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The MONTHLY BULLETIN will be sent to all health officers and deputies in the State. Health officers and deputies shall carefully read and file each copy for future reference. This is very important, for we expect to print instructions, rules and general information, which it will be necessary for officers to preserve.

ABSTRACT OF MORTALITY STATISTICS FOR FEBRUARY, 1902.

The total number of deaths reported for the month was 2,874, which is an annual death rate of 14.8. The deaths reported for the corresponding month last year were 3,350, making a rate of 17.3. There is accordingly, an improvement to note of 2.5 in the death rate. The deaths during the month under 1 year of age numbered 395, which was 14 per cent. of the total number of deaths. Between 1 and 5 the deaths numbered 193, or 7.1 per cent.; from 5 to 10, the number was 52, or 1.9 per cent.; from 10 to 15, 34, or 1.2 per cent.; 65 and over, 792, which is 29.3 per cent. of the total number. Pneumonia heads the list as a cause of death, 512 persons having died from it during the month. Other deaths and causes were as follows: Consumption, 337; violence, 119; cancer, 92; influenza, 84; typhoid fever, 38; diphtheria, 26; cerebrospinal meningitis, 21; diarrhoeal diseases, 13; whooping cough, 12; measles, 6; scarlet fever, 19; smallpox, 3. The smallpox deaths occurred one each in Cass, Delaware and Pulaski County. Cancer stands third as a cause of death in this month. The record of violence in the month of February for the last three years, is as follows: February, 1900, 87 deaths; February, 1901, 96 deaths; February, 1902, 119 deaths.

SANITARY SECTIONS: THE NORTHERN SANITARY SECTION, having a population of 839,835, and numbering 31 counties, had 848 deaths which is a rate of 13.1. The same section in the corresponding month last year reported 916 deaths, a rate of 14.8.

THE CENTRAL SANITARY SECTION, population 1,024,791, reported 1,266 deaths, a rate of 16. The corresponding month last year this section reported 1,407 deaths, a rate of 17.8.

THE SOUTHERN SANITARY SECTION, population 651,836, reported 760 deaths, a rate of 15.1. The same section in the corresponding month last year reported 923 deaths, a rate of 16.7. There appears thus a decided improvement in all of these sections as compared with February, 1901.

COUNTIES: The average death rate for the State during the month was 14.8. The counties having death rates in excess of this were: Blackford, 18.1; Dekalb, 16.6; Fulton, 18.6; Huntington, 15.2; Jasper, 15.4; Jay, 15.9; Lagrange, 17; Lake, 21.2; Miami, 16.5; Brown, 16; Clay, 17; Decatur, 15.9; Fayette, 15.4; Franklin, 23; Clinton, 17.7; Henry, 19.1; Madison, 16.6; Marion, 18.9; Monroe, 15.5; Putnam, 16.3; Shelby, 16.1; Tippecanoe, 17.4; Union, 23.1; Vermillion, 17.8; Vigo, 16.1; Wayne, 20; Clark, 17.1; Crawford, 15.4; Daviess, 16; Dearborn, 18.7; Dubois, 19.1; Gibson, 15.5; Knox, 21.8; Martin, 17.6; Ohio, 16.5; Orange, 16.9; Pike, 16.4; Posey, 23.2; Scott, 18.7; Switzerland, 18.6; Warrick, 16.3.

The county having the lowest death rate was Pulaski which returned the rate of 6.4

CITIES: All cities of the State, showing a total population of 847,302, report 1,148 deaths, a rate of 17.3. This is 3.5 higher than the average for the State. In the corresponding month last year the cities reported 1,200 deaths, a rate of 18.4. There is, therefore, a slight reduction in this comparison. The number of deaths under 1 year of age in the cities was 165; from 1 to 5, 87; from 5 to 10, 22; 10 to 15, 17; 65 and over, 261.

COMPARISON OF CITIES AND COUNTRY: The country deaths number 1,726, which is a rate of 13.5. There thus appears a difference in favor of the country of 3.8 in the rate. The death rate from consumption in the cities during the month was 218.2 per 100,000, and in the country 151.2. For typhoid fever the rate was, cities, 24.2; country, 17.2. Diphtheria, cities, 22.7; country, 8.6. Only in pneumonia did the country exceed the city rate. In this disease the comparison is, cities, 257.6; country, 268.

CITIES BY CLASSES: Cities having over 50,000 population, including Indianapolis and Evansville, report 302 deaths, a rate of 17.2. Compared with the corresponding month last year, these cities reported 309 deaths, a rate of 17.6.

CLASS B, having from 25,000 to 50,000 population, report 145 deaths, a rate of 16.1. This class includes Ft. Wayne, South Bend and Terre Haute. As compared with the corresponding month last year, this is a decrease of 3.1, for these cities then reported 174 deaths, a rate of 19.2.

CLASS C, having from 10,000 to 25,000 population, report 293 deaths, a rate of 17.4. This class includes 14 cities. As compared with the corresponding month last year shows a decrease of 1.2, for these cities in that month reported 314 deaths, a rate of 18.6.

CLASS D, having from 5,000 to 10,000 population, numbering 23 cities, reported 241 deaths, a rate of 19.3. These cities in the corresponding month last year reported 212 deaths, a rate of 17.

CLASS E, having a population under 5,000, including 40 cities, report 167 deaths, a rate of 16.5. The corresponding month last year these cities reported 191 deaths, a rate of 20.5.

The comparison of sanitary districts is given with chart on page 21.

DISEASE PREVALENCE IN FEBRUARY.

Smallpox was the most prevalent disease during February and pneumonia the second most prevalent. In January smallpox was first and pneumonia was fifth. The order of prevalence as reported by county health officers was: smallpox, pneumonia, bronchitis, influenza, rheumatism, tonsillitis, plueritis, measles, scarlet fever, diarrhoea, typhoid fever, diphtheria, erysipelas, whooping cough, puerperal fever, cerebro-spinal meningitis, cholera morbus and cholera infantum.

SMALLPOX IN FEBRUARY.

Smallpox increased this February over the corresponding month last year; 696 cases were reported in 34 counties for February, 1902, with three deaths. For February, 1901, 165 cases and two deaths were reported, in 15 counties. This makes an increase of 50 per cent. in deaths, 261 per cent. in cases, and 126 per cent. of area infected. Following is a list of the counties reporting, with number of cases and deaths:

Fountain county, cases 2; Gibson county, cases 38; Jay county, cases 5; Cass county, cases 5, deaths 1; Noble county, cases 24; Dubois county, cases 17; La-grange county, cases 2; Allen county, cases 5; Knox county, cases 54; Elkhart county, cases 16; Vanderburgh county, cases 28; Montgomery county, cases 40; Pulaski county, cases 8, deaths 1; Delaware county, cases 6; Clark county, cases 13; Adams county, cases 62; Morgan county, cases 7; Owen county, cases 3; Wells county, cases 8; Warrick county, cases 51; Shelby county, cases 6, deaths 1; Hancock county, cases 13; Huntington county, cases 17; Union county, cases 1; Marion county, cases 32; Perry county, cases 25; Vigo county, cases 8; Grant county, cases 6; Clay county, cases 3; Martin county, cases 6; Wayne county, cases 40; Porter county, cases 1; Jackson county, cases 2; Spencer county, cases 40; total cases 596.

WE are glad to present a picture of the great Jenner. A look at his benignant face will add to the veneration and respect which we honor ourselves in giving him. The discoverer of great truths is the man who moves the world onward and upward. Jenner discovered vaccination, the prophylaxis against smallpox, and the practical application of his discovery has mitigated the disease enormously. It

is not his fault that so many people are so impractical as to neglect or refuse to be vaccinated. Such impractical persons will, in all probability, have the disease, and even then not learn. It is hard for truth to prevail against ig-



DR. EDWARD JENNER,
The Discoverer of Vaccination.

norance, prejudice and superstition. And it is impossible, for even truth, to make headway against stupidity. Let us practically apply Jenner's great discovery and be rid of this nasty smallpox with its attendant ills.

* * *

VACCINATION PER OS: Dr. F. A. Benham, a homeopathic physician, practicing at Elkhart, writes us: "I am frequently called upon to vaccinate persons, and during the last four years I have complied with their request in what I deem the safest and best way. I procure from the pharmacists, Boeric & Tafel, of Philadelphia, established in 1835 and still doing business, who get from thg Mulford vaccine stables, of Philadelphia, pure animal vaccine virus, and that I administer per os instead of scarification. My course has been accepted as right and satisfactory until this season. Now our present health officer, Dr. Hoopingarner, objects to my mode of vaccination; still the people prefer it. Thus the officer causes much trouble by attempting to keep children out of school, even after they have been bona fide vaccinated. Does

this method of vaccination answer the requirements of the law compelling vaccination of school children before they can enter school, or does the law specify that vaccination shall be performed by scarification on the arm?"

We do not for one moment believe that the disease "vaccinia" may be produced by introducing vaccine virus into the stomach. One would probably hesitate to take such a substance into his mouth, the objection being purely æsthetic. We are compelled to uphold the local health officer, Dr. Hoopingarner, in his requirements that vaccination be performed by scarification.

* * *

WANTS PURE VIRUS: Mr. H. T. Koerner, president of the town board of Birds Eye, writes us: "Where can I get vaccine which is certainly pure? We had some vaccinating done here last year with presumably impure virus, for there were many exceedingly sore arms. Those who had the untoward experience say they would rather have smallpox, and this prevents many from being vaccinated. I am inclined to take this view, but if you can send me some vaccine which you know to be pure, I will have myself and entire family vaccinated." We sent Mr. Koerner some pure vaccine and told him how the operation of vaccination should be conducted and what care should be taken afterward. There are all too many doctors who have not yet learned that vaccination is a minor surgical operation which requires skill, knowledge and care.

* * *

SMALLPOX QUARANTINE: A physician of Huntington writing to us says: "Several of the leading doctors here are skeptical of the presence of smallpox. The disease is typical in many instances and is occurring in adults. The skeptical doctors vaccinate, but only when their patients insist upon it. One of these physicians says: 'This eruptive disease may be smallpox, but I do not believe it for I have not seen the bug under the microscope.' At a boarding house on the west side, where two or three smallpox patients are quarantined, meals are taken to the house three times a day from a neighboring house and the soiled napkins, dishes, etc., are immediately returned by the patients without any cleansing or disinfection. At this same house a few days ago, the landlady was observed to raise the upstairs window and throw out a bundle of soiled clothes to a boy to carry some distance to a washwoman."

Our comment upon the above statements, assuming them to be correct, would be that the people seemed desirous of having smallpox, for they adopt the very best means possible for transmitting it from person to person. Quarantines conducted as above described, are a farce and an expense that is useless, deleterious and unnecessary. We hope that our informant is mistaken in his statements, yet such conditions as he has described we have witnessed in many parts of the State.

* * *

SORRY: Dr. ——— is now very sorry he did not promptly make out a certificate of death for Theresa S. Adams, of Clark County, who died in October, 1900.

Undertaker ——— is also sorry he did not procure a burial permit before interring the remains. This sorrow comes from the fact that proof of the death is much needed in court to settle the estate, and also because the law must be reckoned with. All doctors and undertakers, and also all citizens, must speedily learn that mortality records are valuable to the State as well as to individuals, and the law therefore requires they shall be reported for record.

* * *

WAS THIS RIGHT? A case of smallpox developed in the Bliss Hotel at Bluffton. The patient was moved across the street to one of several rooms which were the annex to the hotel. These rooms were over a twenty-five cent store called "The Fair." The patient's room was in the extreme rear and well shut off from the hall by an ante-room, and the hall and stairway were disinfected daily with formaldehyde. No one was allowed to go up the stairway. This was certainly thorough isolation, and spread of the disease from a case so cared for was hardly likely. But there is another question. Suppose the presence of this case above "The Fair" injures the business by keeping customers away, would the proprietor be able to secure damages? It is the opinion of a good lawyer who has been consulted that: "The city authorities having moved the smallpox patient to the present place, and by so doing interfered with the business of a tradesman, the said tradesman can secure in court damages to the extent of losses he can prove."

* * *

NOT ALL ROSES: Dr. Severin, Bluffton's active and intelligent health officer, says in his report to the State Board: "I have found that being health officer is not all roses. People do not seem to understand the health laws are for their benefit. My greatest handicap is in the fact that our council does not understand that putting out disease is more important than putting out fire. Indeed, some of its members think it cranky to try to stop communicable diseases. They, of course, must learn, and until they do, we must be patient with them."

* * *

SMALLPOX CYCLONE: Dr. B. E. Miller, the wide awake health officer of Noble County, writes us: "A cyclone of smallpox has struck our city by way of the chickenpox route. There are probably one hundred cases now in Wayne Township. All but two or three cases I have so far seen are atypical. Our smallpox seed came from Huntington."

* * *

WOULDN'T BE VACCINATED: Dr. Barcus, health officer of Montgomery County, in a report to the State Board of Health says: "The first death from smallpox in Montgomery County occurred March 4th at New Richmond. I urged the man who died to be vaccinated when he was exposed, but he said: 'I have never been vaccinated, and I do not intend to be vaccinated.'" Continuing, Dr. Barcus remarks: "It seems some people have to die of the loathsome smallpox before the usefulness of

vaccination appears. A few members of the medical profession in this county still persist in declaring that this eruptive disease, which has now proved fatal in one instance, is not smallpox."

* * *

TYPHOID FEVER AT CAMBRIDGE CITY: In February eleven cases of typhoid fever in nine families suddenly appeared in Cambridge City. Dr. Wright, health officer, says: "All the cases had been using hydrant water. Two patients had been out skating and drank pond water. The well from which the city water is taken is partly supplied from a canal which has its source up the river. The canal, which is really a mill race, receives the discharges of the mill patrons and employes. About two or three weeks before these cases appeared, one of the mill owners was taken with typhoid fever and was complaining for several days before taking to his bed. He no doubt discharged his excreta into the race. It has never been the intention that our hydrant water should be used for drinking, but many citizens have used it nevertheless, principally because their pumps were frozen. As soon as I learned these facts a warning was issued and a stop was put to using the mill race for a sewer." How long will it be before people learn not to eat and drink their own excreta?

* * *

SERVIA: Servia is in Wabash County, and a good doctor—J. P. Buroker—lives there. He says in a letter to the State Board: "We have had mild smallpox at this place for three months. A series of marked grip symptoms are followed by papulous, vesicular and pustular eruptions. Some of the persons attacked have had chickenpox and so that disease is excluded. There are now four cases in Servia and they go about unrestricted, dropping scabs everywhere. It looks as if we would have a frightful time here." Those citizens of Servia who do not want to have smallpox should be successfully vaccinated.

* * *

MARKED IMPROVEMENT: In 1860 less than one per cent. of the population of Indiana was supplied with public water. By 1897 the number had increased to 30.5 per cent. In the same year the percentage of population living in sewerage towns was 18.

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GIBSON COUNTY SMALLPOX: Dr. Critchfield, health officer of Gibson County, in his monthly smallpox report says. "There were 28 cases of smallpox in this county in February. Three cases were confluent, no deaths. Eight cases are in the country, 6 near Sommerville in two families and two cases near Patoka in two families. The other 12 cases were in Princeton. I believe most of our trouble has grown out of the mistake of physicians who were unable to diagnose smallpox, and then, I regret to say, there were some physicians who have avoided the true diagnosis for fear that they would incur the disfavor of their patrons."

It seems unnecessary to make comment upon the above statement of Dr. Critchfield, yet we can not help but express regrets that there may be found in Indiana, or any State, citizens who have so little regard for their neighbors as to claim the right to spread disease. Much more do we regret that physicians may be found who merely for patronage will join in promoting this wrong. Such persons are not regardful of the Golden Rule.

* * *

SPITTING is not a nice subject, but it is so important in this community that we consider it until we have practically done away with the evil of it. If a man must spit on the highway, let him have the decency to go to the curb. The ordinance does not forbid that. It forbids spitting on the sidewalks where other persons may be befouled. We commend the Superintendent of Police for his expressed intention to enforce this ordinance, and suggest that he follow it up earnestly. Some of the policemen are great spitters themselves, and will no more arrest a loafer standing on the corner and spitting than a detective would arrest a policy shark.—Indianapolis News.

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VITAL STATISTICS is the science of numbers applied to the life history of communities and nations.—Dr. Newsholme.

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WHAT IT COSTS ANNUALLY IN INDIANA TO PERMIT BUTTER TO BE ADULTERATED: In every city and town in Indiana is to be found on sale what is known as "process butter." Of course it is not sold under this name, but is offered for sale as "pure country butter." Process butter is simply old rancid butter and passe oleomargarine washed in water containing soda to neutralize the acids which cause the rancidity, and then by aid of pepsin or chemical mixed with milk. The following directions will enable any one to make "process butter:"

Take 100 pounds of old butter and old oleomargarine which has "gone off sale" in groceries because it has spoiled, melt it carefully at as low a temperature as possible and strain out the flies, ants, hair and other dirt. Let the strained, melted stuff flow into ice water which is continually agitated in order to break up the fat into granules. The ice water must contain some soda, about one ounce to each five gallons. When the granulated fat rises to the top, which it will do upon standing, change the old "soda ice water" for fresh to wash the granules. Now having gotten your fat ready, mix it with an equal weight of milk in a revolving churn. The milk may be made to mix, or rather emulsionize with the butter by a simple trick, as follows: Warm the milk to 100 degrees and add enough good pepsin or rennet to change it to a firm, sweet clabber. In this state it may be easily mixed with butter. The old "off sale butter" will cost 8c. a pound and the milk will cost 2c. a pound. The 100 pounds of the first will cost \$8, and the second \$2, a total of \$10 for 200 pounds of process butter, or 5c. per pound. This

stuff is sold retail for 15c. a pound, and a profit of \$20 or 200 per cent. is realized. Now, as before said, this "half butter," for it is one-half milk, may be found on sale in every town and city in Indiana, and as milk is thereby sold at a butter price, us Hoosiers are badly swindled. Why isn't this swindling stopped? The answer is very simple. The legislature so far has refused an appropriation for the enforcement of the pure food law. Indiana's pure food law is most excellent in every particular and has been upheld by the Supreme Court in every point, but it won't enforce itself. The State Board of Health asked the last legislature for a laboratory in which to make analyses of food to detect and prove adulterations in the courts, and asked also for a proper appropriation for enforcing the law. Nothing was done, and people pay \$15,000 daily for adulterations. In the matter of butter alone they pay \$150 daily for adulterations, as appears from the following estimate:

If we assume that on the average each of the 2,650,000 inhabitants of our State eats daily one teaspoonful of butter, weighing one drachm (and the estimate is very low), then each day there is eaten 20,703 pounds, or ten tons. If now we further assume that 10 per cent. is adulterated, and we know positively it is over 20 per cent., then there are sold each day 2,000 pounds of adulterated butter. As one-half of this is water and is sold at 15c. per pound, we therefore spend \$150 per day for water in our butter. This amounts to \$44,750 per year. This, however, is almost nothing when compared with the sum total of loss on account of all kinds of adulterations which exist in the State. The sum total annually lost is not less than \$5,000,000. How long will it be before the legislature acts in this matter?

* * *

THE IDEAL AMERICA: Americans have put themselves in the fore-front of the modern world by virtue of their energy, their intelligence, their strong handling of their resources; but he is a very blind American who does not carry in his heart the burden of unsolved problems, and on his conscience the shame of unredressed wrongs. We do not want a discontented America, but we do want a dissatisfied America; an America entirely free from self-complacency; an America fully aware of its own defects and resolutely determined to overcome them; an America which finds joy in its ideals, not in its attainments.—The Outlook.

VACCINATION IN THE PAST.

Our readers will be interested to know how the people of this country acted one hundred years ago relative to smallpox and vaccination. Alice Morse Earle has an interesting article in The Chicago Record of recent date on "American Life a Century Ago," in which she entertainingly pictures the ravages of smallpox and the triumph of vaccination at that interesting period of our country's history. We heartily commend it to our readers.

The newspapers of the early century show how much excitement there was over the introduction of vaccination as a protec-

tion against smallpox. That disease was a horrible and universal scourge; far more people had suffered from it either through contagion or inoculation than had not had it. The latter class lived in daily terror of disfigurement and death. The words "pock-marked," "pock-fretten," "pock-broken," "pock-pitted," appear in nearly every personal description of the eighteenth century. It had brought not only death but business disaster and ruin to the colonists. New England had been devastated seven times by the disease. Inoculation had controlled it, but there seemed to be no hope of exterminating it. The first public notice of vaccination was in 1799.

In 1800 Dr. Waterhouse, of Cambridge, Mass., published a pamphlet on "The Prospect of Exterminating the Smallpox," etc. He at once vaccinated three of his children and four of his servants, and the boldness of his faith inspired confidence. He issued funny little tickets entitling persons to "One Inoculation." He received the virus from England in quill points and in infected thread.

ADOPTION OF VACCINATION.

It is interesting to see how quickly and with what intelligence people accepted vaccination. Dr. Waterhouse sent several supplies of lymph to President Jefferson, who, with his son-in-law, vaccinated over two hundred of their Virginia neighbors and servants. Whole towns turned out to be vaccinated, a hundred persons a day. Circulars of invitation were read in the pulpit. As proof was desired by some, twelve children who had been successfully vaccinated were afterward inoculated with smallpox, and a public spirited gentleman of Milton, Mr. Horton, gave his house as a hospital. The charge of twelve healthy children for two weeks must have kept him busy. At the close the children were discharged, none of them having taken the smallpox, and each was presented with a certificate, of which the following is a copy:

"JOSHUA BRIGGS."

YOU ARE HEREBY discharged from the Hospital, where you and eleven more appointed for that purpose have offered to all men by the test of Small Pox Inoculation a convincing proof of the never-failing power of that mild preventive, the cow pox.

WHILST you REMAIN a Living Token of Mercy, your mouth will delight to Testify your Gratitude for a Blessing Great as it is Singular of its kind, so that the hearts of men may unite with yours in praise to the Almighty Giver.

OLIVER HOUGHTON,

AMOS HOLBROOK, Chairman Committee of Vaccination.
Physician in Charge.

October 25, 1809.

This seemed so decisive that an annual inoculation was ordered in June, the time of which should be posted in public places, warned from house to house, and advertised in the newspapers, and to which strangers were invited. Due and significant gratitude to God for "so singular and admirable a blessing" was shown by permitting the vaccination to take place in the meeting house. The result of all this was a law in Massachusetts enforcing vaccination and the loathsome pest of smallpox never again had a foothold in the State until after the statute was, unfortunately, repealed in 1836.

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SMALLPOX IN CASS COUNTY: Dr. Busjahn reports as follows: "I have to record another case of smallpox in Allen Hood's family. The first case reported was never vaccinated. The patient was a young woman 23 years old, she died yesterday morning." What a pity the young woman was never vaccinated and her life saved thereby.

SMALLPOX AT WABASH: Mr. M. S. Teague writes us in regard to smallpox as follows: "My daughter attends the Wabash High School. On January 22d she had a chill in school and on January 23d she called on a doctor who gave her some medicine. January 25th she was broken out and called on the doctor. He said it was the medicine making her break out, and told her to go on to school. On the 27th, becoming alarmed, I went after Dr. Williams, and he was not at home; so I got another doctor to come to my house and vaccinate the four members of my family, for which I paid him \$5. He said the girl had smallpox and hung up a red rag, and next day sent a smallpox card for me to put out. There has been no doctor here since the smallpox card was hung up." We present this account of a citizen as a very severe comment upon the ability of a certain physician in Wabash County, to make a correct diagnosis. It is also a comment upon how the health law is enforced in that county. It further illustrates the very great difficulties which attend the fighting of infection when physicians do not know that infection exists, and are not competent to detect it.

THE DIFFERENTIAL DIAGNOSIS OF SMALLPOX.*

By William Thomas Corlett, M. D., L. R. C. P. (Lond.), Cleveland, Ohio,
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Smallpox does not always follow a uniform course, nor is it of equal severity in all persons attacked. In severity it likewise differs in different epidemics. Undoubtedly, individual peculiarities have much to do in determining not only the severity of the disease, but also its duration and clinical features. We occasionally meet with persons who seem to possess a natural immunity to the contagion; others, in whom the disease assumes a mild form, even when not under the protective influence of vaccination or a previous attack of variola. Since the introduction of vaccination, however, these modified forms of the disease have become far more common. In fact, at the present day, with general vaccination in vogue, varioloid is not only the most common, but of the greatest importance to the physician, on account of its harmless appearance and the difficulty of maintaining strict quarantine regulations. For we must not lose sight of the fact that *all forms of smallpox are essentially the same*, and the source of contagion, whether it be from a child, or a malignant case, affords no criterion as to the form the disease may assume in those exposed. Varioloid is, therefore, a mild form of smallpox, usually occurring in those who have been vaccinated, or have previously had the disease. It is a fact commonly observed that vaccination protects against the development of the variola poison for a certain though variable period. Gradually the time arrives when the system loses the complete protective influence of vaccinia, and, if exposure takes place, a mild form of variola develops. After an extensive study of the affection, covering

a period of eighteen years, and embracing epidemics in different countries where climatic conditions are at variance, the writer has formulated the definition of varioloid previously given as *the disease of exceptions*.

An important feature to bear in mind is the character of the lesions themselves. *The typical smallpox lesion is indurated*. This feature appears early in the development of the pock, and is the last to disappear. In anomalous smallpox or varioloid, there may be many in which induration can not be detected. In fact, the most prominent lesions may be composed of small blisters, containing either a clear serum or pus, which, when punctured, completely collapse, leaving no induration in the skin, and if the shrivelled epidemic covering be removed by slight friction, a small denuded area will result. This resembles what is seen in varicella, and lesions of this kind can not be considered as typical of variola. In all cases of variola, however, certain lesions will present the indurated appearance. Such lesions, when punctured, do not readily discharge their contents, but several punctures are necessary to evacuate them. After this is done friction will not cause denudation, but the pock remains as an elevated, ragged lesion.

During the initial stage the symptoms of smallpox often simulate cerebral meningitis more closely than any other disease. Again, the severe epigastric pains, accompanied by obstinate vomiting, has been mistaken for intussusception of the bowels and appendicitis. At other times, from the severe gastric disturbances during the stage of invasion the ingestion of toxic substance has been suspected. The erythematous rashes, which so frequently accompany the first symptoms of variola, have led to the belief that one had to do with a mixed infection, which most authorities regard as extremely rare.

Measles.—A possibility of error between measles and smallpox can only occur during the initial stage and the beginning of the stage of eruption. During the initial fever of smallpox it has been shown that an erythematous eruption is not infrequently observed. When widely diffused and blotchy it may be mistaken for measles, to which it often has a close resemblance. In measles, however, the rash appears later, usually during the third or fourth day, and first shows itself as reddish maculæ on the face and upper part of the trunk, while these are the last to be involved in the prodromal rash of variola. Furthermore, the catarrhal symptoms, which are so prominent in measles, are absent, or nearly so, in smallpox. On the other hand, severe lumbar pains are seldom encountered in measles. There is less likelihood of error during the eruptive stage. In the confluent form of variola, however, mistakes have been made. It should be borne in mind that the lesions in measles are flat, soft, and velvety to the touch, and when put on the stretch give rise to no perceptible thickening of the skin, while the early papules of smallpox are indurated, small and feel like buckshot embedded in the skin. In measles the blotches develop by peripheral extension until they spread out to dime-sized areas, while in smallpox the process of development is, though deeper, more circumscribed and seldom exceeds a split pea in size. Vomiting is not an in-

*Original abstract of paper read before the Ohio State Medical Society, May 10, 1899, at Springfield, Ohio.

frequent symptom in both diseases, although it is more constant in variola. In both diseases blotches may be detected in the fauces. With the appearance of the eruptive stage the temperature rapidly falls in variola, while no remission is observed in measles. The prevalence of an epidemic, or of other cases in the immediate vicinity, will sometimes facilitate the diagnosis, or at least put one on guard.

Scarlet Fever.—The prodromal rash of variola, which counterfeits scarlatina, is met with, for the most part, in mild cases, and is accompanied by little if any anginal symptoms. The premonitory symptoms are always severe in variola, while in scarlet fever, on the contrary, the premonitory symptoms are slight and may be entirely overlooked. The pulse, in the latter disease, is rapid, and is out of proportion to the mild fever, while in variola the fever and pulse lines run nearly parallel. In scarlet fever the erythematous blush appears first on the upper part of the chest, cheeks or neck. In variola the scarlatiform rash is best marked on the lower part of the abdomen and inner surface of the thighs. On careful examination, one may often distinguish between the two from the rash above. It is brighter in scarlet fever, and of a dull red in variola. Another distinguishing feature is the swelling of the cervical lymphatic glands so common in scarlet fever, and seldom, if ever, seen in an early stage of variola. The conspicuous papilla, or strawberry tongue, so constant in scarlet fever, is absent in variola. Finally, the age of the patient is often of assistance. It should be borne in mind that the prodromal rashes of variola seldom occur in young children, while adults seldom suffer from scarlet fever.

Impetigo.—In a communication from Dr. C. O. Probst Secretary of the Ohio State Board of Health, it was shown that the prevalence of supposed impetigo in several towns in Ohio had given rise to an undoubted epidemic of smallpox. During the past year, while making a series of observations on impetigo and its various forms, especially the bullous impetigo, or the so-called pemphigus contagiosus, the subject of the differential diagnosis between smallpox and impetigo was again brought forcibly to mind.

During the present epidemic I have taken occasion to study the various conditions bearing upon its differential diagnosis with impetigo, and in two instances have found the similarity most striking. The first occurred during the early stage of the disease, with few lesions present. The second, of which an admirable photograph was obtained, illustrates the tendency late in the course of variola to assume a bullous character. This is best marked on the hands, and to a less extent on the feet. It usually occurs about the twelfth or fifteenth day of the disease, and is due to secondary infection of the ordinary pus cocci, giving rise to a collection of serum under the epidermis surrounding the encrusted small-pox lesion. An intimate familiarity with the lesions in both diseases, however, would readily enable one to recognize either affection.

Chickenpox.—Unquestionably, many errors occur in determining between chickenpox and variola. In fact, in Germany, following the teachings of Hebra, and maintained by Kaposi, the two diseases are looked upon as identical. It has been clearly demonstrated, however,

that the two diseases have nothing in common save in the somewhat similar appearance of the eruptions.

Mild cases of variola, it is true, closely simulate varicella, and even the experienced diagnostician may, for a time hesitate between them. Investigations which are now under way by Dr. Perkins, of the Pathological Laboratory of the Lakeside Hospital, have already demonstrated that the lesions differ as to histological location as well as in the manner of their formation. Thus the first changes in variola take place deeply between the epidermis and the papillary layer of the derma. In varicella, the superficial strata of the epidermis are principally involved, and a serious exudate occurs at this point, resulting in a transparent thin walled vesicle; while in variola the shot like, deep seated induration and subsequent vesicular formation is sufficiently distinctive to warrant a differential diagnosis. The lesions in varicella, as a consequence, are easily destroyed, and when seen present a transparent, beady appearance, some of which having ruptured leave excoriated areas; whereas in variola it is impossible to rupture the lesions so as to evacuate the entire contents without numerous punctures or totally destroying the diseased area. But we must not lose sight of the fact that in varioloid many lesions may abort, producing a mixed eruption, and the presence of pus cocci often further masks its true nature. Again, as a rule, variola presents more uniformity of development, papules succeeded by a whitened appearance, giving rise to pustules, which is followed by desiccation forming blackish crusts. In varicella, on the contrary, multiform lesions are the rule; papules, vesicles and pustules, together with excoriated areas, are observed at the same time. This is produced by successive crops of papules in the same region of the body, which are not observed to the same extent in variola. The duration and development of the lesions are likewise of importance. In varicella they are short lived, an individual lesion seldom lasting but a day or two; whereas in variola they go through a regular series of development, and, excepting in abortive pocks, attain their maturity about the eighth day, after which desiccation and the formation of crusts follow. Usually a fortnight to three weeks completes the life history of the lesions. In mild cases of variola, sometimes called spurious smallpox or varioloid, the time of development is shortened, and in these cases the greatest difficulty in diagnosis arises. But even here the multiform character is less conspicuous, as well as the successive crops of the eruption; and although the lesions may not last but a week or even less, there will be found some which adhere to the type, and with close observation may be recognized with certainty.

Finally, the age of the patient is important. The writer has never encountered chickenpox after puberty, and the concensus of opinion bears out the statement that it is essentially a disease of childhood.

La Grippe.—During the presence of an influenza, such as has occurred in Cleveland during the past winter, most patients, and not a few physicians, have mistaken the premonitory symptoms of smallpox for "an attack of la grippe." When in due time an eruption has appeared, they, like the ancient Greeks, have not considered the

exanthem of sufficient importance to determine the name of the infection—hence have neglected, in many instances, the proper measures for limiting the spread of the disease.

Reiteration is not necessary, for a careful consideration of the symptoms will remove any doubt that may at first exist. The importance of making daily visits in all suspected cases, especially during a smallpox epidemic, can not be too strongly urged.

Syphilis.—The first patient sent to the smallpox hospital after its completion was a negro suffering from syphilis. The appearance of both eruptions on the palms and soles, often so prominent both in smallpox and syphilis sometimes renders their differentiation difficult. Added to this, the lesions on the mucous surfaces, which occur in both diseases, the clinical picture may be doubly confusing. The eruption on the palms and soles is always of diagnostic value; for while it occurs in varicella to a very limited extent, and is also present in syphilis, it never assumes the pustular character so prominent in the variolous eruption. That there is a distinguishing odor to variola I have never been able to confirm. An equally extensive suppuration of the skin from other causes, with like attention to cleanliness, will, according to my observation, give rise to the same nauseating stench.

Drug Eruptions.—Not infrequently during the past winter cases of suspected smallpox have presented themselves, with an eruption, which was ascertained to be caused by the ingestion of cubeba or copaiba. The potassium iodide likewise sometimes gives rise to a pustular eruption which, at first sight, may closely resemble that observed during the eruptive stage of variola. In these cases an accurate history of the previous condition is important. The absence of all febrile symptoms, the odor of the drug, which may frequently be detected, will usually enable one to arrive at a correct conclusion as to their nature.

Finally, in the differential diagnosis of smallpox the following points should be kept in mind:

First. One should consider the possible sources of infection. This may not be easily obtained in isolated or sporadic cases, nor at the beginning of an epidemic.

Second. In the eruptive fevers, whether or not the patient has previously had the smallpox which the symptoms most strongly point. This, however, should not be too strongly relied upon, especially in measles and scarlet fever, although with them our attack is commonly known to confer more or less immunity to subsequent invasion.

Third. The disease is most liable to be variola, when the most prominent symptoms are: Sudden onset of chills or rigors, severe headache, backache and vomiting, accompanied by a rapid rise of temperature, with delirium, constipation in adults and diarrhoea in children. Further, with the supervention of sweating, furred tongue, foetid breath, and the appearance of an irregular erythematous or petechial rash, first appearing and best marked on the curved triangle of Simon.

* * *

SMALLPOX AT HUNTINGTON: Smallpox appeared at Huntington in January. It seems there was

some hesitation at the beginning as to what the disease really was, but it did not take long for Dr. Wright, county health officer, assisted by Dr. Frye, city health officer, to make out what the trouble was. It is a matter worthy of special remark that the authorities of Huntington, headed by the mayor, Hon. Z. T. Dungan, took hold of the subject most vigorously. The following notice was left at every house in the city:

All persons who willfully violate any of the laws and rules pertaining to the prevention of smallpox, and particularly in regard to quarantine regulations, will be prosecuted according to law. Diagnoses of cases and orders given by health officers shall be considered absolute. Do not oppose health officers, but help them; they are your friends.

Accompanying this notice was another one signed by seventy-two business men. This notice read as follows:

We, the undersigned business men and citizens, believe and urge and command the following rules in regard to smallpox should be duly carried out, and the reasons therefor are by us concurred in:

That there is but one way to stamp out smallpox, and that is for everybody who has not been vaccinated within the last two years to be immediately vaccinated;

That every person should feel himself or herself a personal duty to aid the health officers in their duties, and to do what they can themselves to educate others what to do;

That prosecutions should follow all willful and stubborn violations of the health laws;

That vaccination when carefully done cannot result in serious harm, and that it is the lesser evil between smallpox and vaccination.

So far as we know, Huntington is the only city in Indiana which has taken such prompt and practical action to stamp out smallpox. Usually the business men think it is good policy to suppress the facts and depend upon such suppression to preserve their business. The business men of Huntington, however, knew full well that truth is mighty and will prevail, and that the only practical way to proceed was to acknowledge the presence of the disease and do all they could to put it out. When the smallpox is suppressed, then, of course, it does not exist to interfere with business. In some cities business men's associations have gone to the newspapers and told them not to publish anything in regard to smallpox, because it hurts business, and have threatened to withdraw their advertisements if the papers did not obey. To such business organizations, we point with pride to the business men of Huntington. These gentlemen know good business; they know what it is to be practical, for they propose to first kill the wolf and then go on with their business, and not content themselves with denying that the wolf is not in their midst. Wherever good, practical business men are found, the methods of the city of Huntington will be pursued.

* * *

ANTI-TUBERCULAR: Dr. Markley, secretary of the Wayne county medical society, writes: "Our society desires to put itself on record as an anti-tubercular one, and ready and anxious to do everything possible to relieve the State of the great white death. A committee of five has been appointed to report upon the subject."

CHART SHOWING GEOGRAPHICAL DISTRIBUTION OF DEATHS FROM CERTAIN COMMUNICABLE DISEASES.

NORTHERN SANITARY SECTION.

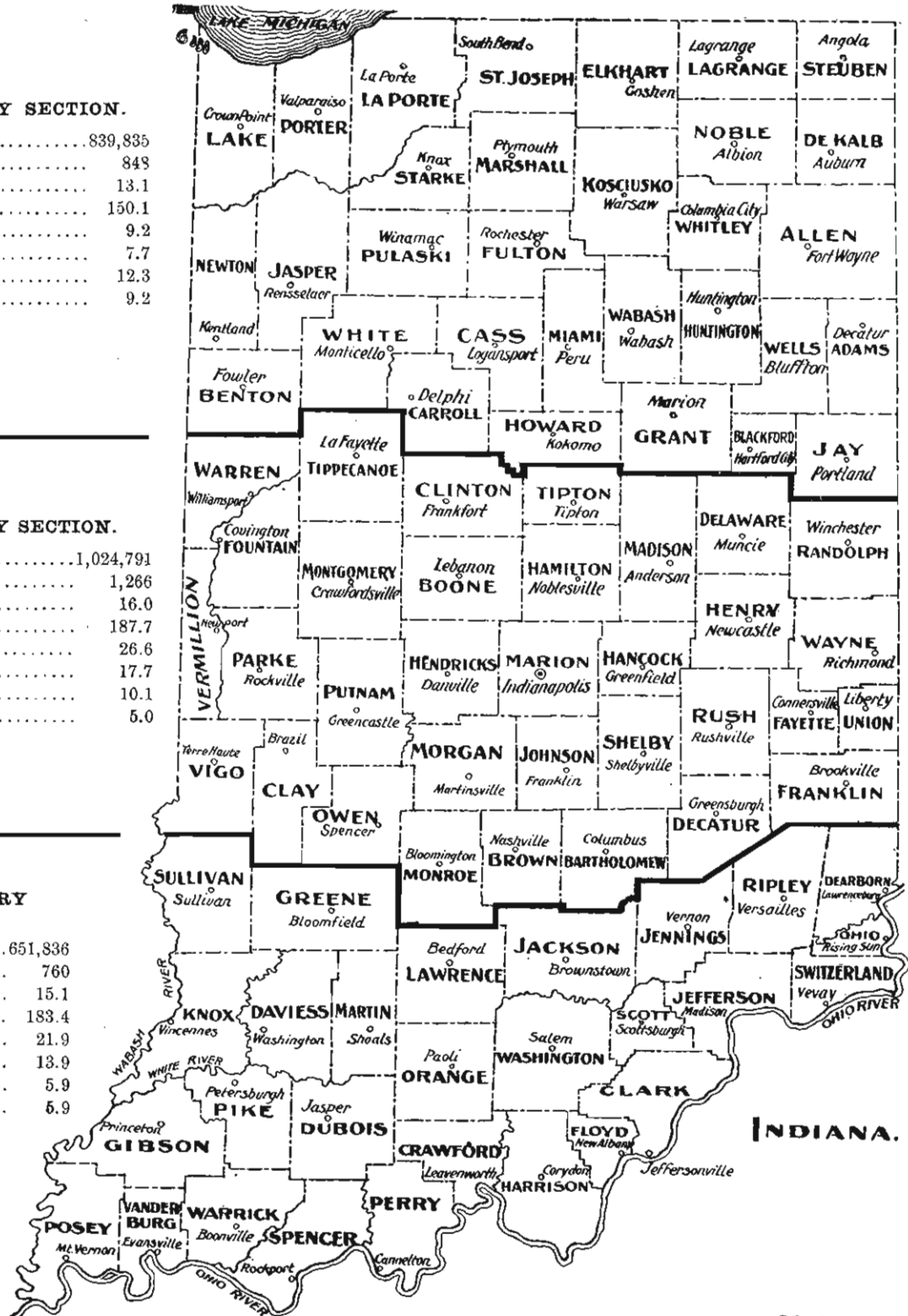
Total population	839,835
Total deaths	843
Death rate per 1,000	13.1
Consumption, rate per 100,000	150.1
Typhoid, rate per 100,000	9.2
Diphtheria, rate per 100,000	7.7
Scarlet fever, rate per 100,000	12.3
Diarrhoeal diseases, rate per 100,000	9.2

CENTRAL SANITARY SECTION.

Total population	1,024,791
Total deaths	1,266
Death rate per 1,000	16.0
Consumption, rate per 100,000	187.7
Typhoid, rate per 100,000	26.6
Diphtheria, rate per 100,000	17.7
Scarlet fever, rate per 100,000	10.1
Diarrhoeal diseases, rate per 100,000	5.0

SOUTHERN SANITARY SECTION.

Total population	651,836
Total deaths	760
Death rate per 1,000	15.1
Consumption, rate per 100,000	183.4
Typhoid, rate per 100,000	21.9
Diphtheria, rate per 100,000	13.9
Scarlet fever, rate per 100,000	5.9
Diarrhoeal diseases, rate per 100,000	5.9



Wm. B. Burford, Jr., Jns. J. B.

TABLE No. II. Deaths in Indiana by Cities During the Month of February, 1902.

CITIES.	Population, based on Census, 1900.	Total Deaths Reported for February, 1902.	Annual Death Rate per 1,000 Population.	Stillbirths.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.																							
					Under 1 Year.	1 to 5, inclusive.	5 to 10, inclusive.	10 to 15, inclusive.	65 Years and Over.	Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Diseases, Under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicæmia.	Cancer.	Violence.	Deaths in Institutions.	Smallpox.								
Cities over 50,000 Population	228,171	302	17.2	13	34	21	3	2	71	43	4	6	3	3		50		1	6		13	9	30											
Indianapolis	169,164	246	18.9	10	36	17	3	1	58	33	4	6	3	3		41		1	5		12	8	20											
Evansville	59,207	56	12.2	3	4	4		1	13	10						9					1	1	10											
Cities from 25,000 to 50,000 Population	116,787	145	16.1	6	26	9	1	3	34	20		1	1		1	22	1		5		6	7	10											
Ft. Wayne	45,115	52	14.9	2	7	4		2	10	9						5			2		2	3	7											
South Bend	35,999	41	14.8	3	8	3		1	11	9						5			2		4	4	3											
Terre Haute	35,673	52	18.9	1	11	2	1	1	13	2						3			4		4	4	3											
Cities from 10,000 to 25,000 Population	218,623	293	17.4	24	37	25	8	8	60	32	4	3	7	1	3	2	38	2	1	6	2	7	21	8	1									
Anderson	20,178	27	17.3	2	4	3		3	3	3						3			1		6	2	5	1										
Elkhart	15,184	8	6.8	1	1	1		4	4	4						1			1		1	1	1	1										
Elwood	12,950	14	14.0	4	2	2		1	1	4						1			1		1	1	1	1										
Hammond	12,376	30	31.5	3	7	3	1	1	3	3			1			1			1		1	1	1	1										
Jeffersonville	10,774	25	30.1	3	5	4		1	1	3			1		2				1		1	1	1	1										
Kokomo	10,609	11	13.4	1	1	1		2	3	3						3			1		1	1	1	1										
Lafayette	18,116	38	27.2	3	3	3		2	9	3						1			2		1	1	1	1										
Logansport	16,204	18	14.4	1	1	1		1	6	1						2			1		1	1	1	1										
Marion	17,337	13	9.7	1	3	1		1	1	1						1			1		1	1	1	1										
Michigan City	14,850	16	14.0	2	4	1		1	3	3						1			1		1	1	1	1										
Muncie	20,942	21	13.0	3	2	1			6	2						1			1		1	1	1	1										
New Albany	20,628	24	15.1	2	5	2		2	4	6						1			1		1	1	1	1										
Richmond	18,226	24	17.1	2	5	2		2	4	6						1			1		1	1	1	1										
Vincennes	10,249	24	30.4	2	1	1		1	8	3						2			1		1	1	1	1										
Cities from 5,000 to 10,000 Population	161,751	241	19.3	11	37	20	6	3	63	28	3	4	2	1	2	39	1	3	10	4	9	3												
Alexandria	7,221	15	27.0	1	2	2		3	1	2						2			1		3	1	1	1										
Bedford	6,115	7	14.8	1	1	1		1	3	3						1			1		1	1	1	1										
Bloomington	6,460	13	26.1	1	3	1		1	4	2						3			1		1	1	1	1										
Brazil	7,786	16	26.7	1	7	1		1	2	2						5			1		1	1	1	1										
Columbus	8,130	8	12.7	1	1	1		1	2	2						1			1		1	1	1	1										
Connersville	6,836	14	26.6	1	1	1		1	5	1						1			1		1	1	1	1										
Crawfordsville	6,649	8	15.6	1	1	1		1	3	2						1			1		1	1	1	1										
Frankfort	7,100	11	20.1		1	1		1	3	1						1			1		1	1	1	1										
Goshen	7,810	12	19.9		1	1		1	4	1						1			1		1	1	1	1										
Greensburg	5,033	10	25.8	1	4	1		1	3	1						1			1		1	1	1	1										
Hartford City	5,912	6	13.1	1	1	1		1	1	1						1			1		1	1	1	1										
Huntington	9,491	14	19.1	1	1	1		1	5	4						1			1		1	1	1	1										
Laporte	7,113	9	16.4	1	1	1		1	6	6						1			1		1	1	1	1										
Madison	7,835	6	9.9	1	2	1		1	1	1						1			1		1	1	1	1										
Mishawaka	5,560	6	14.0	1	1	1		1	1	1						1			1		1	1	1	1										
Mt. Vernon	5,132	17	43.0		3	2			4	1						5			1		1	1	1	1										
Peru	8,463	16	24.5	2	2	2			5	1						1			1		1	1	1	1										
Princeton	6,041	9	19.3	3	3	1		1	2	2						1			1		1	1	1	1										
Seymour	6,445	4	8.0	1	1	1		1	1	1						1			1		1	1	1	1										
Shelbyville	7,169	9	16.3	1	1	2		1	2	2						1			1		1	1	1	1										
Valparaiso	6,280	6	12.4	2	3	1		1	2	1						4			1		1	1	1	1										
Wabash	8,618	7	10.5	1	1	1		1	3	3						2			1		1	1	1	1										
Washington	8,551	18	27.3	1	2	1		1	3	4						1			1		1	1	1	1										
Cities under 5,000 Population	131,508	167	16.5	14	31	12	4	1	33	21	1	2	2	1	21	1	4	2	5	10														
Attica	3,005	2	8.6						1	1						1			1		1	1	1	1										
Auburn	3,396	3	11.4		1				1	1						1			1		1	1	1	1										
Aurora	3,645	1	3.5		1	1			1	1						1			1		1	1	1	1										
Bluffton	4,479	5	14.5	1	1	1			1	2</																								

Mortality of Indiana for February, 1902.

POPULATION BY GEOGRAPHICAL SECTIONS AND AS URBAN AND RURAL.	Population, Census 1900.	Total Deaths Reported for February, 1902.	Annual Death Rate per 1,000 Population.	Stillbirths.	Important Ages.										Deaths and Annual Death Rates per 100,000 Population from Important Causes.							
					Under 1.		1 to 5.		5 to 10.		10 to 15.		65 and Over.		Consumption.		Other Forms Tuberculosis.		Typhoid Fever.		Diphtheria.	
					Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.
State	2,516,462	2,874	14.8	175	395	14.6	193	7.1	52	1.9	34	1.2	792	29.3	337	174.0	38	19.6	38	19.6	26	13.4
Northern Co's.....	839,835	848	13.1	50	133	16.6	50	6.2	15	1.8	10	1.2	233	29.1	97	150.1	8	12.3	6	9.2	5	7.7
Central Co's.....	1,024,791	1,266	16.0	74	166	13.9	85	7.1	18	1.5	15	1.2	359	30.1	148	187.7	19	24.1	21	26.6	14	17.7
Southern Co's.....	651,836	760	15.1	51	96	13.5	58	8.1	19	2.6	9	1.2	200	28.2	92	183.4	11	21.9	11	21.9	7	13.9
All cities	857,840	1,148	17.3	68	165	15.2	87	8.0	22	2.0	17	1.5	261	24.1	144	218.2	12	18.1	16	24.2	15	22.7
Over 50,000.....	228,171	302	17.2	13	34	11.7	21	7.2	3	1.0	2	.6	71	24.5	43	244.9	4	22.7	6	34.1	3	17.0
25,000 to 50,000.....	116,787	145	16.1	6	26	18.7	9	6.4	1	.7	3	2.1	34	24.4	20	222.6	...	...	1	11.1	1	11.1
10,000 to 25,000.....	218,623	293	17.4	24	37	13.7	25	9.2	8	2.9	8	2.9	60	22.3	32	190.2	4	23.7	3	17.8	7	41.6
5,000 to 10,000.....	161,751	241	19.3	11	37	16.0	20	8.6	6	2.6	3	1.3	63	27.3	38	225.0	3	24.1	4	32.1	2	16.0
Under 5,000.....	131,508	167	16.5	14	31	20.2	12	7.8	4	2.6	1	.6	33	21.5	21	207.5	1	9.8	2	19.7	2	19.7
Country.....	1,658,622	1,726	13.5	107	230	14.2	106	6.5	30	1.8	17	1.0	531	32.7	193	151.2	26	20.3	22	17.2	11	8.6

POPULATION BY GEOGRAPHICAL SECTIONS AND AS URBAN AND RURAL.	Deaths and Annual Death Rates per 100,000 Population from Important Causes.																							
	Croup.		Scarlet Fever.		Measles.		Whooping Cough.		Pneumonia.		Diarrhoeal Diseases, Under 5 Yrs.		Cerebro-Spinal Meningitis.		Influenza.		Puerperal Septicæmia.		Cancer.		Violence.		Small-pox.	
	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.	Number.	Death Rate.
State	5	2.5	19	9.8	6	3.0	12	6.1	512	264.4	13	6.7	21	10.8	84	43.3	17	8.7	92	47.5	119	61.4	2	1.0
Northern Co's.....	3	4.6	8	12.3	2	3.0	1	1.5	138	213.6	6	9.2	10	15.4	22	34.0	6	9.2	26	40.2	30	46.4	1	1.5
Central Co's.....	2	2.5	8	10.1	2	2.5	4	5.0	222	231.6	4	5.0	11	13.9	43	54.5	5	6.3	48	60.8	51	64.6	1	1.2
Southern Co's.....	...	...	3	5.9	2	3.9	7	13.9	152	303.1	3	5.9	...	...	19	37.8	6	11.9	18	35.8	38	75.7	...	...
All cities	2	3.0	8	12.1	2	3.0	3	4.5	170	257.6	5	7.5	5	7.5	31	46.9	4	6.0	35	53.0	56	84.8	1	1.5
Over 50,000.....	...	...	3	17.0	...	...	...	...	50	234.8	...	...	1	5.6	6	34.1	...	...	13	74.0	9	51.2	...	...
25,000 to 50,000.....	...	...	1	11.1	...	...	1	11.1	22	244.8	1	11.1	...	...	5	55.6	...	...	6	66.7	7	77.9	...	...
10,000 to 25,000.....	1	5.9	3	17.8	2	11.8	...	...	38	225.9	2	11.8	1	5.9	6	35.6	2	11.8	7	41.6	21	124.8	1	5.9
5,000 to 10,000.....	...	...	1	8.0	...	...	2	16.0	39	313.4	1	8.0	3	24.1	10	80.3	...	...	4	32.1	9	72.3	...	...
Under 5,000.....	1	9.8	...	...	...	...	...	...	21	207.5	1	9.8	...	...	4	39.5	2	19.7	5	49.4	10	98.8	...	...
Country.....	3	2.3	11	8.6	4	3.1	9	7.0	342	263.0	8	6.2	16	12.5	53	41.5	13	10.1	57	44.6	63	49.3	1	.7

Meteorological Summary for February, 1902, Furnished by the Central Office, Indiana Section, Climate and Crop Service, U. S. Weather Bureau, Indianapolis, Ind., March 13, 1902.

W. T. BLYTHE, SECTION DIRECTOR.

SECTIONS.	TEMPERATURE.								PRECIPITATION.				CONDITION OF SKY.			Wind. Prevailing Direction.
	Mean.	Departure from Normal.	Highest.			Lowest.			Average.	Departure from Normal.	Snowfall Un-melted.	Days with .01 inch or more.	Number of Days.			
			Degree.	Date.	Place.	Degree.	Date.	Place.					Clear.	Partly Cloudy.	Cloudy.	
Northern Section.....	19.3	-5.2	58	26 27	Ft. Wayne Marion.....	-20	3	Winamac.....	1.26	-1.02	7.5	8	11	8	9	W.
Central Section.....	21.7	-6.7	59	27	Richmond.....	-11	3-5	Hector Veedsburg.....	0.85	-1.94	3.7	6	11	7	10	W.
Southern Section.....	24.4	-7.0	56	5 26 26	Evansville... Mt. Vernon... Vincennes...}	-12	3	Moore's Hill.....	0.86	-2.31	3.0	6	12	4	12	W.
State	21.5	-6.6	59	27	Richmond.....	-20	3	Winamac.....	0.99	-1.76	4.7	7	11	7	10	W.