STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION

DIVISION OF THE
STATE WATER SURVEY
A. M. BUSWELL, *Chief*

BULLETIN NO. 28

ILLINOIS RIVER STUDIES
1925-1928

BY
C. S. BORUFF AND A. M. BUSWELL

[Printed by authority of the State of Illinois.]

URBANA, ILLINOIS

BULLETINS OF THE STATE WATER SURVEY

No. 1-9. *Out of print.*

No. 10. Chemical and biological survey of the waters of Illinois. Report for 1912. 198 pp., 19 cuts.

No. 11. Chemical and biological survey of the waters of Illinois. Report for 1913. 473 pp., 106 cuts.

No. 12. Chemical and biological survey of the waters of Illinois. Report for 1914. 261 pp., 32 cuts.

No. 13. Chemical and biological survey of the waters of Illinois. Report for 1915. 381 pp., 36 cuts.

No. 14. Chemical and biological survey of the waters of Illinois. Report for 1916. 192 pp., 40 cuts.

No. 15. Chemical and biological survey of the waters of Illinois. Report for 1917. 136 pp., 8 cuts.

No. 16. Chemical and biological survey of the waters of Illinois. Report for 1918 and 1919. 280 pp., 36 cuts.

No. 17. Index to Bulletins 1-16. 1921. 17 pp.

No. 18. Activated sludge studies. 1920-22. 150 pp., 31 cuts. *Out of print.*

No. 19. Solubility and rate of solution of gases. Bibliography. 1924. 49 pp.

No. 20. Comparison of chemical and bacteriological examinations made on the Illinois River during a season of low water and a season of high water—1923-1924.

A preliminary notice of a survey of the sources of pollution of the streams of Illinois. 1924. 59 pp., 8 cuts. (Price 25 cents.)

No. 21. Public ground-water supplies in Illinois. 1925. 710 pp., 11 cuts. (Price |1.00.)

No. 22. Investigations of chemical reactions involved in water purification, 1920-1925. 130 pp., 17 cuts. (Price 50 cents.)

No. 23. The disposal of the sewage of the Sanitary District of Chicago. 1927. 195 pp., 30 cuts. (Price $1.00.)

No. 24. Pollution of streams in Illinois. 1927. 35 pp., 21 watershed maps. (Price 25 cents.)

No. 25. Biopreeipitation studies, 1921-1927. 94 pp., 27 cuts. (Price 50 cents.)

No. 26. Depth of sewage niters and degree of purification. 100 pp., 19 cuts. (Price 50 cents.)

No. 27. A study of factors affecting the efficiency and design of farm septic tanks. 1927. 45 pp., 25 cuts. (Price 50 cents.)

For copies of these bulletins or for other information address: Chief, State Water Survey, Urbana, Illinois.

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION

DIVISION OF THE
STATE WATER SURVEY
A. M. BUSWELL, *Chief*

BULLETIN NO. 28

ILLINOIS RIVER STUDIES
1925-1928

BY
C. S. BORUFF AND A. M. BUSWELL

[Printed by Authority of the State of Illinois.]

URBANA, ILLINOIS

ORGANIZATION

STATE OF ILLINOIS

LOUIS L. EMMEBSON, *Governor.*

DEPARTMENT OP REGISTRATION AND EDUCATION

M. F. WALSH, *Director.*

Board of Natural Resources and Conservation Advisers

M. F. WALSH, *Chairman*

WILLIAM A. NOTES, *Chemistry, Secretary.*
JOHN W. ALVOBD, Engineering.
EDSON S. BASTIN, Geology.
HENBY C. COWLES, Forestry.
WILLIAM TBELEASE, Biology.
C. M. THOMPSON, Representing the President of the University of Illinois.

State Water Survey Division Committee

M. F. WALSH
C. M. THOMPSON
WILLIAM A. NOTES
JOHN W. ALVOBD

STATE WATER SURVEY DIVISION

A. M. BUSWELL, *Chief*

JOURNAL PRINTING COMPANY,
SPRINGFIELD, ILLINOIS.
1929

20363—1500

CONTENTS.

FIGURES.

LETTER OF TRANSMITTAL

STATE OP ILLINOIS

DEPAETMENT OF EEGISTEATION AND EDUCATION
STATE WATEE SURVEY DIVISION

URBANA, Illinois, June 24, 1929.

M. F. Walsh, Chairman, and Members of the Board of Natural Resources and Conservation Advisers:

GENTLEMEN: Herewith I submit a report of the studies of the Illinois Eiver during the seasons of 1925 to 1928 inclusive. I recommend that they be published as Bulletin No. 28 of the Illinois State Water Survey Division.

These studies report data on a very interesting stage in the Illinois Elver's history, namely, the beginning of a recovery from the period of maximum pollution in 1920.

We have been greatly aided in the preparation of this manuscript by suggestions from Mr. J. K. Hoskins, sanitary engineer; Mr. C. T. Butterfield, bacteriologist, and Mr. Emery J. Theriault, chemist of the Cincinnati laboratory of the United States Public Health Service. We wish to take this opportunity to express our appreciation of their assistance.

Eespectfully submitted,

A. M. BUSWELL, *Chief.*

INTRODUCTION

Brief Historical Sketch

Scientific studies on the Illinois River, as carried on by the State of Illinois, date back to a general river investigation program carried out by the Illinois State Laboratory of Natural History in 1874. During the course of time, the State Laboratory was replaced by the State Natural History Survey, which pursued the Illinois Eiver studies in detail. Since 1894 considerable attention has been given to this project. The Natural History Survey has published a number of bulletins on their findings. These earlier investigations, although mainly biological, were supplemented from time to time by chemical studies. In 1894 such chemical work was done by the Chemistry Department of the University of Illinois. In 1895 with the establishment of the State Water Survey Division, this work was taken over by that division, which furnished staff chemists for the river investigations from time to time. In 1923 the Natural History Survey transferred its main investigations to the Rock River, and asked that the State Water Survey take over the Illinois River work. Since this time staff chemists from the Water Survey have been in charge of the project. The earlier chemical studies were published along with the biological investigations in the Natural History Survey bulletins. The first chemical and bacteriological studies of the Illinois River by the State Water Survey were reported in Bulletin No. 20.[1] The chemical and bacteriological studies of 1925, 1926, 1927, and 1928 are reported in this bulletin.

Equipment

The equipment for the Hlinois River studies consists of a large sixty-foot houseboat permanently located on cement piers in Water Works Park at Peoria, an eighteen-foot boat purchased to use with a Johnson big twin outboard motor, a small skiff, a floating pier, and laboratory equipment necessary to run dissolved oxygen, biochemical oxygen demand, and bacteriological determinations. The. large houseboat is equipped with a small office and a small storage room, leaving the middle and major portion available as a laboratory and sleeping quarters for the crew. The boat is wired for electric lights and incubators, and is also provided with city water.

[1] Comparison of Chemical and Bacteriological Examinations Made on the Illinois River During a Season of Low and a Season of High Water. 1923-1924. By Dr. R. E. Greenfield. State Water Survey Bulletin No. 20.

The outboard motor outfit was found to be very satisfactory. The average speed when fully loaded for field work and carrying two men was found to be about ten to twelve miles per hour. Through the use of well organized field kits it has been possible to work for three or four days away from the main laboratory, running all dissolved oxygen and biochemical oxygen demand samples en route, and shipping the iced samples back to the main laboratory for bacteriological analysis.

Personnel

The 1925 staff was composed of Dr. B. E. Greenfield, chemist in charge; two students, Mr. E. E. McMurray and Mr. Eobert Shelton, and Dr. Harold Eigenbrodt, who was employed by the Natural History Survey. The 1926 crew was composed of Mr. A. L. Sotier, bacteriologist in charge; and Mr. C. S. Boruff and Mr. Eobert Shelton. The 1927 crew was composed of Mr. C. S. Boruff, chemist in charge; with Mr. Glen Lindsey and Mr. Simon Vellenga as bacteriologist and chemist, respectively. Mr. Vellenga was replaced in August by Mr. Kenneth Irey. The 1928 staff was composed of Mr. C. S. Boruff, chemist in charge; Dr. Glen Lindsey, bacteriologist, and Mr. Kenneth Irey, chemist. During the month of August Mr. Trey's place was filled by Mr. Donald Tarvin.

Pollution Load of the Illinois River

Table I gives a list of the principal cities along the Illinois Eiver with their estimated population equivalents. This table was prepared by the U. S. Public Health Service and is based on their Illinois Eiver studies. Since these data are based on tests made in 1921-22, they could not be expected to represent the exact conditions as they exist today. They may well be considered at this time, in that there are no later data available. Probably most of the population equivalents are low.

The first introduction of the present major pollution load into the Illinois Eiver occurred in 1900 with the completion of the Chicago Drainage Canal and the diversion of Chicago's sewage into the Illinois Eiver. The population of Chicago at that time was about 1,700,000. In 1920 the Sanitary District was serving a population of about 3,500,000 and handling an additional industrial load equivalent to a population of about 1,500,000. With the building of treatment plants and the recovery of by-product wastes by the industries, the load has been somewhat reduced. The exact extent of this reduction is not available at this time.

TABLE I

EQUIVALENT POPULATION OF ILLINOIS RIVER CITIES AS OF JANUARY 1, 1922

Received from V. 8. Public Health Service

Place	Station (miles from Grafton)	Sewered population	Population equivalent of industrial wastes	Total population contributing
Main Drainage Canal	292	2,834,351	1,885,600	4,719,951
Joliet	288	25,007	25,720	50,727
Rockdale	285	1,477	.....	1,477
Morris	263	2,761	28,090	30,851
Marseilles	247	1,706	102,380	104,086
Ottawa	237	9,419	2,770	12,189
LaSalle	223	12,827	.....	12,827
Peru	222	6,335	950	7,285
Spring Valley	218	4,786	.....	4,786
Lacon	189	.....	480	480
Averyville	165	3,646	7,880	11,526
Peoria	162	68,640	499,000	506,880
(Greater Peoria) [1]	162	[2]100,000	[3]1,000,000	1,100,000
Pekin	152	3,761	145,580	149,341
Havana	120	908	.....	908
Beardstown	88	6,220	.....	6,220

[1] Added by State Water Survey Division.
[2] Population claimed by city of Peoria (1928).
[3] Calculated on basis of studies made by staff in 1925.

With Chicago discharging an average of 8,500 cubic feet per second of water into the Illinois River and with an average river discharge at Peoria of about 19,000 cubic feet per second, it is noted that about 45 per cent of the total flow of the Illinois River at Peoria is due to diversion of lake water. At stations nearer the mouth of the river this percentage is reduced to about 30 per cent. These figures vary greatly from season to season. For details of Chicago's waste problem the reader is referred to Bulletin No. 23 of the State Water Survey Division, which contains the report of the engineering firm of Alvord, Burdick and Howson to the U. S. Engineers Office. This report was prepared at the request of the Secretary of War in connection with the water diversion controversy.

The Chicago Drainage Canal pollution is usually considered as being equivalent to a population of about 5,000,000. On this basis it furnishes 75 to 80 per cent of the total pollution added to the Illinois River. Joliet contributes considerable, but when it is compared with that of Chicago which has entered the river four miles above, it amounts to only one per cent of the total. Marseilles, although a small city, has a high population equivalent due to the numerous factories which contribute wastes of a very high oxygen demand.

The only other pollution load of any importance which enters the Illinois Eiver conies from the cities of Peoria and Pekin, located 160 and 17.4 miles, respectively, below Lake Michigan. The combined population of Peoria and Pekin in 1900 was about 65,000. In 1914 it was estimated to be 86,000 with an additional industrial load equivalent to several thousand. In 1922, as noted in Table I, the U. S. Public Health Service estimated the population equivalent of the two cities to be 656,221. These cities have enjoyed considerable growth since 1922, hence the above population equivalent figures are undoubtedly quite low. Peoria at the present time claims a population of 100,000. A study of the industrial wastes of the city of Peoria was conducted during the summer of 1925 by members of the State Water Survey staff under the direction of Dr. B. E. Greenfield. They studied each of the larger industrial plants and calculated their population equivalents and hence the total industrial population equivalent of the city. These calculations were all based on the following factors derived by the TJ. S. Public Health Service (Bulletin No. 143, page 77): total organic nitrogen per capita per day, 11.4 gms.; oxygen consumed, 51.5 gms. per capita per day; and 10-day B. O. D., 100 gms. per capita per day. Dr. Greenfield's findings may be summarized as follows:

On the basis of total organic nitrogen the total industrial population of the city was calculated to be 720,260; on the basis of oxygen consumed, 824,500; and on the basis of biochemical oxygen demand, 1,149,244. These figures do not include caluclations for the packing plants and stock-yards or for the numerous small manufacturing plants about the city. From these data it would seem that the present total industrial population equivalent of the city must be of the order of 1,000,000, which when added to the population of 100,000, gives a total sewage load equivalent to a population of 1,100,000. On this basis Peoria furnishes 17 per cent of the total pollution added to the Illinois Eiver. The total population equivalent for the city of Pekin has probably also increased since 1922. Although a few of the plants in Peoria and Pekin have taken steps to conserve wastes previously thrown into the river, a large load must still be charged against the majority of the manufacturing plants. Peoria is now preparing to build a sewage treatment plant and there seems to be some agitation about a plant in Pekin.

For further detailed information concerning the entire Illinois Eiver drainage area, which comprises a total area of 28,344 square miles or 50 per cent of the total area of the State, the reader is referred to Bulletin No. 171 of the U. S. Public Health Service, which reports a very complete and thorough fourteen-month survey of the Illinois Eiver, which was conducted in 1921 and 1922.

METHODS

Available Routine Methods and Their Significance

Of the many parameters that are available for river studies probably the best chemical ones are the dissolved oxygen and biochemical oxygen demand determinations. These two, with bacteriological counts, give a valuable index as to the condition and progress of self-purification of the stream. These three parameters, along with physical conditions, constitute the main observations herein tabulated and considered.

The dissolved oxygen content, as the term implies, is a measure of the amount of dissolved oxygen gas that is available for oxidative reactions and for aquatic life. It is an old, sensitive, quick, rational, and readily applicable test which gives a measure of the present condition of the water being tested.

The biochemical oxygen demand test[2] calls for incubation of the water sample, with or without dilution, in a filled glass stoppered bottle at a controlled temperature, usually 20°C, over a definite period of time, usually 5 days, and in the presence of sufficient dissolved oxygen such that an excess will be present at the end of the incubation. The amount of dissolved oxygen present before incubation minus that present after incubation is a measure of the oxygen consuming power of the water or the oxidizability of the organic impurities present in the stream. This test, which is based on the presence of dissolved oxygen, an oxidizing flora of bacteria and other organisms, and oxidizable organic matter brings nothing into play other than those natural reactions taking place in the stream proper. It does not, however, include the factor of reaeration. This test gives a good measure of the organic load of the stream as well as data that may be used in determining the probable future of the stream. By multiplying the flow per unit of time by the determined biochemical oxygen demand there is available a good measure of the biochemical oxygen demand load of the stream passing a given point per unit of time. These data may in turn be converted into many different units of measure. This method is used in the general review following the discussion of the data for 1928.

Bacteriological data are also valuable in river studies. The bac-

[2] For a thorough and comprehensive treatise of this test see Theriault's Public Health Bulletin No. 173. The Oxygen Demand of Polluted Waters.

teriological relationships and reactions are undoubtedly complicated. Although a great deal of the bacterial activity is carried on aerobically, there are in the Illinois River certain zones which in summer are characterized by absence of dissolved oxygen and by the presence of septic fermentative digestion. A bacteriological study of these different zones would be interesting and valuable, but lack of facilities, time, and a sufficient staff have prohibited it. However, counts at 20°C. on gelatin and at 37°C. on agar, along with presumptive B. coli determinators, give very valuable information. Bacteriological data must be carefully collected and critically considered, or they may be misleading, for the tests are extremely sensitive to seasonal turnovers, changes in river stage, rains, and dilution waters from other sources.

Sampling

Accessibility to stations, natural landmarks, hydrographical features, and experience have led to the choice of certain sampling stations. Although certain stations have been taken off the roll and others added from year to year, the main sampling points have remained about the same. In 1928 the full length of the river was covered twice during the summer, but in so doing none of the previous summers' stations were dropped from the list. The sampling program of the years 1925 to 1928, inclusive, is summarized in Table II.

TABLE II.

SUMMARY OF SAMPLING PROGRAM BY YEARS

Year	Stations visited	Miles of river studied	Total D. O. samples	Total B. O. D. samples	Total bacteria samples	Special studies
1925.....	33	135	762	19	30	Biological
1926.....	15	135	828	29	27	.....
1927.....	20	153	1,072	129	73	.....
1928.....	39	294	1,405	196	113	B. O. D.

In studying the upper Illinois-Desplaines River the Desplaines River was sampled just prior to and again shortly after receiving the waters from the Chicago Drainage Canal. The Illinois-Desplaines River was also sampled about three miles below the confluence of these waters. The next point of sampling was at Channahon, located fifteen miles below the confluence of the above mentioned waters. The river at Joliet and Channahon is very turbulent and represents that portion of the

river immediately following the discharge of the polluted canal waters into the river. In lower Joliet and at Channahon, in spite of the high state of pollution, an appreciable dissolved oxygen is usually noted. This is due to the great turbulence of the stream and the high degree of reaeration. At Morris the current is not so swift. Samples at Marseilles were collected from the wagon bridge located only a short distance below the dam. This sampling point accounts for the high dissolved oxygen content recorded for this station.

The reach of the river from Ottawa to Spring Valley, which possesses only a moderate velocity of flow and which in summer becomes quite septic, is characterized by the stations of Ottawa, Utica, LaSalle, and Spring Valley. Samples were collected from the wagon bridge at Ottawa, being careful to take samples far enough to the east side in order to avoid the waters of the Fox River, which enter along the west bank just above the bridge. Samples were also collected from the bridges at Utica, LaSalle, and Spring Valley.

The polluted reach of the river or the reach following the septic portion, is represented by the stations of Henry, Lacon, and Chillicothe. The samples at Henry were taken from the bridge at points so as to avoid sampling the waters from the bay or pocket, located on the west side and just above the bridge, and also the fresh waters entering at times along the east side. The samples at Lacon were also taken from the wagon bridge, but those at Chillicothe were taken by boat from a cross-section located about a half mile below the Santa Fe Railroad bridge.

The waters in the Upper, Middle, and Lower Peoria Lakes were all sampled by boat, with the exception of the Peoria Narrows samples which were collected from the upper Peoria wagon bridge. These numerous lake stations represent that part of the river characterized by all those factors common to lakes, such as slow flow, photosynthesis, sedimentation, algea growths, and high degree of reaeration.

The Wesley City station, located just below the city of Peoria, represents the river following repollution by the city of Peoria. Samples here were taken by boat at a point just opposite the Chicago Sanitary District samplers' shack. The samples at Pekin were collected from the wagon bridge, or if by boat at a point located a short distance above this bridge. This sampling station represents the river approximately ten miles below the confluence of Peoria's sewage with the Illinois River. The river at this sampling point has received none of Pekin's sewage. The samples collected at the lower city limits of Pekin, herein called Pekin (South), represent the river after being polluted by the domestic and industrial wastes of the city of Pekin. The stations of Kingston

Mines, Copperas Creek Dam, and Liverpool represent stages in the self-purification of the lower Illinois Eiver immediately following its re-pollution by Peoria and Pekin. These stations were all sampled by boat.

The stations of Havana, Browning, Beardstown, Meredosia, Florence, Pearl, Kampsville, Hardin, and Grafton all represent progressively ten-to twenty-mile sections in the lower Illinois River system.

In addition to the above mentioned program, samples were also taken from all the main tributaries leading into the Illinois River.

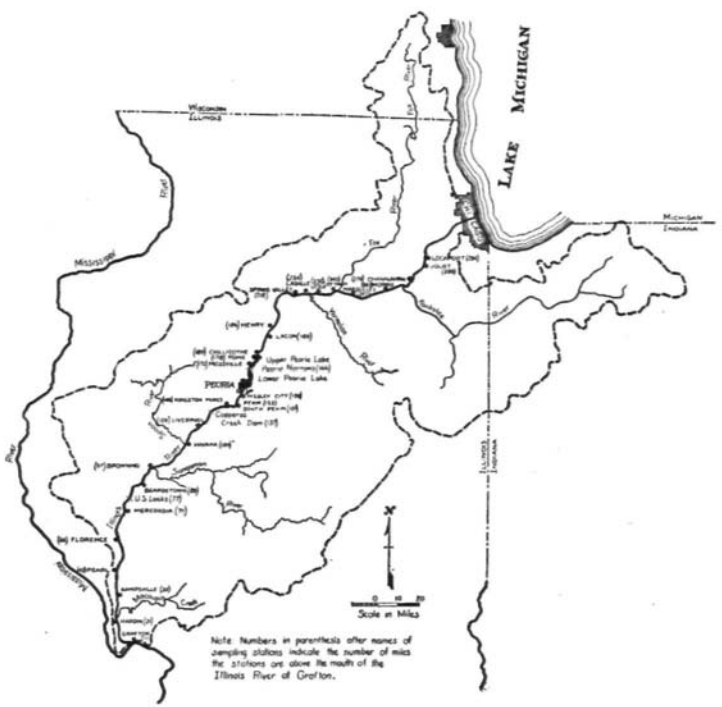

FIG. 1.—MAP or ILLINOIS RIVER VALLEY SHOWING SAMPLING STATIONS.

The respective location of each of the sampling stations above mentioned, as well as additional ones mentioned in the body of this bulletin, and in the data in the appendix, may be noted from the map given in Figure 1.

Most down-stream trips from Peoria were made by boat, although about half of the longer down-stream investigations were conducted by auto. The shorter up-stream trips were conducted by boat, but most of the trips to Lacon and above were conducted by auto in that the sta-

tions were all located along hard roads and sampling could be accomplished from wagon bridges. Sampling by ear was found to be more efficient for trips of twenty-five miles or more. It must be said, however, that some few stations are not accessible by car. It has been advisable to have both methods of travel available. This also permits the staff to be in readiness for special work other than that on the Illinois River. The regular personnel thus equipped has been able to conduct chemical and bacteriological surveys of the Rock River for the Natural History Survey, while carrying on regular sampling on the Illinois River.

At each station visited along the Illinois River six dissolved oxygen samples were taken. The samples included samples one to two feet beneath the surface, hereafter called the top samples, and samples one to two feet above the bottom, hereafter called the bottom samples, taken at points approximately one-third, one-half, and two-thirds the distance across the stream. Such data are recorded in the data sheets (see appendix) as top and bottom samples on east side, channel, and west side. In case the channel is to one side it is recorded as such. All samples were collected by the use of a special dissolved oxygen sampler[3].

The biochemical oxygen demand samples were taken from channel waters at a depth of three to four feet. In cases where cross-section biochemical oxygen demand studies showed that such a point did not give a representative sample of the river at that station, the sampling point was changed to a more representative point. The outstanding example of this sort is at Wesley City, located just below the city of Peoria. The sampling station is located just opposite the Chicago Sanitary District samplers' shack. At this station the east side and east channel waters are protected against wastes coming down-stream from Peoria by a sand-point that throws practically the entire stream current to the west bank. It is reported that there is also fresh spring water entering the river along the east side. In order to get a representative biochemical oxygen demand sample at this station, it must be taken at a point not over 10 to 12 feet from the normal west bank of the stream. In times of high water the point of sampling must be changed. The importance of this matter at Wesley City was not fully realized until 1928, hence this is one of the reasons for the very low biochemical oxygen demand results collected at this station in previous years. Other stations were studied in a similar manner in order to determine the representative point of sampling. The representative sampling procedure was followed rather than trying to composite a

[3] A New Sampler for Dissolved Oxygen. R. E. Greenfield and F. L. Mlckle. State Water Survey Bulletin No. 16, p. 197.

sample from samples collected at different points at the one station. Work along the line of representative sampling for biochemical oxygen demand and bacteriological studies will be continued in the future.

Samples for bacteriological analysis were collected at the same points as those for the biochemical oxygen demand determination. All bacteria samples were iced at once, and either run that same day at Peoria, or if obtained too far away from headquarters, they were shipped to the base laboratory. In cases where the biochemical oxygen demand determinations were being made in the field and the incubated samples carried in the boat or car, the staff bacteriologist at Peoria, upon receipt of the iced bacteria samples, made a biochemical oxygen demand determination on each iced sample as well as the regular routine bacteriological examination. The extra biochemical oxygen demand determination served as a check or control on the biochemical oxygen demands run in the field.

The biological work carried out in 1925 has been reported by the Natural History Survey[4] and will not be discussed in the present report.

Analytical Methods

Dissolved Oxygen. The Eideal-Stewart modification of the Winkler method was used in all dissolved oxygen determinators. All solutions were prepared according to directions as given in Standard Methods of Water Analysis[5]. Two cc. of manganous sulfate solution were used instead of the regular 1 cc. portion, and occasionally the alkaline potassium iodide solution was prepared from sodium hydroxide instead of potassium hydroxide. In winter when the temperature was near freezing the samples were extremely slow in decolorizing upon the addition of the regular amount of sodium oxalate. To overcome this the 2 cc. of manganous sulfate solution were added along with the sodium oxalate. This catalyzed the decolorization of the potassium permanganate and saved a great deal of time. Controls on this procedure showed it to have no effect upon the final results. All dissolved oxygen determinations were made in the field. The thiosulfate solution was standardized every few days against N/40 potassium dichromate solution (2.452 gm. of dry salt per 1.). In accord with work done by W. C. Vosburgh[6], the following procedure for the standardization of the thiosulfate has been worked out and used:

Dilute the measured amount of standard dichromate solution (25 cc. usually used) to 100 cc. and then add 2.5 cc. of concentrated hydrochloric acid or 5 cc. of the 6 N acid. Add 2.5 grams C. P. potassium

[4] The Bottom Fauna of the Middle Illinois River. 1913-1925. By R. E. Richardson. Natural History Survey Bulletin, *XVII,* Article XII.
[5] Standard Methods of Water and Sewage Analysis. Sixth Edition.
[6] Journal American Chemical Society, 44, 2120 (1922).

iodide weighed to within 0.5 gm., and set aside in the dark for 5 minutes. The potassium iodide should he tested frequently to see that it is iodine free. After the solution has stood 5 minutes dilute to about 400 cc. and titrate with the thiosulfate solution, adding starch as an indicator when the end-point is almost reached.

Calculation: $\frac{\text{cc. dichromate}}{\text{cc. of thiosulfate}} = \text{Factor}$

Factor times dissolved oxygen titration = true dissolved oxygen.

This method has been found to work very well in routine studies.

Biochemical Oxygen Demand. The biochemical oxygen demand determinations were made by the dilution method, using the Rideal-Stewart modification of the Winkler method to determine the initial and final dissolved oxygen content.

Incubations were made for 5 days at 20°C, plus or minus 1°, in an electrically controlled ice refrigerator. During the 1928 season many 10-day incubations were also made. The necessary dilutions varied with each station. Two dilutions of the same sample were made whenever possible. In 1926 and 1927 chlorinated Peoria tap water, which had been stored and aerated, was used as the dilution water. During late 1927 and the entire 1928 season much time was spent in trying to trace the causes for the variations in the biochemical oxygen demand determinations of a given sample of river water when run in different dilutions. The technique was critically considered and standardized. The dilution water used, although still Peoria water, was taken directly from well No. 7 at Sankoty and hence had not been chlorinated. A mineral analysis of this water prior to aeration and storage and also a sanitary analysis following aeration and storage is given in Table III.

TABLE III

MINERAL AND SANITARY ANALYSIS OF DILUTION WATER[1]

A. Mineral Analysis Prior to Aeration and Storage
Hypothetical Combinations

	P.P.M.
Potassium Nitrate, KNO_3	6.9
Potassium Chloride, KCl	2.1
Sodium Chloride, NaCl	33.0
Sodium Sulfate, Na_2SO_4	38.7
Ammonium Sulfate, $(NH_4)_2SO_4$	4
Magnesium Sulfate, $MgSO_4$	31.9
Magnesium Carbonate, $MgCO_3$	118.3
Calcium Carbonate, $CaCO_3$	216.3
Alumina, Al_2O_3	7
Silica, SiO_2	12.8
Nonvolatile	1.6
Total	462.7

B. Sanitary Analysis Following Aeration and Storage.

	P.P.M.
Turbidity	0
Color	5
Odor	0
Residue on evaporation	456
Chloride	16
Alkalinity, phenolphthalein	0
Alkalinity, methyl orange	348
Oxygen consumed	0.8
Ammonia nitrogen	0.0
Organic nitrogen	0.0
Nitrate nitrogen	0.4
Nitrite nitrogen	0.005
Iron (Fe)	0.0

[1]Water taken from Well No. 7 at Sankoty (Peoria supply).

In most cases this water was stored for two or three weeks before it was used, but even then it often had a 5-day biochemical oxygen demand of 0.3 parts per million. As the water became older this decreased to a biochemical oxygen demand of 0.1 to 0.0 parts per million. A longer period of storage than two weeks is advisable, but not always possible due to the large amount used and the lack of storage facilities. Blanks on the dilution water were run each time it was used and the corresponding corrections made in the tabulations and calculations. All biochemical oxygen demand dilutions were made in large graduated cylinders and thoroughly mixed. This sample then stood for about 5 minutes before it was again carefully stirred in order to keep it mixed, but not to aerate it, and siphoned into clean glass stoppered initial and incubation bottles. Duplicate incubations of the same dilution seemed to consistently check, but often different dilutions of the same original sample would not check. Further care in technique of manipulation would not rule out this occasional discrepancy. This matter is to be studied again next season.

Bacteriological Methods. The bacteriological methods used were modified forms of those outlined in Standard Methods of Water Analysis[5]. Total counts were made on agar plates incubated for 24 hours at 37°C. All lactose broth tubes showing 10 per cent of gas or over after 48 hours were recorded as positive, and those showing less than 10 per cent, negative. Forty-eight hours were used instead of 24 because at 24 hours there were usually a number of tubes showing from 5 to 10 per cent of gas, while at 48 hours all such tubes were usually decidedly over 10 per cent or less than 10 per cent. No confirmatory tests for B. coli were made. Such studies would be interesting, but up to the present writing, time has not permitted. Separate duplicate dilutions were made on all samples using clean sterile pipettes for each duplicate.

The agar used was the dehydrated nutrient agar of the Digestive Ferments Company, and was made up according to directions given on the bottle, and sterilized at 15 pounds pressure for 30 minutes. The lactose broth was the dehydrated product of the Digestive Ferments Company, and was prepared according to directions given on the bottle, and sterilized at 15 pounds pressure for 25 minutes. Dilution water (Peoria tap water) was boiled, filtered to remove the precipitated hardness, and then sterilized at 15 pounds pressure for 30 to 40 minutes.

Sample bottles were sterilized at 15 pounds pressure for 30 to 40 minutes. Petri dishes and pipettes were sterilized in the hot-air ovens at 175°-190°C. for at least *2* hours. The above time limits for sterilization were found to be necessary for the complete sterilization of the equipment. For the initial cleaning up and sterilization at the opening of the season's work double sterilization, that is regular sterilization on two successive days or double sterilization times, that is sterilizing for twice the usual length of time, were commonly practiced.

The effect of shipment upon bacteriological results may be noted in the data for the 1925 summer season (see appendix). A number of the samples were collected in duplicate and one sample was run at Peoria while the other was iced and shipped to Urbana for analysis. It is noted that the total counts on the samples shipped to Urbana were in all cases much lower than those made at Peoria. The reduction was over 90 per cent and in one case it amounted to 99.5 per cent. The time interval elapsing between the respective laboratory determinations was from one to two days. In all cases the samples were iced.

It is quite generally known that warm and polluted waters when iced for as short a period as 12 hours undergo a marked decrease in total count[7]. On the other hand, warm waters of a low total count may increase slightly in total count when iced for a short period. Laboratory investigations by the writer bear out the above statements. Investigations have also shown that there is little change in total counts of cold waters (1°-4°C.) when such samples are collected from rivers and brought to the laboratory and incubated at 2°C. for one to five days. However, a sample collected from a river at 2°C. and incubated at room temperature was found to increase in count very rapidly following a six-hour lag period. In 24 hours it reached a maximum count of 200,000 per cc. The above mentioned sample had an original count of 1,000 per cc.

The above consideration bears out the fact that river samples collected in spring, summer, and fall should be analyzed as soon as possible,

[7]Prescott and Winslow. Elements of Water Bacteriology. Fourth Edition (1924) pages 28-29.

and especially should this be the rule when the original samples are highly polluted or are relatively pure. If samples possessing a high count must be stored or shipped before being analyzed, it may seem advisable to keep them as near their original temperatures as possible rather than icing them. Further studies along this line are planned.

CONSIDERATION OF THE DATA

Introduction

In considering the data the author does not deem it necessary or advisable to take up individual determinations at stations, or to consider separately the data collected at all the different stations during each summer season, but rather to consider the data as a whole, picking out certain stations as representative of conditions in that particular reach of the river. For this purpose the stations at LaSalle, Henry, and Chillicothe will be considered as characteristic of the lower part of the upper reach of the river. Peoria Narrows will be considered as representative of conditions after passing through the upper and middle Peoria Lakes. The Wesley City and the Pekin samples as considered will represent the river following re-pollution by the city of Peoria. For a consideration of the immediate load of the city of Pekin the station called Pekin (South) will be used. The Pekin sampling station does not carry the pollution load of Pekin. Kingston Mines station, located fifteen and seven miles, respectively, below the cities of Peoria and Pekin, carries the pollution load of both cities, although, as data will show, much of Peoria's wastes have been stabilized by the time the water arrives at this station. For the lower reaches of the river the cities of Havana and Beardstown will serve as representative stations. In the consideration of the data for 1928 other stations will be added. Some of the data plotted as averages are based on too few determinations. Such data, however, are mainly limited to stations in the extreme upper and extreme lower reaches of the river.

Figure 1 shows the location of the sampling stations as well as the drainage area and main tributaries to the Illinois Eiver system. Figures 5, 7, 9, and 11 show the changes in river stage* at Peoria Narrows, and the changes in dissolved oxygen and biochemical oxygen demands during the summer season of four of the representative stations, namely, Henry, Peoria Narrows, Pekin, and Kingston Mines. Figures 2, 3, 4, 6, 8, 10, and, 12 show the average summer dissolved oxygen content

* It is realized that discharge and stage figures do not run parallel. It is also noted that different authorities differ as to the calculated discharge data corresponding to the different stages for the same station. For stage-discharge data the reader is referred to Bulletin No. 171 of U. S. Public Health Service or to the river reports of the Water Resource Branch of U. S. Geological Survey, Department of Interior.

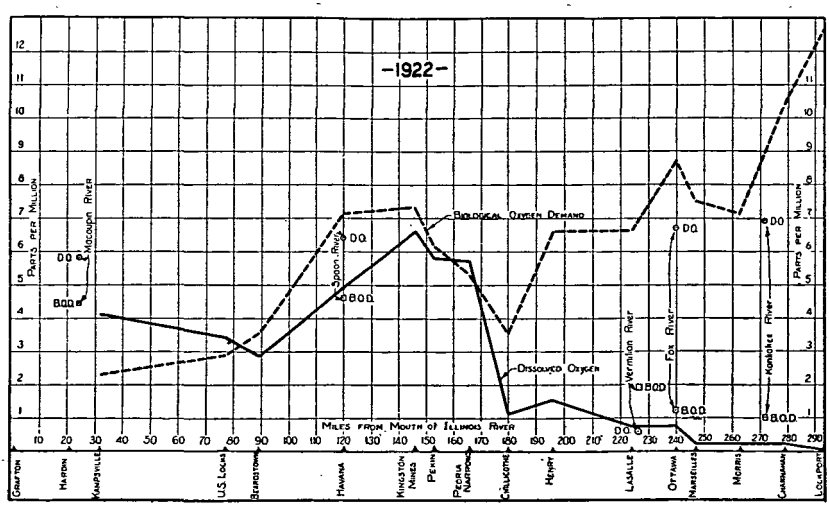

FIG. 2.—SUMMER AVERAGES OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1922.

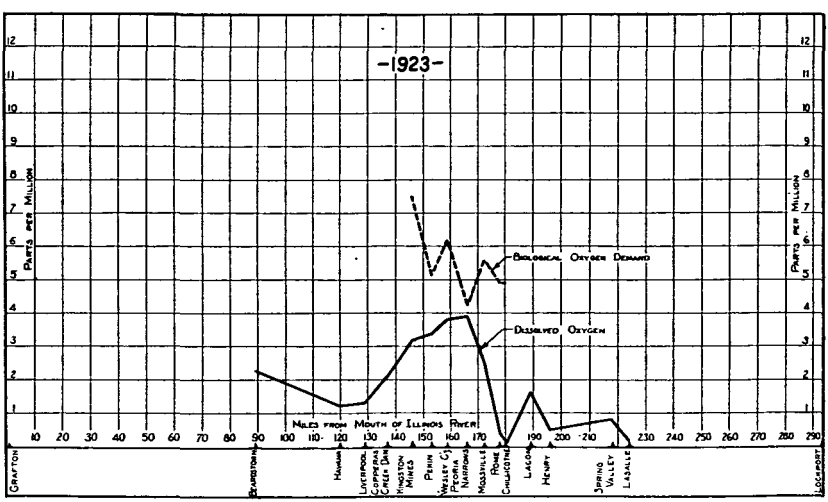

FIG. 3.—SUMMER AVERAGES OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1923.

and biochemical oxygen demands of the river as it flows from station to station. These data as plotted are averages of the three monthly averages of each station for the three summer months of each particular year. For instance, the summer season average dissolved oxygen content at a station was determined by calculating the average dissolved oxygen content for each of the months of June, July, and August, then these three monthly calculations were averaged to get the summer season average dissolved oxygen. The data for 1922, as plotted in Figure 2, have been taken from Bulletin No. 171 of the U. S. Public Health Service. The data for 1923 and 1924, as considered in Figures 3 and

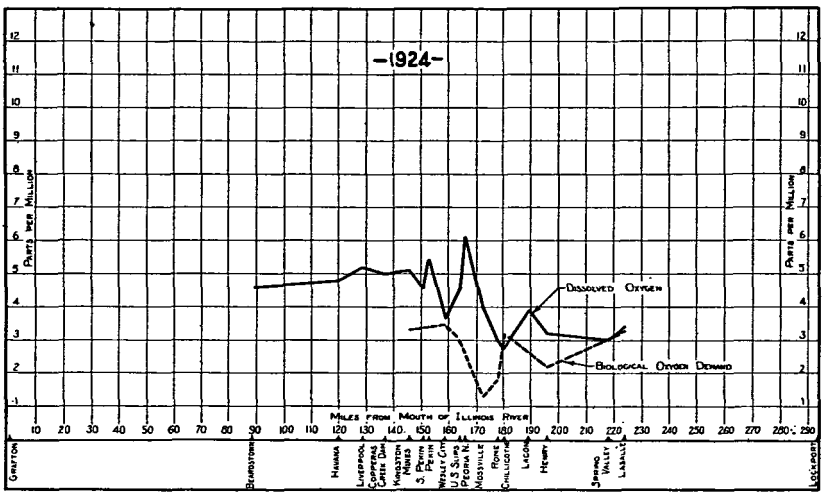

FIG. 4.—SUMMEE AVERAGES or BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1924.

4, were collected by Dr. Greenfield of the Water Survey, and have been reported in Water Survey Bulletin No. 20[1]. The data for the summers of 1922 to 1924, inclusive, along with earlier data as plotted in Figures 14 and 15, are herein reconsidered in the general review in order that the reader may receive a little history as to the chemical condition of the river prior to the main data presented in this bulletin.

Summer Season of 1925

The summer of 1925 was a low-water season. The spring rise was not great. The stage at Peoria on April 1 was 16 feet and on May 1 was 12 feet. All during the summer, as noted in Figure 5, the river

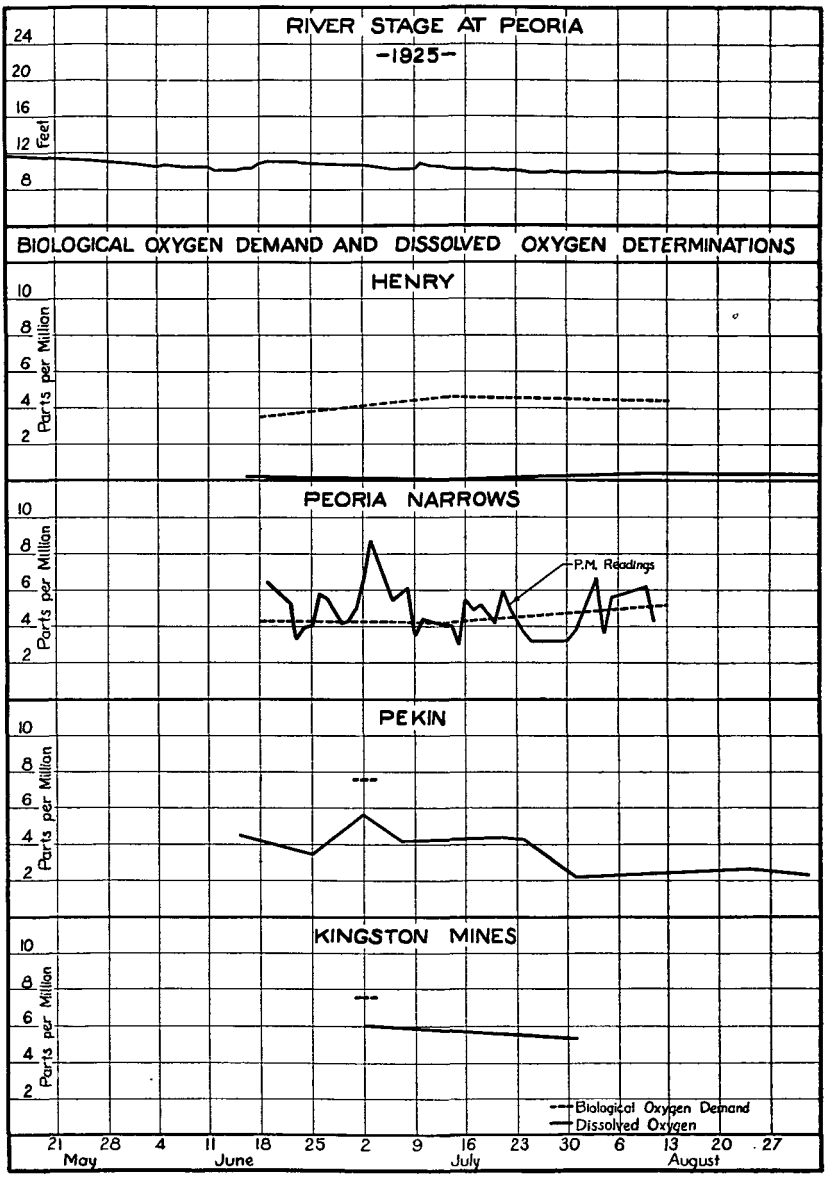

FIG. 5.—REPBESENTATIVE DATA FOB SUMMER OF 1925.

was at a practically constant low stage of about 10 feet. This year's data, therefore, are quite comparable with that of 1923 as reported in Bulletin No. 20[1].

The upper reaches of the river were septic during the entire season, and as the data (see appendix) for this summer show, the dissolved oxygen content was practically zero down to and including Henry. The biochemical oxygen demands were high, being of the order of 5 to 6 parts per million at LaSalle, and an average of 4.2 parts per million at Henry. The total bacterial count at LaSalle ran over a million per cc. with an average at Henry of almost half a million. The river at Henry was very offensive during the entire summer season.

As the water reached Lacon and Chillicothe, it began to acquire a low dissolved oxygen. Even after passing through the upper and

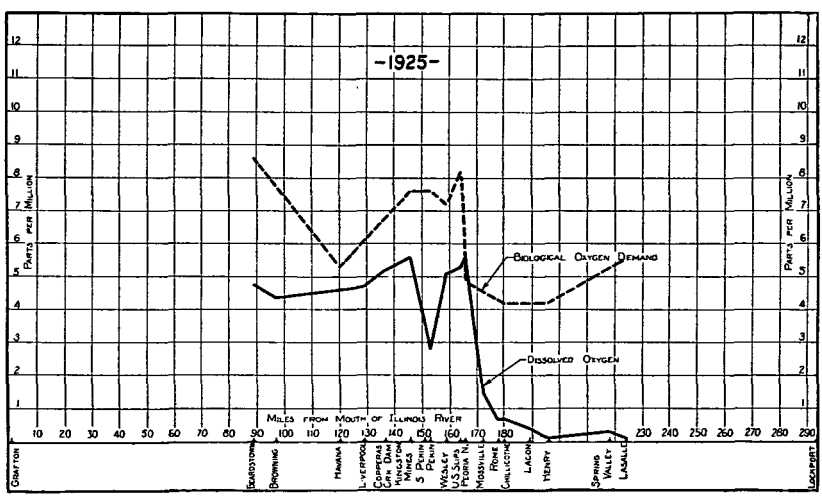

FIG. 6.—SUMMER AVERAGES OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1925.

middle Peoria Lakes, the river at Peoria Narrows only carried an average dissolved oxygen content of 5.6 parts per million (68 per cent saturated).

Great fluctuations are noted in the Peoria Narrows data as plotted in Figure 5. This fluctuation is also noted in the data for following years. The dissolved oxygen content at this station also varied greatly during the day, being usually at a minimum in the early morning and at a maximum in late afternoon. This variation during the day is due to the variation in the amount of photosynthesis and in the amount of

reaeration as due to wind. During the night the wind is usually low, hence along with absence of sunlight during the night, and with the continuance of the oxidative reactions which take out the oxygen already present, the dissolved oxygen in early morning is lower than that during the day, especially, if it is a bright, warm, and windy day. The wind on the lakes is usually at its greatest velocity in late afternoon, hence the amount of reaeration due to this factor is greatest at this time. The variation in dissolved oxygen from day to day, when the sample is taken at the same hour of the day, is due primarily to the changes in degree of photosynthesis as modified by varying amounts of sunlight from day to day and by varying degrees of turbidity in the water. Varying wind velocities and temperatures as well as changes in the biological forms of life found in the lakes above this station also have their effects. The role played by algae in relation to the oxygen content of waters is very important. Algae are capable of increasing very materially the dissolved oxygen content of the waters about them. Bains and other sources of dillution also play a part.

The sewage of Peoria reduced the average dissolved oxygen of 5.6 parts per million (68 per cent saturated) found in the river at Peoria Narrows to a value of 5.1 parts per million at Wesley City, located just below Peoria, and then on down to 2.8 parts per million (34 per cent saturated) at Pekin. The biochemical oxygen demand, as noted in Figure 6, was very materially increased by the sewage of Peoria. The total bacteria count increased from 2,700 per cc. at Peoria Narrows to 425,000 per cc. at Pekin. The presumptive B. coli count also increased from 19 per cc. at Peoria Narrows to 270 per cc. at Pekin. The data for the river in the territory around Havana and Beardstown are based on only one trip in July. It is noted that the dissolved oxygen remains somewhat constant around 4.5 parts per million, but that the biochemical oxygen demand for some reason was very high at Beardstown. This one high result may be ascribed to experimental error. .

As a whole the season of 1925 may be characterized as a low-water season, carrying with it low dissolved oxygens, and high biochemical oxygen demands and bacterial counts. A comparison of the data of 1925 may be made with that of other years by noting the summary given in Table IX. A summary of the monthly averages of the stations sampled during 1925 is given in Table IV.

TABLE IV

SUMMARY BY MONTHS OF THE DATA FOR 1925

Station	Month	Stage feet[1]	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
LaSalle	June	9.5	0.0	5.1	1,100,000	10,000
	July	9.3	0.0	6.4	1,600,000	500,000
	August	8.6	0.3	5.0	328,000	2,700
Spring Valley	August	.....	0.3	.....	.....	.....
Hennepin	June	.....	0.0	.....	.....	.....
	August	.....	0.1	.....	.....	.....
Henry	June	.....	0.1	3.5	544,000	1,000
	July	.....	0.0	4.6	480,000	10,000
	August	.....	0.1	4.4	381,000	270
	September	.....	0.2	.....	.....	.....
Lacon	August	.....	0.6	.....	.....	.....
	September	.....	0.2	.....	.....	.....
Chillicothe	June	.....	0.5	4.0	314,000	1,000
	July	.....	0.7	4.3	600,000	50,000
	August	.....	0.7	4.2	293,000	260
	September	.....	0.8	.....	.....	.....
Rome	June	.....	0.5	.....	.....	.....
	July	.....	1.1	.....	.....	.....
	August	.....	0.3	.....	.....	.....
	September	.....	0.7	.....	.....	.....
Spring Bay	June	.....	3.7	.....	.....	.....
	July	.....	3.7	.....	.....	.....
	August	.....	0.6	.....	.....	.....
	September	.....	2.7	.....	.....	.....
Mossville	June	.....	1.3	.....	.....	.....
	July	.....	2.1	.....	.....	.....
	August	.....	1.4	.....	.....	.....
	September	.....	1.0	.....	.....	.....
Al Fresco	July	.....	5.0	.....	.....	.....
	August	.....	3.4	.....	.....	.....
	September	.....	2.3	.....	.....	.....
Peoria Narrows	June	10.9	5.3	4.3	1,100	5
	July	10.3	6.0	4.2	3,300	50
	August	10.0	5.6	5.2	3,700	1
U. S. Slips	June	.....	4.5	.....	.....	.....
	July	.....	6.9	8.2	70,000	10
	August	.....	4.5	.....	.....	.....
Wesley City	July	.....	4.8	.....	.....	.....
	August	.....	4.3	.....	.....	.....
	September	.....	6.1	.....	.....	.....
7 Mile Island	June	.....	3.3	.....	.....	.....
	July	.....	5.4	7.2	110,000	300
	August	.....	3.4	.....	.....	.....
Pekin	July	.....	3.3	7.6	425,000	270
	September	.....	2.3	.....	.....	.....
Pekin (South)	June	.....	4.0	.....	.....	.....
	July	.....	4.6	.....	.....	.....
	August	.....	2.2	.....	.....	.....
Kingston Mines	July	.....	5.6	7.6	320,000	500
Copperas Creek Dam	July	.....	5.2	.....	.....	.....
Liverpool	July	.....	4.7	.....	.....	.....
Havana	July	8.5	4.6	5.3	197,000	25,000
Browning	July	.....	4.4	.....	.....	.....
Grand Island	July	.....	4.9	.....	.....	.....
Hickory Island	July	.....	2.5	.....	.....	.....
1 mile above Beardstown	July	.....	2.5	.....	.....	.....
Beardstown	July	8.3	4.8	8.6	10,200	55

[1]The monthly stage average as here tabulated is an average of the stage readings taken only on days when samples were collected.

Summer Season of 1926

The river stage during the 1926 summer season was about normal. The stage of the river at. Peoria on March 1, April 1, April 15, and

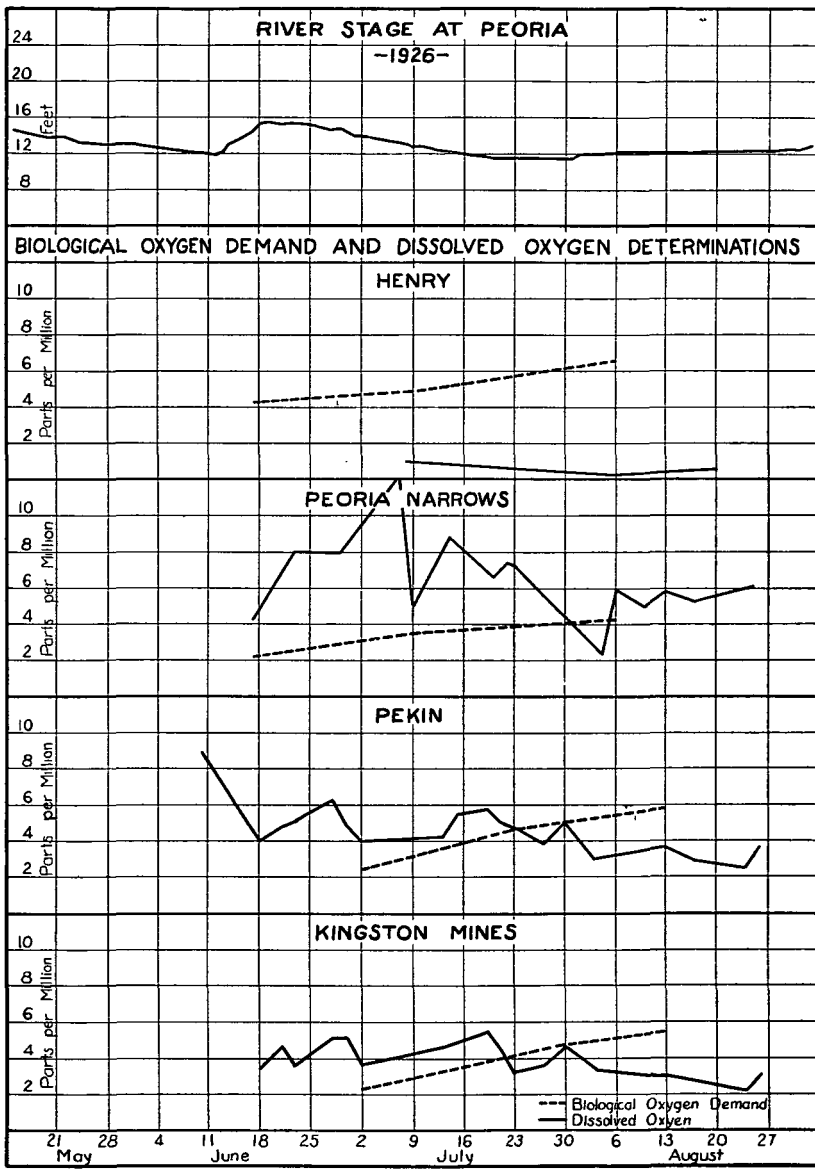

FIG. 7.—REPRESENTATIVE DATA FOB SUMMER OF 1926.

May 1 was, respectively, 16.7, 15.1, 20.0, and 17.9 feet. As noted in Figure 7, the stage at the beginning of the summer survey was 12 feet. Taking the season as a whole the water was about three feet higher at Peoria Narrows than in previous low-water seasons of 1923 and 1925. This was a contributing factor to the higher dissolved oxygen content found in the upper reaches of the river.

At LaSalle the average of three observations showed a dissolved oxygen content of 1.6 parts per million, or less than 20 per cent saturated. The biochemical oxygen demand of the river at LaSalle averaged 4.3 parts per million. The bacteria count per cc. was 123,000 with a B. coli content of 230 per cc. Chemically the river at Henry, located 28 miles below LaSalle, was found to be no better, although it possessed a lower bacteria count. The seasonal trend at Henry, as well as at certain other stations down-stream, may be noted in Figure 7. With the warming up of the summer season, a lowering of the dissolved oxygen and an increase in the biochemical oxygen demand is noted for all four of the stations plotted in Figure 7. Again as in 1925 the river at Henry became quite offensive during the warmer season. It is noted in Figure 8 that as the water travels down-stream from Henry to Peoria (to the left in the diagram) it acquires a higher dissolved oxygen content

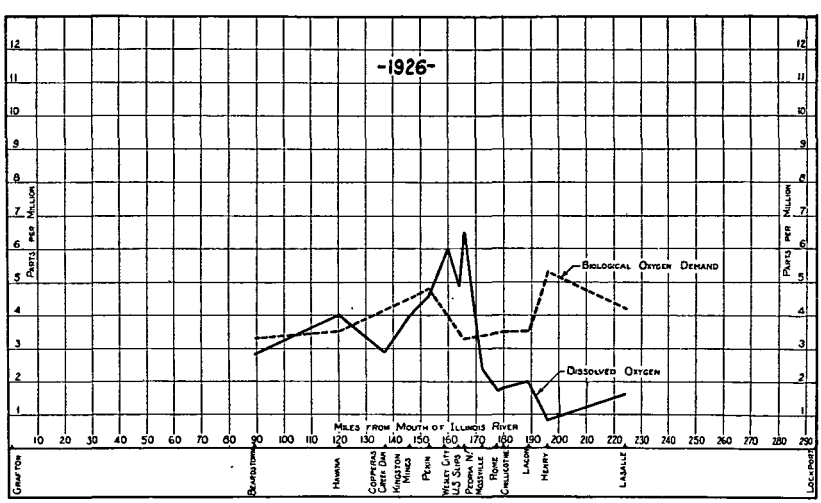

FIG. 8.—SUMMER AVERAGES OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1926.

TABLE V

SUMMARY BY MONTHS OF THE DATA FOR 1926

Station	Month	Stage feet[1]	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
LaSalle	June	14.6	.....	3.9	56,000	100
	July	9.2	2.5	5.6	120,000	500
	August	8.8	.7	3.2	192,000	500
Henry	June	.....	.....	4.3	27,000	100
	July	.....	1.1	4.9	60,000	10
	August	.....	.5	6.7	108,000	100
Lacon	June	.....	4.6	2.3	7,800	500
	July	.....	1.0	4.6	4,700	50
	August	.....	.5	3.5	48,000	10
Chillicothe	June	.....	3.5	3.8	3,600	500
	July	.....	1.4	4.1	1,800	10
	August	.....	.6	2.5	26,000	10
Rome	June	.....	3.7	.....	.....	.....
	July	.....	1.0	.....	.....	.....
	August	.....	.5	.....	.....	.....
Mossville	August	.....	2.4	.....	.....	.....
Peoria Narrows	June	14.8	6.7	2.2	600	1
	July	12.5	7.7	3.5	400	1
	August	12.3	5.0	4.2	7,200	1
U. S. Slips	June	.....	.....	.....	.....	.....
	July:	.....	5.4	.....	.....	.....
	August	.....	4.3	.....	.....	.....
Wesley City	June	.....	7.5	.....	.....	.....
	July	.....	6.3	3.7	26,000	75
	August	.....	4.1	.....	.....	.....
Pekin	June	.....	5.9	.....	.....	.....
	July	.....	4.8	3.6	157,000	250
	August	.....	3.2	5.9	144,000	1,000+
Kingston Mines	June	.....	4.5	.....	.....	.....
	July	.....	4.4	3.5	127,000	100
	August	.....	3.0	5.4	192,000	500
Copperas Creek Dam	July	.....	3.5	.....	.....	.....
	August	.....	2.2	.....	.....	.....
Quiver Lake	August	.....	2.1	.....	.....	.....
Havana	June	10.0	7.7	.....	.....	.....
	July	10.8	2.2	2.6	9,800	30
	August	10.6	2.2	4.3	27,000	100
Beardstown	July	10.8	3.5	3.0	3,000	7
	August	10.1	2.1	3.5	30,000	100

[1] The monthly stage average as here used is an average of the stage readings taken only on days samples were collected.

with a corresponding decrease in the biochemical oxygen demand. At Peoria Narrows the average summer dissolved oxygen content was 6.5 parts per million, which on the basis of an average temperature of 26°C. gives, a saturation of 79 per cent. The dissolved oxygen fiuctuations at

Peoria Narrows from day to day are again noted in Figure 7. This, as explained before, is due to sedimentation, photosynthesis, change in algae flora, and general climatic conditions, as magnified by the lakes located just above this station. The total bacteria per cc. at Peoria Narrows averaged 2,730, with a B. coli content of 1 per cc.

The two biochemical oxygen demand determinations made at Wesley City for this year show a demand of 2.7 and 4.6 parts per million. These results are too low due to the error in point of sampling. This error was mentioned earlier in the bulletin, and hence will not be considered again. The dissolved oxygen determinations at Pekin and Kingston Mines are noted to be lower than at Peoria Narrows. This is due to the oxygen demand of the wastes from the cities of Peoria and Pekin. It is noted in Figure 8 that the Peoria-Pekin sewage load is reduced as the river proceeds on to Havana and Beardstown. The total bacteria count at Kingston Mines averaged 160,000 with a B. coli content of 300 per cc. At Beardstown the figures were 16,500 and 54 per cc, respectively. For monthly averages at each of the stations sampled the reader is referred to Table V. The seasonal averages are found in Table IX.

Summer Season of 1927

The river stage during the spring of 1927 rose to a height of 24.2 at Peoria Narrows on April 25, after having been above flood stage (18 feet) since March 18. The river was slow in receding, and as noted in Figure 9, was still high when the summer work was opened at Peoria in early June. The river did not recede to its normal stage of around 12 feet until late July.

At LaSalle during the high-water season of June the dissolved oxygen content was 3.9 parts per million or 42 per cent saturated. As the water receded and the temperature rose the dissolved oxygen content was decreased to about 12 per cent saturation with a corresponding increase in the biochemical oxygen demand, which in June was 2.1 parts per million, but in July increased to 5.8 parts per million. The same effect of decrease in stage and increase of temperature is noted in the data for all stations between LaSalle and Peoria Narrows. Similar effects are noted in Figure 9 for the stations of Pekin and Kingston Mines. Although the dissolved oxygen content for these two sampling points remained at almost a constant average level, the biochemical oxygen demand increased with the fall of river stage and increase in temperature. With the lowering of the dissolved oxygen content the river

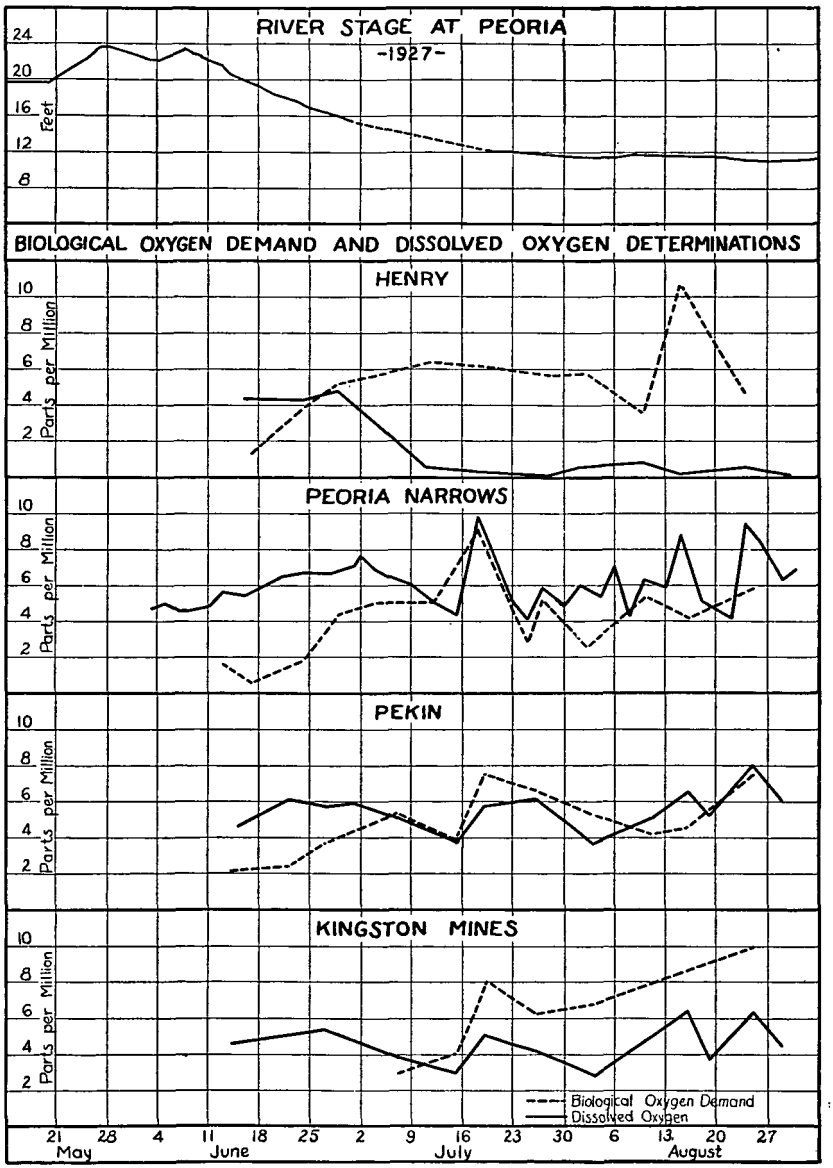

FIG. 9.—REPRESENTATIVE DATA FOB SUMMEB OF 1927.

at Henry became septic about the middle of July and remained in such condition for the rest of the summer.

The curves given in Figure 10 show the effect of natural purification as the river flowed down-stream to Peoria where again, however, it received wastes to lower the dissolved oxygen content and raise the biochemical oxygen demand. The bacteriological data, as plotted in Figure 13, follows much the same trend. The average counts at La-Salle, Henry, Peoria, and Kingston Mines were, respectively, 254,000, 66,000, 1,700, and 92,000 per cc. It is noted that the dissolved oxygen content of the water from Havana, located 120 miles from the mouth

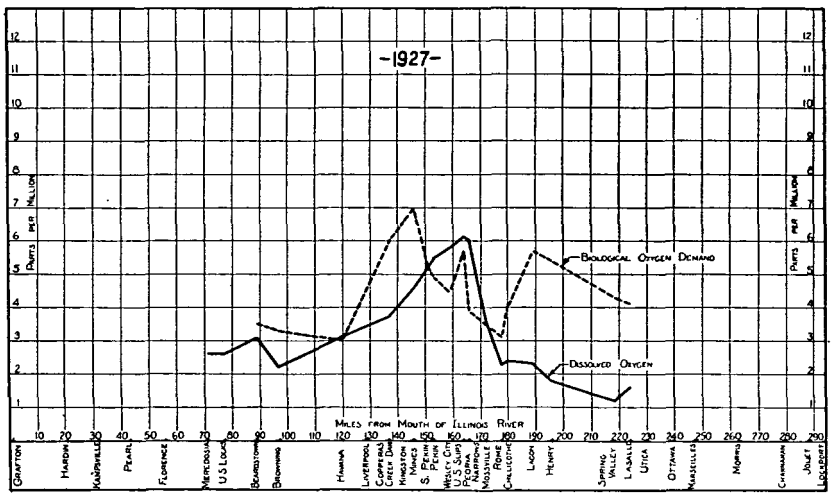

FIG. 10.—SUMMER AVERAGES OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOR 1927.

of the river, to Meredosia, located 71 miles from the mouth, ran from 3.1 to 2.2 parts per million. This gives this section of the river a dissolved oxygen saturation of from 37 to 26 per cent. The author feels that these low values are due to oxygen demands of the Peoria and Pekin wastes.

The bacteriological data for 1927 are plotted in Figure 13 along with similar data for the year 1928. The bacteriological data are plotted logarithmically against time rather than against miles. This makes little difference in the consideration except where rates of flow are found that vary greatly from the average flow. Such is the case in the uppermost reach of the river where the current is very rapid and in the

TABLE VI

SUMMARY BY MONTHS OF THE DATA FOR 1927

Station	Month	Stage feet[1]	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
LaSalle	June	16.9	3.9	2.6	?	100
	July	10.3	.2	5.8	485,000	1,000+
	August	9.9	.6	3.9	22,700	750
	December	17.4	7.7	5.5	5,800	100+
Spring Valley	June	.....	3.3	1.9	?	10
	July	.....	.1	6.8	140,000	1,000+
	August	.....	.1	4.1	90,000	100
	December	.....	8.1	5.6	12,000	10
Henry	June	10.8	4.6	3.4	2,060	10
	July	.....	.3	6.0	87,000	500
	August	.....	.5	6.9	109,000	525
	December	11.8	7.3	5.1	900	3
Lacon	June	.....	3.9	4.5	1,630	10
	July	.....	2.1	5.7	16,000	100
	August	.....	.8	6.9	99,000	275
	December	.....	7.8	3.2	600	6
Chillicothe	June	.....	4.9	2.8	965	5
	July	.....	1.9	5.4	5,600	5
	August	.....	.6	4.0	40,000	55
Rome	June	.....	4.5	1.3	660	5
	July	.....	1.5	4.3	5,700	1
	August	.....	.7	3.7	10,000	55
Mossville	July	.....	2.7	.....	.....	.....
	August	.....	4.4	.....	2,300	5
Peoria Narrows	June	20.8	5.4	2.1	285	1
	July	12.4	6.1	5.5	2,200	5
	August	11.4	6.5	4.0	2,700	7
	December	18.1	9.6	2.8	500	6
U. S. Slips	June	.....	6.4	.....	.....	.....
	July	.....	6.3	5.8	21,000	1
	August	.....	5.7	5.5	25,000	50
Wesley City	June	.....	5.7	[2]4.4	8,900	100
	July	.....	5.9	[2]5.1	8,900	50
	August	.....	5.9	[2]4.0	6,700	50
Pekin	June	.....	5.5	3.2	4,700	7
	July	.....	5.3	5.9	11,500	50
	August	.....	5.7	5.6	212,000	300
	December	.....	9.9	3.2	920	45
Pekin (South of railroad bridge)	June	.....	5.8	4.4	14,000	5
	July	.....	4.9	5.4	127,000	100
	August	.....	5.0	5.9	332,000	500
Kingston Mines	June	.....	5.0	.....	16,000	10
	July	.....	4.0	5.5	122,000	100
	August	.....	4.7	8.4	137,000	75
Copperas Creek Dam	July	.....	2.9	3.3	111,000	100
	August	.....	4.5	8.6	71,000	75
Havana	June	18.0	5.5	2.2	1,750	5
	July	12.7	1.2	4.0	29,000	10
	August	9.7	2.5	2.8	4,300	30
Browning	August	.....	2.2	3.3	1,500	10
Beardstown	June	21.1	5.1	3.0	?	10
	July	12.7	1.9	3.8	28,000	10
	August	9.8	2.3	3.7	2,000	30
LaGrange	August	.....	2.6	6.4	1,700	10
Meredosia	August	.....	2.6	7.8	1,200	10

[1] The monthly stage average as here used is an average of the stage readings taken only on days samples were collected.

[2] Results are low due to point of sampling.

Peoria Lake region where the flow is very slow. Even though the data are plotted against time we note a very rapid decrease in the bacterial count in that part of the curve representing the uppermost reach of the river (labeled I). If the data were plotted on plain graph paper, this decrease would be even more marked. This positively accelerated decrease in count is characteristic of sewages when they are emptied into streams. The first phase is followed by a second phase representing that section of the river possessing a slower rate of flow. The rate of decrease in total count in this latter portion of the river is much lower than in the first phase. This new rate of decrease holds very constant until the river reaches the Peoria Lakes where new conditions are met, and hence the rate of decrease is again augumented. The total count, as noted in Figure 13 (section labeled II), falls off very rapidly as the river enters the Peoria Lakes. This drop in count is due primarily to the very slow rate of flow, which aids sedimentation, and to changes in the chemical and biological characteristics of the water.

The count increases very greatly and abruptly upon receiving the pollution of the city of Peoria (portion of curve labeled III). The count is further increased by the wastes of the city of Pekin. The count gradually decreases as the river flows down-stream from Pekin, but is again temporarily increased at Beardstown (part labeled V), due supposedly to the Sangamon River. However, the total count has again fallen by the time the water reaches LaGrange Locks and Meredosia.

The monthly averages for the stations sampled during 1927 are found in Table VI. The seasonal averages are found in the grand summary in Table IX.

Summer Season of 1928

The Illinois River during the spring of 1928 possessed only a moderately high stage of water. During March the river at Peoria stood almost constantly between 15 to 16 feet. In early April it rose to within a few tenths of an inch of flood stage, which is 18 feet at Peoria. By early May it had receded to a stage of 16 feet. It continued to fall and on opening the work at Peoria on May 26 the stage was 13.2 feet. The stage of the river for the summer season is plotted in Figure 11.

Spring Survey. A two-day survey of the river was made on March 27 and 28 (for complete data see appendix), when the stage of the river at Peoria was 15.3 feet. The river at LaSalle was found to have a dissolved oxygen content of 7.8 parts per million, which at a temperature of 8.2°C. made it 61 per cent saturated. The river at Henry was 70 per cent, and at Peoria Narrows it was 86 per cent saturated. At

Pekin it was 82 per cent saturated. The biochemical oxygen demand of the water at LaSalle was 5.4 parts per million, which fell to 3.0 parts per million at Henry, 2.8 parts per million at Lacon, 2.6 parts per million at Peoria, and then rose to 5.1 parts per million at Pekin due to the wastes from the city of Peoria. The bacteriological data followed much the same trend. The total counts per cc. at LaSalle, Peoria Narrows, and Pekin were 7,500, 300, and 10,000, respectively. It has been suggested that bacterial counts in rivers are lower in summer than in winter due to the feeding of the protozoa upon the former during the summer months. On this point Mr. J. K. Hoskins and Mr. C. T. Butterfield comment as follows: "It appears to be quite well established, that sewage does not contain so many bacteria per capita of contributing population in winter as in summer, but that when added to a stream these (20°C.) bacteria dimmish at a much slower rate in winter. Hence the bacterial count may be actually higher in winter at a point at a distance down-stream from a sewer outlet because of the slower decrease. Also winter flows are usually higher in velocity so that purification in any given distance is greatly retarded under such conditions. In all probability the bacteria-eating protozoa are as much of a factor in winter as in summer; the causes of retarded action are more likely to be greater velocity of river, fewer bacteria contributed per capita, and biological action slower at lower temperatures". The data collected during March, 1928, and that of mid-winter of both 1927 and 1928 show that the total counts on the Illinois Eiver as determined were lower in winter and spring than in summer, although the B. coli count tended to remain constant. The nature of the bacterial flora, as related to the other biological forms found present in such environments as a polluted stream is not well understood. The above data do, however, present an interesting ecological problem.

Summer Survey. During previous summer surveys it was deemed advisable only to study the middle Illinois Eiver, but in that the extreme reaches of the river had not been studied by the Survey for some years, the staff undertook to gather additional data covering this extra territory. During the summer two survey trips were made of the entire Illinois Eiver system, sampling as many of the main tributaries along the line as was possible. These data, along with those of the regular sampling stations, give a very thorough picture of the condition of the river.

The Desplaines Eiver, prior to receiving the sewage load of the Chicago Drainage Canal, was found to be moderately polluted. It contained oil and showed physical characteristics of a polluted stream,

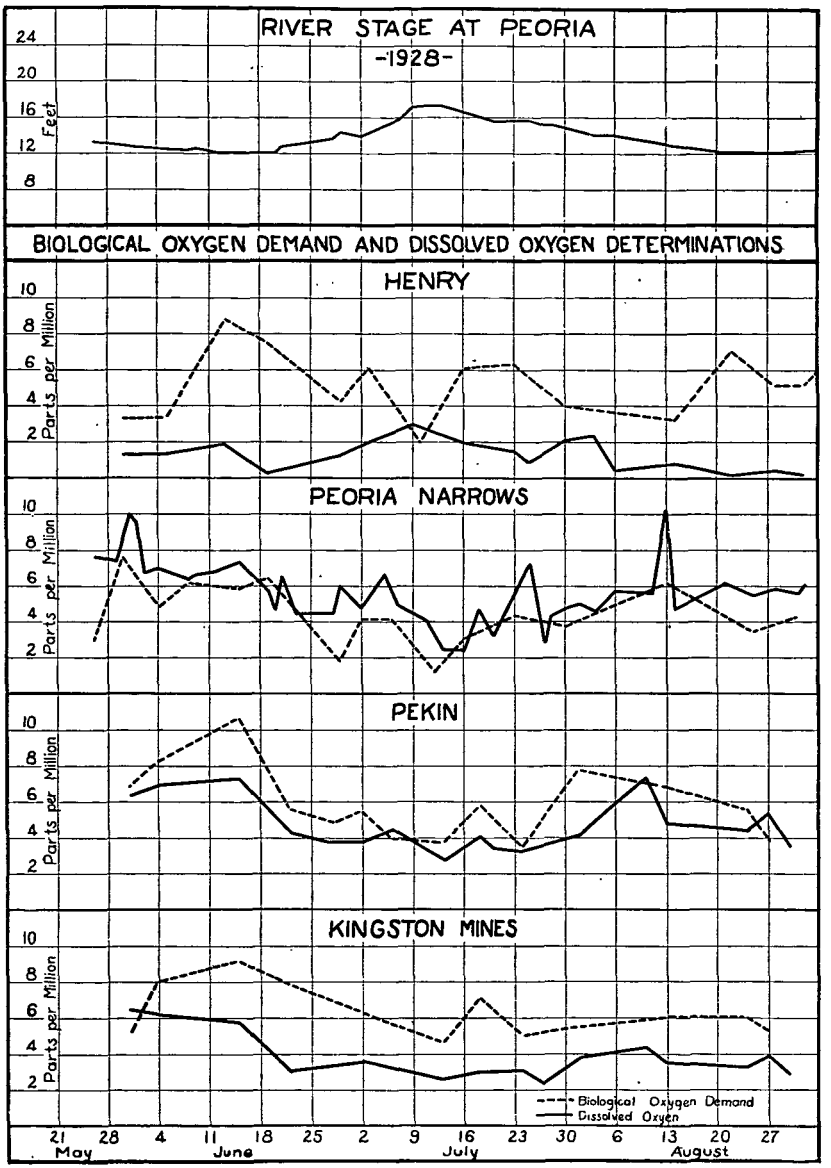

FIG. 11.—REPRESENTATIVE DATA FOR SUMMER OF 1928.

although just above the point of its confluence with the drainage canal, it carried a dissolved oxygen content of 10.7 parts per million at one visit in June, and a dissolved oxygen content of 5.3 parts per million during a visit in August. Its biochemical oxygen demand was 4.8 and 4.9 parts per million and it had a bacteriological count of 11,300 and 25,500 per cc. at the times visited. The high dissolved oxygen values are due to its shallowness, rapid current, and algae content.

The Illinois-Desplaines Eiver at Joliet is a rapid stream. The biochemical oxygen demand and bacteriological data are about the same as the Drainage Canal, because the Desplaines Eiver produces little dilution. As noted in Figure 12 the biochemical oxygen demand decreases quite materially as the stream flows rapidly down-stream. The bacte-

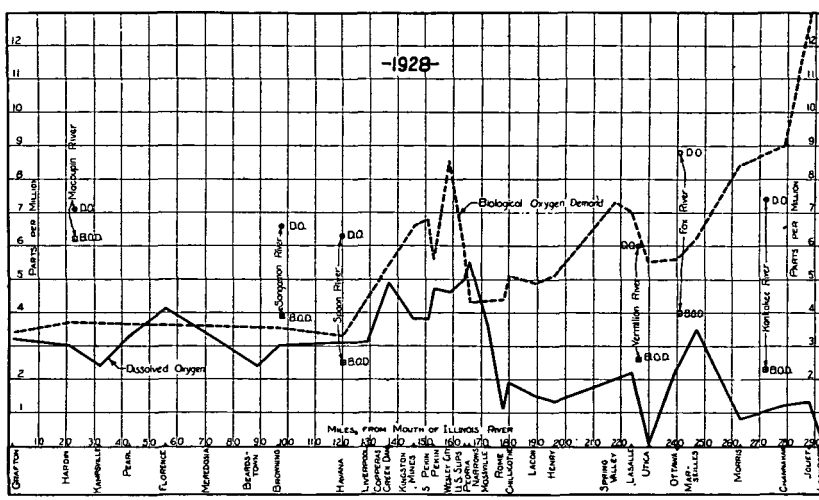

FIG. 12.—SUMMER AVERAGES OP BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN DATA FOB 1928.

riological results also show decided reduction in numbers, as noted in Figure 13. The dissolved oxygen content in the uppermost portion of the river (see Figure 12) is due to the high rate of reaeration that takes place as a result of the swiftness of the current. At some stations it was almost impossible to get dissolved oxygen samples without aerating them due to inability to keep the sampler below the surface of the water. It is this rapid current and the accompanying high reaeration rate that keeps the septic condition of the river at a minimum in this region. The sewage water retains a slight excess of residual

dissolved oxygen practically all the time, hence rapid anaerobic putrefaction cannot take place. The sewage is rapidly and aerobically worked over during this time and is kept stirred up by the current. As the current slackens natural sedimentation takes place which along with lower reaeration causes the river to become practically devoid of dissolved oxygen. Putrefaction then sets in, and the river becomes septic. As noted, this point in the river lies between the cities of Ottawa and Spring Valley. It is a common thing at Spring Valley during the summer months to see the river in a very septic condition. The entire river is often literally fermenting, and liberating large volumes of gas bubbles, which on a quiet day sound much like drops of rain striking the water. Large islands and numerous smaller particles of buoyant sludge are seen to come to the top and burst like small toy balloons. The river during such stages is very dark in color, losing entirely its characteristic grayish brown sewage water tint. The bacteriological counts during such times are very high and dissolved oxygen is absent.

The Kankakee River as it enters the Illinois River between Channahon and Morris (see Figure 1) is chemically and bacteriologically in a good condition. Its flow is from 1,000 to 2,000 cubic feet per second as compared with about 10,000 cubic feet for the Illinois River proper. The Kankakee River is practically saturated as to dissolved oxygen and carries a biochemical oxygen demand of a little over 2.0 parts per million. The chemical data for the Illinois River tributaries are plotted in Figure 12 at their respective points of confluence.

The Fox River, which has a flow of 300 to 600 cubic feet per second, is only moderately polluted as it enters the Illinois River at Ottawa.

As the Illinois River flows down-stream the biochemical oxygen demand gradually decreases until upon arrival at Henry it has a summer average of about 5.0 parts per million. The dissolved oxygen average at Henry for the summer season of 1928 is noted to be 1.3 parts per million. This is a higher value than that recorded in previous years. As noted in Figure 11, at no time during the summer was the dissolved oxygen at this station zero. Although at a number of times it became quite low, it never reached zero as was commonly the case in previous summers. It is also noted in Figure 11 that the increase in stage in mid-summer tended to lower the biochemical oxygen demand and to keep the dissolved oxygen up. It may be that this mid-summer increase in stage is what saved the river at this station from becoming offensive. The increased stage probably came at a crucial time. At

no time during the summer were offensive odors noted from the river. In previous years odors were often noted.

Again as in previous years we note a great variance in the dissolved oxygen content at Peoria Narrows (Figure 11). This, as explained before, is due to the many chemical, physical, and biological factors operating in the upper and middle Peoria Lakes located just above this station. Here also we note a lowering tendency in the biochemical oxygen demand during mid-summer, which quite probably was mainly due to the increase in stage during that period. The average dissolved oxygen content of 5.5 parts per million, which on the basis of an average temperature of 26°C. makes it 67 per cent saturated, was reduced to 56 per cent saturation at Wesley City by the sewage of Peoria. The biochemical oxygen demand average was also increased from 4.3 to 8.5 parts per million and the average total count from 625 to 236,000 per ca The B. coli count was also increased from 4 to 800 per cc. Some of this pollution load is reduced by the time it gets to Pekin, but the data at Pekin (South), which is located just below the lower railroad bridge at that city, and includes the effect of all the pollution load of Pekin, show another increase. The summer average dissolved oxygen at Pekin (South) was 3.8 parts per million which was 45 per cent saturated, and the biochemical oxygen demand was 6.8 parts per million. The total bacterial count and B. coli count were 297,000 and 220 per ec, respectively. The above chemical considerations may be followed in the diagram given in Figure 12. The seasonal trend at Pekin and at Kingston Mines, located six miles below, may be noted in Figure 11.

It is noted in Figure 12 that the pollution loads at Peoria and Pekin are somewhat reduced by the time the water reaches Havana, but that there is seemingly no further reduction of biochemical oxygen demand as the river flows on to Grafton and the Mississippi Eiver. It should be noted that the biochemical oxygen demand of the river from Havana to Grafton remains about 3.5 parts per million, and that the dissolved oxygen content runs from 2.4 parts per million at Beardstown to 4.1 parts per million at Florence. From here it decreases to around 2 to 3 parts per million for the lower reach of the river. This part of the river is quite turbid most of the time. This tends to keep down photosynthesis and retard reaeration of the water.

The Spoon Eiver, which has a flow that varies from 100 to over 2,000 cubic feet per second contributes much roily water and mud to the Illinois Eiver. It possesses a high dissolved oxygen content, and contains practically no domestic wastes. The Sangamon Eiver, which

enters the Illinois Eiver above Beardstown and has a flow of from 300 to 3,000 cubic feet per second as compared to around 12,000 cubic feet per second for the Illinois Eiver, possesses a dissolved oxygen content of 6.6 parts per million. The Sangamon Eiver is quite muddy and samples showed a biochemical oxygen demand of 3.9 parts per million with a total bacteria count of 10,000 per cc. The only other tributary of importance in the lower reaches of the Illinois Eiver is the Macoupin Creek which has a flow of only a few hundred cubic feet per second. It also is muddy a good portion of the time.

The writer believes that the low dissolved oxygen (2 to 4 p.p.m.) and the appreciable biochemical oxygen demand (3 to 6 p.p.m.) which characterize the lower reaches of the Illinois Eiver, are due to a number of factors. First, might be mentioned the magnitude and the nature of the wastes added at Peoria and Pekin. The population of these two cities is of the order of 104,000. To this must be added a large industrial population equivalent which brings the total population equivalent of these two cities to a figure of the order of 1,250,000.

This heavy pollution load is carried into the lower reaches of the river and during its 6-day trip to the Mississippi it continually draws dissolved oxygen from the river. The industrial wastes from the cities of Peoria and Pekin are composed mainly of stock-yards and packing house wastes, paper and strawboard factory wastes, and corn-product and fermentation wastes. Many of these wastes have a very high and in some cases a very slow acting biochemical oxygen demand. One plant alone in Peoria is adding about four million gallons of wastes per day, which have a biochemical oxygen demand of 15,000 parts per million. There are a few other industrial concerns in these two cities that are discharging large volumes of strong wastes into the river. To these must also be added a large number of smaller plants.

Second, it is quite possible that this section of the river represents the nitrogenous oxidation phase of the stabilization of the wastes present. If such is the case, appreciable values for the biochemical oxygen demand should be secured. In commenting upon this question Mr. J. K. Hoskins of the U. S. Public Health Service says: "This suggestion I believe to be the real explanation. The O. D. data of the Sanitary District of Chicago, I understand, fully bears out the conclusion that these high demands which they and we as well observed in the lower river are the result of the second stage of oxidation. Samples collected in this lower stretch and incubated for 1, 3, 5, 10, 15, etc., days, have an altogether different form of O. D. curve than samples further

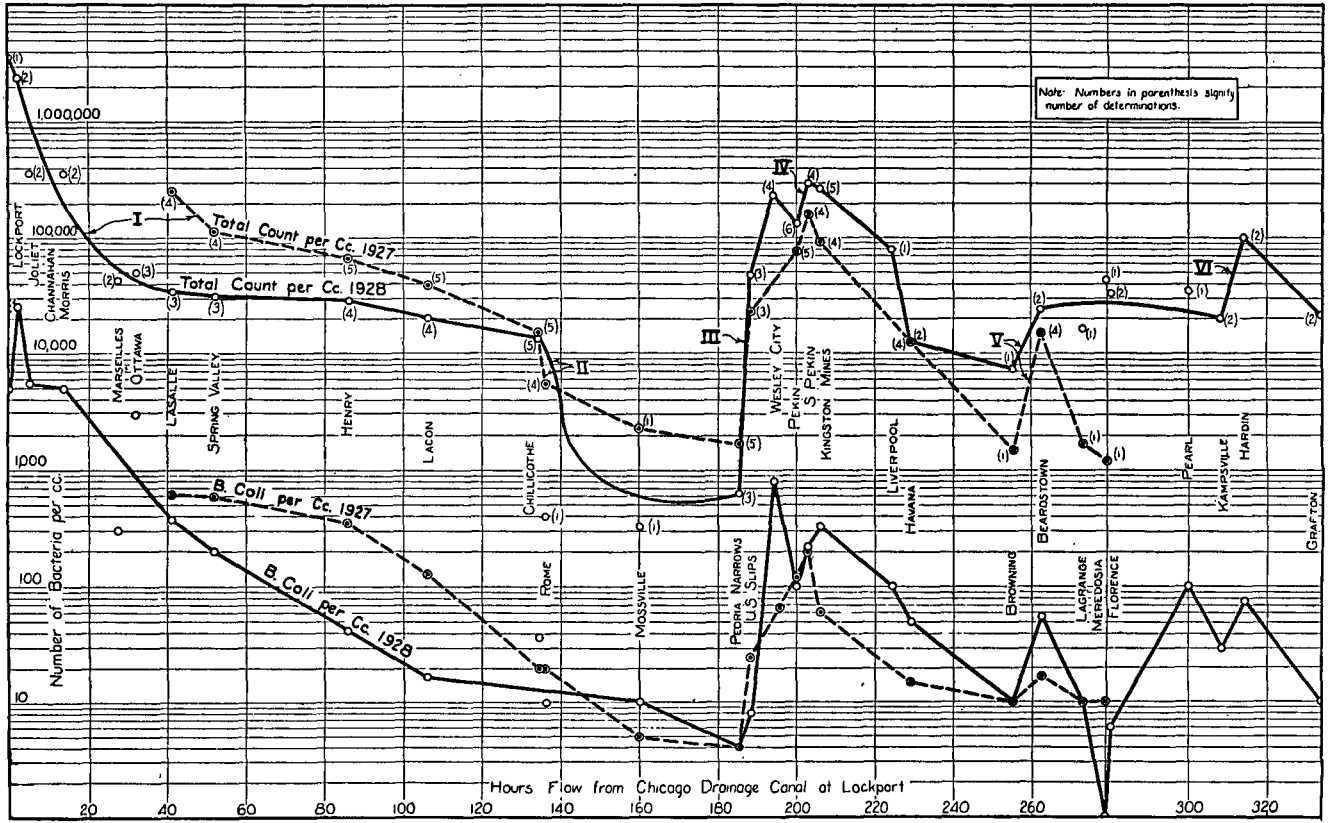

FIG. 13.—GRAPH or BACTERIOLOGICAL DATA FOB 1927 AND 1928.

upstream. Certainly such a secondary stage must be anticipated from our knowledge of rates of oxygen depletion in long time incubated samples and these observations in the Illinois seem to be confirmatory".

Another factor which undoubtedly plays an important part in the condition of the lower Illinois River is the nature of the soil in that region. It is easily washed into the streams where its organic content and biologic life draws upon the oxygen of the stream and also increases the biochemical oxygen demand. The lower Illinois River is always turbid and following rains the tributaries carry in large volumes of very muddy water. In addition to the chemical action which this soil wash may have, it also plays a very important role in retarding photosynthesis. This latter factor may be one of the main reasons for the low dissolved oxygen contents. The writer offers the above three factors as possible explanations of the conditions in the lower Illinois Eiver. The subject requires further investigation.

Bacteriological Considerations. The bacteriological data for the year 1928 are plotted in Figure 13 along with that of 1927. The same general tendencies are noted in the summer averages for the year 1928 as of the proceeding year of 1927. The extra data collected at the extreme reaches of the river during the 1928 summer season add interest.

It is noted that the total count of 3,485,000 found in the Chicago Drainage Canal proper is reduced quite rapidly and at a very definite rate in the upper part of the river (labeled I). This part of the river, as stated before, is characterized by its rapid flow and lack of septic condition in mid-stream. After the phase of accelerated death it is noted that the rate of decrease falls off appreciably but remains quite a constant rate from between Ottawa and LaSalle down to Chillicothe. This reach of the river may be characterized by its much slower but almost constant rate of flow between these towns. This section, labeled II, is the one that becomes septic during the summer season. This tends to keep the count up. That part of the river located between Chillicothe and Peoria, as noted in Figure I, may be characterized by its very slow flow through the upper, middle, and lower Peoria Lakes. Natural sedimentation, photosynthesis, and biologic life in the lakes do much in correcting the polluted condition of the stream. It is noted that the total count falls very materially from Chillicothe to Peoria Narrows. This latter station is located at a narrows between the middle and lower Peoria Lakes. The upper part of lower Peoria Lake receives the domestic wastes of the city of Averyville (now part of greater Peoria)

as well as wastes from a number of factories. These wastes enter the river above the sampling point at U. S. Slips, hence the counts at this station are far above those of Peoria Narrows. This accounts for the abrupt slope in that part of the curve labeled III. Wesley City located just below the city of Pekin carries the waste load of the city of Peoria. Part of this Peoria pollution load is stabilized by the time it gets to Pekin, but the addition of the Pekin waste load again increases the count to a number above that at Wesley City. Following the abrupt accelerated death phase that always follows pollution, it is noted that the total count gradually decreases as the river flows to Browning. The Beardstown total counts are noted to be higher than those at Browning. This is probably due to bacterial soil wash contributed by the Sangamon Eiver as well as some Beardstown sewage that may have mixed with the water at that station prior to sampling. The Beardstown samples were taken from the wagon bridge, which is located above the center of the town, but the channel follows the far side of the river. It seems improbable that mixing of the river water with some of Beardstown's sewage could take place in such a short distance.

The lower reach of the river during 1928 was found quite muddy both times it was sampled, hence the counts were fairly high, although the B. coli content was moderately low, and probably most of these were aerogenes of soil origin.

The B. coli counts of the Illinois Eiver follow much the same diminution in numbers with mileage and time as do the total counts. It is noted in Figure 13 that the B. coli presumptive count at Peoria Narrows was only 4 per cc.; that it was materially increased by the wastes of Peoria and Pekin, but returned again to a low count at certain points down-stream. The great fluctuation in the down-stream presumptive B. coli counts is probably due to the muddy water found in this reach.

Winter Survey. A winter survey of the Illinois Eiver from Pekin to Ottawa was made on November 30 and December 1 in connection with a trip to Pekin to investigate difficulties at the Super-Power Plant where they were using Illinois Eiver water as the cooling medium in their condensers.

The river stage at Peoria Narrows was 15.9 feet. The dissolved oxygen was found to be 10.6 parts per million, which at the temperature of 3.3°C. was 80 per cent saturated. The biochemical oxygen demand was 4.8 parts per million and the total bacteria and B. coli counts per cc. were 1,100 and 10, respectively. At Pekin the river was 66 per cent

saturated with oxygen and possessed a biochemical oxygen demand of 7.2 parts per million and bacteria counts, on agar at 37°C, of 7,500 and 1,000 per cc, respectively. As during the summer season, the dissolved oxygen decreased up-stream above Peoria with a corresponding increase in biochemical oxygen demand and bacterial counts. The biochemical oxygen demand at Henry was 6.5 parts per million and at Ottawa 8.0 parts per million. The total count and B. coli count per cc. at each of these two stations was 22,000 and 10, respectively, at Henry, and 67,000 and 500, respectively, at Ottawa. The river was 61 per cent saturated with dissolved oxygen at Ottawa. The Vermilion Eiver and Fox River were also sampled. The Fox Eiver was found in good condition. It possessed a dissolved oxygen content of 9.5 parts per million which at 3°C. made it 70 per cent saturated. The Vermilion Eiver was 92 per cent saturated as to dissolved oxygen, but carried a biochemical oxygen demand of 5.2 parts per million, and a B. coli count of 50 per cc. Samples for sanitary chemical analysis were taken of the river at Peoria Narrows and Pekin. The results of these analyses are tabulated in Table VII.

The monthly summaries of the stations sampled during 1928 may be found in Table VIII. The summer averages are recorded in Table IX.

TABLE VII

SANITARY CHEMICAL ANALYSIS OF THE ILLINOIS RIVER AT PEORIA NARROWS AND PEKIN STATIONS DECEMBER 3, 1928

	Peoria Narrows Laboratory No. 63140	Pekin Laboratory No. 63139
Turbidity	30	30
Color	35	35
Odor	3e	3e
Total Residue (p.p.m.)	344	348
Alkalinity, methyl orange (p.p.m.)	156	154
Oxygen consumed (p.p.m.)	5.1	5.2
Chlorides (p.p.m.)	13.0	11.0
Ammonia N. (p.p.m.)	.56	.52
Organic N. (p.p.m.)	.48	.64
Nitrate N. (p.p.m.)	2.8	2.8
Nitrite N. (p.p.m.)	.1	.1

TABLE VIII.

SUMMARY BY MONTHS OF THE DATA FOR 1928

Station	Month	Stage feet[1]	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Chicago Canal (Lockport)	August	.....	0.0	20.1	3,485,000	5,000
Desplaines River	June	.....	10.7	4.8	11,300	10
	August	.....	5.3	4.9	25,500	500
Joliet (Ruby St.)	June	.....	.2	18.0	122,000.	500
	August	.....	.1	6.8	2,300,000	50,000
Joliet (Route 7 bridge)	June	.....	3.9	18.7	139,000	1,000+
	August	.....	1.2	7.7	2,400,000	50,000
Channahon	June	.....	1.3	12.5	40,500	1,000+
	August	.....	1.1	5.4	680,000	10,000
Kankakee River	June	.....	8.2	2.1	20,000	100
	August	.....	7.7	2.6	15,800	50
Morris	June	7.2	1.1	8.5	14,400	100
	August	7.9	.5	8.3	705,000	10,000
Marseilles	June	.....	3.4	7.6	14,200	100
	August	.....	3.6	4.8	72,000	500
Fox River	June	.....	11.0	4.5	675	0
	July	.....	6.0	.....	4,450	10
	August	.....	9.4	4.7	2,050	5
	November	.....	9.5	4.8	750	10
Ottawa	June	.....	1.6	5.9	15,100	50
	July	.....	4.7	4.9	56,000	1,000+
	August	.....	.6	5.9	78,500	5,000
	November	.....	7.9	8.0	67,000	500
Utica	August	.....	.1	5.5	.....	.....
Vermilion River	June	.....	5.6	3.8	2,100	1
	July	.....	6.6	2.0	7,450	500
	August	.....	5.8	2.0	10,800	10
	November	.....	10.4	5.2	575	50
LaSalle	March	13.8	7.8	5.4	7,500	500
	June	13.3	2.3	10.0	13,700	100
	July	17.2	4.2	.....	38,000	500
	August	12.6	0.0	4.2	50,000	500
	November	14.4	8.3	9.8	55,000	1,000
Spring Valley	March	.....	7.5	4.9	8,000	10
	June	.....	2.4	9.7	11,900	10
	July	.....	3.5	.....	23,500	500[2]
	August	.....	.1	5.0	58,500	100
Henry	March	.....	8.1	3.0	.....	.....
	June	.....	1.2	5.7	9,900	50
	July	.....	1.8	5.8	6,700	30
	August	.....	0.9	4.9	69,000	50
	November	.....	8.0	6.5	22,000	10
Lacon	March	.....	7.0	2.8	900	5
	June	.....	1.7	4.5	9,900	10
	July	.....	1.9	4.5	4,700	10
	August	.....	.9	5.7	45,000	30
	November	.....	9.1	4.6	1,250	50
Chillicothe	June	.....	2.9	5.6	7,700	10
	July	.....	2.2	4.8	2,250	40
	August	.....	.7	5.0	30,500	50

TABLE VIII—Concluded.

Station	Month	Stage feet[1]	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Rome	June	.....	1.2	.....	.....	.....
	July	.....	2.0	.....	400	10
	August	.....	.2	4.4	.....	.....
Mossville	June	.....	4.0	.....	.....	.....
	July	.....	3.1	.....	325	10
Peoria Narrows	March	15.2	9.9	2.6	300	1
	June	12.7	6.7	4.9	800	1
	July	15.7	4.3	3.4	450	1
	August	12.8	5.6	4.7	.....	10
	November	15.8	10.6	4.8	1,100	10
U. S. Slips	June	.....	6.3	4.8	5,700	10
	July	.....	3.6	4.8	6,500	5
	August	.....	5.1	8.0	32,000	10
Wesley City	June	.....	4.9	8.2	19,800	1,000+
	July	.....	3.9	7.2	129,000	1,000+
	August	.....	4.9	10.0	560,000	500
Commercial Solvents (outlet)	August	.....	.....	5,350 to 15,000		
Pekin (Wagon)	March	.....	9.6	5.1	10,000	50
	June	.....	5.6	6.6	28,000	10
	July	.....	3.6	4.5	41,500	50
	August	.....	5.0	5.8	327,000	230
	November	.....	8.8	7.2	7,500	1,000
Pekin (South) (R.R.)	June	.....	3.9	7.5	199,000	50
	July	.....	3.2	5.4	57,000	100
	August	.....	4.3	7.6	635,000	500
Kingston Mines	June	.....	5.0	8.2	198,000	500
	July	.....	2.9	5.8	61,000	100
	August	.....	3.6	5.7	552,000	366
Copperas Creek Dam	August	.....	4.9	8.3[2]	443,000	100
Liverpool	August	.....	3.1	9.4[2]	79,000	100
Sangamon River	June	.....	6.6	3.9	10,000[3]	100[3]
Spoon River	June	.....	5.5	16.+[3]	91,000[3]	100[3]
	August	.....	7.1	2.5[2]	6,900	1
Havana	June	13.2	3.0	5.3[3]	19,800[3]	50[3]
	August	11.1	3.2	1.4	5,500	50
Browning	August	.....	3.0	3.5[2]	7,400	10
Beardstown	June	10.7	2.2	4.9[3]	13,500[3]	100[3]
	August	10.2	2.6	7.4[2]	35,000	10
LaGrange	August	.....	3.0	.....	16,500	10
Meredosia	August	.....	3.3	5.8[4]	43,000	1
Valley City	.....	.....	.....	.....	61,000	1
Florence	June	.....	5.2	4.8[3]	6,350[3]	10[3]
	August	.....	3.0	5.0[6]	60,000	1
Pearl	June	8.3	3.5	9.5[3]	34,500[3]	100[3]
	August	7.8	3.0	6.3[4,6]	.....	.....
Kampsville	June	.....	3.1	9.2[3]	4,250[3]	10[3]
	August	.....	1.6	5.0[5]	35,000[3]	50[3]
Macoupin River	June	.....	7.1	6.2[3]	240,000[3]	100[3]
Hardin	June	.....	3.4	3.5[3]	159,000[3]	100[3]
	August	.....	2.5	4.8[5,3]	42,500[3]	50[3]
Grafton	June	9.0	3.0	4.0[3]	26,600[3]	10[3]
	August	7.3	3.4	2.7[5,3]	16,500[3]	10[3]

[1] The monthly stage average as here used is an average of the stage readings taken only on days samples were collected.
[2] Carried 5 days in boat at average temperature of 25°. Roily water.
[3] Very muddy water. Heavy rains.
[4] Carried 4 days in boat at 25°. One day at 20°. Roily water.
[5] Carried 2 days in boat at 25°. Three days at 20°. Roily water.
[6] Roily water.

GENERAL REVIEW AND SUMMARY

It seems proper at this time to review some of the data collected prior to 1925 and compare it with the main data presented and considered in this bulletin. For this purpose the data collected by chemists of the Water Survey during the years 1911 to date will be used. The data for 1922 is taken from Bulletin No. 171 of the U. S. Public Health Service. Only data for the three summer months of June, July and August are considered. The data for 1923. and 1924 have been taken from the original data as reported by Dr. Greenfield in Bulletin No. 20 of the State Water Survey. The average of the monthly averages of the three summer months for the years 1922, 1923, and 1924 is plotted in Figures 2, 3, and 4. The data for 1922, as plotted in Figure 2, are comparable with that of 1928, as plotted in Figure 12, since the river stage was about the same during both seasons. The same general tendencies are noted in the dissolved oxygen and biochemical oxygen demand curves for these two seasons. The data for 1923, as plotted in Figure 3, are noted to be very similar to that of 1925, as plotted in Figure 6. Both were low-water seasons. The season of 1924 was a high-water season, hence the reason for the general high dissolved oxygen contents and the low biochemical oxygen demands. The averages for the different stations for this year are plotted in Figure 4.

Figures 14 and 15 show the changes in the average dissolved oxygen content of the Illinois River at certain stations from 1911 to 1928, inclusive. The curves are irregular, but they may be interpreted with a little explanation. In Figure 14 are plotted the dissolved oxygen contents for the stations of LaSalle, Chillicothe, and Peoria Narrows. These stations have been picked as representative of their respective reaches of the river. (See map in Figure 1). It is noted that all the curves from the earlier dates to 1920 have a downward trend. In other words during this period the river was becoming more highly polluted, and required more oxygen for oxidative purposes. In 1922 we note that the dissolved oxygen figures were a little higher, but that they dropped to a lower value in 1923, which was a low-water season. The season of 1924 was a high-water season, hence the reason for the high dissolved oxygens. The summer of 1925 was another low-water season, hence the biochemical oxygen demand was high, and the dissolved oxygen results as determined were low. The summers of 1926, 1927, and 1928 were seasons of about an average river stage. We note during these latter years that

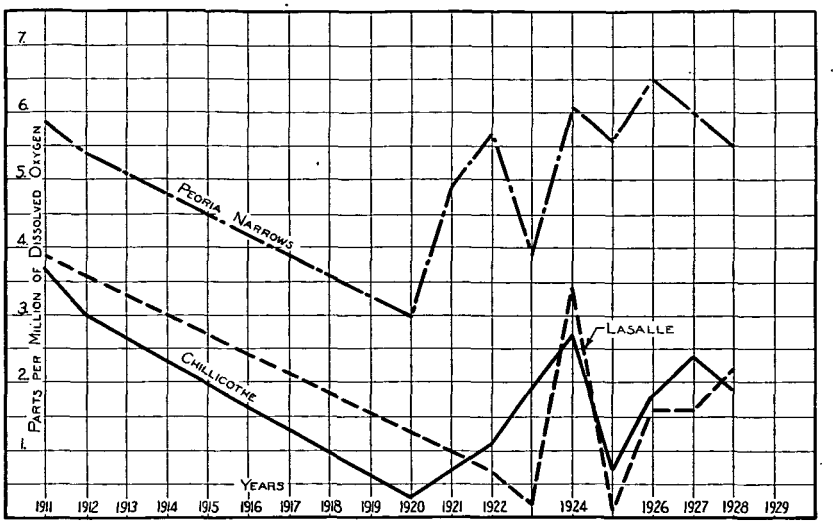

FIG. 14.—CHANGE IN DISSOLVED OXYGEN CONTENT OF UPPER ILLINOIS RIVER SINCE 1911.

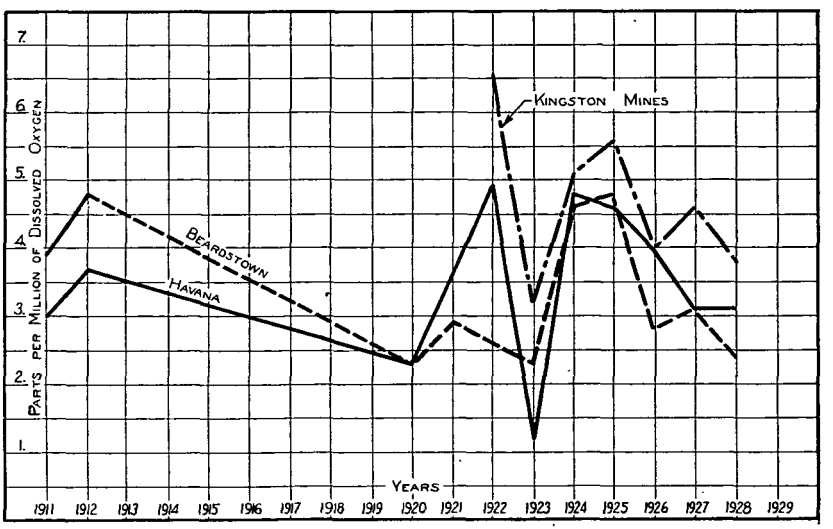

FIG 15.—CHANGE IN DISSOLVED OXYGEN CONTENT OF LOWER ILLINOIS RIVER SINCE 1911.

there seems to be a tendency toward higher dissolved oxygen values. This is also noted in the data for the station of Henry, as plotted in Figures 5, 7, 9, and 11. There was no time during the summer of 1928 when the dissolved oxygen content was zero at Henry. In 1927 there were a few such times. In previous summers it was a common occurrence. This tends to show that the middle reach of the river above Peoria is becoming slightly better. Physical conditions such as odor, color, etc., also tend to support this statement. Eesidents along the river claim that they can notice a tendency for the better. Prom the above we may conclude that the year of 1920 probably marks the period of maximum pollution load. The apparent improvement in the river above Peoria is probably due mainly to a lightening of the industrial load added by certain concerns in the Chicago Sanitary District. Through changes in plant design and treatment of wastes the Argo Starch Works has cut their extremely high pollution load to a low figure. Other plants have done the same, in part at least, which along with the sewage treatment program of the city itself probably constitute the responsible factors in the apparent improvement of the middle Illinois Eiver.

The Illinois River below Peoria presents a different picture. It is noted in Figure 15 that the dissolved oxygen curves for Kingston Mines, Havana, and Beardstown all' have a downward tendency for the years 1925 to 1928. In other words the river is demanding more oxygen. Furthermore it is noted in Table X that the product of the determined biochemical oxygen demand times the flow of the river in terms of thousands of cubic feet per second[1], which the author desires to call the biochemical oxygen demand load, shows a pronounced increase for the cities of Kingston Mines, Havana, and Beardstown from 1925 to 1928. It is true that the same calculations for the cities of LaSalle, Chillicothe, and Peoria Narrows also show an increasing tendency but this tendency is slight in comparison to that of the city of Kingston Mines and other down-stream cities where the biochemical oxygen demand load has almost doubled during the past three summer seasons. The slight increase in the values for LaSalle, Chillicothe, and Peoria Narrows is attributed to changes in the technique of running the biochemical oxygen demand test. This slight error in the consideration would of course be carried over to the down-stream stations as well, but this error is only a small fraction of the increase noted in the latter stations.

[1] The flow data for the stations considered in calculating the biochemical oxygen demand load and bacteria quantity units was taken from daily gage height and discharge data furnished by the Department of Interior, U. S. Geological Survey, Water Resource Branch. For stations which had no gage readings and hence flow data, the flow was arrived at either through extrapolation of the data for stations above and below it, or by analogy to data given in Bulletin No. 171 of the U. S. Public Health Service.

TABLE IX

GRAND SUMMARY OF SUMMER AVERAGES

Station	Year	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Chicago Drainage Canal (Lockport) (294 miles)	1922[1]	.02	12.6	3,210,000	69,800
	1928	.0	20.1	3,485,000	5,000
Desplaines River (293 miles)	1922	5.5	6.3	8,320	12
	1928	8.0	4.9	18,400	255
Joliet (288 miles)	1922	.....	.....	1,440,000	43,900
	1928	1.3	12.8	1,240,000	25,400
Channahon (279 miles)	1922	.2	10.5	1,069,000	15,080
	1928	1.2	9.0	360,000	5,500
Kankakee River (273 miles)	1922	6.9	1.0	6,360	29
	1928	8.0	2.3	17,900	75
Morris (263 miles)	1911[5]	1.1	.....	.....	.....
	1922	.2	7.1	883,000	17,000
	1928	.8	8.4	360,000	5,000
Marseilles (247 miles)	1911[5]	1.3	.....	.....	.....
	1922[3]	.2	7.5	710,000	9,500
	1928[4]	3.5	6.2	43,100	300
Fox River (240 miles)	1922	6.7	1.2	25,800	2,460
	1928	8.8	4.6	2,390	5
Ottawa (240 miles)	1911	3.9	.....	.....	.....
	1922	.7	8.7	464,000	10,500
	1928	2.3	5.6	49,800	3,000
Vermilion River (226 miles)	1922	.6	1.9	8,640	111
	1928	6.0	2.6	6,800	170
LaSalle (224 miles)	1911[5]	3.8	.....	.....	.....
	1922	.7	6.6	101,000	3,300
	1923[2]	.2	.....	.....	.....
	1924[2]	3.4	3.3	3,000	1,000
	1925	0.1	5.5	1,009,000	170,900
	1926	1.6	4.2	123,000	230
	1927	1.6	4.1	254,000	620
	1928	2.2	7.0	33,900	370
Spring Valley (218 miles)	1923	.8	.....	.....	.....
	1924	3.0	.....	.....	.....
	1925	.3	.....	.....	.....
	1926	.....	.....	.....	.....
	1927	1.2	4.3	115,000	600
	1928	2.0	7.3	31,300	200
Henry (196 miles)	1911	3.8	.....	.....	.....
	1922	1.5	6.6	73,300	451
	1923	.5	.....	.....	.....
	1924	3.2	2.2	350	10
	1925	.1	4.2	468,000	3,760
	1926	.8	5.3	65,000	70
	1927	1.8	5.4	66,000	350
	1928	1.3	5.5	28,500	43

TABLE IX—Continued.

Station	Year	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Lacon (189 miles)	1923	1.6?	.....	.....	.....
	1924	3.9	.....	.....	.....
	1925	0.4	.....	.....	.....
	1926	2.0	3.5	20,200	190
	1927	2.3	5.7	39,000[2]	130
	1928	1.5	4.9	20,000	17
Chillicothe (180 miles)	1911	3.7	.....	.....	.....
	1912	3.0	.....	.....	.....
	1920	.3	.....	.....	.....
	1922	1.1	3.5	23,800	150
	1923	0.1	4.9	.....	.....
	1924	2.7	3.2	625	10
	1925	0.7	4.2	402,000	17,000
	1926	1.8	3.5	10,500	170
	1927	2.4	4.1	15,500	20
	1928	1.9	5.1	13,500	33
Rome (178 miles)	1923	.4	4.9	.....	.....
	1924	3.0	1.8	300	5
	1925	0.7	.....	.....	.....
	1926	1.7	.....	.....	.....
	1927	2.3	3.1	5,500	20
	1928	1.1	4.4	400	10
Mossville (172 miles)	1923	2.5	5.6	.....	.....
	1924	4.0	1.3	325	5
	1925	1.5	.....	.....	.....
	1926	2.4	.....	.....	.....
	1927	3.6	.....	2,300	5
	1928	3.6	.....	325	10
Peoria Narrows (166 miles)	1911[5]	5.8	.....	.....	.....
	1912	5.4	.....	.....	.....
	1920	3.0	.....	.....	.....
	1921	4.9	3.7	2,300	8
	1922	5.7	5.3?	3,300	22
	1923	3.9	4.2	.....	.....
	1924	6.1	2.6	410	5
	1925	5.6	4.6	2,700	19
	1926	6.5	3.3	2,730	1
	1927	6.0	3.9	1,700	4
	1928	5.5	4.3	625	4
U. S. Slips (164 miles)	1924	4.6	3.0	.....	.....
	1925	5.3	8.2	70,000	10
	1926	4.9	.....	.....	.....
	1927	6.1	5.7	23,000	25
	1928	5.0	5.9	14,700	8
Wesley City (159 miles)	1911[5]	6.2	.....	.....	.....
	1923	3.8	6.2	.....	.....
	1924	3.6	3.5	10,000	30
	1925	5.1	7.2	110,000	300
	1926	6.0	?	26,000	75
	1927	5.8	4.5?	8,200?	67
	1928	4.6	8.5	236,000	800

TABLE IX—Continued.

Station	Year	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Pekin (153 miles)	1911[5]	6.0	.....	.....	.....
	1922	5.8	6.1	82,000	690
	1923	3.4	5.1	.....	.....
	1924	5.4	3.4	.....	.....
	1925	2.8	7.6	425,000	270
	1926	4.6	4.8	150,000	625
	1927	5.5	4.9	76,000	120
	1928	4 7	5.6	132,000	100
Pekin (South) (151 miles)	1924	4.6	.....	22,000	55
	1925	3.6	.....	.....	.....
	1926	.....	.....	.....	.....
	1927	5.2	5.2	158,000	200
	1928	3.8	6.8	297,000	220
Kingston Mines (146 miles)	1911[5]	4.0	.....	.....	.....
	1922	6.6	7.3	254,000	4,700
	1923	3.2	7.8	.....	.....
	1924	5.1	3.3	21,000	100
	1925	5.6	7.6	320,000	500
	1926	4.0	4.5	160,000	300
	1927	4.6	7.0	92,000	60
	1928	3.8	6.6	270,000	322
Copperas Creek Dam (137 miles)	1911[5]	4.9	.....	.....	.....
	1912	4.0	.....	.....	.....
	1920	1.2	.....	.....	.....
	1923	2.1	.....	.....	.....
	1924	5.0	.....	.....	.....
	1925	5.2	.....	.....	.....
	1926	2.9	.....	.....	.....
	1927	3.7	6.0	90,000	90
	1928	4.9	.....	443,000	100
Liverpool (129 miles)	1923	1.3	.....	.....	.....
	1924	5.2	.....	.....	.....
	1925	4.7	.....	.....	.....
	1928	3.1	.....	79,000	100
Havana (120 miles)	1911	3.0	.....	.....	.....
	1912	3.7	.....	.....	.....
	1920	2.3	.....	.....	.....
	1922	4.9	7.1	41,400	484
	1923	1.2	.....	.....	.....
	1924	4.8	.....	.....	.....
	1925	4.6	5.3	197,000	25,000
	1926	4.0	3.5	12,400	65
	1927	3.1	3.0	12,700	15
	1928	3.1	3.3	12,600	50
Spoon River (120 miles)	1922	6.4	4.6	12,000	100
	1928	6.3	2.5	50,000	50
Sangamon River (98 miles)	1921	3.7	3.1	24,000	156
	1928	6.6	3.9	10,000	100
Browning (97 miles)	1911[5]	3.2	.....	.....	.....
	1925	4.4	.....	.....	.....
	1927	2.2	3.3	1,500	10
	1928	3.0	3.5	7,400	10

TABLE IX—Concluded.

Station	Year	D. O. p.p.m.	5 day B. O. D. p.p.m.	Total Count per cc. 37°C	B. Coli per cc.
Beardstown (89 miles)	1911[5]	3.9	.....	.....	.....
	1912	4.8	.....	.....	.....
	1920	2.3	.....	.....	.....
	1921	2.9	3.5	30,000	80
	1923	2.3	.....	.....	.....
	1924	4.6	.....	.....	.....
	1925	4.8	8.6	10,200	55
	1926	2.8	3.3	16,500	54
	1927	3.1	3.5	15,000	17
	1928	2.4	6.1?	24,000	55
LaGrange (77 miles)	1911[5]	4.8	.....	.....	.....
	1921	3.4	2.9	19,000	86
	1927	2.6	6.4?	1,700	10
	1928	3.0	.....	16,500	10
Meredosia (71 miles)	1911[5]	5.3	.....	.....	.....
	1927	2.6	7.8?	1,200	10
	1928	3.3	.....	43,000	1
Florence (56 miles)	1911[5]	5.5	.....	.....	.....
	1928	4.1	.....	33,000	6
Pearl (43 miles)	1928	3.3	.....	34,500	100
Kampsville (32 miles)	1911[5]	6.2	.....	.....	.....
	1921	4.1	2.3	6,900	117
	1928	2.4	.....	20,000	30
Macoupin River	1922	5.8	4.4	9,150	14
	1928	7.1	6.2	240,000	100
Hardin (21 miles)	1911[5]	6.6	.....	.....	.....
	1928	3.0	3.7	100,000	75
Grafton (1 mile)	1911[5]	6.5	.....	.....	.....
	1928	3.2	3.4	21,500	10

[1] 1922 data from U. S. P. H. Bull. No. 171. Averaged for months of June, July and August.
[2] 1923-4 data taken from original data collected by Dr. Greenfield.
[3] Samples collected just above dam.
[4] Samples collected just below dam.
[5] One trip, August 31-September 5, 1911. Peoria stage at 8.8.

TABLE X

SUMMARY BY YEARS OF DATA FOR CERTAIN REPRESENTATIVE STATIONS

LA SALLE

Year	Stage	D. O. p.p.m.	B. O. D. Load	Bacteria Quantity Units
1922	Moderate	0.7	74.0	1,130,000
1923	Low	0.2	.....	.....
1924	High	3.4	90.6	82,500
1925	Low	.1	55.2	10,090,000
1926	Moderate	1.6	56.0	1,638,000
1927	Moderate	1.6	73.6	4,700,000
1928	Moderate	2.2	90.0	430,000

TABLE X—Concluded.

CHILLICOTHE

Year	Stage	D. O. p.p.m.	B. O. D. Load	Bacteria Quantity Units
1922	Moderate	1.1	44.1	290,000
1923	Low	.1	45.8	.....
1924	High	2.7	70.3	14,700
1925	Low	.7	45.4	4,220,000
1926	Moderate	1.8	54.5	153,000
1927	Moderate	2.4	68.3	310,000
1928	Moderate	1.9	74.0	196,000

PEORIA NARROWS

1921	Moderate	5.7	37.0	20,300
1923	Low	3.9	38.8	35,800
1924	High	6.1	56.5	9,850
1925	Low	5.6	48.2	29,200
1926	Moderate	6.5	50.6	43,200
1927	Moderate	6.0	64.6	28,900
1928	Moderate	5.5	72.0	10,600

KINGSTON MINES

1922	Moderate	6.6	92.5	.....
1923	Low	3.2	109.2	.....
1924	High	5.1	77.3	505,000
1925	Low	5.6	83.5	3,460,000
1926	Moderate	4.0	62.2	2,560,000
1927	Moderate	4.6	110.0	1,750,000
1928	Moderate	3.8	112.0	4,850,000

HAVANA

1922	Moderate	4.9	95.3	567,000
1923	Low	1.2	.....	.....
1924	High	4.8	.....	.....
1925	Low	4.6	63.0	2,360,000
1926	Moderate	4.0	50.0	211,000
1927	Moderate	3.1	71.8	330,000
1928	Moderate	3.1	80.0	277,000

BEARDSTOWN

1921	Moderate	2.9	41.5	351,000
1923	Low	2.3	.....	.....
1924	High	4.6	.....	.....
1925	Low	4.8	.....	128,000
1926	Moderate	2.8	57.0	327,000
1927	Moderate	3.1	113.0	450,000
1928	Moderate	2.4	104.0	408,000

The bacteria quantity units, which, as denned by the U. S. Public Health Service, is the total count per cc. times the flow in thousands of cubic feet per second, is constant or decreases for the stations of Peoria Narrows and above, but like the biochemical oxygen demand load increases for Kingston Mines and Beardstown. Physical conditions, especially between Peoria and Pekin and below this latter city for some miles, tend to show each summer season signs of an increasing pollution load. The extra load that is being added to the river is due to the increased population of the Pekin and Peoria districts, as well as to the very marked increase in industrial wastes.

APPENDIX

DISSOLVED OXYGEN DATA—1925

Each Day Two Sets of Samples Were Collected. Top Set of Date Represents Top Samples, Second Series of Data Represents Bottom Samples.

STATION—LA SALLE—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 17	4:45 p. m.	Clear	.1	23.0	0.0	23.0			
			.1	23.0	0.0	23.0			
July 14			0.0	24.0	0.0	24.0	0.0	24.0	
			0.0	24.0	0.0	24.0	0.0	24.0	
Aug. 12	3:00 p. m.				0.4	25.5			
					lost	25.5			
Aug. 13	7:20 a. m.	Choppy			0.4	24.5			
					0.5	24.5			
Aug. 28	8:00 a. m.		.2	22.5	.1	22.5	1.4	22.5	River at LaSalle turbid with flaky sludge. Not much floating massed sludge or oil. Did not take bottom samples on account of short rope.

STATION—SPRING VALLEY—1925.

Aug. 12	1:15 p. m.	Cloudy, cool, calm			0.3	25.5			
					0.2	25.5			

STATION—HENNEPIN—1925.

June 17	11:55 a. m.	Clear	0.1	22.7	0.0	22.5	0.5	23.7	
			0.0	22.0	0.0	22.0	0.0	23.0	
Aug. 12	10:10 a. m.				0.1	25.5			
					0.1	25.5			

STATION—HENRY—1925.

June 16	5:40 p. m.	Cloudy	.35	23.0	0.3	23.0	0.25	23.0	Below dam.
			.24	23.5	0.1	22.5	0.3	22.5	
June 17	9:25 a. m.	Clear			0.2	22.5			Below dam. River very muddy from rain at 5:00 a. m.
					0.2	22.0			
June 17	9:40 a. m.		0.0	22.3	0.0	22.5	0.3	23.0	Above dam. River somewhat muddy from rain.
			0.0	22.0	0.0	22.5	0.3	22.5	
July 14			0.0	25.0	0.0	25.0	0.1	25.0	
			0.0	25.0	0.0	25.0	0.1	25.0	
Aug. 11	3:15 p. m.				0.1	26.0			
					0.5	26.0			
Aug. 12	10:55 a. m.	Cloudy			0.0	25.0			
					0.0	25.0			
Sept. 9	1:30 p. m.	Clear, warm	0.1	26.5	0.4	27.0	0.9	27.0	
			0.2	26.5	0.4	27.0	0.7	27.0	

STATION—LACON—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks.
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 11	1:25 p. m.	Sprinkling, cool, calm	------	--------	0.4	26.0	------	--------	
			------	--------	0.3	26.0	------	--------	
Aug. 28	11:00 a. m.	----------	1.0	24.0	1.3	24.0	1.8	24.0	
			------	--------	0.6	24.0	------	--------	
Sept. 9	11:05 a. m.	Clear, warm	0.8	26.5	0.2	26.0	------	--------	
			0.7	26.0	0.1	26.0	0.2	26.5	

STATION—CHILLICOTHE—1925.

June 16	3:10 p. m.	----------	0.8	25.0	1.9	24.3	5.9	27.0	
			0.0	24.8	0.2	24.0	1.4	25.2	
June 29	----------	----------	2.2	23.0	0.0	23.0	1.9	24.0	
			1.0	22.0	0.0	23.0	0.7	23.5	
July 9	11:35 a. m.	----------	0.4	28.5	0.3	28.5	1.9	29.5	
			0.4	28.5	0.3	28.0	1.0	29.0	
July 14	----------	----------	------	--------	0.9	26.5	0.4	26.5	
			------	--------	0.6	26.5	0.7	26.5	
July 16	----------	----------	0.2	27.0	0.4	27.0	0.4	27.2	
			0.1	26.8	0.2	26.8	0.3	27.2	
July 27	----------	----------	1.5	25.2	1.6	25.5	1.5	25.5	
			1.4	25.2	1.3	25.2	1.4	25.5	
Aug. 11	11:20 a. m.	----------	------	--------	0.5	26.0	------	--------	
			------	--------	0.1	26.0	------	--------	
Aug. 13	2:10 p. m.	Cloudy, warm, calm	------	--------	0.4	----------	------	--------	
			------	--------	0.15	26.1	------	--------	
Aug. 18	1:10 p. m.	Clear, warm	0.1	26.8	0.3	26.8	0.4	27.0	
			0.0	26.8	0.0	26.8	0.1	26.8	
Aug. 25	1:00 p. m.	Clear	0.5	26.0	0.3	26.0	1.3	28.2	
			0.8	26.0	0.2	25.8	4.2	26.5	
Aug. 28	12:30 p. m.	Clear, warm	2.6	25.5	3.0	----------	4.4	--------	
			2.0	25.5	1.9	25.5	------	--------	
Sept. 2	1:20 p. m.	Clear	2.5	26.0	1.4	25.8	3.0	26.4	
			1.0	25.6	1.5	25.5	2.3	26.1	
Sept. 9	9:30 a. m.	Clear, warm	0.5	25.2	0.4	26.2	0.4	26.2	
			0.3	25.2	0.1	26.0	0.2	26.0	

STATION—ROME—1925.

June 18	----------	----------	0.0	24.8	0.3	25.0	0.6	25.0	
			0.0	24.8	0.3	24.5	0.5	24.8	
June 29	----------	----------	1.6	24.0	0.7	23.5	1.5	23.5	
			1.4	24.0	0.7	23.2	0.6	23.0	
July 9	2:20 p. m.	Cool, rainy	------	--------	0.7	28.0	3.0	28.0	
			1.5	--------	0.7	28.0	2.3	28.0	
July 16	----------	----------	2.0	27.0	0.6	27.0	1.4	27.0	
			1.9	27.0	0.2	27.0	0.0	26.8	
July 27	----------	----------	3.1	26.0	2.2	25.5	1.4	25.5	
			3.5	25.8	2.4	25.2	1.2	25.0	
Aug. 11	10:55 a. m.	Cloudy, cool	------	--------	0.2	26.0	------	--------	
			------	--------	0.7	26.0	------	--------	
Aug. 13	2:35 p. m.	----------	------	--------	0.15	28.0	------	--------	
			------	--------	0.0	27.0	------	--------	
Aug. 18	1:45 p. m.	Clear, warm	0.5	27.2	0.2	26.8	0.4	27.8	
			0.5	27.0	0.1	26.8	0.3	27.0	
Aug. 25	1:30 p. m.	Clear, warm	2.4	27.0	0.6	26.0	3.1	27.0	
			2.4	27.0	0.6	25.8	2.3	26.8	
Sept. 2	11:20 a. m.	Clear	2.3	26.2	0.9	25.8	2.2	26.0	
			2.2	25.8	0.4	25.6	2.3	26.0	

STATION—MIDWAY BETWEEN SPRING BAY AND ROME—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 18	2:15 p. m.	Clear, warm	3.8	28.0	0.2	26.8	0.4	27.5	
			0.1	27.0	0.0	27.8	0.3	27.0	
Aug. 25	2:00 p. m.	Clear, warm	3.6	27.0	1.2	26.8	1.5	26.5	
			3.9	26.0	0.7	26.5	1.0	26.2	

STATION—SPRING BAY—1925.

June 29			8.1	23.5	5.1	23.0	1.7	23.0	
			5.4	22.0	2.2	22.5	1.8	23.0	
July 9	3:00 p. m.	Cool, cloudy			5.2	28.0			
					3.3	28.5			
July 16		Clear, windy, rough	6.3	26.2	5.3	27.0	2.4	26.8	
			5.3	26.0	5.3	26.8	1.4	26.0	
July 27			5.1	26.0	1.8	25.0	1.3	25.0	
			4.8	25.8	1.5	25.0	0.9	25.0	
Aug. 18	11:00 a. m.	Clear, warm	2.4	27.0	0.9	27.0	0.1	26.2	
			2.1	26.8	0.1	26.5	0.0	26.0	
Aug. 25	11:00 a. m.	Clear, warm	5.7	26.0	1.9	26.0	1.8	27.2	
			0.4	25.2	0.5	25.5	0.1	25.8	
Sept. 2	2:20 p. m.	Clear	3.9	26.0	4.4	26.0	3.6	26.0	
			1.6	25.2	1.0	25.0	1.9	26.0	

STATION—MOSSVILLE—1925.

June 18			2.7	25.5	2.0	25.3	4.7	26.0	
			1.2	25.5	1.2	25.0	1.9	25.5	
June 29			1.9	22.5	1.3	22.2	2.8	23.0	
			0.6	22.0	0.8	22.0	1.9	22.0	
July 16		High wind			2.5	26.5			Very rough water.
					2.4	26.5			
July 17			3.3	26.5	2.9	26.0	9.5	27.2	
			3.3	26.0	2.4	25.8	8.6	27.0	
July 27			3.2	25.6	1.3	25.5	6.1	25.8	
			3.1	25.6	1.1	25.0	5.1	25.2	
Aug. 5	3:10 p. m.	Cloudy, warm	9.1	25.8	4.8	25.2	7.3	26.0	
			4.1	25.1	0.7	25.0	6.6	25.8	
Aug. 18	10:25 a. m.	Clear, warm	1.4	27.0	0.6	26.4	5.6	27.5	
			1.7	27.0	0.0	26.0	5.3	27.5	
Aug. 25	10:35 a. m.	Clear, warm	4.8	26.4	1.8	26.0	8.3	27.0	
			2.4	26.0	0.4	25.5	6.9	27.0	
Sept. 2	10:20 a. m.	Clear	2.3	25.8	1.3	25.8	2.2	26.0	
			1.5	25.2	0.7	25.5	2.5	25.8	

STATION—MAPLE POINT—1925.

July 17			6.1	26.2	7.2	27.0	9.5	27.0	
			3.7	25.5	5.3	26.0	10.0	27.0	
Aug. 6	2:05 p. m.		5.1	26.0	2.4	25.6	6.0	25.8	
			5.0	25.8	2.2	25.5	5.8	25.8	After a storm.

STATION—LONG SHORE BEACH—1925.

June 29			4.8	23.0	4.4	23.0	4.8	23.0	
			5.3	23.0	2.9	22.0	5.3	23.0	
Aug. 6	4:00 p. m.	Cloudy	12.0	25.5	6.4	25.5	5.1	25.8	
			7.6	25.0	2.0	25.2	4.1	25.5	

STATION—AL FRESCO—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 17			8.3	27.0	8.3	27.0	10.2	27.2	
			5.8	26.5	5.5	26.0	7.2	26.8	
July 27			7.4	25.2	3.4	25.0	2.4	25.2	
			6.2	25.0	2.3	25.0	3.5	25.0	
Aug. 18	9:30 a. m.	Clear, warm	9.3	27.0	4.0	27.0	4.6	27.4	
			6.4	26.5	1.9	26.5	3.0	27.0	
Aug. 25	9:45 a. m.	Clear	13.3	25.8	4.8	25.5	5.3	25.8	
			7.6	25.2	3.1	25.0	4.8	25.6	
Sept. 2	9:30 a. m.	Clear	3.6	25.3	2.7	25.4	2.3	25.6	
			3.7	25.2	2.0	25.4	2.3	25.5	

STATION—PEORIA NARROWS—1925.

Date	Time	Climate	Stage, feet	East Side		Channel		West Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 15				5.7	24.0	5.6	23.5	5.0	23.5	
			10.2	6.0	24.0	3.6	23.5	3.4	23.0	
June 19	8:30 a. m.					6.8	23.0			
			11.0			6.2				
June 22	8:30 a. m.					5.3	26.0			
			11.0			5.3				
June 22	5:30 p. m.					4.6	25.0			
			11.0			4.5				
June 23	8:30 a. m.					3.4	25.0			
			11.0			3.4				
June 23	5:30 p. m.					6.3	25.0			
			11.0			6.3				
June 24	8:30 a. m.					4.0	24.0			
			10.9			3.7				
June 25	8:30 a. m.					4.0	23.0			
			10.9			4.0				
June 25	7:30 p. m.	Cloudy to fair, wind				6.0	22.0			
			10.9			5.7				
June 26	8:30 a. m.	Clear, warm, breezy				5.5	22.0			
			10.9			6.2				
June 27	8:20 a. m.	Clear, cool, calm				6.0	22.0			
			10.9			5.0				
June 29	8:20 a. m.	Clear, cool, calm				4.4	22.0			
			10.8			3.9				
June 29	7:30 p. m.	Clear, cool, breezy				7.3				
			10.8			7.4				
June 30	7:00 a. m.	Clear, cool, calm				4.2				
			10.8			4.4				
June 30	5:00 p. m.	Clear, warm, calm				7.9				
			10.8			8.1				
July 1	8:20 a. m.	Clear, cool, wind				5.0	23.0			
			10.7			4.7				
July 1	5:00 p. m.	Clear, warm, wind				7.5	24.0			
			10.7			6.8				
July 2	8:30 a. m.	Clear, warm, calm				6.4				
			10.6			6.7				
July 2	5:45 p. m.	Clear, hot, calm				13.3	25.0			
			10.6			13.2				
July 3	8:30 a. m.	Clear, hot, calm				8.7	25.0			
			10.5			8.7				
July 6	8:30 a. m.	Clear, hot, wind				5.6	26.0			
			10.2			5.4				
July 6	4:00 p. m.	Clear, hot, wind				8.3	28.0			
			10.2			6.9				
July 7	8:30 a. m.	Cloudy, warm, calm				5.9				
			10.2			5.9				
July 8	8:00 a. m.	Cloudy, warm, calm				6.2				
			10.3			6.0				

STATION—PEORIA NARROWS—1925—Continued .

Date	Time	Climate	Stage, feet	East Side		Channel		West Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 8	5:30 p. m.	Clear, hot, calm				15.9				
			10.3			16.9				
July 9	8:30 a. m.	Clear, hot, calm				4.6	28.0			
			10.3			2.6				
July 10	8:30 a. m.	Clear, hot, calm				4.3	28.0			
			10.7			4.5				
July 10	4:30 p. m.	Clear, hot, calm				9.4	28.0			
			10.7			9.3				
July 13	9:30 a. m.	Clear, hot, calm				4.2				
			10.4			4.0				
July 13	5:00 p. m.	Clear, hot, calm				6.4	28.0			
			10.4			7.8				
July 14	8:30 a. m.	Cloudy, cool				4.0	28.0			
			10.3			4.0				
July 14	4:30 p. m.	Rain, rough				4.5	26.0			
			10.3			4.5				
July 15	8:30 a. m.	Clear, warm, calm				3.0	25.0			
			10.3			3.0				
July 15	6:30 p. m.	Clear, rough				8.9	28.0			
			10.3			9.3				
July 16	8:30 a. m.	Clear, rough				5.3	25.0			
			10.4			5.5				
July 16	5:00 p. m.	Clear, warm, wind								
			10.4			7.8				
July 17	8:30 a. m.	Clear, cool, calm				4.9	25.0			
						5.0				
July 17	6:30 p. m.	Clear, cool, calm				9.1	25.0			
						8.8				
July 18	8:30 a. m.					5.2				
			10.3			5.2				
July 20	8:20 a. m.					4.2	25.0			
			10.3			4.2				
July 20	5:00 p. m.					4.4	25.0			
			10.3			3.7				
July 21	8:30 a. m.					5.6	26.0			
						6.1				
July 21	5:00 p. m.					7.1				
						7.3				
July 22	8:05 a. m.					4.9	23.0			
			10.2			4.9				
July 22	5:00 p. m.	Clear, cool, wind				8.2				
			10.2			8.5				
July 23				5.1	25.0	5.0	24.8	6.8	25.0	
			10.2	5.2	24.5	4.7	24.8	5.7	25.0	
July 23	7:10 p. m.	Clear, cool				8.0	25.0			
			10.2			8.1				
July 24	8:30 a. m.	Clear, cool, calm				3.4	25.0			
			10.0			3.8				
July 24	5:30 p. m.	Cloudy, rough				5.1	24.0			
			10.0							
July 25	8:30 a. m.	Cool				3.2	25.0			
			9.8							
July 28	5:00 p. m.	Clear, cool				6.3				
			9.9							
July 29	5:00 p. m.	Clear, cool				6.8	25.0			
			9.9							
July 30	8:00 a. m.	Cloudy, rain				3.2	24.0			
			9.8							
July 30	4:30 p. m.	Cloudy, cool				4.9	24.0			
			9.8							
July 31	8:30 a. m.	Cloudy, cold				3.7	22.0			
			10.0							
July 31	4:30 p. m.	Cloudy, cold				5.8	22.0			
			10.0							
Aug. 3	8:30 a. m.	Clear, cool				6.7	21.0			
Aug. 3	5:30 p. m.	Clear, warm				6.9	25.0			
Aug. 4	8:30 a. m.					3.6	22.0			

STATION—PEORIA NARROWS—1925—Concluded.

Date	Time	Climate	Stage, feet	East Side		Channel		West Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 5	8:30 a. m.	Clear, warm				5.6	24.0			
Aug. 5	4:45 p. m.	Cloudy, cool	10.0			7.7	25.2	1.0	25.2	
Aug. 7	4:30 p. m.	Rain, wind	10.0			10.0 4.5	25.0	3.0	24.5	
Aug. 10	9:00 a. m.	Clear, hot, calm				6.1	26.0			
Aug. 10	5:00 p. m.	Clear, hot, calm				10.7	27.0			
Aug. 11	8:30 a. m.	Cloudy, cool				4.3	26.0			
Aug. 11	4:30 p. m.	Rain	9.9			5.0	27.0			
Aug. 12	4:30 p. m.	Rain	9.9			3.0	27.0			
Aug. 13	4:10 p. m.	Clear, cool, calm				8.6 8.4	26.0			
			10.0							

STATION—U. S. SLIPS (PEORIA)—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks.
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 25			4.6	22.8	4.7	23.0	4.4	23.0	
			4.5	22.5	4.2	22.5	4.1	23.0	
July 7	10:20 a. m.	Warm, choppy	9.0	28.2	9.2	28.0	8.2	27.5	
			5.0	27.2	5.0	27.5	6.7	27.5	
July 17			7.3	26.5	9.2	26.8	7.2	26.8	
			6.2	26.5	5.3	26.5	5.3	26.5	
July 23			7.0	25.5	6.7	25.2	5.7	25.5	
			4.1	25.0	6.1	25.0	5.1	25.0	
Aug. 14	9:00 a. m.	Clear, warm	5.1		5.1	25.5	4.4	25.5	
			3.7		3.9	26.5	2.8	25.0	
Aug. 24	9:30 a. m.	Clear, warm	9.5	25.2	5.2	25.5	7.6	25.5	
			4.3	24.8	4.0	24.8	6.0	25.0	

STATION—MAIN STREET (PEORIA)—1925.

July 17			7.0	26.2	6.7	26.8	7.4	27.0	
			5.7	26.0	5.8	26.0	4.4	26.0	
Aug. 14	9:25 a. m.		5.7	26.0	5.0	25.8	4.9	25.8	
			5.4	25.5	2.9	25.5	2.6	25.0	
Aug. 24	10:15 a. m.		6.7	25.2	7.2	25.2	7.1	25.8	
			5.9	25.2	4.1	25.0	3.6	25.0	

STATION—PEORIA AND PEKIN UNION BRIDGE—1925.

June 15			4.3	24.0	4.5	23.8	4.4	24.0	
			4.4	24.0	4.5	24.0	4.2	24.0	
June 25			4.3	23.0	2.1	23.0	3.0		
			3.8	22.5	3.6	23.0	5.5	23.2	
July 7	4:20 p. m.	Hot, calm	4.2	28.0	5.7	28.0	6.6	28.2	
			3.8	28.0	5.3	28.0	7.1	28.0	
July 17			5.3	26.5	5.1	26.5	5.5	26.2	
			5.6	26.2	5.1	26.5	5.2	26.2	
July 23			5.1	25.5	4.4	25.4	4.2	25.5	
			4.3	25.2	4.3	25.0	4.7	25.4	
Aug. 14	9:55 a. m.	Clear, warm	4.1	25.8	3.9	25.8	5.1	26.0	
			4.2	25.0	0.9	25.5	3.4	25.8	
Aug. 24	10:40 a. m.	Clear, warm	5.4	25.2	4.4	25.0	3.8	25.6	
			5.2	25.8	4.4	25.0	3.7	25.4	

STATION—WESLEY CITY—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 7	3:40 p. m.	Hot, calm	4.3	28.0	4.5	28.5	5.8	28.5	
			3.0	28.0	4.3	28.0	5.0	28.0	
July 17	11:00 a. m.	Clear, moderate	4.7	26.2	5.1	26.5	4.1	26.5	
			5.1	26.0	5.2	26.5	4.1	26.5	
Aug. 14	10:15 a. m.	Clear	4.1	25.5	4.3	25.5	3.1	------	
			4.2	25.5	4.1	25.2	2.7	26.0	
Aug. 24	11:05 a. m.	Clear	5.4	25.0	4.5	25.0	0.2	26.0	
			5.1	25.0	4.4	25.0	0.7	25.8	
Sept. 1	2:45 p. m.	Clear, hot	6.8	24.6	6.0	24.3	------	------	
			6.8	24.2	6.3	23.9	------	------	
Sept. 5	3:40 p. m.	Clear	------	------	6.0	27.0	------	------	
			------	------	------	------	------	------	

STATION—SEVEN MILE ISLAND—1925.

June 25	------	------	3.4	23.0	3.6	23.0	3.4	23.0	
			3.2	23.0	2.9	23.0	3.0	23.2	
July 7	2:40 p. m.	Hot	4.7	28.0	5.7	28.1	5.6	------	
			4.7	28.0	5.3	28.0	5.7	27.0	
July 21	2:45 p. m.	Cloudy, cool, calm	5.1	26.0	5.6	27.0	5.4	26.5	
			6.2	26.0	6.5	26.5	4.4	26.5	
July 24	------	------	5.8	25.5	5.3	25.5	3.4	25.5	
			4.7	25.0	4.2	25.2	4.0	25.2	
Aug. 14	10:50 a. m.	Clear	2.5	25.8	3.9	25.5	4.0	26.0	
			2.7	25.8	3.7	25.8	3.7	25.8	
Aug. 24	2:40 p. m.	Clear	5.6	26.0	5.5	25.8	3.5	25.8	
			5.7	26.0	5.4	26.0	4.1	25.6	

STATION—PEKTN—1925.
Lower Railroad Bridge.

June 15	------	------	4.4	24.0	5.0	24.5	3.2	24.5	
			4.3	24.0	4.0	24.0	3.2	24.5	
June 25	------	------	0.2	23.2	3.3	23.5	3.7	23.0	
			3.6	23.2	3.8	23.2	3.3	23.2	
July 2	1:30 p. m.	------	------	------	7.3	25.0	------	------	
			------	------	4.0	25.0	------	------	
July 7	1:40 p. m.	Cloudy, calm	5.0	28.0	4.1	28.0	3.2	28.0	
			5.0	28.0	4.4	27.8	4.1	28.0	
July 21	12:20 p. m.	Clear, moderate	5.0	26.5	4.3	26.5	3.0	26.5	
			4.8	26.5	4.5	26.0	3.0	26.0	
July 24	------	------	3.8	25.2	4.3	25.0	3.2	25.5	
			4.1	25.0	4.2	25.0	3.2	25.5	
Aug. 14	11:40 a. m.	Clear	0.4	26.8	1.8	26.0	0.5	26.0	
			0.3	26.8	1.7	25.8	0.6	25.8	
Aug. 24	1:30 p. m.	Clear	4.1	25.8	3.8	25.5	3.2	25.8	
			4.0	25.5	1.5	25.0	1.4	25.6	

STATION—PEKIN—1925.
Wagon Bridge.

July 24	11:00 a. m.	------	------	------	4.3	25.0	------	------	
			------	------	4.2	------	------	------	
July 31	4:15 p. m.	------	------	------	2.2	------	------	------	
Sept. 1	1:15 p. m.	Clear, warm	4.2	25.0	2.3	24.8	.3	25.1	West side samples taken very near the shore—not a regular station—very putrid odor, about putrescent 4.
			4.1	24.5	2.3	24.8	.1	24.6	

STATION—KINGSTON MINES—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 2	12:30 p. m.				6.3	24.8			
					5.7	24.5			
July 31	2:25 p. m.	Cloudy	6.3		5.5	22.5	5.0	22.5	
					5.0	22.5			

STATION—MACKINAW—1925.

June 25			3.3	23.0	3.0	23.2	3.2		
			3.1	23.0	3.1	23.0	3.2	23.2	

STATION—COPPERAS CHEEK DAM—1925.

July 2	10:50 a. m.				5.0	24.8	6.1	25.0	
					5.6	24.5	6.0	25.0	
July 31	12:30 p. m.	Cloudy	5.0	22.5	2.7		5.8		
					7.4	22.5		22.5	

STATION—LIVERPOOL—1925.

July 2	8:40 a. m.	Clear	5.5	24.5	6.4	25.2	5.1	24.5	
			4.0	24.2	5.3	25.0	4.3	24.5	
July 31	9:25 a. m.	Cloudy, cool	4.3	22.0	3.6		3.9	22.5	
					3.6	22.5			

STATION—HAVANA—1925.

July 1	3:50 p. m.	Clear, hot	5.2	24.5	5.3	24.2	5.5	24.8	
			5.3	24.0	5.2	24.2	5.7	24.8	
July 31	7:30 a. m.	Clear, cool	5.3	21.0	3.8	22.5			
					4.0	22.5			

STATION—MATANZA—1925.

July 1	2:40 p. m.	Clear	5.0	25.0	4.0	24.0	6.0	24.0	
			5.7	24.3	4.0	24.0	3.5	24.2	

STATION—BROWNING—1925.

July 1	10:55 a. m.	Clear	4.2	24.0	3.9	24.0	2.0	23.9	
			3.6	23.3	4.9	23.9	3.9	23.8	

STATION—HEAD OF GRAND ISLAND—1925.

July 30	8:30 a. m.	Cloudy			1.8	24.0	1.8	24.0	
			2.6	24.0	2.1	24.0	2.1	24.0	

STATION—FOOT OF GRAND ISLAND—1925.

Date	Time	Climate	East Side		Channel		West Side		Remarks.
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 1	12:55 p. m.	Clear, rough	3.7 4.4	24.0 24.0	5.4 4.3	24.0 24.0	------ 4.2	-------- 24.2	

STATION—HEAD OF HICKORY ISLAND—1925.

July 30	10:30 a. m.	Rain	------ ------	-------- --------	2.7 2.2	24.0 24.0	2.7 ------	24.0 --------	

STATION—ONE MILE ABOVE BEARDSTOWN—1925.

July 30	12:30 p. m.	----------	2.0 ------	-------- --------	2.7 2.2	24.0 24.0	2.8 ------	24.0 --------	

STATION—BEARDSTOWN—1925.

July 1	9:00 a. m.	Clear, cool	3.2 3.0	23.2 23.0	6.1 3.4	23.5 23.5	4.8 3.7	23.8 23.6	

BIOCHEMICAL OXYGEN DEMAND AND BACTERIOLOGICAL DATA—1925

B. O. D. RESULTS 1925 (GREENFIELD).

Station	June 18	July 2	July 13	August 13					
	5-Day	5-Day	5-Day	1-Day	3-Day	5-Day	8-Day	10-Day	12-Day
LaSalle	5.1		6.4	1.8	2.8	5.0	9.4	13.4	out 14.8+
Henry	3.5		4.6	1.2	3.0	4.4	6.2	9.6	out 14.8+
Chillicothe	4.0		4.3	1.6	2.6	4.2	5.2	7.8	9.0
Peoria Narrows	4.3		4.2	1.8	4.0	5.2	8.2	11.2	out 15.6+
U. S. Slips		8.2							
Peoria and Pekin Union Bridge		8.4							
7 Mile Island		7.2							
Pekin		7.6							
Kingston		7.6							
Havana		5.3							
Beardstown		8.6							

BACTERIAL STUDIES 1925 (GREENFIELD).[2]
(With Effect of Shipment upon Bacterial Counts.)

Station	Date	Peoria count	B. Coli	Urbana count	B. Coli[1]
LaSalle	June 18	1,100,000	10,000	16,000	1,000+
	July 14	1,600,000	500,000	70,000	500
	Aug. 13	312,000	500		
	Aug. 28	344,000	5,000		
Henry	June 18	544,000	1,000	3,000	1,000+
	July 14	480,000	10,000	14,000	500
	Aug. 13	728,000	500		
	Aug. 28	34,800	50		
Chillicothe	June 18	314,000	1,000	11,000	1,000+
	July 14	600,000	50,000	23,000	500
	Aug. 13	582,000	500		
	Aug. 28	4,000	10		
Peoria Narrows	June 18	1,100	5	100	10
	July 14	3,300	50	550	10
	Aug. 13	4,000	1		
	Aug. 28	3,500	1		
U. S. Slips	July 2	55,000	10		
	July 31	76,000	10		
Peoria and Pekin Union R. R. Bridge	July 2	5,400	10		
	July 31	9,200	50		
7 Mile Island	July 2	40,000	100		
	July 31	190,000	500		
Pekin	July 2	230,000	50		
	July 31	624,000	500		
Kingston Mines	July 2	180,000	500		
	July 31	460,000	500,000?		
Havana	July 2	314,000	50		
	July 31	80,000	50,000		
Beardstown	July 2	3,400	10		
	July 31	17,000	100		

[1] Tubes marked with + were not sufficiently diluted to give negative fermentation tubes.
[2] Retabulated by Boruff.

TABULATION OF RESULTS ON FLOATING TRIP—JULY 23-24, 1925.

Place	Miles traveled approx.	Time	Time elapsed	D. O. bottom	D. O. top	Temp. Deg. C.	Remarks
Peoria Narrows	0	7:10 p. m.	0	8.0	8.1	26.0	
Peoria Narrows opposite Paper Mills	.5+	8:00 p. m.	1	7.5	9.1	26.0	
Avery's No. 1	1.25	9:00 p. m.	2	6.6	6.9	25.0	
½ mile above light	1.75	10:00 p. m.	3	6.6	8.1	25.0	Too far east.
Just below U. S. Slips Station	2.00	11:00 p. m.	4	6.1	6.4	26.0	Travel was too slow and too far east.
Just below Recher's Yard	2.2	12:00	5	6.4	8.0	25.0	Probably too far east.
Four blocks above lower ice house	2.4	1:00 a. m.	6	7.1	6.6	25.0	
Opposite lower ice house	2.6	2:00 a. m.	7	7.0	7.9	25.0	
Above lower bridge ½ mile	2.8	3:00 a. m.	8	5.9	5.9	24.5	The travel in these two hours was all but nil. At 4:00 we rowed ½ mile to lower bridge.
150 yds. above Dixon's	3.0	4:00 a. m.	9	4.5	5.9	24.0	
½ mile above Pekin and Peoria Union Bridge	5.0	5:00 a. m.	10	5.4	5.4	24.0+	
Wesley City	6.6	6:00 a. m.	11	4.8	5.2	24.5	
Keystone Canal	7.6	7:00 a. m.	12	5.1	5.2	25.0	
½ way between Wesley and 7 Mile Island	8.8	8:00 a. m.	13	------	4.7	25.0	
Peoria Narrows	--------	8:00 a. m.	--------	3.4	3.8	25.0	
½ way between 7 Mile Island and Pekin	10.0	9:00 a. m.	14	------	5.1	25.0	
1½ mile above Pekin	11.5	10:00 a. m.	15	------	4.7	25.0	
Pekin	13.0	11:00 a. m.	16	4.2	4.3	25.0	

DISSOLVED OXYGEN DATA—1926

Each Day Two Sets of Samples Were Collected. Top Set of Data Represents Top Samples, Second Series of Data Represents Bottom Samples.

STATION—LA SALLE (224)—1926

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 8	1:45 p. m.	Clear, warm, slight wind	9.2	2.6	26.1	2.5	26.1	2.2	26.4	
				2.3	26.1	2.4	26.0	2.1	26.2	
Aug. 5	1:45 p. m.	Clear, hot, slight wind	8.8	0.3	25.5	0.5	25.6	1.0	25.7	
				0.2	25.8	0.4	25.4	1.6	25.3	
Aug. 9	5:00 p. m.	Clear, hot, calm	8.8	1.1	26.0	0.9	25.8	1.2	25.5	Water had a dark color. Oily.
				1.2	25.6	1.0	25.5	1.0	25.3	

STATION—HENRY (196)—1926

July 8	10:45 a. m.	Clear, warm, slight wind		2.3	27.0	1.1	26.8	1.2	26.8	
				1.6	26.8	1.0	26.5	1.1	26.8	
Aug. 5	10:00 a. m.	Clear, hot, slight wind		0.6	25.0	0.4	24.8	0.1	24.5	
				0.5	25.0	0.2	24.5	0.2	24.4	
Aug. 20	9:00 a. m.	Clear, hot, calm		0.6	25.8	0.6	25.8	0.2	24.8	
				0.5	25.8	0.6	25.6	0.0	25.3	

STATION—LACON (189)—1926.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 22	1:30 p. m.	Clear, warm, calm	6.1	22.8	4.1	22.2	4.9	22.3	
			6.0	22.8	4.1	21.5	4.6	22.3	
June 25	11:00 a. m.	Clear, warm	7.1	23.2	4.9	22.8	5.1	22.5	River falling and very clear.
			6.7	23.0	4.4	22.5	5.1	22.0	
June 29	10:30 a. m.	Clear, warm, moderately windy.	6.4	23.0	6.3	22.8	4.6	22.7	
			4.0	23.0	3.7	22.2	4.7	22.7	
July 7	11:00 a. m.	Clear, warm, calm	2.7	26.5	3.0	27.0	1.2	26.5	
			1.5	27.0	1.2	26.3	0.5	26.0	
July 9	9:00 a. m.	Clear, windy	1.6	26.5	1.3	26.3	1.8	26.4	Slight rain the night before.
			1.5	26.6	0.9	26.3	1.7	26.4	
July 14	12:30 p. m.	Clear, warm, calm	6.3	24.2	1.6	24.5	1.3	24.0	River greenish blue due to algae.
			3.0	24.0	0.6	23.9	0.6	23.9	
July 16	9:45 a. m.	Clear, warm, strong wind	2.6	23.2	1.4	22.8	1.9	23.0	Very rough water.
			1.8	23.0	0.8	22.5	2.1	22.8	
July 20	11:15 a. m.	Clear, hot, windy	1.2	24.8	1.2	24.8	2.4	25.0	Rough water.
			1.4	25.0	0.8	24.6	1.2	24.7	
July 22	11:15 a. m.	Cloudy, hot, calm	2.9	26.2	0.8	25.5	1.8	25.8	Heavy rain night before.
			2.4	26.0	0.5	25.5	1.2	25.5	
July 28	11:30 a. m.	Clear, warm, calm	1.0	24.1	0.4	23.5	0.9	24.1	
			0.7	23.5	0.0	23.3	0.0	23.3	
Aug. 4	1:15 p. m.	Clear, hot, calm	0.3	24.8	0.4	24.5	1.6	24.2	
			0.1	24.7	0.2	24.0	0.2	24.0	
Aug. 6	8:30 a. m.	Clear, hot, calm	4.4	26.4	0.5	26.0	0.2	26.0	
			2.7	26.1	0.1	25.8	0.3	25.7	
Aug. 11	11:30 a. m.	Clear, hot, calm	3.3	25.0	1.2	25.0	1.9	25.0	
			4.5	25.0	0.8	24.3	0.7	24.5	
Aug. 19	10:45 a. m.	Clear, hot, calm	6.6	26.0	0.8	26.0	0.9	26.2	
			6.3	25.8	0.2	25.8	0.0	25.5	

STATION—CHILLICOTHE (180)—1926.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 9	11:20 a. m.	Clear, warm, no wind	4.5	22.4	2.5	21.0	2.5	21.8	
			4.2	22.0	2.4	20.8	2.1	21.0	
June 17	12:15 p. m.	Clear, warm, slight wind	2.1	21.8	2.0	21.2	1.7	21.1	Day after heavy rain.
			1.6	21.5	1.3	20.9	1.1	21.0	
June 22	11:30 a. m.	Clear, warm, calm	4.0	22.0	4.2	22.0	3.7	21.8	
			3.9	21.8	3.1	21.6	3.8	22.0	
June 25	1:30 p. m.	Clear, warm	5.7	23.4	5.1	23.2	5.2	23.2	River falling and very clear.
			4.6	23.0	4.8	23.0	4.9	23.2	
June 29	12:30 p. m.	Clear, warm, light breeze	5.6	23.3	5.1	23.1	5.4	23.4	
			4.3	23.0	4.5	22.8	5.0	23.1	
July 7	12:45 p. m.	Clear, warm, calm	4.3	27.8	3.0	27.2	2.4	27.2	
			2.7	27.1	2.3	27.0	2.2	27.0	
July 9	10:30 a. m.	Clear, warm, windy	3.4	27.2	2.4	27.2	1.8	27.1	Slight rain the night before.
			3.2	27.2	2.2	27.0	1.5	27.0	
July 14	10:30 a. m.	Clear, warm, calm	2.2	24.0	0.7	23.8	1.0	24.0	
			1.1	24.0	0.6	23.8	0.6	24.0	
July 16	11:20 a. m.	Clear, warm, very windy	2.9	23.1	2.0	22.8	2.0	23.2	Rough water.
			2.7	23.0	1.6	22.8	1.9	23.2	
July 20	10:00 a. m.	Clear, hot, windy	2.3	25.0	1.5	25.0	1.9	24.7	Heavy sea.
			1.9	24.8	1.2	24.8	1.4	25.0	
July 22	10:15 a. m.	Cloudy, hot, calm	5.3	26.5	1.0	26.0	1.3	26.1	Rain night before.
			3.4	26.2	1.1	26.0	1.4	26.1	
July 28	10:15 a. m.	Clear, warm, calm	0.4	24.0	0.2	23.6	1.6	24.1	
			0.1	23.7	0.1	23.5	1.5	23.8	
Aug. 4	10:50 a. m.	Clear, hot, calm	2.3	25.2	0.3	24.2	0.4	24.6	
			1.1	25.0	0.3	24.0	0.2	24.5	
Aug. 6	10:00 a. m.	Clear, hot, calm	2.5	26.4	0.4	25.9	0.6	26.0	
			0.8	26.0	0.4	25.8	0.5	26.0	
Aug. 11	1:45 p. m.	Clear, hot, calm	9.3?	26.2	1.7	25.0	1.4	25.0	
			2.9	25.6	1.0	24.8	1.1	25.0	
Aug. 18	11:30 a. m.	Clear, cool, calm.	2.5	25.7	1.2	25.1	1.5	25.5	
			1.8	25.3	0.5	24.9	3.2	25.0	
Aug. 25	12:10 p. m.	Clear, warm, calm	1.3	26.1	0.1	25.0	0.4	25.4	
			1.2	25.9	0.0	25.2	0.4	25.4	

STATION—ROME (178)—1926.

June 9	9:35 a. m.	Clear, warm, no wind	5.1	21.1	2.3	20.5	2.3	20.2	
			4.0	20.8	2.0	20.5	2.5	20.7	
June 17	10:45 a. m.	Cloudy, warm, slight wind.	1.8	21.5	2.9	21.2	2.4	21.5	Day after heavy rain.
			1.4	20.7	1.8	21.0	1.9	22.0	
June 22	10:30 a. m.	Clear, warm, calm	3.7	21.5	4.3	21.5	4.8	23.0	
			2.3	21.5	3.7	21.5	3.9	22.0	
June 25	2:30 p. m.	Cloudy	6.2	23.0	5.4	23.0	5.5	22.0	Water clear. Lake a bit rough.
			3.8	22.5	4.1	22.5	4.6	23.0	
June 29	2:00 p. m.	Clear, warm, light breeze	7.1	23.4	5.8	23.2	5.9	23.2	
			4.7	23.0	4.3	23.0	5.9	23.3	
July 7	9:30 a. m.	Clear, warm, calm	1.5	26.0	1.3	26.0	1.2	26.3	
			1.0	26.0	0.7	26.0	0.8	26.2	
July 14	9:30 a. m.	Clear, warm, calm	1.0	24.0	0.9	24.0	1.2	24.2	
			1.0	24.0	0.7	24.0	1.0	24.3	
July 20	9:15 a. m.	Clear, hot, windy	2.0	25.0	1.4	24.5	1.7	25.0	Water very rough.
			1.5	24.5	1.1	24.3	1.3	25.0	
July 22	9:15 a. m.	Cloudy, hot, calm	1.1	26.0	1.2	26.2	1.2	26.3	Rain night before.
			1.0	25.9	0.7	26.1	0.8	26.3	
July 28	9:30 a. m.	Clear, warm, calm	0.5	23.7	0.3	23.8	0.4	24.0	
			0.3	23.6	0.2	23.8	0.4	23.5	
Aug. 4	9:45 a. m.	Clear, hot, calm	0.5	25.3	0.3	24.7	0.4	25.0	
			0.2	24.4	0.2	24.7	0.2	25.0	
Aug. 11	2:45 p. m.	Clear, hot, calm	2.3	25.7	1.3	25.0	1.3	25.0	
			0.9	25.0	0.7	24.7	0.8	25.0	
Aug. 18	10:45 a. m.	Cloudy, cool, calm.	1.4	25.2	0.6	25.1	1.3	25.2	
			0.8	25.0	0.2	25.0	0.5	25.0	
Aug. 25	11:10 a. m.	Clear, warm, calm	2.5	26.2	0.0	25.5	1.7	27.0	
			1.0	25.8	0.0	25.0	0.7	25.2	

STATION—MOSSVILLE (172)—1926.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 13	9:30 a. m.	Clear, hot,	5.4	27.3	6.7	26.5	2.8	26.7	Rain night before.
		calm	3.8	27.0	2.8	26.0	2.1	26.3	
Aug. 18	9:50 a. m.	Cloudy, cool,	7.0	25.0	1.9	24.8	4.6	25.1	
		calm	6.2	25.0	1.3	24.8	3.2	25.0	
Aug. 25	10:05 a. m.	Clear, moderate, calm	5.8	26.2	1.0	25.8	3.1	26.0	
			5.5	25.5	0.6	25.0	2.4	25.4	

STATION—PEORIA NARROWS (166)—1926.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 17	2:15 p. m.	Clear, warm,	14.6	4.0	22.2	4.3	22.2	4.8	22.2	Day after
		slight wind		4.1	22.5	4.0	22.3	4.0	22.0	heavy rain.
June 23	2:30 p. m.	Clear, warm,	15.4	7.8	23.4	8.0	23.4	7.7	23.0	
		calm		7.3	23.2	8.0	23.2	7.8	23.0	
June 29	3:45 p. m.	Clear, warm,	14.5	8.2	23.8	7.9	23.7	8.5	23.8	
		moderate wind.		7.8	23.5	7.8	23.5	7.5	23.2	
July 7	2:30 p. m.	Clear, warm,	13.1	10.2	28.5	12.2	28.3	7.8	27.4	
		calm		9.5	28.5	12.4	28.4	7.0	27.0	
July 9	1:30 p. m.	Clear, warm,	12.8	4.7	27.6	5.1	27.8	7.5	27.8	Rain the night
		very windy		4.4	27.5	4.6	27.8	7.3	27.5	before.
July 14	2:30 p. m.	Clear, warm,	12.4	9.4	26.0	9.0	25.9	7.8	25.5	
		calm		8.7	26.0	8.6	26.0	7.5	25.1	
July 20	2:15 p. m.	Clear, hot,	11.7	0.0	27.0	6.8	26.2	6.0	26.0	
		calm		3.5	26.8	6.6	26.0	15.9	25.8	
July 22	2:00 p. m.	Clear, hot,	11.6	7.7	26.8	7.5	26.5	6.8	26.4	Heavy rain
		calm		7.8	26.8	7.2	26.5	6.3	26.4	night before.
July 23	1:00 p. m.	Clear, warm,	11.6	9.7	26.8	7.4	26.5	6.4	26.6	
		calm		9.4	26.6	6.9	26.5	6.3	26.4	
Aug. 4	9:30 a. m.	Clear, hot,	12.1	1.6	26.0	2.4	25.8	3.3	25.8	
		calm		0.6	25.8	2.4	25.8	3.1	25.8	
Aug. 6	11:30 a. m.	Clear, hot,	12.2	5.0	26.2	6.2	26.2	7.4	26.4	
		calm		4.5	26.0	5.6	25.8	6.1	26.2	
Aug. 10	4:00 p. m.	Clear, hot	12.3	4.3	24.5	5.2	24.5	6.4	25.0	Day after
				4.6	24.5	4.5	24.5	6.3	25.0	heavy rain.
Aug. 13	10:15 a. m.	Clear, hot,	12.2	5.1	27.0	6.7	26.9	6.3	26.4	Rain night
		calm		4.6	26.3	4.8	26.8	6.0	26.5	before.
Aug. 17	2:45 p. m.	Clear, hot,	12.2	5.2	26.2	5.6	25.9	6.0	26.0	
		calm		4.6	26.0	5.0	25.8	5.1	26.0	
Aug. 25	2:45 p. m.	Clear, warm,	12.5	5.2	26.0	6.6	25.8	6.6	25.6	
		calm		5.6	26.0	5.5	25.8	6.5	25.8	

STATION—U. S. SLIPS (164)—1926.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 2	12:30 p. m.	Clear, warm,	6.2	24.5	5.8	24.0	6.1	23.4	
		slight wind	4.3	23.4	4.2	23.3	4.4	24.5	
July 30	12:15 p. m.	Clear, warm,	8.2	27.1	8.4	27.0	13.5	28.6	
		calm.	4.8	26.5	3.3	26.1	5.8	26.3	
Aug. 13	12:30 p. m.	Hazy, warm,	11.8	29.0	8.8	28.3	7.2	27.3	Day after heavy rain.
		calm	4.0	26.1	3.0	25.8	4.8	25.8	
Aug. 17	8:15 a. m.	Slight fog,	3.5	25.8	3.1	25.8	4.7	25.6	
		calm	3.0	25.3	2.3	25.2	4.3	25.2	

STATION—WESLEY CITY (159)—1926.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 1	0 1:30 p. m.	Clear	11.2	22.8	10.2	22.5	10.9	22.5	
			11.1	22.8	10.8	22.5	10.9	22.5	
June 18	1:00 p. m.	Clear	4.4	22.2	5.4	22.3	5.3	22.4	Water muddy from heavy rain on the 16th.
			4.2	22.0	4.7	22.0	5.0	22.3	
June 23	1:00 p. m.	Clear, warm	5.7	22.8	6.7	22.8	6.9	23.2	
			6.2	22.6	6.8	22.8	6.8	23.2	
June 30	1:30 p. m.	Clear, hot, no wind	7.5	24.2	7.4	24.4	7.2	24.7	Water very clear.
			7.4	24.2	7.6	24.2	7.1	24.5	
July 2	11:50 a. m.	Clear, warm, no wind	3.8	23.8	4.1	23.7	4.2	24.0	
			3.1	23.8	4.2	23.7	4.3	23.9	
July 13	1:00 p. m.	Clear, warm	5.8	25.6	6.2	25.7	6.3	25.6	Heavy rain night before. Some oil on surface of water. Water muddy.
			5.8	25.6	7.1	25.8	6.6	25.6	
July 15	1:00 p. m.	Cloudy, calm	5.0	25.5	6.1	25.2	8.0	25.5	
			5.8	25.2	6.6	25.0	8.1	25.5	
July 19	2:15 p. m.	Clear, hot, windy	7.4	25.6	7.7	25.8	7.8	26.0	
			7.7	25.2	8.0	25.5	7.6	25.5	
July 21	12:30 p. m.	Clear, hot, calm	5.8	27.0	6.3	26.7	7.0	26.8	Third day of very hot weather.
			6.0	25.0	6.2	26.8	6.9	26.0	
July 23	1:15 p. m.	Clear, warm, calm	6.6	26.4	8.3	26.3	8.4	26.1	
			6.0	26.2	8.1	26.0	8.7	26.2	
July 27	1:00 p. m.	Clear, warm, calm	5.6	26.1	6.3	25.9	7.4	25.9	Moderate rain night before.
			4.4	26.0	5.4	25.8	6.9	26.0	
July 30	11:15 a. m.	Clear, hot, calm	4.4	27.0	6.1	26.8	5.8	27.1	
			4.4	27.0	5.8	26.5	6.3	27.0	
Aug. 3	10:45 a. m.	Clear, warm	4.1	23.3	3.7	23.3	4.1	23.3	Following several days of heavy rain.
			3.3	23.5	3.8	23.3	3.8	23.4	
Aug. 10	2:45 p. m.	Clear, warm	3.7	24.8	4.0	24.6	4.0	24.8	Day after heavy rain.
			3.5	24.2	4.0	24.6	5.2	24.7	Water muddy.
Aug. 13	12:00	Cloudy, warm, calm	3.6	26.2	4.4	26.2	4.2	26.2	Day after heavy rain.
			3.7	26.2	4.2	26.2	4.2	26.2	
Aug. 17	10:15 a. m.	Clear, warm, calm.	2.7	25.6	3.1	25.6	4.4	25.5	
			2.8	25.5	3.0	25.2	4.4	25.8	
Aug. 24	12:00	Clear, warm, calm	3.4	25.0	3.9	25.0	4.4	25.2	Day after very heavy rain.
			3.0	25.0	3.9	25.1	4.3	25.1	

STATION—PEKIN (Free Wagon Bridge) (153)—1926.

June 10	10:15 a. m.	Clear, windy	8.2	21.9	9.0	21.6	9.1	21.6	
			8.1	21.8	8.7	21.6	9.2	21.4	
June 18	10:30 a. m.	Clear, warm	3.7	22.0	4.1	22.0	5.1	22.2	Water muddy from heavy rain on the 16th.
			3.8	21.7	4.1	22.0	4.9	22.1	
June 21	12:45 p. m.	Clear, windy,	4.5	22.0	4.8	22.0	4.9	21.8	Rough water.
			4.6	22.0	4.8	22.1	4.6	22.0	
June 23	10:45 a. m.	Clear, warm	4.4	22.9	5.2	22.5	5.5	22.5	
			4.6	23.0	5.2	22.8	5.6	23.0	
June 28	11:05 a. m.	Clear, warm, windy	6.1	22.5	6.4	22.5	5.8	22.5	Rough water.
			5.4	22.4	6.2	22.4	6.4	21.8	
June 30	11:15 a. m.	Clear, hot, no wind	4.2	23.7	5.9	23.3	6.4	23.4	
			4.6	23.9	5.8	23.2	6.4	23.3	
July 2	11:00 a. m.	Clear, warm, no wind	3.0	23.9	4.0	23.7	4.0	24.1	
			2.9	23.8	4.0	23.7	3.9	23.9	
July 13	11:00 a. m.	Clear, warm	3.6	25.0	4.2	25.1	5.3	25.1	Heavy rain night before. Water muddy.
			4.1	25.0	4.5	25.0	5.0	25.0	
July 15	11:30 a. m.	Cloudy, cool, windy	4.8	24.0	5.6	24.9	6.7	24.7	Some oil on surface of water.
			3.0	24.8	5.4	24.8	6.2	24.8	
July 19	12:15 p. m.	Clear, hot, windy	5.9	25.4	5.2	25.0	7.4	25.6	
			6.2	25.2	6.3	25.0	7.0	25.4	
July 21	10:30 a. m.	Clear, hot, calm	4.7	26.0	5.3	26.1	5.1	26.2	Third day of very hot weather.
			4.5	26.0	4.8	26.0	6.1	26.1	
July 23	11:15 a. m.	Clear, warm, calm	6.2	25.5	4.8	25.6	4.1	26.0	
			6.0	26.0	4.8	25.5	4.1	25.5	
July 27	11:00 a. m.	Clear, warm, calm	3.5	25.5	4.3	25.4	5.3	25.2	Moderate rain night before.
			3.5	25.2	3.5	25.4	5.2	25.5	

STATION—PEKIN (Free Wagon Bridge) (153)—1926—Concluded.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 30	10:30 a. m.	Clear, hot,	3.6	27.1	4.7	25.9	5.1	27.2	
		calm	3.5	27.0	5.4	26.8	3.7	27.3	
Aug. 3	9:45 a. m.	Clear, warm	2.6	23.1	3.0	23.2	3.5	23.1	Following several days of rain.
			2.6	23.0	3.2	23.0	3.4	23.3	
Aug. 13	10:30 a. m.	Clear, warm,	2.4	26.0	3.9	25.9	3.3	26.7	Day after heavy rain.
		calm	2.1	26.0	3.5	25.8	2.9	26.0	
Aug. 17	11:30 a. m.	Clear, warm,	2.2	25.8	2.9	25.8	3.4	25.7	
		calm.	1.3	25.8	3.0	25.8	3.4	25.6	
Aug. 24	10:15 a. m.	C lear, warm,	2.3	25.0	2.6	25.0	3.4	25.0	Day following very heavy rain.
		calm	2.2	25.0	2.5	25.0	2.8	25.1	
Aug. 26	10:25 a. m.	Clear, warm,	3.3	24.6	3.8	24.8	4.4	24.7	Water rough.
		windy	3.1	24.8	3.5	24.7	4.3	24.5	

STATION—KINGSTON FERRY (146)—1926.

June 18	9:30 a. m.	Clear, warm	3.7	21.9	3.4	22.0	3.9	21.5	After heavy rain on June 16th.
			3.5	21.5	3.5	21.5	3.9	21.5	
June 21	10:45 a. m.	Clear, windy	3.9	22.0	4.6	22.0	4.8	22.0	Rough water.
			4.6	22.0	4.7	21.8	4.5	21.8	
June 23	9:45 a. m.	Clear, warm,	3.5	23.0	3.8	22.5	3.5	22.6	
		windy	3.5	22.9	3.6	22.8	4.0	22.4	
June 28	9:30 a. m.	Clear, warm,	6.1	22.5	5.2	22.2	5.7	22.3	Rough water.
		windy	5.7	22.5	5.1	22.3	5.1	22.4	
June 30	9:30 a. m.	Clear, warm,	6.5	24.0	5.3	23.2	5.6	23.7	Just after a steamboat had passed.
		no wind	5.9	23.8	5.0	23.2	5.5	23.8	
July 2	10:30 a. m.	Clear, warm,	3.6	23.8	3.7	23.7	4.2	23.8	
		no wind	3.9	23.9	3.6	23.6	4.5	23.8	
July 13	9:30 a. m.	Clear, warm	4.8	26.0	4.8	25.8	4.9	25.6	Heavy rain night before. River falling slowly.
			4.5	25.8	4.6	25.8	4.7	25.5	
July 15	10:00 a. m.	Cloudy, cool,	5.6	24.8	4.9	24.8	4.9	24.6	
		slight wind	4.8	24.8	5.3	24.8	4.7	24.6	
July 19	11:00 a. m.	Clear, hot,	5.6	25.2	5.5	25.0	6.0	25.1	
		slight breeze	5.4	24.9	5.4	25.0	5.6	25.0	
July 21	9:15 a. m.	Clear, hot,	4.0	26.0	4.5	25.9	5.1	25.9	Third day of very hot weather.
		calm	4.0	26.0	4.3	25.9	4.8	26.0	
July 23	9:50 a. m.	Clear, warm,	3.7	26.0	3.2	26.0	4.2	26.5	
		calm	5.0	26.0	3.5	25.9	4.2	25.9	
July 27	9:45 a. m.	Clear, warm	3.9	25.6	3.8	25.4	4.1	25.0	Moderate rain night before.
			3.6	25.3	3.6	25.6	4.1	25.0	
July 30	9:45 a. m.	Clear, hot,	4.0	27.0	5.4	26.4	4.4	26.2	
		calm	4.0	26.8	4.0	26.3	4.1	26.2	
Aug. 3	8:30 a. m.	Moderate,	2.8	23.0	3.6	23.0	3.2	22.8	After heavy rains.
		clear	2.4	23.0	3.2	23.1	3.0	23.0	
Aug. 13	10:00 a. m.	Cloudy,	3.2	25.9	3.1	25.8	3.2	25.6	Day after heavy rain.
		warm, calm	2.9	25.8	3.2	25.7	3.3	25.6	
Aug. 24	9:15 a. m.	Clear, hot,	2.5	25.2	2.3	25.0	2.2	24.7	Day after very heavy rain.
		calm	2.0	25.1	2.0	25.0	2.2	24.8	
Aug. 26	9:15 a. m.	Clear, warm,	3.2	25.1	3.2	24.8	3.3	24.8	Water rough.
		slight wind	3.2	25.0	3.1	25.0	3.3	25.1	

STATION—COPPERAS CREEK DAM (137)—1926.

Date	Time	Climate	Stage feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 2	9:30 a. m.	Clear, warm,	------	3.0	23.9	3.2	23.9	3.0	23.8	
		no wind	------	3.0	23.9	3.3	23.8	2.9	23.8	
July 30	8:55 a. m.	Clear, hot,	------	2.7	26.4	3.7	26.8	3.1	26.8	
		calm.	------	2.5	26.2	3.7	26.5	3.1	26.5	
Aug. 13	9:00 a. m.	Cloudy,	------	2.1	25.2	2.2	25.7	2.2	25.5	Day after heavy rain.
		warm, calm	------	2.1	25.3	2.3	25.7	2.2	25.5	

STATION—HAVANA (120)—1926.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 11	12:30 p. m.	Clear, hot, slight wind	10.0	10.0	24.5	7.7	24.0	7.3	24.5	
				9.7	24.0	7.6	24.0	6.9	24.5	
July 2	8:00 a. m.	Clear, warm, no wind	12.3	4.3	24.2	3.2	24.0	2.5	24.2	
				4.8	24.2	3.0	23.9	2.4	24.2	
July 30	7:15 a. m.	Clear, warm, calm,	9.3	2.8	26.2	1.5	26.3	2.1	26.8	
				2.6	26.4	1.3	26.5	2.0	27.0	
Aug. 13	7:00 a. m.	Cloudy, warm	10.6	2.0	25.6	2.9	25.8	1.8	25.8	Day after heavy rain.
				2.6	25.6	1.6	25.8	1.3	25.8	

STATION—BEARDSTOWN (88)—1926.

July 1	3:15 p. m.	Clear, warm, no wind	12.7	3.8	25.3	4.5	25.8	6.6	26.2	Water muddy.
				3.7	25.2	4.3	25.8	6.4	26.2	
July 29	3:15 p. m.	Clear, hot, calm.	8.9	2.5	27.8	2.9	27.7	8.6	29.0	Very hot day.
				2.4	27.7	2.5	27.6	4.0	28.0	
Aug. 12	2:00 p. m.	Clear, warm	10.1	2.3	25.8	2.4	25.7	4.2	27.2	Heavy rain in the morning.
				1.8	25.8	1.8	25.7	2.1	27.0	

STATION—QUIVER, LAKE CHAUTAUQUA BEACH—1926.

Aug. 13	7:15 a. m.	Cloudy, warm	------	------	--------	2.1	25.6	------	--------	One sample taken for Mr. H. B. Drake, Havana.

BIOCHEMICAL OXYGEN DEMAND DATA—1926

STATION—LA SALLE (224)—1926.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks.
June 17	100	5.3	1.4	3.9	
	50	8.1	3.6	9.0?	
July 9	100	5.3	1.3	4.0	
	50	7.1	3.5	7.2	
Aug. 6	100	6.3	3.2	3.1	
	50	6.9	5.3	3.2	

STATION—HENRY (196)—1926.

June 17	100	6.1	1.6	4.5	
	50	8.2	6.2	4.0	
July 9	100	5.8	1.9	3.9	
	50	6.9	4.0	5.8	
Aug. 6	100	6.8	1.5	5.3	
	50	7.5	3.5	8.0	

STATION—LACON (189)—1926.

June 17	100	4.6	2.1	2.5	
	50	5.8	4.8	2.0	
July 9	100	6.4	1.8	4.6	
	50	7.0	4.7	4.6	
Aug. 6	100	6.4	3.1	3.3	
	50	6.9	5.1	3.6	

STATION—CHILLICOTHE (180)—1926.

June 17	100	3.9	0.8	3.1	
	50	7.1	4.9	4.4	
July 9	100	5.7	2.2	3.5	
	50	7.4	5.1	4.6	
Aug. 6	100	6.3	4.2	2.1	
	50	6.8	5.4	2.8	

STATION—PEORIA NARROWS (166)—1926.

June 17	100	5.2	2.9	2.3	
	50	7.4	6.4	2.0	
July 9	100	7.1	3.0	4.1	
	50	6.5	5.1	2.8	
Aug. 6	100	6.5	2.1	4.4	
	50	7.2	5.2	4.0	

STATION—WESLEY CITY (159)—1926.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
July 2	100	6.4	4.0	2.4	
	50	7.5	6.0	3.0	
July 30	100	6.1	1.1	5.0	Very hot weather.
	50	6.9	4.8	4.2	No wind or rain.

STATION—PEKXN (153)—1926.

July 2	100	6.6	4.1	2.5	
	50	7.5	6.3	2.4	
July 30	100	5.8	0.3	5.5	Very hot weather.
	50	6.3	4.5	3.6	No wind or rain.
Aug. 13	100	7.5	1.3	6.2	Following several days of rain.
	50	7.3	4.5	5.6	

STATION—KINGSTON FERRY (146)—1926.

July 2	100	5.5	3.5	2.0	
	50	7.5	6.2	2.6	
July 30	100	5.2	0.3	4.9	Very hot weather.
	50	6.2	4.0	4.4	No wind or rain.
Aug. 13	100	7.3	2.6	4.7	Following several days of rain.
	50	8.0	5.0	6.0	

STATION—HAVANA (120)—1926.

July 2	100	5.5	4.3	1.2	
	50	6.7	5.9	1.6	
July 30	100	5.6	1.4	4.2	Very hot weather.
	50	6.3	4.7	3.2	No wind or rain.
Aug. 13	100	8.1	4.0	4.1	Following several days of rain.
	50	7.3	5.1	4.4	

STATION—BEARDSTOWN (89)—1926.

July 2	100	5.8	4.2	1.6	
	50	6.5	5.6	1.8	
July 30	100	5.8	0.9	4.9	Very hot weather.
	50	6.4	4.6	3.6	No wind or rain.
Aug. 13	100	8.1	4.7	3.4	Following several days of rain.
	50	7.6	4.0	3.6	

BACTERIOLOGICAL DATA—1926

STATION—LA SALLE (224)—1926.

Date	Total count 1.cc	B. Coli (Presumptive)				Recp.	Remarks.
		1.cc	0.1cc	0.01cc	0.001cc		
June 18	56,000	2+	2+	2+	2—	100	Day after heavy rain.
July 9	120,000	2+	2+	2+	1+,1—	500	
Aug. 6	192,000	2+	2+	2+	1+,1—	500	Clear and hot. No rain or wind.

STATION—HENRY (196)—1926.

June 18	27,000	2+	2+	2+	2—	100	Day after heavy rain.
July 9	60,000	2+	2+	2+	2—	10	
Aug. 6	108,000	2+	2+	2+	2—	100	Clear and hot. No rain or wind.

STATION—LACON (189)—1926.

June 17	7,800	2+	2+	2—	1+,1—	500	Day after a rain.
July 9	4,700	2+	2+	1+,1—	2—	50	
Aug. 6	48,000	2+	2+	2—	2—	10	Clear and hot. No rain or wind.

STATION—CHILLICOTHE (180)—1926.

June 17	3,600	2+	2+	1+,1—	1+,1—	500	Day after a rain.
July 9	1,800	2+	2+	2—	2—	10	
Aug. 6	26,000	2+	2+	2—	2—	10	Clear and hot. No rain or wind.

STATION—PEORIA NARROWS (166)—1926.

June 17	600	2+	2—	2—	2—	1	Day after a rain.
July 9	400	2+	2—	2—	2—	1	
Aug. 6	7,200	2+	2—	2—	2—	1	Clear and hot. No rain or wind.

STATION—WESLEY CITY (159)—1926.

July 2	46,000	2+	2+	2+	2—	100	
July 30	6,000	2+	2+	1+,1—	2—	50	Very hot day. River stage low.

STATION—PEKLN (153)—1926.

July 2	2,000	2+	2+	2—	2—	10	
July 30	312,000	2+	2+	2+	1+,1—	500	Very hot day. River stage low.
Aug. 13	144,000	2+	2+	2+	2+	1,000	Following several days of rain.

STATION—KINGSTON FERRY (146)—1926.

Date	Total count 1.cc	B. Coli (Presumptive)				Recp.	Remarks
		1.cc	0.1cc	0.01cc	0.001cc		
July 2	26,000	2+	2+	2+	2—	100	
July 30	228,000	2+	2+	2+	2—	100	Very hot day. River stage low.
Aug. 13	192,000	2+	2+	2+	1+,1—	500	Following several days of rain.

STATION—HAVANA (120)—1926.

July 2	5,200	2+	2+	2—	2—	10	
July 30	14,400	2+	2+	1+,1—	2—	50	Very hot day. River stage low.
Aug. 13	27,000	2+	2+	2+	2—	100	Following several days of rain.

STATION—BEARDSTOWN (89)—1926.

July 2	700	2+	1+,1—	2—	2—	5	
July 30	5,400	2+	2+	2—	2—	10	Very hot day. River stage low.
Aug. 13	30,000	2+	2+	2+	2—	100	Following several days of rain.

DISSOLVED OXYGEN DATA—1927

STATION—LA SALLE (224)—1927.

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 16	4:00 p. m.	Cloudy, windy, cool	16.9	3.7	19.1	3.9	19.0	4.3	19.1	
				3.6	19.2	3.9	19.0	4.1	19.0	
July 11	11:00 a. m.	Cloudy, warm, calm.	10.3	.1	24.4	.5	24.0	.2	24.0	Bubbling. Oil and humus floating on water. Crawfish all along bank. Odor.
				0.0	24.0	0.	24.0	.2	24.0	
Aug. 1	3:15 p. m.	Clear, warm, calm	10.	.6	25.0	.1	25.0	.1	25.0	pH west=7.2, channel 7.4, east 7.4. Bubbling and dark oily scum. Odor.
				.1	25.0	.1	25.0	.1	25.0	
Aug. 20	3:00 p. m.	Hazy, warm, calm	9.8	.7	22.0	1.5	22.0	1.5	22.0	Oil.
				.5	21.8	.8	21.8	.7	22.0	Bubbling.
Dec. 28	8:30 a. m.	Rain, cold, windy	17.4			8.0	.7			River closed with ice. Unable to get side samples.
						7.5	.7			

STATION-SPEING VALLEY (218)—1927.

June 16	2:15 p. m.	Hazy, cool, windy		3.7	20.5	3.7	19.7	3.8	20.0	
				3.6	19.4	3.0	19.5	3.9	19.9	
July 11	9:45 a. m.	Warm, cloudy, calm.		.1	24.6	.2	24.6	.2	24.8	Bubbling. Humus and oil on surface. Reported bubbling for 2 weeks. Crawfish numerous along bank. Odor.
				.2	24.4	.1	24.5	.2	24.7	
Aug. 1	2:00 p. m.	Clear, cool, slightest wind.		.3	25.5	0.0	24.8	.1	25.0	pH west and channel= 7.2, east= 7.4. Floating humus. Odor. Much bubbling and oily scum.
				.3	25.5	0.0	24.8	.3	24.8	
Aug. 20	4:30 p. m.	Hazy, warm, calm		.5	22.0	.5	22.0	.3	22.0	Bubbling, oil. Floating humus.
				.5	22.0	.1	21.5	.1	21.8	
Dec. 28	9:00 a. m.	Rain, cold, windy				8.4	.7			River frozen over.
						7.8	.7			

STATION—HENRY (198)—1927.

Date	Time	Climate	Stage,	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 16	11:15 a. m.	Hazy, cool, windy	12.7	4.7	20.9	4.3	21.0	3.8	20.9	
				4.7	21.0	4.5	20.9	3.8	20.8	
June 24	1:15 p. m.	Clear, warm, windy	10.5	4.9	22.8	4.3	22.7	3.4	22.3	
				4.8	22.8	4.2	22.5	3.2	22.2	
June 29	1:15 p. m.	Clear, warm, calm	9.1	5.7	25.0	5.1	25.0	3.4	24.8	
				5.6	25.0	4.5	25.0	3.2	24.8	
July 11	8:00 a. m.	Clear, calm, warm		1.8	24.6	.6	24.8	.2	24.6	Bubbling reported two miles above city. Many crawfish coming out of water. No odor.
				1.7	24.5	.6	24.6	.1	24.6	
July 18	1:00 p. m.	Clear, hot, calm		.6	26.3	.3	26.2	.1	26.2	Slight odor and bubbling.
				.1	26.2	.3	26.2	.4	26.2	
July 28	10:30 a. m.	Clear, warm, slight wind		.1	26.8	.1	26.7	.1	26.7	Musty odor. Bubbling reported at times.
				.1	26.7	.1	26.3	.1	26.4	
Aug. 1	11:15 a. m.	Clear, cool, slight wind		.9	25.6	.9	25.4	.3	25.8	pH west and east = 7.2, channel = 7.4. Odor. Rain reported upstream.
				.5	25.6	.3	25.4	.3	25.2	
Aug. 10	10:00 a. m.	Clear, cool, calm		.7	24.0	.8	24.0	.2	23.9	Odor. Heavy general rain all upstream on Aug. 7, 1927. River rising rapidly.
				.5	24.0	.9	24.0	.3	24.0	
Aug. 15	1:00 p. m.	Clear, warm, calm		2.1	25.2	.2	25.0	.6	24.8	
				2.0	25.2	.2	24.9	.4	25.1	
Aug. 24	11:00 a. m.	Clear, warm, calm		.5	23.0	.8	23.2	.5	23.0	Heavy rain, Aug. 22 and 23.
				.9	23.0	.4	23.3	.5	23.0	
Aug. 30	9:45 a. m.	Clear, warm, calm	11.2	1.5	23.5	.1	23.7	.7	23.6	Floating sludge. Muddy scum. Odor.
				.9	23.4	.2	23.6	.1	24.0	
Dec. 27	1:15 p. m.	Hazy, windy, cold		7.5	.7	7.5	.7	7.1	.6	River clear of ice. High water two weeks previous.
				7.8	.7	7.1	.7	7.2	.7	

STATION—LACON (189)—1927.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 13	1:20 p. m.	Cloudy, cool, calm	4.5	21.2	3.6	21.8	3.9	21.7	
			4.5	21.2	4.0	21.5	3.8	21.5	
June 16	9:45 a. m.	Hazy, cool, windy	5.3	20.5	3.9	20.8	4.2	20.8	
			4.5	20.6	4.2	20.8	3.9	20.8	
June 24	11:30 a. m.	Clear, warm, windy	5.9	22.8	4.2	22.7	4.5	22.8	
			5.5	22.5	4.0	22.3	4.2	22.6	
June 29	11:00 a. m.	Clear, warm, calm	6.3	24.8	6.8	25.0	8.0	25.3	
			4.7	24.3	3.6	24.4	5.5	24.0	
July 6	11:15 a. m.	Clear, warm, windy	6.4	24.9	5.8	25.0	6.5	25.0	
			3.9	24.5	3.9	24.2	4.8	24.8	
July 11	7:00 a. m.	Clear, warm, calm	4.7	25.1	1.8	25.2	2.3	25.1	
			3.8	25.0	1.7	25.0	2.4	25.0	
July 18	11:00 a. m.	Clear, hot, calm	1.4	26.4	2.3	26.8	.6	26.2	Slight bubbling and odor. Bubbling reported July 13, 1927. Bad at east side.
			1.0	26.2	.1	26.2	1.5	26.0	
July 28	11:45 a. m.	Clear, hot, slight wind	2.5	26.6	1.3	26.6	2.1	26.6	
			.5	26.0	.1	26.0	.6	26.2	
Aug. 1	9:45 a. m.	Hazy, cool, slight wind	1.2	25.6	.6	25.6	.1	25.7	pH west = 7.4; channel = 7.0; east = 7.2.
			3.0	25.3	.1	25.5	.4	25.5	Strong odor.
Aug. 10	11:15 a. m.	Clear, cool, calm	3.1	24.3	.5	25.0	.5	24.5	Odor. Heavy rain all upstream, Aug. 7, 1927. River rising slowly.
			3.2	24.3	.7	24.5	.9	24.2	
Aug. 15	2:00 p. m	Clear, warm, calm	11.6	25.8	2.8	25.5	3.1	25.0	Slight bubbling.
			10.0	25.6	.7	24.8	1.7	24.8	Floating humus. River rising.
Aug. 24	1:15 p. m.	Clear, warm, calm	2.0	23.8	1.2	24.8	2.2	22.8	Low water. Heavy rain Aug. 22 and 23.
			1.8	23.0	.6	22.7	.5	22.3	
Aug. 30	10:45 a. m.	Clear, warm, calm	.8	24.2	.1	24.2	1.5	24.3	Oily scum and floating humus. Odor.
			.8	24.3	.4	24.3	.8	24.3	
Dec. 27	12:15 p. m.	Hazy, windy, cold	7.7	.6	7.7	.5	7.8	.6	River clear of ice except east side.
			7.9	.6	7.9	.6	7.6	.7	

STATION—CHILLICOTHE (180)—1927.

June 13	11:30 a. m.	Cloudy, cool, slight wind	4.3	21.3	4.2	21.3	3.8	21.5	
			4.4	21.2	4.3	21.3	4.2	21.5	
June 17	11:00 a. m.	Clear, moderate, slight wind.	4.8	21.0	4.8	21.0	4.3	21.0	
			4.8	20.9	4.6	21.0	4.3	21.0	
June 24	10:00 a. m.	Clear, warm, windy	4.9	22.4	4.6	22.3	4.9	22.4	
			4.8	22.2	5.0	22.1	4.8	22.3	
June 29	10:00 a. m.	Clear, warm, calm	8.1	25.0	6.0	24.8	5.8	24.7	
			6.8	24.7	5.8	24.7	5.6	24.7	
July 6	10:00 a. m.	Clear, hot, windy	5.6	25.1	6.1	25.4	5.2	25.0	Rain during night before.
			5.2	25.0	5.2	25.0	5.2	25.0	
July 12	10:15 a. m.	Clear, warm, windy	4.5	25.8	2.4	25.6	3.0	25.8	
			3.6	25.7	2.8	25.5	2.5	25.8	
July 18	9:15 a. m.	Clear, hot, calm	1.3	26.5	.8	26.4	1.9	26.3	
			1.8	26.2	.3	26.2	1.4	26.3	
July 20	11:00 a. m.	Clear, warm, calm	1.8	24.9	1.1	24.9	.4	25.0	
			2.5	24.9	.4	24.8	0.0	25.0	
July 25	10:00 a. m.	Clear, warm, windy	2.6	23.4	.8	23.2	1.9	23.3	
			2.6	23.3	.9	22.9	.9	23.0	
July 28	9:00 a. m.	Clear, warm, calm	2.2	26.0	1.5	25.8	2.5	25.8	
			1.7	25.8	.8	25.8	1.2	25.8	
Aug. 2	10:00 a. m.	Cloudy, cool, calm	.5	25.0	.2	25.0	2.0	25.0	pH all 7.6. Sprinkle during night.
			.7	25.0	.1	24.8	1.1	25.0	
Aug. 10	1:00 p. m.	Clear, warm, calm	1.7	25.8	.1	25.1	3.5	25.0	Heavy rains upstream. River rising slowly.
			.9	25.2	.1	25.0	1.1	25.0	
Aug. 15	10:30 a. m.	Clear, warm, calm	2.6	24.9	2.2	24.8	1.6	24.8	River rising.
			4.1	24.9	1.1	24.6	.2	24.6	
Aug. 24	9:15 a. m.	Clear, warm, calm	2.2	22.5	1.1	22.6	1.4	22.4	About 11 ft. stage.
			2.6	22.6	1.1	22.4	1.4	22.5	Low H^2S. Heavy rains Aug.22 and 23.
Aug. 26	3:15 p. m.	Clear, cool, calm	5.1	25.0	.1	24.0	1.9	24.4	
			2.1	24.6	0.0	24.3	1.0	24.4	
Aug. 30	12:00 m.	Clear, warm, calm	5.0	25.0	1.0	24.8	1.8	24.6	Scum and oil. Bad odor Aug. 28.
			.8	24.2	1.0	24.8	1.2	24.5	

STATION—ROME (178)—1927.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 20	10:15 a. m.	Clear, warm,	5.1	22.6	5.1	22.5	5.6	22.6	High waves.
		windy	4.3	22.1	3.8	22.2	4.2	22.1	
June 24	9:00 a. m.	Clear, warm,	5.1	22.2	4.8	22.1	5.1	22.1	
		windy	4.7	22.0	4.4	22.0	4.8	22.1	
July 6	9:00 a. m.	Clear, hot,	4.5	25.0	4.1	25.0	4.0	25.0	Heavy rain during
		calm	3.8	24.7	3.0	24.8	3.5	24.9	night.
July 12	11:50 a. m.	Hazy, warm,	3.1	25.7	2.4	25.6	2.8	25.7	
		windy	1.8	25.4	1.8	25.6	2.4	25.5	
July 18	8:30 a. m.	Clear, hot,	1.3	26.4	.6	26.4	1.3	26.8	
		calm	.9	26.1	.4	26.4	.4	26.7	
July 20	10:00 a. m.	Clear, warm,	2.0	24.8	.6	25.0	.8	25.2	
		slight wind	1.4	24.8	.5	25.0	.9	25.2	
July 25	10:30 a. m.	Clear, warm,	1.1	24.0	.7	24.0	1.5	24.5	
		slight wind	.9	23.8	.5	23.9	.7	23.9	
Aug. 2	10:30 a. m.	Cloudy, cool,	1.6	24.6	.5	25.0	.5	24.8	pH west and channel
		slight wind	.1	24.7	.9	24.9	.4	25.0	7.4, east 7.6.
Aug. 15	10:30 a. m.	Clear, warm,	2.0	24.6	1.0	25.8	1.0	24.9	
		slight wind	2.0	24.8	.1	25.8	1.1	25.0	
Aug. 24	8:45 a. m.	Clear, warm,	1.7	22.1	.9	22.6	1.2	22.8	Heavy rain Aug. 22
		calm	2.5	22.4	1.5	22.6	2.2	22.8	and 23. Low water.
Aug. 26	2:45 p. m.	Hazy, cool,	2.2	24.8	.6	24.3	1.7	24.2	
		calm	1.1	24.7	.4	24.1	1.3	24.5	
Aug. 30	12:45 p. m.	Clear, warm,	3.0	25.2	.9	24.0	.8	24.2	
		calm	2.0	24.6	.6	24.2	.5	24.2	

STATION—MOSSVILLE (172)—1927.

July 25	8:00 a. m.	Clear, warm,	4.1	23.6	3.2	23.7	2.5	23.6	
		calm	1.4	23.2	2.2	23.4	2.1	23.3	
Aug. 26	1:15 p. m.	Hazy, cool,	4.8	25.0	5.3	24.5	11.3	24.6	
		calm	4.2	24.8	3.6	24.3	9.0	24.4	

STATION—PEORIA NARROWS (166)—1927.
(Wagon Bridge.)

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 3	10:10 a. m.	Cloudy, cool,	22.4	4.9	18.0	4.7	18.0	------	--------	Bridge open
		slight wind	------	4.9	18.0	4.8	18.0	------	--------	and no boat.
June 5	9:30 a. m.	Clear, cool,	23.4	5.0	18.0	5.0	18.0	------	--------	
		windy	------	5.0	18.0	5.0	18.0	------	--------	
June 7	9:30 a. m.	Clear, cool,	23.4	5.0	18.9	4.9	18.8	5.6	19.0	
		windy	------	4.8	18.8	4.2	18.9	5.0	18.9	
June 8	4:30 a. m.	Cloudy, cool,	23.4	4.3	19.0	4.9	18.9	5.0	19.0	
		windy	------	4.0	19.0	4.2	18.9	4.6	19.0	
June 11	9:30 a. m.	Clear, warm,	22.3	4.5	21.9	5.1	21.8	5.4	21.8	
		calm	------	5.1	21.8	4.5	21.8	5.5	21.8	
June 13	3:15 p. m.	Cloudy,	21.6	5.7	21.0	5.6	21.0	5.6	21.0	
		warm,	------	4.8	21.1	5.7	21.0	5.6	21.0	
		slight wind								
June 16	3:45 p. m.	Hazy, warm,	20.1	5.9	20.0	5.3	19.9	5.6	19.9	
		windy	------	5.5	20.1	5.5	19.8	5.6	19.8	
June 21	2:20 p. m.	Clear, warm,	18.1	6.5	22.8	6.5	22.8	6.7	22.8	
		windy	------	6.5	22.9	6.5	22.7	6.8	22.8	
June 24	3:30 p. m.	Clear, warm,	17.7	6.7	22.9	6.7	22.8	6.6	22.8	High waves.
		windy	------	6.7	23.0	6.6	22.7	6.6	22.8	
June 28	2:30 p. m.	Clear, warm,	16.1	6.8	24.0	6.7	23.9	6.8	23.9	
		windy	------	6.9	24.0	6.8	23.8	6.8	23.9	

STATION—PEORIA NARROWS (166)—1927—Concluded.

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 1	2:00 p. m.	Clear, hot, slight wind	15.4	8.0	26.6	7.3	26.4	7.1	26.5	
				7.9	26.6	6.9	26.1	4.9	25.8	
July 2	2:30 p. m.	Clear, warm, windy		7.5	26.4	7.7	26.3	9.0	26.7	Heavy rain at 3:30 on July 1.
				7.5	26.4	7.6	26.3	9.1	26.5	
July 4	2:00 p. m.	Clear, hot, calm		7.7	25.8	6.9	25.7	6.4	25.0	
				7.0	25.7	6.8	25.3	6.8	25.0	
July 6	5:00 p. m.	Clear, warm, windy		6.7	25.6	6.5	25.2	6.8	25.0	Heavy rain night before.
				6.9	25.6	6.4	25.2	5.9	25.0	
July 9	3:30 p. m.	Warm, cloudy, windy.		6.9	25.0	6.1	24.9	6.2	24.9	
				6.7	25.0	6.2	24.9	5.8	24.8	
July 12	1:30 p. m.	Clear, warm, windy		5.3	26.0	5.1	26.0	4.8	26.0	
				4.8	26.0	5.0	26.0	4.7	26.0	
July 15	1:30 p. m.	Clear, hot, slight wind		4.4	26.7	4.4	26.8	4.4	26.8	
				4.6	26.7	4.4	26.7	4.4	26.8	
July 18	3:00 p. m.	Clear, hot, calm	12.2	9.3	28.0	10.0	28.0	8.7	27.3	
				9.0	27.9	9.8	28.0	8.3	27.3	
July 23	12:30 p. m.	Clear, warm, calm	12.1	5.0	24.2	5.2	24.0	5.4	24.0	
				5.0	24.1	5.2	24.0	5.4	24.0	
July 25	7:15 a. m.	Hazy, warm, calm	11.9	5.0	23.0	4.3	23.0	5.1	23.0	
				4.7	22.7	4.1	22.4	4.7	22.5	
July 27	9:00 a. m.	Hazy, warm, calm	11.8	5.7	25.1	6.1	25.1	5.6	25.0	
				6.1	25.0	5.7	25.0	6.0	25.0	
July 30	12:45 p. m.	Clear, warm, slight wind	11.5	5.6	27.0	4.8	26.8	5.2	26.8	
				5.8	27.0	5.0	26.8	4.8	26.6	
Aug. 1	3:30 p. m.	Clear, warm, slight wind	11.4	5.8	26.7	6.0	26.2	6.4	26.6	
				5.7	26.7	5.9	25.5	6.3	26.6	
Aug. 4	11:45 a. m.	Clear, warm, calm	11.5	3.2	23.8	5.4	23.5	6.3	23.6	
				2.3	23.6	5.3	23.6	5.4	23.7	
Aug. 6	3:30 p. m.	Hazy, warm, slight wind	11.4	1.3	27.0	7.5	24.6	5.5	24.1	
				6.3	26.7	6.5	24.3	5.0	24.1	
Aug. 8	10:30 a. m.	Clear, warm, calm	11.6	6.3	26.3	4.6	25.9	6.4	25.8	Rain on Aug. 7.
				4.8	26.2	4.0	25.9	5.8	25.7	
Aug. 10	2:30 p. m.	Clear, warm, calm	11.8	6.6	25.3	6.3	24.6	7.4	24.6	River rising slowly, .3 ft. in 3 days.
				4.3	25.0	6.3	24.4	6.1	24.5	
Aug. 13	9:00 a. m.	Hazy, cool, calm	11.9	5.5	25.0	5.4	24.8	6.8	24.8	
				5.5	24.9	6.4	24.8	6.5	24.9	
Aug. 15	5:00 p. m.	Clear, warm, calm	11.9	10.1	26.1	9.2	25.9	9.3	26.0	
				8.8	26.1	8.3	25.9	9.0	25.9	
Aug. 18	12:45 p. m.	Hazy, cool, slight wind	11.7	5.0	22.2	5.2	22.0	7.4	22.3	
				5.0	22.5	5.2	22.5	5.4	22.2	
Aug. 22	10:30 a. m.	Hazy, cool, windy	11.3	1.3	22.8	4.2	22.8	4.3	23.0	Low water. River dropped 4 to 6 inches in 4 days.
				.3	22.6	4.1	22.7	4.2	22.6	
Aug. 24	3:30 p. m.	Clear, warm, calm	10.9	7.2	24.1	8.8	23.7	8.7	23.4	Rain Aug. 22 and 23.
				8.7	24.0	10.2	23.6	7.6	23.6	
Aug. 26	6:00 p. m.	Clear, cool, calm	10.9	11.85	24.2	8.2	24.1	10.1	24.2	
				9.5	24.3	8.8	24.1	9.2	24.0	
Aug. 29	2:30 p. m.	Clear, cool, calm	11.1	3.9	24.2	6.5	24.3	6.8	24.2	
				6.2	25.0	6.1	24.4	4.5	24.5	
Aug. 31	11:00 a. m.	Clear, warm, calm	11.2	6.9	24.8	7.1	24.6	8.9	24.8	
				5.9	25.7	6.6	24.6	8.5	24.7	
Dec. 28	3:00 p. m.	Hazy, cold, windy		9.5	1.0	9.4	1.0	9.4	1.0	River open except at sides. Lakes frozen.
				9.2	1.0	9.8	1.0	9.6	1.0	

STATION—U. S. SLIPS (164)—1927.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 27	7:15 a. m.	Clear, moderate, calm.	6.7 6.5	23.0 22.8	6.7 6.2	23.0 22.8	6.7 6.9	22.8 22.8	
July 1	12:00 m.	Clear, hot, slight wind.	9.9 5.6	27.2 25.4	9.2 6.1	26.9 25.4	9.7 6.3	27.0 25.5	
July 7	6:45 a. m.	Clear, warm, slight wind.	5.3 4.8	24.8 24.5	5.5 5.3	24.5 24.3	6.2 6.8	24.9 24.6	Rain during night.
July 15	12:00 m.	Cloudy, hot, calm	5.4 4.1	26.9 26.4	7.7 3.4	28.0 26.3	5.1 4.0	26.7 26.2	
July 19	6:00 a. m.	Cloudy, windy, cool	7.3 6.6	27.0 26.6	7.2 7.2	26.9 26.9	6.3 6.4	26.9 26.7	Slight rain night before.
July 26	7:30 a. m.	Hazy, calm, cool	5.5 5.6	24.3 24.0	5.7 5.5	24.6 24.5	6.1 5.5	24.2 24.0	pH east and west side 6.6, channel 7.6 or over.
Aug. 3	7:45 a. m.	Clear, cool, calm	3.6 3.6	23.3 23.5	3.7 3.4	23.6 23.8	4.8 4.6	23.6 23.8	
Aug. 11	7:00 a. m.	Clear, cool, calm	5.5 4.1	24.2 24.0	5.6 5.0	24.3 24.0	5.6 4.8	24.0 23.8	
Aug. 16	6:15 a. m.	Clear, cool, calm	6.5 5.3	23.8 23.8	6.8 6.6	24.8 23.8	8.0 7.7	24.6 24.0	
Aug. 19	10:30 a. m.	Clear, warm, slight wind.	3.3 2.5	22.7 22.8	4.9 4.4	22.8 22.8	6.2 6.0	22.6 22.7	
Aug. 25	6:45 a. m.	Clear, cool, calm	8.0 8.2	23.0 23.2	6.7 7.1	23.0 23.1	8.8 7.5	22.8 22.9	Heavy rain Aug. 22 and 23.
Aug. 29	7:15 a. m.	Clear, cool, calm	8.6 8.7	23.5 23.4	7.6 6.7	23.8 23.5	5.4 5.7	23.7 23.6	

STATION—WESLEY CITY (159)—1927.

June 15	10:20 a. m.	Clear, warm, slight wind.	4.8 5.1	20.9 20.8	5.2 4.9	20.7 20.6	5.5 5.5	20.9 20.8	
June 27	8:15 a. m.	Clear, moderate, slight wind.	6.1 6.0	23.0 22.9	6.6 6.3	23.0 23.0	6.6 6.4	22.9 22.8	
July 1	9:00 a. m.	Clear, warm, calm	6.3 6.6	25.0 25.0	6.8 6.6	25.0 24.9	6.7 5.9	25.0 25.0	
July 7	7:30 a. m.	Clear, warm, calm	5.6 5.1	24.5 24.5	5.2 5.3	24.5 24.5	5.7 5.6	24.5 24.6	Heavy rain night before.
July 15	11:30 a. m.	Cloudy, hot, calm	3.8 4.0	26.7 26.5	4.5 4.8	26.6 26.4	4.6 4.7	26.6 26.7	
July 19	6:45 a. m.	Cloudy, cool, slight wind.	4.9 4.5	26.6 26.4	5.9 6.6	26.6 26.6	6.7 6.4	26.8 26.5	Slight rain during night.
July 26	8:30 a. m.	Clear, warm, calm	6.3 5.3	24.3 24.2	6.0 6.8	24.4 24.5	6.6 6.7	24.3 24.2	pH 7.6 or above for all. Slight bubbling.
Aug. 3	8:45 a. m.	Clear, warm, calm	2.7 2.4	23.8 24.0	3.5 3.5	23.8 23.9	4.4 4.4	23.6 23.6	
Aug. 11	8:00 a. m.	Clear, warm, calm	4.0 3.9	24.4 24.4	6.2 5.7	24.2 24.0	6.1 5.8	24.3 24.3	Starchy odor.
Aug. 16	7:15 a. m.	Clear, cool, calm	4.4 4.5	24.0 23.8	6.4 6.6	23.9 23.7	7.2 6.7	23.5 23.3	Starchy odor on west side.
Aug. 19	11:15 a. m.	Clear, cool, windy	6.2 6.2	22.8 22.7	5.1 6.2	22.7 22.7	3.6 3.3	23.0 22.8	
Aug. 25	7:45 a. m.	Clear, cool, calm	5.4 5.3	22.9 22.8	7.4 8.3	23.0 22.8	7.7 7.2	22.7 22.8	Heavy rains Aug. 22 and 23.
Aug. 29	8:00 a. m.	Clear, cool, calm	3.2 3.7	23.8 23.6	6.5 5.2	23.6 23.6	7.1 5.9	24.7 23.5	

STATION—PEKIN (153)—1927.
(Wagon Bridge.)

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 15	12:45 p. m.	Clear, warm,	4.4	20.6	4.5	20.7	5.3	20.8	
		slight wind	4.5	20.5	4.7	20.7	5.3	20.7	
June 22	2:45 p. m.	Cloudy, warm, windy.	6.6	23.2	6.0	23.2	6.7	23.2	
			6.5	23.2	6.3	23.2	6.7	23.3	
June 27	9:30 a. m.	Clear, moderate, slight wind.	5.7	23.0	5.6	22.8	6.7	22.8	
			5.6	23.0	5.8	22.8	6.9	22.7	
July 1	10:00 a. m.	Clear, warm,	5.4	25.3	5.9	25.0	6.3	25.0	
		calm	4.7	25.3	5.8	25.0	5.8	25.0	
July 7	1:50 p. m.	Clear, warm,	4.2	25.4	5.1	25.3	5.4	25.1	Heavy rain night before.
		slight wind	4.4	25.1	5.0	25.0	5.3	25.0	
July 15	10:45 a. m.	Hazy, hot,	2.4	26.5	4.0	26.6	4.1	26.6	
		calm	2.9	26.6	3.5	26.5	4.0	26.5	
July 19	9:30 a. m.	Clear, warm,	4.7	27.0	6.1	26.9	6.6	26.9	Rain during night.
		slight wind	4.3	26.7	5.4	26.7	6.2	26.7	
July 26	11:30 a. m.	Clear, warm,	5.7	24.9	6.2	24.8	6.3	24.9	pH 7.6 or above in all cases.
		calm	5.5	25.0	6.2	24.9	6.5	25.0	
Aug. 3	2:30 p. m.	Clear, warm,	3.1	24.8	3.8	24.7	4.8	24.8	
		calm	2.3	24.9	3.6	24.8	4.3	24.9	
Aug. 11	8:45 a. m.	Cloudy,	3.4	24.5	5.2	24.0	5.9	24.0	
		cool, calm	3.8	24.2	4.9	24.7	6.0	24.4	
Aug. 16	10:45 a. m.	Clear, warm,	3.8	24.8	7.7	24.5	6.9	24.5	
		calm	3.5	24.6	5.5	24.6	6.5	24.3	
Aug. 19	2:00 p. m.	Clear, cool,	3.0	22.9	5.3	23.0	5.9	22.9	
		slight wind	2.6	22.7	5.3	23.0	5.8	22.8	
Aug. 25	2:30 p. m.	Clear, cool,	5.7	24.6	8.3	24.2	8.5	24.0	Heavy rain Aug. 22 and 23.
		calm	6.0	24.5	7.6	23.9	8.2	23.9	
Aug. 29	11:00 a. m.	Clear, warm,	4.9	24.0	6.6	24.0	5.9	24.1	
		calm	5.4	23.9	5.4	24.0	6.1	24.0	
Dec. 28	1:45 p. m.	Windy, cold,	9.2	.8	10.2	.8	8.7	.8	River open. Floating ice.
		cloudy	9.3	.8	9.7	.8	8.9	.9	

STATION—SOUTH PEKIN (151)—1927.
(R. R. Bridge.)

June 27	11:50 a. m.	Clear, warm,	5.1	23.2	6.0	23.3	7.1	23.2	
		slight wind	5.1	23.1	5.6	22.9	6.4	23.0	
July 1	10:30 a. m.	Clear, warm,	5.6	25.3	5.5	25.3	7.0	25.0	
		calm	5.2	25.4	5.4	25.3	6.6	25.1	
July 7	8:15 a. m.	Clear, warm,	3.8	24.8	4.5	24.8	4.8	24.7	Heavy rain during night.
		slight wind	3.8	24.6	4.6	24.7	4.8	24.7	
July 15	10:30 a. m.	Clear, hot,	2.3	26.8	3.6	26.5	3.5	26.7	
		calm	2.3	26.4	3.5	26.4	4.5	26.5	
July 19	7:45 a. m.	Cloudy, cool,	4.0	26.7	5.3	26.8	6.3	27.0	Rain during night.
		calm	4.0	26.7	5.3	26.8	6.6	26.7	
July 26	9:30 a. m.	Clear, warm,	2.6	24.6	6.0	24.6	5.6	24.6	pH east and channel 7.6, west side 7.4.
		calm	2.7	24.5	5.2	24.6	5.6	24.6	
Aug. 3	9:45 a. m.	Clear, warm,	1.3	24.0	3.0	24.0	4.2	24.0	
		calm	1.4	24.0	3.1	24.0	4.2	24.0	
Aug. 11	9:15 a. m.	Raining, cool,	2.4	24.2	5.3	24.0	4.5	24.5	
		calm	2.5	24.2	5.5	24.3	3.8	24.5	
Aug. 16	8:15 a. m.	Clear, warm,	2.2	24.7	4.4	24.7	6.3	24.8	Scum along east side.
		calm	2.5	23.0	5.2	24.3	5.9	24.0	
Aug. 19	12:00 m.	Clear, cool,	1.7	22.9	5.5	23.0	5.1	22.9	
		slight wind	1.7	22.7	3.8	23.0	5.4	22.8	
Aug. 25	9:00 a. m.	Clear, cool,	3.6	23.1	6.1	23.0	6.6	23.2	Heavy rain Aug. 22 and 23.
		calm	3.9	22.9	6.6	22.8	6.8	23.0	
Aug. 29	9:00 a. m.	Clear, cool,	3.5	24.0	6.3	23.9	6.5	23.6	
		calm	2.5	23.6	6.4	23.7	6.5	23.5	

STATION—KINGSTON MINES (146)—1927.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 14	9:30 a. m.	Cloudy, moderate, calm.	4.8	20.6	4.6	20.8	4.9	20.7	High water but receding rapidly.
June 27	10:45 a. m.	Clear, warm, slight wind.	5.4 5.5	23.0 23.2	5.4 5.4	23.2 23.1	5.4 5.4	23.1 23.0	
July 7	9:10 a. m.	Clear, warm, windy.	4.0 3.8	24.6 24.6	3.9 3.8	24.5 24.5	4.8 4.2	24.0 24.3	Heavy rain during night. Roily water.
July 15	10:00 a. m.	Clear, hot, calm.	2.9 2.9	26.6 26.5	2.9 3.0	26.5 26.4	3.3 3.6	26.2 25.8	
July 19	8:15 a. m.	Clear, warm, slight wind.	4.8 5.0	26.9 26.7	5.2 4.9	27.0 26.8	5.2 5.7	26.9 25.9	Rain during night.
July 26	10:00 a. m.	Clear, warm, calm.	4.4 4.6	24.6 24.7	4.3 4.0	24.6 24.6	4.6 5.0	24.1 24.0	pH 7.6 or above on all.
Aug. 3	10:15 a. m.	Clear, warm, calm.	2.8 2.9	24.4 24.4	2.8 2.7	24.2 24.5	3.3 3.5	23.8 24.4	
Aug. 16	9:15 a. m.	Clear, warm, calm.	5.8 5.8	25.0 24.6	7.7 5.3	24.8 24.4	6.1 6.1	24.2 23.6	
Aug. 19	12:45 p. m.	Hazy, cool, slight wind.	4.0 3.8	23.0 22.8	3.9 3.6	23.0 22.8	5.0 4.7	22.8 22.8	
Aug. 25	9:45 a. m.	Clear, warm, calm.	6.6 6.7	23.6 23.2	6.3 6.5	23.2 23.5	7.1 7.0	23.2 23.0	Heavy rains Aug. 22 and 23.
Aug. 29	9:45 a. m.	Clear, cool, calm.	3.3 2.6	24.0 23.9	4.0 4.7	24.0 23.8	6.4 6.3	23.4 23.6	

STATION—COPPERAS CREEK DAM (137)—1927.

July 7	10:15 a. m.	Clear, warm, slight wind.	3.6 3.5	25.0 25.1	3.5 3.5	24.8 24.9	3.6 3.6	25.0 24.8	Roily water. Rain during night before.
July 15	9:00 a. m.	Clear, hot, calm.	2.3 2.4	26.5 26.2	2.2 2.3	26.5 26.3	2.7 2.5	26.3 26.3	
Aug. 3	11:15 a. m.	Clear, warm, calm.	2.9 3.0	24.6 24.6	2.8 2.9	24.6 24.6	3.1 3.2	24.1 24.3	
Aug. 25	11:00 a. m.	Clear, cool, slight wind.	4.9 4.7	23.7 23.8	6.5 6.0	23.7 23.8	5.5 5.4	23.4 23.6	Heavy rains Aug. 22 and 23.

STATION—HAVANA (120)—1927.

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 22	12:30 p. m.	Clear, warm, windy.	18.0	5.4 5.4	23.4 23.2	5.7 5.4	23.1 23.1	5.7 5.8	23.0 23.0	
July 15	7:15 a. m.	Clear, hot, calm.	12.7	2.2 2.3	26.0 26.0	1.2 1.3	26.2 26.0	3.0 2.9	25.7 25.8	
Aug. 9	3:30 p. m.	Clear, warm, calm.	9.9	1.6 1.6	25.5 25.5	7.9 1.8	25.2 25.4	3.0 3.4	25.2 25.2	
Aug. 26	5:00 p. m.	Clear, warm, calm.	9.6	2.3 2.3	23.5 23.5	3.3 3.2	23.5 23.7	3.4 5.5	23.8 24.0	Small amount of scum and oil. River stage dropping about .1 foot per day.

STATION—BROWNING (97)—1927.

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 9	1:40 p. m.	Clear, warm, calm	------	2.1	25.6	2.1	25.5	2.9	25.0	
			------	2.1	25.6	2.3	25.4	2.7	25.1	

STATION—BEARDSTOWN (89)—1927.

June 21	1:00 p. m.	Clear, warm, windy	21.1	5.2	23.0	5.1	23.0	5.4	23.0	Water 4 feet under swinging span of bridge.
			------	4.9	23.0	5.1	22.6	5.6	23.0	
July 14	2:45 p. m.	Cloudy, warm, calm	12.7	2.1	26.9	1.9	26.8	3.5	27.1	Very slight rain during afternoon.
			------	1.8	27.0	1.9	27.0	3.5	27.0	
Aug. 9	12:40 p. m.	Clear, warm, calm	10.0	2.3	25.8	2.0	25.7	4.5	25.4	
			------	2.3	25.9	2.1	25.9	5.3	25.4	
Aug. 26	11:00 a. m.	Clear, warm, calm	9.6	3.5	23.1	2.5	23.1	5.8	23.9	Stage dropping .1 foot per 24 hours.
			------	2.4	23.2	2.5	23.1	5.7	23.4	

STATION—U. S. LOCKS (77)—1927.
(Just Below Dam and Locks.)

Aug. 9	10:20 a. m.	Clear, cool, calm	------	2.4	25.4	2.5	25.5	3.6	25.5	
			------	2.1	25.5	2.7	25.6	3.6	25.5	

STATION—MEREDOSIA (71)—1927.

Aug. 9	10:00 a. m.	Clear, cool, calm	------	2.2	25.6	2.8	25.6	2.8	25.8	
			------	2.0	25.6	2.4	26.0	2.9	25.6	

BIOCHEMICAL OXYGEN DEMAND DATA—1927

STATION—LA SALLE (224)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
June 17	100	5.1	3.0	2.1	Blank = 0.
	50	6.7	5.1	3.2	
July 12	100	.4	.1	.3++	
	50	3.3	.4	5.8	Blank = 0.
Aug. 2	50	4.6	3.6	2.0	Blank = 0.
	25	5.9	4.2	6.8	Blank = 0.
Aug. 20	50	5.85	4.15	3.4	
	25	7.2	6.4	3.2	
Dec. 28	100	9.6	4.1	5.5	

STATION-SPRING VALLEY (218)—1927.

June 17	100	5.1	3.1	2.0	
	50	6.3	5.4	1.8	Blank = 0.
July 12	100	.2	.1	.1++	
	50	3.5	.1	6.8	Blank = 0.
Aug. 2	50	4.9	3.7	2.4	Blank = 0.
	25	6.2	5.3	3.6	Blank = 0.
Aug. 20	50	6.05	3.5	5.0	
	25	7.0	5.6	5.6	
Dec. 28	100	9.6	4.0	5.6	

STATION—HENRY (196)—1927.

June 17	100	5.6	4.3	1.3	
	50	6.4	5.8	1.2	Blank = 0.
June 24	100	6.1	3.2	2.9	
	50	6.8	4.4	4.8	Blank = 0.
June 29	100	6.5	.8	5.7	
	50	6.9	4.2	4.7	Blank 200 cc took .7 cc.
July 12	100	2.5	.3	2.2+	
	100	4.6	1.4	6.4	Blank = 0.
July 18	50	4.3	1.3	6.0	Blank = 0.
	25	6.0	4.4	6.4	Blank = 0.
July 28	50	4.2	1.6	5.2	Blank = 0.
	25	5.5	4.0	6.0	Blank = 0.
Aug. 2	50	6.1	4.3	3.6	Blank = 0.
	25	6.3	4.3	8.0	Blank = 0.
Aug. 10	100	6.3	1.3	5.0	Blank = 0.
	50	6.8	5.8	2.0	Blank = 0.
	25	6.9	6.7	.8	Blank = 0.
Aug. 15	50	7.3	3.0	8.6	
	50	7.3	2.2*	10.2*	* 10 day.
	25	7.75	4.6	12.6	
	25	7.75	3.8*	15.8*	* 10 day.
Aug. 24	100	7.0	3.6	3.4	
	50	7.4	4.4	6.0	
Dec. 28	100	9.7	4.6	5.1	

STATION—LACON (189)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day D. O.	Remarks.
June 13	100	4.9	4.0	.9?	
	50	5.8	4.0	3.6	Blank = 0.
June 17	100	5.1	3.9	1.2?	
	50	6.6	4.1	5.0	Blank = 0.
June 24	100	5.0	.2	4.8	
	50	6.5	5.1	2.8	Blank = 0.
June 29	100	6.1	.3	5.8	
	50	6.8	3.9	5.1	200 cc blank required .7 ppm.
July 6	100	5.8	.6	5.2	
	50	5.8	1.9	7.2	200 cc demands .5 ppm.
July 12	100	3.4	.1	3.3++	
	50	4.6	2.1	5.0	Blank = 0.
July 18	50	5.8	2.3	7.0	Blank = 0.
	50	6.6	4.9	6.8	Blank = 0.
July 28	50	5.1	2.7	4.8	Blank = 0.
	25	5.6	4.6	4.0	Blank = 0.
Aug. 2	50	4.7	2.6	4.2	Blank = 0.
	25	5.5	4.3	4.8	Blank = 0.
Aug. 10	100	6.7+	3.4	3.3	
	50	7.0	6.2	1.6	
	25	7.0+	6.8	.8	
Aug. 15	50	8.1	2.3	11.6	
	50	8.1	1.1*	14.*	* 10 day.
	25	8.75	3.6	20.6	
	25	8.75	2.0*	27.0*	* 10 day.
Aug. 24	100	5.7	4.4	1.3	
	50	7.2	6.2	2.0	
Dec. 28	100	9.7	4.6	5.1	

STATION-CHILLICOTHE (180)—1927.

June 13	100	4.9	3.0	1.9?	
	50	6.0	4.3	3.4	
June 17	100	5.5	4.0	1.5	
	50	6.5	6.0	1.0	Blank = 0.
June 24	100	5.5	3.7	1.8	
	50	6.5	5.6	1.8	Blank = 0.
June 29	100	6.6	.9	5.7	
	50	7.1	4.4	4.7	200 cc blank required .7 ppm
July 6	100	5.8	.4	5.4	
	100	5.8	1.1	8.8	200 cc demand = .5cc.
July 12	100	4.1	.1	4.0++	
	50	4.8	2.1	5.4	Blank = 0.
July 18	50	5.4	3.4	4.0	Blank = 0.
	25	6.4	5.4	4.0	Blank = 0.
July 25	50	5.6	2.8	5.6	Blank = 0.
	25	6.5	5.3	4.8	Blank = 0.
Aug. 2	50	4.5	2.8	3.4	Blank = 0.
	25	5.4	4.2	4.8	Blank = 0.
Aug. 10	100	7.3	5.1	2.2	Blank = 0.
	50	7.0+	6.2	1.6	Blank = 0.
	25	7.1	6.0	2.2	Blank = 0.
Aug. 15	50	8.0	4.1	7.8	
	50	8.0	3.4*	1.2*	* 10 day.
	25	7.15	5.0	8.6	
	25	7.15	4.3*	11.4*	* 10 day.
Aug. 24	100	7.0	4.5	2.5	
	50	7.6	6.2	2.8	

STATION—ROME (178)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
June 20	100	5.6	4.5	1.1	
	50	5.8	5.5	.6	Blank = 0.
June 24	100	6.2	4.7	1.5	
	50	6.8	5.7	2.2	Blank = 0.
July 6	100	4.2	.1	4.1	
	50	5.9	3.4	4.4	200 cc demand = .5cc.
July 12	100	3.4	.3	3.1	
	50	4.7	3.0	3.4	Blank = 0.
July 18	50	5.2	2.9	4.6	Blank = 0.
	25	6.3	4.5?	7.2?	Blank = 0.
July 25	50	5.0	3.4	3.2	Blank = 0.
	25	6.3	4.7	6.4	Blank = 0.
Aug. 2	50	4.9	.1	9.6?	Blank = 0.
	25	5.4	4.6	3.2	Blank = 0.
Aug. 15	100	5.9	3.0	5.8	
	100	5.9	1.5*	8.8*	* 10 day.
	50	6.4	2.5	15.6?	
	50	6.4	1.4*	20.0*	* 10 day.
Aug. 24	100	7.0	4.7	2.3	
	50	7.2			

STATION—PEORIA NARROWS (166)—1927.

June 13	100	5.7	4.2	1.5	Tap water for aeration. No blank.
	50	6.2	5.2	2.0	Tap water for aeration. No blank.
June 17	100	6.3	5.9	.4	
	50	7.0	6.6	.8	Blank = 0.
June 24	100	6.9	4.4	1.5	
	50	7.2	6.1	2.2	Blank = 0.
June 29	100	7.4	1.8	5.6	
	50	7.5	5.6	3.1	200 cc. blank required .7 ppm.
July 4	100	7.3	1.3	6.0	
	50	7.4	5.2	4.0	200 cc. blank required .4 ppm.
July 12	100	5.1	.3	4.8	
	50	6.1	3.5	5.2	Blank = 0.
July 18	50	8.2	2.8	10.8	Blank = 0.
	25	7.6	5.7	7.6	Blank = 0.
July 25	50	7.3	6.2	2.2	Blank = 0.
	25	7.3	6.4	3.6	Blank = 0.
	100	7.3	4.0**	3.3**	** 2 days.
	100	7.3	1.2	6.1	
	100	7.3	.1*	7.2*	* 10 day.
July 27	100	7.6			
	50	6.8	4.2	5.2	Blank = 0 demand.
Aug. 2	100	5.7	2.7	3.0	Blank = 0 demand.
	50	6.6	5.5	2.2	Blank = 0 demand.
	25	6.9	6.3	2.4	Blank = 0 demand.
Aug. 10	100	7.0	1.8	5.2	
	50	7.1+	4.3	5.6	
	25	7.3	6.9	1.6	
Aug. 16	100	7.5	3.3	4.2	
	50	7.5	2.4?	10.2?	
Aug. 25	100	7.9	.8	7.1	
	50	6.6	4.3	4.6	
Dec. 28	100	9.3	6.5	2.8	

STATION-U. S. SLIPS (164)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
July 7	100	6.5	3.6	2.9	
	50	6.9	5.2	2.8	200 cc bad demand of .4 cc.
July 15	100	7.6	.3	7.3	
	50	7.3	3.5	7.6	No demand on blank.
July 19	100	7.4	1.3	6.1	
	50	7.6	4.0	7.2	No demand on blank.
July 26	100	13.6	7.3	6.3	
	50	10.1	6.9	6.4	No demand on blank.
Aug. 3	50	6.9	5.0	3.8	No demand on blank.
	25	7.1	6.0	4.4	No demand on blank.
Aug. 11	100	7.5	3.5	4.0	No demand on blank.
	50	7.5	5.8	3.4	No demand on blank.
Aug. 16	100	8.0	3.5	4.5	No demand on blank.
	50	7.8	5.1	5.4	No demand on blank.
Aug. 25	100	7.6	.01	7.6++	
	50	7.2	.7	13.0	

STATION—WESLEY CITY[1] (159)—1927.

June 27	100	6.7	4.9?	1.8?	
	50	7.2	5.0	4.4	Blank = 0.
July 7	100	6.2	1.0	5.2	
	50	5.6	4.6	1.6	Demand for 200 cc = .4cc.
July 15	100	4.5	.1	4.4	
	50	5.9	4.3	3.2	No demand on blank.
July 19	100	8.2	.8	7.4	Blank = 0.
	50	7.8	4.3	5.0	Blank = 0.
July 26	100	6.6	1.0	5.6	Blank = 0.
	50	7.1	3.0	8.2	Blank = 0.
Aug. 3	50	6.8	4.6	4.4	Blank = 0.
	25	7.2	5.8	5.6	Blank = 0.
Aug. 11	50	7.4	6.8	1.2	Blank = 0.
	25	7.7	6.9	3.2	Blank = 0.
Aug. 16	100	8.1	2.3	5.8	
	50	6.8	5.2	3.2	
Aug. 25	100	8.7	.7	8.0	
	50	7.9	3.9	8.0	

[1] Results are all low due to error in point of sampling.

STATION—PEKIN (153)—1927.
(Wagon Bridge.)

June 14	100	4.9	3.5	1.4	
	50	6.1	4.7	2.8	No blank.
June 22	100	6.9	4.9	2.0	
	50	7.3	5.9	2.8	Blank = 0.
June 27	100	6.6	3.8	2.8	
	50	7.1	5.0	4.2	Blank = 0.
July 7	100	6.7	.4	6.3	
	50	6.5	4.1	4.4	200cc demand was .4cc.
July 15	100	4.0	.3	3.7	
	50	5.9	3.8	4.2	Blank = No demand.
July 19	100	7.7	.1	7.6	Blank = 0.
	50	7.8	4.4	7.6	Blank = 0.
July 26	100	8.6	1.1	7.5	Blank = 0.
	50	7.8	4.9	5.8	Blank = 0.
Aug. 3	50	6.5	3.8	5.4	
	25	7.0	5.7	5.2	
Aug. 11	50	7.1	5.0	4.2	
	25	7.1	7.0?	----------	
Aug. 16	100	9.0	3.1	5.9	
	50	7.9	6.2	3.4	
Aug. 25	100	8.1	0.0	8.1++	
	50	7.5	4.0	7.0	
Dec. 28	100	9.7	6.5	3.2	

STATION—SOUTH PEKIN (151)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
June 27	100	5.9			
	50	6.8	4.6	4.4	Blank = 0.
July 7	100	5.0	1.9	3.1	
	50	6.1	4.7	2.4	200 cc demand was .4 cc.
July 15	100	3.6	.1	3.5+	
	50	5.6	3.4	4.4	No demand on blank.
July 19	100	8.3	.1	8.2	
	50	7.8	3.5	8.6	No demand on blank.
July 26	100	8.9			
	50	7.9	4.2	7.4	
Aug. 3	50	6.6	4.3	4.6	
	25	7.0	5.5	6.0	
Aug. 11	50	6.2	5.0	2.4	
	25		6.9		
Aug. 16	100	7.1	1.0	6.1	
	25	7.9	4.6	6.6	
Aug. 25	100	8.0	.1	7.9	
	50	6.4	2.7	7.4	

STATION—KINGSTON MINES (146)—1927.

July 7	100	3.9	1.0	2.9	
	50	5.7	4.4	3.2	200 cc required .4cc.
July 15	100	4.2	.1	4.1	
	50	5.6	3.5	4.2	Blank = no demand.
July 19	100	7.8	.3	7.5	Blank = no demand.
	50	8.2	3.8	8.8	Blank = no demand.
July 26	100	8.2	1.0	7.2	
	50	7.7	5.0	5.4	
Aug. 3	50	6.8	3.4	6.8	
	25	7.1	5.4	6.8	
Aug. 25	100	8.0	.1	7.9++	
	50	7.45	2.5	10.0	

STATION—COPPERAS CREEK DAM (137)—1927.

July 7	100	3.6	2.2	1.4	
	50	5.5	4.5	1.6	200 cc demand .4cc.
July 15	100	3.3	0.0	3.3+	
	50	5.1	2.6	5.0	Blank = 0 demand.
Aug. 3	50	6.7	3.4	6.6	
	25	7.0	4.8	8.8	
Aug. 25	100	8.9	0.0	8.9++	
	50	8.05	3.3	9.6	

STATION—HAVANA (120)—1927.

June 22	100	6.7	5.0	1.7	
	50	7.1	5.7	2.8	Blank = 0.
July 15	100	2.1	.1	2.0+	
	50	4.5	2.5	4.0	Blank = 0 demand.
Aug. 9	100	3.2	.4	2.8	
	50	5.4	5.1	.6?	
Aug. 26	100	5.5	2.6	2.9	
	50	6.0	4.6	2.8	

STATION—BROWNING (97)—1927.

Aug. 9	100	3.4	.5	2.9	
	50	5.8	3.9	3.8	

STATION—BEARDSTOWN (89)—1927.

Date	Concentration per cent	Initial D. O.	5-Day D. O.	5-Day B. O. D.	Remarks
June 21	100	7.2	5.0	2.2	
	50	7.8	5.9	3.8	Blank = 0.
July 15	100	5.0	.9	4.1	
	50	5.9	4.2	3.4	Blank = 0.
Aug. 9	100	3.8	.2	3.6	Blank = 0.
	50	5.7	4.5	2.4	Blank = 0.
Aug. 26	100	6.1	2.1	4.0	
	50	6.9	4.5	4.8	

STATION—U. S. LOCKS (77)—1927.

Aug. 9	100	3.1	.05	3.0+	Blank = 0.
	50	5.5	1.8	1.4	Blank = 0.

STATION—MEREDOSIA (71)—1927.

Aug. 9	100	3.5	.1	3.4+	Blank = 0.
	50	6.3	2.4	7.8	Blank = 0.

BACTERIOLOGICAL DATA—1927

STATION—LA SALLE (224)—1927.

Date	Total count 1. cc	B. Coli (presumptive)				Remarks
		1. cc	0.1cc	0.01cc	0.001cc	
June 17	30,000,000	not run	2+	2+	2—	Many small colonies.
	27,000,000					Old stock media.
July 12	470,000	2+	2+	2+	2+	
	500,000					
Aug. 2	28,000	2+	2+	2+	1+,1—	
	30,000					
Aug. 20	15,800	2+	2+	2+	2+	
	17,200					
Dec. 28	5,800	5+	5+	5+	5+	B. Coli on 10. cc.

STATION—SPRING VALLEY (218)—1927.

June 17	20,400,000	not run	2+	2—	2—	Many small colonies.
	16,800,000					Old stock media.
July 12	111,000	2+	2+	2+	2+	
	170,000					
Aug. 2	25,000	2+	2+	2+	2—	
	26,000					
Aug. 20	147,000	2+	2+	2+	2—	
	160,000					
Dec. 28	12,000	5+	5+	5+	5—	B. Coli on 10. cc.

STATION—HENRY (196)—1927.

June 17	12,000,000	not run	2—	2—	2—	Many small colonies.
	10,200,000					Old stock media.
June 24	2,200	2+	1+,1—	1+,1—	2—	
	1,900					
July 12	103,000	2+	2+	2+	1—,1+	
	70,000					
Aug. 2	165,000	2+	2+	2+	2+	
	215,000					
Aug. 24	27,500	2+	2+	1+,1—	2—	
	28,000					
Dec. 27	900	5+	5+	1+,4—	5—	B. Coli on 10. cc.

STATION—LACON (189)—1927.

June 17	15,600,000	not run	2—	2—	2—	Many small colonies.
	12,000,000					Old stock media.
June 24	1,180	2+	2+	2—	2—	
	2,080					
July 12	25,000	2+	2+	2+	2—	
	7,000					
Aug. 2	195,000	2+	2+	2+	1+,1—	
	190,000					
Aug. 24	5,000	2+	2+	1+,1—	2—	
	5,400					
Dec. 27	600	5+	5+	3+,2—	5—	B. Coli on 10. cc.

STATION—CHILLICOTHE (180)—1927.

Date	Total count 1. cc	B. Coli (Presumptive)				Remarks
		1. cc	0.1cc	0.01cc	0.001cc	
June 17	8,400,000	not run	1+,1−	2−	2−	Many small colonies.
	8,400,000					Old stock media.
June 24	880	2+	1+,1−	2−	2−	
	1,050					
July 12	9,000	2+	1+,1−	2−	2−	
	2,200					
Aug. 2	90,000	2+	2+	2+	2−	
	60,000					
Aug. 24	6,000	2+	2+	2−	2−	
	4,500					

STATION—ROME (178)—1927.

June 24	730	2+	1+,1−	2−	2−	
	580					
July 12	5,700	2+	2−	2−	2−	
Aug. 2	9,000	2+	2+	2−	2−	
	9,500					
Aug. 24	10,700	2+	2+	2+	2−	
	11,000					

STATION—MOSSVILLE (172)—1927,

Aug. 26	2,200	2+	1+,1−	2−	2−	
	2,450					

STATION—PEORIA NARROWS (166)—1927.

June 17	6,000,000	not run	2−	2+	2−	Many small colonies.
	4,800,000					Old stock media.
June 24	280	2+	2−	2−	2−	
	290					
July 12	2,340	2+	1+,1−	2−	2−	
	2,100					
Aug. 2	2,000	2+	1−,1+	2−	2−	
	2,200					
Aug. 25	3,500	2+	2+	2−	2−	
	3,000					
Dec. 28	500	5+	5+	3+,2−	5−	B. Coli on 10. cc.

STATION—U. S. SLIPS (164)—1927.

July 15	20,000	2+	2−	2−	2−	
	22,000					
Aug. 3	30,000	2+	2−	2−	2−	
	35,000					
Aug. 25	20,000	2+	2+	1+.1−	2−	
	18,000					

STATION—WESLEY CITY (159)—1927.

June 27	9,800	2+	2+	1+,1−	1+,1−	
	8,000					
July 15	9,000	2+	2+	1+,1−	2−	
	8,800					
Aug. 3	11,000	2+	2+	1+,1−	2−	
	10,000					
Aug. 25	2,900	2+	2+	1+,1−	2−	
	3,100					

STATION-PEKIN (153)—1927.

Date	Total count 1. cc	B. Coli (Presumptive)				Remarks
		1. cc	0.1cc	0.01cc	0.001cc	
June 22	6,700 7,300	2+	1+,1—	2—	2—	
June 27	2,800 1,900	2+	2+	2—	2—	
July 15	12,000 11,000	2+	2+	1+,1—	2—	
Aug. 3	125,000 135,000	2+	2+	1—,1+	1—,1+	
Aug. 25	259,000 330,000	2+	2+	2+	1+,1—	
Dec. 28	920	5+	5+	5+	2+,3—	B. Coli on 10. cc.

STATION—SOUTH PEKIN (151)—1927.
(R. R. Bridge.)

June 27	15,500 13,000	2+	1+,1—	2—	2—	
July 15	125,000 130,000	2+	2+	2+	2—	
Aug. 3	284,000 275,000	2+	2+	1+,1—	2—	
Aug. 25	380,000 390,000	2+	2+	2+	1+,1—	

STATION—KINGSTON MINES (146)—1827.

June 27	13,500 17,500	2+	2+	2—	2—	
July 15	125,000 120,000	2+	2+	2+	2—	
Aug. 3	185,000 145,000	2+	2+	2+	2—	
Aug. 25	138,000 80,000	2+	2+	1—,1+	2—	

STATION—COPPERAS CREEK DAM (137)—1927.

July 15	112,000 110,000	2+	2+	2+	2—	
Aug. 3	80,000 130,000	2+	2+	2+	2—	
Aug. 25	31,000 44,000	2+	2+	1—,1+	2—	

STATION—HAVANA (120)—1927.

June 22	2,000 1,500	2+	1+,1—	2—	2—	Old media.
July 15	30,000 28,000	2+	2+	2—	2—	
Aug. 9	3,900 4,000	2+	1+,1—	2—	2—	
Aug. 26	5,000 4,300	2+	2+	1+,1—	2—	

STATION—BROWNING (97)—1927.

Date	Total count 1. cc	B. Coli (Presumptive)				Remarks
		1. cc	0.1cc	0.01cc	0.001cc	
Aug. 9	1,570 1,350	2+	2+	2—	2—	

STATION—BEARDSTOWN (89)—1927.

June 21	34,000,000 36,000,000	2+	2+	2—	2—	Thermopholic contamination in plates. Count questionable. Old media.
July 15	30,000 27,000	2+	2+	2—	2—	
Aug. 9	2,110 1,750	2+	2+	1+,1—	2—	
Aug. 26	1,900 2,500	2+	1—,1+	2—	2—	

STATION—U. S. LOCKS (77)—1927.

Aug. 9	1,910 1,620	2+	2+	2—	2—	

STATION—MEREDOSIA (71)—1927.

Aug. 9	1,200 1,200	2+	2+	2—	1+,1—	

DISSOLVED OXYGEN DATA—1928

STATION—LOCKPORT (DES PLAINES RIVER) 294 MILES—1928.
(Wagon Bridge just above Chicago Sanitary District Power Plant.)

Date	Time	Climate	Stage	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 11	2:30 p. m.	Clear, warm, calm	4 ft. of water in midstream	----	----	10.3	21.4	----	----	Odor, oil, green color, pH 8.2.
				----	----	11.2	21.5	----	----	
Aug. 7	2:45 p. m.	Clear, hot, slight wind	5 ft. of water in midstream	6.2	28.0	----	----	4.5	28.0	Rapid current, much aeration, pH 7.8.
				----	----	----	----	----	----	

STATION—JOLIET (ILLINOIS RIVER) 289 MILES—1928.
(Wagon Bridge at Ruby Street.*)

June 11	3:15 p. m.	Clear, warm, calm	10 ft. of water in midstream	.9	16.8	.3	16.3	.6	16.4	Oil, odor, greenish color, 3 m. p.h. current, pH 7.0. Small stream along east side from steel mill contain odor with much oil, pH 7.2 .
				----	----	.2	16.3	----	----	
Aug. 7	3:30 p. m.	Clear, hot, calm	10 ft. of water in midstream	0.0	24.6	----	----	.2	24.0	Odor, much oil, rapid current, brown color, floating solids. pH7.6
				0.0	24.4	----	----	.2	23.8	

STATION—JOLIET (ILLINOIS RIVER) 287 MILES—1928.
(Wagon Bridge, Route 7—State Road.*)

June 11	3:45 p. m.	Clear, warm, calm	10 ft. of water in midstream	2.0	17.0	4.0	17.0	1.3	17.0	Oil, greenish color, strong odor, current 5 m.p.h. Much churning and aeration of water.
				----	----	3.8	17.0	----	17.0	
Aug. 7	3:15 p. m.	Clear, warm, calm	10 ft. of water in midstream	2.1	24.0	----	----	.3	24.0	Odor, oil, rapid turbulent water, brownish color. pH 7.4.
				2.1	24.0	----	----	.4	24.0	

STATION—NEAR CHANNAHON (ILLINOIS RIVER) 279 MILES*—1928.

June 12	8:25 p. m.	Clear, cool, calm	7 ft. of water in midstream	1.1	17.0	----	----	1.4	16.8	Oil, odor, 5 m.p.h. current, roily water. Much surface aeration pH 7.2.
				----	----	----	----	1.3	17.1	
Aug. 7	11:30 p. m.	Clear, warm, slight wind	7 ft. of water in midstream	4.7	23.8	----	----	.9	23.7	Odor, oil, dark green color, rapid turbulent water, much aeration. pH 7.4.
				1.4	23.5	----	----	1.1	23.8	

* Hard to get above samples without aerating due to swiftness of current.

STATION—KANKAKEE RIVER, 273 MILES—1928.
(Wagon Bridge a Mile or so Above where it Empties into Illinois River.)

Date	Time	Climate	Stage	North Side		Mid-Stream		South Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 12	9:15 a. m.	Clear, cool, calm	Wide but only 1 ft. deep	8.1	20.9	8.2	21.0	7.7	21.0	Clear, rock bottom, much aeration. pH 8.2.

-STATION—MORRIS, 263 MILES—1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 12	10:45 a. m.	Hazy, warm, calm	------	1.2	18.0	1.0	17.9	1.7	18.2	Current 2 m.p.h. Slight oil, roily water. pH 7.0.
			7.2	1.2	17.9	1.3	17.8	1.8	18.5	
Aug. 7	8:45 a. m.	Hazy, warm, calm	------	.3	23.5	.6	23.5	1.4	23.9	Much oil, scum, greenish dirty color, bubbling along sides. Deep red wastes on west side probably from leather tanning factory near bank of river. pH 7.6.
			7.9	.1	23.4	.4	23.5	1.2	23.8	

STATION—MARSEILLES, 247 MILES—1928.
(Wagon Bridge just Below Large Dam.)

Date	Time	Climate	Stage	North Side		Min-stream		South Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 12	1:00 p. m.	Hazy, warm, slight wind	Shallow	4.1	19.8	3.4	19.8	3.8	19.7	Current 3 m.p.h.
				4.1	20.0	3.4	19.8	3.8	19.7	Wastes entering stream on west (city) side. pH 7.4.
Aug. 7	8:00 a. m.	Hazy, warm, calm	Shallow	3.3	24.0	3.6	24.0	3.6	24.1	Turbulent water, odor, oil. Wastes coming in along west side. pH 7.6.

STATION—FOX RIVER AT OTTAWA, 240 MILES—1928.
(Wagon Bridge on Route 7 near Bridged Illinois and Michigan Canal.)

Date	Time	Climate	Stage	North Side		Mid-Stream		South Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 12	1:30 p. m.	Hazy, warm, slight wind.	Shallow about 1 ft. water	11.3	23.8	11.0	23.8	10.1	23.8	Yellow deposits in stream. Water itself a faint yellow. pH 8.8.
July 9	5:00 p. m.	Clear, warm, slight wind.	4 ft. of water	6.0	27.4	----	----	6.0	27.4	Roily water.
Aug. 6	3:30 p. m.	Clear, warm, calm	3 to 4 ft. of water	9.4	26.0	----	----	9.4	26.1	Greenish color, slightly roily. pH 8.6.
Dec. 1	11:00 a. m.	Cloudy, cold, calm		9.8	3.0	----	----	9.2	3.0	

STATION—OTTAWA, 240 MILES—1928.
(Illinois River Bridge on Route 7A.)

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 12	2:00 p. m.	Hazy, warm, windy	1.2	20.2	1.3	20.3	3.1	20.5	3 m.p.h. current. pH of 7.2.
			1.2	20.5	2.0	20.5	3.1	20.6	
July 9	5:30 p. m.	Clear, warm, slight wind.	5.1	26.0	4.4	25.6	4.9	25.8	River a little over bank full. Estimated 4 m.p.h. current. Small amount of oil.
			3.5	26.0	5.1	25.6	5.0	25.9	
Aug. 6	3:45 p. m.	Clear, warm, calm	1.7	25.4	.7	25.0	1.7	25.1	Odor, oil, scum, roily water. pH 7.6.
			2.4	25.4	.5	24.9	1.7	25.0	
Dec. 1	10:30 a. m.	Cloudy, cold, calm	9.1	5.0	8.0	5.0	------	-------	
			7.1	5.2	7.7	5.2	------	-------	

STATION—OTTCA, 230 MILES—1928.
(Illinois River Wagon Bridge just below Starved Rock.)

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 6	2:00 p. m.	Clear, warm, calm	.2	25.3	.1	25.2	.1	25.2	Odor, oil, scum, black humus floating, greenish color. pH 7.4.
			.1	25.2	.1	25.1	.1	25.1	

STATION—VERMILION RIVER, 226 MILES—1928.
(Wagon Bridge on Route 7A.)

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 13	7:15 a. m.	Clear, cool, windy	------	----	----	5.8	25.4	----	----	pH 8.2.
			6.0	----	----	5.5	24.9	----	----	
July 9	4:00 p. m.	Clear, warm, windy	------	----	----	6.6	27.1	----	----	Roily water.
			------	----	----	6.6	27.0	----	----	
Aug. 6	1:30 p. m.	Clear, warm, calm	------	----	----	6.3	26.0	----	----	Roily water. pH 8.2.
			------	----	----	5.4	26.0	----	----	
Dec. 1	10:00 a. m.	Cloudy, cold, calm	------	----	----	10.4	5.0	----	----	Green water in deep layers.
			------	----	----	----	----	----	----	

STATION—LA SALLE, 224 MILES-1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 27	6:00 p. m.	Clear, cold,	------	7.6	8.2	7.9	8.0	7.8	8.3	Musty sewage odor. Some oil.
		calm------	------	8.2	8.3	7.8	8.4	7.9	8.5	
June 13	7:45 a. m.	Clear, cool,	------	2.2	19.6	2.5	19.4	2.8	19.6	pH 7.2.
		windy------	11.3	2.0	19.6	2.2	19.8	2.0	19.6	
July 9	3:00 p. m.	Clear, warm,	------	3.9	25.8	3.9	25.9	3.7	25.9	River fell 3 ft. in last 24 hours.
		windy------	17.2	3.7	25.8	4.6	25.8	4.1	25.9	Roily water, no odor. Estimated 3 m.p.h. current. Small amount of oil.
Aug. 6	12:15 p. m.	Clear, warm,	------	0.0	24.1	0.05	24.0	0.0	24.3	Oil, scum, small amount of
		windy------	12.6	0.0	24.0	0.0	24.0	0.1	24.1	bubbling roily water, floating sludge. Moderate stage. pH 7.6.
Dec. 1	9:30 a. m.	Cloudy, cold,	------	8.6	4.6	8.2	4.8	8.1	5.0	
		calm------	------	9.0	4.5	8.5	4.9	8.0	5.0	

STATION—SPRING VALLEY, 218 MILES—1928.

Date	Time	Climate	West Side		Midstream		Channel		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 27	5:00 p. m.	Clear, cold,	8.3	8.5	7.1	9.0	7.5	8.0	
		calm------	8.3	8.8	7.9	8.8	8.0	8.5	
June 13	9:20 a. m.	Clear, cool,	2.7	20.0	2.5	19.9	2.1	20.0	pH 7.4.
		windy------	2.7	20.0	2.4	19.9	2.0	20.0	
July 9	2:00 p. m.	Hazy, warm,	3.4	25.6	3.4	25.8	3.0	25.9	Roily water. Estimated 4 m.p.h. current. Greater than usual, high water. No odor. On July 8 bubbling noted.
		windy------	3.4	25.6	3.6	25.8	1.8	25.8	
Aug. 6	11:30 a. m.	Hazy, warm,	.4	24.4	.15	24.2	.6	24.5	Odor, bubbling, oil,
		calm------	.4	24.3	.05	24.1	.9	24.2	yellow-green color, scum. pH 7.6.

STATION—HENRY, 198 MILES—1928.

Date	Time	Climate	Channel		Midstream		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 27	2:00 p. m.	Clear, cold,	7.8	9.0	8.4	8.5	7.0	8.0	
		wind------	11.1	9.0	7.8	9.0	6.6	9.0	
May 30	8:45 a. m.	Clear, cool,	2.6	18.0	1.3	17.6	1.0	17.8	
		calm------	2.8	17.9	1.2	17.5	1.0	17.8	
Juue 5	11:30 a. m.	Hazy, cold,	2.1	17.4	1.3	17.6	1.0	17.8	
		calm------	2.0	17.4	1.3	17.4	.8	17.6	
June 13	11:00 a. m.	Clear, cool,	3.4	20.2	2.5	20.1	1.3	20.2	pH 7.2.
		strong wind	3.5	20.1	1.3	19.9	1.3	19.9	
June 19	10:30 a. m.	Hazy, warm,	.4	22.8	.2	22.6	.3	22.8	Heavy rain during
		wind------	.3	22.9	.3	22.8	.3	22.8	June 17 and June 18.
June 29	10:30 a. m.	Hazy, cool,	2.2	19.6	1.3	19.4	1.6	19.4	Heavy rains for past
		calm------	2.0	19.7	1.3	19.4	1.5	19.4	few days.
July 3	11:30 a. m.	Hazy, warm,	2.9	23.8	2.0	23.7	2.5	23.8	Rains upstream, river
		wind------	2.8	23.8	1.9	23.6	2.3	23.9	up a little.
July 9	11:30 a. m.	Hazy, warm,	2.8	26.2	2.9	26.1	2.5	26.0	Rain July 8. River
		windy------	2.7	26.0	3.2	26.0	3.0	26.0	up rapidly.
July 16	11:00 a. m.	Clear, warm,	1.3	24.5	2.0	24.6	2.3	24.5	River going down.
		calm------	1.6	24.5	2.1	24.5	2.7	24.5	
July 23	1:00 p. m.	Clear, warm,	1.8	26.1	1.3	25.9	1.6	26.0	
		calm------	1.0	26.0	1.7	25.5	1.6	26.0	

STATION—HENRY, 196 MILES—192S-Concluded.

Date	Time	Climate	Channel		Midstream		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
July 25	10:00 a. m.	Clear, warm, calm	1.1	26.2	.9	26.0	.9	26.3	
			1.0	26.2	.9	26.0	.9	26.4	
July 30	12:00 m.	Clear, warm, calm	1.7	24.7	1.7	24.9	1.7	24.9	
			1.6	24.7	2.5	24.7	2.3	24.7	
Aug. 3	9:30 a. m.	Clear, warm, windy	2.3	25.8	2.4	25.8	1.8	25.8	
			2.5	25.8	2.4	25.8	1.8	25.8	
Aug. 6	9:45 a. m.	Hazy, cool, calm	1.3	24.1	.6	24.4	.3	24.8	
			1.3	24.6	.4	24.4	.4	24.7	pH 7.8.
Aug. 14	10:20 a. m.	Clear, warm, calm	.7	25.0	.9	24.8	.6	25.0	
			.4	25.0	.9	25.0	.4	25.0	
Aug. 22	9:45 a. m.	Clear, warm, wind	.1—	24.1	.1	24.1	.1—	24.0	Slight odor.
			.1—	24.0	.4	24.0	.1—	24.1	
Aug. 28	11:15 a. m.	Cloudy, warm, wind	.5	25.1	.5	25.1	.4	25.3	
			.4	25.1	.4	25.1	.4	25.3	
Sept. 1	10:00 a. m.	Clear, cool, windy	.5	23.0	.2	23.0	.6	23.0	
			.1	23.1	.3	23.1	.5	23.0	
Sept. 6	10:45 a. m.	Clear, cool, calm	2.2	20.2	1.0	20.0	1.1	20.1	Very cool weather.
			1.5	20.0	.9	19.8	1.2	19.8	
Nov. 30	4:00 p. m.	Cloudy, cold, windy	9.9	3.4	8.0	3.9	9.1	4.0	Slight rain during night.
			10.4	3.7	7.9	4.1	6.3	4.0	

STATION—LACON, 188 MILES—1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 27	1:00 p. m.	Clear, cold, wind	------	8.8	8.5	7.3	8.0	7.2	8.0	
			8.4	10.2	9.0	6.8	9.0	6.5	9.0	
May 30	10:00 a. m.	Clear, cool, calm	------	5.6	18.5	1.5	18.2	1.9	18.1	Bubbling on east side of bridge.
			6.0	5.0	18.5	1.0	18.0	1.5	18.1	
June 5	10:00 a. m.	Hazy, cold, calm	------	2.5	17.4	1.7	18.0	1.3	17.6	Sprinkling. Rain during night.
			6.0	3.2	17.0	2.4	17.8	1.9	17.0	
June 13	12:00 m.	Clear, cool, strong wind	------	4.9	20.5	3.1	20.5	2.9	20.5	High waves. pH 7.6.
			5.9	5.2	20.6	2.6	20.6	2.6	20.6	
June 19	9:15 a. m.	Hazy, warm, wind	------	1.5	23.0	1.5	22.8	.9	23.0	Bubbling along east side. Heavy rain during night.
			------	1.3	22.8	.4	22.4	.5	22.6	
June 29	9:00 a. m.	Cloudy, cool, calm	------	1.3	19.8	.9	19.8	1.2	19.8	Heavy rains bringing river up rapidly.
			7.6	1.3	19.8	1.0	19.8	1.5	19.8	
July 3	10:00 a. m.	Hazy, warm, wind	------	4.7	24.3	1.7	23.8	2.0	23.9	Rains upstream. River rising.
			7.8	4.7	24.3	1.8	23.7	1.9	24.0	
July 9	10:30 a. m.	Hazy, warm, calm	------	4.5	26.7	3.1	26.4	1.8	26.4	Rain July 8. River rapidly rising
			10.7	3.6	26.7	1.4	26.3	1.8	26.2	
July 16	9:10 a. m.	Hazy, warm, calm	------	2.2	25.0	2.6	25.0	1.0	24.9	River receding.
			10.0	3.0	25.0	1.9	25.0	1.8	24.9	
July 23	1:00 p. m.	Clear, warm, wind	------	2.6	27.0	2.0	27.0	1.7	26.9	
			9.0	2.7	27.0	2.1	27.0	1.9	26.6	
July 25	9:00 a. m.	Clear, warm, calm	------	5.4	26.9	1.6	26.8	.8	26.4	
			8.9	5.2	26.9	1.4	26.4	.8	26.4	
July 30	1:00 p. m.	Clear, warm, windy	------	3.7	24.8	2.1	25.0	1.5	25.0	
			8.2	4.3	24.8	1.6	24.8	2.0	24.8	
Aug. 3	8:30 a. m.	Clear, warm, windy	------	3.1	25.8	2.3	25.8	3.8	26.0	
			7.5	3.3	25.8	2.3	25.7	3.5	26.0	
Aug. 6	9:00 a. m.	Hazy, cool, calm	------	3.0	24.4	.5	25.1	1.3	24.6	pH 7.8.
			7.3	4.4	24.4	.9	25.0	1.2	24.7	
Aug. 14	9:30 a. m.	Clear, warm, calm	------	4.9	25.3	.8	25.2	.7	25.0	
			6.3	6.2	25.3	.8	24.9	.8	25.0	
Aug. 22	9:00 a. m.	Clear, warm, wind	------	.1	24.0	0.0	24.2	.7	23.7	Slight odor.
			5.6	.1	23.8	0.0	24.0	.1	23.5	
Aug. 28	10:30 a. m.	Cloudy, warm, calm	------	1.9	25.4	.5	25.0	1.9	25.2	
			5.5	1.8	25.3	.5	24.9	1.6	25.2	
Sept. 1	9:00 a. m.	Clear, cool, calm	------	1.2	23.0	.4	23.3	.7	23.3	
			5.7	1.6	22.8	.5	22.7	.7	22.8	
Sept. 6	10:00 a. m.	Clear, cool, calm	------	3.4	20.5	.7	20.6	1.0	20.3	Very cool weather.
			5.9	2.7	20.4	.5	20.2	.8	20.0	
Nov. 30	3:15 p. m.	Cloudy, cold, windy	------	10.4	3.3	9.3	4.0	9.6	3.8	
			9.4	10.0	3.5	8.9	4.1	9.4	3.8	

STATION—CHILLICOTHE, 180 MILES—1928.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
May 30	11:10 a. m.	Clear, cool,	9.2	19.9	4.3	19.0	4.0	19.0	
		calm	6.5	18.0	2.7	18.7	3.7	19.0	
June 5	9:00 a. m.	Hazy, cold,	4.1	17.8	3.6	17.5	3.6	17.5	Sprinkling and rain during night June 4.
		calm	5.8	17.8	3.8	17.6	4.5	17.4	
June 13	1:45 p. m.	Clear, cool,	5.3	20.3	4.3	20.3	3.9	20.3	High waves. pH 7.8.
		strong wind	4.9	20.3	4.0	20.3	3.7	20.4	
June 20	12:30 p. m.	Cloudy,	1.5	23.0	1.5	22.8	2.0	23.1	
		warm, calm	1.5	23.0	1.1	22.8	1.2	23.0	
June 29	8:00 a. m.	Hazy, cool,	2.8	21.6	2.4	21.7	3.0	21.7	River rising rapidly
		calm	2.7	21.6	2.5	21.5	2.5	21.5	4 to 6 inches during night. Roily water.
July 3	8:30 a. m.	Hazy, warm,	3.5	24.2	2.8	24.3	2.9	24.6	Rains upstream.
		calm	3.3	24.4	3.1	24.3	2.8	24.5	River rising.
July 9	1:00 p. m.	Clear, warm,	3.3	27.5	2.1	27.0	2.1	27.0	Much drift wood.
		calm	2.7	27.2	1.8	27.0	2.1	27.0	Water slightly roily.
July 16	1:00 p. m.	Clear, warm,	2.9	25.5	2.9	25.7	1.9	26.0	River receding.
		calm	2.4	25.6	2.6	25.5	1.7	25.6	
July 19	12:00 m.	Cloudy,	3.1	26.0	2.3	26.0	2.3	26.0	Rain at 11:00 a. m.
		warm,	2.9	26.0	2.0	26.0	2.2	26.0	
		windy.							
July 25	1:00 p. m.	Clear, hot,	2.8	27.5	1.3	27.4	1.4	27.5	
		calm	2.8	27.4	1.4	27.2	1.1	27.2	
July 30	2:15 p. m.	Clear, warm,	2.4	25.4	2.0	25.8	2.0	26.8	
		windy	2.1	25.0	2.5	25.0	1.7	26.5	
Aug. 3	11:00 a. m.	Clear, warm,	3.7	26.9	------	-------	------	-------	Too rough to go out in
		windy	3.6	26.8	------	-------	------	-------	boat.
Aug. 14	12:45 p. m.	Clear, warm,	3.4	27.7	1.1	26.3	1.0	26.3	pH 7.8.
		calm	3.0	27.1	1.2	26.3	1.0	26.1	
Aug. 22	11:30 a. m.	Clear, warm,	1.3	24.9	.5	25.0	.7+	25.0	Musty odor.
		slight wind	1.7	25.0	.7	24.6	.7	24.7	
Aug. 28	9:00 a. m.	Clear, warm,	2.5	25.3	0.6	25.3	0.7	25.3	
		slight wind	2.2	25.3	0.3	25.3	0.5	25.3	
Sept. 1	11:30 a. m.	Clear, cool,	3.1	24.0	1.5	23.7	.8	23.9	
		slight wind	3.2	24.0	1.2	23.5	.8	23.7	
Sept. 6	1:00 p. m.	Clear, cool,	3.4	21.6	.9	21.0	1.6	21.4	
		calm	2.5	21.2	.7	20.8	1.3	21.4	

STATION—ROME, 178 MILES—1928.

June 20	11:00 a. m.	Cloudy, cool,	3.6	23.5	1.2	23.0	2.1	23.1	
		windy	1.2	23.0	1.3	23.0	2.1	23.1	
July 19	9:45 a. m.	Clear, warm,	2.9	26.8	2.2	26.3	2.7	26.8	
		windy	2.6	26.0	1.8	26.1	1.7	26.2	
Aug. 28	8:30 a. m.	Clear, warm,	1.0	25.0	.3	25.0	------	-------	Too rough to row
		windy	1.3	25.0	.1	25.0	------	-------	across to far side.

STATION—MOSSVILLE, 172 MILES—1928.

June 20	9:00 a. m.	Hazy, cool,	4.9	23.4	4.3	23.2	4.2	23.2	
		slight wind	4.4	23.0	3.6	23.1	3.6	22.9	
July 19	8:45 a. m.	Clear, warm,	5.2	27.0	3.7	26.5	4.0	26.6	
		windy	3.9	26.5	2.5	26.2	3.3	26.3	

STATION—PEORIA NARROWS, 166 MILES—1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 28	3:00 p. m.	Cloudy, cold, windy	15.3	13.6 9.5	9.2 9.2	10.2 9.6	9.2 9.0	10.1 10.1	9.2 9.0	
May 26	10:00 a. m.	Clear, cool, calm	13.2	7.7 7.8	19.2 19.2	7.6 7.5	19.2 19.0	7.7 7.4	19.2 19.1	
May 29	2:00 p. m.	Clear, cool, calm	13.0	7.4 7.5	19.0 19.0	7.4 7.4	19.0 19.0	7.8 7.7	19.0 19.0	
May 30	12:15 p. m.	Clear, cool, wind	13.1	10.0 10.0	20.2 20.0	9.4 7.9	19.8 19.4	8.7 9.0	19.3 19.3	
May 31	5:30 p. m.	Hazy, cool, calm	13.0	9.9 10.9	19.7 19.8	9.8 10.2	19.8 19.8	---- ----	---- ----	Bridge open.
June 1	1:30 p. m.	Hazy, cool, windy	12.9	9.1 9.9	20.3 20.2	9.5 9.4	20.1 20.2	---- ----	---- ----	Bridge open.
June 2	6:45 a. m.	Clear, cool, calm	12.9	6.5 6.6	18.5 19.7	6.7 6.7	18.0 17.8	---- ----	---- ----	
June 4	9:30 a. m.	Cloudy, cold, windy	12.8	7.0 7.1	18.5 18.6	7.0 7.0	18.7 18.5	---- ----	---- ----	
June 5	2:00 p. m.	Hazy, cool, calm	12.6	6.9 6.7	17.4 17.4	6.9 6.7	17.3 17.2	---- ----	---- ----	
June 8	1:00 p. m.	Hazy, cool, calm	12.6	6.8 6.9	18.2 18.1	6.4 6.4	17.5 17.6	6.3 6.3	18.2 17.5	
June 9	10:20 a. m.	Clear, cool, windy	12.6	6.4 6.4	17.8 17.6	6.6 6.7	17.6 17.6	---- ----	---- ----	Bridge open. Too windy for boat.
June 12	4:00 p. m.	Clear, cool, very windy	12.2	7.0 7.0	21.7 21.7	6.9 6.8	21.5 21.9	---- ----	---- ----	Bridge open. Too windy for boat.
June 14	4:30 p. m.	Clear, cool to warm, calm	12.0	10.0 11.0	23.4 23.2	10.9 12.7	22.8 23.0	8.6 7.9	22.8 22.4	
June 15	3:00 p. m.	Clear, cool, wind	12.0	7.8 7.7	22.0 21.8	7.4 7.3	21.7 21.6	5.2 5.4	21.8 21.3	
June 19	1:00 p. m.	Cloudy, cool, windy	12.1	5.8 5.7	23.2 23.5	6.0 5.5	23.2 23.2	---- ----	---- ----	Rain during night upstream.
June 20	2:00 p. m.	Cloudy, cool, windy	12.2	5.4 5.2	23.6 23.4	4.7 4.7	23.4 23.4	6.6 6.4	23.4 23.5	
June 21	3:00 p. m.	Clear, warm, calm	12.7	5.7 5.7	24.3 24.2	6.7 6.2	24.4 24.1	---- ----	---- ----	Heavy rains. Note change in stage.
June 23	3:00 p. m.	Clear, cool, calm	13.0	4.3 4.3	23.0 22.8	4.3 4.3	23.0 22.8	4.2 4.1	23.0 22.8	Heavy rains June 22.
June 28	3:30 p. m.	Cloudy, cool, calm	13.6	5.1 5.4	21.2 21.2	4.5 4.4	21.0 20.9	5.1 4.6	20.8 21.0	Rains. River rising rapidly.
June 29	2:30 p. m.	Hazy, cool, wind	14.2	5.5 5.5	21.6 21.5	6.0 5.9	21.5 21.5	5.5 6.1	21.4 21.5	Heavy rains upstream, river rising rapidly.
July 2	4:00 p. m.	Clear, hot, windy	14.1	6.6 6.8	24.1 24.1	5.1 4.6	23.5 23.3	3.8 3.0	23.0 23.0	Hot all day. First hot day of season.
July 5	3:00 p. m.	Hazy, warm, slight wind	15.0	6.7 6.7	26.4 26.4	6.6 6.6	26.3 26.3	6.1 6.2	25.8 25.8	Rains. River coming up.
July 7	10:00 a. m.	Clear, warm, slight wind	15.8	6.4 6.1	26.8 26.8	4.8 5.1	26.8 26.8	3.7 4.1	26.7 26.7	River up.
July 9	2:00 p. m.	Clear, cool, slight wind	17.0	4.5 4.6	27.6 27.5	4.6 4.7	27.8 27.6	4.7 4.7	27.8 27.8	River up.
July 11	2:00 p. m.	Clear, warm, calm	17.3	4.0 4.0	27.5 27.6	4.1 3.9	27.4 27.3	3.9 4.4	27.5 27.4	River up.
July 13	2:00 p. m.	Clear, warm, slight wind	17.3	2.4 2.5	26.1 26.0	2.8 2.3	26.3 26.2	2.7 2.6	26.1 25.9	Bacteria taken.
July 16	1:30 p. m.	Clear, warm, calm	16.5	2.2 2.2	25.7 25.7	2.7 2.3	25.7 25.5	3.2 2.8	25.8 25.8	River down.
July 18	3:00 p. m.	Cloudy, warm, calm	16.0	3.3 3.4	26.2 26.2	4.7 4.6	26.4 26.3	5.4 5.5	26.5 26.3	River down.
July 20	8:00 a. m.	Clear, warm, calm	15.5	3.0 2.8	26.9 26.7	3.4 3.3	26.5 26.5	3.7 3.5	26.8 26.6	
July 23	3:30 p. m.	Clear, warm, slight wind	15.5	5.6 5.7	28.0 28.0	5.8 5.6	27.5 27.5	6.4 6.0	27.5 27.5	
July 25	12:30 p. m.	Clear, calm, warm	15.45	5.7 6.0	28.0 28.0	8.8 5.8	27.9 27.8	7.9 5.1	27.9 27.6	
July 27	8:00 a. m.	Clear, cool, windy	15.2	3.6 2.5	27.0 26.9	3.1 2.6	27.0 26.9	4.2 3.6	27.0 26.9	
July 28	10:15 a. m.	Clear, cool, windy	15.1	4.4 4.3	25.7 25.6	4.3 4.4	25.8 25.7	4.7 4.5	25.6 25.8	
July 30	3:00 p. m.	Clear, cool, windy	14.7	5.5 5.6	25.1 25.3	4.8 4.9	24.9 24.8	4.6 4.5	24.9 24.8	

STATION—PEORIA NARROWS, 166 MILES—1928—Concluded.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 1	8:30 a. m.	Clear, warm, slight wind	------	5.0	----	4.4	----	4.9	----	
			14.4	4.3	----	4.4	----	4.9	----	
Aug. 1	11:00 a. m.	Hazy, warm, slight wind	------	4.3	----	4.4	----	3.4	----	
			14.4	3.5	----	2.8	----	3.7	----	
Aug. 1	2:00 p. m.	Hazy, warm, slight wind	------	5.0	26.2	5.0	26.1	4.5	26.2	
			14.4	4.5	26.3	4.9	26.0	4.9	26.1	
Aug. 3	12:00 m.	Clear, warm, windy	------	4.5	26.0	4.6	25.9	5.2	26.2	
			14.0	4.6	26.1	4.6	25.8	5.1	26.1	
Aug. 6	3:00 p. m.	Clear, hot, calm	------	4.9	26.6	5.8	26.8	6.0	26.7	
			14.0	5.0	26.6	5.6	26.5	5.7	26.6	
Aug. 11	5:00 p. m.	Clear, warm, windy	------	5.7	26.0	5.9	26.1	6.0	26.2	
			13.4	5.7	26.0	5.5	26.1	5.9	26.1	
Aug. 13	5:15 p. m.	Clear, warm, calm	------	10.2	27.3	10.9	26.7	11.3	26.5	A hot, clear day. River falling.
			13.0	10.2	27.0	9.5	26.6	8.2	26.5	
Aug. 14	1:30 p. m.	Cloudy, cool, windy	------	4.8	25.9	4.6	26.6	5.1	25.9	Rain during morning.
			12.9	4.7	25.9	4.8	26.6	5.1	25.8	
Aug. 21	3:15 p. m.	Clear, warm, fair	------	6.0	26.1	6.3	25.1	6.8	26.0	
			12.2	5.9	25.1	6.1	25.0	6.8	26.0	
Aug. 25	1:00 p. m.	Clear, warm, calm	------	5.7	23.3	5.6	23.0	5.7	22.9	
			12.1	5.5	23.2	5.3	23.0	5.5	22.8	
Aug. 28	1:45 p. m.	Clear, warm, calm	------	5.8	25.8	5.9	25.6	----	25.7	
			12.0	5.2	25.8	5.8	25.6	5.2	25.7	
Aug. 31	4:00 p. m.	Clear, warm, calm	------	5.4	24.1	5.7	24.0	6.4	23.8	
			12.1	5.4	23.8	5.5	23.9	6.4	23.8	
Sept. 1	2:30 p. m.	Clear, warm, slight wind	------	5.1	23.8	5.9	23.7	6.3	23.8	
			12.3	5.3	23.6	6.3	23.7	6.1	23.8	
Sept. 4	3:15 p. m.	Clear, cool, calm	------	6.1	20.9	5.5	21.1	5.6	20.7	Scum and oil following heavy rain Sept. 2. Very cool.
			12.3	5.4	20.9	5.3	21.0	5.4	20.6	
Sept. 6	2:15 p. m.	Clear, cool, calm	------	5.0	21.9	4.6	21.7	6.1	21.4	
			12.5	4.9	21.8	4.5	21.5	6.1	21.3	
Nov. 30	11:15 a. m.	Cold, cloudy, wind	------	10.6	3.4	10.4	3.3	10.7	3.4	
			15.9	10.7	3.4	10.8	3.4	10.7	3.4	

STATION—U. S. SLIPS, 164 MILES-1928.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 8	1:30 p. m.	Hazy, cool, calm	6.2	17.5	7.3	17.6	7.3	18.0	
			6.1	17.5	6.8	17.8	8.0	18.0	
June 15	8:00 a. m.	Clear, cool, slight wind	7.6	21.4	7.4	21.3	6.9	21.4	
			7.2	21.2	7.1	21.3	7.3	21.0	
June 22	8:30 a. m.	Hazy, cool, slight wind	6.1	24.2	5.4	24.0	5.2	24.2	Heavy rains upstream. River rising rapidly.
			5.1	23.8	4.1	23.9	2.5	23.8	
July 2	8:30 a. m.	Clear, warm, slight wind	6.5	23.6	4.3	23.5	4.4	23.5	
			3.6	22.6	2.8	22.3	3.1	22.3	
July 6	8:45 a. m.	Clear, cool, slight wind	5.6	26.0	4.6	26.0	5.6	26.0	River rising rapidly due to rains upstream.
			4.9	25.8	4.8	25.7	4.8	25.7	
July 13	7:30 a. m.	Cloudy, cool, calm	2.6	26.0	2.5	26.2	2.6	26.0	
			2.7	25.9	2.3	25.9	2.6	25.8	
July 18	8:30 a. m.	Clear, cool, slight wind	5.5	26.6	4.4	26.4	5.5	26.5	River receding.
			5.2	26.4	3.5	26.2	4.0	26.2	
July 20	8:30 a. m.	Clear, warm, slight wind	4.7	26.8	3.9	26.8	4.6	26.9	
			4.5	26.7	3.4	26.5	4.5	26.6	
July 24	8:30 a. m.	Clear, warm, slight wind	4.5	27.5	4.3	27.5	4.7	27.3	
			3.5	27.2	3.8	27.2	4.3	27.2	
July 29	8:30 a. m.	Clear, cool, slight wind	4.7	27.4	3.6	26.8	4.0	27.0	
			2.6	27.0	2.4	26.8	3.7	26.9	

STATION—U. S. SLIPS, 164 MILES-1928-Concluded.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 1	9:00 a. m.	Clear, cool,	5.5	24.7	5.3	24.5	5.2	24.3	pH 8.0.
		windy	5.3	24.5	4.1	24.2	4.9	24.2	
Aug. 10	9:15 a. m.	Clear, warm,	8.0	27.9	7.5	28.0	6.0	27.5	
		slight wind	7.1	27.5	5.6	27.6	5.6	27.4	
Aug. 13	8:45 a. m.	Clear, warm,	5.7	25.5	5.6	25.2	5.8	25.0	
		calm	5.4	25.3	5.1	25.1	5.5	25.2	
Aug. 24	8:30 a. m.	Cloudy, cool,	4.5	23.5	4.5	23.3	6.0	23.0	
		windy	4.2	23.5	4.5	23.4	6.0	23.5	
Aug. 27	9:45 a. m.	Clear, warm,	5.8	24.8	5.7	24.1	7.2	23.8	
		windy	5.6	24.1	5.4	23.8	7.0	23.5	
Aug. 30	8:45 a. m.	Clear, warm,	5.3	25.3	4.0	25.2	5.8	24.5	
		slight wind	3.6	24.9	3.9	25.1	6.3	24.4	

STATION—WESLEY CITY, 159 MILES—1928.

June 15	9:00 a. m.	Clear, cool,	6.0	21.4	5.8	21.1	7.9	20.8	Odor. Commercial solvent throwing in large volume of fermentliquid at about 2 p.m. Steaming hot. Gave forth a strong odor. Colored river brown for some distance.
		slight wind	5.6	21.2	5.2	21.2	7.8	21.1	
June 22	9:15 a. m.	Hazy, cool,	3.5	24.2	4.4	24.0	4.6	24.0	Rain upstream.
		slight wind	3.6	24.1	4.2	23.8	4.6	23.8	
July 2	9:15 a. m.	Clear, warm,	3.4	23.3	4.9	23.4	4.8	25.5	
		calm	3.6	22.9	4.2	22.6	4.1	22.6	
July 6	9:30 a. m.	Clear, cool,	4.5	26.0	6.1	26.0	4.8	26.0	River up.
		slight wind	4.4	26.0	4.6	25.8	4.6	25.8	
July 13	8:30 a. m.	Clear, cool,	2.8	26.0	2.9	26.0	3.0	26.1	High water.
		calm	2.8	25.8	2.8	25.9	2.9	25.9	
July 18	9:15 a. m.	Clear, cool,	2.8	26.7	4.0	26.5	4.7	27.0	River receding.
		slight wind	2.9	26.5	3.7	26.3	4.7	26.3	
July 20	9:30 a. m.	Clear, warm,	2.8	26.9	3.2	26.7	4.1	26.7	River receding.
		slight wind	2.5	26.7	3.4	26.6	4.0	26.5	
July 24	9:15 a. m.	Clear, warm,	3.1	27.5	4.0	27.5	4.2	27.4	
		windy	3.3	27.4	4.5	27.3	4.6	27.3	
July 27	9:15 a. m.	Clear, warm,	2.0	27.6	3.2	27.4	4.4	27.4	
		calm	1.9	27.0	2.9	27.1	4.4	27.1	
Aug. 1	10:00 a. m.	Clear, cool,	3.8	24.5	4.0	24.4	4.8	24.3	pH 8.2.
		slight wind	3.5	24.6	4.2	24.6	4.7	24.4	
Aug. 10	10:00 a. m.	Clear, warm,	6.0	27.8	6.4	27.6	7.3	27.7	
		slight wind	6.0	27.8	6.5	28.0	7.2	27.3	
Aug. 13	10:10 a. m.	Clear, warm,	4.6	25.8	5.3	25.5	5.8	25.5	Bubbling about one mile south of sampling station.
		calm	4.3	25.7	5.2	25.5	5.7	25.7	
Aug. 24	9:30 a. m.	Cool, cloudy,	3.9	23.8	4.7	23.5	5 6	23.1	
		windy	4.0	23.4	4.6	23.4	6.0	23.2	
Aug. 27	10:30 a. m.	Clear, warm,	4.2	24.2	4.6	24.1	5.2	24.0	
		windy	4.0	24.2	4.5	24.0	5.2	23.9	
Aug. 30	9:45 a. m.	Clear, warn ,	3.7	25.5	4.4	25.2	5.1	24.9	
		slight wind	3.6	25.4	4.1	25.1	5.2	25.0	

STATION—PEKIN, 153 MILES—1928.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Mar. 28	1:30 p. m.	Cloudy, cold, windy	9.0	9.0	10.1	9.0	10.1	9.0	
			9.4	9.0	9.2	9.0	12.0	9.0	
May 31	11:30 a. m.	Hazy, cool, calm	5.7	19.0	6.4	19.0	8.6	19.0	
			6.0	19.1	6.2	19.0	8.7	19.0	
June 4	2:00 p. m.	Hazy, cold, windy	5.8	18.4	6.9	18.2	7.2	18.2	Rain during night of June 3.
			5.4	18.2	7.0	18.0	7.5	18.2	
June 15	12:40 p. m.	Clear, calm, warm	6.4	22.0	7.6	22.0	8.4	22.1	
			6.3	21.8	7.0	21.8	8.0	22.0	
June 22	1:00 p. m.	Cloudy, cool, wind	2.8	24.0	4.1	24.0	4.6	24.0	Heavy rains upstream. River rising.
			2.6	23.9	4.3	23.8	4.1	23.7	
June 27	5:00 p. m.	Clear, cool, calm	2.2	22.0	3.8	22.2	4.8	22.0	Rain.
			3.3	22.0	3.9	22.1	4.9	22.0	
July 2	1:15 p. m.	Clear, warm, calm	2.7	23.6	3.9	23.5	4.8	24.0	
			3.4	23.3	3.7	23.1	4.6	23.6	
July 6	12:15 p. m.	Clear, warm, calm	3.3	26.2	4.3	25.9	4.3	26.0	River rising.
			3.8	25.9	4.7	25.8	4.7	25.8	
July 13	12:15 p. m.	Clear, warm, calm	2.3	26.1	2.8	26.0	3.4	26.0	
			2.0	26.0	2.8	26.0	3.3	25.9	
July 18	1:00 p. m.	Clear, warm, calm	3.1	27.4	4.1	27.1	5.0	27.5	River receding.
			3.3	27.0	4.0	26.8	5.0	27.2	
July 20	12:00 m.	Clear, warm, calm	3.0	26.7	3.5	26.7	7.1	26.7	
			2.8	26.8	3.3	26.7	3.9	26.7	
July 24	1:00 p. m.	Clear, warm, wind	3.6	28.5	3.4	28.2	5.7	28.5	
			3.6	28.2	3.1	28.0	5.6	28.5	
July 27	1:00 p. m.	Clear, warm, wind	2.9	27.6	3.6	27.7	4.9	27.6	
			2.5	27.5	3.6	27.5	4.8	27.4	
Aug. 1	1:45 p. m.	Clear, warm, calm	3.2	25.1	4.2	25.0	4.9	25.0	
			3.3	25.0	4.2	24.8	4.9	25.0	
Aug. 13	2:45 p. m.	Clear, warm, calm	3.6	26.4	4.8	26.0	6.0	26.4	
			3.4	26.2	5.0	26.0	5.9	26.3	
Aug. 10	2:00 p. m.	Clear, warm, wind	6.0	28.5	7.4	27.9	8.0	28.4	
			6.2	28.1	7.3	28.0	7.8	28.3	
Aug. 24	1:50 p. m.	Clear, cool, calm	3.4	24.1	4.1	24.0	5.7	24.0	
			3.3	23.9	4.8	23.8	5.7	23.8	
Aug. 27	2:15 p. m.	Clear, warm, windy	3.9	24.7	5.5	24.5	5.7	24.6	
			3.6	24.7	5.2	24.5	5.7	24.8	
Aug. 30	1:30 p. m.	Clear, warm, wind	2.7	25.0	3.8	25.3	4.9	25.9	
			2.4	24.9	3.4	25.5	4.7	25.6	
Nov. 30	9:30 a. m.	Cloudy, cold, windy	10.0	3.5	8.0	3.5	10.5	3.2	Slightly roily. Slight rain.
			10.3	3.6	9.5	3.4	10.5	3.3	

STATION—SOUTH PEKIN, 151 MILES—1928.
(Just South of Lower Railroad Bridge.)

June 15	10:00 a. m.	Clear, cool, slight wind	4.1	21.8	5.2	21.5	6.9	21.8	
			3.8	21.4	4.7	21.1	7.1	21.5	
June 22	10:00 a. m.	Cloudy, cool, windy	2.0	24.0	3.0	23.9	4.0	23.9	Heavy rain upstream.
			2.0	24.0	3.0	23.9	3.7	23.9	
July 2	10:00 a. m.	Clear, warm, calm	2.3	23.3	3.7	23.0	4.3	23.4	
			2.6	22.9	4.9	22.7	4.2	22.8	
July 6	11:00 a. m.	Clear, cool to warm, slight wind.	3.2	26.2	4.1	26.5	4.3	26.3	
			4.0	26.1	3.8	26.2	4.4	26.0	
July 13	9:30 a. m.	Clear, cool, calm	1.6	26.5	2.5	26.4	3.1	26.2	
			1.8	26.2	2.6	26.1	3.1	26.0	
July 18	10:00 a. m.	Clear, cool, slight wind	2.5	26.5	3.5	26.6	4.1	26.8	
			2.5	26.4	3.4	26.3	3.6	26.6	
July 20	11:00 a. m.	Clear, warm, calm	1.9	26.8	2.7	26.8	3.3	27.0	
			1.7	26.8	3.0	26.6	3.3	26.8	
July 24	10:00 a. m.	Clear, warm, windy	2.8	27.8	3.2	27.6	3.2	27.8	
			3.0	27.4	3.2	27.4	3.6	27.6	
July 27	10:00 a. m.	Clear, warm, slight wind	1.6	27.5	2.6	27.4	3.6	27.5	
			1.3	27.3	2.4	27.2	3.4	27.3	
Aug. 1	10:45 a. m.	Hazy, cool, slight wind	2.1	24.8	4.3	24.7	4.3	24.9	pH 8.4.
			2.2	24.7	4.0	24.5	4.7	24.7	
Aug. 10	11:00 a. m.	Clear, warm, slight wind	3.7	27.7	5.6	27.8	5.6	28.4	
			2.6	27.5	5.8	27.4	4.7	27.6	

STATION—SOUTH PEKIN. 151 MILES—1928—Concluded.

Date	Time	Climate	West Side		Channel		East Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 13	11:15 a. m.	Clear, warm, slight wind	1.8 1.6	25.7 25.6	3.8 4.0	25.6 25.5	4.5 4.8	25.5 25.4	Some bubbling.
Aug. 24	10:30 a. m.	Cloudy, cool, windy	1.6 1.9	23.7 23.3	4.1 4.1	23.6 23.3	4.9 4.9	23.5 23.4	
Aug. 27	11:30 a. m.	Clear, warm, windy	1.2 1.0	24.3 24.2	4.1 4.0	24.0 23.9	4.8 4.5	24.5 23.9	
Aug. 30	10:30 a. m.	Clear, warm, slight wind	1.3 1.8	25.5 25.4	3.6 3.5	25.5 25.4	4.6 4.6	25.3 25.2	

STATION—KINGSTON MINES, 146 MILES—1928.

May 31	9:00 a. m.	Clear, cool, slight wind	6.8 7.0	19.0 19.2	6.0 6.8	19.2 19.0	7.7 7.8	18.9 18.7	
June 4	1:15 p. m.	Hazy, cold, windy	6.2 6.2	18.6 18.4	6.2 6.3	18.1 18.2	7.2 7.3	18.4 18.5	Rain during night of June 3.
June 15	10:30 a. m.	Clear, cool, calm	5.7 5.3	21.8 21.7	5.9 5.7	21.6 21.6	6.3 6.4	21.4 21.4	
June 22	11:00 a. m.	Cloudy, cool, windy	3.0 2.7	24.0 24.2	3.0 3.0	23.9 23.8	4.0 3.9	23.9 23.7	Heavy rain upstream River rising.
July 2	11:00 a. m.	Clear, warm, calm	4.1 3.5	24.0 23.3	3.6 3.5	24.0 23.3	5.0 4.4	24.0 23.2	
July 13	10:15 a. m.	Clear, warm, calm	2.3 2.1	26.6 26.3	2.6 2.5	26.1 26.0	2.8 2.9	26.3 26.1	
July 18	10:45 a. m.	Clear, warm, calm	3.5 3.0	26.7 26.6	3.0 2.9	26.7 26.5	3.6 3.5	27.2 26.3	River receding.
July 24	10:45 a. m.	Clear, warm, slight wind	3.0 3.0	27.7 27.6	3.2 2.9	27.5 27.3	4.4 4.1	28.0 27.1	
July 27	10:45 a. m.	Clear, warm, windy	2.4 2.4	27.4 27.4	2.6 2.3	27.0 27.2	3.5 3.5	27.2 26.8	
Aug. 1	11:30 a. m.	Hazy, cool, slight wind	3.8 3.0	24.8 24.8	4.5 3.1	24.8 24.6	5.0 4.5	24.6 24.3	pH 8.3.
Aug. 10	11:45 a. m.	Clear, warm, windy	4.2 4.5	27.8 27.8	4.5 4.3	27.8 27.5	5.8 6.1	27.5 27.2	
Aug. 13	12:00 m.	Clear, warm, windy	3.3 3.7	25.9 25.4	3.7 3.3	25.7 25.5	4.8 5.2	25.8 25.3	
Aug. 24	11:15 a. m.	Cloudy, cool, windy	2.7 2.5	23.8 23.6	3.3 3.4	23.1 23.0	4.3 4.3	23.2 23.0	
Aug. 27	12:15 p. m.	Clear, warm,, windy	3.7 3.7	24.6 24.5	3.9 3.9	24.2 24.1	5.0 5.0	24.6 24.2	
Aug. 30	11:20 a. m.	Clear, warm, slight wind	2.8 2.6	25.6 25.5	2.9 2.9	25.3 25.4	3.8 3.5	25.0 25.0	

STATION—COPPERAS CREEK DAM, 137 MILES—1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 15	11:00 a. m.	Clear, warm, calm	------ ------	4.9 4.8	26.9 27.0	5.1 4.8	26.8 26.9	5.5 5.7	26.9 26.8	pH 7.7.

STATION—LIVERPOOL, 129 MILES—1928.

Aug. 15	11:30 a. m.	Hazy, warm, calm	------ ------	3.4 3.4	26.8 26.8	3.3 2.9	26.8 27.0	3.0 2.8	27.0 27.0	pH 7.6.

STATION—HAVANA, 120 MILES—1928—1928.

Date	Time	Climate	Stage,	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 27	2:50 p. m.	Clear, warm,	------	3.3	22.3	3.0	22.0	3.6	22.3	Muddy water. Rains.
		calm-------	13.2	2.9	22.0	3.0	22.0	2.5	22.0	
Aug. 15	1:45 p. m.	Clear, warm,	------	3.5	27.5	3.2	27.5	3.7	27.2	pH 8.0.
		calm-------	11.1	3.4	26.9	3.2	27.0	3.4	27.0	

STATION—SPOON RIVER, 120 MILES—1928.

June 27	3:00 p. m.	Clear, warm,	------	----	----	5.8	19.8	--------	Very muddy water. Rain.	
		calm-------	------	----	----	5.3	20.0	--------		
Aug. 15	12:45 p. m.	Clear, warm,	------	----	----	7.0	26.0	--------	Much green floating material.	
		calm-------	------	----	----	7.2	25.8	--------		

STATION—SANGAMON RIVER, 98 MILES—1928.

Date	Time	Climate	South Side		North Side		Remarks
			D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 27	1:00 p. m.	Clear, cool, calm---	6.5	20.8	6.7	20.8	Roily waters.
			6.8	20.8	6.6	20.8	

STATION—BROWNING, 97 MILES—1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 15	4:30 p. m.	Hazy, warm,	------	2.9	28.0	3.1	27.9	3.9	28.0	pH 8.0.
		calm-------	------	2.6	27.0	2.9	27.2	3.7	27.2	

STATION—BEARDSTOWN, 89 MILES—1928.

June 27	10:45 a. m.	Clear, calm,	------	2.1	20.8	2.0	21.0	5.2	20.0	Muddy water except east side
		cool-------	10.7	2.0	20.8	2.5	20.8	5.1	19.8	samples. Rain.
Aug. 16	8:00 a. m.	Clear, warm,	------	2.9	27.1	2.9	27.0	4.4	27.6	pH 8.0.
		calm-------	10.2	2.1	26.7	2.3	26.7	4.2	27.2	

STATION—U. S. LOCKS, 77 MILES—1928.

Aug. 16	9:45 a. m.	Clear, warm,	------	3.1	28.0	2.7	28.0	3.5	28.1	pH 7.8.
		calm-------	------	3.2	27.1	3.3	27.2	3.4	27.2	

STATION-MEREDOSIA, 71 MILES-1928.

Date	Time	Climate	Stage, feet	West Side		Channel		East Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
Aug. 16	10:35 a. m.	Clear, warm,	------	3.3	28.0	3.4	28.0	4.3	28.2	pH 8.0.
		calm------	------	3.0	27.1	3.3	27.5	3.8	27.5	

STATION-FLORENCE, 56 MILES-1928.

June 26	7:00 p. m.	Clear, calm,	------	3.3	21.8	4.8	21.6	----	----	Muddy water. Rain.
		cool-------	------	3.4	21.8	5.6	21.6	4.4	21.8	

STATION—PEARL, 43 MILES-1928.

June 26	5:00 p. m.	Clear, calm,	------	4.0	24.0	3.6	24.2	3.8	24.0	Muddy water. Rain few days
		cool-------	8.3	3.8	24.0	3.5	24.0	3.8	24.0	previous.
Aug. 16	3:45 p. m.	Clear, warm,	------	3.0	28.8	3.1	28.7	3.3	28.8	pH 8.0.
		calm------	7.8	3.1	28.2	3.0	28.0	2.8	28.1	

STATION—KAMPSVILLE, 32 MILES-192.8

June 26	3:30 p. m.	Clear, cool,	------	3.5	22.8	3.1	23.2	3.6	23.4	Muddy water. Heavy rain few
		calm------	------	3.4	22.7	3.2	23.3	3.2	23.6	days previous.
Aug. 18	8:00 a. m.	Hazy, warm,	------	1.9	26.4	1.7	26.5	1.4	26.4	Heavy rains night of Aug. 16.
		calm------	------	1.8	26.2	1.5	26.5	1.3	26.4	Roily water. pH 8.0.

STATION-MACOUPIN RIVER, 23 MILES-1928.
(About 1 to 2 Miles above Outlet into Illinois River.)

June 26	1:30 p. m.	Clear, cool,	------	----	----	7.3	19.8	----	----	Very muddy. Good flow of water
		calm------	------	----	----	7.0	19.8	----	----	for its size.

STATION-HARDIN, 21 MILES-1928.

June 26	2:30 p. m.	Clear, cool,	------	3.0	22.0	3.4	21.8	5.7	22.0	Muddy water. Heavy rain two
		calm------	------	3.1	22.0	3.4	22.0	4.3	22.0	days previous.
Aug. 18	9:20 a. m.	Clear, warm,	------	2.3	27.1	2.4	27.2	2.6	27.0	pH 8.0. Roily water. Heavy
		calm------	------	2.2	27.1	2.6	27.1	2.4	27.0	rain night of Aug. 16.

STATION-GRAFTON, 1 MILE—1928.

Date	Time	Climate	Stage, feet	North Side		Channel		South Side		Remarks
				D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	D. O.	Temp. Deg. C.	
June 26	8:50 a. m.	Clear, cool,	------	3.1	21.8	3.0	21.8	4.3	21.3	Muddy water. Heavy rain two
		calm------	9.0	2.9	21.8	3.0	21.8	4.2	21.2	days previous.
Aug. 18	11:45 a. m.	Clear, warm,	------	4.0	27.8	3.5	27.5	3.5	27.6	pH. 7.9. Roily water. Rain night
		calm------	7.3	----	----	3.4	27.5	3.1	27.6	of Aug. 16.

BIOCHEMICAL OXYGEN DEMAND DATA—1928

STATION—CHICAGO SANITARY DISTRICT CANAL AT LOCKPORT—1928.
(Wagon Bridge just above Chicago Sanitary District Power Plant.)

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
Aug. 8	20	6.35	4.45	3.32	9.5	15.15	
Aug. 8	10	7.20	5.1	4.3	21.0	29.0	
Aug. 8	5	7.46	6.5	6.1	19.2	27.2	

STATION—LOCKPORT (DES PLAINES RIVER), 294 MILES—1928.
(Wagon Bridge just above Cnicago Sanitary District Power Plant.)

June 12	100	6.96	--------	.02	4.6+*	6.94+	
June 12	50	7.25	--------	3.6	4.8*	7.3	
Aug. 8	50	6.97	4.6	2.32?	4.74	9.30?	
Aug. 8	25	7.38	6.15	6.14	4.92	4.96	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—JOLIET (ILLINOIS RIVER), 289 MILES—1928.
(Wagon Bridge at Ruby Street.)

June 12	50	7.0	--------	.1	--------	14.0+	
June 12	25	7.35	--------	.6	18.0*	27.0	
Aug. 8	20	6.62	5.61	4.84	5.05	8.9	
Aug. 8	10	6.75	5.9	5.75	8.50	10.0	

* 5-Day B. O. D. calculated on basis that 10-Day B. 0. D. = 1.5 x 5-Day B. O. D.

STATION—JOLIET (ILLINOIS RIVER), 287 MILES-1928.
(Wagon Bridge Route No. 7 State Road.)

June 12	50	8.92	--------	.05	--------	13.7+	
June 12	25	7.26	--------	.3	18.7*	28.0	
Aug. 8	20	6.80	5.38	3.87	7.10	14.65	
Aug. 8	10	7.32	6.50	5.52	8.2	18.0	

• 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—ILLINOIS RIVER NEAR CHANNAHON, 279 MILES—1928.

June 12	50	6.92	--------	.75	--------	12.34	
June 12	25	7.45	--------	2.75	12.5*	18.8	
Aug. 8	33⅓	6.79	5.10	3.05	5.07	11.22	
Aug. 8	20	7.26	6.10	4.45	5.80	14.05	

• 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. 0. D.

STATION—KANKAKEE RIVER—1928.
(Wagon Bridge a Mile above Mouth.)

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
June 12	100	7.6		4.78	1.88*	2.82	
June 12	50	6.95		5.13	2.4*	3.64	
Aug. 8	50	8.15	6.9	6.33	2.5	3.64	
Aug. 8	25	7.52	6.86	6.2	2.64	5.28	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—MORRIS (ILLINOIS RIVER), 263 MILES—1928.

June 12	50	6.9		.5	8.5*	12.8	Dilution H_2O had demand of .3 p.p.m. correction made in determination.
June 12	25	5.82		2.9		11.7	
Aug. 8	33⅓	6.64	4.05	1.11	7.77	16.59	
Aug. 8	20	7.00	5.24	3.24	8.8	18.8	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—MARSEILLES, 247 MILES—1928.
(Wagon Bridge just below Dam.)

June 12	100	6.7		.1		6.6+	
June 12	50	6.8		1.1	7.6*	11.4	
Aug. 8	50	7.0	4.64	2.43	4.72	9.14	
Aug. 8	25	7.22	6.00	4.45	4.88	11.08	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—FOX RIVER AT OTTAWA, 240 MILES—1928.
(Wagon Bridge on Route 7 next to Bridged Illinois and Michigan Canal.)

June 12	100	7.97		1.24	4.5*	6.73	
June 12	50	7.46		4.1		6.72	
July 10	33⅓	7.02	6.64	6.1	1.14	2.76	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10	20	7.3	7.0	6.7	1.0	3.0	
Aug. 8	50	7.40	5.05	4.58	4.7	5.64	
Aug. 8	25	7.40	6.2	5.8	4.8	6.4	
Dec. 1	100	12.0	8.7		3.3		Permanganate O_2 consumed on original 7.2.
Dec. 1	50	9.6	6.5		6.2		

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—OTTAWA, 240 MILES—1928.
(Illinois River at Route 7A Bridge.)

June 12	100	7.1		.38		6.7	
June 12	75	6.9		.3	5.9*	8.8	
July 10	33⅓	6.9	5.57	4.72	3.99	6.54	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10	20	7.2	6.05	5.6	5.75	8.0	
Aug. 8	33⅓	7.4	5.42	2.9	5.94	13.5	
Aug. 8	20	7.4	6.23	3.96?	5.85	17.2?	
Dec. 1	50	8.6	5.0		7.2		Permanganate O_2 consumed on original 6.5.
Dec. 1	25	8.2	6.0		8.8		

* 5-Day B. O. D. calculated on basis that 10-Day B. 0. D. = 1.5 x 5-Day B. O. D.

STATION—UTICA, 230 MILES—1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
Aug. 8	33⅓	7.10	5.27	3.92	5.49	9.54	
Aug. 8	20	6.95	6.27?	5.6	3.4?	6.75	

STATION—VERMILION RIVER—1928.
(Bridge on Route 7A.)

June 13	100	7.65		2.85		4.8	
June 13	50	7.6		5.0	3.8*	5.2	
July 10	33⅓	7.06	6.51	6.24	1.65	2.46	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10	20	7.35	6.90	6.68	2.25	3.35	
Aug. 8	50	6.97	6.1	5.22	1.74	3.50	
Aug. 8	25	7.14	6.6	6.0	2.20	4.16	
Dec. 1	50	9.6	7.1		5.0		Permanganate O_2 consumed on original 3.2.
Dec. 1	33⅓	8.7	6.9		5.4		

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—LA SALLE, 224 MILES—1928.

Mar. 27	100	10.8	5.4		5.4		
				.2			
June 13	50	6.92		.2	10.0+	13.4++	
June 13	25	7.75		3.8		15.8	
	25	7.80		3.4		17.6	
July 10	33⅓	6.75	6.15	5.7	1.8	3.15	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10	20	7.05	6.64	6.48	2.05	2.85	
Aug. 8	33⅓	6.80	5.40	4.1	4.2	8.1	
Aug. 8	20	7.30		5.32		9.9	
Dec. 1	50	8.8	4.5		8.6		Permanganate O_2 consumed on original 5.9.
Dec. 1	33⅓	9.1	5.4		11.1		

STATION—SPRING VALLEY, 218 MILES—1928.

Mar. 27	100	10.2	5.3		4.9		
June 13	50	7.1		2.5	6.1*	9.2	
June 13	25	7.86		2.86		20.0	
	25	7.86		2.81		20.2	
June 13	25	7.86		1.4**			** 15-Day.
	25	7.86		1.6**			
June 13	25	7.86		.8**			** 20-Day.
	25	7.86		1.0**			
June 13	25	7.86		.05**			** 30-Day.
	25	7.86		.05**			

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D.=1.5 % 5-Day B. O. D.
** Special.

STATION-HENRY, 196 MILES-1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
May 30	100	6.45	3.15		3.30		
June 5	100	8.0	4.3		3.7		
	100	8.0	5.2		2.8		
June 13	50	7.87		1.1		13.54	
	50	7.87		.74	9.0*	14.26	
June 13	25	8.1		5.03		12.28	
	25	8.1		4.7	8.7*	13.6	
June 19	50	6.52		1.7		9.64	
	50	6.52		1.6	6.4*	9.84	
June 19	25	7.3		4.12		12.72	
	25	7.3		4.24	8.5*	12.24	
June 29	50	7.85	5.84	2.98	4.02	9.74	
June 29	25	8.2	7.05	5.87	4.6	9.32	
July 3	50	6.46	3.58	.9	5.76	11.12	
July 3	25	6.47	5.1	4.2	6.44	9.08	
July 10	50	6.62	5.66?	5.22?	1.92	2.80	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10	25	6.76	6.24?	6.00?	2.08	3.04	
July 16	50	7.04	4.33	3.18	5.42	7.72	
July 16	25	7.11	5.42	4.18	6.76	11.72	
July 23	50	6.2	4.1	.9	4.2?	10.6	
July 23	25	7.4	5.3	4.3	8.4	12.4	
July 30	50	7.16	5.04	4.28	4.24	5.76	
July 30	25	7.5	6.55	6.3	3.80	4.8	
Aug. 8	50	6.52	4.72	2.02	3.60	9.0	
Aug. 8	25	6.85	5.92	4.54	3.72	9.24	
Aug. 14	50	6.98	5.32	5.00	3.32	3.96	
Aug. 14	25	7.16	6.32	6.06	3.36	4.4	
Aug. 22	50	7.6	4.5		6.2		
Aug. 22	25	8.2	6.2		8.00		
Aug. 28	50	6.86	4.43		4.86		East swing of bridge.
Aug. 28	25	6.95	5.55		5.60		East swing.
Aug. 28	50	7.00	5.25		3.50		Mid-stream.
Aug. 28	25	6.84?	6.15		2.76		Mid-stream.
Aug. 28	50	6.37	5.40		1.94		West swing of bridge.
Aug. 28	25	6.96					West swing.
Sept. 1	50	6.57	4.0		5.14		
	50	6.57	4.0				
Sept. 1	25	7.65	6.4		5.00		
	25	7.65	6.3		5.40		
Nov. 30	50	9.1	5.9		6.4		Permanganate O_2 consumed on original 6.7.
Nov. 30	33⅓	8.6	6.4		6.6		

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 *x* 5-Day B. O. D.

STATION—LACON, 189 MILES—1928.

Mar. 27	100	9.3	6.5		2.8		
May 30	100	5.9	3.36		2.54		
June 5	100	7.0	4.0		3.0		
	100	7.0	4.2		2.8		
June 13	100	7.1		.1			
	100	7.1		.13		7.+	
June 13	50	7.77		1.94			
	50	7.77	6.92[1]	1.00[3]			
	50	7.77	6.23[2]	.94			
	50	7.77	5.73	.55	4.08	11.66	
June 19	50	6.8		1.03		11.54	
	50	6.8		1.20	7.7*	11.2	
June 19	25	7.47		4.70		11.08	
	25	7.47		4.74	7.3*	10.92	
June 29	50	7.12	4.75	3.9	4.74	6.44	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 *x* 6-Day B. O. D.
[1] 1-Day.
[2] 3-Day.
[3] 15-Day.
[4] 20-Day.
[5] 30-Day.

STATION—LACON, 189 MILES—1928—Concluded.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
June 29	25	7.96	6.92	6.84	4.16	4.48	
July 3	50	6.55	4.4		4.30		
July 3	25	6.76	5.7	4.82	4.24	7.36	
July 10**	100	6.63	4.78	3.83	1.85	2.80	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubation.
July 10**	50	6.85	5.85	5.40	2.00	2.90	
July 16	50	6.8	4.82	4.22	3.96	5.16	
July 16	25	7.38	6.35	5.55	4.12	7.32	
July 23	50	7.06	4.58	1.00	4.96	12.12?	
July 23	25	7.22	5.65	4.7	6.28	10.08?	
July 30	50	5.85		4.2		3.30	
July 30	25	7.57	6.68	6.38	3.56	4.76	
Aug. 8	50	6.7	4.05	1.67	5.3	10.06	
Aug. 8	25	6.97	5.36	4.54	6.44	9.72	
Aug. 14	50	7.4	3.8	2.6	7.2	9.6	
Aug. 14	25	7.17	6.20	4.5	7.88	10.68	
Aug. 22	50	7.35	4.87	4.52	4.96	5.66	
Aug. 22	25	8.00	6.26		6.96		
Aug. 28	50	6.42	4.40		4.04		
Aug. 28	25	6.88	5.77		4.44		
Sept. 1	50	8.1	6.05				
	50	8.1	6.0		4.2		
Sept. 1	25	7.85	6.85				
	25	7.85	6.80		4.0		
Nov. 30	50	8.5	6.5		4.0		Permanganate O_2 consumed on original 7.2.
Nov. 30	33⅓	8.3	6.8		4.5		

** Special.

STATION—CHILLICOTHE, 180 MILES—1928.

May 30	100	6.1	.2		5.9		
June 5	100	8.4	3.2		5.2		
	100	8.4	3.1		5.3		
June 13	100	7.68		.16		7.52+	
June 13	50	7.9		2.5	7.2*	10.8	
June 19	50	6.8		.85			
	50	6.8		.83		11.9	
June 19	25	7.0		4.63			
	25	7.0		4.80		9.48	
June 20	50	8.06	6.83[1]	5.18[2]			
	50	8.06	4.4	1.2	7.32	13.72	
June 20	25	8.25	4.8[3]	2.5[5]			
	25	8.25	4.6[4]	5.0		13.0	
June 29	50	7.64	5.60	1.88	4.08	11.52	
June 29	25	8.14	7.14	4.92	4.00	12.88	
July 3	50	6.65	3.5		6.3		
July 3	25	7.0	5.4	4.2	6.4	11.2	
July 10	50	6.54	5.56	5.24	1.96?	2.60	River up due to heavy rains. Ice water dripped into water seal jars. Temperature 15° instead of 20° for incubating.
July 10	25	7.15	6.52	6.14	2.52?	4.04	
July 16	50	5.47		3.18		4.58	
July 16	25	7.38	6.05	5.82	5.32	6.24	
July 19	100	6.33	3.4		2.93		
July 19	50	7.02	6.00		2.04		
July 23	50	7.15	4.72	3.00	4.86	8.30	
July 23	25	7.47	6.20	5.28	5.08	8.76	
July 30	50	7.28	5.31	2.92	3.94	8.72	
July 30	25	7.28	6.35	5.50	3.72	7.12	
Aug. 8	50	6.42	3.0	.1	6.84	12.64+	
Aug. 8	25	7.12	5.07	3.7	8.2	13.68	
Aug. 14	50	6.86	5.02	4.74	3.68	4.24	
Aug. 14	25	7.54	6.6		3.76		
Aug. 22	50	6.91	4.08	1.72	5.66	10.38	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.
[1] 1-Day.
[2] 3-Day.
[3] 15-Day.
[4] 20-Day.
[5] 30-Day.

STATION—CHILLICOTHE 180 MILES—1928—Concluded.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
Aug. 22	25	8.05	6.56	4.47	5.96	14.32	
Aug. 28	50	6.57	5.44?	----	2.26?	----	
Aug. 28	25	7.05	5.78	----	5.08	----	
Sept. 1	50	7.5	6.3	----	2.4	----	
	50	7.5	6.4	----	2.1	----	
Sept. 1	25	8.05	7.30	----	3.00	----	
	25	8.05	7.1	----	3.80	----	

STATION—ROME, 178 MILES—1928.

Aug. 28	50	6.50	4.4	----	4.2	----	
Aug. 28	25	6.85	5.68	----	4.64	----	

STATION—PEORIA NARROWS, 166 MILES—1928.

Mar. 28	100	10.4	7.8	----	2.6	----	
May 26	100	7.65	4.6	----	3.05	----	
	100	7.65	4.75	----	2.90	----	
May 30	100	8.9	1.3	----	7.6	----	
June 4	100	7.9	3.6	----	4.3	----	
	100	7.9	2.4	----	5.5	----	
June 8	100	7.0	.9	.08	6.1	----	
June 8	50	8.05	4.8	1.0	6.30	----	
June 15	50	8.13	----	3.7	5.9*	8.86	
June 19	50	7.7	----	4.2	----	----	
	50	7.7	----	4.2	4.66*	7.0	
June 19	25	8.35	----	5.2	----	----	
	25	8.35	----	4.9	8.4*	12.6	
June 23	50	7.58	12.9[1]	9.42[2]	----	----	All samples turned yellow after $KMnO_4$-$Na_2C_2O_4$ treatment.
	50	7.58	12.1	14.3	----	----	
June 23	25	7.38	4.7[3]	----	----	----	
	25	7.38	3.4[4]	6.4	3.92	----	
June 29	50	8.02	7.52	4.77	1.0	6.5	
June 29	25	8.3	7.6	6.2	2.8	8.4	
July 2	50	6.74	4.79	1.0	3.80	11.48	
July 2	25	7.17	6.0	4.3	4.68	11.48	
July 6	50	7.0	5.7?	5.56	2.6?	2.88	
July 6	25	7.39	6.35	----	4.16	----	
July 12	100	5.46	4.62	----	.84	----	Samples from west end of swing.
	100	5.46	4.66	----	.80	----	
July 12	100	5.8	4.55	----	1.25	----	West side center of swing.
	100	5.8	4.40	----	1.40	----	
July 12	100	5.6	4.58	----	1.02	----	East side center of swing.
	100	5.6	4.64	----	.96	----	
July 12	100	5.95	4.86	----	1.09	----	East end of swing.
	100	5.95	4.96	----	.99	----	
July 16	50	6.92?	5.65	3.75	2.54	6.34	
July 16	25	7.3	6.4	5.8	3.6	6.0	
July 23	50	7.27	5.2	3.2	4.14	8.14	
July 23	25	7.42	6.25	5.5	4.68	7.68	
July 30	50	6.46	6.06	4.96	.8?	2.20	
July 30	25	7.94	7.00	6.42	3.76	2.32	
Aug. 13	50	7.7	4.63	3.62	6.14	8.16	
Aug. 13	25	7.43	5.85	5.70	6.32	6.92	
Aug. 25	100	8.0	4.5	----	3.5	----	
Aug. 25	25	7.7	5.9	----	3.6	----	
Aug. 31	50	7.9	5.78	----	----	----	
	50	7.9	5.88	----	4.2	----	
Aug. 31	25	8.2	7.15	----	----	----	
	25	8.2	7.05	----	4.4	----	
Nov. 30	100	10.2	6.2	----	4.0	----	Permanganate O_2 consumed on original 5.1.
Nov. 30	50	8.8	6.0	----	5.6	----	Sanitary analysis 63140.

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

[1] 2-Day.

[2] 4-Day.

[3] 20-Day.

[4] 30-Day.

STATION—U. S. SLIPS, 164 MILES—1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
June 8	100	6.85	1.55	--------	5.3	--------	
June 8	100	6.85	--------	.08	--------	6.77+	
June 8	50	8.55	5.6	--------	5.9	--------	
June 22	50	7.37	5.2	1.4	4.34	12.00	
June 22	25	7.56	6.6	5.31	3.84	9.0	
July 2	50	7.0	3.72	--------	6.56	14.0+	
July 2	25	7.3	5.7	3.85	6.4	13.8	
July 6	50	6.8	5.55	5.38	2.50	2.84	
July 6	25	7.14	6.30	6.38	3.36	3.04	
July 13	50	6.66	5.44	3.6	2.44	6.12	This sample from midstream channel.
July 13	25	7.32	6.2	5.85	4.48	5.88	
July 13	50	7.02	5.51	3.34	3.02	6.76	This sample from east channel.
July 13	25	7.5	7.12	5.8	1.52	6.8	
July 18	50	6.8	4.2	3.17	5.2	7.26	
July 18	25	7.38	6.06	5.7	5.28	6.72	
July 24	50	7.52	3.5	1.8	8.04	11.44	
July 24	25	8.07	--------	5.46	8.56	10.44	
Aug. 1	50	6.96	2.05	.65	9.82	12.62	
Aug. 1	25	7.45	4.30	--------	12.60	--------	
Aug. 13	50	7.63	3.00	2.63	9.26	10.00	
Aug. 13	25	7.6	3.88	3.6	14.88	16.00	
Aug. 24	50	8.2	5.6	1.8	5.2	12.8	
Aug. 24	25	8.57	7.23	5.7	5.36	11.48	
Aug. 27	50	7.04	5.3	4.90	3.48	4.28	
Aug. 27	25	7.75	6.95	6.70	3.20	4.20	

STATION—COMMERCIAL SOLVENT WASTE, 160 MILES

(Collected as Entering River Beneath Surface of Water. Some River Water Present in Sample but Amount Unknown.)

Date	Dilution	Initial D. O.	5-Day D. O.	5-Day B.O.D.
Aug. 15	1 to 1,000	6.08	.73	5,350
Aug. 15	1 to 2,000	7.35	3.85	3,500
Aug. 15	1 to 4,000	7.15	5.60	2,550

STATION—WESLEY CITY, 159 MILES—1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
June 15	100	8.06	--------	.1	5.3*	8.+	
June 15	50	7.9	--------	.1	10.0*	15.6+	
June 22	50	6.98	2.17	1.03	9.62	11.9	
June 22	25	7.48	5.48	--------	8.00	--------	
July 2	50	6.72	3.8	.87	5.84	11.7	Channel sample.
July 2	25	7.3	5.89	4.0	5.68	13.2	Channel sample.
July 2	50	6.7	1.53	--------	10.34	13.4	West side sample.
July 2	25	7.2	4.75	2.8	9.80	17.6	West side sample.
July 6	50	6.6	4.0	4.7?	5.2	?	
July 6	25	7.03	5.76	4.77	5.08	9.04	
July 13	50	7.21	4.42	2.0	5.58	10.42	
July 13	25	7.41	5.85	4.67	6.24	10.96	
July 18	50	6.3	--------	.2—	--------	12.2++	
July 18	25	7.05	3.56	2.45	13.96	18.4	
July 24	50	7.0	4.03	3.3	5.94	7.4	
July 24	25	7.33	5.82	5.43	6.04	7.6	
Aug. 1	50	7.06	2.70	.6	8.72	12.92	
Aug. 1	25	7.23	5.20	4.0	8.12	12.92	
Aug. 13	50	7.24	.8	.4	12.88	13.68	
Aug. 13	25	7.34	4.40	3.6	11.76	14.96	
Aug. 24	50	7.9	1.32	.9	11.16	14.0	
Aug. 24	25	8.26	4.70	2.84	14.24	21.64	
Aug. 27	50	6.78	3.70	2.28	6.16	9.00	
Aug. 27	25	7.25	5.60	5.15	6.60	8.40	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—PEKIN, 153 MILES—1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
Mar. 28	100	10.5	5.4		5.1		
May 31	100	8.34	1.5		6.84		
June 4	100	8.3	.1		8.2		
	100	8.3	.1		8.2		
June 15	100	7.67		.15		7.5+	
June 15	50	8.12		.1	10.7*	16.0+	
June 22	50	6.62	4.0	1.5	5.24	10.24	
June 22	25	7.2	5.7	3.1	6.0	16.4	
June 28	50	8.81	6.3	5.0	5.02		
June 28	25	8.8	7.6	6.5	4.8		
July 2	50	6.9	4.33		5.14		
July 2	25	7.18	5.7	4.23	5.92	11.8	
July 6	50	6.71	4.72	4.6	3.98	4.22	
July 6	25	7.01	6.00	5.48	4.04	6.12	
July 13	50	7.1	5.75	3.2	2.70	7.8	
July 13	25	7.81?	6.60	5.63?	4.84	8.72?	
July 18	50	6.9	4.0	3.48	5.8	6.84	
July 18	25	7.4	5.95	5.73	5.8	6.68	
July 24	50	7.02	5.29	4.62	3.46	4.8	
July 24	25	7.43	6.53	6.24	3.6	4.76	
Aug. 1	50	7.15		2.53		9.24	
Aug. 1	25	7.94	6.00	5.20	7.76	10.96	
Aug. 13	50	7.17	3.97	3.44	6.40	7.46	
Aug. 13	25	7.35	5.55		7.20		
Aug. 24	50	8.26	5.40	2.12	5.72	12.28	
Aug. 24	25	8.22	6.80	5.58	5.68	10.56	
Aug. 27	50	6.88	5.00	3.68	3.76	6.40	
Aug. 27	25	6.72	5.70		4.08		
Nov. 30	100	10.6	3.8		6.8		Permanganate O_2 consumed on original 5.2.
Nov. 30	50	8.5	4.7		7.6		Sanitary analysis No. 63139.

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—SOUTH PEKIN, 151 MILES-1928.
(Lower Railroad Bridge.)

June 15	100	7.76		.05		7.7+	
June 15	50	7.8		.8	9.4*	14.0	
June 22	50	7.03	4.3	3.9	5.46	6.26	
June 22	25	7.58	5.65	5.67	7.72	7.64	
July 2	50	6.7	4.0	1.2	5.4	11.0	
July 2	25	7.26	5.81	4.0	5.80	13.04	
July 6	50	6.49	4.58	4.20	3.82	4.58	
July 6	25	7.03	6.04	5.07	3.96	7.84	
July 13	50	6.84	5.47?	3.6	2.74?	6.48	
July 13	25	7.45	6.2?	5.75	6.00	6.80	
July 18	50	7.12	4.16	3.10	5.92	8.04	
July 18	25	7.36	5.85	5.34	6.04	8.08	
July 24	50	7.3	4.05	3.78	6.50	7.04	
July 24	25	6.78?	6.10	6.23	2.72?	2.2?	
Aug. 1	50	8.05	3.35	3.24	9.4	9.62	
Aug. 1	25	8.2	6.0	4.35	8.8	15.4	
Aug. 13	50	6.85	2.75	2.42	8.20	8.86	
Aug. 13	25	7.5	5.13		9.48		
Aug. 24	50	7.84	4.45	.8	6.78	14.08	
Aug. 24	25	8.52	6.65	5.10	7.48	13.68	
Aug. 27	50	6.63	4.20	1.00	4.86	11.26	
Aug. 27	25	6.85	5.40	4.35	5.80	10.00	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—KINGSTON MINES, 146 MILES—1928.

Date	Concentration Percent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
May 31	100	6.56	1.5		5.06		
June 4	100	8.4	.4		8.0		
	100	8.4	.3		8.1		
June 15	100	7.06		.1		7.+	
June 15	50	7.6		.8	9.1*	13.6	
June 22	50	6.83	3.8	2.9	6.06	7.86	
June 22	25	7.19	4.8	3.1	9.56	16.36	
July 2	50	6.62	3.8	0.0	5.64		
July 2	25	7.1	5.35	4.0	7.00	12.4	
July 13	50	6.62	4.25	2.0	4.74	9.24	
July 13	25	7.25	6.10	5.15	4.60	8.4	
July 18	50	6.9	3.3	1.8	7.2	10.2	
July 18	25	7.45	5.7	5.42	7.00	8.12	
July 24	50	6.84	4.11	3.96	5.46	5.88	
July 24	25	7.25	6.10	6.03	4.60	4.88	
Aug. 1	50	6.87	4.10	1.45	5.54	10.84	
Aug. 1	25	?	5.53	4.05			
Aug. 13	50	7.2	4.6	3.7	5.2	7.0	
Aug. 13	25	7.46	6.00	5.70	6.84	7.04	
Aug. 24	50	8.14	5.04	1.65	6.20	12.98	
Aug. 24	25	8.3	6.85	5.55	5.80	11.00	
Aug. 27	50	6.62	3.90	2.92	5.44	7.40	
Aug. 27	25	6.93	5.60	5.25	5.32	6.72	

* 5-Day B. O. D. calculated on basis that 10-Day B. O. D. = 1.5 x 5-Day B. O. D.

STATION—COPPERAS CREEK DAM (ILLINOIS RIVER), 137 MILES—1928.

Aug. 15	50	7.2	2.8	1.75	8.8	10.9	5-Day B. O. D. carried in boat entire period. Temperature average about 25°C. 10-Day had same with 5 days at 20°C.
Aug. 15	33⅓	6.98	4.34	4.13	7.92	8.55	

STATION—LIVERPOOL, 129 MILES—1928.

Aug. 15	50	7.3	5.27		4.06		Same as Copperas Creek Dam.
Aug. 15	25	7.3	5.5		5.4		

STATION—SPOON RIVER, 120 MILES—1928.

June 28	50	8.0	0.0	0.0	16.+	16.+	Very muddy water.
Aug. 15	50	8.2	7.04	6.37	2.32	3.66	Same as Copperas Creek Dam.
Aug. 15	33⅓	7.7	6.78	6.48	2.76	3.66	

STATION-HAVANA, 120 MILES-1928.

June 28	50	8.23	5.7	3.9	5.06		Roily water.
June 28	25	8.0	6.6	6.4	5.60		Roily water.
Aug. 15	50	6.75	6.04		1.42		Same as Copperas Creek Dam.
Aug. 15	33⅓	6.85	6.38	5.58	1.41	3.81	

STATION—SANGAMON RIVER, 98 MILES-1928.

June 28	50	8.77	7.05	6.6	3.44	4.34	
June 28	25	8.71	7.6	6.35	4.44	4.72	

STATION—BROWNING, 97 MILES—1928.

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
Aug. 15	50	8.00	6.26	5.13	3.48	5.74	Same as Copperas Creek Dam.
Aug. 15	33⅓	8.58	6.42		3.48		

STATION—BEARDSTOWN, 89 MILES—1928.

June 28	100	9.7	3.0[1]	4.4[2]			
	100	9.7	5.0	4.25	4.7		
June 28	50	9.2	8.33[3]	4.7[2]			
	50	9.2	6.70	5.5	5.0		
	50	9.2	8.00[4]				
June 28	25	8.79	7.6[4]	5.85[2]			
	25	8.79	7.2	6.9	6.36		
	25	8.79	8.3[3]				
Aug. 16	50	8.4	4.85		7.10		See note under Copperas Creek Dam. Same only with 1 day extra at 20°C.
Aug. 16	33⅓	7.00	4.44		7.68		

[1] 15-Day.
[2] 20-Day.
[3] 1-Day.
[4] 3-Day.

STATION—MEREDOSIA, 71 MILES—1928.

Aug. 16	100	6.5	2.4	2.0	4.1	4.5	Incubated 4 days at 25°; 1 day at 20°.
Aug. 16	50	6.95	3.20	1.2	7.50	11.5	

STATION—FLORENCE, 56 MILES—1928.

June 26	50	9.07	7.62	5.51	2.90	7.12	
June 26	25	9.75	8.1	6.5	6.60	13.00	
Aug. 16	50	6.75	2.66		7.78		Incubated 4 days at 25°; 1 day at 20°.
Aug. 16	25	7.38	6.12		5.04		On shipped iced bacteria sample incubated at 20°.

STATION—PEARL, 43 MILES—1928.

June 26	50	9.23	5.75	4.13	6.96	10.20	Roily water.
June 26	25	9.0	6.0	4.62	12.0	17.52	Roily water.
Aug. 16	100	7.95	1.71		6.24		Roily water. Incubated 4 days at 25°; 1 day at 20°.
Aug. 16	50	6.65	3.52		6.26		

STATION—KAMPSVILLE, 32 MILES—1928.

June 26	50	9.4	4.8	3.95	9.2	10.9	Muddy water
Aug. 18	100	5.9	3.62		2.28		Incubated 2 days at 25°; 3 days at 20°C.
Aug. 18	50	7.14	3.24		7.80		Roily water.

STATION—MACOUPIN RIVER, 22 MILES—1928.
(Just above Hardin.)

Date	Concentration Per cent	Initial D. O.	5-Day D. O.	10-Day D. O.	5-Day B.O.D.	10-Day B.O.D.	Remarks
June 26	50	7.38	4.08	3.36	6.6	8.04	Muddy water.
June 26	25	7.2	5.75	4.02	5.8	12.72	Muddy water.

STATION—HARDIN, 21 MILES—1928.

June 26	50	5.48	4.6	2.8	3.76	5.36	Muddy water.
June 26	25	6.3	5.47	4.7	3.32	6.40	Muddy water.
Aug. 18	100	7.24	3.92	--------	3.32	----------	Incubated 2 days at 25°C.; 3 days at 20°C.
Aug. 18	50	7.34	5.16	4.60	4.36	5.48	
Aug. 18	33⅓	8.00	5.78	4.85	6.66	12.45	

STATION—GRAFTON, 1 MILE—1928.

June 26	50	7.05	5.36	2.8	3.38	8.50	Muddy samples.
June 26	25	6.95	5.8	4.61	4.60	9.36	
Aug. 18	100	6.07	4.40	--------	1.67	----------	Roily water. Incubated 2 day at 25°C., 3 days at 20°C.
Aug. 18	50	7.14	5.22	--------	3.84	----------	

BACTERIOLOGICAL DATA—1928

STATION—CHICAGO SANITARY CANAL AT LOCKPORT (294)—1928.
(Wagon Bridge just above Power Plant.)

Date	Total count 1.cc	B. Coli (Presumptive)						Remarks
		1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	
Aug. 8	3,780,000	----	----	2+	2+	1—,1+	2—	
	3,190,000	----	----	----	----	----	----	

STATION—LOCKPORT (DES PLAINES RIVER) (294)—1928.
(Wagon Bridge just above Chicago Sanitary District Power Plant.)

June 12	11,000	2+	2+	2—	2—	2—	----	
	11,700	----	----	----	----	----	----	
Aug. 8	24,000	2+	2+	2+	1—,1+	----	----	
	27,000	----	----	----	----	----	----	

STATION—JOLTET (ILLINOIS RIVER) (289)—1928.
(Wagon Bridge at Ruby Street.)

June 12	136,000	2+	2+	2+	1—,1+	----	----	
	109,000	----	----	----	----	----	----	
Aug. 8	2,500,000	----	----	2+	2+	2+	1+,1—	
	2,000,000	----	----	----	----	----	----	

STATION—JOLIET (ILLINOIS RIVER) (287)—1928.
(Wagon Bridge Route No. 7.)

June 12	135,000	2+	2+	2+	2+	----	----	
	144,000	----	----	----	----	----	----	
Aug. 8	2,200,000	----	----	2+	2+	2+	1—,1+	
	2,600,000	----	----	----	----	----	----	

STATION—CHANNAHON (279)—1928.

June 12	32,000	2+	2+	2+	2+	----	----	
	49,000	----	----	----	----	----	----	
Aug. 8	760,000	----	----	2+	2+	2+	2—	
	600,000	----	----	----	----	----	----	

STATION—KANKAKEE RIVER (273)—1928.
(Wagon Bridge about a mile above where River Empties into Illinois River.)

June 12	23,000	2+	2+	2+	2—	----	----	
	17,000	----	----	----	----	----	----	
Aug. 8	15,700	2+	2+	1+,1—	2—	----	----	
	16,000	----	----	----	----	----	----	

STATION—MORRIS (263)—1928.

Date	Total count 1.cc	B. Coli (Presumptive)						Remarks
		1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	
June 12	15,000	2+	2+	2+	2—	-------	-------	
	13,800	-------	-------	-------	-------	-------	-------	
Aug. 8	630,000	-------	-------	2+	2+	2+	2—	
	780,000	-------	-------	-------	-------	-------	-------	

STATION—MARSEILLES (247)—1928.
(Wagon Bridge just Below Dam.)

June 12	14,500	2+	2+	2+	2—	-------	-------	
	14,000	-------	-------	-------	-------	-------	-------	
Aug. 8	70,000	-------	-------	2+	1+,1—	2—	2—	
	74,000	-------	-------	-------	-------	-------	-------	

STATION—FOX RIVER AT OTTAWA (240)—1928.
(Wagon Bridge on Route No. 7 next to Bridged Illinois and Michigan Canal.)

June 12	700	2—	2—	2—	2—	-------	-------	
	650	-------	-------	-------	-------	-------	-------	
July 10	4,200	2+	2+	2—	2—	-------	-------	River up and roily.
	4,700	-------	-------	-------	-------	-------	-------	
Aug. 8	2,000	2+	1—,1+	2—	-------	-------	-------	
	2,100	-------	-------	-------	-------	-------	-------	
Dec. 1	600	-------	2+	2—	2—	2—	-------	
	900	-------	-------	-------	-------	-------	-------	

STATION—OTTAWA (240)—1923.
(Route 7A Bridge.)

June 12	14,700	2+	2+	1—,1+	2—	-------	-------	
	15,500	-------	-------	-------	-------	-------	-------	
July 10	57,000	2+	2+	2+	2+	-------	-------	
	55,000	-------	-------	-------	-------	-------	-------	
Aug. 8	81,000	-------	-------	2+	2+	1+,1—	2—	
	76,000	-------	-------	-------	-------	-------	-------	
Dec. 1	63,000	-------	2+	2+	1+,1—	2—	-------	
	70,000	-------	-------	-------	-------	-------	-------	

STATION—VERMILION RIVER (226)—1928.
(Bridge on Route 7A.)

June 13	2,500	2+	2—	2—	2—	-------	-------	
	1,700	-------	-------	-------	-------	-------	-------	
July 10	9,300	2+	2+	2+	1—,1+	-------	-------	Roily. River up. Receives sewage of Oglesby.
	5,600	-------	-------	-------	-------	-------	-------	
Aug. 8	12,600	-------	2+	2—	2—	-------	-------	
	9,000	-------	-------	-------	-------	-------	-------	
Dec. 1	550	-------	2+	1+,1—	2—	2—	-------	
	600	-------	-------	-------	-------	-------	-------	

STATION—LA SALLE (224)—1928.

Date	Total count 1.cc	B. Coli (Presumptive)						Remarks
		1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	
Mar. 28	7,500	2+	2+	2+	1+,1—			
June 13	14,000	2+	2+	2+	2—			
	13,500							
July 10	44,000	2+	2+	2+	1—,1+			High water.
	32,000							
Aug. 8	50,000		2+	2+	1—,1+	2—		
Dec. 1	50,000		2+	2+	2+	2—		
	60,000							

STATION—SPRING VALLEY (218)—1928.

Mar. 28	8,000	2+	2+	2—	2—			
June 13	12,700	2+	2+	2—	2—			
	11,200							
July 10	14,900	2+	2+	2+	1+,1—			Roily high water.
	12,000							Bubbling.
Aug. 8	31,000		2+	2+	2—	2—		
	86,000							

STATION—HENRY (196)—1928.

June 13	10,200	2+	2+	1+,1—	2—			
	9,700							
July 10	6,200	2+	2+	1+,1—	2—			River coming up rapidly.
	5,000							
July 30	7,500	2+	2+	2—	2—	2—		
	8,200							
Aug. 8	68,000		2+	1—,1+	2—	2—		
	70,000							
Aug. 28	230,000	2+	2+	2+	2—			Midstream sample. Plates contaminated.
	360,000							
Aug. 28	275,000	2+	2+	1—,1+	2—			Channel sample. Plates contaminated.
	310,000							
Nov. 30	23,000		2+	2—	2—	2—		
	21,000							

STATION—LACON (189)—1928.

Mar. 28	900	2+	1+,1—	2—	2—			
June 13	10,300	2+	2+	2—	2—			
July 10	4,000	2+	2+	2—	2—			Roily. River coming up.
	3,800							
July 30	5,800	2+	2+	2—	2—	2—		
	5,200							
Aug. 8	46,000		2+	2+	2—	2—		
	44,000							
Aug. 28	180,000	2+	2+	2—	2—			Counts questionable.
	150,000							
Nov. 30	1,400		2+	1+,1—	2—	2—		
	1,100							

STATION—CHILLICOTHE (180)—1928.

Date	Total count 1.cc	B. Coli (Presumptive) 1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	Remarks
June 13	8,000	2+	2+	2—	2—			
	7,300							
July 10	3,700	2+	2+	2+	2—			River rising rapidly.
	4,000							
July 19	490	2+	2+	2—	2—			River receding rapidly.
	420							
July 30	4,100	2+	1+,1—	1+,1—	2—	2—		
	4,600							
Aug. 8	35,000		2+	1—,1+	2—	2—		
	26,000							
Aug. 28	400,000	2+	2+	1+,1—	1+,1—			Counts questionable.
	360,000							

STATION—ROME (178)—1928.

July 19	390	2+	2+	2—	2—			
	410							
Aug. 28	300,000	2+	2+	2+	1+,1—			Counts questionable.
	240,000							

STATION—MOSSVILLE (172)—1928.

July 19	340	2+	2+	2—	2—			
	310							

STATION—PEORIA NARROWS (166)—1928.

Mar. 28	300	1+,1—	1+,1—	2—	2—			
June 8	830	2+	2—	2—	2—			
	780							
July 10	660	2+	1—,1+	2—	2—			
	700							
July 30	250	2+	2—	2—	2—			
	200							
Aug. 28		2+	2+	2—	2—			
Nov. 30	1,000		2+	2—	2—	2—		
	1,200							

STATION—U. S. SLIPS (164)—1928.

June 8	5,500	2+	2+	2—	2—			
	5,900							
July 13	4,900	2+	1+,1—	2—	2—			
	8,000							
Aug. 1	80,000	2+	2+	2—	2—			Fisherman pulling nets. Probable cause of high count.
	71,000							
Aug. 27	35,600	2+	2+	2—	2—			
	29,000							

STATION—WESLEY CITY (159)—1928.

June 15	18,000	2+	2+	2+	2+			
	21,500							
July 13	125,000	2+	2+	2+	2+			
	132,000							
Aug. 1	230,000	2+	2+	2+	1+,1—	2—		
	240,000							
Aug. 28	250,000	2+	2+	2+	1+,1—	2—		
	400,000							

STATION—PEKIN (153)—1928.

Date	Total count 1.cc	B. Coli (Presumptive) 1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	Remarks
Mar. 28	10,000	2+	2+	1+,1—	2—			
June 15	24,200	2+	2+	2—	2—			
	31,700							
June 27	88,000	2+	2+	1+,1—	1+,1—			Heavy rains.
	77,000							
July 13	40,000	2+	2+	1+,1—	2—			
	43,000							
Aug. 1	400,000	2+	2+	2+	1+,1—	2—		
	450,000							
Aug. 15	270,000	2+	2+	2+	2—			
	221,000							
Aug. 27	290,000	2+	2+	2+	2—			
	330,000							
Nov. 30	5,000	2+	2+	2+	2+	2—		
	10,000							

STATION-SOUTH PEKIN (151)-1928.

June 15	210,000	2+	2+	2+	1+,1—	2—		
	187,000							
July 13	60,000	2+	2+	2+	2—			
	54,000							
Aug. 1	590,000	2+	2+	2+	1+,1—	2—		Roily water.
	550,000							
Aug. 27	750,000	2+	2+	2+	1+,1—			
	650,000							

STATION—KINGSTON MINES (146)—1928.

June 15	109,000	2+	2+	2+	1+,1—			
	205,000							
July 13	63,000	2+	2+	2+	2—			
	59,000							
Aug. 1	970,000	2+	2+	2+	1+,1—	2—		Roily water.
	810,000							
Aug. 15	223,000	2+	2+	2+	1+,1—			
	247,000							
Aug. 27	500,000	2+	2+	2+	2—			
	560,000							

STATION—COPPERAS CREEK DAM (137)—1928.
(Below Dam.)

Aug. 15	426,000	2+	2+	2+	2—			Water roily.
	460,000							

STATION—LIVERPOOL (129)—1928.

Aug. 15	82,000	2+	2+	2+	2—			
	76,000							

STATION—SPOON RIVER (121)—1928.

June 27	91,000	2+	2+	1—,1+	1—,1+			Very muddy water. Heavy rains.
Aug. 15	6,700	2+	2—	2—	2—			
	7,200							

STATION-HAVANA (120)-1928.

Date	Total count 1.cc	B. Coli (Presumptive)						Remarks
		1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	
June 27	24,700	2+	2+	1—,1+	2—			Muddy water. Heavy rains for some days upstream.
	15,000							
Aug. 15	5,000	2+	2+	1+,1—	2—			
	6,000							

STATION—SANGAMON BIVER (98)—1928.

June 27	6,200	2+	2+	2+	2—			Muddy water. Heavy rains.
	13,800							

STATION—BROWNING (97)—1928.

Aug. 15	7,400	2+	2+	2—	2—			

STATION—BEARDSTOWN (89)—1928.

June 27	13,100	2+	2+	2+	2—			Muddy water. Heavy rains for some days upstream.
	13,900							
Aug. 15	32,000	2+	2+	2—	2—			
	38,000							

STATION-LAGRANGE (U. S. LOCKS) (77)-1928.

Aug. 16	18,000	2+	2+	2—	2—			
	15,000							

STATION—MEREDOSIA (71)—1928.

Aug. 16	45,000	2+	2—	2—	2—			
	41,000							

STATION—VALLEY CITY (61)—1928.

Aug. 16	55,000	2+	2—	2—	2—			
	67,000							

STATION—FLORENCE (56)—1928.

June 26	6,500	2+	2+	2—	2—			Muddy water. Heavy rains.
	6,200							
Aug. 16	64,000	2+	2—	2—	2—			
	57,000							

STATION—PEARL (43)—1928.

Date	Total count 1.cc	B. Coli (Presumptive)						Remarks
		1.cc	0.1cc	0.01cc	0.001cc	0.0001cc	0.00001cc	
June 26	34,000	2+	2+	2+	2—			Muddy water. Heavy rains.
	35,000							

STATION-KAMPSVILLE (32)—1928.

June 26	5,000	2+	2+	2—	2—			Muddy water. Heavy rains.
	3,500							
Aug. 18	30,000	2+	2+	1+,1—	2—			Rain on Aug. 16 (evening).
	40,000							Roily water.

STATION—MACOUPIN RIVER (23)—1928.

June 26	210,000	2+	2+	1+,1—	1+,1—			Muddy water. Heavy rains.
	270,000							

STATION—HARDIN (21)—1928.

June 26	152,000	2+	2+	2+	2—			Muddy water. Heavy rains.
	165,000							
Aug. 18	50,000	2+	2+	1+,1—	2—			Roily water. Rain night of Aug. 16.
	35,000							

STATION—GRAFTON (1)—1928.

June 26	25,200	2+	2+	2—	2—			Muddy water. Heavy rains.
	28,000							
Aug. 18	15,000	2+	2+	2—	2—			Roily water.
	18,000							