevertheless, we have to bear in mind that there are many old and new factors in advanced life that tend to "loose the silver cord" and that while these alone could not break the golden bowl, yet in conjunction with heart disease resulting from some infection, dating perhaps far back in the individual's history, they may be sufficient to snap the slender cord on which life hangs.

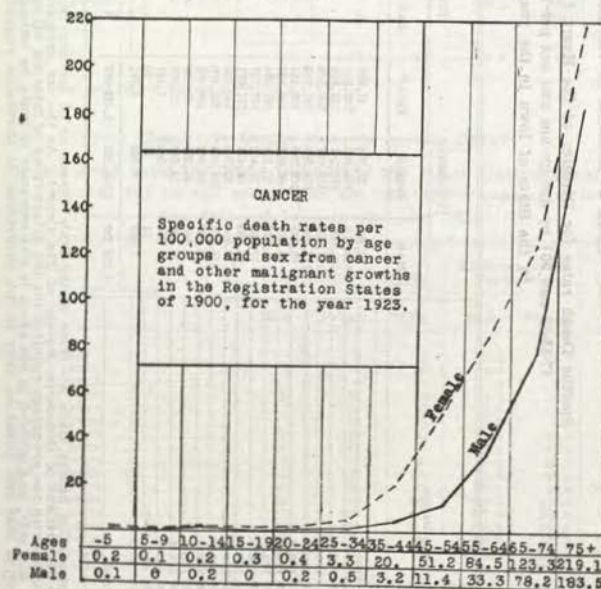




TABLE 9—DISEASES OF THE HEART  
Specific Death rates for Diseases of the Heart (International List Nos. 87-88-89 and 90) by age groups and sex per 100,000 population in the State of Iowa in the year 1925.

| Age Groups              | Population |           | Total Number of Deaths |        | Rates per 100,000 Population |          | Combined Rate |
|-------------------------|------------|-----------|------------------------|--------|------------------------------|----------|---------------|
|                         | Male       | Female    | Male                   | Female | Male                         | Female   |               |
| Under 1 year.....       | 35,398     | 32,788    | 47,088                 | 4      | 30.4                         | 17.3     | 22.9          |
| Under 5 years.....      | 135,362    | 135,362   | 245,724                | 11     | 4.9                          | 4.2      | 4.6           |
| 5 to 9 years.....       | 137,463    | 139,587   | 245,729                | 11     | 4.7                          | 4.2      | 4.6           |
| 10 to 14 years.....     | 117,583    | 119,087   | 245,550                | 15     | 14.7                         | 12.6     | 13.9          |
| 15 to 19 years.....     | 96,143     | 102,389   | 245,247                | 12     | 10.4                         | 13.6     | 11.9          |
| 20 to 24 years.....     | 96,096     | 102,389   | 245,434                | 19     | 10.4                         | 18.5     | 14.6          |
| 25 to 29 years.....     | 96,096     | 102,389   | 245,434                | 18     | 16.8                         | 18.7     | 17.6          |
| 30 to 34 years.....     | 79,738     | 77,162    | 245,434                | 21     | 27                           | 25.2     | 22.1          |
| 35 to 39 years.....     | 66,139     | 66,139    | 245,434                | 21     | 32                           | 27.3     | 24.5          |
| 40 to 44 years.....     | 66,139     | 66,139    | 245,434                | 46     | 68.2                         | 69.8     | 67.6          |
| 45 to 49 years.....     | 74,859     | 66,735    | 245,434                | 51     | 104.5                        | 137.2    | 150.1         |
| 50 to 59 years.....     | 118,175    | 104,994   | 245,434                | 135    | 312.0                        | 445.0    | 480.0         |
| 60 to 69 years.....     | 135,362    | 135,362   | 245,434                | 377    | 1,092.0                      | 964.0    | 1,135.0       |
| 70 to 79 years.....     | 135,362    | 135,362   | 245,434                | 477    | 2,769.0                      | 1,839.0  | 2,500.0       |
| 80 to 89 years.....     | 9,168      | 12,640    | 245,434                | 24     | 2,769.0                      | 7,069.0  | 6,000.0       |
| 90 to 99 years.....     | 659        | 595       | 245,434                | 41     | 6,269.0                      | 29,000.0 | 11,300.0      |
| 100 years and over..... | 1,852      | 1,069     | 245,434                | 3      |                              |          |               |
| Unknown.....            |            |           |                        |        |                              |          |               |
| Total.....              | 1,235,729  | 1,194,305 | 2,430,927              | 1,322  | 194.2                        | 165.1    | 174.9         |

\*The population figures given are those of the State Census as of January 1st, 1925 which figures, apparently have been accepted by the Department of Commerce, Bureau of the Census. As the age groupings used by the State Census of 1925 did not exactly correspond with the groupings required for the determining of rates for all age groupings and as the whole population, 45 years of age and over, was not included in the census, it was necessary to make an estimate of the distribution of population according to the distribution that was found to exist in the Department of Commerce, Bureau of the Census report of 1920.

TABLE 10—ANGINA PECTORIS

Specifies death rates for Angina Pectoris (International List No. 89) by age groups and sex per 100,000 population in the State of Iowa in the year 1925.

| Age Group               | Total Number of Deaths |        |       | Rates per 100,000 Population |         | Combined Rate |
|-------------------------|------------------------|--------|-------|------------------------------|---------|---------------|
|                         | Male                   | Female | Total | Male                         | Female  |               |
| Under 1 year.....       |                        |        |       |                              |         |               |
| Under 5 years.....      |                        |        |       |                              |         |               |
| 5 to 9 years.....       |                        |        |       |                              |         |               |
| 10 to 14 years.....     | 1                      |        | 1     | .8                           |         | .4            |
| 15 to 19 years.....     |                        |        |       |                              |         |               |
| 20 to 24 years.....     | 1                      |        | 1     | 1.0                          |         | .5            |
| 25 to 29 years.....     |                        |        |       |                              |         |               |
| 30 to 34 years.....     | 2                      | 2      | 4     | 2.4                          | 2.4     | 2.4           |
| 35 to 39 years.....     | 2                      | 1      | 3     | 1.3                          | 1.3     | 1.3           |
| 40 to 44 years.....     | 7                      | 4      | 11    | 10.7                         | 6.0     | 8.4           |
| 45 to 49 years.....     | 9                      | 3      | 12    | 12.1                         | 4.5     | 8.5           |
| 50 to 59 years.....     | 31                     | 14     | 45    | 26.2                         | 15.4    | 20.6          |
| 60 to 69 years.....     | 78                     | 42     | 119   | 101.5                        | 65.2    | 85.2          |
| 70 to 79 years.....     | 65                     | 38     | 103   | 100.5                        | 58.3    | 111.2         |
| 80 to 89 years.....     | 38                     | 10     | 48    | 413.5                        | 143.5   | 254.0         |
| 90 to 99 years.....     | 1                      | 1      | 2     | 152.5                        | 138.0   | 172.3         |
| 100 years and over..... | 1                      | 1      | 2     | 6,069.7                      | 3,842.0 | 3,842.0       |
| Unknown.....            |                        |        |       |                              |         |               |
| Total.....              | 231                    | 117    | 348   | 18.9                         | 9.8     | 14.4          |

Note: See population figures in Table 9.

TABLE 11—OTHER DISEASES OF THE HEART

Specific death rates for Other Diseases of the Heart (International List number 90) by age groups and sex per 100,000 population in the State of Iowa in the year 1925.

| Age Groups              | Total Number of Deaths |        |       | Rates per 100,000 Population |         | Combined Rate |
|-------------------------|------------------------|--------|-------|------------------------------|---------|---------------|
|                         | Male                   | Female | Total | Male                         | Female  |               |
| Under 1 year.....       | 6                      | 3      | 9     | 25.8                         | 12.6    | 18.8          |
| Under 5 years.....      | 5                      | 5      | 10    | 4.0                          | 4.2     | 4.1           |
| 5 to 9 years.....       | 1                      | 6      | 7     | .8                           | 5.0     | 2.9           |
| 10 to 14 years.....     | 11                     | 12     | 23    | 8.6                          | 10.1    | 9.3           |
| 15 to 19 years.....     | 7                      | 14     | 21    | 5.9                          | 11.2    | 8.6           |
| 20 to 24 years.....     | 5                      | 10     | 15    | 5.2                          | 9.9     | 7.6           |
| 25 to 29 years.....     | 11                     | 13     | 24    | 11.5                         | 13.4    | 12.4          |
| 30 to 34 years.....     | 11                     | 14     | 25    | 13.1                         | 16.8    | 14.9          |
| 35 to 39 years.....     | 16                     | 35     | 51    | 20.1                         | 25.3    | 25.0          |
| 40 to 44 years.....     | 33                     | 28     | 61    | 50.6                         | 42.3    | 46.4          |
| 45 to 49 years.....     | 38                     | 36     | 74    | 50.7                         | 54.8    | 51.5          |
| 50 to 59 years.....     | 150                    | 118    | 268   | 126.5                        | 112.4   | 120.0         |
| 60 to 69 years.....     | 278                    | 223    | 511   | 377.0                        | 300.0   | 308.3         |
| 70 to 79 years.....     | 305                    | 279    | 584   | 1,068.0                      | 789.0   | 924.0         |
| 80 to 89 years.....     | 304                    | 194    | 498   | 2,280.0                      | 1,322.0 | 1,814.0       |
| 90 to 99 years.....     | 38                     | 53     | 91    | 5,785.0                      | 6,267.0 | 6,035.0       |
| 100 years and over..... | 2                      | 2      | 4     | 15,323.0                     | 7,069.0 | 7,069.0       |
| Unknown.....            |                        |        |       |                              |         |               |
| Total.....              | 1,179                  | 1,027  | 2,206 | 96.0                         | 86.1    | 91.8          |

Note: See population figures in Table 9.

TABLE 12—ENDOCARDITIS AND MYOCARDITIS (ACUTE)

Specific death rates for Endocarditis and Myocarditis (Acute), International List number 88, by age groups and sex per 100,000 population in the State of Iowa in the year 1925.

| Age Groups              | Total Number of Deaths |        |       | Rates per 100,000 Population |        | Combined Rate |
|-------------------------|------------------------|--------|-------|------------------------------|--------|---------------|
|                         | Male                   | Female | Total | Male                         | Female |               |
| Under 1 year.....       |                        | 1      | 1     |                              | 4.3    | 2.2           |
| Under 5 years.....      | 1                      | 8      | 9     | .8                           | 6.5    | 3.4           |
| 5 to 9 years.....       | 7                      | 3      | 10    | 5.5                          | 2.5    | 4.4           |
| 10 to 14 years.....     | 5                      | 3      | 8     | 4.3                          | 2.5    | 3.5           |
| 15 to 19 years.....     | 4                      | 8      | 12    | 4.2                          | 7.8    | 6.4           |
| 20 to 24 years.....     | 5                      | 5      | 10    | 5.2                          | 5.2    | 5.2           |
| 25 to 29 years.....     | 3                      | 5      | 8     | 3.6                          | 6.0    | 4.8           |
| 30 to 34 years.....     | 5                      | 4      | 9     | 6.3                          | 5.1    | 5.7           |
| 35 to 39 years.....     | 6                      | 3      | 9     | 9.2                          | 4.5    | 6.5           |
| 40 to 44 years.....     | 4                      | 5      | 9     | 5.3                          | 7.6    | 6.4           |
| 45 to 49 years.....     | 13                     | 13     | 26    | 10.9                         | 11.4   | 11.2          |
| 50 to 54 years.....     | 23                     | 11     | 34    | 31.2                         | 17.0   | 24.5          |
| 55 to 59 years.....     | 17                     | 24     | 41    | 49.8                         | 67.8   | 59.0          |
| 60 to 64 years.....     | 14                     | 15     | 29    | 152.3                        | 134.5  | 137.1         |
| 65 to 69 years.....     | 2                      | 4      | 6     | 306.0                        | 792.5  | 517.0         |
| 100 years and over..... |                        |        |       |                              |        |               |
| Unknown.....            |                        |        |       |                              |        |               |
| Total.....              | 110                    | 111    | 221   | 9.0                          | 9.3    | 9.1           |

Note: See population figures in Table 9.

#### SUMMARY OF DEATH RATES (PER 100,000 POPULATION) FOR DISEASES OF THE HEART AND CANCER (ALL FORMS) FOR YEARS, 1924-1925.

##### DISEASES OF THE HEART

**Counties**—The death rate per 100,000 population in the State of Iowa for the year of 1924 was 81. For 1925 it was 111, or an increase of 30, over 1924. The three counties having the highest rates for 1925 were: Clinton County (193), Cass (188), and Jasper (180). For 1924 they were: Van Buren (185), Des Moines (129), and Allamakee (122).

**Cities**—The three cities (over 10,000 population) having the highest rates for 1925 were: Keokuk (260), Iowa City (259), and Clinton (249). For 1924 they were: Iowa City (177), Keokuk (176), and Burlington (149).

##### CANCER (ALL FORMS)

**Counties**—The death rate per 100,000 population in the State for the year 1924 was 94, compared with 97, for the year 1925. The three counties having the highest rates for 1924 were: Johnson (255), Muscatine (168), and Cherokee (145). For 1925 they were: Johnson (267), Jefferson (173), and Cherokee (152).

**Cities**—The three cities having the highest rates for 1924 were: Iowa City (453), Muscatine (229), and Keokuk (204). For 1925 they were: Iowa City (487), Dubuque (205), and Burlington (187).

TABLE 13—NUMBER OF DEATHS CAUSED BY DISEASES OF THE HEART AND CANCER (ALL FORMS) WITH RATES (PER 100,000 POPULATION) BY COUNTIES FOR YEARS, 1924-1925.  
(Cities Included Within Counties)

| County               | No. of Deaths Diseases of the Heart |       | Rates |      | No. of Deaths Cancer (All Forms) |       | Rates |      |
|----------------------|-------------------------------------|-------|-------|------|----------------------------------|-------|-------|------|
|                      | 1924                                | 1925  | 1924  | 1925 | 1924                             | 1925  | 1924  | 1925 |
| Total for State..... | 2,019                               | 2,781 | 81    | 111  | 2,372                            | 2,446 | 96    | 97   |
| Adair.....           | 9                                   | 15    | 92    | 105  | 13                               | 13    | 91    | 91   |
| Adams.....           | 10                                  | 10    | 95    | 95   | 2                                | 8     | 19    | 76   |
| Allamakee.....       | 21                                  | 17    | 132   | 99   | 10                               | 18    | 57    | 104  |
| Appanoose.....       | 19                                  | 35    | 60    | 111  | 32                               | 37    | 99    | 116  |
| Ashtabula.....       | 4                                   | 9     | 32    | 72   | 13                               | 7     | 102   | 55   |
| Benton.....          | 20                                  | 25    | 81    | 101  | 29                               | 19    | 156   | 77   |
| Black Hawk.....      | 44                                  | 66    | 70    | 103  | 54                               | 75    | 86    | 117  |
| Boone.....           | 31                                  | 45    | 99    | 144  | 28                               | 23    | 90    | 73   |
| Bremer.....          | 8                                   | 16    | 46    | 95   | 18                               | 12    | 104   | 69   |
| Buchanan.....        | 17                                  | 16    | 86    | 80   | 17                               | 22    | 86    | 111  |
| Buena Vista.....     | 13                                  | 59    | 66    | 99   | 13                               | 26    | 65    | 120  |
| Butler.....          | 9                                   | 10    | 49    | 54   | 17                               | 18    | 98    | 98   |
| Calhoun.....         | 11                                  | 16    | 60    | 88   | 18                               | 13    | 99    | 71   |
| Carroll.....         | 19                                  | 29    | 45    | 129  | 29                               | 22    | 102   | 102  |
| Cass.....            | 19                                  | 37    | 97    | 188  | 10                               | 22    | 51    | 111  |
| Cedar.....           | 8                                   | 11    | 45    | 62   | 9                                | 18    | 50    | 102  |
| Cerro Gordo.....     | 25                                  | 30    | 63    | 74   | 33                               | 31    | 83    | 76   |
| Cherokee.....        | 10                                  | 19    | 55    | 103  | 27                               | 28    | 145   | 162  |
| Chickasaw.....       | 5                                   | 18    | 32    | 116  | 21                               | 19    | 134   | 129  |
| Clarke.....          | 10                                  | 11    | 95    | 104  | 10                               | 14    | 95    | 133  |
| Clay.....            | 14                                  | 19    | 82    | 111  | 12                               | 14    | 69    | 81   |
| Clayton.....         | 15                                  | 38    | 60    | 152  | 25                               | 29    | 97    | 115  |
| Clinton.....         | 49                                  | 84    | 113   | 193  | 56                               | 63    | 128   | 143  |
| Crawford.....        | 11                                  | 15    | 55    | 82   | 12                               | 16    | 56    | 76   |
| Dallas.....          | 24                                  | 29    | 96    | 111  | 18                               | 27    | 68    | 103  |
| Davis.....           | 9                                   | 21    | 72    | 168  | 14                               | 9     | 110   | 51   |
| Deautil.....         | 19                                  | 14    | 114   | 84   | 16                               | 5     | 94    | 39   |
| Delaware.....        | 19                                  | 14    | 65    | 76   | 17                               | 14    | 91    | 77   |
| Des Moines.....      | 49                                  | 55    | 129   | 157  | 47                               | 55    | 132   | 133  |
| Dickinson.....       | 7                                   | 9     | 63    | 78   | 7                                | 5     | 61    | 43   |
| Dubuque.....         | 64                                  | 81    | 109   | 127  | 80                               | 91    | 136   | 154  |
| Emmet.....           | 5                                   | 11    | 36    | 76   | 10                               | 10    | 71    | 69   |
| Fayette.....         | 22                                  | 29    | 77    | 99   | 10                               | 22    | 33    | 75   |
| Floyd.....           | 14                                  | 23    | 71    | 115  | 15                               | 19    | 75    | 95   |
| Franklin.....        | 18                                  | 23    | 110   | 134  | 13                               | 10    | 78    | 69   |
| Freemont.....        | 8                                   | 14    | 52    | 90   | 15                               | 10    | 96    | 61   |
| Greene.....          | 16                                  | 19    | 96    | 113  | 9                                | 12    | 53    | 71   |
| Grundy.....          | 10                                  | 6     | 67    | 49   | 13                               | 8     | 87    | 53   |
| Guthrie.....         | 15                                  | 16    | 84    | 90   | 18                               | 15    | 100   | 84   |
| Hamilton.....        | 15                                  | 18    | 76    | 91   | 19                               | 13    | 95    | 96   |
| Hancock.....         | 7                                   | 10    | 45    | 62   | 14                               | 9     | 89    | 56   |
| Hardin.....          | 25                                  | 29    | 102   | 89   | 32                               | 22    | 128   | 89   |
| Harrison.....        | 10                                  | 28    | 63    | 113  | 14                               | 16    | 53    | 63   |
| Henry.....           | 26                                  | 22    | 142   | 121  | 15                               | 15    | 82    | 82   |
| Howard.....          | 15                                  | 21    | 106   | 149  | 16                               | 14    | 77    | 98   |
| Humboldt.....        | 13                                  | 10    | 98    | 74   | 8                                | 12    | 60    | 80   |
| Ia.....              | 7                                   | 10    | 59    | 84   | 8                                | 8     | 67    | 87   |
| Iowa.....            | 11                                  | 23    | 59    | 122  | 16                               | 12    | 84    | 61   |
| Jackson.....         | 16                                  | 18    | 80    | 90   | 21                               | 19    | 105   | 96   |
| Jasper.....          | 17                                  | 51    | 60    | 150  | 30                               | 16    | 105   | 56   |
| Jefferson.....       | 15                                  | 22    | 90    | 113  | 16                               | 29    | 94    | 173  |
| Johnson.....         | 28                                  | 45    | 104   | 164  | 69                               | 73    | 253   | 367  |



TABLE 13—Continued

| County        | No. of Deaths<br>Diseases of<br>the Heart |      | Rates |      | No. of Deaths<br>Cancer (All<br>Forms) |      | Rates |      |
|---------------|---|------|-------|------|--|------|-------|------|
|               | 1924                                      | 1925 | 1924  | 1925 | 1924                                   | 1925 | 1924  | 1925 |
| Jones         | 19  | 29   | 102   | 107  | 20                                     | 24   | 106   | 129  |
| Keokuk        | 25  | 25   | 119   | 119  | 27                                     | 17   | 126   | 84   |
| Kossuth       | 17  | 14   | 64    | 52   | 17                                     | 9    | 72    | 33   |
| Lee           | 50  | 67   | 121   | 161  | 52                                     | 47   | 125   | 113  |
| Linn          | 69  | 91   | 82    | 110  | 102                                    | 87   | 123   | 106  |
| Louis         | 11  | 6    | 91    | 49   | 9                                      | 16   | 73    | 131  |
| Lucas         | 13  | 14   | 78    | 82   | 22                                     | 1    | 129   | 36   |
| Lyon          | 9   | 13   | 57    | 81   | 5                                      | 13   | 31    | 81   |
| Madison       | 11  | 21   | 69    | 140  | 18                                     | 7    | 118   | 46   |
| Mahaska       | 20  | 30   | 76    | 114  | 29                                     | 31   | 110   | 118  |
| Marion        | 21  | 31   | 81    | 119  | 24                                     | 25   | 91    | 95   |
| Marshall      | 40  | 40   | 95    | 117  | 34                                     | 48   | 100   | 141  |
| Mills         | 8   | 8    | 51    | 51   | 8                                      | 9    | 51    | 56   |
| Mitchell      | 12  | 19   | 85    | 133  | 14                                     | 11   | 58    | 77   |
| Monona        | 11  | 18   | 65    | 103  | 11                                     | 12   | 62    | 68   |
| Monroe        | 14  | 22   | 60    | 94   | 16                                     | 14   | 67    | 59   |
| Montgomery    | 19  | 29   | 110   | 115  | 21                                     | 10   | 119   | 92   |
| Muscatine     | 25  | 30   | 86    | 103  | 49                                     | 42   | 168   | 141  |
| O'Brien       | 8   | 9    | 40    | 44   | 18                                     | 14   | 90    | 69   |
| Osceola       | 6   | 4    | 35    | 36   | 5                                      | 9    | 46    | 32   |
| Page          | 20  | 24   | 80    | 99   | 20                                     | 31   | 82    | 128  |
| Palo Alto     | 7   | 13   | 43    | 79   | 8                                      | 15   | 45    | 91   |
| Plymouth      | 12  | 17   | 50    | 71   | 14                                     | 18   | 57    | 73   |
| Pocahontas    | 4   | 19   | 25    | 118  | 6                                      | 7    | 37    | 43   |
| Polk          | 101                                       | 107  | 93    | 100  | 142                                    | 170  | 80    | 94   |
| Pottawattamie | 46  | 67   | 71    | 102  | 84                                     | 78   | 98    | 110  |
| Poweshiek     | 19  | 19   | 95    | 94   | 13                                     | 19   | 63    | 94   |
| Ringgold      | 8   | 20   | 62    | 154  | 12                                     | 14   | 91    | 108  |
| Sac           | 14  | 16   | 78    | 87   | 12                                     | 14   | 66    | 77   |
| Scott         | 65  | 115  | 89    | 139  | 85                                     | 78   | 105   | 94   |
| Shelby        | 11  | 16   | 69    | 99   | 10                                     | 11   | 62    | 69   |
| Sioux         | 21  | 20   | 78    | 73   | 16                                     | 20   | 57    | 73   |
| Story         | 18  | 28   | 60    | 102  | 32                                     | 27   | 115   | 98   |
| Tama          | 19  | 25   | 86    | 118  | 23                                     | 23   | 103   | 91   |
| Taylor        | 16  | 16   | 103   | 103  | 13                                     | 22   | 83    | 141  |
| Union         | 18  | 20   | 102   | 114  | 17                                     | 26   | 95    | 147  |
| Van Buren     | 26  | 20   | 185   | 142  | 20                                     | 16   | 142   | 114  |
| Wapello       | 46  | 63   | 114   | 145  | 29                                     | 34   | 102   | 89   |
| Warren        | 13  | 14   | 72    | 77   | 22                                     | 18   | 121   | 99   |
| Washington    | 23  | 30   | 114   | 144  | 25                                     | 25   | 129   | 129  |
| Wayne         | 16  | 22   | 101   | 143  | 18                                     | 13   | 117   | 84   |
| Webster       | 30  | 37   | 76    | 96   | 25                                     | 25   | 63    | 62   |
| Winnebago     | 6   | 9    | 42    | 62   | 4                                      | 5    | 28    | 31   |
| Winneskeo     | 18  | 38   | 81    | 170  | 19                                     | 18   | 81    | 80   |
| Woodbury      | 65  | 107  | 61    | 100  | 101                                    | 98   | 95    | 90   |
| Worth         | 9   | 14   | 73    | 100  | 12                                     | 10   | 56    | 79   |
| Wright        | 13  | 23   | 74    | 105  | 16                                     | 20   | 73    | 92   |

TABLE 14—NUMBER OF DEATHS CAUSED BY DISEASES OF THE HEART AND CANCER (ALL FORMS) WITH RATES (PER 100,000 POPULATION) FOR CITIES OVER 10,000 POPULATION

| City           | No. of Deaths<br>Diseases of<br>the Heart |      | Rates |      | No. of Deaths<br>Cancer (All<br>Forms) |      | Rates |      |
|----------------|---|------|-------|------|--|------|-------|------|
|                | 1924                                      | 1925 | 1924  | 1925 | 1924                                   | 1925 | 1924  | 1925 |
| Boone          | 16  | 24   | 118   | 175  | 16                                     | 8    | 126   | 138  |
| Burlington     | 36  | 45   | 149   | 191  | 40                                     | 45   | 164   | 187  |
| Cedar Rapids   | 42  | 60   | 81    | 112  | 71                                     | 54   | 134   | 161  |
| Clinton        | 36  | 58   | 148   | 240  | 41                                     | 45   | 168   | 186  |
| Council Bluffs | 33  | 55   | 88    | 136  | 49                                     | 65   | 122   | 161  |
| Davenport      | 54  | 100  | 85    | 153  | 73                                     | 65   | 100   | 161  |
| Des Moines     | 147                                       | 170  | 101   | 113  | 122                                    | 152  | 85    | 100  |
| Dubuque        | 46  | 70   | 117   | 177  | 67                                     | 81   | 169   | 203  |
| Fort Dodge     | 14  | 19   | 65    | 92   | 15                                     | 14   | 70    | 65   |
| Fort Madison   | 13  | 14   | 110   | 109  | 14                                     | 14   | 102   | 100  |
| Iowa City      | 21  | 31   | 177   | 239  | 54                                     | 58   | 434   | 487  |
| Keokuk         | 26  | 38   | 176   | 261  | 30                                     | 27   | 204   | 157  |
| Marshalltown   | 22  | 27   | 139   | 157  | 26                                     | 32   | 179   | 186  |
| Mason City     | 13  | 22   | 53    | 88   | 23                                     | 22   | 92    | 87   |
| Muscatine      | 16  | 16   | 99    | 99   | 37                                     | 36   | 229   | 186  |
| Ottumwa        | 32  | 48   | 136   | 203  | 32                                     | 24   | 144   | 101  |
| Sioux City     | 56  | 90   | 67    | 105  | 82                                     | 88   | 98    | 103  |
| Waterloo       | 29  | 42   | 49    | 100  | 41                                     | 57   | 98    | 136  |

## SUMMARY OF DEATH RATES (PER 100,000 POPULATION) FOR PNEUMONIA (ALL FORMS) AND TUBERCULOSIS (ALL FORMS) FOR YEARS 1924-1925.

## PNEUMONIA (ALL FORMS)

**Counties**—The death rate per 100,000 population for the State of Iowa in 1924 was 68, and for 1925 it was 78, or an increase of 10, over 1924. The three counties having the highest rates for 1924 were: Mills (108.), Butler (99.) and Polk (92.). For 1925 they were: Johnson (157.), Jackson (140.) and Wapello (115.).

**Cities**—The three cities having the highest rates for 1924 were: Iowa City (168.), Clinton (114.) and Des Moines (102.). For 1925 they were: Iowa City (268.), Clinton and Council Bluffs (149.) and Fort Dodge (130.).

## TUBERCULOSIS (ALL FORMS)

**Counties**—The death rate per 100,000 population for the year 1924 was 39, and for the year 1925 it was 39. The three counties having the highest rates for 1924 were: Johnson County (372.), Cherokee (81.) and Scott (77.). For 1925 they were: Johnson (377.), Cherokee (129.) and Henry (118.).

**Cities**—The three cities having the highest rates for 1924 were: Iowa City (126.), Ottumwa (99.) and Fort Madison (86.). For 1925 they were: Iowa City (216.), Burlington (94.) and Davenport and Ottumwa each had a rate of (89.).

TABLE 15—NUMBER OF DEATHS CAUSED BY PNEUMONIA (ALL FORMS) AND  
TUBERCULOSIS (ALL FORMS) WITH RATES (PER 100,000  
POPULATION) BY COUNTIES FOR YEARS, 1924-1925.

(Cities Included Within Counties)

| County               | No. of Deaths<br>Pneumonia<br>(All Forms) |       | Rates |      | No. of Deaths<br>Tuberculosis<br>(All Forms) |      | Rates |      |
|----------------------|---|-------|-------|------|--|------|-------|------|
|                      | 1924                                      | 1925  | 1924  | 1925 | 1924   | 1925 | 1924  | 1925 |
| Total for State..... | 1,345                                     | 1,394 | 68    | 78   | 978  | 970  | 39    | 39   |
| Adair.....           | 6   | 6     | 42    | 42   | 2  | 3    | 14    | 21   |
| Adams.....           | 7   | 7     | 66    | 66   | 3  | 1    | 38    | 6    |
| Allamakee.....       | 12  | 13    | 68    | 75   | 2  | 4    | 11    | 23   |
| Appanoose.....       | 28  | 29    | 86    | 91   | 13   | 10   | 40    | 31   |
| Audubon.....         | 5   | 2     | 39    | 15   | 1  | 2    | 7     | 13   |
| Benton.....          | 12  | 11    | 56    | 44   | 15   | 10   | 70    | 40   |
| Black Hawk.....      | 27  | 28    | 37    | 39   | 18   | 23   | 28    | 39   |
| Boone.....           | 14  | 22    | 53    | 70   | 12   | 11   | 40    | 34   |
| Bremer.....          | 9   | 14    | 52    | 81   | 5  | 29   | 20    | 40   |
| Buchanan.....        | 14  | 15    | 70    | 75   | 12   | 8    | 60    | 40   |
| Buena Vista.....     | 9   | 9     | 45    | 45   | 1  | 5    | 5     | 24   |
| Butler.....          | 18  | 18    | 99    | 98   | 3  | 3    | 16    | 16   |
| Calhoun.....         | 9   | 16    | 49    | 88   | 4  | 3    | 22    | 16   |
| Carroll.....         | 16  | 17    | 70    | 75   | 6  | 8    | 25    | 35   |
| Cass.....            | 3   | 11    | 15    | 56   | 5  | 4    | 25    | 20   |
| Cedar.....           | 11  | 9     | 61    | 51   | 4  | 9    | 22    | 51   |
| Cerro Gordo.....     | 18  | 26    | 45    | 64   | 11   | 7    | 27    | 17   |
| Cherokee.....        | 9   | 10    | 48    | 54   | 24   | 15   | 129   | 81   |
| Chickasaw.....       | 8   | 12    | 51    | 78   | 7  | 7    | 44    | 44   |
| Clarke.....          | 8   | 11    | 70    | 104  | 1  | 3    | 9     | 28   |
| Clay.....            | 8   | 7     | 46    | 40   | 2  | 2    | 11    | 11   |
| Clayton.....         | 19  | 27    | 74    | 107  | 9  | 6    | 35    | 23   |
| Clinton.....         | 37  | 43    | 84    | 99   | 19   | 23   | 48    | 52   |
| Crawford.....        | 19  | 12    | 47    | 62   | 4  | 4    | 18    | 18   |
| Dallas.....          | 13  | 27    | 49    | 103  | 3  | 10   | 11    | 38   |
| Davis.....           | 6   | 7     | 47    | 55   | 9  | 8    | 71    | 64   |
| Decatur.....         | 12  | 9     | 70    | 54   | 6  | 3    | 35    | 12   |
| Delaware.....        | 4   | 9     | 21    | 49   | 4  | 21   | 43    | 12   |
| Des Moines.....      | 9   | 24    | 25    | 64   | 12   | 27   | 33    | 50   |
| Dickinson.....       | 4   | 4     | 34    | 34   | 1  | 3    | 8     | 25   |
| Dubuque.....         | 25  | 66    | 42    | 112  | 31   | 32   | 52    | 62   |
| Emmett.....          | 5   | 2     | 36    | 14   | 5  | 4    | 35    | 27   |
| Fayette.....         | 8   | 22    | 26    | 73   | 9  | 3    | 29    | 9    |
| Floyd.....           | 10  | 13    | 50    | 65   | 4  | 6    | 29    | 39   |
| Franklin.....        | 13  | 13    | 78    | 78   | 5  | 2    | 30    | 12   |
| Fremont.....         | 12  | 11    | 76    | 71   | 7  | 6    | 44    | 38   |
| Greene.....          | 6   | 5     | 35    | 29   | 5  | 2    | 29    | 11   |
| Grundy.....          | 8   | 6     | 53    | 40   | 2  | 3    | 13    | 20   |
| Guthrie.....         | 7   | 18    | 39    | 100  | 2  | 3    | 11    | 16   |
| Hamilton.....        | 7   | 18    | 35    | 91   | 4  | 10   | 20    | 50   |
| Hancock.....         | 2   | 5     | 12    | 31   | 2  | 2    | 12    | 12   |
| Hardin.....          | 18  | 13    | 72    | 52   | 5  | 6    | 20    | 24   |
| Harrison.....        | 11  | 11    | 41    | 40   | 8  | 10   | 39    | 31   |
| Henry.....           | 15  | 11    | 82    | 60   | 22   | 12   | 118   | 65   |
| Howard.....          | 5   | 6     | 38    | 42   | 5  | 3    | 38    | 21   |
| Humboldt.....        | 7   | 4     | 52    | 29   | 3  | 2    | 22    | 14   |
| Ia.....              | 9   | 9     | 74    | 74   | 0  | 1    | 37    | 15   |
| Iowa.....            | 8   | 14    | 42    | 74   | 4  | 2    | 20    | 10   |
| Jackson.....         | 14  | 28    | 70    | 140  | 4  | 2    | 20    | 10   |
| Jasper.....          | 20  | 23    | 70    | 78   | 8  | 10   | 28    | 35   |
| Jefferson.....       | 8   | 11    | 47    | 65   | 4  | 4    | 22    | 23   |
| Johnson.....         | 23  | 43    | 86    | 157  | 102  | 102  | 377   | 372  |

TABLE 15—Continued

| County          | No. of Deaths<br>Pneumonia<br>(All Forms) |      | Rates |      | No. of Deaths<br>Tuberculosis<br>(All Forms) |      | Rates |      |
|-----------------|---|------|-------|------|--|------|-------|------|
|                 | 1924                                      | 1925 | 1924  | 1925 | 1924   | 1925 | 1924  | 1925 |
| Jones.....      | 7   | 11   | 37    | 58   | 7  | 5    | 37    | 26   |
| Keokuk.....     | 6   | 16   | 28    | 78   | 9  | 9    | 42    | 42   |
| Kossuth.....    | 4   | 14   | 14    | 52   | 10   | 9    | 37    | 38   |
| Lee.....        | 26  | 40   | 65    | 96   | 23   | 21   | 55    | 50   |
| Linn.....       | 36  | 46   | 43    | 56   | 23   | 33   | 27    | 38   |
| Louis.....      | 5   | 5    | 41    | 41   | 5  | 1    | 41    | 8    |
| Lucas.....      | 7   | 15   | 41    | 98   | 4  | 12   | 23    | 70   |
| Lyon.....       | 3   | 8    | 18    | 38   | 3  | 6    | 19    | 37   |
| Madison.....    | 5   | 12   | 33    | 79   | 7  | 5    | 49    | 33   |
| Mahaska.....    | 16  | 12   | 40    | 45   | 10   | 8    | 38    | 30   |
| Marion.....     | 13  | 19   | 49    | 72   | 10   | 13   | 38    | 49   |
| Marshall.....   | 16  | 26   | 47    | 82   | 15   | 5    | 44    | 14   |
| Mills.....      | 17  | 6    | 108   | 38   | 11   | 7    | 70    | 44   |
| Mitchell.....   | 7   | 13   | 49    | 91   | 2  | 1    | 14    | 7    |
| Monona.....     | 11  | 10   | 62    | 57   | 2  | 3    | 11    | 17   |
| Monroe.....     | 16  | 22   | 67    | 93   | 10   | 5    | 42    | 21   |
| Montgomery..... | 6   | 12   | 34    | 69   | 3  | 6    | 17    | 34   |
| Muscatine.....  | 11  | 18   | 37    | 62   | 10   | 10   | 34    | 34   |
| O'Brien.....    | 8   | 6    | 40    | 29   | 2  | 2    | 10    | 9    |
| Osceola.....    | 4   | 4    | 36    | 36   | 4  | 3    | 36    | 30   |
| Page.....       | 9   | 17   | 36    | 70   | 20   | 11   | 82    | 45   |
| Palo Alto.....  | 4   | 11   | 24    | 67   | 2  | 8    | 12    | 18   |
| Plymouth.....   | 11  | 16   | 45    | 67   | 6  | 5    | 24    | 29   |
| Pocahontas..... | 5   | 8    | 31    | 50   | 3  | 3    | 18    | 18   |
| Polk.....       | 163                                       | 179  | 92    | 99   | 84   | 63   | 47    | 34   |
| Portsmouth..... | 51  | 82   | 78    | 125  | 28   | 23   | 35    | 35   |
| Poweshiek.....  | 12  | 16   | 59    | 79   | 6  | 12   | 29    | 50   |
| Ringgold.....   | 5   | 8    | 38    | 62   | 2  | 7    | 15    | 54   |
| Sac.....        | 10  | 12   | 55    | 66   | 5  | 2    | 27    | 11   |
| Scott.....      | 37  | 68   | 45    | 82   | 48   | 64   | 59    | 77   |
| Shelby.....     | 4   | 11   | 24    | 68   | 1  | 3    | 6     | 18   |
| Sioux.....      | 15  | 21   | 54    | 77   | 4  | 5    | 14    | 18   |
| Story.....      | 12  | 22   | 43    | 80   | 10   | 15   | 36    | 54   |
| Tama.....       | 19  | 20   | 35    | 91   | 14   | 5    | 63    | 22   |
| Taylor.....     | 9   | 8    | 57    | 51   | 1  | 6    | 9     | 38   |
| Union.....      | 12  | 11   | 67    | 62   | 6  | 4    | 33    | 22   |
| Van Buren.....  | 7   | 4    | 49    | 28   | 3  | 9    | 21    | 64   |
| Wapello.....    | 18  | 44   | 47    | 115  | 23   | 23   | 60    | 60   |
| Warren.....     | 3   | 15   | 16    | 83   | 5  | 18   | 27    | 72   |
| Washington..... | 5   | 12   | 24    | 57   | 6  | 7    | 23    | 34   |
| Wayne.....      | 6   | 13   | 39    | 84   | 1  | 6    | 6     | 29   |
| Webster.....    | 17  | 35   | 43    | 88   | 22   | 15   | 55    | 37   |
| Winnebago.....  | 4   | 13   | 28    | 90   | 3  | 4    | 21    | 27   |
| Winneshek.....  | 12  | 13   | 51    | 58   | 6  | 4    | 25    | 17   |
| Woodbury.....   | 64  | 60   | 60    | 88   | 30   | 43   | 28    | 40   |
| Worth.....      | 2   | 4    | 16    | 31   | 6  | 1    | 45    | 7    |
| Wright.....     | 6   | 13   | 27    | 59   | 6  | 5    | 27    | 23   |



TABLE 16—NUMBER OF DEATHS CAUSED BY PNEUMONIA (ALL FORMS) AND TUBERCULOSIS (ALL FORMS) WITH RATES (PER 100,000 POPULATION) FOR CITIES OVER 10,000 POPULATION

| City           | No. of Deaths<br>Pneumonia<br>(All Forms) |      | Rates |      | No. of Deaths<br>Tuberculosis<br>(All Forms) |      | Rates |      |
|----------------|---|------|-------|------|--|------|-------|------|
|                | 1924                                      | 1925 | 1924  | 1925 | 1924   | 1925 | 1924  | 1925 |
| Boone          | 9   | 11   | 71    | 80   | 5  | 2    | 39    | 14   |
| Burlington     | 7   | 10   | 28    | 36   | 7  | 24   | 28    | 96   |
| Cedar Rapids   | 19  | 27   | 36    | 50   | 15   | 24   | 28    | 46   |
| Clinton        | 28  | 36   | 114   | 149  | 15   | 18   | 61    | 74   |
| Council Bluffs | 39  | 60   | 97    | 149  | 20   | 21   | 50    | 52   |
| Davenport      | 30  | 56   | 45    | 80   | 43   | 38   | 64    | 89   |
| Des Moines     | 159                                       | 135  | 102   | 130  | 7  | 31   | 28    | 78   |
| Dubuque        | 19  | 59   | 66    | 192  | 75   | 55   | 51    | 36   |
| Fort Dodge     | 11  | 28   | 51    | 130  | 14   | 14   | 68    | 65   |
| Fort Madison   | 9   | 12   | 65    | 89   | 11   | 11   | 80    | 79   |
| Iowa City      | 20  | 32   | 168   | 268  | 15   | 25   | 126   | 210  |
| Keokuk         | 11  | 18   | 74    | 123  | 9  | 8    | 61    | 54   |
| Marshalltown   | 6   | 19   | 41    | 111  | 10   | 4    | 22    | 15   |
| Mason City     | 11  | 13   | 44    | 51   | 8  | 4    | 37    | 43   |
| Muscatine      | 2   | 12   | 15    | 75   | 6  | 7    | 37    | 43   |
| Ottumwa        | 13  | 30   | 58    | 127  | 22   | 21   | 99    | 89   |
| Sioux City     | 60  | 71   | 72    | 88   | 25   | 39   | 30    | 45   |
| Waterloo       | 26  | 32   | 62    | 76   | 16   | 16   | 38    | 38   |

## BIRTHS\*

The birth rate for the State of Iowa, exclusive of stillbirths, was 19.7 per 10,000 population for the year 1925 compared to 20.3 for the year of 1924.

There were 49,740 births reported to the State Department of Health for the year 1925. Males—25,494. Females—24,246. For the year of 1924 there were 48,887 births reported. Males—25,317. Females—23,570.

For the year of 1925 there were 1,537 stillbirths reported compared with 1,670 for the year 1924.

Counties—Johnson County with a birth rate of 27.9 (per 1,000 population) had the highest rate for 1925. Carroll County was second with a rate of 27.8 and Shelby next with 26.4. For 1924 the three counties having the highest birth rates were: Johnson (27.1), Carroll (25.2) and Sioux (24.7). The county with the lowest rate for 1925 was Taylor having a rate of 10.7. Taylor County also had the lowest rate (11.7) for 1924.

Cities—The three cities having the highest birth rates for 1925 were: Iowa City (41.5), Council Bluffs (25.6) and Ottumwa (25.4). For the year 1924 they were: Iowa City (39.2), Ottumwa (26.5) and Keokuk (23.9). The city having the lowest rates for 1925 was Davenport (14.7). For the year 1924 Marshalltown had lowest rate (13.8). The birth rate for the eighteen cities over 10,000 population for 1924 was 20.1 compared with 20.7 for 1925. The birth rate for the counties (exclusive of 18 cities) for 1924 was (19.6) and for 1925 it was (19.5).

\*NOTE: All figures include delayed births reported.

TABLE 17—NUMBER OF BIRTHS WITH RATES (PER 1,000 POPULATION) BY COUNTIES IN THE STATE OF IOWA YEARS, 1924-1925.

| County              | No. of Births |        | Rates |      |
|---------------------|---------------|--------|-------|------|
|                     | 1924          | 1925   | 1924  | 1925 |
| Total for the State | 48,887        | 49,740 | 20.3  | 19.7 |
| Adair               | 284           | 310    | 19.8  | 21.8 |
| Adams               | 226           | 263    | 21.4  | 25.0 |
| Allamakee           | 284           | 302    | 16.4  | 17.5 |
| Appanoose           | 719           | 621    | 23.0  | 19.6 |
| Arundel             | 259           | 279    | 20.6  | 22.2 |
| Benton              | 485           | 454    | 19.7  | 18.4 |
| Black Hawk          | 1,109         | 1,097  | 19.3  | 17.2 |
| Boone               | 546           | 549    | 20.9  | 17.5 |
| Bremer              | 346           | 330    | 20.1  | 19.1 |
| Buchanan            | 359           | 381    | 17.9  | 19.2 |
| Buena Vista         | 345           | 346    | 17.4  | 17.3 |
| Butler              | 397           | 308    | 21.8  | 16.9 |
| Calhoun             | 386           | 345    | 21.4  | 19.0 |
| Carroll             | 563           | 563    | 25.8  | 27.8 |
| Cass                | 366           | 384    | 18.6  | 19.6 |
| Cedar               | 287           | 284    | 16.3  | 16.3 |
| Cerro Gordo         | 758           | 878    | 19.1  | 21.7 |
| Cherokee            | 382           | 380    | 20.9  | 21.8 |
| Chickasaw           | 320           | 290    | 20.7  | 18.8 |
| Clarke              | 192           | 204    | 18.2  | 19.4 |
| Clay                | 259           | 382    | 14.5  | 22.2 |
| Clayton             | 460           | 485    | 18.8  | 19.2 |
| Clinton             | 600           | 837    | 16.9  | 19.3 |
| Crawford            | 415           | 482    | 19.8  | 20.6 |
| Dallas              | 502           | 508    | 21.8  | 22.0 |
| Davis               | 261           | 227    | 20.7  | 18.2 |
| Decatur             | 370           | 344    | 22.1  | 20.7 |
| Delaware            | 425           | 420    | 23.1  | 22.9 |
| Des Moines          | 602           | 602    | 19.4  | 14.5 |
| DeWitt              | 233           | 251    | 20.6  | 21.8 |
| Dubuque             | 1,195         | 1,260  | 20.3  | 21.5 |
| Emmet               | 334           | 326    | 23.8  | 23.5 |
| Payette             | 578           | 616    | 19.3  | 20.5 |
| Floyd               | 318           | 331    | 16.1  | 16.6 |
| Franklin            | 350           | 375    | 21.4  | 22.8 |
| Frederick           | 282           | 345    | 18.2  | 22.4 |
| Greene              | 307           | 340    | 18.3  | 20.3 |
| Grundy              | 265           | 278    | 17.8  | 18.6 |
| Guthrie             | 378           | 375    | 21.3  | 21.5 |
| Hamilton            | 446           | 434    | 22.5  | 21.6 |
| Hancock             | 311           | 270    | 19.7  | 16.9 |
| Hardin              | 483           | 468    | 19.6  | 18.7 |
| Harrison            | 473           | 555    | 18.8  | 22.9 |
| Henry               | 292           | 287    | 14.3  | 15.7 |
| Howard              | 297           | 321    | 18.9  | 19.4 |
| Humboldt            | 235           | 289    | 17.6  | 21.5 |
| Ia                  | 246           | 298    | 20.5  | 22.5 |
| Iowa                | 267           | 339    | 19.5  | 18.2 |
| Jackson             | 375           | 308    | 18.8  | 15.4 |
| Jasper              | 520           | 637    | 18.3  | 22.5 |
| Jefferson           | 280           | 290    | 17.3  | 17.4 |
| Johnson             | 736           | 764    | 27.1  | 27.9 |
| Jones               | 391           | 372    | 16.1  | 20.0 |
| Keokuk              | 370           | 346    | 17.0  | 16.5 |
| Keosauqua           | 659           | 613    | 24.4  | 22.8 |

TABLE 17—Continued

| County             | No. of Births |       | Rates |      |
|--------------------|---------------|-------|-------|------|
|                    | 1924          | 1925  | 1924  | 1925 |
| Lee.....           | 824           | 871   | 19.8  | 20.9 |
| Linn.....          | 1,392         | 1,388 | 18.1  | 18.9 |
| Louis.....         | 199           | 204   | 16.3  | 16.8 |
| Lucas.....         | 274           | 312   | 16.3  | 18.4 |
| Lyon.....          | 349           | 312   | 22.0  | 19.6 |
| Madison.....       | 298           | 235   | 19.5  | 15.6 |
| Malaska.....       | 442           | 409   | 16.8  | 17.5 |
| Marion.....        | 475           | 435   | 18.3  | 16.7 |
| Marshall.....      | 569           | 601   | 16.5  | 20.3 |
| Mills.....         | 252           | 222   | 16.3  | 17.0 |
| Mitchell.....      | 275           | 226   | 18.7  | 18.7 |
| Monona.....        | 345           | 325   | 19.8  | 18.6 |
| Monroe.....        | 470           | 387   | 20.0  | 16.5 |
| Montgomery.....    | 314           | 271   | 18.1  | 15.6 |
| Muscatine.....     | 544           | 547   | 18.3  | 18.8 |
| O'Brien.....       | 305           | 375   | 15.2  | 18.7 |
| Oscola.....        | 262           | 269   | 24.1  | 24.6 |
| Page.....          | 467           | 472   | 19.2  | 19.6 |
| Palo Alto.....     | 370           | 348   | 22.6  | 20.9 |
| Plymouth.....      | 529           | 545   | 22.2  | 22.9 |
| Pocahontas.....    | 368           | 368   | 22.0  | 22.6 |
| Polk.....          | 3,442         | 3,506 | 19.5  | 19.8 |
| Pottawattamie..... | 1,392         | 1,496 | 21.4  | 22.7 |
| Poweshiek.....     | 378           | 355   | 18.8  | 17.4 |
| Ringgold.....      | 257           | 272   | 19.8  | 21.0 |
| Sac.....           | 380           | 380   | 21.1  | 21.1 |
| Scott.....         | 1,194         | 1,245 | 14.7  | 15.1 |
| Shelby.....        | 363           | 421   | 22.5  | 26.4 |
| Sioux.....         | 671           | 728   | 24.7  | 28.3 |
| Story.....         | 631           | 633   | 23.1  | 23.1 |
| Tama.....          | 455           | 372   | 20.8  | 17.0 |
| Taylor.....        | 186           | 167   | 11.9  | 10.7 |
| Union.....         | 337           | 313   | 19.1  | 17.4 |
| Van Buren.....     | 218           | 252   | 15.5  | 18.0 |
| Wapello.....       | 812           | 823   | 21.3  | 21.6 |
| Warren.....        | 321           | 318   | 17.7  | 17.6 |
| Washington.....    | 379           | 309   | 18.3  | 17.8 |
| Wayne.....         | 293           | 260   | 19.0  | 17.5 |
| Webster.....       | 880           | 805   | 22.2  | 21.7 |
| Winnebago.....     | 283           | 250   | 19.7  | 18.3 |
| Winneshiek.....    | 402           | 423   | 19.8  | 18.9 |
| Woodbury.....      | 2,273         | 2,318 | 21.4  | 21.8 |
| Worth.....         | 235           | 227   | 18.2  | 18.0 |
| Wright.....        | 456           | 474   | 21.1  | 21.8 |

TABLE 18—NUMBER OF BIRTHS WITH RATES (PER 1,000 POPULATION) FOR CITIES OVER 10,000 POPULATION YEARS, 1924-1925.

| City                | No. of Births |       | Rates |      |
|---------------------|---------------|-------|-------|------|
|                     | 1924          | 1925  | 1924  | 1925 |
| Boone.....          | 227           | 250   | 16.8  | 18.2 |
| Burlington.....     | 509           | 505   | 30.7  | 21.8 |
| Cedar Rapids.....   | 939           | 948   | 18.1  | 17.8 |
| Clinton.....        | 432           | 446   | 17.4  | 18.5 |
| Council Bluffs..... | 928           | 1,030 | 23.4  | 25.6 |
| Davenport.....      | 901           | 956   | 14.1  | 14.7 |
| Des Moines.....     | 3,016         | 3,157 | 20.5  | 21.9 |
| Dubuque.....        | 305           | 286   | 20.3  | 22.4 |
| Fort Dodge.....     | 490           | 461   | 23.0  | 22.4 |
| Fort Madison.....   | 270           | 272   | 19.7  | 19.4 |
| Iowa City.....      | 463           | 495   | 30.2  | 41.5 |
| Keokuk.....         | 351           | 345   | 23.9  | 23.6 |
| Marshalltown.....   | 224           | 396   | 18.8  | 23.1 |
| Mason City.....     | 515           | 534   | 21.0  | 21.1 |
| Muscatine.....      | 304           | 321   | 18.9  | 20.9 |
| Ottumwa.....        | 586           | 508   | 26.5  | 25.4 |
| Sioux City.....     | 1,783         | 1,817 | 21.5  | 21.8 |
| Waterloo.....       | 718           | 735   | 17.5  | 17.5 |

Estimated population of the eighteen (18) cities for 1924 was 669,004 and for 1925 it was 681,847.

#### SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR, PER 1,000 LIVE BIRTHS) FOR YEARS, 1924-1925.

The Infant Mortality rates in Iowa show a very slight decrease in year 1925 compared with the year of 1924. The rate for 1924 being 53.2 and in 1925 it was 52.5. The Infant Mortality rate is one of the best obtainable indices of health conditions in a community.

**Counties**—The three counties showing the highest infant mortality rates for 1924 were: Pottawattamie (79.1), Dickinson (77.2) and Monroe (76.5). For 1925 they were: Taylor (101.7), Woodbury (81.1) and Lee (75.7).

**Cities**—The three cities having the highest rates for 1924 were: Council Bluffs (98.1), Mason City (83.4) and Clinton (76.3). For 1925 they were: Port Madison (128.6), Iowa City (88.8) and Sioux City (85.8). The three cities having the lowest rates for 1924 were: Burlington (36.3), Boone (52.8) and Cedar Rapids (56.4). For 1925 they were: Waterloo (48.2), Muscatine (49.8) and Cedar Rapids (51.4).

For the year 1924 of the total number of births reported (48,887) 13,462 of them occurred in the eighteen cities over 10,000 population for which returns of births and deaths are kept separate. The number of deaths under one year occurring in the cities was 833. The Infant Mortality rate for the 18 cities for 1924 was 65.4 compared with the county rate (exclusive of the 18 cities) of 58.6. For the year of 1925 of the total number of births reported (49,720), 14,152 births occurred in the cities. There were 968 deaths under one year reported from the cities. The Infant Mortality rate of the cities was 68.4 compared with the county rate (exclusive of the 18 cities) of 46.3.



TABLE 19—SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR, PER 1,000 LIVE BIRTHS) BY COUNTIES FOR THE YEARS, 1924-1925.

| County          | No. of Births |        | Deaths Under One Year |       | Rates |      |
|-----------------|---------------|--------|-----------------------|-------|-------|------|
|                 | 1924          | 1925   | 1924                  | 1925  | 1924  | 1925 |
| Total for State | 48,887        | 49,740 | 3,602                 | 2,616 | 53.2  | 52.5 |
| Adair           | 284           | 310    | 15                    | 15    | 52.8  | 48.3 |
| Adams           | 226           | 263    | 8                     | 5     | 35.3  | 19.0 |
| Allamakee       | 284           | 302    | 14                    | 15    | 49.2  | 49.7 |
| Appanoose       | 717           | 621    | 50                    | 33    | 69.4  | 53.1 |
| Audubon         | 259           | 279    | 13                    | 12    | 50.1  | 43.0 |
| Benton          | 485           | 454    | 21                    | 15    | 43.2  | 33.2 |
| Black Hawk      | 1,109         | 1,097  | 63                    | 53    | 55.8  | 48.2 |
| Boone           | 346           | 549    | 32                    | 27    | 58.6  | 49.2 |
| Bremer          | 346           | 330    | 9                     | 17    | 26.0  | 51.6 |
| Buchanan        | 359           | 361    | 13                    | 15    | 36.2  | 39.5 |
| Buena Vista     | 346           | 345    | 20                    | 10    | 57.8  | 28.9 |
| Butler          | 307           | 308    | 16                    | 12    | 49.5  | 42.2 |
| Calhoun         | 388           | 345    | 19                    | 12    | 48.9  | 34.8 |
| Carroll         | 563           | 623    | 41                    | 37    | 71.0  | 59.5 |
| Cass            | 396           | 384    | 19                    | 14    | 51.9  | 36.4 |
| Cedar           | 287           | 284    | 16                    | 14    | 55.7  | 47.6 |
| Cerro Gordo     | 738           | 878    | 52                    | 43    | 67.1  | 49.0 |
| Cherokee        | 3-2           | 390    | 23                    | 19    | 60.2  | 48.7 |
| Chickasaw       | 329           | 290    | 15                    | 14    | 46.8  | 48.3 |
| Clarke          | 192           | 204    | 7                     | 9     | 36.4  | 44.2 |
| Clay            | 259           | 382    | 14                    | 13    | 56.1  | 34.1 |
| Clayton         | 490           | 483    | 24                    | 30    | 52.1  | 62.1 |
| Clinton         | 600           | 837    | 43                    | 52    | 62.3  | 60.9 |
| Crawford        | 415           | 492    | 35                    | 17    | 36.1  | 20.3 |
| Dallas          | 592           | 598    | 16                    | 34    | 38.4  | 57.0 |
| Davis           | 361           | 227    | 10                    | 10    | 38.3  | 44.1 |
| Deautil         | 370           | 344    | 18                    | 11    | 48.6  | 32.1 |
| Delaware        | 425           | 429    | 18                    | 22    | 42.3  | 52.3 |
| Des Moines      | 692           | 692    | 29                    | 42    | 41.9  | 60.5 |
| Dickinson       | 233           | 251    | 18                    | 9     | 77.2  | 35.3 |
| Dubuque         | 1,195         | 1,366  | 76                    | 94    | 68.2  | 74.2 |
| Emmet           | 354           | 336    | 17                    | 14    | 50.8  | 41.6 |
| Fayette         | 578           | 616    | 29                    | 25    | 51.6  | 40.6 |
| Floyd           | 318           | 331    | 9                     | 24    | 28.3  | 72.4 |
| Franklin        | 350           | 375    | 18                    | 22    | 51.4  | 58.7 |
| Fremont         | 282           | 345    | 11                    | 19    | 39.0  | 55.0 |
| Greene          | 307           | 340    | 19                    | 14    | 61.5  | 41.1 |
| Grundy          | 265           | 278    | 12                    | 6     | 45.2  | 21.5 |
| Guthrie         | 378           | 375    | 15                    | 11    | 39.6  | 29.3 |
| Hamilton        | 446           | 424    | 19                    | 24    | 42.6  | 56.6 |
| Hancock         | 311           | 279    | 14                    | 10    | 45.0  | 37.3 |
| Hardin          | 483           | 463    | 24                    | 24    | 49.6  | 51.7 |
| Harrison        | 473           | 555    | 18                    | 24    | 38.0  | 43.2 |
| Henry           | 292           | 287    | 12                    | 13    | 45.8  | 45.2 |
| Howard          | 297           | 281    | 8                     | 14    | 26.9  | 60.5 |
| Humboldt        | 235           | 280    | 10                    | 10    | 42.5  | 34.6 |
| Ida             | 246           | 288    | 13                    | 14    | 52.8  | 52.8 |
| Iowa            | 367           | 339    | 12                    | 12    | 32.4  | 35.4 |
| Jackson         | 375           | 308    | 13                    | 13    | 34.6  | 42.2 |
| Jasper          | 539           | 637    | 33                    | 27    | 63.4  | 42.3 |
| Jefferson       | 289           | 290    | 14                    | 15    | 48.4  | 51.6 |
| Johnson         | 736           | 764    | 44                    | 53    | 59.7  | 69.4 |
| Jones           | 301           | 372    | 23                    | 24    | 76.4  | 64.6 |
| Keokuk          | 379           | 346    | 16                    | 14    | 37.0  | 40.5 |
| Kossuth         | 650           | 613    | 19                    | 28    | 39.2  | 45.4 |

TABLE 19—Continued

| County        | No. of Births |       | Deaths Under One Year |      | Rates |       |
|---------------|---------------|-------|-----------------------|------|-------|-------|
|               | 1924          | 1925  | 1924                  | 1925 | 1924  | 1925  |
| Lee           | 824           | 871   | 54                    | 66   | 65.5  | 75.7  |
| Linn          | 1,362         | 1,381 | 79                    | 71   | 58.0  | 51.4  |
| Louis         | 199           | 204   | 5                     | 7    | 25.1  | 34.4  |
| Lucas         | 274           | 312   | 13                    | 16   | 47.4  | 51.2  |
| Lyon          | 249           | 312   | 15                    | 13   | 42.9  | 41.6  |
| Madison       | 293           | 235   | 11                    | 10   | 37.5  | 42.5  |
| Mahaska       | 442           | 490   | 26                    | 18   | 58.8  | 39.1  |
| Marion        | 475           | 455   | 32                    | 18   | 67.3  | 41.4  |
| Marshall      | 559           | 601   | 33                    | 51   | 59.9  | 73.7  |
| MMs           | 232           | 262   | 15                    | 8    | 59.5  | 30.5  |
| Mitchell      | 275           | 266   | 15                    | 12   | 54.5  | 45.1  |
| Monona        | 345           | 325   | 19                    | 13   | 55.0  | 40.0  |
| Monroe        | 470           | 387   | 30                    | 26   | 76.5  | 67.2  |
| Montgomery    | 314           | 271   | 9                     | 17   | 28.6  | 60.5  |
| Muscatine     | 544           | 547   | 35                    | 27   | 64.3  | 49.5  |
| O'Brien       | 275           | 266   | 10                    | 13   | 32.7  | 54.7  |
| Osceola       | 245           | 325   | 10                    | 13   | 38.1  | 45.5  |
| Page          | 470           | 387   | 21                    | 33   | 44.9  | 69.9  |
| Palo Alto     | 314           | 271   | 16                    | 14   | 43.2  | 40.6  |
| Plymouth      | 544           | 547   | 33                    | 31   | 62.3  | 56.5  |
| Pocahontas    | 568           | 363   | 23                    | 9    | 62.5  | 24.8  |
| Polk          | 3,442         | 3,568 | 206                   | 207  | 59.8  | 58.0  |
| Pottawattamie | 1,392         | 1,493 | 110                   | 99   | 79.0  | 66.2  |
| Poweshiek     | 378           | 352   | 12                    | 17   | 31.7  | 48.2  |
| Ringgold      | 257           | 272   | 15                    | 10   | 58.3  | 36.8  |
| Sac           | 280           | 380   | 21                    | 13   | 55.2  | 34.2  |
| Schles        | 1,194         | 1,245 | 73                    | 60   | 61.2  | 53.0  |
| Shelby        | 367           | 421   | 18                    | 16   | 49.5  | 38.0  |
| Sioux         | 671           | 728   | 24                    | 27   | 35.7  | 37.1  |
| Story         | 631           | 633   | 16                    | 21   | 25.3  | 33.2  |
| Tama          | 455           | 372   | 22                    | 18   | 48.3  | 48.4  |
| Taylor        | 186           | 167   | 14                    | 17   | 75.2  | 101.7 |
| Union         | 337           | 313   | 21                    | 16   | 62.3  | 51.2  |
| Van Buren     | 218           | 232   | 10                    | 11   | 45.7  | 45.6  |
| Wapello       | 812           | 823   | 47                    | 50   | 57.9  | 60.7  |
| Warren        | 321           | 318   | 20                    | 14   | 62.3  | 44.0  |
| Washington    | 379           | 369   | 10                    | 13   | 26.3  | 35.1  |
| Wayne         | 233           | 299   | 20                    | 17   | 86.2  | 63.2  |
| Webster       | 880           | 865   | 55                    | 49   | 62.5  | 56.6  |
| Winnebago     | 283           | 236   | 11                    | 14   | 38.8  | 59.1  |
| Winneshek     | 452           | 423   | 23                    | 22   | 50.8  | 52.0  |
| Woodbury      | 2,373         | 2,318 | 149                   | 188  | 65.5  | 81.1  |
| Worth         | 235           | 227   | 13                    | 14   | 55.2  | 61.6  |
| Wright        | 456           | 474   | 18                    | 25   | 39.4  | 52.8  |

TABLE 20—SUMMARY OF INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR, PER 1,000 LIVE BIRTHS) FOR CITIES OVER 10,000 POPULATION, YEARS, 1924-1925.

| City           | No. of Births |       | Deaths Under One Year |      | Rates |       |
|----------------|---------------|-------|-----------------------|------|-------|-------|
|                | 1924          | 1925  | 1924                  | 1925 | 1924  | 1925  |
|                |               |       |                       |      |       |       |
| Boone          | 227           | 250   | 12                    | 13   | 52.8  | 52.0  |
| Burlington     | 500           | 505   | 18                    | 34   | 36.0  | 67.4  |
| Cedar Rapids   | 980           | 948   | 53                    | 55   | 56.4  | 51.4  |
| Clinton        | 422           | 446   | 33                    | 37   | 76.3  | 82.9  |
| Council Bluffs | 928           | 1,030 | 91                    | 85   | 96.0  | 82.5  |
| Davenport      | 901           | 956   | 57                    | 50   | 63.3  | 52.3  |
| Des Moines     | 3,016         | 3,157 | 175                   | 181  | 58.0  | 57.3  |
| Dubuque        | 865           | 886   | 54                    | 71   | 67.0  | 80.0  |
| Fort Dodge     | 400           | 461   | 28                    | 33   | 57.1  | 71.5  |
| Fort Madison   | 270           | 272   | 18                    | 35   | 66.6  | 128.6 |
| Iowa City      | 493           | 495   | 28                    | 44   | 69.4  | 88.8  |
| Keokuk         | 351           | 345   | 20                    | 29   | 71.0  | 87.5  |
| Marshalltown   | 234           | 390   | 15                    | 31   | 64.1  | 79.2  |
| Mason City     | 515           | 534   | 43                    | 32   | 83.4  | 59.9  |
| Muscatine      | 304           | 321   | 22                    | 16   | 72.3  | 49.8  |
| Ottumwa        | 586           | 598   | 40                    | 39   | 68.2  | 65.1  |
| Sioux City     | 1,783         | 1,817 | 117                   | 156  | 65.5  | 85.8  |
| Waterloo       | 718           | 735   | 53                    | 36   | 73.8  | 48.2  |

NUMBER OF MARRIAGES AND DIVORCES REPORTED IN THE STATE OF IOWA FOR YEARS OF 1924 AND 1925

According to the returns received, there were 21,924 marriages performed in Iowa during the year of 1925, as compared with 24,855 in 1924, representing a decrease of 2,931, or 11.8 per cent.

During the year 1925 there were 4,112 divorces granted in the state, as compared with 3,782 in 1924, representing an increase of 330, or 8.7 per cent.

The number of marriages per 1,000 of the population was 9.1 in 1925 as against 10.3 in 1924; and the number of divorces per 1,000 of the population was 1.70 in 1925, as against 1.56 in 1924.

The number of marriages performed and the number of divorces granted were furnished to the State Department of Health by the County Clerks.

TABLE 21

| County                      | Marriages |        | Divorces |       |
|-----------------------------|-----------|--------|----------|-------|
|                             | 1925      | 1924   | 1925     | 1924  |
| Total for the State         | 21,924    | 24,855 | 4,112    | 3,782 |
| Number per 1,000 population | 9.1       | 10.3   | 1.70     | 1.56  |
| Adair                       | 109       | 77     | 14       | 6     |
| Adams                       | 60        | 70     | 9        | 9     |
| Allamakee                   | 111       | 102    | 5        | 6     |
| Appanoose                   | 211       | 222    | 49       | 67    |
| Audubon                     | 72        | 62     | 11       | 4     |
| Benton                      | 106       | 135    | 29       | 22    |

TABLE 21—Continued

| County      | Marriages |      | Divorces |      |
|-------------|-----------|------|----------|------|
|             | 1925      | 1924 | 1925     | 1924 |
| Black Hawk  | 527       | 597  | 139      | 145  |
| Boone       | 288       | 202  | 45       | 40   |
| Bremer      | 158       | 133  | 9        | 5    |
| Buchanan    | 161       | 170  | 17       | 10   |
| Buena Vista | 125       | 155  | 15       | 25   |
| Butler      | 80        | 87   | 8        | 12   |
| Calhoun     | 124       | 130  | 6        | 12   |
| Carroll     | 185       | 163  | 20       | 12   |
| Cass        | 181       | 187  | 12       | 18   |
| Cedar       | 96        | 75   | 12       | 5    |
| Cerro Gordo | 333       | 342  | 56       | 88   |
| Cherokee    | 137       | 115  | 12       | 14   |
| Chickasaw   | 381       | 248  | 5        | 10   |
| Clarke      | 98        | 87   | 19       | 12   |
| Clay        | 167       | 142  | 15       | 23   |
| Clayton     | 151       | 144  | 14       | 19   |
| Clinton     | 308       | 421  | 75       | 58   |
| Crawford    | 154       | 178  | 16       | 14   |
| Dallas      | 307       | 302  | 22       | 29   |
| Davis       | 118       | 111  | 15       | 11   |
| DeWaver     | 125       | 123  | 8        | 21   |
| Dwight      | 143       | 140  | 9        | 18   |
| Des Moines  | 356       | 248  | 90       | 83   |
| Dickinson   | 100       | 83   | 5        | 9    |
| Dubuque     | 577       | 527  | 60       | 48   |
| Emmet       | 102       | 98   | 22       | 14   |
| Fayette     | 196       | 201  | 29       | 25   |
| Floyd       | 143       | 165  | 19       | 16   |
| Franklin    | 109       | 82   | 9        | 5    |
| Fremont     | 184       | 204  | 15       | 16   |
| Greene      | 137       | 162  | 13       | 19   |
| Grundy      | 105       | 92   | 2        | 10   |
| Guthrie     | 111       | 83   | 13       | 13   |
| Hamilton    | 172       | 93   | 17       | 7    |
| Hancock     | 194       | 91   | 4        | 7    |
| Hardin      | 141       | 141  | 17       | 14   |
| Harrison    | 279       | 326  | 23       | 28   |
| Henry       | 108       | 147  | 12       | 16   |
| Howard      | 75        | 82   | —        | 4    |
| Humboldt    | 63        | 69   | 6        | 11   |
| Ia          | 78        | 79   | 15       | 7    |
| Iowa        | 137       | 42   | 10       | 5    |
| Jackson     | 133       | 146  | 11       | 20   |
| Jasper      | 249       | 225  | 35       | 28   |
| Jefferson   | 135       | 123  | 20       | 14   |
| Johnson     | 311       | 419  | 51       | 41   |
| Jones       | 154       | 117  | 23       | 20   |
| Keokuk      | 93        | 112  | 20       | 17   |
| Kossuth     | 177       | 160  | 20       | 10   |
| Lee         | 213       | 248  | 58       | 47   |
| Linn        | 746       | 809  | 246      | 142  |
| Louis       | 60        | 59   | 14       | 8    |
| Lucas       | 125       | 117  | 30       | 21   |
| Lyon        | 109       | 126  | 4        | 5    |
| Madison     | 88        | 97   | 14       | 11   |
| Mahaska     | 100       | 260  | 34       | 27   |
| Marion      | 157       | 100  | 16       | 28   |
| Marshall    | 275       | 237  | 74       | 80   |
| Mills       | 427       | 565  | 8        | 15   |



TABLE 21—Continued

| County             | Marriages |       | Divorces |      |
|--------------------|-----------|-------|----------|------|
|                    | 1923      | 1924  | 1923     | 1924 |
| Mitchell.....      | 78        | 82    | 5        | 5    |
| Monona.....        | 131       | 176   | 12       | 15   |
| Monroe.....        | 156       | 178   | 17       | 8    |
| Montgomery.....    | 161       | 170   | 16       | 13   |
| Muscatine.....     | 288       | 270   | 88       | 72   |
| O'Brien.....       | 103       | 115   | 11       | 6    |
| Ogocla.....        | 69        | 65    | 7        | 6    |
| Page.....          | 201       | 199   | 25       | 22   |
| Palo Alto.....     | 100       | 82    | 5        | 8    |
| Plymouth.....      | 175       | 218   | 24       | 8    |
| Pocahontas.....    | 90        | 97    | 10       | 11   |
| Polk.....          | 1,963     | 2,103 | 909      | 863  |
| Pottawattamie..... | 1,202     | 3,012 | 219      | 204  |
| Poweshiek.....     | 110       | 92    | 12       | 16   |
| Ringgold.....      | 87        | 74    | 12       | 5    |
| Sac.....           | 108       | 83    | 14       | 7    |
| Scott.....         | 719       | 700   | 241      | 251  |
| Shelby.....        | 108       | 107   | 8        | 4    |
| Sioux.....         | 168       | 175   | 13       | 7    |
| Story.....         | 283       | 282   | 29       | 25   |
| Tama.....          | 168       | 133   | 31       | 32   |
| Taylor.....        | 86        | 102   | 16       | 15   |
| Union.....         | 130       | 142   | 19       | 24   |
| Van Buren.....     | 57        | 67    | 9        | 4    |
| Wapello.....       | 433       | 435   | 123      | 88   |
| Warren.....        | 265       | 254   | 7        | 11   |
| Washington.....    | 127       | 127   | 19       | 13   |
| Wayne.....         | 92        | 111   | 29       | 9    |
| Weber.....         | 353       | 374   | 54       | 70   |
| Winnebago.....     | 96        | 89    | 13       | 5    |
| Winneshiek.....    | 139       | 127   | 8        | 4    |
| Woodbury.....      | 1,218     | 1,406 | 351      | 319  |
| Worth.....         | 79        | 80    | 5        | 3    |
| Wright.....        | 127       | 124   | 18       | 7    |

TABLE 22—REPORT OF CERTIFIED COPIES ISSUED (BY MONTHS) FOR YEARS, 1924-1925

One feature of the work of this division is the issuing of certified copies of birth and death records. When these certified copies are required for certain purposes no fee is required, while for others the state requires a fee of fifty cents. The following table is a summary of the certified copies issued during the biennium.

|                          |    | Births       |                         |       | Deaths       |                                |       | Grand total |
|--------------------------|----|--------------|-------------------------|-------|--------------|--------------------------------|-------|-------------|
|                          |    | Fee received | Government compensation | Total | Fee received | Pension and war risk insurance | Total |             |
| January, 1924.....       | 5  | 20           | 25                      | 52    | 26           | 78                             | 108   |             |
| 1925.....                | 1  | 15           | 16                      | 76    | 41           | 117                            | 133   |             |
| February, 1924.....      | 2  | 24           | 26                      | 28    | 21           | 49                             | 75    |             |
| 1925.....                | 4  | 22           | 26                      | 77    | 32           | 109                            | 135   |             |
| March, 1924.....         | 1  | 23           | 24                      | 41    | 33           | 74                             | 98    |             |
| 1925.....                | 2  | 34           | 36                      | 56    | 46           | 111                            | 147   |             |
| April, 1924.....         | 1  | 16           | 17                      | 36    | 29           | 65                             | 83    |             |
| 1925.....                | 2  | 37           | 39                      | 54    | 27           | 81                             | 120   |             |
| May, 1924.....           | 3  | 22           | 25                      | 60    | 24           | 84                             | 109   |             |
| 1925.....                | 1  | 28           | 29                      | 46    | 31           | 77                             | 106   |             |
| June, 1924.....          | 2  | 12           | 15                      | 30    | 36           | 66                             | 81    |             |
| 1925.....                | 1  | 15           | 16                      | 64    | 32           | 116                            | 132   |             |
| July, 1924.....          | 11 | 21           | 32                      | 78    | 27           | 98                             | 130   |             |
| 1925.....                | 1  | 23           | 24                      | 32    | 46           | 78                             | 102   |             |
| August, 1924.....        | 5  | 19           | 24                      | 57    | 30           | 87                             | 111   |             |
| 1925.....                | 5  | 9            | 14                      | 62    | 43           | 105                            | 119   |             |
| September, 1924.....     | 6  | 13           | 19                      | 45    | 23           | 68                             | 87    |             |
| 1925.....                | 5  | 22           | 27                      | 54    | 29           | 83                             | 110   |             |
| October, 1924.....       | 27 | 27           | 38                      | 68    | 28           | 66                             | 92    |             |
| 1925.....                | 3  | 24           | 27                      | 51    | 38           | 89                             | 116   |             |
| November, 1924.....      | 2  | 18           | 20                      | 35    | 20           | 55                             | 75    |             |
| 1925.....                | 4  | 26           | 30                      | 49    | 41           | 90                             | 120   |             |
| December, 1924.....      | 2  | 24           | 26                      | 79    | 29           | 108                            | 134   |             |
| 1925.....                | 4  | 18           | 22                      | 35    | 51           | 86                             | 108   |             |
| Total, 1924.....         | 40 | 240          | 280                     | 574   | 324          | 898                            | 1,178 |             |
| 1925.....                | 33 | 273          | 306                     | 653   | 477          | 1,142                          | 1,448 |             |
| Total for two years..... | 73 | 513          | 586                     | 1,229 | 801          | 2,040                          | 2,626 |             |

NUMBER OF DISINTERMENT PERMITS ISSUED DURING  
BIENNIAL YEAR

|                 | 1924-1925 | 1925-1926 |
|-----------------|-----------|-----------|
| July .....      | 59        | 55        |
| August .....    | 70        | 42        |
| September ..... | 79        | 65        |
| October .....   | 111       | 57        |
| November .....  | 57        | 33        |
| December .....  | 24        | 35        |
| January .....   | 9         | 15        |
| February .....  | 12        | 26        |
| March .....     | 24        | 33        |
| April .....     | 87        | 75        |
| May .....       | 90        | 112       |
| June .....      | 86        | 63        |
| Total .....     | 708       | 611       |

## MORBIDITY REPORT.

A summation table of all cases of reportable diseases reported to the State Department of Health for the Years 1924 and 1925 and the first six months of 1926 is herewith submitted. It contains some significant and interesting data.

An uncritical survey of the figures might lead one to conclude that no progress is being made in the prevention of cases of disease, even though a considerable reduction is being made in the death rate from these diseases. Undoubtedly, through better medical attention and by providing less favorable soil for the nurture of disease, some diseases are actually becoming less virulent, and more people are therefore recovering from them. More recoveries are resulting, too, from the availability and more general use of specifics, such as antitoxin for Diphtheria, Pasteur treatment for Rabies, etc.

The comparative figures for 1924 and 1925 show no striking differences except for a few diseases like measles and chickenpox which usually show great variations as they tend to occur in cycles of years. When we compare the figures for the first half of the year 1926, there seems to be a remarkable increase in the incidence of most diseases. In the case of one disease, viz, smallpox, there was a definite and unwarranted increase in its prevalence, but for practically every other disease the apparent increase for the first six months of 1926 is explained by a remarkable improvement in the completeness of reporting. To give an illustration, the number of deaths reported from Tuberculosis for the years 1924 and 1925 was 977 and 988 respectively, whereas for the same years only 5 and 71 cases, respectively, were reported. Due to an effort put forth early in 1926 to get better reporting of tuberculosis, 279 cases were reported for the first six months of 1926. Large numbers of cases of German measles and Influenza were reported for the same period, whereas for former years not one case was reported.

One significant fact which testifies to the effectiveness of the campaign against Diphtheria, is that with all the general improvement in reporting, the number of cases of Diphtheria for the first half of 1926 shows a marked decrease.

Great credit is due the local health officers, the township clerks, the Superintendent of Sanatoria, and others who have had a part in this improvement in reporting, which is a fundamental requirement for the progress and expansion of all health work. Unfortunately, there are still some who either do not know, or do not have respect for the state rule and reputation which requires that every case of communicable disease be reported to the State Department of Health within 24 hours of its discovery.



COMPARATIVE MONTHLY DISTRIBUTION OF CASES OF REPORTABLE DISEASE REPORTED TO THE STATE DEPARTMENT OF HEALTH FOR THE YEARS 1924-1925 AND THE FIRST HALF OF 1926—PART I

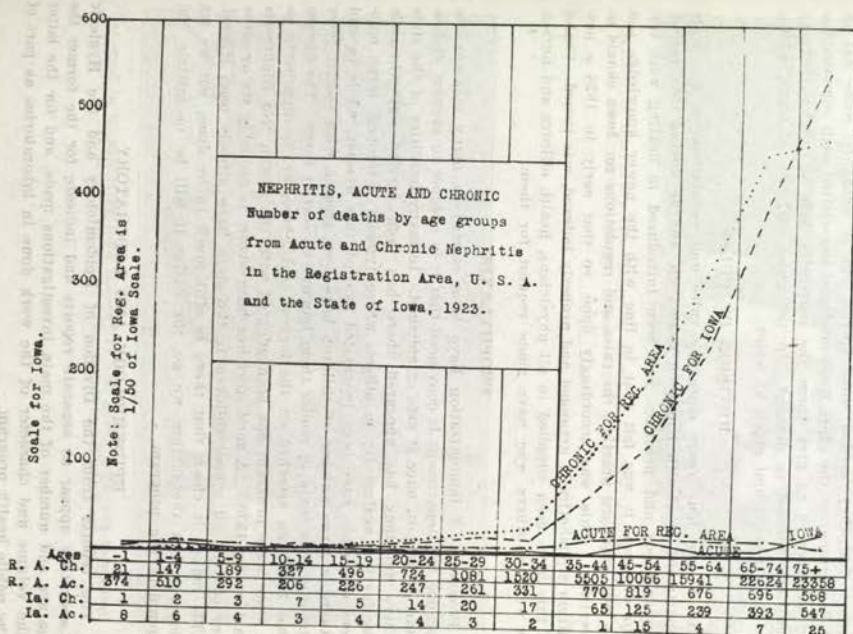
|                  |      | Actinomycosis | Opthalmia | Ankylostomiasis | Ashtax | Cerebro spinal meningitis | Chickenpox | Cholera | Dengue | Diphtheria | Dysentery | Encephalitis lethargica | Erysipelas | Favus | German measles | Influenza | Impetigo | Leprosy | Malaria | Measles | Mumps | Paratyphoid fever | Plague |
|------------------|------|---------------|-----------|-----------------|--------|---------------------------|------------|---------|--------|------------|-----------|-------------------------|------------|-------|----------------|-----------|----------|---------|---------|---------|-------|-------------------|--------|
| January,         | 1924 | 0             | 0         | 0               | 0      | 2                         | 156        | 0       | 0      | 153        | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 894     | 137   | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 0                         | 87         | 0       | 0      | 91         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 11      | 44    | 0                 | 0      |
|                  | 1926 | 0             | 0         | 0               | 0      | 0                         | 230        | 0       | 0      | 86         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 642     | 116   | 0                 | 0      |
| February,        | 1924 | 0             | 0         | 0               | 0      | 0                         | 74         | 0       | 0      | 89         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 1,312   | 203   | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 1                         | 79         | 0       | 0      | 81         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 11      | 60    | 0                 | 0      |
|                  | 1926 | 0             | 0         | 0               | 0      | 3                         | 151        | 0       | 0      | 81         | 0         | 0                       | 0          | 0     | 115            | 0         | 0        | 0       | 0       | 387     | 179   | 0                 | 0      |
| March,           | 1924 | 0             | 0         | 0               | 0      | 0                         | 50         | 0       | 0      | 77         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 805     | 232   | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 0                         | 105        | 0       | 0      | 41         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 16      | 60    | 0                 | 0      |
|                  | 1926 | 0             | 1         | 0               | 0      | 4                         | 176        | 0       | 0      | 53         | 0         | 0                       | 0          | 0     | 231            | 626       | 0        | 0       | 0       | 972     | 206   | 0                 | 0      |
| April,           | 1924 | 0             | 0         | 0               | 0      | 0                         | 56         | 0       | 0      | 53         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 290     | 229   | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 1                         | 94         | 0       | 0      | 65         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 37      | 62    | 0                 | 0      |
|                  | 1926 | 0             | 0         | 0               | 0      | 1                         | 234        | 0       | 0      | 42         | 0         | 0                       | 0          | 0     | 971            | 11        | 0        | 0       | 0       | 870     | 156   | 0                 | 0      |
| May,             | 1924 | 0             | 0         | 0               | 0      | 1                         | 16         | 0       | 0      | 40         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 94      | 35    | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 1                         | 93         | 0       | 0      | 68         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 38      | 44    | 0                 | 0      |
|                  | 1926 | 0             | 0         | 0               | 0      | 0                         | 65         | 0       | 0      | 43         | 0         | 0                       | 0          | 0     | 202            | 0         | 0        | 0       | 0       | 650     | 104   | 0                 | 0      |
| June,            | 1924 | 0             | 0         | 0               | 0      | 1                         | 43         | 0       | 0      | 70         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 183     | 110   | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 0                         | 61         | 0       | 0      | 38         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 17      | 43    | 0                 | 0      |
|                  | 1926 | 0             | 0         | 0               | 0      | 1                         | 66         | 0       | 0      | 40         | 1         | 0                       | 4          | 0     | 128            | 1         | 0        | 0       | 0       | 334     | 22    | 0                 | 0      |
| July,            | 1924 | 0             | 0         | 0               | 0      | 2                         | 19         | 0       | 0      | 47         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 41      | 7     | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 0                         | 25         | 0       | 0      | 21         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 5       | 22    | 0                 | 0      |
| August,          | 1924 | 0             | 0         | 0               | 0      | 3                         | 6          | 0       | 0      | 46         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 21      | 5     | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 1                         | 7          | 0       | 0      | 21         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 1       | 9     | 0                 | 0      |
| September,       | 1924 | 0             | 0         | 0               | 0      | 2                         | 8          | 0       | 0      | 35         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 4       | 12    | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 2                         | 8          | 0       | 0      | 29         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 1       | 7       | 19    | 0                 | 0      |
| October,         | 1924 | 0             | 0         | 0               | 0      | 0                         | 22         | 0       | 0      | 94         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 1       | 23    | 0                 | 0      |
|                  | 1925 | 1             | 0         | 0               | 0      | 0                         | 30         | 0       | 0      | 238        | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 1       | 11      | 22    | 0                 | 0      |
| November,        | 1924 | 0             | 0         | 0               | 0      | 1                         | 84         | 0       | 0      | 82         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 4       | 19    | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 2                         | 207        | 0       | 0      | 190        | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 16      | 46    | 0                 | 0      |
| December,        | 1924 | 0             | 0         | 0               | 0      | 0                         | 108        | 0       | 0      | 47         | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 46      | 36    | 0                 | 0      |
|                  | 1925 | 0             | 0         | 0               | 0      | 1                         | 256        | 0       | 0      | 133        | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 77      | 112   | 0                 | 0      |
| Total,           | 1924 | 0             | 0         | 0               | 0      | 15                        | 649        | 0       | 0      | 803        | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 3,791   | 1,048 | 0                 | 0      |
|                  | 1925 | 1             | 0         | 0               | 0      | 13                        | 1,088      | 0       | 0      | 1,006      | 0         | 0                       | 0          | 0     | 0              | 0         | 0        | 0       | 0       | 2,747   | 534   | 0                 | 0      |
| 1st 6 mos., 1926 |      | 0             | 1         | 0               | 0      | 9                         | 915        | 0       | 0      | 345        | 1         | 0                       | 1          | 0     | 1,617          | 638       | 0        | 0       | 0       | 4,055   | 785   | 0                 | 0      |

COMPARATIVE MONTHLY DISTRIBUTION OF CASES OF REPORTABLE DISEASE REPORTED TO THE STATE DEPARTMENT OF HEALTH FOR THE YEARS 1924-1925 AND THE FIRST HALF OF 1926—PART II

|           |      | Pneumonia | Pedunculitis | Rabies | Rocky Mountain fever | Scarlet fever | Septic sore throat | Smallpox | Tetanus | Trachoma | Trichinosis | Tuberculosis | Tularia | Typhoid fever | Typhus fever | Vincent's angina | Whooping cough | Yellow fever | Glanders | Chancroid | Gonorrhea | Syphilis |
|-----------|------|-----------|--------------|--------|----------------------|---------------|--------------------|----------|---------|----------|-------------|--------------|---------|---------------|--------------|------------------|----------------|--------------|----------|-----------|-----------|----------|
| January,  | 1924 | 2         | 1            | 0      | 0                    | 268           | 0                  | 35       | 0       | 0        | 0           | 1            | 0       | 0             | 0            | 0                | 100            | 0            | 0        | 5         | 200       | 158      |
|           | 1925 | 17        | 0            | 0      | 0                    | 265           | 0                  | 146      | 0       | 0        | 0           | 0            | 0       | 0             | 0            | 0                | 0              | 0            | 0        | 0         | 143       | 112      |
|           | 1926 | 0         | 0            | 0      | 0                    | 296           | 0                  | 158      | 0       | 0        | 0           | 18           | 0       | 0             | 0            | 0                | 0              | 0            | 0        | 2         | 111       | 65       |
| February, | 1924 | 19        | 0            | 0      | 0                    | 275           | 0                  | 42       | 0       | 0        | 0           | 2            | 0       | 0             | 0            | 0                | 47             | 0            | 0        | 4         | 177       | 117      |
|           | 1925 | 25        | 0            | 0      | 0                    | 187           | 0                  | 90       | 0       | 0        | 0           | 32           | 0       | 0             | 0            | 0                | 29             | 0            | 0        | 3         | 165       | 98       |
|           | 1926 | 0         | 0            | 0      | 0                    | 250           | 0                  | 220      | 0       | 0        | 0           | 55           | 0       | 0             | 0            | 0                | 28             | 0            | 0        | 0         | 172       | 86       |
| March,    | 1924 | 15        | 1            | 0      | 0                    | 227           | 0                  | 96       | 0       | 0        | 0           | 1            | 0       | 0             | 0            | 0                | 65             | 0            | 0        | 0         | 134       | 100      |
|           | 1925 | 2         | 0            | 0      | 0                    | 132           | 0                  | 49       | 0       | 0        | 0           | 1            | 0       | 0             | 0            | 0                | 0              | 0            | 0        | 0         | 115       | 57       |
|           | 1926 | 0         | 0            | 0      | 0                    | 333           | 0                  | 122      | 0       | 0        | 0           | 5            | 0       | 0             | 0            | 0                | 57             | 0            | 0        | 0         | 128       | 75       |

PART II—Continued

|             |           | Pneumonia | Pollinosis | Rabies | Rocky Mountain fever | Scarlet fever | Septic sore throat | Smallpox | Tetanus | Trachoma | Trichinosis | Tuberculosis | Tularia | Typhoid fever | Typhus fever | Vincent's angina | Whooping cough | Yellow fever | Glanders | Chancroid | Gonorrhea | Syphilis |
|-------------|-----------|-----------|------------|--------|----------------------|---------------|--------------------|----------|---------|----------|-------------|--------------|---------|---------------|--------------|------------------|----------------|--------------|----------|-----------|-----------|----------|
| April,      | 1924..... | 0         | 2          | 0      | 0                    | 207           | 0                  | 71       | 0       | 0        | 0           | 0            | 0       | 1             | 0            | 0                | 23             | 0            | 0        | 0         | 185       | 122      |
|             | 1925..... | 11        | 12         | 0      | 0                    | 131           | 0                  | 37       | 0       | 0        | 0           | 8            | 0       | 3             | 0            | 0                | 24             | 0            | 0        | 1         | 37        | 36       |
|             | 1926..... | 22        | 0          | 0      | 0                    | 232           | 0                  | 212      | 0       | 0        | 0           | 79           | 0       | 12            | 0            | 0                | 72             | 0            | 0        | 0         | 108       | 77       |
| May,        | 1924..... | 0         | 1          | 0      | 0                    | 63            | 0                  | 50       | 0       | 0        | 0           | 0            | 0       | 2             | 0            | 0                | 11             | 0            | 0        | 2         | 94        | 63       |
|             | 1925..... | 0         | 1          | 0      | 0                    | 112           | 0                  | 60       | 0       | 0        | 0           | 1            | 0       | 1             | 0            | 0                | 34             | 0            | 0        | 0         | 94        | 64       |
|             | 1926..... | 10        | 1          | 0      | 0                    | 133           | 0                  | 135      | 0       | 0        | 0           | 23           | 0       | 3             | 0            | 0                | 54             | 0            | 0        | 0         | 104       | 91       |
| June,       | 1924..... | 6         | 0          | 0      | 0                    | 137           | 0                  | 110      | 0       | 0        | 0           | 1            | 0       | 1             | 0            | 0                | 18             | 0            | 0        | 3         | 192       | 132      |
|             | 1925..... | 0         | 0          | 0      | 0                    | 42            | 0                  | 39       | 0       | 0        | 0           | 0            | 0       | 4             | 0            | 0                | 22             | 0            | 0        | 0         | 57        | 25       |
|             | 1926..... | 2         | 3          | 0      | 0                    | 114           | 0                  | 96       | 0       | 0        | 0           | 56           | 0       | 4             | 0            | 0                | 60             | 0            | 0        | 1         | 55        | 122      |
| July,       | 1924..... | 0         | 0          | 0      | 0                    | 45            | 0                  | 22       | 0       | 0        | 0           | 0            | 0       | 40            | 0            | 0                | 7              | 0            | 0        | 2         | 247       | 109      |
|             | 1925..... | 0         | 8          | 0      | 0                    | 24            | 0                  | 13       | 0       | 0        | 0           | 0            | 0       | 3             | 0            | 0                | 25             | 0            | 0        | 3         | 218       | 88       |
| August,     | 1924..... | 0         | 3          | 0      | 0                    | 29            | 0                  | 21       | 0       | 0        | 0           | 0            | 0       | 1             | 0            | 0                | 2              | 0            | 0        | 3         | 252       | 101      |
|             | 1925..... | 0         | 24         | 0      | 0                    | 28            | 0                  | 12       | 0       | 0        | 0           | 0            | 0       | 12            | 0            | 0                | 11             | 0            | 0        | 1         | 123       | 56       |
| September,  | 1924..... | 0         | 39         | 0      | 0                    | 73            | 0                  | 50       | 0       | 0        | 0           | 0            | 0       | 7             | 0            | 0                | 15             | 0            | 0        | 0         | 268       | 87       |
|             | 1925..... | 0         | 61         | 0      | 0                    | 48            | 0                  | 19       | 0       | 0        | 0           | 2            | 0       | 32            | 0            | 0                | 4              | 0            | 0        | 2         | 188       | 84       |
| October,    | 1924..... | 0         | 8          | 0      | 0                    | 133           | 0                  | 64       | 0       | 0        | 0           | 0            | 0       | 4             | 0            | 0                | 3              | 0            | 0        | 2         | 213       | 92       |
|             | 1925..... | 20        | 59         | 0      | 0                    | 165           | 0                  | 29       | 2       | 0        | 0           | 11           | 0       | 34            | 0            | 0                | 48             | 0            | 0        | 4         | 232       | 111      |
| November,   | 1924..... | 0         | 6          | 0      | 0                    | 160           | 0                  | 105      | 0       | 0        | 0           | 0            | 0       | 2             | 0            | 0                | 4              | 0            | 0        | 1         | 87        | 45       |
|             | 1925..... | 23        | 16         | 0      | 0                    | 211           | 0                  | 39       | 0       | 0        | 0           | 31           | 0       | 25            | 0            | 0                | 49             | 0            | 0        | 1         | 260       | 144      |
| December,   | 1924..... | 0         | 4          | 0      | 0                    | 215           | 0                  | 219      | 0       | 0        | 0           | 0            | 0       | 4             | 0            | 0                | 40             | 0            | 0        | 1         | 208       | 98       |
|             | 1925..... | 15        | 5          | 0      | 0                    | 216           | 1                  | 90       | 0       | 0        | 0           | 13           | 0       | 23            | 0            | 0                | 49             | 0            | 0        | 5         | 167       | 132      |
| Total,      | 1924..... | 47        | 65         | 0      | 0                    | 1,392         | 0                  | 872      | 0       | 0        | 0           | 5            | 0       | 67            | 0            | 0                | 336            | 0            | 0        | 0         | 2,107     | 1,224    |
|             | 1925..... | 77        | 176        | 2      | 0                    | 1,561         | 1                  | 645      | 0       | 0        | 0           | 71           | 0       | 132           | 0            | 0                | 383            | 0            | 0        | 20        | 1,797     | 1,007    |
| 1st 6 mos., | 1926..... | 160       | 7          | 0      | 0                    | 1,207         | 0                  | 949      | 0       | 0        | 0           | 279          | 0       | 18            | 0            | 0                | 467            | 0            | 0        | 3         | 678       | 499      |



**DIVISION OF INFECTIOUS AND CONTAGIOUS DISEASES**

During this biennium a method of dealing with reports of communicable disease was evolved and adopted as the standard practice to be followed in all ordinary reports of disease. For example: when the first case of diphtheria from a community is reported, standard



practice sets forth what literature and information are to be sent out to the locality or adjacent territory, the officials who are to be notified and the general advice that is to be given. Should the disease spread, an outline is given of what measures are to be adopted. This standard practice also outlines the course to be pursued if an order for a biologic is received from a locality from which no cases of the disease, for which the biologic would be used, have been reported.

#### AID TO LOCAL BOARDS OF HEALTH

Wherever municipalities have asked for assistance and whenever it seemed that they needed some special aid or guidance, some one of the department or the State Epidemiologist has visited such communities and endeavored to give them the particular help or advice that the conditions seemed to demand. In the great majority of cases, advice has been sought and given by letter.

#### REVISION OF RULES

As it was four years since the rules and regulations of the State Department of Health had been drawn up, and as during that period, new methods and practices had been introduced in dealing with certain diseases, it was felt that in line with the newer knowledge and the best standard practice, the rules and regulations for Iowa should be rewritten. This was accordingly done, so that early in 1926 a new edition alphabetically arranged and properly indexed, was issued. Copies of this have been supplied to all physicians, health officers and nurses, as well as others who have made request for them.

#### PROPHYLAXIS

Programs of immunization have been started in many communities because the department is convinced that it is cheaper to prevent disease than to fight it, once it gets established. In many localities of the state where smallpox has appeared there has been carried out wholesale vaccination against it; in others, where typhoid developed, large numbers of people have been inoculated against that disease, while in still others, a large number of children have been treated with scarlet fever streptococcus toxin to render them immune to scarlet fever. The disease that has been attacked on the largest scale, however, is diphtheria, as a state wide program has been adopted with the slogan "No Diphtheria in Iowa by 1930." A good start has been made, as probably six or seven per cent of all school children in the state have already been treated. This makes it clear, that there is still much to be done, but we are hopeful that the farther we go, the easier it will be to initiate and complete the program.

#### EPIDEMIOLOGY AND LABORATORY

The reports from the Division of Epidemiology and the Hygienic Laboratory appear as separate reports and indicate for the former the nature and number of the main investigations made, and for the latter the volume and character of the work done in laboratories as part of the public health program.



Section of temporary laboratory in basement of City Hall at Mason City, Iowa, used in survey of Lime Creek and Shell Rock River.



Car used in transporting field laboratory and going from one sampling station to the next in survey of Lime Creek and Shell Rock River.

## DIVISION OF LABORATORIES

Dr. Don M. Griswold was director of the Laboratories for the State Department of Health. The reports from the several sections are herewith presented.

### BACTERIOLOGICAL SECTION

The work of this laboratory, of which C. S. Linton has charge, is related to the prevention and control of communicable diseases.

Routine examinations consist largely of diphtheria, tuberculosis, typhoid fever and rabies. Many miscellaneous specimens are also examined.

#### DIPHTHERIA

The number of diphtheria cultures examined during the past biennium shows a decided decrease. This may be accounted for by the rather general use of toxin-antitoxin in producing immunity among school children and a corresponding decrease in the number of schools finding it necessary to use the survey method of detecting carriers.

#### TYPHOID

A total of 2908 typhoid examinations were made during the biennium. These consisted principally of Widal's, the remainder being feces, urine and blood culture specimens. The blood culture outfit has not been used as extensively as its value in the initial stages of the disease would warrant. This may be due to a combination of several factors among which must be considered the difficulty in recognizing the disease early, the time required to secure an outfit and possibly also some failure to recognize the value of this type of examination.

A new typhoid feces outfit containing a preservative fluid is being used. Experiments have shown that, while there is a rapid decrease in the number of typhoid organisms found in feces alone until in 3-4 days a negative result is secured on an originally strongly positive specimen, when the preservative medium is present the specimen is just as reliable for examination after five days to a week as it was at the beginning. The outfit has also been adapted to collecting urine. The use of this outfit should greatly extend the practicability of carrying out the typhoid feces test.

#### RABIES

The chart shown below gives the rabies situation at a glance. An epidemic has been in progress which reached its peak in February 1925, as shown by the number of positive examinations made. This gradually receded from that date until the winter of 1926 when a normal level was again reached. It is hoped that a better informed public will prevent the recurrence of such an epidemic as well as the unnecessary killing of animals for laboratory examinations.

A total of 579 examinations for rabies in dogs, cats, cows, horses, hogs,

etc., were made during the biennium. This is more than double the examinations made during the previous biennium.

### TUBERCULOSIS

A substantial increase is noted in the number of tuberculosis examinations made and especially in the number of positive examinations.

Only a microscopic examination is made on sputum unless otherwise requested while body fluids are inoculated into a guinea pig when the microscopic examination is negative. Feces and urine specimens are always examined microscopically and by animal inoculation.

### EPIDEMIC MENINGITIS

The number of positive examinations for this disease is not indicative of its prevalence in the state. The laboratory recommends that the specimens be kept at body temperature by packing in warmed cotton in a warmed thermos bottle. Also a drop of the fluid, as it comes from the spine, should be spread on a glass slide and dried in order that the laboratory may have an unaltered picture of the original fluid. Disintegration in transit, which occurs to a greater or lesser extent with liquid specimens gives the dried smear a very great importance.

### MISCELLANEOUS EXAMINATIONS

A considerable increase in the number of miscellaneous examinations is noted. A total of 365 specimens were examined. There have been many requests for Vincent's angina examinations and a considerable percentage of these cases have been found positive. It is well known however, that organisms resembling those of Vincent may be found about carious teeth at times and their presence does not necessarily indicate a badly diseased condition. The specimen should consist of a smear of material taken from the lesion, although presumptive evidence of the disease may at times be secured from a diphtheria culture which has been incubated not more than a few hours.



TABLE 1.—SPECIMENS RECEIVED FOR THE EXAMINATION OF DIPHTHERIA

|                   | Positive     | Negative      | Diagnosis Reserved | Specimens Unsuitable for Exam. | Total         |
|-------------------|--------------|---------------|--------------------|--------------------------------|---------------|
| <b>Diagnosis—</b> |              |               |                    |                                |               |
| 1924-1925.....    | 1,713        | 8,565         | 1,454              | 89                             | 11,821        |
| 1925-1926.....    | 1,018        | 9,745         | 621                | 92                             | 12,476        |
| <b>Total.....</b> | <b>3,381</b> | <b>18,310</b> | <b>2,075</b>       | <b>181</b>                     | <b>23,947</b> |
| <b>Release—</b>   |              |               |                    |                                |               |
| 1924-1925.....    | 1,460        | 3,365         | 649                | 10                             | 5,484         |
| 1925-1926.....    | 1,491        | 2,645         | 144                | 58                             | 4,338         |
| <b>Total.....</b> | <b>2,951</b> | <b>6,010</b>  | <b>793</b>         | <b>68</b>                      | <b>9,819</b>  |
| <b>Carrier—</b>   |              |               |                    |                                |               |
| 1924-1925.....    | 121          | 310           | 85                 | 2                              | 518           |
| 1925-1926.....    | 225          | 812           | 96                 | 12                             | 1,145         |
| <b>Total.....</b> | <b>346</b>   | <b>1,122</b>  | <b>181</b>         | <b>14</b>                      | <b>1,663</b>  |
| <b>Virulence—</b> |              |               |                    |                                |               |
| 1924-1925.....    | 4            | 4             | 0                  | 0                              | 8             |
| 1925-1926.....    | 4            | 26            | 0                  | 0                              | 30            |
| <b>Total.....</b> | <b>8</b>     | <b>30</b>     | <b>0</b>           | <b>0</b>                       | <b>38</b>     |
| <b>Total.....</b> | <b>6,036</b> | <b>25,472</b> | <b>3,019</b>       | <b>258</b>                     | <b>35,885</b> |

Grand total for the biennial period, 35,885.

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

|                         | Positive   | Negative     | Weak Reaction | Specimens Unsuitable for Exam. | Total        |
|-------------------------|------------|--------------|---------------|--------------------------------|--------------|
| <b>Widal—</b>           |            |              |               |                                |              |
| 1924-1925.....          | 128        | 1,047        | 95            | 0                              | 1,270        |
| 1925-1926.....          | 182        | 1,181        | 96            | 3                              | 1,462        |
| <b>Feces and Urine—</b> |            |              |               |                                |              |
| 1924-1925.....          | 2          | 56           | 0             | 0                              | 58           |
| 1925-1926.....          | 7          | 57           | 7             | 1                              | 72           |
| <b>Milk—</b>            |            |              |               |                                |              |
| 1924-1925.....          | 0          | 2            | 0             | 0                              | 2            |
| 1925-1926.....          | 0          | 0            | 0             | 0                              | 0            |
| <b>Blood Cultures—</b>  |            |              |               |                                |              |
| 1924-1925.....          | 2          | 15           | 0             | 0                              | 17           |
| 1925-1926.....          | 1          | 29           | 0             | 0                              | 30           |
| <b>Total.....</b>       | <b>292</b> | <b>2,384</b> | <b>198</b>    | <b>4</b>                       | <b>2,978</b> |

Grand total for the biennial period, 2,998.

TABLE 3.—SPECIMENS RECEIVED FOR THE EXAMINATION OF TUBERCULOSIS

|                         | Positive     | Negative     | Diagnosis Reserved | Specimens Unsuitable for Exam. | Total        |
|-------------------------|--------------|--------------|--------------------|--------------------------------|--------------|
| <b>Sputum—</b>          |              |              |                    |                                |              |
| 1924-1925.....          | 362          | 3,619        | 1                  | 29                             | 4,211        |
| 1925-1926.....          | 327          | 3,978        | 3                  | 20                             | 4,528        |
| <b>Total.....</b>       | <b>1,089</b> | <b>7,595</b> | <b>4</b>           | <b>49</b>                      | <b>8,737</b> |
| <b>Feces and Urine—</b> |              |              |                    |                                |              |
| 1924-1925.....          | 0            | 17           | 0                  | 0                              | 17           |
| 1925-1926.....          | 2            | 30           | 0                  | 1                              | 33           |
| <b>Total.....</b>       | <b>2</b>     | <b>47</b>    | <b>0</b>           | <b>1</b>                       | <b>50</b>    |
| <b>Milk—</b>            |              |              |                    |                                |              |
| 1924-1925.....          | 0            | 0            | 0                  | 0                              | 0            |
| 1925-1926.....          | 0            | 2            | 0                  | 0                              | 2            |
| <b>Total.....</b>       | <b>0</b>     | <b>2</b>     | <b>0</b>           | <b>0</b>                       | <b>2</b>     |
| <b>Pus—</b>             |              |              |                    |                                |              |
| 1924-1925.....          | 0            | 9            | 0                  | 0                              | 9            |
| 1925-1926.....          | 0            | 7            | 1                  | 0                              | 8            |
| <b>Total.....</b>       | <b>0</b>     | <b>16</b>    | <b>1</b>           | <b>0</b>                       | <b>17</b>    |
| <b>Synovial Fluid—</b>  |              |              |                    |                                |              |
| 1924-1925.....          | 0            | 3            | 0                  | 1                              | 4            |
| 1925-1926.....          | 0            | 24           | 0                  | 0                              | 24           |
| <b>Total.....</b>       | <b>0</b>     | <b>27</b>    | <b>0</b>           | <b>1</b>                       | <b>28</b>    |
| <b>Total.....</b>       | <b>1,091</b> | <b>7,687</b> | <b>5</b>           | <b>51</b>                      | <b>8,834</b> |

Grand total for the biennial period, 8,834.

TABLE 4.—SPECIMENS RECEIVED FOR THE EXAMINATION OF RABIES

|   | Positive   | Negative   | Diagnosis Reserved | Specimens Unsuitable for Exam. | Total      |
|---|------------|------------|--------------------|--------------------------------|------------|
| <b>Dog Head—</b>  |            |            |                    |                                |            |
| 1924-1925.....  | 128        | 121        | 19                 | 46                             | 314        |
| 1925-1926.....  | 36         | 58         | 1                  | 30                             | 125        |
| <b>Total.....</b>                                       | <b>164</b> | <b>179</b> | <b>20</b>          | <b>76</b>                      | <b>439</b> |
| <b>Heads of Cat, Hog, Calf, Squirrel, Horse, Sheep.</b> |            |            |                    |                                |            |
| 1924-1925.....  | 28         | 27         | 8                  | 2                              | 65         |
| 1925-1926.....  | 12         | 35         | 6                  | 6                              | 61         |
| <b>Total.....</b>                                       | <b>40</b>  | <b>62</b>  | <b>14</b>          | <b>8</b>                       | <b>124</b> |

Grand total for the biennial, 579.

TABLE 5.—SPECIMENS RECEIVED FOR MENINGITIS

|               | Positive | Negative | Diagnosis Reserved | Specimens Unsuitable for Exam. | Total |
|---------------|----------|----------|--------------------|--------------------------------|-------|
| Spinal Fluid— |          |          |                    |                                |       |
| 1924-1925     | 0        | 12       | 0                  | 0                              | 12    |
| 1925-1926     | 1        | 6        | 0                  | 0                              | 7     |
| Total         | 1        | 18       | 0                  | 0                              | 19    |

Grand total for the biennial period, 19.

TABLE 6.—SPECIMENS FOR EXAMINATION OF MISCELLANEOUS MATERIAL

|               | Positive | Negative | Diagnosis Reserved | Rejected | Total |
|---------------|----------|----------|--------------------|----------|-------|
| Smears, Etc.— |          |          |                    |          |       |
| 1924-1925     | 69       | 73       | 10                 | 2        | 154   |
| 1925-1926     | 107      | 88       | 5                  | 11       | 211   |
| Total         | 176      | 161      | 15                 | 13       | 365   |

Grand total for the biennial period, 365.

TABLE 7.—OUTFITS DISTRIBUTED

|        | Diphtheria | Tuberculosis | Typhoid | Wassermann | Gonococcus | Blood | Feces | Meningitis | Miscellaneous | Water | Total   |
|--------|------------|--------------|---------|------------|------------|-------|-------|------------|---------------|-------|---------|
| 1924-5 | 35,604     | 8,286        | 3,046   | 39,295     | 3,307      | 126   | 83    | 0          | 2             | 1,801 | 51,550  |
| 1925-6 | 40,815     | 8,308        | 2,496   | 40,801     | 4,319      | 71    | 83    | 0          | 0             | 1,985 | 98,441  |
| Total  | 75,919     | 16,654       | 5,542   | 80,096     | 7,626      | 200   | 166   | 0          | 2             | 3,786 | 189,991 |

Grand total for the biennial period, 189,991.

## SEROLOGICAL SECTION

The serological division in charge of Miss Zelma Zentmire has experienced a marked increase in the number of specimens received during the biennium. A total of 102,343 specimens was received, an increase of 29,382 specimens or 39.8% over the previous biennium. As in the previous two years the growth was chiefly due to the use of the division by a greater number of physicians and to the larger number of specimens submitted by individual physicians.

The increase in the work of preparing outfits and examining specimens necessitated early in the biennium the addition of another technician to the staff. The service was immediately improved by making the Wasserman test daily except on Saturday and Sunday.

The work of the period is summarized in Table 8.

TABLE 8.—SPECIMENS RECEIVED BY SEROLOGICAL DIVISION

|                                      | 1924-25 | 1925-26 |
|--------------------------------------|---------|---------|
| Blood—                               |         |         |
| Cholest. Antig. Positive             |         |         |
| Alch. Antig. Positive                | 6,196   | 6,077   |
| Cholest. Antig. Negative             |         |         |
| Alch. Antig. Negative                | 35,345  | 38,036  |
| Cholest. Antig. Positive             |         |         |
| Alch. Antig. Negative                | 644     | 822     |
| Cholest. Antig. Positive             |         |         |
| Alch. Antig. Doubtful                | 717     | 512     |
| Cholest. Antig. Doubtful             |         |         |
| Alch. Antig. Negative                | 902     | 327     |
| Specimens unsuitable for examination | 1,754   | 1,515   |
| Anticomplementary                    | 103     | 60      |
| Doubtful                             | 398     | 218     |
| Spinal Fluid—                        |         |         |
| Alch. Antig. Positive                | 283     | 216     |
| Alch. Antig. Negative                | 920     | 945     |
| Doubtful                             | 46      | 40      |
| Anticomplementary                    | 73      | 23      |
| Specimens unsuitable for examination | 22      | 10      |
| Gonorrhea—                           |         |         |
| Positive                             | 501     | 638     |
| Negative                             | 745     | 1,052   |
| Doubtful                             | 1,823   | 1,761   |
| Specimens unsuitable for examination | 14      | 24      |
| Bacillus of Durey                    | 3       | 3       |
| Spirochaetes                         | 17      | 14      |
| Total                                | 50,006  | 52,827  |

Grand total '24-'26, 102,843.



## THE WATER LABORATORY SECTION

The Water Laboratory Section is in charge of Jack J. Hinman, Jr. The work of the water laboratory is naturally subject to some fluctuation as a result of seasonal conditions. Unusually dry weather and consequent lowering of the water level of wells is reflected in an unusual number of samples received at the laboratory. Unusually high water is also responsible for an increased amount of work. It is obvious that these two conditions cause communities and individuals affected to doubt the continued safety of their water supplies. This results in a considerable variation in the number of samples examined in a given month thru a series of years and in some cases it also modifies the volume of work for the year of striking variations from the normal precipitation. Biennial summaries show the way in which the work is increased.

|                 |                       |
|-----------------|-----------------------|
| Biennium 1914-6 | 2488 Samples Examined |
| 1916-8          | 3967                  |
| 1918-20         | 3991                  |
| 1920-2          | 6364                  |
| 1922-4          | 6465                  |
| 1924-6          | 7520                  |

One of the striking facts which the summaries of examination of water samples show is the fact that public water supplies are so much more likely to be safe than private water supplies of the same class. It is the opinion of the division that this situation is due chiefly to the fact that the public water supplies, even though not cared for with the best of results in many cases, are so much more closely watched than are the private supplies that their condition is generally known and needed improvements are more likely to be attended to than in the case with the private well.

It is obvious of course that the various types of water supplies suffer from difficulties peculiar to their classification. Thus shallow wells which derive their water supply of necessity from close to the surface of the ground are much more likely to be influenced by surface drainage and hence more inclined toward dangerous pollution than are the deeper wells. The deeper wells are not infrequently found to be polluted. Such pollution is most likely to get in near the surface, as in the case of the shallow well. The pollution of the deep well in such cases is commonly due to the usual practice of cutting off the casing near the bottom of a well pit and merely letting the drop pipe of the pump into the casing. Unless the top of the casing makes a tight joint with the drop pipe or its fittings, surface water may from time to time mix with the water in the deep well and contaminated water may be distributed to the users. Springs show many of the characteristics of the shallow well. Much of the water comes from shallow sources and many of the points of emergence are inefficiently protected from surface water and from stock and small animals.

Treated waters are usually restricted to the public supplies. In general a water which is treated is known to be polluted as received at the plant and it is appreciated that a close watch is needed to keep the supply in

the desired condition. This appreciation of the need for constant control is responsible for the much better showing of the treated waters as compared to the other types of water supplies.

Swimming pools are usually open to public use. For that reason all of those reported are listed as from public sources. So far as is known no sample from a private individual's pool has been examined. Most of the pool samples come from swimming pools in which the water is recirculated and purified. That is, the water is removed from the pool, filtered, treated with a germicidal agent and returned. Other pools are operated on the fill-and-draw principle in which the pool is filled, used for a predetermined period, and then emptied. Commonly such pools receive treatment with copper sulphate to kill algae and with calcium hypochlorite as a germicidal substance. The preponderance of samples from pools with recirculation systems is responsible for the high proportion of satisfactory samples.

## SUMMARY OF RESULTS OF THE WATER LABORATORY

## PERCENTAGE SATISFACTORY

| Type of Source                  | Public Supplies.                       |           | Private Supplies. |           |
|---------------------------------|--|-----------|-------------------|-----------|
|                                 | Feb. 1914 to Biennium<br>June 30, 1926 | 1924-1926 | June 30, 1926     | 1924-1926 |
| Shallow Wells.....              | 39.32                                  | 46.65     | 18.35             | 17.47     |
| Deep Wells.....                 | 66.40                                  | 73.35     | 66.10             | 56.55     |
| Springs.....                    | 38.03                                  | 48.00     | 27.16             | 23.08     |
| Treated Waters.....             | 86.18                                  | 90.81     | .....             | .....     |
| Filter Plant Effluents.....     | 94.84                                  | 92.84     | .....             | .....     |
| Swimming Pools.....             | 79.78                                  | 78.81     | .....             | .....     |
| Totals.....                     | 60.59                                  | 63.05     | 31.50             | 22.73     |
| Grand Total of All Samples..... | .....                                  | 54.65     | .....             | 55.29     |

The above table shows very clearly that the public water supplies from shallow sources are about twice as likely to be safe as are the private sources of the same nature. This lends strength to the belief that the public water supply of a community is usually the safest water to be found there, even tho many of the public supplies could be bettered.

The high degree of satisfaction derived from the filter plants of the state is also worthy of remark. Some of these plants are much better operated than others. It is also true that we have so little data on the control of some other plants that we can not express a very decided opinion as to the degree of purity which their effluents may be expected to show at all times. The following table will give an idea of the success of operation. It should always be kept in mind that the greater number of samples, the more nearly is the efficiency of operation shown by the proportion of unsatisfactory specimens.

## RESULTS ON TREATED WATERS OF WATER FILTRATION AND COAGULATION PLANTS IN IOWA, 1914-1926.

| Town           | County        | Number of Samples Examined | Number of Samples Unsatisfactory | Date of Last Examination |
|----------------|---------------|----------------------------|----------------------------------|--------------------------|
| Adel           | Dallas        | 11                         | 2                                | June 10, 1924            |
| Albia          | Monroe        | 30                         | 5                                | May 26, 1926             |
| Bedford        | Taylor        | 46                         | 10                               | June 11, 1926            |
| Burlington     | Des Moines    | 1,046                      | 49                               | June 22, 1926            |
| Cedar Rapids   | Linn          | 33                         | 8                                | Aug. 9, 1922             |
| Centerville    | Appanoose     | 82                         | 12                               | Feb. 18, 1926            |
| Chariton       | Lucas         | 66                         | 25                               | June 9, 1926             |
| Clarinda       | Page          | 90                         | 16                               | April 11, 1926           |
| Clear Lake     | Cerro Gordo   | 4                          | 2                                | Dec. 11, 1924            |
| Corning        | Adams         | 35                         | 10                               | June 2, 1926             |
| Corydon        | Wayne         | 30                         | 9                                | June 3, 1926             |
| Council Bluffs | Pottawattamie | 13                         | 2                                | Jan. 6, 1925             |
| Creston        | Union         | 71                         | 13                               | June 24, 1925            |
| Davenport      | Scott         | 73                         | 12                               | June 16, 1926            |
| Fairfield      | Jefferson     | 46                         | 7                                | June 30, 1926            |
| Ft. Madison    | Lee           | 87                         | 19                               | June 8, 1926             |
| Iowa City      | Johnson       | 4,429                      | 66                               | June 30, 1926            |
| Jefferson      | Greene        | 18                         | 2                                | Sept. 2, 1925            |
| Keokuk         | Lee           | 160                        | 19                               | May 27, 1926             |
| Lamoni         | Decatur       | 2                          | 0                                | Nov. 13, 1921            |
| Lenox          | Taylor        | 25                         | 9                                | Mar. 18, 1926            |
| Marshalltown   | Marshall      | 11                         | 0                                | May 7, 1926              |
| Mt. Ayr        | Ringgold      | 3                          | 1                                | May 26, 1926             |
| Oskaloosa      | Madison       | 49                         | 8                                | June 3, 1926             |
| Ottumwa        | Wapello       | 33                         | 3                                | June 29, 1926            |
| Storm Lake     | Buena Vista   | 51                         | 21                               | June 23, 1926            |
| Tabor          | Fremont       | 12                         | 3                                | June 10, 1926            |
| What Cheer     | Keokuk        | 32                         | 3                                | June 24, 1926            |
| Total          |               | 6,548                      | 338                              |                          |

Per cent unsatisfactory, 5.17%.

Samples also examined at local authorized branch laboratory and results forwarded to the Water Laboratory Division. Results of Branch Laboratories are not included in above summary.

Water purification plants have been installed and put into operation in the following Iowa Communities and Institutions:

Chlorination Plants (Treating with liquid chlorine only): Akron, Arnold's Park, Audubon, Avoca, Bellevue, Boone, Brooklyn, Camp Dodge, Cascade, Charter Oak, Clinton, Cresco, Cherokee, Cherokee State Hospital, Clarinda State Hospital, Des Moines, Decorah, Dubuque, Everly, Hedrick, Keystone, LeMars, Lisbon, Manchester, Marshalltown, Newton, Odebolt, Sac City, Sanborn, Sioux City, Spirit Lake, Waterloo, Waverly and Woodward State Hospital. (34)

Coagulation Plants (Those using chlorine are marked Cl): Corning (Cl), Council Bluffs (Cl), Lamoni. (3)

Filter Plants (Those using chlorine as a final treatment are marked Cl): Adel (Cl), Albia (Cl), Ames ISC (Cl), Bedford (Cl), Burlington (Cl), Cedar Rapids (Cl), Centerville (Cl), Chariton (Cl), Clarinda (Cl), Clear Lake, Clinton (Emergency filter out of service since 1907), Corydon (Cl), Creston (Cl), Davenport (Cl pre-treatment), Fairfield (Cl), Fort Madison (Cl), Iowa City (Cl), Jefferson (Cl, softening), Keokuk (Cl), Marshalltown (Cl), Mount Ayr (Cl), Osceola (abandoned), Oskaloosa (Cl), Ottumwa (Cl), Storm Lake (Cl), Tabor (Cl), What Cheer (Cl). (27)

## SPECIAL INVESTIGATIONS

During the biennium Mr. Hinman, the Chief of the Water Laboratory Division has made the following special trips of inspection.

| Date            | Locality     | Purpose                          |
|-----------------|--------------|----------------------------------|
| Mar. 25, 1925   | Grinnell     | Water Shortage Investigation.    |
| June 2, 1925    | Clinton      | Inspection of Water Works.       |
| June 27, 1925   | Marshalltown | Inspection of Filter Plant.      |
| August 27, 1925 | Mason City   | Stream Pollution Investigations. |
| Do.             | Waverly      | Stream Pollution Investigations. |
| Nov. 14, 1925   | Waverly      | Inspection of Water Works.       |
| Dec. 5, 1925    | Mason City   | Stream Pollution Investigations. |
| Jan. 29, 1926   | Mason City   | Stream Pollution Investigations. |
| March 11, 1926  | Des Moines   | Conference on Stream Data.       |

## PUBLIC ADDRESSES

During the biennium the following public addresses were made by Mr. Hinman.

| Date           | Place            | Audience                                    | Subject   |
|----------------|------------------|---|---|
| July 28, 1924  | Iowa City        | Radio Station WSUI                          | Rural Water Supplies  |
| Oct. 28, 1924  | Ames             | Sewage Dis. Conference                      | Objectives in Sewage Treatment                                  |
| Nov. 17, 1924  | Des Moines       | Professional Club                           | Stream Pollution  |
| Jan. 14, 1925  | Iowa City        | Chemists Club                               | Water Supplies for Domestic Animals                             |
| Jan. 29, 1925  | Des Moines       | Iowa Engineering Society                    | Water Supplies for Animals                                      |
| April 29, 1925 | Louisville, Ky.  | American Water Wks. Assn.                   | Water Supplies for Animals                                      |
| Aug. 26, 1925  | Spirit Lake      | Iowa League of Municipalities               | Sources of Water Supply in Iowa                                 |
| Nov. 12, 1925  | Ames             | Sewage Disposal Conference                  | Water for Stock   |
| Jan. 5, 1926   | Des Moines       | Iowa Assn. Mfrs. of Carbonated Beverages    | Water supply in Relation to the Carbonated Beverage Industry    |
| Jan. 22, 1926  | Ft. Worth, Texas | 8th Annual School for Water Works Operators | Recent Tendencies in the Bacteriological Exam. of Waters        |
| April 1, 1926  | Cedar Rapids     | Iowa Academy of Science                     | Present Tendencies in the Bacteriological Examination of Waters |
| June 24, 1926  | Rockwell City    | Local Medical Society                       | Water Supplies and Sanitation                                   |



## PUBLICATIONS

The following articles have been published from the Water Laboratory by Mr. Hinman during the Biennium:

| Title  | Reference.   |
|--|--|
| Use of Gentian Violet Broth on the Colon Group of Bacteria.            | Engineering and Contracting, 62, 367-8 (Aug. 13, 1924)   |
| Laboratory Control of Water Purification                               | Proc. Indiana Sanitary and Water Supply Assn., 17, 104-111, (1924) Fire and Water Engineering, 76, 633-4 and 656-7 (Sept. 17, 1924)      |
| Water Supply for Schools   | Iowa Health Bulletin, 1, (n. s.) No. 1, pp. 1-16, (Feb. Mar. 1925)   |
| Objectives in Sewage Treatment   | Bul. No. 69, Iowa State College, Exten. Dept. Vol. 23, No. 30, (Dec. 24, 1924) Municipal and Co. Engineering, 68, 167-172, (April, 1925) |
| Safeguarding the Health of Bathers in Swimming Pools                   | Red Cross Courier, 4, 10-11, June, 1925  |
| The necessity for Continual Inspection of the Water of Swimming Pools  | Swimming, 1, 2-3 (June, 1925)  |
| Water Supply for Domestic Animals                                      | Proc. Iowa Engineering Society, 37, 57-62, (1925)  |
| Importance of Differentiating Colon Aerogenes Group in Examining Water | American Journal of Pub. Health, 15, 614-619, (July 1925)  |
| Water Supply in Iowa   | American Municipalities, 50, 23-5, and 15-18, (Dec. 1925 and Jan. 1926)  |
| The Swimming Pool and its Sanitation                                   | Iowa Health Bulletin, 1, No. 4, ppl-30, Oct., Nov., Dec., 1925)  |

## RECOMMENDATIONS

Work which would be useful to the water works and sewage plant operators of the State would include the examination of sands for use in water works filters and in intermittent sand filters of sewage treatment plants.

TABLE 9—REPORT FOR 1924-25; 1925-26; WATER SECTION

| Public                | 1924-1925 | 1925-1926 | 1924-1925 | 1925-1926 | 1924-1925 | 1925-1926 | 1924-1925 | 1925-1926 | 1924-1925 | 1925-1926 | 1924-1925 | 1925-1926 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                       | Good      | Bad       | Doubtful  | Total     | Good      | Bad       | Doubtful  | Total     | Good      | Bad       | Doubtful  | Total     |
| Shallow wells.....    | 185       | 265       | 450       | 291       | 235       | 426       | 85        | 70        | 155       | 471       | 560       | 1,031     |
| Deep wells.....       | 416       | 379       | 965       | 150       | 130       | 270       | 58        | 36        | 94        | 624       | 735       | 1,359     |
| Springs.....          | 5         | 7         | 12        | 6         | 5         | 11        | 0         | 2         | 2         | 11        | 14        | 25        |
| Treated.....          | 724       | 718       | 1,432     | 39        | 34        | 113       | 18        | 16        | 34        | 811       | 788       | 1,599     |
| Raw streams.....      | 1         | 0         | 1         | 396       | 431       | 827       | 0         | 0         | 0         | 397       | 431       | 828       |
| Lakes, etc.....       | 0         | 4         | 1         | 1         | 1         | 2         | 0         | 3         | 3         | 1         | 8         | 9         |
| Ice.....              | 4         | 2         | 6         | 4         | 2         | 6         | 1         | 0         | 1         | 9         | 4         | 13        |
| Cisterns.....         | 0         | 0         | 0         | 0         | 3         | 3         | 1         | 0         | 1         | 1         | 3         | 4         |
| Miscellaneous.....    | 0         | 2         | 2         | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 3         | 3         |
| Sewage.....           | 0         | 0         | 0         | 25        | 26        | 51        | 1         | 0         | 1         | 26        | 26        | 52        |
| Swimming pools.....   | 447       | 464       | 911       | 88        | 80        | 177       | 31        | 37        | 68        | 566       | 590       | 1,156     |
| Total.....            | 1,792     | 2,041     | 3,833     | 930       | 957       | 1,887     | 195       | 164       | 359       | 2,917     | 3,162     | 6,079     |
| Private—              |           |           |           |           |           |           |           |           |           |           |           |           |
| Shallow wells.....    | 161       | 165       | 206       | 390       | 414       | 804       | 75        | 94        | 169       | 566       | 613       | 1,179     |
| Deep wells.....       | 32        | 63        | 95        | 33        | 27        | 62        | 7         | 4         | 11        | 74        | 94        | 168       |
| Springs.....          | 1         | 5         | 6         | 8         | 10        | 18        | 0         | 2         | 2         | 9         | 17        | 26        |
| Streams, etc.....     | 0         | 2         | 2         | 1         | 4         | 5         | 0         | 0         | 0         | 1         | 6         | 7         |
| Ice.....              | 2         | 7         | 9         | 3         | 1         | 4         | 1         | 1         | 2         | 6         | 9         | 15        |
| Cisterns.....         | 0         | 2         | 3         | 9         | 15        | 1         | 2         | 2         | 10        | 14        | 24        | 38        |
| Miscellaneous.....    | 1         | 3         | 4         | 6         | 1         | 7         | 0         | 0         | 0         | 7         | 4         | 11        |
| Total.....            | 137       | 188       | 325       | 462       | 466       | 915       | 84        | 103       | 187       | 673       | 757       | 1,430     |
| Ownership not stated— |           |           |           |           |           |           |           |           |           |           |           |           |
| Shallow wells.....    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| Deep wells.....       | 0         | 0         | 0         | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 1         | 1         |
| 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         | 0         | 0         | 2         | 7         | 9         | 1         | 0         | 1         | 3         | 7         | 10        |
| Total.....            | 0         | 0         | 0         | 2         | 8         | 10        | 1         | 0         | 1         | 3         | 8         | 11        |
| Total.....            | 1,929     | 2,229     | 4,158     | 1,394     | 1,431     | 2,815     | 280       | 267       | 547       | 3,590     | 3,927     | 7,517     |

Grand total for the biennial period, 7,529.

## EPIDEMIOLOGY SECTION

It has been the continued purpose of this section, which is in charge of Dr. John A. C. Busby to aid in the promotion of health throughout the State by assisting in the control of contagious disease. After an investigation has been made of the local conditions, recommendations have been given to the local authorities for controlling their situation. That this service has been over the State in general and not limited to one locality or area is shown by a glance at the chronologic list of the places visited.

The following tabulation, arranged in numerical sequence shows the number of trips or field investigations made by this Division.

|                     |    |                           |   |
|---------------------|----|---------------------------|---|
| Diphtheria.....     | 15 | Scarlet Fever.....        | 5 |
| Smallpox.....       | 13 | Rabies.....               | 4 |
| Typhoid Fever.....  | 9  | Conferences.....          | 2 |
| Addresses.....      | 9  | Gastroenteritis.....      | 1 |
| Polio-myelitis..... | 7  | Pemphigus neonatorum..... | 1 |
|                     |    | Mumps.....                | 1 |

A total of 65 trips were made and of these diphtheria and smallpox comprise 43% or almost one-half. If to these are added the investigations for typhoid fever and the addresses given, three-fourths of the field work of this Division will be represented.

## SMALLPOX

Smallpox has been present during the past two years in rather considerable amount and has called for 13 investigations from this Division. The severity of the disease was quite variable. In the northern part of the state the virulence was quite marked.

In one small community (Bristow) there were ten cases and seven resulting deaths. The type found in the western part of the state was much less virulent, in fact the morbidity rate was greatly affected by the incorrect diagnoses, undiagnosed cases, and cases so mild that physicians were not called.

## TYPHOID FEVER

The number of typhoid fever investigations was identical with the number for the preceding biennium—namely nine. No serious typhoid fever situation has developed but usually each year for several years past during the summer and late summer months there have appeared isolated foci of typhoid fever. The mode of spread of the disease in the community in most cases has been easily determined and is often common knowledge in the community, but the source of the original case has been frequently undetermined. While the water supply has always been considered and especially by the community, in no instance during the past biennium has it been found to be a causative agent in the dissemination of the disease. The usual mode of spread has been found to be by contact with the case or through contamination of a milk supply.

## POLIOMYELITIS

Seven investigations were made for poliomyelitis during the present biennium most of them occurring in the Fall of 1925. One outbreak occurred in Clinton in the Fall of 1924 and was carefully handled and reported in Medical literature by Dr. H. R. Sugg, Health Officer of Clinton. In the other investigations the disease was never present in epidemic proportions, the investigation being differential diagnosis in several instances.

## MISCELLANEOUS

Investigation for other diseases include five trips for scarlet fever, four for rabies, one for gastroenteritis, one for pemphigus neonatorum and one for mumps.

In table 10 is given a chronological list of investigations made by this Division, showing the type of the investigation, its location, the disease in question, its probable mode of spread and by whom the investigation was made. A complete report of each investigation has been made and is kept in the files of this Division and a copy is sent to the office of the State Commissioner of Health.

TABLE 10—PLACES VISITED AND PURPOSE OF VISIT. FROM JULY 1, 1924, TO JUNE 30, 1926

| Date        | Type of Investigation | Town or City                             | Disease                      | Probable Mode of Spread | By Whom Investigated |
|-------------|-----------------------|--|------------------------------|-------------------------|----------------------|
| 1924        |                       |  |                              |                         |                      |
| July 28     | Field                 | Des Moines                               | Typhoid                      | Contact                 | Busby                |
| July 30     | Field                 | Gladwin                                  | Smallpox                     | Contact                 | Busby                |
| Aug. 20     | Field                 | Clinton                                  | Infantile Paralysis          | Contact and carrier     | Busby                |
| Sept. 8-10  | Field                 | Clinton                                  | Diphtheria                   | Contact and carrier     | Busby                |
| Sept. 26-27 | Field                 | Norwoodville, Altoona, Oakdale, Aukney   | Typhoid                      | Carrier                 | Busby                |
| Oct. 2      | Field                 | Anamosa                                  | Gastroenteritis              | Contact                 | Griswold             |
| Oct. 2-3    | Field                 | Manila                                   | Scarlet fever                | Contact                 | Busby                |
| Nov. 6-7    | Field                 | Van Meter                                | T. A. Given                  | Contact                 | Busby                |
| Nov. 24-25  | Field                 | Wheatland                                | Smallpox                     | Contact                 | Busby                |
| Dec. 4-5    | Field                 | Galena                                   | Smallpox                     | Contact                 | Busby                |
| Dec. 10     | Field                 | Fort Dodge                               | Conference (Advice on Hosp.) |                         | Griswold             |
| Dec. 16     | Field                 | Albia                                    | Rabies                       |                         | Griswold             |
| Dec. 16-18  | Field                 | Bonaparte                                | Scarlet fever                | Contact                 | Busby                |
| Dec. 17-19  | Field                 | Calamus, Grand Mound, Madison, Wheatland | Smallpox vaccine on          |                         | Busby                |
| Dec. 23     | Field                 | Willmar                                  | Rabies                       |                         | Griswold             |
| Dec. 23     | Field                 | West Branch                              | Rabies                       |                         | Griswold             |
| Jan. 6-8    | Field                 | Laurens                                  | Diph. Prevention Campaign    |                         | Busby                |
| Jan. 14-16  | Field                 | Rockwell City                            | Address                      |                         | Griswold             |
| Jan. 27-29  | Field                 | Manlyville                               | Smallpox                     |                         | Griswold             |
| Feb. 11-13  | Field                 | Tipton                                   | Diphtheria                   | Contact                 | Busby                |
| Feb. 18     | Field                 | Washington, D. C.                        | Conference                   |                         | Griswold             |
| Feb. 19-20  | Field                 | Salem                                    | Scarlet fever                | Contact                 | Busby                |
| Mar. 2-4    | Field                 | Knoxville                                | Rabies                       |                         | Busby                |
| Mar. 5-6    | Field                 | Kearnsville                              | Rabies                       |                         | Busby                |
| Mar. 9-10   | Field                 | Davenport                                | Rabies                       |                         | Busby                |
| Mar. 18     | Field                 | Madison, Wise                            | Smallpox                     | Contact                 | Griswold             |
| Mar. 19-20  | Field                 | Bristow                                  | Smallpox                     | Contact                 | Griswold             |
| Apr. 30     | Field                 | Pt. Madison                              | Pemphigus Neonatorum         | Contact                 | Busby                |
| May 1       | Field                 | Hamlet                                   | Smallpox                     | Contact                 | Busby                |
| May 15-16   | Field                 | Polk City                                | Smallpox                     | Contact and carrier     | Busby                |
| Aug. 4      | Field                 | Saylor Township, Polk Co.                | Typhoid                      | Carrier                 | Busby                |
| Aug. 5      | Field                 | Kasper                                   | Poliomyelitis                | Contact and carrier     | Busby                |
| Aug. 21-23  | Field                 |  |                              |                         |                      |



TABLE 10—(Continued)

| Date        | Type of Investigation  | Town or City                | Disease                  | Probable Mode of Spread | By Whom Investigated |
|-------------|------------------------|-----------------------------|--------------------------|-------------------------|----------------------|
| Sept. 4     | Address.               | Eldora                      | Diphtheria               | Contact                 | Busby                |
| Sept. 5     | Field                  | Adams                       | Polio-myelitis           | Contact                 | Busby                |
| Sept. 8-9   | Field                  | Wolcott                     | Diphtheria School Survey | Milk                    | Busby                |
| Sept. 17    | Field                  | Newton                      | Typhoid                  | Diphtheria              | Busby                |
| Sept. 18-19 | Field                  | Wolcott                     | T. A. Admin.             | Diphtheria              | Busby                |
| Sept. 22    | Field                  | Wolcott                     | T. A. Admin.             | Contact                 | Busby                |
| Sept. 23    | Field                  | Wolcott                     | Polio-myelitis           | Contact                 | Busby                |
| Sept. 29-30 | Field                  | Portsmouth                  | Polio-myelitis           | Contact                 | Busby                |
| Oct. 9      | Field                  | LeMars                      | Address teachers.        | Contact                 | Busby                |
| Oct. 14-15  | Field                  | Charles City                | Diphtheria               | Contact                 | Busby                |
| Nov. 16     | Address.               | Des Moines                  | Diphtheria               | Contact and carrier     | Busby                |
| Nov. 17-18  | Field                  | Jefferson                   | Diphtheria Prevention    | Unknown                 | Busby                |
| Nov. 25     | Field                  | Rockwell City               | Typhoid                  | Contact                 | Busby                |
| Nov. 30     | Field                  | Neola and Underwood         | Smallpox                 | Contact                 | Busby                |
| Dec. 2-3    | Field                  | Amamosa                     | Diphtheria               | Contact                 | Busby                |
| Dec. 17-8   | Field                  | Amamosa                     | Diphtheria               | Contact                 | Busby                |
| Dec. 11-12  | Field                  | Clinton                     | Smallpox                 | Contact and carrier     | Busby                |
| Dec. 14-16  | Field                  | Clinton                     | Smallpox                 | Contact                 | Busby                |
| Dec. 17     | Field                  | Alton                       | Smallpox                 | Contact                 | Busby                |
| 1926        |                        |                             |                          |                         |                      |
| Jan. 11     | Field                  | Wilton                      | Scarlet fever            | Contact                 | Busby                |
| Jan. 17     | Address.               | Wellman                     | Diphtheria               | Contact                 | Busby                |
| Jan. 18-21  | Field                  | Clinton                     | Scarlet fever            | Contact                 | Busby                |
| Jan. 23     | Field                  | Clinton                     | Diphtheria Prevention    | Contact                 | Busby                |
| Jan. 25-28  | Field                  | Clinton                     | Diphtheria Prevention    | Contact                 | Busby                |
| Feb. 1-3    | Field                  | Clinton                     | Diphtheria Prevention    | Contact                 | Busby                |
| March       | No investigations made | from Iowa City. (See below) | Smallpox                 | Contact                 | Busby                |
| April       | Field                  | Creston                     | Smallpox                 | Contact                 | Busby                |
| May         | Investigations made    | from Iowa City.             | Polio-myelitis and T. B. | Contact                 | Wallace              |
| June        | Field                  | Rockwell City               | Smallpox                 | Contact                 | Wallace              |
| Jan. 1      | Field                  | Waterloo and Dewar          | Smallpox                 | Contact                 | Wallace              |
| Jan. 30     | Field                  | Denison and Beloit          | Smallpox                 | Contact                 | Wallace              |
| Mar. 3      | Field                  |                             |                          |                         |                      |

TABLE 11—EXAMINATIONS MADE AT AFFILIATED LABORATORIES  
JULY 1924—JUNE 30, 1926

| Laboratory     | Diphtheria | Tuberculosis | Typhoid | Miscellaneous | Total  |
|----------------|------------|--------------|---------|---------------|--------|
| Ames           | 1,542      | 14           | 8       | 110           | 1,642  |
| Atlantic       | 24         | 8            | 1       | 19            | 52     |
| Burlington     | 645        | 96           | 53      | 270           | 1,064  |
| Carroll        | 0          | 0            | 0       | 116           | 116    |
| Cedar Rapids   | 766        | 111          | 12      | 265           | 1,154  |
| Clinton        | 20         | 0            | 0       | 30            | 50     |
| Council Bluffs | 233        | 30           | 6       | 156           | 496    |
| Des Moines     | 5,320      | 45           | 28      | 1,094         | 7,387  |
| Dubuque        | 2,847      | 116          | 255     | 1,969         | 5,187  |
| Fort Dodge     | 58         | 88           | 10      | 38            | 144    |
| Grinnell       | 145        | 66           | 26      | 84            | 321    |
| Keokuk         | 88         | 30           | 87      | 58            | 213    |
| Mason City     | 512        | 91           | 8       | 658           | 1,369  |
| Sheffield      | 0          | 0            | 0       | 63            | 63     |
| Sioux City     | 2,320      | 295          | 50      | 14,195        | 16,860 |
| Washington     | 1,000      | 31           | 3       | 164           | 1,238  |
| Total          | 15,532     | 997          | 492     | 20,199        | 37,240 |

Grand total for the biennial period, 37,240.

## LABORATORY RECORDS SECTION

Letter correspondence, mailing reports of specimens, filing and the permanent records for the sections of bacteriology, serology, epidemiology and water laboratory, are taken care of in this section. It will be seen that an increase of work in any one, or all, of these divisions, gives a corresponding increase in the records division. The most noticeable increase has been in the registration of the serologic specimens. The clerical work, however, has not become burdensome or monotonous to any one of the staff, as there is no definite separation of work here, but each one has the responsibility of the progress of the work as a whole. At present the staff consists of four persons.

The following figures give an idea of the type of examinations and reports sent. The letter reports from the State Bacteriological Laboratory, many of the Water Laboratory reports, and the reporting of epidemics from the Epidemiological Division, often require detailed information, and must therefore be more or less personal. As will be seen, these are, however, in the minority and the work of the several divisions is greatly facilitated by using printed forms wherever this can be done satisfactorily.

|                                      | 1924-5 | 1925-6 | 1924-6  |
|--------------------------------------|--------|--------|---------|
| State Bacteriological Laboratory     |        |        |         |
| Report blanks                        | 23,413 | 23,708 | 47,121  |
| Letter reports                       | 559    | 404    | 963     |
| Serological Division (report blanks) | 50,006 | 52,337 | 102,343 |
| Water Laboratory                     | 2,086  | 2,175  | 4,261   |
| Epidemiology                         | 32     | 32     | 64      |
| Total                                | 76,096 | 78,656 | 154,752 |

It will be seen by comparison that there is a variation in the total amount of the water examinations and the number of reports sent out. This is due to the fact that the total examinations include the city water and swimming pools of Iowa City and the University, which reports are not covered by a regular printed form.

The type of examination and totals of the branch laboratories will be seen in Table 11. This data is collected monthly. It is done by sending out request cards each month to the several branch laboratories to be filled out and returned. The total of these reports are not, however, included in the summaries, as it does not indicate any work done here except that handled by the records division.

A summary of the work of the biennium and the annual and biennial volume of work since the establishment of the laboratory are given below:

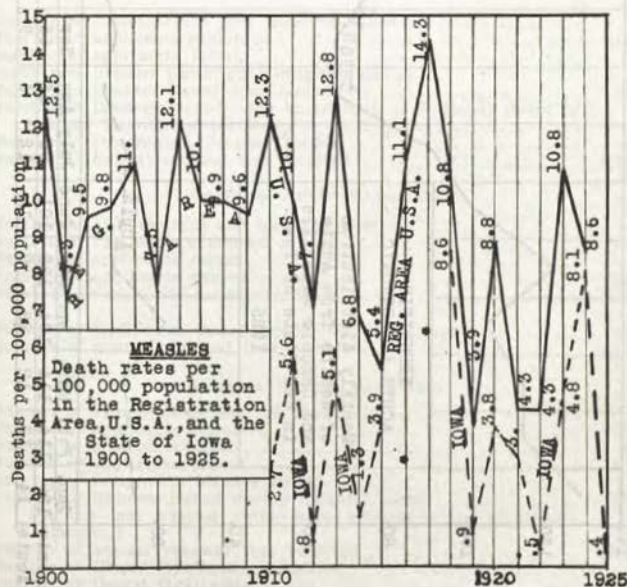
**SUMMARY OF WORK OF STATE HYGIENIC LABORATORIES FOR THE BIENNium**  
(BRANCH LABORATORIES NOT INCLUDED)

|  | 1924-5         | 1925-6         | Summation | Total          |
|--|----------------|----------------|-----------|----------------|
| <b>I. Diagnostic Division--</b>  |                |                |           |                |
| a. Outfits distributed.....  | 47,147         | 51,336         | 98,483    |                |
| b. Specimens received:   |                |                |           |                |
| Diphtheria.....  | 17,831         | 17,554         | 35,385    |                |
| Typhoid.....   | 1,347          | 1,561          | 2,908     |                |
| Tuberculosis.....  | 4,241          | 4,563          | 8,804     |                |
| Rabies.....  | 309            | 189            | 498       |                |
| Meningitis.....  | 12             | 7              | 19        |                |
| Miscellaneous.....   | 154            | 211            | 365       |                |
| Total.....   | 71,125         | 75,448         | Summation | 146,573        |
| <b>II. Serological Division--</b>  |                |                |           |                |
| a. Outfits distributed.....  | 42,602         | 45,120         | 87,722    |                |
| b. Specimens received:   |                |                |           |                |
| Blood.....   | 46,029         | 47,906         | 93,935    |                |
| Spinal fluid.....  | 1,344          | 1,229          | 2,573     |                |
| Gonorrhea.....   | 2,533          | 3,475          | 6,008     |                |
| Bac. of Ducrey.....  | 3              | 8              | 11        |                |
| Spirochete.....  | 17             | 14             | 31        |                |
| Total.....   | 92,608         | 97,457         | Summation | 190,065        |
| <b>III. Water Analysis Division--</b>  |                |                |           |                |
| Containers sent out.....   | 1,801          | 1,985          | 3,786     |                |
| a. Water.....  | 3,532          | 3,888          | 7,420     |                |
| b. Ice.....  | 15             | 17             | 32        |                |
| c. Sewage.....   | 26             | 28             | 54        |                |
| Total.....   | 5,394          | 5,912          | Summation | 11,306         |
| <b>IV. Epidemiology Division--</b>   |                |                |           |                |
| Investigations:  |                |                |           |                |
| Field.....   | 27             | 29             | 56        |                |
| Trips made in the interest of the public health other than investigations..... | 5              | 3              | 8         |                |
| Total.....   | 32             | 32             | Summation | 64             |
| <b>V. Records Division--</b>   |                |                |           |                |
| State Bacteriological Laboratory:  |                |                |           |                |
| Report blanks.....   | 23,413         | 25,706         | 49,119    |                |
| Letter reports.....  | 559            | 404            | 963       |                |
| Wassermann Division.....   | 50,006         | 52,337         | 102,343   |                |
| Water Laboratory.....  | 2,086          | 2,175          | 4,261     |                |
| Epidemiology.....  | 32             | 32             | 64        |                |
| Total.....   | 76,096         | 78,656         | Summation | 154,752        |
| <b>Grand total.....</b>  | <b>245,235</b> | <b>257,505</b> |           | <b>502,740</b> |

**ANNUAL AND BIENNIAL VOLUME OF WORK SINCE ESTABLISHMENT OF LABORATORY**

(INCLUDING REPORTS SENT OUT FROM RECORDS DIVISION, 1924-25-1925-26)

| Year | Fiscal Period                   | Volume  | Biennium | Volume  |
|------|---------------------------------|---------|----------|---------|
| 1    | July 1, 1904-June 30, 1905..... | 3,580   | 1st      | 8,779   |
| 2    | July 1, 1905-June 30, 1906..... | 5,199   |          |         |
| 3    | July 1, 1906-June 30, 1907..... | 8,423   | 2nd      | 17,280  |
| 4    | July 1, 1907-June 30, 1908..... | 8,836   |          |         |
| 5    | July 1, 1908-June 30, 1909..... | 10,437  | 3rd      | 22,961  |
| 6    | July 1, 1909-June 30, 1910..... | 12,524  |          |         |
| 7    | July 1, 1910-June 30, 1911..... | 13,437  | 4th      | 27,078  |
| 8    | July 1, 1911-June 30, 1912..... | 13,641  |          |         |
| 9    | July 1, 1912-June 30, 1913..... | 17,464  | 5th      | 35,432  |
| 10   | July 1, 1913-June 30, 1914..... | 17,998  |          |         |
| 11   | July 1, 1914-June 30, 1915..... | 14,601  | 6th      | 40,486  |
| 12   | July 1, 1915-June 30, 1916..... | 23,793  |          |         |
| 13   | July 1, 1916-June 30, 1917..... | 23,752  | 7th      | 46,880  |
| 14   | July 1, 1917-June 30, 1918..... | 29,128  |          |         |
| 15   | July 1, 1918-June 30, 1919..... | 43,715  | 8th      | 129,705 |
| 16   | July 1, 1919-June 30, 1920..... | 85,989  |          |         |
| 17   | July 1, 1920-June 30, 1921..... | 108,662 | 9th      | 298,978 |
| 18   | July 1, 1921-June 30, 1922..... | 190,316 |          |         |
| 19   | July 1, 1922-June 30, 1923..... | 282,911 | 10th     | 552,843 |
| 20   | July 1, 1923-June 30, 1924..... | 209,532 |          |         |
| 21   | July 1, 1924-June 30, 1925..... | 245,235 | 11th     | 502,760 |
| 22   | July 1, 1925-June 30, 1926..... | 257,505 |          |         |



\* Figures incomplete



## DIVISION OF EXAMINATIONS AND LICENSES

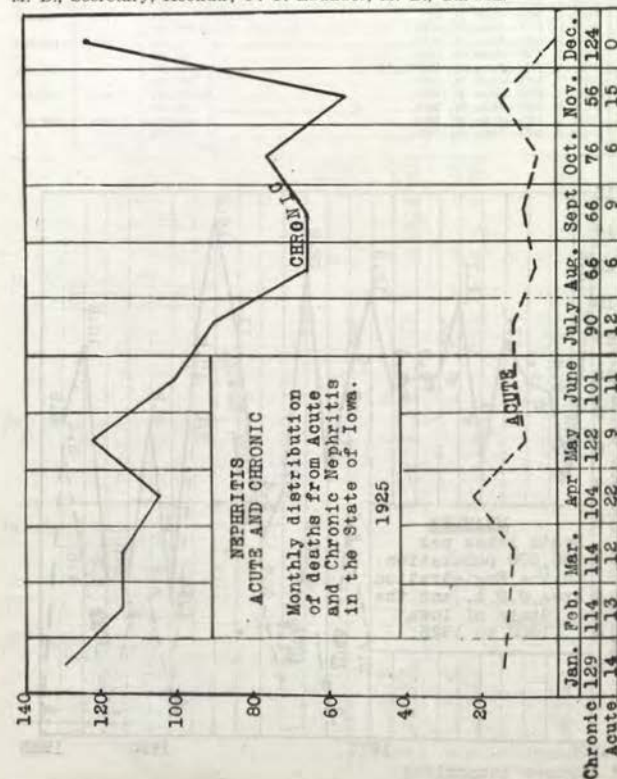
Under the provisions of Section 2186, Code 1924, there was created a Division of Examinations and Licenses for the practice of certain professions named in Section 2439, as follows:

Medicine and Surgery, Podiatry, "Osteopathy," "Osteopathy and Surgery," Chiropractic, Nursing, Dentistry, Dental Hygiene, Optometry, Pharmacy, 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.

The following boards served during the biennial period:

**MEDICAL**—Wm. Jepson, M. D., Chairman, Sioux City; Frank M. Fuller, M. D., Secretary, Keokuk; F. T. Launder, M. D., Garwin.



**NURSES**—Sara O'Neill, R. N., Chairman, Sioux City; Frances G. Hutchinson, R. N., Secretary, Council Bluffs; Jane M. Wiley, R. N., Cedar Rapids.

**DENTAL**—H. J. Altfillisch, D. D. S., Chairman, Dubuque; Carl B. Miller, D. D. S., Secretary, Des Moines; L. V. Feike, D. D. S., Des Moines; H. D. Coy, D. D. S., Hamburg; J. J. Booth, D. D. S., Marion.

**OPTOMETRY**—Alfred J. Meyer, Chairman, Davenport; Fred Beauchamp, Secretary, Rockwell City; James McDonald, Washta.

**CHIROPRACTIC**—S. E. Julander, D. C., Chairman, Des Moines; Myrtle E. Long, D. C., Secretary, Des Moines; R. B. Blean, D. C., Marshalltown.

**EMBALMING**—Jesse A. West, L. E., Chairman, Sioux City; F. W. Alexander, L. E., Secretary, Conrad; Bert L. Zuver, L. E., Mason City.

**PODIATRY**—Wm. von M. Gerard, Chairman, Cedar Rapids; Sumner J. Olson, Secretary, Des Moines; Paul M. Hawk, Waterloo.

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 also 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.....  | 5     |
| Number of applicants examined .....  | 186   |
| Number of applicants failed .....  | 1     |
| Number of licenses issued upon examination .....   | 73    |
| Number of licenses issued upon reciprocity .....   | 98    |
| Number of licenses issued upon recognition of National Board of Medical Examiners' certificate ..... | 3     |
| Number of Itinerants' Licenses issued .....  | 6     |
| Number of annual renewal fees received .....   | 6,395 |

## BOARD OF NURSE EXAMINERS

|   |       |
|---|-------|
| Number of examinations and meetings held.....             | 8     |
| Number of applicants examined .....                       | 894   |
| Number of applicants failed .....                         | 34    |
| Number of applicants passed .....                         | 860   |
| Number of reciprocity certificates issued .....           | 73    |
| Number of certificates issued during biennial period..... | 933   |
| Number of annual renewal fees received.....               | 4,154 |

## BOARD OF DENTAL EXAMINERS

|  |       |
|--|-------|
| Number of examinations and meetings held.....                        | 4     |
| Number of applicants examined .....                                  | 178   |
| Number of applicants failed .....                                    | 47    |
| Number of applicants passed .....                                    | 131   |
| Number of reciprocity licenses issued .....                          | 3     |
| Number of licenses issued during biennial period.....                | 131   |
| (Of the last number three were applicants for reciprocity licenses.) |       |
| Number of annual renewal fees received.....                          | 2,932 |
| Number of Dental Hygienists examined .....                           | 2     |
| Number of Dental Hygienists passed .....                             | 2     |
| Number of Dental Hygienists renewal fees received.....               | 20    |

## BOARD OF OPTOMETRY EXAMINERS

|   |    |
|---|----|
| Number of examinations and meetings held..... | 5  |
| Number of applicants examined .....           | 26 |
| Number of applicants failed .....             | 7  |
| Number of applicants passed .....             | 19 |
| Number of reciprocity licenses issued .....   | 8  |

|   |       |
|---|-------|
| Number of licenses issued during biennial period..... | 27    |
| Number of annual renewal fees received .....          | 1,217 |
| Number of Itinerants' Licenses issued .....           | 19    |

## BOARD OF CHIROPRACTIC EXAMINERS

|  |       |
|--|-------|
| Number certified to department for licenses upon examination.. | 244   |
| Number certified for reciprocity licenses.....                 | 14    |
| Number of Itinerants' Licenses issued .....                    | 1     |
| Number of annual renewal fees received.....                    | 1,691 |

## BOARD OF OSTEOPATHIC EXAMINERS

|   |     |
|---|-----|
| Number of applicants certified to practice Osteopathy .....             | 56  |
| Number of applicants certified to practice Osteopathy and Surgery ..... | 3   |
| Number of applicants certified for reciprocity licenses .....           | 14  |
| Number of annual renewal fees received (1925-1926).....                 | 375 |
| (Not under State Department of Health, 1924-1925.)                      |     |

## BOARD OF EMBALMER EXAMINERS

|   |       |
|---|-------|
| Number of examinations and meetings held..... | 4     |
| Number of applicants examined .....           | 215   |
| Number of applicants failed .....             | 110   |
| Number of applicants passed .....             | 105   |
| Number of reciprocity licenses issued.....    | 11    |
| Number of annual renewal fees received.....   | 3,127 |

## BOARD OF PODIATRY EXAMINERS

|  |     |
|--|-----|
| Number of meetings held.....   | 2   |
| No examinations were held during the biennial period, the board met to organize in accordance with Sec. 2459, prepare and adopt rules and regulations relating to examinations and reciprocity. Also to certify to the department the schools to be recognized and the states with which reciprocity may be established. |     |
| Number of annual renewal fees received.....  | 120 |

## ANTITOXIN AND OTHER PROPHYLACTICS

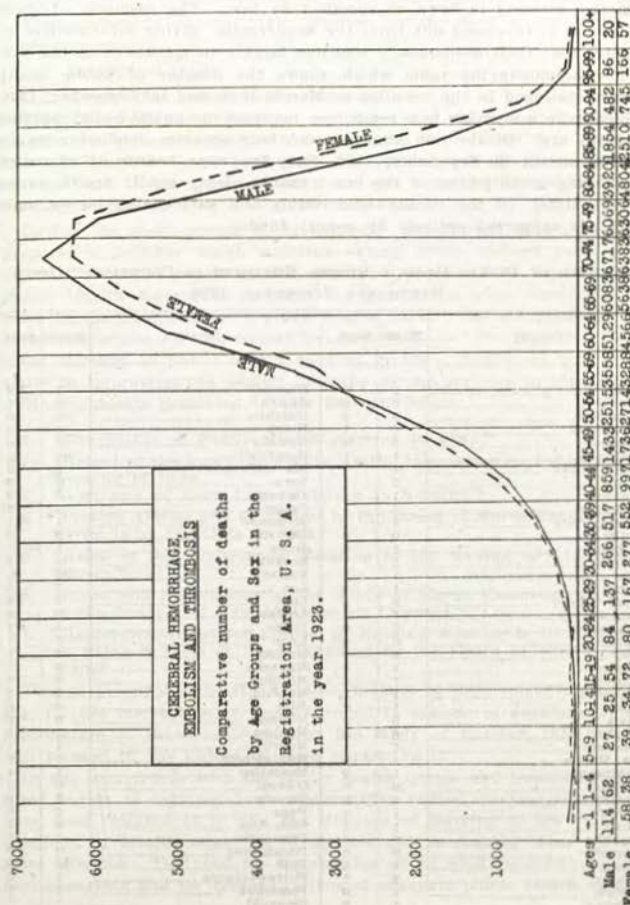
The following shows the extent of operations in the distribution of antitoxin and other prophylactics.

The cost of material for rendering a person immune to typhoid fever is 28 cents; to smallpox 8 cents and to diphtheria 18-1/3 cents.

|   |         |
|---|---------|
| No. of packages Diphtheria antitoxin.....       | 13,435  |
| No. of packages Diphtheria toxin antitoxin..... | 22,135  |
| No. of packages Tetanus antitoxin.....          | 7,115   |
| No. of tubes Smallpox vaccine.....              | 165,069 |
| No. of packages Typhoid vaccine.....            | 8,301   |
| No. of Pasteur treatments for Rabies.....       | 396     |
| No. of ampuls Silver Nitrate.....               | 41,500  |

## DIVISION OF NURSING

For some four years prior to March, 1926, the public health nursing activities of the department had been carried on in a semi-official manner by the Public Health Nursing Division of a non-official health agency.





The State Department of Health made temporary arrangements for an official bureau in March, 1926. Miss Edith Swaine was placed in charge. There were then 183 nurses said to be engaged in public health nursing. Some of these were engaged entirely in family case work, others were employed as overseers of the poor, still others were engaged entirely in the giving of first aid. Of the one hundred eighty-three nurses, said to be engaged in public health nursing in March, 1926, more than one-sixth had not been licensed by the department to practice nursing in Iowa as specified by law. The response of these nurses to letters sent out from the department, giving information indicates that their delinquency was due largely to ignorance of the law.

The accompanying table which shows the number of public health nurses stationed in the counties in March, 1926, and in September, 1926, indicates in a measure how temporary many of the public health nursing services are. Of the one hundred and four agencies employing public health nurses in September, 1926, forty-five were boards of education employing seventy-nine of the one hundred eighty public health nurses in the state. Of the twenty-three county and part county nurses, only four are supported entirely by county funds.

NUMBER OF PUBLIC HEALTH NURSES EMPLOYED IN COUNTIES IN IOWA  
MARCH AND SEPTEMBER, 1926

| County      | March | Sept. | County        | March | Sept. |
|-------------|-------|-------|---------------|-------|-------|
| Adair       | 0     | 0     | Hancock       | 1     | 0     |
| Adams       | 0     | 0     | Hardin        | 2     | 2     |
| Allamakee   | 0     | 0     | Harrison      | 0     | 0     |
| Appanoose   | 0     | 1     | Henry         | 0     | 0     |
| Audubon     | 0     | 0     | Howard        | 0     | 0     |
| Benton      | 1     | 1     | Humboldt      | 1/2   | 1/2   |
| Black Hawk  | 6     | 7     | Ida           | 0     | 0     |
| Boone       | 1     | 1     | Iowa          | 0     | 0     |
| Bremer      | 1     | 1     | Jackson       | 0     | 0     |
| Buchanan    | 1     | 1     | Jasper        | 3     | 2     |
| Buena Vista | 1     | 1     | Jefferson     | 1     | 1     |
| Butler      | 0     | 0     | Johnson       | 3     | 3     |
| Calhoun     | 1     | 0     | Jones         | 1     | 1     |
| Carroll     | 1     | 1     | Keokuk        | 0     | 0     |
| Cass        | 1     | 1     | Kossuth       | 1/2   | 1/2   |
| Cedar       | 1     | 0     | Lee           | 5     | 5     |
| Cerro Gordo | 5     | 5     | Linn          | 0     | 0     |
| Cherokee    | 1     | 1     | Louis         | 0     | 0     |
| Chickasaw   | 0     | 0     | Lucas         | 0     | 1     |
| Clarke      | 0     | 0     | Lyon          | 1     | 1     |
| Clay        | 0     | 0     | Madison       | 1     | 1     |
| Clayton     | 1     | 0     | Mahaska       | 1     | 1     |
| Clinton     | 7     | 6     | Marion        | 0     | 1     |
| Crawford    | 1     | 1     | Marshall      | 2     | 2     |
| Dallas      | 1     | 2     | Mills         | 0     | 0     |
| Davis       | 0     | 0     | Mitchell      | 0     | 0     |
| Decatur     | 0     | 0     | Monona        | 1     | 1     |
| Delaware    | 1     | 1     | Monroe        | 0     | 0     |
| Des Moines  | 5     | 5     | Montgomery    | 0     | 0     |
| Dickinson   | 1     | 0     | Muscatine     | 1     | 1     |
| Dubuque     | 10    | 9     | O'Brien       | 0     | 0     |
| Emmett      | 0     | 0     | Osceola       | 0     | 0     |
| Fayette     | 2     | 2     | Page          | 1     | 1     |
| Floyd       | 1     | 1     | Palo Alto     | 1     | 1     |
| Franklin    | 0     | 0     | Plymouth      | 2     | 2     |
| Fremont     | 0     | 0     | Pocahontas    | 0     | 0     |
| Greene      | 1     | 1     | Polk          | 48    | 45    |
| Grundy      | 2     | 2     | Pottawattamie | 5     | 6     |
| Guthrie     | 1     | 0     | Poweshiek     | 2     | 2     |
| Hamilton    | 0     | 0     | Ringgold      | 1     | 1     |

NUMBER OF PUBLIC HEALTH NURSES EMPLOYED—Continued

|           |    |   |            |    |    |
|-----------|----|---|------------|----|----|
| Sac       | 1  | 1 | Warren     | 2  | 2  |
| Scott     | 10 | 9 | Washington | 1  | 1  |
| Shelby    | 0  | 0 | Wayne      | 0  | 0  |
| Sioux     | 1  | 1 | Webster    | 3  | 3  |
| Story     | 2  | 2 | Winnebago  | 0  | 0  |
| Tama      | 0  | 1 | Winneshek  | 0  | 0  |
| Taylor    | 0  | 0 | Woodbury   | 12 | 13 |
| Union     | 1  | 1 | Worth      | 0  | 0  |
| Van Buren | 0  | 0 | Wright     | 2  | 1  |
| Wapello   | 2  | 2 |            |    |    |

There seems to be two main reasons for the lack of continuity of these services—

1st. Insufficient funds.

2nd. Unqualified public health nurses.

These obstacles to competent and adequate public health nursing services would be overcome, to a great degree, if provision were made by law requiring the levying of taxes for the support of county nursing services and if the qualifications for those engaging in public health nursing in the state were established by law.

During the short period of its existence, the Bureau of Nursing has prepared a bulletin which contains among other matters relating to nursing, a partial report of the committee appointed by the American Public Health Association to study the question of what constitutes the essential qualifications for a public health nurse. The acceptance of the recommendations of this committee as a basis for the requirements of those engaged in public health nursing in Iowa, would aid very materially in improving the quality of many of the services in the state.

Other subjects presented in this bulletin follow:

1. "The Status of Public Health Nursing in Iowa."
2. "Report of the American Public Health Association on Public Health Nursing in Iowa."
3. "Abstracts of Iowa Laws Relating to Nursing."
4. "Powers, Duties and Privileges of the Board of Nurse Examiners as Given It by the Code of 1924."
5. "Rules of the Department Relating to the Issuing of Licenses to Nurses."
6. "Rules and Regulations of the Board of Nurse Examiners Relative to the Conduct of Examinations for Licenses."
7. "Recommendations for Schools of Nursing Wishing to Be Approved as Being Schools of Good Standing by the Board of Nurse Examiners."

Though prepared especially for the guidance of those engaged in nursing, for the instruction of those enrolled in schools of nursing, for the information of those contemplating the study of nursing, this bulletin will be sent to any citizen of Iowa requesting it.

In our conferences with the public health nurses and those employing these nurses in eighteen Iowa communities visited, various suggestions have been received as to how the Division of Nursing in the State Department of Health might be of distinct aid in making these services more effective. The need for information as to what constitutes public health nursing and for demonstrations of adequate public health nursing



services is evident. While there is no denying that a person doing first aid nursing or social service work may also be doing public health nursing, it is not true that all engaged in these lines of endeavor are engaged in public health nursing. Rather it is most probable, that those employed primarily for first aid nursing or to do the work of overseer of the poor, have little or no time in which to do the work of the public health nurse. From the manual recently published by the National Organization for Public Health Nursing, the Bureau of Nursing has abstracted information bearing upon the various phases of public health nursing and the type of work that is to be done if it is rightfully to be considered public health nursing. These leaflets have been distributed to many Iowa communities.

Again, it is humanly impossible to demonstrate a public health nursing program in a week's time, in two weeks' time or even in a month's time as unfortunately has been attempted in some Iowa communities. Such so-called demonstrations have served only in giving communities an incorrect idea of what constitutes public health nursing and of the value an adequate public health nursing service might be to the community.

The preparation of qualified public health nurses includes the instruction given in the schools of nursing. To learn of the facilities provided for the instruction of their student nurses, the writer was delegated to visit and report upon twelve schools of nursing in various parts of the state. Some of these schools are maintaining a very high quality of work—admitting only students of mature years having adequate educational background; providing nursing experience on the various fields of medicine, surgery, pediatrics, obstetrics, etc.; providing not only competent but adequate supervision; providing class room instruction, comparable to that in our high schools and colleges; providing clean, attractive living quarters for the students; arranging hours of work, sleep and recreation as will make it possible for the students to maintain their physical health. Other schools, however, that are accredited by the State Department of Health upon the approval of the Board of Nurse Examiners, give evidence of providing their students with little instruction and with even less supervision; of providing their students with no experience in the nursing care of sick children, in the nursing care of communicable disease or in the nursing care of orthopedic cases. Graduates of some of these schools learn after graduation that because of the limited experience provided them during their three years in the hospital, they are not eligible for membership in such national nursing organizations as the American Red Cross and the National Organization for Public Health Nursing. To make known to the young women of Iowa who are contemplating entering the nursing profession, the standards of instruction offered by the schools of nursing it accredits, is certainly a duty of the State Department of Health. That the Board of Nurse Examiners might have a basis for approving and rating, one year hence, those schools of nursing wishing to be recognized by the department as schools of good standing, this bureau has prepared questionnaires which have been sent to those schools now on the accredited list.

During the past month the work of this bureau has included vising the credentials of more than three hundred applicants to the accredited schools of nursing, approving such as have been in accord with the requirements of the Board of Nurse Examiners for entrance to these schools.

During previous years, several agencies have been engaged in the placement of public health nurses in the state. Early in June, 1926, at a conference, called by the commissioner of health, of representatives of the principal agencies engaged in this placement work, incidents illustrating both duplication of effort and difficulties in encouraging the employment of better qualified nurses under this arrangement, were cited. It was, therefore, agreed by the representatives of the American Red Cross and the Iowa Tuberculosis Association present at this conference, that in the future the placement work in Iowa of these two organizations would be referred to the Bureau of Nursing of the State Department of Health. Correspondence in regard to the employment of public health nurses, has been carried on with twelve communities, six of which have employed the nurses suggested by this bureau.

Those experienced in the administration of public health work are agreed that it is impossible for one public health nurse to adequately serve a population of more than four thousand. Yet, in those Iowa communities having a public health nursing service, one nurse serves, on the average, a population of more than eleven thousand, as well as covering a territory of more than two hundred square miles. Of all the states in the union, Iowa ranks *thirty-second* in the ratio of public health nurses to the population served, and *twenty-seventh* in the ratio of public health nurses to the number of square miles. The neighboring states ranking ahead of Iowa in these respects are given in the accompanying table.

| State              | Population Served<br>by 1 Public Health<br>Nurse | Square Miles to 1<br>Public Health<br>Nurse |
|--------------------|--|---|
| South Dakota ..... | 10,000   |   |
| Kansas .....       | 9,000  |   |
| Missouri .....     | 8,000  | 85  |
| Illinois .....     | 8,000  | 57  |
| Nebraska .....     | 7,000  | 198   |
| Minnesota .....    | 6,000  | 174   |

It is sincerely hoped that the next legislature will make provision to have the Division of Nursing placed on a permanent basis.