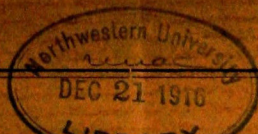


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PROCEEDINGS

JOHN E. GEORGE

OF THE

NATIONAL ASSOCIATION OF OFFICIALS

OF

BUREAUS OF LABOR STATISTICS

IN THE

UNITED STATES.

ELEVENTH ANNUAL CONVENTION

HELD AT

Minneapolis, Minn., Sept. 17-19, 1895.

ST. PAUL, MINNESOTA.
1895.

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ST. PAUL, MINN.:
PIONEER PRESS COMPANY,
1895.

OFFICERS FOR 1895-96.

President:

CARROLL D. WRIGHT, Washington, D. C.

First Vice President:

B. R. LACY, Raleigh, N. C.

Second Vice President:

LEE MERIWETHER, Jefferson City, Mo.

Secretary-Treasurer:

LE GRAND POWERS, St. Paul, Minn.

Executive Committee:

THOMAS J. DOWLING, Chairman, Albany, N. Y.
CARROLL D. WRIGHT, Washington, D. C.
LE GRAND POWERS, St. Paul, Minn.
CHARLES H. MORSE, Lansing, Mich.
S. W. MATTHEWS, Augusta, Maine.

Official Stenographer:

SAMUEL C. DUNHAM, Washington, D. C.

Place of Meeting for the Twelfth Annual Convention:
Albany, N. Y.

CHRONOLOGY OF ASSOCIATION.

Year.	Convention Held at	Month.	OFFICERS—NAMES OF				Number of Bureaus Represented
			President.	First Vice President.	Second Vice President.	Secretary-Treasurer.	
1883	Columbus, Ohio.....	September.	H. A. Newman.....	.....	.....	Henry Luskey.....	6
1884	St. Louis, Mo.....	June.....	H. A. Newman.....	.....	.....	Henry Luskey.....	10
1885	Boston, Mass.....	June.....	Carroll D. Wright..	James Bishop.....	.....	John S. Lord.....	13
1886	Trenton, N. J.....	June.....	Carroll D. Wright..	James Bishop.....	.....	E. R. Hutchins.....	14
1887	Madison, Wis.....	June.....	Carroll D. Wright..	Frank A. Flower....	.....	E. R. Hutchins.....	14
1888	Indianapolis, Ind.....	May.....	Carroll D. Wright*.	Frank A. Flower....	.....	E. R. Hutchins.....	13
1889	Hartford, Conn.....	June.....	Carroll D. Wright..	Samuel M. Hotchkiss.	.....	E. R. Hutchins.....	17
1890	Des Moines, Iowa†....	.....	.....	.....	.....	.....	.....
1891	Philadelphia, Pa.....	May.....	Carroll D. Wright..	Samuel M. Hotchkiss.	Willard C. Hall.....	Frank H. Betton.....	20
1892	Denver, Colo.....	May.....	Charles F. Peck.....	Lester Bodine.....	Samuel W. Matthews.	Frank H. Betton.....	16
1893	Albany, N. Y.†.....	.....	.....	.....	.....	.....	.....
1893	Chicago, Ill.†.....	October....	.....	.....	.....	.....	8
1894	Washington, D. C.....	May.....	Carroll D. Wright..	B. R. Lacy.....	George W. Walts....	L. G. Powers.....	17
1895	Minneapolis, Minn.....	September.	Carroll D. Wright..	B. R. Lacy.....	Lee Merlweber.....	L. G. Powers.....	12

*Frank A. Flower presided; Mr. Wright absent. †No meeting. ‡An informal conference; Samuel W. Matthews presided.

CHRONOLOGY OF BUREAUS.

STATE.	When Or- ganized.	Chief Officers.	YRS. OF SERVICE.	
			Date.	No.
United States.....	1884	Carroll D. Wright.....	1885	11
Arkansas	1889	M. F. Locke.....	1889-1893	4
		W. G. Vincenheller.....	1893	1
California	1883	John S. Enos.....	1883-1887	4
		John J. Tobin.....	1887-1891	4
		George W. Walts.....	1891-1895	4
		E. L. Fitzgerald.....	1895	1
Colorado	1887	O. J. Driscoll.....	1887-1889	2
		John W. Lockin.....	1889-1891	2
		Lester Bodine.....	1891-1893	2
		J. W. Brentlinger.....	1893-1895	2
		W. H. Klett.....	1895	1
Connecticut	1873	James F. Babcock.....	1873-1874	1
		Samuel J. Starr.....	1874-1875	1
		Arthur T. Hadley.....	1885-1887	2
		Samuel M. Hotchkiss.....	1887-1893	6
		Robert J. Vance.....	1893-1895	2
		S. B. Horne.....	1895	1
Idaho	1890	J. M. Matthews.....	.....	.....
Illinois	1879	F. H. B. McDowell.....	1879-1881	2
		John S. Lord.....	1881-1893	12
		George A. Schilling.....	1893	3
Indiana	1879	John Collett.....	1879-1881	2
		John B. Conner.....	1881-1883	2
		William A. Peelle, Jr.....	1883-1895	12
		Simeon J. Thompson.....	1895	1
Iowa	1884	E. R. Hutchins.....	1884-1890	6
		J. R. Sovereign.....	1890-1894	4
		W. E. O'Brien.....	1894	2
Kansas	1885	Frank H. Betton.....	1885-1893	8
		J. F. Todd.....	1893-1895	2
		Wm. G. Bird.....	1895	1
Kentucky	1876	C. E. Bowman.....	.....	.....
		C. Y. Willson.....	.....	.....
		Nicholas McDowell.....	1892	4
Maine	1887	Samuel W. Matthews.....	1887	9
Maryland	1884	Thomas C. Weeks.....	1884-1892	8
		Allen B. Howard, Jr.....	1892	4
Massachusetts	1869	Henry K. Oliver.....	1869-1873	4
		Carroll D. Wright.....	1873-1888	15
		Horace G. Wadlin.....	1888	8
Michigan	1883	John W. McGrath.....	1883-1885	2
		C. V. R. Pond.....	1885-1887	2
		A. H. Heath.....	1887-1891	4
		Henry A. Robinson.....	1891-1893	2
		Charles H. Morse.....	1893	3
Minnesota	1887	John Lamb.....	1887-1891	4
		J. P. McGaughey.....	1891	.....
		L. G. Powers.....	1891	5
Missouri	1879	W. H. Hilkene.....	1880-1882	2
		H. J. Spaunhorst.....	1882-1883	1
		H. A. Newman.....	1883-1885	2
		Oscar Kochtitzky.....	1885-1889	4
		Lee Meriwether.....	1889-1891	2
		Willard C. Hall.....	1891-1893	2
		Henry Blackmore.....	1893-1895	2
		Lee Meriwether.....	1895	1
Montana	1893	James H. Mills.....	1893	3
Nebraska	1887	John Jenkins.....	1887-1890	3
		Philip Andres.....	1891-1893	2
		J. B. Erlon.....	1893-1895	2
		J. H. Powers.....	1895	1
New Jersey.....	1878	James Bishop.....	1878-1893	15
		Charles H. Simmerman..	1893	3
New Hampshire.....	1893	John W. Bourlet.....	1893	1
New Mexico.....	1891	Max Frost.....	1891	3
New York.....	1883	Charles F. Peck.....	1883-1893	10
		Thomas J. Dowling.....	1893	2

CHRONOLOGY OF BUREAUS—Continued.

STATE.	When Or- ganized.	Chief Officers.	YRS OF SERVICE.	
			Date.	No.
North Carolina.....	1887	W. N. Jones.....	1887-1889	2
		John C. Scarborough.....	1889-1893	4
		B. R. Lacy.....	1893	2
North Dakota.....	1889	H. T. Helgesen.....	1889-1893	4
		Nelson Williams.....	1893-1895	2
		A. H. Laughlin.....	1895	1
Ohio	1877	Harry J. Walls.....	1877-1881	4
		Henry Luskey.....	1881-1885	4
		L. McHugh.....	1885-1887	2
		A. D. Fassett.....	1887-1890	3
		John McBride.....	1890-1892	2
		W. T. Lewis.....	1892	3
Pennsylvania	1872	Thomas J. Bigham.....	1872-1875	3
		W. H. Grier.....	1875-1879	4
		M. S. Humphreys.....	1879-1883	4
		Joel B. McCamant.....	1883-1887	4
		James M. Clark.....	1887-1895	8
Rhode Island.....	1887	Almon K. Goodwin.....	1887-1890	3
		Henry E. Tiepke.....	1890	1
South Dakota.....	1890	Frank Wilder.....	1890-1891	2
		Robert A. Smith.....	1891-1893	2
		Walter McKay.....	1893	1
		S. A. Wheeler.....	1893	1
Tennessee	1891	George W. Ford.....	1891-1893	2
		John E. Lloyd.....	1893-1895	2
		F. P. Clute.....	1895	1
Texas ..	1876	V. O. King.....	1876-1881	5
		A. W. Spreight.....	1881-1883	2
		H. P. Brewster.....	1883-1884	2
		H. P. Bee.....	1884-1887	3
		L. L. Foster.....	1887-1891	4
		J. E. Hollingsworth.....	1891-1895	4
		A. J. Rose.....	1895	1
Utah	1890	Joseph P. Bache.....	1890	6
Wisconsin	1883	Frank A. Flower.....	1883-1889	6
		H. M. Stark.....	1889-1891	2
		J. Dobbs.....	1891-1895	4
		Halford Erickson.....	1895	1
West Virginia.....	1889	Edward Robinson.....	1889-1893	4
		John M. Sydenstricker...	1893	1

NOTES AND EXPLANATIONS OF CHRONOLOGY OF BUREAUS.

The act creating the United States Bureau was passed in 1884, but no officers were appointed before 1885.

When the constitution for the State of Idaho was framed, it contained a clause providing for a Commissioner of Immigration, Labor, and Statistics. Under the provisions of the constitution Mr. J. M. Matthews was appointed Commissioner in 1890. The legislature has, however, never made appropriation for the pay of the Commissioner, nor enacted any legislation to make the provision of the constitution operative. Hence, nothing was done by Mr. Matthews during his term of office and no successor has been appointed.

In Indiana, South Dakota, and Kentucky the office of Commissioner of Labor is elective.

In Illinois the Bureau of Labor Statistics consists of three Commissioners appointed by the Governor. These Commissioners meet and select a Secretary, and determine the line of investigation to be carried out by the department. The Secretary is, however, the main executive officer of the department, as the Commissioners meet but seldom and exercise only a power of selection in the choice of subordinates and the lines of investigation.

In Minnesota, at the beginning of 1891, Mr. McGaughey was appointed Commissioner, but resigned at the expiration of three months and Mr. Powers was then appointed to fill out the unexpired term.

The Kentucky Bureau, created in 1876 as a Bureau of Agriculture, Horticulture, and Statistics, was made a Bureau of Agriculture, Labor, and Statistics in April, 1892. (See proceedings for Kentucky for further details.)

In Nebraska, Governor Boyd, who was elected at the general election in 1890, appointed Philip Andres. A contest was instituted in the courts as to Boyd's eligibility, and he was unseated, the former Governor, Thayer, assuming the office pending a final settlement. From this time until August, 1891, the Chief Clerk, H. F. Downs, acted as Commissioner, when Luther P. Ludden received the appointment from Governor Thayer. When the gubernatorial matter was finally settled, and Governor Boyd declared eligible, he again, in March, 1892, appointed Mr. Andres.

The Connecticut Bureau was created by law July 12, 1873. Later, in 1875, it was abolished, and then re-established in 1885. Two reports were issued under the law of 1873.

Texas, by act of legislature, approved Aug. 21, 1876, created a Department of Insurance, Statistics, and History. The first commissioner was confirmed Jan. 23, 1879. The duties of the bureau were enlarged April 1, 1887, and the name changed to Department of Agriculture, Insurance, Statistics, and History.

There is no uniformity in the work of the various bureaus above catalogued. The work of the several bureaus is determined largely by the industries of the state in which they are located. Over half the bureaus confine their labors to what has technically come to be known as labor statistics. Others, as Indiana and Montana, devote a portion of all reports to general statistics of the states, including agriculture, and Arkansas, Kentucky, New Mexico, North Dakota, Utah, and Texas devote the greater portion of their efforts to gathering and disseminating information relating to agriculture and but little to general labor.

RULES
OF THE
NATIONAL ASSOCIATION OF OFFICIALS
OF
BUREAUS OF LABOR.

ADOPTED MAY 24, 1892, AT DENVER, COLORADO.

1. This organization shall be known henceforth as the National Association of Officials of Bureaus of Labor Statistics.

2. Its objects are to meet annually for the discussion of business pertaining to the association—for the discussion of methods of work, current and otherwise, pertaining to Bureaus of Labor or Industrial Statistics and kindred departments with which its members are connected in their respective states; also, to foster the ties of friendship, interchange ideas, and in various ways seek to promote the welfare of these Bureaus of Statistics; to present subjects for investigation and to transact all such business as is deemed consistent with the duties of statisticians.

3. The active members of this association shall consist of Commissioners and Chiefs of State and National Bureaus of Labor and Industrial Statistics, their deputies and chief clerks. All ex-commissioners and ex-deputies of such bureaus shall also be ex-officio members of the association, entitled to all rights except election to office; and all officers of the association shall be entitled to serve out the full term of their election.

4. The officers of this association shall consist of a President, First Vice President, Second Vice President, Secretary-Treasurer, and an Executive Committee, who shall serve for the term of one year from the date of their election, or until their successors are elected.

5. The officers shall be elected at each convention annually, by ballot, and those receiving a majority of votes of the total number cast shall be declared elected to the positions for which they were nominated. All officers shall serve for the term of one year from the time of their election, or until their successors are elected, and shall assume their respective duties immediately after being thus elected.

6. The Executive Committee must, by either session or correspondence, agree upon a date for convention sixty days previous to the date selected, and immediately, within ten days after such agreement, issue the official call for the convention, which must be signed by all members

of the committee and approved by the signatures of the President and Secretary.

7. The Executive Committee shall consist of five members, to consist of a chairman, who shall be the member residing in the state wherein the next convention is to be held, two members to be selected by ballot, and the President and Secretary-Treasurer of the association. It shall have charge of all preliminary arrangements pertaining to each convention that occurs during the term of said committee.

8. The cost of membership in this association will be five dollars per year for each state represented and as much more as is necessary to meet the maintenance of the association; provided, that the maximum cost of said respective membership does not exceed the sum of ten dollars per year.

9. Any state in arrears for a period exceeding one year will be suspended from membership until such time as all arrears are paid.

10. The conventions of this association shall be held annually at a place chosen by ballot at the immediately preceding convention. The annual conventions of this association will convene in the month of May or June, at a date agreed upon by a majority vote of the Executive Committee. In the event that neither May nor June proves practicable, some other month, to be selected by a majority vote of all members—sent to the chairman of the Executive Committee—shall be named. No convention shall convene, however, earlier than May or later than September in each year.

11. The place of meeting selected by the convention cannot be changed except by unanimous consent of all members of the Executive Committee, including the acquiescence of the resident member in the state wherein said convention was to have been held.

12. A standing committee of three, composed of the President, First Vice President, and Secretary of the convention, is hereby created, whose duty it shall be to select such question or questions as they may deem, in their judgment, of general interest, to be taken up for investigation by the Bureaus of Statistics.

13. The conventions of this association must extend through at least two full days, and shall not exceed five days.

14. The duties of the President shall be to preside over the deliberations of the association and to preserve order, and transact such business as may of right appertain to his office. The First Vice President shall perform all duties of the President in event of the absence or resignation of the President. The Second Vice President shall perform the duties of the President in event of the absence or resignation of the President and First Vice President.

15. The proceedings of each session of the convention shall be printed under the direction of the Secretary-Treasurer and published in pamphlet form; each bureau to be supplied with copies at cost. The Secretary shall also keep a correct record of all proceedings of the convention, transact correspondence incidental to his duties, and deliver to his successor all books, papers, moneys, etc., that are property of the association. He shall also be custodian of all moneys of the association.

16. All rules inconsistent with these are hereby repealed.

PROCEEDINGS.

The eleventh annual convention of the National Association of Officials of Bureaus of Labor Statistics met in the rooms of the Commercial Club at Minneapolis, Minn., Sept. 17, 1895, at 10 o'clock a. m., President Carroll D. Wright presiding. In calling the convention to order the President spoke as follows:

Gentlemen: In calling this our eleventh annual convention to order it is a great pleasure to congratulate the gentlemen composing it on their continued interest in the work in which we are all engaged. We have met here in the great Northwest. Our meetings, you know, are generally arranged with two objects in view: First, to accommodate the different parts of our great country, meeting alternately in some city in the East and then in the West; and, second, to meet in some locality where, independently of our discussions and deliberations, we can learn personally and officially something of the resources of the nation. We have been to Denver, and learned what Colorado can give us; and some of you who were there will remember that the Governor told us that "it was utterly impossible to tell the truth about Colorado without lying," Colorado being such a productive state. I am glad to know, that, when we come to Minnesota, we find that they have become so used to telling the great stories of their productions here that there is no necessity whatever of stretching the truth,—that the truth about Minnesota is sufficiently romantic to attract us all,—and now, as we study its resources and add to our own knowledge, and therefore to our own economic culture, we shall find those things which are advantageous to us all.

We have one sad reflection to-day. I think it is the first time in our meetings that we have had to mourn the departure of any of our members. The genial Peelle of Indiana has gone over the river, and the venerable Bishop of New Jersey, for a long time the Chief of the Bureau of that state, has finally succumbed to age and infirmity. I think the latter was with us at the very first meeting of this convention, which was held at Columbus, Ohio, and he was always an interested spirit in our meetings. These are the sad reflections. All others are of a pleasant nature; and from my own position at Washington, where I have the reports of all your states relative to your work, I perhaps have a little broader outlook, covering all the bureaus

of the country, than any one gentleman connected with the convention; and it is a constant source of gratification to me to find that your work is becoming more and more acceptable, and that the public of the different states considers your work as important to the welfare of each of the commonwealths represented, and now, with thirty-two states covering our work and the Federal Government in addition, we are in a position to represent the social and the economic conditions of a very large majority of the people of the whole country.

I will not detain you with further remarks, but will give way to the gentlemen who have kindly come here to welcome us to the State of Minnesota and to the city of Minneapolis. I have the honor of introducing to you in this connection His Excellency Governor Clough of Minnesota. (Applause.)

ADDRESS OF WELCOME BY GOVERNOR CLOUGH.

Mr. President and Members of the Bureaus of Labor of the United States: Less than a quarter of a century has elapsed since the establishment of the first office for the systematic study of industrial subjects. That first office was the Massachusetts Bureau of Statistics of Labor. Since its establishment similar offices have been created in most of the states of the Union and in the leading civilized nations of the globe. It is the object of these bureaus, as I understand it, to gather exact information upon all disputed questions relating to labor and capital. These bureaus have been created, with this primary object, for this reason: Knowledge is one of the greatest factors in preventing strife. It is easy for men and parties to quarrel when neither is possessed of any exact or reliable information concerning the subject in dispute. It is also easy for the same persons to reach a settlement, even with rival or opposing interests, when accurate information leaves no issues in dispute save those growing out of diverse interests. It was a recognition of these facts that led to the creation of the first Bureau of Labor Statistics in Massachusetts. Since the creation of that first bureau thirty-four similar departments, including that of the general government, have been established in the United States. The rapid increase in the number is testimony to the fact that men have indeed found exact information a powerful factor in eliminating strife, strikes, and discord from the industrial world. The collection of information by these bureaus has in the United States assisted in lessening the hours of labor, in creating laws for the protection of toilers, and in awakening a great popular interest in every branch of the subject of labor and capital. The toiler, seeing his fight for shorter hours strengthened, and in many cases won, by reason of the facts collected by these bureaus, and seeing also good laws in his interest enacted in the same way, has been a great advocate and friend of such offices. The business man, from other reasons, has come to believe in and be benefited by these departments. We have, here in the North Star State, the greatest flour, lumber, and iron interests to be found anywhere in the United States. Our state is growing in these and in all other industries.

We have thus far been signally free from the bitter strife and discord in industrial matters that have so greatly disturbed some of our older communities. We hope by the gathering of exact information upon these questions and by the cultivation of a friendly spirit of co-operation among all classes to be able to avoid in the future, as in the past, these bitter and costly disputes. We trust that your meeting in our midst may give an impetus to the study of these questions, and aid in the growth of a spirit of kindly good will among our employers and employes. I believe that your presence here will be of great service to us. Believing this, I cordially and heartily, as well as formally, welcome you, on behalf of the state, to the hospitality of Minnesota. I trust, also, that, ere you leave our state, we may be able to show you something of our industries and the great resources of our commonwealth. Those industries and resources are well worthy of your study as statisticians in the industrial world. We are glad to offer you every possible facility for learning about these industries and resources. Again, permit me formally to welcome you to the State of Minnesota. Gentlemen, I thank you. (Applause.)

The President: It gives me great pleasure to introduce to you His Honor Robert Pratt, the Mayor of Minneapolis, who will speak for this great municipality.

ADDRESS OF WELCOME BY MAYOR PRATT.

Mr. President and Gentlemen of the Bureaus of Labor Statistics: We feel honored by the presence here of such a gathering of eminent scholars and scientists. We appreciate the fact that the Bureaus of Statistics of Labor, and kindred offices for the study of economic subjects, are of recent origin, but the work that they have accomplished is of inestimable value, and it seems to me that the future field of work and its value must increase in geometric ratio. Some one speaks of statistics as "history standing still," and speaks of the period taken in the life of a nation as a tableau. It seems to me, that, with the shifting scenes in this age of invention and use of natural forces, you, gentlemen, will be the authors of many pictures.

We hope that your stay here may be enjoyable and beneficial, as we are sure it will be profitable to us. You are in the house of your friends, and, on behalf of the city of Minneapolis, I cordially welcome you. (Applause.)

The President: We are indebted for our place of meeting to the Commercial Club of Minneapolis, and its President, Mr. J. F. Calderwood, is glad to extend to us a welcome on behalf of that club.

ADDRESS OF WELCOME BY MR. CALDERWOOD, PRESIDENT OF THE
MINNEAPOLIS COMMERCIAL CLUB.

Mr. President and Gentlemen: It gives me great pleasure on this occasion to extend to you a hearty welcome. I believe we are on the threshold of a new era of prosperity, and I believe the cornerstone of that structure is a better understanding between labor and capital. I am confident that the bitter experiences of the past two years have taught us a great lesson, and I have no doubt this meeting will be an excellent one for us all. I thank you, gentlemen. (Applause.)

The President: Your Excellency, Your Honor, and President of the Commercial Club: I have been designated to respond on behalf of this convention to your cordial welcome, and I assure you that we thank you most heartily for the welcome you have severally extended to us.

I think it is proper to say that we meet every year with the single purpose of doing good, and to further the purpose of each and every bureau represented of doing good by itself. I think we are right in considering ourselves what you intimated, as part of the educational forces of the country, and I believe that ultimately the work of these state and federal offices will lead to a better understanding of the conditions of production everywhere, the result being that labor and capital will consider themselves allied forces and not antagonistic forces. Certainly, if a clear and comprehensive study of facts shall lead to such a conclusion on the part of the public generally, then all the money that these offices have cost will be returned to the public a thousand and a million fold. The cost is a bagatelle compared with the value of the results which are to be attained. Even now we see it; even now, in addition to returning prosperity—with which, of course, we have had nothing to do—there is coming a new revival,—a revival of a practical religion which grows out of a knowledge of conditions,—and I believe that we are contributing more, perhaps, than any other series of offices to the elements of this new condition that is coming.

That the bureaus of the different states have been fairly successful I think is evidenced in what you refer to as the establishment of like offices in other countries. The Massachusetts Bureau was established in 1869, twenty-six years ago last June. We have now, I think,—you are more correct than myself,—

thirty-four such offices in the United States. Beyond that, Great Britain, France, Belgium, Germany, Austria, Russia, New Zealand, and now New South Wales are the foreign countries that have established similar offices; and more than that, the press everywhere, in all countries, is using more and more of the results of the work of these bureaus. The Bureaus of Statistics of Labor in different states and countries cannot compete with the press, nor do they attempt it; but they give to the press the results of their work always in advance, and they are reviewed and reviewed over again until the whole country becomes possessed of the vital features of each state's work.

Another historian, Mr. Mayor, made a remark as to what statistics is, and I think his definition is a better one than that you quoted. The great Schlosser of Germany has said that "Statistics is history ever advancing;" that is to say, the official statistician presents each year such facts as will ultimately become a part of the history of his nation or state, and those statistics represent history ever moving onward, and in so far as we gentlemen recognize this great principle, which I believe we have discussed before, we are recognizing the very essence of history, which is teaching to future peoples the condition of the age in which we live.

These are our views; these are some of the reasons which bring us together, and the cordial welcome which you have extended to us only encourages us in the work in which we are engaged; and in our meeting here now I assure you that we will try to so conduct ourselves that we shall not need during our stay any executive clemency from either the state or the municipality. (Applause.)

Governor Clough: I understand that the members of this convention are going to Duluth on Friday. I am going up Friday night, and shall be there Saturday, and hope to see you all there.

The President submitted the report of the Executive Committee, which is as follows:

The Executive Committee of the convention have the honor to submit the following order of business for the eleventh annual session:

SEPTEMBER 17TH—MORNING SESSION.

1. Call to order.
2. Addresses of welcome.
3. Response by the President.
4. Roll-call by the Secretary.
5. Reports of current work by the several Commissioners so far as time will permit.

AFTERNOON SESSION.

6. Addresses by Professor Folwell, Mr. Wadlin, and others.

SEPTEMBER 18TH—MORNING SESSION.

7. Continuation of reports of current work. During this session a short recess will be taken for the purpose of visiting the Chamber of Commerce.

8. After all reports of current work have been made the following question will be discussed: "How far can the statistical method be applied in the investigation of causes?"

SEPTEMBER 19TH—MORNING SESSION.

9. Discussion of the question just stated and others to be submitted by members of the convention.
10. Transaction of any general business which may be brought before the convention.
11. Selection of a place for the next meeting.
12. Election of officers.

TIME OF MEETING AND ADJOURNMENTS.

Morning sessions on the 17th, 18th, and 19th to be called to order at ten o'clock, and the presiding officer to adjourn the sessions at 12:30.

Afternoon session of September 17th to be called to order at 2 p. m., and adjournment on motion.

Visits to mills, excursions, and other matters to be carried out in accordance with the call of August 5th.

On motion of Mr. Morse of Michigan, the report of the Executive Committee was adopted as the order of business for the convention.

The Secretary called the roll by states, and the following named gentlemen responded:

Carroll D. Wright, Commissioner of Labor, Washington, D. C.
Horace G. Wadlin, Chief of the Massachusetts Bureau of Statistics of Labor, Boston, Mass.

James M. Clark, Chief of the Bureau of Industrial Statistics of Pennsylvania, Harrisburg, Pa.

Samuel B. Horne, Commissioner of the Bureau of Labor Statistics of Connecticut, Hartford, Conn.

William W. Ives, Chief Clerk of Connecticut Bureau, Hartford, Conn.

Lee Meriwether, Labor Commissioner of Missouri, Jefferson City, Mo.

H. Gill, Special Agent Bureau of Labor Statistics of Missouri, Jefferson City, Mo.

Charles H. Simmerman, Chief of the Bureau of Statistics of Labor and Industries of New Jersey, Trenton, N. J.

James T. Morgan, Secretary of Bureau of Statistics of Labor and Industries of New Jersey, Trenton, N. J.

Charles H. Morse, Commissioner of Labor of Michigan, Lansing, Mich.

Halford Erickson, Commissioner of Labor of Wisconsin, Madison, Wis.

Charles Lewiston, Deputy Commissioner of Wisconsin Bureau of Labor Statistics, Madison, Wis.

B. R. Lacy, Commissioner of Labor of North Carolina, Raleigh, N. C.

Thomas J. Dowling, Commissioner of Labor of New York, Albany, N. Y.

L. G. Powers, Commissioner of Labor for Minnesota, St. Paul, Minn.

W. A. Hammond, Assistant Commissioner of Labor, St. Paul, Minn.

J. P. McGaughey, ex-Commissioner of Labor for Minnesota.

In addition to the foregoing gentlemen entitled to a seat under the rules of the association, there were present the following gentlemen connected with the Minnesota Bureau but not entitled to a vote in the deliberations: Frank Valesh, Deputy; Frank Casserly, E. B. Mayo, and J. N. Jones, Factory Inspectors for Minnesota.

The Secretary read the call.

The Secretary reported the following states and territories having Bureaus of Labor Statistics, or kindred offices or departments. For each state or territory there is given the title of the office, the date of its establishment, the method of publishing its regular reports (annually or biennially), the title of the executive officer in charge, the name of the present incumbent and his postoffice address:

United States Department of Labor—Established as Bureau of Labor Jan. 31, 1885; made a Department of Labor June 13, 1888. Annual reports. Commissioner of Labor, Carroll D. Wright, Washington, D. C.

Massachusetts Bureau of Statistics of Labor—Established June 23, 1869. Annual reports. Chief of the Bureau of Statistics of Labor, Horace G. Wadlin, Boston, Mass.

Pennsylvania Bureau of Industrial Statistics—Established April 12, 1872. Annual reports. Chief of Bureau of Industrial Statistics, James M. Clark, Harrisburg, Pa.

Connecticut Bureau of Labor Statistics—Established July 12, 1873. Abolished July 23, 1875. Re-established April 23, 1885. Annual reports. Commissioner of Labor, Samuel B. Horn, Hartford, Conn.

Kentucky Bureau of Agriculture, Labor and Statistics—First established March 20, 1876, as a Bureau of Agriculture, Horticulture, and Statistics; the duties of the bureau were enlarged and present name adopted April 2, 1892. Biennial reports. Commissioner of Agriculture, Labor, and Statistics, Nicholas McDowell, Frankfort, Ky.

Missouri Bureau of Labor Statistics and Inspection—Established March 19, 1879; enlarged March 23, 1883. Annual reports. Commissioner of Labor, Lee Meriwether, Jefferson City, Mo.

Ohio Bureau of Labor Statistics—Established March 5, 1877. Annual reports. Commissioner of Labor, W. T. Lewis, Columbus, Ohio.

New Jersey Bureau of Statistics of Labor and Industries—Established March 27, 1878. Annual reports. Chief of the Bureau of Statistics of Labor and Industries, Charles H. Simmerman, Trenton, N. J.

Illinois Bureau of Labor Statistics—Established May 29, 1879. Biennial reports. Secretary of the Bureau of Labor Statistics, George A. Schilling, Springfield, Ill.

Indiana Bureau of Statistics—Established March 29, 1879. Biennial reports. Chief of the Bureau of Statistics, Simeon J. Thompson, Indianapolis, Ind.

New York Bureau of Labor Statistics—Established May 4, 1883. Annual reports. Commissioner of Labor, Thomas J. Dowling, Albany, N. Y.

California Bureau of Labor Statistics—Established March 3, 1883. Biennial reports. Commissioner of Labor, E. L. Fitzgerald, San Francisco, Cal.

Michigan Bureau of Labor and Industrial Statistics—Established June 6, 1883. Annual reports. Commissioner of Labor, Charles H. Morse, Lansing, Mich.

Wisconsin Bureau of Labor Statistics—Established April 3, 1883. Biennial reports. Commissioner of Labor, Halford Erickson, Madison, Wis.

Iowa Bureau of Labor Statistics—Established April 3, 1884. Biennial reports. Commissioner of Labor, W. E. O'Brien, Des Moines, Iowa.

Maryland Bureau of Industrial Statistics—Established March 27, 1884. Annual reports. Chief of the Bureau of Industrial Statistics, A. B. Howard, Jr., Baltimore, Md.

Kansas Bureau of Labor Statistics—Established March 5, 1885. Annual reports. Commissioner of Labor, W. G. Bird, Topeka, Kan.

Rhode Island Bureau of Labor Statistics—Established March 29, 1887. Annual reports. Commissioner of Labor, Henry E. Tiepke, Providence, R. I.

Nebraska Bureau of Labor and Industrial Statistics—Established March 31, 1887. Biennial reports. The Governor, ex-officio Commissioner. Deputy Commissioner of Labor and Industrial Statistics, J. H. Powers, Lincoln, Neb.

North Carolina Bureau of Labor Statistics—Established Feb. 28, 1887. Annual reports. Commissioner of Labor, B. R. Lacy, Raleigh, N. C.

Maine Bureau of Labor Statistics—Established March 7, 1887. Annual reports. Commissioner of Labor, Samuel W. Matthews, Augusta, Me.

Minnesota Bureau of Labor—Established as a Bureau of Labor Statistics March 8, 1887; enlarged and changed to Bureau of Labor April, 1893. Biennial reports. Commissioner of Labor, L. G. Powers, St. Paul, Minn.

Colorado Bureau of Labor Statistics—Established March 24, 1887. Biennial reports. Commissioner of Labor, W. H. Klett, Denver, Colo.

Texas Bureau of Agriculture, Insurance, Statistics, and History—Established 1887. Annual reports. Commissioner of Agriculture, etc., A. J. Rose, Austin, Tex.

West Virginia Bureau of Labor—Established Feb. 22, 1889. Annual reports. Commissioner of Labor, John M. Sydenstricker, Charleston, W. Va.

Arkansas Bureau of Mines, Manufactures, and Agriculture—Established 1889. Biennial reports. Commissioner, W. G. Vincenheller, Little Rock, Ark.

South Dakota Department of Labor and Statistics. Established 1890. Biennial reports. Commissioner of Labor, S. A. Wheeler, Lead, S. D.

North Dakota Department of Agriculture and Labor—Established Oct. 1, 1890. Biennial reports. Commissioner of Labor, A. H. Laughlin, Bismarck, N. D.

Idaho Bureau of Immigration, Labor, and Statistics—Established 1890. Commissioner of Labor, Boise City, Idaho. (The state constitution authorizes a bureau with the preceding title, but the legislature has never made appropriations for its support or enacted laws defining the powers and duties of the Commissioner. No person has been appointed by the present Governor for the position.)

Utah Bureau of Statistics—Established March 13, 1890. Annual reports. Territorial Statistician, Joseph P. Bache, Salt Lake City, Utah.

Tennessee Bureau of Labor Statistics and Mines—Established March 23, 1891. Annual reports. Commissioner of Labor, F. P. Clute, Nashville, Tenn.

New Mexico Bureau of Immigration and Industrial Statistics—Established 1891. Secretary of the Bureau of Immigration and Industrial Statistics, Max Frost, Santa Fe, N. M.

Montana Bureau of Agriculture, Labor, and Industry—Established Feb. 17, 1893. Annual reports. Commissioner of Labor, James H. Mills, Helena, Mont.

New Hampshire Bureau of Labor—Established March 30, 1893. Biennial reports. Commissioner of Labor, John W. Bourlet, Concord, N. H.

FOREIGN BUREAUS OF STATISTICS OF LABOR.

In Belgium the Office du Travail (Ministere de l'Industrie et du Travail) was established in 1895 at Brussels, the official head of the office being entitled "Chef." A superior council of labor (conseil superieur du travail), which made investigations and reports on matters relating to labor, has been in existence since April 7, 1892. Nov. 12, 1894, a separate labor bureau, similar to the American and French type, was created under the Department of Agriculture, Industry, and Public Works. But in 1895 this department was separated into two departments, known as Department of Agriculture and Public Works and Department of Industry and Labor, and the newly created labor bureau was made a division under this latter department.

In France the Office du Travail (Ministere du Commerce, de l'Industrie, des Postes, et des Telegraphes) was established July 21, 1891, at Paris, the official head of the office being entitled "directeur." The publications of the bureau consist of special reports on particular subjects, of which a number are issued each year, and since Jan. 1, 1894, a monthly bulletin, "Bulletin de l'Office du Travail."

In Germany the Kommission fuer Arbeiter Statistik was established June 1, 1891, at Berlin. This is a permanent commission, which issues special reports from time to time on particular questions and reports of the minutes of its meetings. The material collected by it is compiled by the Imperial Statistical Bureau.

In Great Britain the labor department of the board of trade was established in 1893 at London, the official head of the office being entitled "commissioner." A service for the collection and publication of statistics of labor has been in existence under the board of trade since March 2, 1886. In 1893 this service was greatly enlarged and given its present name. Its reports, therefore, date from 1886-87, and consist of annual reports of operations and statistical abstracts, annual reports on strikes and lockouts, annual reports on trade unions, annual reports on wages (contemplated), special reports, and, since May, 1893, a monthly "Labor Gazette."

In Switzerland the Secretariat Ouvrier Suisse was constituted Dec. 20, 1886, at Berne. The "secretariat" is an officer of the federation of labor organizations, but is subsidized by the government, which directs him to make certain reports. His publications consist of annual and special reports.

In Ontario, Canada, a bureau of industries was organized under the commissioner of agriculture, March 10, 1882, the official head of the bureau being styled secretary. Annual and occasional special reports are issued.

In New Zealand a bureau of industries was created in 1892. In the following year the designation of the bureau was changed to that of department of labor. Its publications consists of annual reports and a monthly journal commenced in March, 1893, under the title "Journal of Commerce and Labor, which after the issue of a few numbers was changed to that of "Journal of the Department of Labor."

We have been informed unofficially that an office for the collection of labor statistics has recently been established in Spain.

The above statement is believed to include information concerning all bureaus of foreign governments especially created for the collection and publication of statistics relating to labor. It is not a statement, however, of the extent to which foreign governments publish labor statistics, as a great deal of valuable information on this subject is contained in the publications of the central statistical bureaus or other offices of foreign governments.—*Bulletin of the United States Department of Labor, November, 1895.*

The subject of current work of the various bureaus was then taken up and reports made as follows:

THE UNITED STATES DEPARTMENT OF LABOR.

Mr. Wright: The United States Department of Labor has just completed its tenth annual report, an extended account of which I gave you last year, and which relates to the strikes and lockouts occurring in the country from Jan. 1, 1887, to June 30, 1894. This report will go to press at once.

The current work of the department consists of two general investigations ordered by congress and a few features of special work undertaken by the department on its own motion. The investigations which have been ordered by congress are: First, one relating to the employment of women and children. In 1887 we published the fourth annual report, which related to the employment of women and children in twenty-two of the large cities of the country. That report covered questions of wages, cost of living, physical conditions, home surroundings, nativities, education, etc. In the investigation now ordered by congress the department takes a departure from the investigation reported in the fourth annual report, and is endeavoring to find out something of the causes of women entering so largely the industrial field. During the past twenty years the number of women engaged in our productive industries has doubled, and it is becoming a very serious economical and ethical question as to the reasons for such a vast increase. So the department is trying to find out the facts. This work is being done, as we usually carry on our investigations, by clearly defined inquiries; so that the agents in the field are collecting their information along similar exact lines. The inquiries

consist of such questions as these: What are the leading causes of the employment of women and girls to the extent that they are now employed? Is there an increasing tendency to the employment of women and girls? Another inquiry relates to the daily hours of work of the employes about whom information is sought. We also get at the age, the conjugal conditions, the education, and the character of the occupation of the women; whether they are paid by the piece or time; their earnings for one full week, taking so many hours; and then the quality, in fitness for duties, among those of the same occupation; that is to say, the comparative fitness of men and women when performing like services. These inquiries, when carefully carried out and classified, will show the earnings of men and women in the same lines, and will also demonstrate an exceedingly important feature; that is, whether men are being displaced by women or whether women are simply and to a general extent displacing girls and boys. In other words, whether women in our productive industries are, as a rule, performing the work formerly performed by men, or performing the work usually done by boys. These are very largely economic questions, but they will have a very important bearing upon the whole question of the employment of women. We shall secure a great deal of important information which we have not yet had except in a few instances. The bureaus of the different states have been taking up the question of the employment of women, and it is an exceedingly valuable one to be pursued. I give you only the general outline of this investigation, so as not to take up too much time.

The other investigation ordered by congress is a far more comprehensive one and far wider in its reach, and that relates to the influence which machinery or inventions have had upon wages, the time employed,—that is, the hours of labor,—and the cost of production, both in time and in money. The time is auspicious for such an investigation. It is a surprise to most, and it has been a constant surprise to me in conducting this investigation, to find how many of the industries of the country are carried on in a double sense—in some places by hand, under the old hand regime or method, and again, in other localities, often contiguous to the first, by the most improved modern methods. But the old methods are passing away, and the men who were familiar with them and who still can give

the public the facts are passing away, too; so that the sooner an investigation of this kind is carried on to fair completion the better it will be. You will at once understand, gentlemen, that there is nothing whatever in an investigation of this kind upon which legislative action can be based; but such an investigation will have the very greatest importance in the consideration of the economic questions of our time, so the department is making it as complete and exhaustive as possible. It will take up every available feature of hand and machine production, from the very smallest elements in production to the most extensive operations, running from the manufacture of a pin, may be, to the production of lumber and ore. You, gentlemen of this state, are perhaps more familiar than the rest of us with the great changes which have taken place in the production of lumber, and yet, with all the methods which the Northwest now employs in making lumber, there are localities in the country that are still using the old upright saw; so that the factors of information, so to speak, exist now, and the department will carry its work on and on until it has covered the leading industries of the country and in the general localities where they prevail. It is not an investigation, as you will at once see, that involves any question of aggregation or totals, or that has any benefit to be derived from immediate completion; therefore, we shall carry on this investigation into the influence of machinery upon labor, upon hours of work, and cost of production, until we have practically made it exhaustive so far as the United States is concerned, and then, if there is any money left at our disposal, we shall try to carry it across the water. You will all see the advantage of such an investigation and the contribution which the results will be to economic and ethical science.

There is a matter on which we are engaged, and which is being carried out on other lines by Mr. Wadlin of the Massachusetts office. That relates to wages in different parts of the country. Our department is doing this simply as "knitting-work." When the services of a man can be spared from other things we collect from the official reports of different countries the wages so far as they have been reported. I presume those two reports will some time, perhaps, come together.

Congress has now ordered a new feature in our work, and I wish to call the especial attention of the commissioners repre-

sented here and throughout the whole country to this work, because I believe they will take as much interest in it as the department does. At the last session of congress the department was authorized to publish a bulletin. You know that the Department of Labor of Great Britain, the French Labor Department, the New Zealand Department, and now the Department of Labor in Russia are publishing bulletins. In some cases they are monthly and in other cases bi-monthly. They are having an exceedingly good effect, and congress thought it was wise for the Department of Labor to undertake the same class of work. This would have been done long ago, had it not been for two things. In the first place, there was a disposition to make the bulletin the official announcement of the scarcity or the abundance of labor in different localities. This would have been a most dangerous feature in a country like ours. It is all very well in France and England; but in the United States such work would have been exceedingly vicious. For instance, the Department of Labor might announce in one of its bulletins that there was a scarcity of weavers in the woolen mills of a certain place. The inevitable result would be a rush of unemployed weavers to that particular locality, and if a hundred only were wanted there might be a thousand traveling long distances to secure the one hundred places. Thus, the publication, instead of being of assistance to the unemployed weavers of the country, would impose a vast burden upon them, for they would have to be transported back again at somebody's expense or at their own loss. So after due deliberation, the committee of congress having the matter in charge saw at once that this would not do in a country the size of the United States. The second reason why a bulletin has not been published before is that the demands for it were based upon the idea that such a bulletin should be the propaganda of certain theories, no matter what; that it should be a controversial publication instead of simply a publication confining itself to current facts. That would have been just as dangerous as the other. The government of the United States ought not to undertake to teach any particular economic theory or any particular political dogma. The country is composed of its citizens, and they have the right to know the truth when the government speaks. So these two ideas prevented the publication of the bulletin; but now it has been authorized along

the basis of the collection of information for the general public, and it provides, also,—(of course you are all interested in a general way, but you are interested in it in a specific way,)—for the publication of abstracts of the state and foreign labor documents. So that each number of the bulletin (the first will appear in October, and then bi-monthly after that) will contain abstracts of the most important information in each one of your reports. This will enable us to spread broadcast over this country and foreign countries, in official and other directions, the crucial results of all your individual work, and it therefore becomes a matter of great interest to the members of this convention. We shall publish the abstracts of as many reports as possible in each number, always taking the latest; so it will be a very great favor if the members of this convention will see to it that the department always has advance sheets of their state reports, with a statement as to when your report will be published, so that we may not bring out an abstract before you bring out your report. In this way, the committee of congress having the matter in charge thought that the state and federal offices would be brought more into line with each other, because each would be interested then officially in the work of the other, and the results would become of national importance and of national benefit. You will at once comprehend the whole situation on the simple statement I have made.

Another department of this bulletin will be what we shall call the law or legislative department; and here again I wish to bespeak the good offices of the members of this convention. We want to publish in each bulletin, so far as conditions will allow, the bills that are pending in the various states relating to labor matters, and, furthermore, the acts that are passed; and, further, all decisions of courts which bear upon labor matters, either in the interpretation of existing laws or in relation to injunctions or other suits or causes that come up in which labor is in anywise involved. Here you can be of great assistance in making this bulletin a national vehicle for current information from your own states, and I know that I have simply to mention the matter to secure your hearty co-operation, because this bulletin will be absolutely a reciprocal matter, aiming always at preserving and disseminating information which is of national importance. Of course, those things in

your reports which are merely local we ought not to touch, but where you report things, as you always do through your bureaus, that are of just as great value in one part of the country as another, you will now have a vehicle through which these particular features of your reports can become a part of a national document as well as a part of your own state documents.

These are the features of the departmental work, and they are features which it seems to me are exceedingly valuable, and in which we can—particularly with reference to the bulletin—co-operate with an efficiency which I am sure will be recognized.

A part of the call for reports on current work relates to financial matters. The Department of Labor now has at its disposal \$175,000 a year in round numbers. It usually employs a force of about 110 people on an average. Its clerical force and its special agency force are under civil service regulations, so that we run along in a smooth way, and with an equipment which, to my mind, shows not only the interest which congress takes in such work but really its generosity. People sometimes say: "You ought to have a million or at least half a million," or that sort of thing; but when it is understood, that, with the establishment of the bureau as it was originally, \$25,000 was appropriated; that four years later it was made an independent department, and that now it has an equipment of \$175,000 a year, I do not think that any labor statistician can complain of congress for its action in these matters. I know perfectly well that members of congress are using the state and federal reports more and more as time goes on, and that the value of the reports is recognized by them and by the very best men everywhere as sources of reliable, trustworthy information, so that we have only to go on, making our work scientific, at the same time recognizing this one thing, gentlemen, that merely counting hogs and logs and dogs is not all there is to a statistician; that he should recognize the relation of the facts which he collects to other facts, and be able to see something of the philosophy and the economic and ethical forces underlying the facts which he presents, thus making his analyses vital in their importance and of far greater value than simply by publishing columns of figures and stating numbers. I believe that the members of our convention recognize

this, and that it is the principle on which our own office works and which enters more and more into these investigations to which I have called attention.

STATE BUREAUS OF LABOR STATISTICS.

Pennsylvania.—Mr. Clark: Being new in the work, I can give the convention only an imperfect outline of the methods pursued by the Pennsylvania Bureau and of its condition at the present time.

The publication of the report for 1894 has been greatly delayed on account of a disastrous fire that occurred in the state printing office in the early spring, and it is probable that it will be late in the fall before the report will be ready for distribution. It will contain statistics in regard to the employment of women, the building trades, and a large number of iron, steel, glass, and textile manufactures, similar to those published in the annual report since 1892; and also statistics relative to the strikes that occurred in 1894 and mine accidents, as well as an article on the manufacture of pig iron.

In taking up the subject of women in industry, we did not reach that class treated by the commissioner of Massachusetts,—college graduates,—but went into the factories and the stores. We endeavored to ascertain the earnings of the employes, their hours of labor, and their average compensation, as compared with what men receive for the same kind of work, and made inquiry as to what, in their opinion, might be done to better their condition in their respective occupations.

In our investigation of the building trades we have endeavored to obtain individual reports, showing wages, lost time, and earnings, from 1890 to 1894, inclusive. You will readily understand the difficulties we have had to encounter in prosecuting this work, as but few workingmen keep any account of their earnings, and therefore find it hard to give reliable information on this subject, even for one year, and the difficulty is increased in proportion to the number of years covered by the inquiry. We have been successful, however, in obtaining fairly complete returns, enough at least to show that the great majority of workingmen, after deducting lost time, while working at wages of from three to four dollars per day, do not average more than one to two dollars.

Realizing, as we do, that the interests of the employe can be best promoted by a closer and better understood relationship with the employer, and that there is no question the solution of which, or the better understanding of which, would do more towards attaining this end than a thorough knowledge of the causes that lead to strikes, we give this subject increased study and increased space each year.

For 1895 the tin plate industry will be a leading feature of our work. We purpose entering into the subject fully, tracing it from its early struggles in this country up to the present time. In Pennsylvania, in the town of New Castle, where I live, we shall have, when the improvements now being made shall have been completed, say, by Jan. 1, 1896, the largest, most complete, and most perfect, in all its appliances, tin plate plant in the world. In that work we shall show by means of photographs the complete process of manufacture from the steel billet to the tin sheet. It is possible we may publish a limited number of copies of this part of the report in pamphlet form during the early winter. We shall also continue our comparative reports from leading iron, steel, glass, and textile manufacturers. It is the intention to publish as complete a report as possible of the products of iron and steel in the state, the number of men employed, the number of days worked, the aggregate wages paid and the total value of output.

We are also preparing a directory of the industries of the state, and if some of the commissioners present will show us how to do it better than we are doing it we shall be very grateful. We do not have the necessary force to do it by a personal canvass, but are using the commercial reports as a basis, and after classifying the work by counties, will submit the list for each county to well-known representative men in the county, who will add thereto or eliminate such names as may be necessary.

As to the question of finances, our legislature meets biennially and appropriations are made for the ensuing two years. We have an appropriation of \$12,000 for the period ending June 30, 1897, which must cover all our expenses. I do not mean salaries, but the expenses incurred,—traveling expenses as well as all incidental expenses connected with the bureau. This does not include the cost of printing, which is done by the state. We have two collectors of statistics, who travel a part

of the time, and during the first three months of the year, while we are compiling the report, we employ eight to ten men additional. You will readily see, that, to cover thoroughly the great manufacturing State of Pennsylvania, we could use much more money to good advantage.

Connecticut.—Mr. Horne: Mr. President and Gentlemen: Having recently come into the office in Connecticut I am not thoroughly skilled and experienced in just what was being done up to the 1st of July by my predecessor, but I can briefly state the current business of the bureau.

We first take up the cost of maintaining the poor in the years 1892 and 1894. That is divided among the institutions—almshouses, hospitals, and homes; outside poor—heads of families, individuals, amount paid for rent; comparison of tax rate for same, with grand list, giving tax rate in mills for each of the 168 towns for both years; amount per capita for each year; amount per capita of population based on census of 1890; also, the same facts for twenty-one cities and towns scattered about the state, for a period of twenty years.

Next we present a table showing the increase in assets of all the building and loan associations in the state. Our last report shows that we made a thorough inquiry in regard to these institutions. This is the last report the Labor Bureau will make upon the building and loan associations of the state, as a law has recently been enacted by which they are transferred to the bank commissioners.

Then we give a table of classified industries, showing the improved conditions of the manufactures of the state, in number of employes, hours run, increase and restoration of wages. We have about 1,800 manufacturers in the State of Connecticut, one-third of whom made a reply within the first two or three weeks. We are sending out special deputies now to hasten forward a report from the larger mills in the cities of the state.

We also take up manual training, showing to what extent it has been introduced through the state, in common and high schools and in the Young Men's Christian Association.

We give, also, a record (without comment) of strikes and lockouts, giving the number of men involved, length of duration, cause, and result.

Laws were passed by the recent legislature raising the age limit for employment of children from thirteen to fourteen, creating a State Board of Arbitration, and authorizing the appointment of special agents for Italian and other alien laborers. A stringent law concerning interference with steam or street railways was also passed. In regard to the law for the appointment of Italian special agents, I would say, that, according to the census of 1890, we have about 10,000 Italians in the state, one-third of whom are situated in the city of New Haven, in New Haven county. I have appointed as special agent in each of the cities of the state, an intelligent Italian, one in whom his countrymen have confidence, and who understands properly the English language. They are causing a good deal of work for the bureau. I have given that subject a great deal of thought, and I have no doubt that our efforts in this particular will result in much good. I understand from Mr. Defeo of New York, who is the author of this law, that a similar law has been established in three of the states of the Union for the protection of Italian laborers. Of course, you all know that a very large percentage of Italians are ignorant,—can neither read nor write their own language,—and it devolves upon us, as they think, that something should be done by which their interests can be protected, and particularly from the *padrone* system.

Through the efforts of the bureau a restrictive law was passed, and now all foreign and domestic building and loan associations are placed under the jurisdiction of the bank commissioners, subject to semi-annual examinations, or oftener if the commissioners see fit.

Bulletins have been issued giving a summary of the laws of interest to labor, and one containing the *padrone* law, with advice to Italian residents in the state, has been printed in the Italian language, under the approval of the Italian minister in New York.

That, in brief, is the current work of the bureau. We contemplate that it will comprise a volume of 300 pages. One hundred and fifty pages have been prepared and placed in the hands of the printer. The whole report must be completed on or before the 1st day of December next, when the entire matter goes into the hands of the printer.

In regard to the expense of the bureau, I would say that the commissioner receives a salary of \$3,000 a year and the

clerk \$1,800 a year. We are authorized to employ as many specials as the needs of the office require. I give my special deputies \$3.50 a day and expenses, which includes car fare, railroad fare, and hotel expenses. We are not limited in the amount of our expenditures. Any order signed by me is speedily cashed. Of course, we have an eye to economy. Any good business man will keep his eye on the financial part of any concern of which he has charge. The expenses of our bureau have run from \$10,000 to \$30,000 a year. I expect to do all this work for a sum in the neighborhood of \$9,000 complete, including the cost of printing. I succeeded this year in reducing the cost of printing the report ten per cent over that of any of my predecessors, and I am exercising the same care and caution in regard to the expenditure of money in other matters that I have exercised in that.

New York.—Mr. Dowling: Since the last annual session of the commissioners, the New York Bureau has made an extensive investigation as to labor organizations; whether or no labor has been benefited by reason of such organizations, and in what respect and to what extent.

From the information secured it was found that there was, in a great many instances, a reduction in the hours of labor without a corresponding reduction in the wages.

The answers obtained to the question, "Has recent improvement in labor-saving machinery reduced the number employed?" show that the reduction has been most in the printing trade. It shows a decrease in the number employed of from twenty to sixty-six and two-thirds per cent.

The work also treats extensively on the growth of organized labor and the effect of organization on wages and working time; also, as to whether organization has prevented wage reductions.

Among the many things brought out by the investigation was one of great importance as to the financial aid rendered by labor organizations to their members.

That the labor organizations of New York displayed a commendable spirit of generosity during the recent commercial and industrial depression was shown in their returns regarding the amount of money expended during the past year in benefits to members out of work.

What makes this investigation of more than ordinary importance is, that it is demonstrated to the public that labor organizations, at the present time, are organized for more than the question of increasing the wages and shortening the hours of labor.

Speaking on this subject lately, at a gathering of Episcopal clergymen in New York City, an eminent labor advocate said: "As we read the record of misery among the masses we should keep in mind the fact, that, as a rule these miserables are of the unorganized workers. You will find on investigation, that, during the recent period of industrial depression, the applicants for charity were, with a very few exceptions, workmen not attached to labor organizations. These exceptions were members of the younger unions of the lower east side, with, as yet, low wages and a poor treasury."

The amount of money spent by labor organizations during the past year was \$512,000, and the largest amount expended by a single organization in out-of-work benefits is recorded by Typographical Union No. 6, which paid to its unemployed members \$31,000.

An extensive investigation was made in regard to the condition of business in the first quarter of 1895 as compared with the depression of 1893-94. This investigation covers the erection of new buildings in the cities of New York and Buffalo. In the city of New York the number of new buildings for which plans and specifications were filed during the first quarter of 1893 was 655, in 1894, 538, while during the first quarter of 1895, there were 1,107. The estimated cost of these 655 buildings in 1893 was \$14,879,638, of the 538 in 1894 \$9,418,930, while the estimated cost of the 1,107 buildings in 1895 reached \$27,462,514. In the city of Buffalo the number and estimated cost of new buildings with the number of permits issued during the first quarter of 1893 was 521, at a cost of \$1,531,301; in 1894, 466 permits, at a cost of \$1,051,671; while the cost of new buildings in 1895 was \$3,416,621.

At the present time the bureau has under its charge the following investigations:

An investigation of the bake shops of the state—as to their sanitary condition. The investigation is to cover the working condition of the employes of these shops, as to their nationality, age, rate of wages, and hours of labor; also, as to whether they are citizens or aliens.

An investigation relative to the mechanics' lien law and scaffolding as used by painters and kindred organizations; also, relative to aliens coming from Canada and working in the State of New York at a reduced rate of wages, these aliens coming over in the morning and returning at night, which is believed to be a violation of the contract labor law.

The following is a list of questions relative to labor organizations, the returns from which promise to be quite interesting and will be included in the forthcoming report:

1. Trade or calling.
2. Name of local labor organization.
3. Year of organization.
4. Address of meeting-place.
5. Name of secretary.
6. Number of members of local organization, July 1, 1894—male and female.
7. Number of members of local organization, July 1, 1895—male and female.
8. Rate of wages, 1894—male and female.
9. Rate of wages, 1895—male and female.
10. Hours of labor, July 1, 1894, on each of the first five days of the week. Hours on Saturday.
11. Hours of labor, July 1, 1895, on each of the first five days of the week. Hours on Saturday.
12. Number of members employed, July, 1894—male and female.
13. Number of members unemployed, July, 1894—male and female.
14. Number of members employed July, 1895—male and female.
15. Number of members unemployed July, 1895—male and female.
16. If during the year ending June 30, 1895, rate of wages were increased or hours of labor reduced. Please state whether such changes were the result of strikes, or were immediately secured on demand of the organization and without resort to strikes or were voluntarily made by employers.

Missouri.—Mr. Meriwether: At the very beginning of the Labor Bureau in Missouri the legislature defined a great many routine duties for the commissioner and his assistants. From

time to time during the past fifteen years successive legislatures have added to these duties, until now there are so many routine duties, specially defined by the legislature, for the commissioner and his assistants to perform that there remains little time or money for special investigations. To give you an idea of what I mean by special routine duties, I may mention the inspection of mines. Missouri has 1,042 mines, not counting the smaller lead and zinc mines. Some of these mines are so extensive, that to inspect them, even superficially, takes several days. The law requires each mine to be inspected twice a year; that is to say, more than 2,000 inspections must be made each year. They must be inspected with great care, to see that proper safeguards have been provided by the proprietors. In connection with this work of inspection it has been the custom of the commissioners to obtain as much information about the hours of labor, conditions of employment of miners, etc., as it is possible for the inspectors to secure after having performed the work of inspection proper. The legislature, among other specific duties, has also made it obligatory upon the commissioner to obtain each year statistics of manufactures—the amount, quantity, and kind of goods manufactured by all the manufacturing establishments throughout the state, the hours of labor, the wages of labor; and, at the same time, to inspect these factories, in order to ascertain whether the laws regarding them have been complied with, such as supplying seats for female employes, etc., and certain sanitary features. All these matters (and I have touched upon only a few of them) have made it almost impossible for the commissioner to undertake any extended special investigation. I only took charge of the Missouri office on the 1st of July of this year, but even during that time, and notwithstanding the many routine duties saddled upon my office, I have begun a tentative investigation into the subject of public franchises. I began this investigation along the line of the street railways, and it is my purpose to carry it into all manner of public franchises—telegraph, telephone, water, gas, railroads, etc. The investigation so far has been of the most preliminary character; only during the last six weeks have I had my agents employed in collecting information on this subject. We began by taking up the subject of the franchises of the street railway system of the city of St. Louis, with the object of determining to what extent the hold-

ers of franchises have compensated the public for the use thereof. Of course, you have all heard the statement made by more or less responsible parties to the effect, that, as a rule, the holders of a franchise, while perhaps paying corrupt city councilmen and other officials large sums therefor, do not pay the public a penny. My idea has been to get at the facts regarding this; to see whether the public has been fairly paid for these franchises. Even in the short time that this investigation has been under way some curious facts have been developed in St. Louis. For example, while I entered on this investigation without any preconceived idea of what would be shown thereby, one of the facts which has already been shown in my St. Louis investigation is, that the street railway systems of that city have reported to the assessor twenty-eight and 56-100ths miles less of track than they have, as a matter of fact, been operating for a year past; in other words, there is that mileage upon which absolutely no tax has been paid. It was not my idea to get at that fact; that was an incidental discovery. My sole idea in beginning this investigation of franchises was to find out what ratio exists between the actual cost of construction and capital invested for rolling stock, for real estate and personal property, in the shape of power-houses, machinery, etc., and the stock or bonded value of these roads, and then to find what percentage of dividends they have been paying upon the real value as compared with the artificial value, if it be proved that it is artificial. Having ascertained these facts from the official records, I submitted them to the managers of the different street-car properties in St. Louis, my idea being to avoid as far as possible any errors or unwarranted deductions. I submitted them to the managers before permitting the press to have them. We have a very enterprising press in St. Louis, and when they get wind of what is being done they make life a burden, insisting that we shall tell everything we know. I declined to give this matter to the press, but sent out typewritten copies to the managers of the various street railway corporations, asking them to correct any errors or faulty deductions. To my surprise, instead of complying with my request, they gave my printed synopses to the Globe-Democrat and other papers of St. Louis, accompanied by a vicious assault upon our work, asserting that there were numerous glaring errors in our figures as well as in our deduction; but they declined to point out the alleged er-

rors. I mention this to show you how these investigations may be looked upon. The president of one of our large street railway corporations pointed out to a gentleman of the press who interviewed him the fact that the inquiry did not call for the amount of wages nor the hours of labor of the men engaged in the service, and that he thought it a very unwarranted attack upon them, to attempt to get at the real value of a railway as compared with its stock or bond value. For the benefit of gentlemen who may possibly share the view of the president of the railway referred to, I will state that the fundamental law establishing the Bureau of Labor in Missouri has a "general welfare clause;" I was merely making a liberal construction of that clause, just as the supreme court has done in reference to the general welfare clause of the Constitution of the United States. It seemed to me that this investigation might be of value to the public and therefore to the workingmen of our state. This is about the only special feature that has been undertaken, and I do not suppose that the routine duties of the office will permit me to go into it as far as I desire and as thoroughly as its importance merits.

As to the question of finances, our legislature for some years past has made, apart from the salary of the commissioner, an appropriation of \$9,000 a year for contingent expenses, \$3,000 a year for the salaries of two mine inspectors, and \$3,000 a year for printing, making a total of \$12,000 a year for the contingent expenses of the office, apart from the salary of the commissioner, the printing of his report, stationery, and office supplies; hence, the sum which we have to draw upon, apart from our printing, etc., is \$1,000 a month.

New Jersey.—Mr. Simmerman: Mr. Chairman and Gentlemen: The report of the New Jersey Bureau for 1894 has just left the press and is now being sent out. You, of course, have not yet received that number.

For 1895 we are continuing what we undertook in the 1894 report relating to industrial depressions, showing what changes have taken place during the past year, on the same lines that we pursued in our last report.

In 1880 there was a law enacted in New Jersey to encourage the formation of co-operative societies among workingmen. Since that time there have been something like forty charters or articles of association of different co-operative

societies taken out under that law. I am now attempting and will have in the 1895 report a history of these various efforts to start co-operative societies.

In addition to that there is a continuation of what we have been doing for a number of years. The term of trade life in various occupations is continued as applied to the cotton and woolen industries of the state. I want to say, in connection with this work, that the statistics will cover but a small proportion of the number of people actually engaged in those industries, for the reason that we had to select certain establishments where the conditions have not been changed recently. We found very few cotton mills and woolen mills, for instance, where there had not been either a doubling of their capacity within a very recent time or where the old employes had not been superseded by new immigrants. Those conditions faced us in this investigation. Therefore we had to confine ourselves to those establishments where such changes had not taken place within recent years, carrying out the idea underlying that line of investigation.

These features will comprise the lines of investigation for our 1895 report. I want to say, also, in connection with this subject, that heretofore we have not been prompt in having our report gotten out at a particular time. For instance, the law says that the bureau shall make an annual report to the governor on the thirty-first day of October, but as I told you, our 1894 report is just ready for distribution. This has been going on for a number of years. Naturally we wanted to make it as complete as possible, and so could not get it out on time. The last legislature, however, made it mandatory that all state reports required to be made annually shall be completed on the 31st of November, and consequently we are trying to live up to the law in that respect. The idea struck some of the members of our legislature last year that a report ought to be made whether it is ready to be made or not; that is, that the statistics can be turned out by machinery and will come in on time.

Of course, a feature of our report is the annual statement relating to building and loan associations.

As far as expenditures are concerned, we have an annual appropriation of \$5,000, which pays for the collection of statistics, postage for sending out of reports, etc., including all expenses except the printing of the reports and the blanks,

etc., which is done under the general contract. The salaries of the chief and secretary are additional to that. Outside of the salaries of the chief and the secretary, we have but \$5,000 a year for all purposes except the printing of our reports and schedules.

Michigan.—Mr. Morse: Mr. President and Members of the Convention: The main feature of the current work of the Bureau of Industrial Statistics of Michigan was undertaken at the suggestion of the Association of Street Railway Employees, and in connection with that what seemed to be kindred occupations were taken up. We are gathering statistics of the street railways, not only relating to the employees, but, so far as we may, anything that pertains to the operation of street railways. In addition to that we concluded it was an opportune time to gather with those statistics information relative to any of our people that are engaged in any sort of transportation, either of freight or passengers, outside of steam railways and navigation lines. Our canvass is now drawing to a close, and our report is expected to be published by the first day of February.

In addition to that special feature of our report we take up what perhaps I may term "side lines," at the request of various people who are interested in our researches, and this year we shall endeavor to publish something relating to our mining interests, comparing them with the most depressed year that the Michigan miners have ever seen. Of course, you are aware that I refer to the year 1893.

We shall also give information in regard to strikes. We have quite an extensive strike going on in our Marquette mining district at present. We will also present some information relative to prison labor in our state.

I may say, that, so far as the law governing the Michigan Bureau is concerned, the scope of our inquiries is all included in one section of about six lines, and to use a homely expression, we are allowed a certain appropriation and "turned loose" to do what we see fit with it. Two years ago the legislature provided for factory inspection, and placed that under the charge of the Labor Commissioner, and you can very readily see that it has doubled our work; but at the same time it has been a source of some benefit to us, for, with half a dozen factory inspectors, we use them to a certain extent promiscuously.

They are valuable to us in the Labor Bureau, as they furnish us information much more cheaply, and oftentimes much more quickly, than we could get it from any other source. In most of the states factory inspection is a bureau by itself, and I apprehend that in due course of time the same may be said of Michigan.

So far as the finances at our disposal are concerned, I would say that the standing appropriation for the Labor Bureau proper is \$8,000 a year, exclusive of the salaries of the commissioner and deputy commissioner, the two aggregating \$3,500; and in addition to that, the cost of printing, stationery, supplies of every kind, and office rent are paid out of the general fund of the state, and the appropriation for factory inspection proper is another \$8,000, making a standing appropriation of \$19,500 for expenses of administration and salaries.

North Carolina.—Mr. Lacy: Mr. President: I find myself this year in almost the same condition that I reported last year at Washington. I am totally unprepared to make any regular report of what we have done or what we intend to do. I did not expect to attend the convention until last Saturday. I had given up all hopes of coming here, and therefore I am not prepared. I will say in a very few words what I have to present to the convention. North Carolina being very largely an agricultural state, eighty per cent of its population being engaged in agricultural pursuits, and not feeling the necessity of a Bureau of Labor, as do those states which are engaged almost entirely in manufacturing industry, has done very little for this work. I am a great deal more encouraged than when I was in Washington last year, and I feel very much flattered and pleased by the feeling that is growing in the state toward the work. The mill men in the state, who would not meet me at all formerly, who would not answer questions under any consideration before, are now answering with a very good grace. The great trouble in North Carolina (and it rather mortifies me, as I am a North Carolinian, and we are very proud of our section of the United States) is the lack of support, financial and otherwise, which I have to contend with. It also mortifies me to find that other states have forged so far ahead in everything pertaining to this work. In North Carolina we have only \$1,100, outside the salaries, with which to collect our statistics. I have about the seventh largest state east of the

Mississippi to work over. We have an agricultural population, and there is a very efficient agricultural bureau, and although that bureau is so efficient they had a law passed to collect statistics through the tax collectors and the assessors, and the farmers turned out and elected a farmer legislature and did away with that, for the reason that they did not want their business pried into. The manufacturing business in our state is growing very fast. We have no law giving us the right to go into our factories. We have no factory or mine inspectors. Now, although it may seem to you that this is a poor report, I am satisfied that our bureau is doing a great deal of good, not simply as a scientific study or in the treatment of sociological questions, but by educating the rich people and the mill men of North Carolina to understand that the state has not only a right but that it is its duty to look into the condition of their employees; in other words, that their business enterprises are not private snaps as long as humanity is concerned. One line of inquiry that we are engaged on for the report of 1895 is to find out how much labor there is in a bale of cotton; also, how much it cost per pound to raise it. But it is a very difficult undertaking.

These conventions always do me a great deal of real good, yet I am deeply impressed with the conviction that I am an infant in our work, although I have tried very hard to make progress. When I hear Colonel Wright, Mr. Wadlin, and others speak,—gentlemen who are way down in Z, while I am still in A,—it mortifies me to a certain extent.

Another subject that gives me concern is the condition of child labor in North Carolina, and what should be done about it. I do not know how to proceed in recommending a law relating to this subject. There is no regulation regarding the hours of labor in my state. You can work a person as long as you please. I think the Massachusetts committee which came down to North Carolina last winter was very much surprised at our leniency in this respect. One county in our state which has nineteen factories has what they call an eleven-hour law, and that is the only county in the state that works its factory employes less than twelve hours, and they think those are unusually short hours, while some of the factories work their employes from twelve to fourteen hours. There are a great many factories which have children from nine to twelve years of age working those long hours, and unless you have a law behind

you to give you the right to enter those factories you cannot find out anything to improve the conditions.

If we make any effort to find out anything we are given the cold shoulder. When you remember what I have already said, that North Carolina has only two per cent of foreign population, and that its citizens are the most conservative people in the country, you will understand what I have to meet. Their idea is that I am interfering with their business, and they insist that I shall not look into their affairs. So, while, as I say, we have done wonderfully well toward educating the people in the right direction, we have a great deal to learn yet. The trouble with the manufacturing industries in North Carolina is, that our factory people compete with our farm labor. Our farm laborers receive very small pay for their services; the wages of a man is about \$8.50 per month. Now, in coming from the fields, where they work from twelve to fifteen hours daily, they think they have made a great advance, and they are perfectly satisfied to work the hours required. They will not answer our questions; they think we are trying to raise a disturbance, and I am afraid the owners often encourage them in that belief. During the last session of the legislature, which was a fusion legislature, they tried to get a nine-hour law passed. The committee called on me several times and discussed the bill very fully, but I could not recommend so radical a move at one step, and the bill failed to pass; and really I do not know how we are to solve this question of the hours of labor in North Carolina, but especially is this true in regard to the problem of child labor. Until we have a compulsory educational law in our state I do not see how we can extend the age limit, as it would simply result in turning our children in the street. The age of consent last year was settled at fourteen years. Now, if we should make fourteen years the limit for child labor, we would only turn the children of North Carolina loose without any restraint. With the fathers and mothers working in the factories from twelve to fourteen hours, they have no control over their children except at night; they do not see them at all during the day. It seems to me that we would be raising a race of thugs, for children's habits are formed during their early years. A noted Episcopal bishop once said, that, if he had the care of a child until he was twelve years old, he did not care what church you sent him to after that. Under the present conditions I do not recommend tak-

ing the children out of the factories. We do not have school laws to warrant it. Some of the factories have schools of their own, and they supplement the free schools with four months of their own school; but they are in a very small minority. North Carolina has progressed, and her bureau, in my estimation—perhaps it is indelicate for me to say so—has made a grand and wonderful step forward by educating the people to understand that the state has a duty to perform to the man in the factory in teaching him how to be a better citizen and how to better his condition.

I would be very glad to hear some of those who have had years of experience suggest what means we should pursue to get the statistics with as little friction as possible. I do not like the stringent laws of some of the more advanced states, and am proud to say, that, with very few exceptions, all do not need them. We do need a law to make the hours more uniform, as much for the mill owners as for the employees. We will probably pass an eleven-hour law at the next session of the legislature. We also need very much a compulsory school law, and that children should not be allowed in any factory until a certain age, and then only with a certificate showing that they have passed an examination.

Minnesota.—Mr. Powers: Mr. President: The first and most important work in a statistical line which we are undertaking for this two-year period, and that to which we make all other investigations that we have begun or shall undertake subordinate, is one relating to taxation. The first question which we are seeking to solve, so far as it is possible to do so, is the comparative burden of taxation borne by the several interests in the state and in the country. We start this investigation with the data at our command relating to railroads. We take for that comparison the year 1890, as that is the year for which the census gives us an estimate of the real market value of property in the several states as well as the value of railways. We then seek, not alone for Minnesota but for the other states of the Union, to obtain (after the data furnished by the national government showing the value of the railroads and the value of all property) the amount of taxes of all kinds collected in the several states and the amount in that year that is contributed by the railroads. In that way we seek to obtain an answer to this question so far as railroads are concerned,

what share of taxes, proportioned to the value of their property in the total of all property, the different railroads in the several states of the Union pay. Then, incidentally to this, as throwing a side light upon the question, we tabulate for the several states the methods of taxing railways, showing in this, if possible, what method is furnishing the best or most equitable system of taxation. I will state that a large variety exists in the several states of the Union. Taking the census valuations as a basis, it is found that the railroads in some of the Eastern States are paying more than their just share, while in the Western States as a whole they are paying only from twenty to forty per cent of their share. Of course, we understand that the question may be raised that the census estimates of the valuations of these railroads are inexact. We shall, so far as possible, seek to gather all the information obtainable upon the actual value of the railroads—not simply that which is given us by the census, but so far as possible we shall seek, along the line of the investigation by the commissioner of the Missouri Bureau, to secure and publish all available information relating to the actual value of railroad properties in the several states. It was the aim of the investigation when we began it, not simply to cover the question of the relative burden of taxation borne by the railroads, but, in the State of Minnesota, to carry this as far as possible, and show for this state the relative burden of taxation borne by other interests. It was hoped that we might be able thus to separate farm property from other forms of property, and show whether the farmers of this state are paying more or less than their proper share of the burden of public expenses. We have found that there are many and great difficulties in pushing this investigation along the lines which we had originally intended to carry it, and it is at the present time somewhat uncertain how far we can carry the investigation. We shall carry it along these lines just as far as we can secure available data, for we believe that there is no question of so widespread and of so vital interest, not alone to our working people but to all classes, as that of a just system of taxation. We shall seek in this connection to investigate, so far as it is possible, all the questions that may throw a side light upon the justness of the present or other methods of taxation in the State of Minnesota, and place the results obtained here in comparison with those obtained in other states. In the matter of railroad taxation

we have tabulated the results comparatively, the value of that class of property and the taxes paid by it, since 1870, year by year. As I have said, we have meant to make this tax investigation the main investigation or study for this two-year period, which will be included in our next report. Until we have settled exactly how far we can carry that and how much time it will require we have been unwilling to decide upon other work. It is probable, however, that, among the topics which will be taken up, there will be a study of the iron industry of Minnesota. We shall ask you to visit the iron mines and learn something of this industry personally. I may mention, however, that this iron industry in Minnesota began only a few years ago; but it has already grown to large proportions, and for many reasons it will, in all probability, reach far greater proportions in the near future. We look forward to the day when Minnesota, in a very short time, will produce, in all probability, one-half of the iron ore mined in the United States. The mining industry, then, is something that deserves study. We shall attempt to obtain these data from the beginning of the mining industry. We shall present the wages paid and the number of men employed by years,—not alone the total of wages paid but the scale of wages in each year from the establishment of the mines to the present time,—together with all other data that may be necessary to bring out the true proportions of our mining industry. We do not expect this to be so much of immediate value as a basis for future comparisons.

Of other work which we have in contemplation I may mention an investigation relating to women's work—something in the line of that already sketched by the National Commissioner of Labor for his department; also, the tabulation of the distribution of wealth in the State of Minnesota as shown by the probate court records and in other ways.

We have, of course, incidental to this work as statisticians in this state, our work as factory inspectors. The law places upon our department, as it has in Michigan and some other of our Western States, the duty of enforcing all laws for the protection of the working people. Of that as a whole I say little, because it comes in in the report of our Department of Factory Inspection. I might mention, however, that, so far as we can, we seek in that department to do a certain statistical work. Thus we have tabulated the accidents, by causes and by the character of the accidents. We seek, so far as possible,

to throw light upon the causes of accidents, thereby aiding us in preventing them in our factory inspection work. I am glad to say, that, here, as in many other lines of work, we are obtaining a hearty co-operation on the part of our manufacturers. I believe we are getting very full accident reports, and we have a growing interest in them, as we are having a growing interest both on the part of our working people and our factory owners and our business men in everything that relates to our bureau.

In regard to our appropriation, I will say that the law creating the bureau gave it a total of \$4,500. At the end of two years the functions of the bureau were enlarged, and it then received an appropriation of \$6,500. The legislature, three years ago, in giving to us the factory inspection and enacting the present factory inspection law, added to our force and to our appropriation, giving us as a total for statistical work and factory inspection the sum of \$12,200. This is independent of our printing, which, as in most states, is paid for from the printing fund. This money pays the salaries of the commissioners and all officials, together with all incidental and traveling expenses.

Wisconsin.—Mr. Erickson: The Bureau of Labor of Wisconsin is at present at work on its seventh biennial report. The method of work mostly followed in this bureau since it was established has been to a great extent continued by the commissioner now in charge, and consists in sending circular schedules containing questions bearing upon such points as will assist us in getting at the condition of the wage-earning classes and of the industrial condition in general. Personal investigations are also made to such an extent as time and circumstances will allow.

Since it is one of the objects of Labor Bureaus to collect facts and figures relating to the industrial condition, especially the economic and social condition of the working classes, and to so arrange such facts and figures that the real condition of the working classes is not only ascertained in detail, but that they may also serve as a guide to future legislation, the social importance of these bureaus can hardly be overestimated.

The efforts of a state or government to obtain a clear knowledge of existing economic and social conditions in order to be able to deal with them wisely and with understanding is in itself an important link in the solutions of social prob-

lems. In this, as in nearly everything else, a thorough knowledge of and sober representation of facts much simplify matters, clear away many misapprehensions and much bitterness, and bring the opposite sides closer together. This department ought, therefore, to become one of the most important in our government.

The important elements of statistical information, therefore, are accuracy of figures and the manner in which they are compiled; for not seldom have statistics proved to be very misleading. Consequently, our aim is to get true facts, and with this end in view we have taken all precautions possible under our present system.

All returns are carefully examined, and if discrepant they are sent back for correction. Under this system a faithful adherence to some uniform method which by experience has proved the most reliable is necessary; but at times even the greatest care cannot prevent errors.

Our experience thus far fully confirmed us in our opinion that the best results are to be had from personal efforts in the way of investigations, and we regret very much to say that the annual appropriation to this bureau is not adequate to meet the expenses of competent men in the field.

The subject of wage statistics will be as usual one of the features of our next report.

Statistics are obtained from manufacturers from blanks prepared for the purpose, showing the scale or rates of wages paid to their employes; hours of labor, both in summer and winter; the number of males and females employed; total amount of wages paid during the year, and the number of weeks in operation.

The numerous and varied industries are classified, so that we will be able to show the number employed, the time in operation, and the rate of wages paid in each branch of industry.

In addition to the above, we will this year obtain considerable data from the state census which has just been completed. More items are this year included in the census blanks than were ever made use of before in our state census. We have also this year endeavored to go into the condition of the agricultural classes of the state. We have an agricultural bureau, but its duty, it seems, does not embrace the economic condition of the farmer, and for that reason our bureau this year has gone into the investigation of the condition of the farmers and

farm laborers. For this purpose a blank or list of questions was formulated, and pains were taken to make the questions plain and self-explanatory and applicable to all conditions of farm life. The bureau is glad to note the willingness of the farmers to respond, for we have already over fifty per cent returned, and as a rule they are very intelligently filled out.

The least interest in this work has perhaps been shown by farm laborers. The percentage of blanks returned by them is the smallest, and their answers have as a rule been unsatisfactory. There are many reasons why perhaps this could not be otherwise. The tendency of the workingmen is towards the cities, and agricultural labor seems rather a last resort with the majority. There is a constant shifting. A farm hand one season is likely to have drifted into the cities the next, and there find work in some mill or factory. Others are attracted to the great lumbering districts, where, at least, they put in the winter months. As a rule, this class does not belong to any labor organization or trade union, and it is perhaps not difficult to understand the reasons why less interest on their part should be taken in work of this kind. What has just been said, however, applies with less force to the older and more distinctly agricultural communities. At least twenty-five per cent of the blanks distributed among this class have been filled out and returned, and gives a fair indication of their condition.

We shall also endeavor to ascertain, through blanks, the true condition of the wage-earning, and especially the laboring, classes in the cities of our state. We intend to go exhaustively into the subject; that is, we want to get at the wages earned, the cost of living, means of saving, the educational and sanitary condition of our laboring people.

Since our State Bureau was established, no effort has been made to investigate the workings and standing of our building and loan associations, of which we have quite a number. We have therefore taken up this subject, and it seems to meet with much favor from the associations. The building and loan associations will therefore occupy more or less space in our next report, and will give some interesting information about those valuable co-operative enterprises. We hope to see them rapidly increasing both in influence and number.

The factory inspectors, working under the direction of this bureau, have thus far this year inspected about 1,200 factories

and workshops. Generally they do not meet with a great deal of opposition in enforcing the factory laws, though there are some to whom state interference is distasteful.

The factory laws having been in operation in our state for a considerable time, and our factories having been repeatedly inspected by our state factory inspectors, changes to conform to the requirements of our statute have generally been made when ordered, so that our factories are constantly being improved both for safety and in sanitary ways.

The law which regulates child labor we find the most difficult to enforce. The reason for this, however, is not so much in the attitude of the employer as in the position taken by the parents and the children themselves. The social and individual evils of unrestricted child labor are so apparent that it seems almost superfluous to mention them. Still, to the most ignorant and poorest class of our laborers the prohibition of their child's work means only a diminution of their income. Every effort of the inspector is resisted by both parent and child, and certificates, even affidavits, as to age are unscrupulously furnished. When any of these children are born in this country, public records may disclose their age; but of those born in foreign countries it is under the circumstances almost impossible to find out their real age.

Although there is a systematic effort on the part of both children and parents to get around the law regulating child labor, there is not at present as much child labor as has been at times currently reported. Efforts by the bureau to enforce this law have put employers on their guard, and they are now exercising considerable care in the hiring of children. The hard times have made this much easier for the employers, as a fall in wages and the number of unemployed now enable employers to hire children over fourteen years to work nearly as cheap (if not fully so) as children under this age. The bureau is certainly doing everything that can be done under its authority to prevent the employment of children under fourteen.

Besides the above mentioned, we may include in the report a couple of short chapters on other topics.

We shall also make use of and print the individual opinions submitted on the blanks returned to the bureau, concerning the ways and means for the amelioration of the farming and laboring classes. Some of these show a marked understanding of the economic condition of the country.

The condition of business generally has improved somewhat during the last year; but the effects of the late panic are yet felt, and in some places quite seriously.

As to the working classes, they are certainly better off now than a year ago. There may be a few lines of business which show a decline, but the general average shows improvement. This improvement consists mainly in the steadiness of work rather than in any increase of wages, although some of the ironworkers are getting a very considerable increase as compared with one or two years ago, when the times were the hardest. But, although business is in a better condition than a year ago, it is far from being in as good a condition as before the panic.

Massachusetts.—Mr. Wadlin: The current work of the Massachusetts Bureau, apart from the census work, which is also conducted by us, relates to two subjects. The first is covered in a report on the compensation in certain occupations of women who have received a college training. For the information contained in that report the bureau is indebted to an investigation undertaken by the Association of Collegiate Alumnae, comprising graduates of colleges for women of the United States. The purpose of that association in undertaking its investigation was to secure data relative to the incomes of women who have received special training with respect to that of men in like employments. That, of course, was a question in which the members of the association were deeply interested and through their different branches they issued a certain number of schedules of two kinds, one addressed to employers and the other to employes, each containing questions applicable to the class to which it was addressed, endeavoring to bring out, not merely the rates of wages paid but also certain facts relating to the industrial status of women as compared with men in like employments, especially employments in which, as I have said, special training is required. The schedules, when returned, have been placed at the disposal of the Massachusetts Bureau for tabulation and presentation in our forthcoming report. As you may suppose, the number of schedules received was not very large. Inquiries of that nature, undertaken in an unofficial way and by a private organization, could not be expected to bring forth extensive results. Nevertheless all sections of

the country were represented in the returns, and while the results are not very largely statistical, I regard what was received as valuable evidence respecting women in industry, and I have therefore tabulated such statistics as the schedules contain and accompanied the tables with very full abstracts of the statements made by the women employes themselves and by their employers upon the question of differences in wages paid women as compared with men, and as to the difference in the quality of the services rendered by women as compared with men in like employments. This is a brief report, and will form the first part of our forthcoming volume.

The other subject of importance with which we have been engaged is comprehended in a special investigation ordered by the legislature as to the effect of intemperance on pauperism, insanity, and crime, and, incidentally of course, on industrial relations. The legislature directed the bureau to make such an investigation, and placed at our disposal a special appropriation for this purpose. The work has been carefully and thoroughly performed, and has required twelve months for the collection of data. The information has been obtained through the penal institutions, and the institutions for the relief of insanity and pauperism, and through the courts by special agents carefully selected for the work, and we anticipate very valuable results from the inquiry. The data will be immediately tabulated and published.

Colonel Wright has spoken of the investigation which his department is making with respect to wages, and has referred to the fact that my own bureau is engaged in similar work. We are making a complete tabulation of wages paid in all of the states and in foreign countries from the earliest years, so far as the same can be collected from official documents, with the intention of placing them in comparison with Massachusetts wages. That is a work which we began some time ago, and have carried along as we have found time to devote to it without neglecting other important matters. It will be published in sections as fast as we get it completed. Such work is largely historical; and not of immediate or merely temporary interest, and it is intended to form a complete collection of wage statistics as a basis for future work along the same line.

The subjects I have mentioned comprise what I may call the "current work" of the bureau as a bureau of statistics of labor, so far as relates to its report. The legislature of Mas-

sachusetts at its last session, acting under a suggestion which I made in my report last year, authorized the Massachusetts Bureau to publish a bulletin also, and the first issue will appear before the close of the year. It will be principally devoted to matters of local interest. Very frequently the bureau has had questions submitted to it, requiring the collection of information, the value of which depended upon prompt publication. Take, for example, the subject of the unemployed, which during the recent industrial depression became of great importance. There was a great demand for immediate information relating to it. Everyone wished to know how many persons were unemployed in the industrial centers. If we had been able to collect information upon that subject rapidly and issue it to the public immediately, it would have been of great assistance in the consideration of practical schemes for aiding the unemployed, and would also have allayed much unnecessary apprehension, for, as you are aware, very wild statements were made which might have been corrected if a properly constituted authority like a state bureau of labor had been able to present the exact facts. For the purpose, then, of promptly disseminating information from time to time respecting the state of employment, and other information relative to industrial conditions, the legislature has authorized this bulletin. It will be issued quarterly at first, as I see no present need of a monthly or bi-monthly bulletin in a state like Massachusetts.

I have mentioned the various branches of our work relating to statistics of labor. Besides that, as you know, we every year publish a report on the statistics of manufactures, which is of industrial value, but which is more properly along the line of census work, about which I shall speak this afternoon.

I have been asked to give you a statement of the finances of our bureau, and upon this point I can do no better than to read from the report of our last convention the statement which I then made:

We have at our disposal a so-called "contingent fund" of \$5,000, out of which are paid the clerical expenses connected with the report on the statistics of labor. In addition to that we have an annual appropriation of \$6,500, out of which are paid the clerical expenses of the report on the statistics of manufactures.

We now have an additional appropriation of \$1,200 for a bulletin, giving us, for the entire statistical work of the bu-

reau in each year, the sum of \$12,700, not including the salaries of the chief and the first and second clerks. If those salaries be included, the total amount becomes \$18,500, not, however, including the printing of the reports. The reports of the Massachusetts Bureau are printed under the general contract for printing the state documents, and the printing is paid for out of a general appropriation. The amount I have named is at our disposal for the collection of material and preparing it for the press.

The rent of the rooms we occupy is paid by the state out of a general appropriation for rent, as, owing to lack of space in the present state house, we are provided with offices outside. Special investigations, undertaken from time to time by order of the legislature, are paid for by special appropriations. For instance the investigation relative to the effect of intemperance upon crime, pauperism, and insanity, to which I have alluded, was provided for by a special appropriation of \$5,000, which we draw upon in addition to our general appropriation.

Illinois.—Mr. Schilling: Mr. President and Fellow Delegates: I have not prepared any written statement relative to the work of the Illinois Bureau. I will simply say that the eighth biennial report has not yet been issued, although it has all been set up. By the time I get back home I suppose it will be ready for the bindery. Last May, a year ago, when we met at Washington, I stated that it was possible that the eighth biennial report of the bureau would, aside from presenting the results of an original investigation on the question of taxation, also contain certain statistics relating to the street car and gas franchises of Chicago. This latter subject was taken up, and considerable data gathered, but we finally feared that, to include it, the report would be so bulky that it would be too unhandy for one volume; so we dropped this part but will likely embody it in our next report.

The current work, or the work to be investigated for the next biennial report, is not all determined upon. The commissioners of Illinois had a meeting on the 1st of September, at which they settled some matters, but the question as to what shall be taken up next, aside from the street car and gas question, will be determined on the 28th of this month.

I really cannot say now what other subject will be determined upon. So far as the scope of our work is concerned,

there has been no change since we last met, and the statement which I made at Washington and which appears in the proceedings of our last convention embodies all that I could say now, with the exception that we have been fortunate enough to have our appropriation raised from \$6,000 to \$8,000 per annum.

The President: I understand that you make a biennial report?

Mr. Schilling: Yes, sir; but we also make an annual coal report, the compiling of which is paid for out of the regular funds appropriated for the bureau.

The President: Mr. D. R. McGinnis, secretary of the St. Paul Commercial Club, is present, and is desirous of saying a few words. I know you will be interested in what he has to say. I take pleasure in introducing Mr. McGinnis.

Mr. McGinnis: Mr. President and Gentlemen of the Convention: I am commissioned by the president and board of directors of the St. Paul Commercial Club to invite you to come over next Thursday and see our sister twin city, St. Paul. We desire to have the pleasure of tendering to you a carriage ride through the business district and the principal residence sections of our city, as well as through our park system. We should also be pleased to have the pleasure of your presence at a reception to be given in the clubrooms on Thursday evening. We shall feel very greatly honored to have you visit St. Paul, and can promise you, we trust, a pleasant and profitable time. (Applause.)

The President: On behalf of the convention, Mr. McGinnis, I most heartily accept your kind invitation.

The convention took a recess until 2 o'clock p. m.

AFTERNOON SESSION.

The convention met at two o'clock, with President Wright in the chair.

ADDRESS BY PROF. W. W. FOLWELL.

The President: The first matter on our program is a paper by Prof. W. W. Folwell of the Department of Political Economy of the University of Minnesota, on "The Relation of Statistics to the Economic Questions of the Day." I have the pleasure of introducing Professor Folwell.

Professor Folwell [speaking without notes]: Mr. President: Precious as is the time of this body, I want to say

to you how pleased I am to meet again such a body of statisticians—I like the old and short word. I had the pleasure some years ago of meeting with you, and was very much refreshed, and was confirmed in some of the views I had of your work. I hope that what I may say on this occasion may not be unprofitable.

Political economy has been in considerable disrepute for a generation, I may say. The political economist is quite commonly condemned by the newspaper men as an unprofitable servant; as a kind of necromancer and dealer in worn-out fancies, and I suppose that teachers and students of political economy must admit that there are some grounds for this reproach. Economic principles, of course, are as old as the race, but the discovery of those rules and the knowledge of them is comparatively modern. So far as we can learn from history, there was no science of political economy before the middle of the last century, and it is quite remarkable how suddenly there grew up during the last half of the eighteenth century a science of economics. It had its home in France, and was the outgrowth of a long period of philosophizing. This passion for philosophizing was not confined to economics; it spread into all things—into the social life, into religion, and especially into politics. The best picture of the conditions at this period that I know of is to be found in Taine's "Ancient Régime," and an excellent summary is contained in Guizot's "History of Civilization."

There was formed in France in the middle of the eighteenth century, with headquarters in Paris, a body who called themselves by the name, "Economistes." These "Economistes" have been nicknamed, after the title of one of their books, "Physiocrats," and the name of their system, "physiocracy," is a very good term, because it emphasizes the generative power of nature. The Mercantilists, before them, emphasized the importance of money and trade; the physiocrats came forward and said, "Money is not the first thing; Nature is the first thing." So they emphasized the generative power of nature, teaching that wealth consists alone in the produce of the soil, the waters, and the mine. Adam Smith went to France somewhere in the early 60's of the last century, and there associated for some time with the Physiocrats, and he learned a great deal from them. He learned that there was, or might be, an orderly science of political economy. Going home to Scotland, Adam Smith set to work, and in the course

of ten years produced his "Wealth of Nations," that book which Buckle declares, in exaggerated phrase, to be "the most important book that ever was written." Nevertheless the work of Adam Smith will stand at the head of all writings in political economy, if it is not entitled to a corresponding place in general literature. Adam Smith used the deductive method of the Physiocrats, and he used it very powerfully; but he did not confine himself to the deductive method. With his practical Scotch-English notions, he was not content to spin his conclusions by the rules of logic out of certain assumed postulates, but he derived or confirmed his conclusions from a mass of information so varied and so great as to be a constant source of astonishment to all persons who read his book. Now, it would have been a happy thing if the successors of Adam Smith in England and elsewhere had followed his example. But the age of philosophizing was not ended, and the successors of Adam Smith did not follow his example, either on the Continent or in England. They were carried away with the philosophizing spirit of the time, and so they adopted and used to an excessive degree the deductive method. This was particularly so in France, and the political economy of France is still a deductive political economy. The English, down to the present time, have pursued the deductive method almost exclusively. In Italy the French example has been followed, and in Germany, also, but with less uniformity and thoroughness. Now, it is this excessive use of the deductive method, this effort to spin conclusions of political economy according to the rules of logic, out of a comparatively few postulates, that has worked mischief. Some of the English political economists have gone so far as to draft a whole system from a half-dozen assumed postulates.

Now, the over-working of the deductive method has brought the science into disrepute. But one must be careful not to go to extremes. Alongside of this movement on the deductive road there began later and there has continued a movement on the inductive or "historical" road. The French, as I have suggested, have been the greatest sticklers for the exclusive use of the *a priori* method in political economy, but curiously enough it is among the French that we find the origin of a new movement, the historical movement. It was Auguste Comte, who, late in the 30's, in his "Positive Philosophy," laid the foundation for the new science of sociology, out of which a new political economy was to be one day born.

The idea of Comte was that the "positive" or scientific method should be applied to the phenomena of society, and he invented the title "Sociology" for the new sciences whose evolution he predicted. John Stuart Mill was a friend and comrade of Auguste Comte, and he was very much affected by the views of Comte, as shown in their correspondence; but Mill was too solidly grounded in the old political economy—he had been trained too thoroughly by his father in the old system—to break away from it, and he made no changes in the textbook which he published in the middle of his life.

I say it was a Frenchman who first laid out the new sociological road, but the French have made but slight advance in that direction. The Germans took up the new study with eagerness, and I suppose the reason why the "positive" method found a larger hospitality in Germany was this, that the new sciences of comparative philology and law had been cultivated from the beginning of the century. They had already learned the historical method. What do we mean by the historical method? We simply mean the inductive method of logic applied to facts extending over great spaces and through long periods of time. Now this historical method in political economy has been widely extended in Germany. The great Roscher, who has died within two years, Hildebrand, and Knies were the pioneers. In England this method has made but small advance, and it is only within the last ten or twelve years that we are learning in America to apply it. In my judgment there is great hope from the application of the historical method to political economy, and this application, let me say, of the method in any profitable degree depends upon the co-operation and the action of such gentlemen and such bodies as I see before me to-day. The historical method calls for the investigation of facts; not merely for the collection of facts but for the arrangement, tabulation, discussion, and interpretation of facts. The historical method stands, then, for knowledge, and the business of the statistician is to gather together the knowledge of things which is necessary to form a basis for reasoning about them. Statistics, then, means reasoning on the basis of knowledge, and here is the ground on which political economists and statisticians are at one. The political economist, above all things, has need of the statistician to collect, and formulate, and interpret the facts which form the foundation of his studies. On the other hand, I think I may go so far as to say that the statistician would

be quite disarmed without the assistance of the political economist. The thinker will always be in demand. It is a large part of the business of the political economist to inquire what are the things that it is necessary to investigate, and so the political economist and the statistician may work hand in hand.

As announced, the subject on which I am to speak here to-day is "The Relation of Statistics to the Economic Questions of the Day." I hardly think it necessary for me to go into much detail in regard to that. I did think it worth while that you should allow me to make these general remarks. But yet there are a few things, perhaps, that I might bring forward as they occur to me in illustration of the suggestion I have been trying to throw out, that statistics means reasoning on the basis of knowledge. What the political economist now wants and what the whole world wants is more knowledge, more daylight. We have got as far as we can go in political economy, both public and private, and in political science without larger knowledge of facts, interpreted through the statistical method. Now, in illustration of that, I might refer to the population question. We have got just as far as we can go in the population question without larger knowledge of facts. The generalization of Malthus which was thrown out at the close of the last century has been a very useful one. There is a startling amount of truth in it, and it must be admitted that it was based upon an induction. Here is a good example of the importance of correct inductions. Malthus looked over into the new world and he saw, at the suggestion of Dr. Franklin, that population was doubling every twenty-five years, and he made a hasty induction that population might under any circumstances double every twenty-five years. Of course, if that were a fact the state of things would become fearful in any of the older countries which have a dense population. It would mean misery and starvation for great multitudes. That was a hasty induction. What we are still looking for is the "principle of population," and that can be learned only from long and careful investigation of the actual facts of population in different countries at different times and under different circumstances. So far from its being true that population is always on the increase in the modern world, the latest statistics show that the population of France is rather running down. The death rate has increased and the birth rate has decreased, and French states-

men are in alarm for fear that one of these days there may not be soldiers enough in France to carry on the impending campaign against the Germans. In many of the smaller German states the population is almost stationary. What we want is no more speculation on the subject of population; we want the facts. Since the beginning of the century, it is true, we have been collecting census statistics in this and other countries, and we have already an exceedingly valuable body of information; but there is a great deal more to learn, as I am sure all will admit, and especially those who have given most attention to the subject.

Here is another illustration of the importance of statistics. Let us take the question of wages, one with which you are **most** occupied. What we want here is no more speculation; we want more and more daylight. We want no more speculation in regard to wage-funds; we want no more speculation in regard to wages as depending upon standard of living, or upon the length of the working day. What we want is the facts in regard to wages—what they are, what in amount, what in kind; who are the working people, under what circumstances are they employed, and so on. I am happy to say that we have a considerable body of those facts in existence now, and they have been used and interpreted in a very able manner; but there was never a time, it seems to me (I say this subject to correction), when we needed daylight on the subject of wages so much as now. Take, further, the question of women's wages. I see lately in the newspapers assertions that the introduction of women into productive employments is having the effect of throwing men out of employment or of reducing the wages of men. Speculation upon that question will be to little purpose. We want some information on the subject. Again, we have had plenty of speculation in regard to the effect of machinery on labor, but I expect that the investigation which Colonel Wright is now making on that question will be worth more than all the palaver from the time of Adam Smith down to the present day.

The same remark holds good in the case of the question of profit-sharing. We want no more speculation; we want knowledge. The same will apply to co-operation. For my own part, I have very considerable expectations in regard to co-operation in the future, and yet I am bound to say that my expectations have been moderated very much by an examination of the history of co-operation in this country.

I tell my good friend whom I see before me [Mr. J. S. Rankin], and who is an enthusiast on the subject of agricultural co-operation, that the co-operative man has not yet been born. I hope he may at length appear.

In regard to the matter of the difference between real and nominal wages there is a question upon which we still need more light, and yet I am happy in being able to say that the Massachusetts report of 1885 upon that point was worth more than all the other discussions we have ever had on the subject.

As another illustration of what we need in the way of knowledge, let me take the tariff. The main questions at issue in the tariff discussion are just such questions as must be settled by knowledge, if they are ever to be settled. President Cleveland comes forward and tells us that the tariff duties are always added to prices. Mr. McKinley and others on the stump say that is not the fact at all: duties are not added to prices; and there is the issue between those gentlemen. They cannot settle it. I do not believe anybody can, except on a basis of solid statistical information. We are told on the one hand that the protective duty cheapens articles, and we are told on the other hand that it makes articles dearer. This question must be settled, but it cannot be settled by speculation. The main thing I desire to lay before you is that political economists want daylight at the hands of you statisticians; but I do not think it necessary to illustrate this more in detail. There is not any branch of public economy in which this necessity is not felt, no matter what it is, whether it is transportation, or corporations, or trusts, or what not. Daylight we must have, not merely for economic reasons but for social reasons. We are living in a time now when such questions as I have referred to are not questions for the economist and for the philosopher in their closets, but they are questions for the newspaper man and for the working man in his trade-union meetings and at his work.

Now, let me say a word in regard to corporations, which I mentioned a moment ago. There is great complaint of corporations, trusts, and syndicates, and I suppose there is much ground for this complaint. There is certainly a great deal of suspicion in regard to all classes of corporations. It is constantly alleged that they are robbing the people, getting enormous returns from their enterprises without giving a fair equivalent. The only safe way, it seems to me, to treat this

question is for those persons who have the knowledge or who can get it to furnish it to the public, so that the public may know—so that everybody who runs may read—the record of those institutions. We do that with regard to our national banks. They are obliged to show their transactions quarterly or monthly, as the case may be; they are obliged to show up what they are doing, and they ought to be obliged, as I think, to show up to a greater extent than they do. I should be glad to see the Canadian system of reporting bank transactions introduced in this country for the control of our national banks. Now, what is done for the national banks should be done for all corporations, syndicates, and trusts. So far as possible they should be obliged to show up. I am sorry to say "obliged." I wish it were not necessary, and I hope it may not be necessary to do that. My judgment is, that it is the wise way and the safe way for all persons who are now enjoying franchises and are in an advantageous position on that account to show their hands to the people. That is the best way for them, and I wish they might do that voluntarily and not wait to be forced to do it. I think, on the other hand, that our laboring people would be doing wisely to show the public what they are doing in their organizations. There should be daylight, and sunshine, and publicity all around.

Before I sit down I want to make reference to a matter which you have probably entirely forgotten. I was invited to attend the meeting of this body at Des Moines, but was not able to go; so I sent my paper to the secretary, Dr. Hutchins, and I understood it was read. Whether it made any impression I do not know; but I want to bring up the matter again.

The President: The meeting that was called for Des Moines was not held.

Professor Folwell: Then I shall be all the more obliged if you will let me refer to the matter here.

The President: The convention will be pleased to hear what you have to say.

Professor Folwell: We have in the United States a considerable number and variety of statistical agencies, national, state, and municipal, and they are all doing exceedingly valuable work. Now, it seems to me that we need very much in this country some kind of a clearing-house to gather together the information emanating from these various offices, or so much of it as is of general and permanent interest, and secure its publication and diffusion. I think in the paper which I

prepared for the Des Moines meeting I went so far as to suggest the formation of a United States bureau of statistics which should take charge of the whole business and take it out of the hands of other parties. I think I am getting a little wiser as I grow older, and perhaps I would not now make such a proposition. The plan I would like to hear discussed here, and favored, if it should be thought best, is the establishment of a United States clearing-house of statistics, an institution which should collect, classify, tabulate, publish, and diffuse statistics of all sorts which are useful to the people. I think that one of the most useful functions which any government can undertake is the collection and diffusion of statistics, and my expectation is, that, one of these days, this business will be the most important function of the government,—the collection and diffusion of information which cannot be collected nor diffused by private parties. I wish this institution might be organized right away, and that our friend Colonel Wright could live long enough to see it well organized and to see the fruits of it coming in.

Now, Mr. President, I thank you for the opportunity of presenting these things. I should have been glad to speak at length, but as there is another audience waiting for me I shall have to bid you good morning.

With your permission, I will make an announcement before I leave you. President Northrop of the University of Minnesota desires me to present to you his compliments and to extend to you an invitation to visit the university. We are beginning the twenty-sixth year of our college work. Last year we had 2,200 students, and this year the registration will be about 2,500,—as fine a body of young people as you would care to look upon. If you can get over, in a body or individually, at ten o'clock in the morning, you will see as many as we can get into the present assembly-room, and, Mr. President, if it should be convenient we should be pleased to have you come over to the university and hold one of your sessions there. We will furnish you as good a room as this, which is good enough, and make you as comfortable as possible. You will certainly be most welcome. (Applause.)

The President: This very suggestive paper of Professor Folwell's, particularly some portions of it, ought to be discussed. I would like to say, for his information and the information of the gentlemen present, that his idea of a great statistical clearing-house at Washington is now under ad-

visement by the National Board of Trade, an exceedingly important and influential body, which holds a meeting every year and has its delegates from the great commercial bodies of the United States,—boards of trade, commercial clubs, chambers of commerce, etc. A year ago last January they took this matter under consideration,—the establishment by the business interests of the country, not the government,—of just such an institution as that suggested by Professor Folwell. Nothing has come of it yet, but the suggestion was received unanimously and referred to the proper committee. I presume that the business depression has interfered with the progress of the matter. It is one of the most important things that can be done, and I hope that the present convention will discuss that feature of Professor Folwell's remarks, as well as other points in his address, most freely. The question is open for debate.

Upon motion of Mr. Horne of Connecticut, the thanks of the convention were tendered to Professor Folwell for his interesting and able address.

Mr. Powers: Mr. President, may I ask you, for my own information, and in particular that it may be discussed while Professor Folwell is here, how far the bulletin which is to be issued by the general government answers this purpose of a clearing-house to which Professor Folwell alludes? So far as relates to the labor statistical reports of the United States that bulletin would really act as a generally clearing-house for them, would it not?

The President: I do not know that Professor Folwell is acquainted with the authorization of congress for the publication of a bulletin. Congress has just authorized the department of labor to issue a bulletin which shall comprehend current economic facts, and also take up the different state and foreign reports on industrial statistics and give to the country the salient features of the various reports—those things that are of national interest and importance. That would answer Professor Folwell's suggestion only to a certain extent, I suppose, but it would be an entering wedge.

Mr. Simmerman: It occurs to me that the difficulty in organizing such an institution as that suggested would be to give to each and every interest impartial consideration. For instance, it is suggested that the National Board of Trade contemplates organizing something of that character. Now, the natural inference that presents itself to my mind is, that

such an institution would deal simply with commercial interests. On the other hand, if the office should be organized under the direction of the National Department of Labor, there is the danger that it would devote itself to the interests of labor.

The President: The law providing for a bulletin says that it shall publish "condensations of state and foreign labor reports, facts as to the conditions of employment, and such other facts as may be deemed of value to the industrial interests of the country."

Mr. Simmerman: The difficulty that arises in my mind is as to whether we could get such an institution as that suggested by the National Board of Trade to deal impartially with all sides of the industrial question. That institution would owe its life to and be under the direction of the commercial interests of the country. Now, can you conceive of an institution so organized that would present the facts relating to organized labor and give their side with the same impartiality that it would present the facts regarding the commercial interests of the country? Suppose such an office were under the direction of the working people. Is it possible to conceive that it would give the commercial side with the same impartiality? May it not be better, after all, to depend upon our separate state offices until a new condition arises which will make it possible for us to work through one great central office? These are merely some of the thoughts that have occurred to me.

Mr. Powers: I think that the question Mr. Simmerman propounds should be met in the spirit in which we ask our bureaus to be treated. In the earliest days of our bureaus, when the laboring men asked for the collection of facts, a great many business men were afraid, that, if we considered those facts from the standpoint of the workingmen, their interests would suffer; and, in the same spirit, too many of the men belonging to what we call the party of labor or interested in organized labor were afraid, that, unless we had at the head of our offices some one who belonged to their party, the facts when gathered would in some way or other be twisted against them. I am glad to say that that era with reference to the bureaus is passing away, and I think all of the older commissioners will say the same thing. We do not now have, when we are dealing either with the working man or the employer, this constant suspicion, that, in some way, we are going to

twist our facts in the interest of one party or the other. Men are waking up to the view, that, more and more, facts are for the interest of everybody; and so it must be with a clearing-house such as that suggested. We must recognize, that, if such an office is established, it will be like our bureaus. It will be human in its management, and thus within certain lines fallible. It will make mistakes; but with public sentiment behind it, it will carry forward along impartial lines the work which has been so well begun by our bureaus, and it will strengthen our bureaus individually, in that it will aid in lifting them out of the suspicion which in certain sections still linger. Our friend Lacy of North Carolina told us this morning something of the difficulties in a community like the South in securing data. Men are afraid to give information. The more this spirit of collecting the widest possible information and diffusing it is encouraged, the greater advance we shall all make in our individual work. The publication of information by such an office as that suggested would aid every one engaged in this work in securing facts for his own use, because people, in my opinion, will see more and more the value of such information. When they see that others are giving information they will be ready to give it; and with that information, as the Governor said this morning, there will come a better feeling everywhere, and that better feeling will aid us in getting still more information.

Mr. Simmerman: I can readily conceive of what importance an office of that kind would be to me; for instance, if we could get through it reports from the various commercial bodies, showing what they are doing, etc.

The President: The suggestion before the National Board of Trade was to establish an office at Washington, the particular duty of which should be to collect and print in compact form facts that had been collected by different governments, home and foreign, so that valuable statistics which are now kept from the public on account of the small number of volumes published by France, England, and some other countries could be made available to the American public in all directions. The office would bring together all kinds of official facts which might be of general interest. It would have no other function at all; it would not make investigations, but simply furnish in concrete form the results of the world's endeavor to collect facts.

Mr. Lacy: I suppose, Mr. President, there could be only one sentiment in this body as to the advisability of establishing such an office as that suggested. It would be a good thing. It would help my section of the country and help me in my work there. Now, would it not be beneficial if this convention should pass resolutions, to be forwarded to the National Board of Trade, to the effect that the statisticians composing this body are a unit in indorsing and recommending such a clearing-house?

The President: I should think that would be advisable, and I would suggest to the gentleman from North Carolina (Mr. Lacy) that he prepare a resolution and present it when we reach the consideration of general business.

Mr. Lacy: I will do so.

ADDRESS BY HON. HORACE G. WADLIN.

The President: The next feature of our program is an address by Hon. Horace G. Wadlin, chief of the Massachusetts Bureau of Statistics of Labor, on "Methods Pursued by the Massachusetts Bureau in Taking the Present Industrial Census of that State."

Mr. Wadlin: Mr. President and Gentlemen: I am announced, as the president has stated, to give you an account of the methods pursued by my bureau in taking the present industrial census of the State of Massachusetts. I shall interpret the term "industrial census" rather broadly, and speak to you of what we are doing through the census with respect to any matter which is of industrial interest, not restricting it to the census of manufactures simply but applying it to all topics which bear on industrial relations with which we deal under our census system. I shall speak quite informally, and if you wish to interrupt me at any time, or to ask me questions when I have finished, I shall be glad to have you do so, because what I desire to do is to explain our methods fully, as I think these will be of some interest to you in the performance of your own work.

We have in Massachusetts what I do not hesitate to pronounce as well-organized machinery for the collection of facts relating to industrial questions as exists anywhere in the world. That is a broad statement, but I feel justified in making it because Massachusetts possesses, and has possessed for some time, a decennial census system, which is administered by a permanent bureau. Most censuses are taken by the aid of official machinery which is not permanent, but which is temporarily organized for the purpose of doing the

work at that moment in hand. In order to explain what we propose to do in the present industrial census I shall first outline what we have previously done, inasmuch as our present methods are the result of many years' experience. From the earliest years of its existence as an independent commonwealth Massachusetts has taken a census under the provisions of its constitution and statutes made in conformity therewith. This census has for its prime object the enumeration of the people—and that was all that was attempted at first—for the purpose of redistricting the state every ten years for the election of senators and representatives. Something like fifty years ago,—in 1837, I think,—other things were taken on; for example, the collection of information relative to the products of the state, both agricultural and manufacturing. These facts were rather crudely collected, not very well assimilated, and brought together under some such general statement, as that, in the town of A, certain things were raised or manufactured, such things being specified; in the town of B certain other things were produced, and those were also specified, no uniform method of presentation being observed. Besides this incomplete county statements were given, and finally a summary for the state, also more or less incomplete. All this was very imperfect and very inaccurate. Gradually other and better methods were adopted. Previous to 1875 the census had been taken in its various branches under the charge of the secretary of the commonwealth, but in that year, when my predecessor, Colonel Wright, now president of this convention, took charge of the Bureau of Statistics of Labor, which had become a well-established statistical office, the administration of the census was by law transferred to the bureau. At that time very much better methods were adopted for securing statistics of agriculture and manufactures, and other industrial statistics, and each of these subjects was made a separate and distinct branch of the work; yet the collection of data still remained in the hands of the enumerators. For example, when the enumerators collected the facts relative to the population they also secured the facts relative to agriculture and manufactures. Ten years later, in 1885, it was felt that the obtaining of accurate statistics of production, both in agriculture and in manufactures, was of such importance that it merited special attention. Therefore, instead of collecting information by means of the ordinary enumerator, he was

simply directed, when he made his canvass in May for the purpose of enumerating the population, so far as relates to agriculture, to leave with every farmer a schedule relating to farm products, etc., which schedule the farmer was expected to fill, that it might be taken up by a special agent in the fall, at which time the crops for the year would be garnered and the facts fresh and complete in the farmer's mind. The manufacturers were reached through the mails. A very complete schedule was devised, containing more than 100 inquiries. This schedule was sent to every manufacturer whose name had previously been returned by the enumerators, and the manufacturer was expected to fill the schedule and return it to the bureau by mail.

I may say that in 1885 the best results were reached that had up to that time been possible, but the experience of that year showed two or three defects in the plan which I have outlined. It showed, in the first place, to speak first of the production of the farms, that very few farmers would fill the schedule. Some would read it; others would manifest some slight interest in it; others would lay it aside with the intention of filling it at some period in the future which never arrived; others attempted to fill it, but so imperfectly that when the special agent called in the fall he had either to enter the replies *de novo* or make such important corrections in the few schedules which had been filled by the farmer that the advance distribution of schedules to the farmers was found to be of no practical value. And again, as to the statistics of manufactures, it was found, that, while there were about 23,000 establishments in the state, only a part of the manufacturers would fill the schedules and return them by mail. It was to them a novelty; it was elaborate in its form, containing a large number of questions, all of them of great importance,—all of great importance to the manufacturer himself, if he could have been brought to understand them. But as I say, it was an innovation, and besides this the schedule appeared to be quite complex. Manufacturers are generally busy men. If interested in the matter the recipient would glance at the schedule, saying to himself: "Yes, that is a good thing, and I will fill out the replies." He would then put it on his desk until the time should come when he would have leisure to fill it; but that time very seldom came. Many regarded some of the questions as inquisitorial; others considered them of no importance, and many of the smaller

manufacturers thought that much of so complete a schedule could not apply to them. For these and other similar reasons only a small proportion of the schedules were at once returned by mail. Then letters were sent to delinquents asking that the schedules be filled and returned, and quite a number of manufacturers responded. A second notice was sent out, and that brought a few more. Then a third and more peremptory request mailed, and a few more schedules came in; and, finally, the collection was completed by sending special agents to those who still remained delinquent. In the long run they were all secured, but the method originally contemplated was found to be defective in the points I have named.

I have, I think, made it plain that the present census system of Massachusetts is an outgrowth of many years' experience. This experience has served to give us a basis for future work, and has also shown us some of the difficulties to be encountered in making inquiries so broad. Before the results of the census of manufactures of 1885 were tabulated it was found that an industrial census taken once in ten years was liable to be misleading, owing to abnormal conditions that might exist in the census year. Such a census would be used as a basis of comparison or deduction for the succeeding ten years; yet it might be taken in a year that for exceptional reasons was not adapted to show fairly the condition of affairs in the commonwealth. A business depression might exist, as was the case in 1885 in certain industries. Therefore Colonel Wright deemed it wise to suggest to the legislature that instead of taking an industrial census once in ten years annual statistics covering certain leading points should be taken. This suggestion was favorably received by Governor Robinson, at that time in office, and was supported by some of the principal manufacturers, and the legislature in 1886, the year following the decennial census year, authorized the collection of annual statistics of manufactures as part of the routine work of the bureau, and the plan has since been carried out by us. At its inception the intention was to abandon the decennial census of manufactures and rely entirely upon the annual statistics, and the law contemplated that the inquiries should go to every manufacturer in the commonwealth, thus making the annual inquiry practically an annual census of manufactures. Before the plan of operation was fully matured, however, Colonel Wright was

called to Washington and I became connected with the bureau as his successor. The first schedules, I think, were sent out before Colonel Wright resigned, but they were collected and tabulated under my direction. It has been found impossible to take an annual census of manufactures, that is to say, covering every establishment without regard to size. There is not sufficient time within the period of twelve months, and moreover such a census would far exceed in cost the amount of our annual appropriation. We have found, however, that if the prime purpose of such an inquiry is to show the conditions surrounding our industries, the work may be as conclusively done by means of inquiries replied to by establishments covering perhaps eighty per cent of the capital and product as it could be by a complete census. This has been made clear by careful comparisons made between our annual statistics and the returns of a complete census, and the evidence upon this point may be seen in our reports. We, of course, do not obtain census totals of either of the elements entering into production, but we do obtain facts which show the trend of business from year to year, whether up or down, as accurately as it could be shown by a response from every establishment, small as well as large; so that, in practice, the annual inquiry with respect to manufactures in Massachusetts, in which we receive 4,000 schedules from our leading industrial establishments made on exactly the same lines from year to year, identical establishments being compared for a series of years, is of more scientific value than an ordinary census of manufactures, in which schedules are received from a far greater number of concerns, many of whom have never made any prior return. The annual return, I repeat, is made upon the same general basis by identical establishments in each year compared, and therefore the basis of comparison is exactly the same from year to year. Variations of method, which too often vitiate statistical comparisons, are therefore as far as possible eliminated.

In 1895 we have again reached the limit of a decennial census period, but instead of abandoning the decennial census of manufactures, as was at first contemplated, that is still maintained; hence the Massachusetts census system now includes the decennial enumeration, covering all the manufacturing establishments in the commonwealth, and the annual inquiry covering the larger establishments and used as a basis of comparison from year to year.

So much for our system. I now speak of certain changes which have been made in our methods. The industrial statistics which we collect through the census are of three kinds. First, we secure certain personal facts which apply to every citizen of the commonwealth, such as information relative to his occupation and to the duration or continuity of his employment. Such information, although industrial in its character, falls properly under the classification of social statistics, and is collected by the enumerators who enumerate the population in May. These enumerators also return to the office a list of all the farmers and all the manufacturers in their respective enumeration districts, these districts each consisting of a small, accurately bounded territory, containing approximately 3,000 people, about 1,000 enumerators being required for the state.

The industrial facts relating to agriculture which are afterward collected comprise full information as to the value of farm property,—which may be termed agricultural plant, taking to the farmer the place which the factory occupies to the manufacturer,—the amount of capital invested in agriculture, value of product, number employed, wages paid, etc. These industrial statistics of agriculture will be collected under our present system, in November or December, after the crops are in, and for the same reason that that time of year was chosen in 1885; but our plan does not contemplate leaving the schedule in advance, as in 1885. We shall, on the contrary, employ a carefully selected force of special agents who will be sent into every district, each man working within exclusive territory, obtaining the facts directly from the farmers, and entering them in due form on the schedules.

Formerly the manufacturers were asked to make up their returns for the ending in May, the month in which the population is enumerated, but as we now have an annual inquiry relative to manufactures which ends with the thirty-first day of December, the decennial census relating to manufactures will be collected at the close of the year, so as to disclose the conditions on the 31st of December. Therefore that branch of our work will begin after the thirty-first day of January next, and will be conducted by special agents working in accurately bounded districts and equipped with the proper schedules. I have before stated that the names of manufacturers and farmers were to be returned by the enumerators of the population. Their lists of farmers will be ac-

cepted without revision, but the names of manufacturers will be compared with Bradstreet's lists, with directories wherever they are in existence, and with our own list of manufacturers which we have made up in the course of our annual work, covering, as I have said, all the larger firms, so that there can be no possible omission.

Now, before I go further, let me explain the manner in which the enumerators and agents are selected for the performance of this work. This year there has been a new departure in Massachusetts with reference to the selection of enumerators. Massachusetts is a compact state; it can be very accurately divided, on the basis of our township lines, into enumeration districts, the cities being divided on the basis of wards, and the wards being subdivided into precincts, if necessary, so that each enumerator shall cover approximately 3,000 persons, requiring altogether about 1,000 enumerators, who must be selected and appointed by the Chief of the Bureau. Some of you are aware of the methods which are sometimes followed in the appointment of subordinate civil officers who are selected to perform minor political or public duties. There are not infrequently abuses in connection with such appointments, and of course census work has not been entirely free from such abuses. My own bureau in Massachusetts, in its general work, has been for many years entirely free from political dictation in such appointments, yet it is impossible for the chief of such an office to select and equip 1,000 men unaided. He cannot possibly know all those men personally, however good his intentions may be. He must take somebody's advice. Some years ago—I think in the census of 1885—my predecessor incorporated in the census law, afterward adopted by the legislature, a provision that lists of enumerators selected by the chief of the bureau should be subjected to the mayor and aldermen in cities and to the selectmen in towns for their approval. That was for the purpose of enlisting the co-operation of the local authorities in the appointment of enumerators; for the local interest in the census, as you are aware, is very great. You know how intense is the interest of rival cities that their position in the census shall be fully and accurately shown. This local pride always shows itself in criticism of census work. It was therefore thought best that the co-operation of the local authorities should be invited and secured, to the end that, by requiring their approval of the appointments,

only fit men might be selected. When it devolved upon me to draft the statute for the present census, I thought, that, if the local authorities were to approve the nominations, they might as well make them. I could not see any especial gain in the chief taking the initiative if the approval of the local authorities was essential, and felt that they might as well make them in the first place; provided, of course, a check was placed on unfit nominations. For in Massachusetts, as elsewhere, it is unfortunately true that there are local authorities—not, of course, numerous, but there are some—who are not sufficiently patriotic to nominate good men regardless of political or personal considerations, and in order to prevent unfit men being foisted upon the bureau another provision was put into the census law. My experience has convinced me that the civil service principle is a good one in its general application, and yet it was manifestly impossible, for such work as the enumerators were to perform (temporary in its nature and not highly paid, especially within the brief period at our command), to subject each applicant to the usual civil service examinations. I believed, however, that, as we had a civil service commission in Massachusetts, well established and acting under state law, it would be well to recognize that commission in the selection of the enumerators; therefore, while the local authorities might nominate twice as many men as were required for the performance of the work in their respective municipalities, it was also provided that the men thus named to the chief for consideration should be subject to a test under the approval of the civil service commission. That provision was put into the bill, it was submitted to the proper legislative committee, adopted without objection, and became a part of the law. I then districted the state, and notified each municipal board as to the number of men that would be required and as to their duty with respect to nominations. These officers nominated to me twice as many men as I needed. The test of capacity devised was not a scholastic one, not one requiring any special ability, but one adapted to the express purpose of determining the fitness of the men for doing the particular work we had in hand. This work is performed by the enumerator under special instructions which indicate explicitly just what we wish done. Each applicant or nominee was provided with a copy of these instructions, sent to him two weeks before he was expected to meet the examiner, and he was told to study them in prepara-

tion for the test of fitness. On the day appointed for the examination, the state being divided into examination districts, and an examiner being sent into that territory, the applicants were given a certain number of hypothetical facts relating to a family, in the form of a story, which they were required to then and there enter upon schedules similar to the census schedules in accordance with the instructions which they had received,—just such facts as the lady of the house would give the enumerators when making the actual enumeration. That was the test. Besides that, each applicant was asked to make a statement in writing showing his previous business experience, his habits with respect to the use of intoxicating liquors, whether he had ever been convicted of any offense, his age, and certain other personal facts that tended to show the character of the applicant. That method of testing a man's fitness for our work gave most admirable results. In the first place, there were about 2,000 men nominated. About five hundred dropped out at once; that is to say, the man who thought he was simply to have a "soft snap" but who felt himself unqualified did not care to enter into the contest. Of the others, the best were appointed, without the influence of personal considerations at all, except that other things being equal veteran soldiers were given preference in accordance with the spirit of our civil service law. Each applicant, the names being unknown to the markers, was graded by number upon the results shown in the test, and the men were appointed in order of merit, beginning at the top of the list and proceeding downward until a sufficient number were secured. By that method I obtained the best men, so far as we could determine their respective merit, and the office was relieved from political pressure during the time we were burdened with work in preparation for the census. As soon as it was known that there was to be an impartial test everybody let us alone politically. Besides this, and not of least importance, every enumerator had been able to study his instructions some four weeks before he was required to begin his actual work; and in the examination he had had the important points of the schedules brought forcibly to his mind, so that when he began his work he was not entirely unprepared, as census enumerators usually are, but he knew quite well what he was expected to do, and that, of course, increased his efficiency. The whole plan of appointment has worked very satisfactorily. It has increased the cost of the work undoubtedly, because the

better your men and the more conscientious they are the more care they will use in the performance of their duties, and this usually means that somewhat more time will be consumed in it.

Now that is the way the thousand enumerators that took the population in May were selected. The industrial facts which they were expected to collect were the facts showing in great detail the occupations of the people and full information as to the extent of employment during the entire census year, for every person engaged in gainful occupations. That feature was first incorporated in the census in 1885. It has been extended under the present census so as to show employment and non-employment month by month, and just what employment if any is followed by each person when unemployed in his usual occupation. The results of this inquiry will include the fullest and most exact data ever secured relative to non-employment. All information, of whatever sort, for each person is entered on a card, the facts relating to a male being entered on a blue card; those relating to a female on a red card, while the facts for the family as a whole are shown on a yellow card; so that we have what may be termed a complete card catalogue of the population of Massachusetts under these three different heads. Besides that, as previously stated, the enumerator returns to the office a list of the firms and farmers in his enumeration district. These farmers will be visited in November by specially selected agents, many of whom have been enumerators in May. Respecting such agents, therefore, we have not only the civil service test but the test of actual work in the field. We shall need but a comparatively small number of men for the work in November, and we shall take the best men from among those who have worked for us in May. In 1885 we employed 250 men in this branch of the work. I have not yet determined how many we shall need this year, but I think not more than fifty or sixty, my object being to employ a smaller number of men of greater general efficiency. When they complete the collection of statistics relative to agriculture it will be about time to take up the work relative to manufactures, and the same agents who have been over the state, becoming familiar with the ground and acquiring increased efficiency, will be commissioned to take up all schedules relating to manufactures which have not previously been received by mail. These schedules are mailed to every manufacturer in

the state, being practically the same as those we use in collecting our annual statistics, and all the schedules which come in by mail will be so much gained, and, as I have explained, the remainder will be collected by the agents, who by that time will have completed the work on agriculture.

The manufactures schedule, copies of which I have here and will submit for your examination, instead of containing 100 inquiries, as formerly, has, under the experience of the office, been reduced to four pages, and the questions practically reduced to eleven. In 1885 we had a very extensive schedule. It embraced many very valuable questions, and each question was very elaborately explained, so that those who were required to reply might understand exactly what was expected. It was, however, somewhat too elaborate and diffuse. Experience has shown that it is much better to reduce the schedule to comparatively small limits, putting the inquiries upon a single page [indicating] and a brief explanation on another, and if any further explanation supplying it through a special agent who visits the manufacturer personally. The questions asked the manufacturer relate to the number of partners or stockholders in each establishment; the amount of capital invested; the value of stock used; the value of goods made or work done; the number of persons employed by sexes, for each month of the year; the total amount paid in wages, exclusive of salaries of agents, manager, book-keepers, and other persons of this class; classified weekly wages, by sexes; the proportion of business done during the year as compared with the greatest capacity for production of the establishment, and the number of days the establishment was in operation during the year. Those are subjects which the schedule covers, and it seems to me those are practically all that it is essential to cover in a census of manufactures, and few if any others will be added. The method of replying to the questions is briefly explained on the second page of the schedule so as to bring out any points of special importance.

Having thus described our method of collecting information, I pass to a description of the system in use in the office for putting the material into tabular form.

The Massachusetts Bureau of Statistics of Labor was created in 1869. From that year until 1875, when the bureau was first authorized to take the census of the commonwealth, the methods of work in the office may be characterized as

"old style;" that is, all the computations were done by hand, and all aggregations were secured by copying figures from blanks or schedules into columns and adding the same, we may say, by hand. In 1875, to facilitate the census work, self-counting tally sheets were introduced and also a printed device, of a similar nature, for the aggregation of figures. This latter sheet was used in aggregating the statistics of manufacture, agriculture, etc., while the self-counting tally sheet was used for the statistics of population. It may be stated here that the form of schedule used in the Massachusetts state census of 1875, known as the family schedule, was identical in plan with the schedule used by the United States in 1890. In Massachusetts, however, this form of schedule has been abandoned in favor of a compact legible card for each individual, this being successfully used in the state censuses of 1885 and 1895. In 1885 a card printed in blue was used for males and a card printed in red for females. In 1895, as I have said, a yellow card is used for families, a blue card for males, and a red card for females, all printed in black ink.

The form of schedule has had considerable to do with the development of the methods of tabulation and aggregation now in use in the bureau. In 1882 machinery was first used in the bureau for the aggregation of figures. As the figures could be aggregated much more expeditiously by taking them from the schedules and transferring them to the machinery which gave the total, the old plan of copying the figures into columns was naturally discontinued, and only the results were taken from the machinery. In 1883 the Electric Adding Machine, which has been in use in the bureau since that time, was invented, and the census of 1885 and the reports on the annual statistics of manufactures for 1886 up to the present time have been tabulated by the use of that machine; the actual time required in aggregation in order to supply the figures for the entire volume rarely covering more than one month. In 1885 an automatic counting machine (by counting I mean registering one at a time to distinguish from the addition of large numbers) was used successfully in the tabulation of the census returns for population. These returns were made upon cards eleven inches long and four inches wide, printed only upon one side of the card. In 1895 the card was made exactly one-half the size, or five and one-half by four, being printed upon both sides. This gave the same

space for recording answers but reduced the space required for packing one-half. It also brought about certain changes in the method of tabulation, and the improved Automatic Counting Machine, now in use, is the natural outcome.

It is not necessary here to refer in detail to the large number of peculiar schedules and cards devised for securing the information required by the bureau, nor to the various patented machines and copyrighted devices specially devised and used for the performance of special work. My present object is to refer to two machines and one copyrighted device now in use in the bureau with which all forms of statistical work, whether required by the bureau itself, or by the census and industrial statistics of the state, can be expeditiously, accurately, and economically performed.

I have no sympathy with the excessive application of machine methods which reduce the application of brain to the minimum, and remove from the educated and thoughtful clerk the opportunity to use intelligence in the correction of error; for that reason I believe in using the legible census card in tabulation; that is, I believe that a card written by the enumerator or by the person who collects the data may be passed through the hands of the clerks and be subject to their constant scrutiny so that at any time in the course of the work the intelligent mind can correct manifest errors, for in statistics it is assuredly better to correct an error late than never to correct it at all. The machines referred to as being the ones which I shall consider somewhat at length, are the Electric Writing Machine and the Automatic Counting Machine. The copyrighted device is known as the chip system.

The Electric Writing Machine is operated by sliding keys designated as units, tens, hundreds, thousands, tens of thousands, hundreds of thousands, millions, etc. To add to 999,999 requires a six-dial machine; to increase the capacity to 999,999,999 requires a nine-dial machine; and by the use of an automatic device of small expense, one of the dials may be dispensed with, thus reducing the cost. The method of procedure is virtually to write the figures upon the machine without adding; these figures are compared with the schedule from which they are taken and as soon as the writing upon the machine is found to be correct the addition is made. The machine is run by three Leclanché batteries, which when charged will supply the necessary power to run the machine

seven hours a day for a period of six months. The batteries may then be recharged at slight expense and are good for another six months. This machine can be used for all forms of addition and also for multiplication in the proving of percentages. We have tried several of the percentage machines, and have finally settled down to the plan of figuring the percentage by long division and then proving the same by multiplication.

The Automatic Counting Machine is a simple box having a face measuring about four by four and about four inches deep. It has four registers or travelers moving from left to right, indicating units, tens, hundreds, and thousands. The capacity of the machine is therefore 9,999. These counting machines are used in what are called sorters; these sorters or boxes are composed of twelve compartments, each compartment being four inches wide by eleven inches high, and about eleven and one-half inches deep. The counting machine is held in place in these sorters by a spring which bears against the side of the compartment and holds the machine firmly. It will be seen that twelve counting machines can be used in each sorter. Used in connection with the counting machine is an adjustable door about four inches square, held in place by a spring, having metal bars upon the front which serve to hold in place the door-cards, either written or printed, which indicate which schedules are to be placed in a certain box or compartment of the sorter. These door-cards form the scheme of tabulation. It has been found in practice that a clerk can run advantageously three sorters placed one above the other, and containing thirty-six counting machines; that is, she is able to carry readily in her mind thirty-six different points of tabulation. This is not the limit of the system, for, by correlation, by the interlocking of one class of statistics with another, the number of points to be carried in the mind is increased largely. As a technical distinction, we call it tabulating in the bureau, when a card or schedule is placed in a particular box and the fact recorded upon the automatic counting machine. If the cards are not placed in the box before the fact is recorded after an inspection of the card or schedule, which are simply turned over in the progress of the work, that process is called tallying. When we come to tallying the capacity of the machine can be largely increased, for two counting machines can be used in each compartment; this gives us twenty-four to each sorter or a

total of seventy-two to the three sorters which can be advantageously used by a clerk. This gives seventy-two different points which can be recorded at one handling of the schedules. I have here photographs of these machines which may be examined at your leisure after I conclude.

It will be noticed, that, if twelve clerks were at work with these counting machines, each having three sorters and thirty-six machines, that if a class of work came up requiring that each clerk should have but twelve machines, that the thirty-six sorters could be separated and thirty-six different clerks supplied with twelve machines each without any expenditure for new material. It is this mobility of the system that renders it particularly applicable for use in bureau work.

The speed in tabulation has been increased from year to year by the adoption of these new devices. In 1875, by the use of a self-counting tally sheet, an average of 2,500 points per day was secured, the maximum amount reached by the best clerks being 6,000. In 1885 the general average was pushed forward to 5,000 per day, the maximum being 10,000; in 1895 the average is 10,500 points per day for each clerk, the maximum so far attained being 17,000 points for seven hours' work by one clerk. Each one of these points means a recorded fact drawn from the census cards.

The expense of the machines I have described is not excessive. With one of these machines with thirty-six counters capable of being converted into three machines of twelve counters each without expense, all the tabulations required in the report of the average bureau could easily be tabulated.

The copyrighted device is the chip. This is a printed card about two and one-fourth inches square, different colors indicating different denominations, and the digits from one to nine being shown by permanent figures printed both upon the front and back of the card. The chip system as now used in the bureau covers nine divisions, as follows:

- Units—Red card; digits printed in red.
- Tens—Cream card; digits printed in red.
- Hundreds—Blue card; digits printed in red.
- Thousands—Pink card; digits printed in blue.
- Tens of thousands—Yellow card; digits printed in blue.
- Hundreds of thousands—Green card; digits printed in blue.
- Millions—Slate card; digits printed in black.
- Tens of millions—White card; digits printed in black.
- Hundreds of millions—Melon card; digits printed in black.

The reason for printing the digits in different colors is so that in case of persons who may be afflicted with any degree of color blindness or who may be unable to distinguish the difference between colors in certain lights, these variations in the color of the ink used for printing the digits prevents confounding the chips. For instance a red card, indicating units, cannot be confounded with the pink indicating thousands, in case the unit chip has the digits printed in red and the thousands chip has the digits printed in blue.

In the same way the cream chip, indicating tens, cannot be confounded with the white chip indicating tens of millions, for the tens chip has the digits printed in red while the tens of millions chip has the digits printed in black.

These chips are contained in a case divided into eighty-one compartments and raised at an angle of about thirty-three degrees. The chips are taken from the case in the same manner that a compositor selects type from his type case. For instance, if a clerk wishes to register 2,965 by the chip system, she takes from the case a pink 2 and a blue 9, a cream 6 and a red 5; before throwing these chips into the box or compartment in which they belong, she compares them with the number upon the schedule or card that she desires to add. It becomes second nature with a clerk to know which denominations are meant by the different colors, and it is found in actual practice that addition done by the chip system is much more accurate than that performed by the transferring of figures into columns. Such errors as writing 6,785 in a column when 8,567 was the number desired are prevented by the chip system.

The chip system is used for addition but its particular value and applicability is in the addition of a large number of columns, each containing comparatively small numbers. It is used in connection with the same sorters that have been described as containing the counting machines, and the same door-cards or label holders are used to indicate which box the chip should be thrown into. I will give one illustration of its use: We will suppose that we are aggregating the quantity and value of agricultural products as drawn from a state census. We have seen that thirty-six different products can be tabulated at one handling of the schedules. We can consider that the red, cream, blue, and pink chips mean units, tens, hundreds, and thousands of value. We can also consider that the yellow, green, slate, white, and melon chips

mean units, tens, hundreds, thousands, and tens of thousands of quantity. We can throw the chips indicating quantity and value into the same box, for they can be sorted during the process of counting and the values will all come together and the quantities all come together. On the counting box, which is placed in each compartment, we can register each instance where a farmer raised a particular crop. If there are any of the thirty-six products being tabulated that he does not raise, to indicate that fact we can throw a plain white chip or slip of paper into that box to indicate that fact. It will be thus seen that we secure four points for each compartment, or a total of 144 points in the thirty-six compartments at one handling of the schedules. It has been proven by actual work that it costs only one-third as much to aggregate statistics of agriculture by the chip system as it does by the old plan of transferring the numbers to columns. In addition, we have discovered, that, by use of a properly constructed result slip, showing each product for each town, by simply sorting the result slips, we can secure presentations for each product of the cities and towns in their proper order, no considerable labor being required. On the old plan of work (that is by writing into columns and adding same), after securing the presentation by towns in order to secure the presentation by products, it would have been necessary to do the work all over again, with the consequent opportunities and probabilities of error in the second transcription.

In conclusion, allow me to say that the plan of the Massachusetts Bureau of Statistics of Labor has been to make all its investigations exhaustive. The original annual appropriation granted the bureau in 1869 has never been increased, although additional money was allowed the bureau when the publication of the annual statistics of manufactures was commenced. Despite the immense increase in the amount of work required to be done in the office, the appropriations allowed have been sufficient to pay for that work; but they would not have been had not the most improved appliances for tabulation and aggregation been adopted and used successfully.

With the exception of Thacher's Percentage Machine and the Comptometer, all the patented machines and printed devices used in connection therewith in use in the office since 1875, have been invented and successfully applied to the bu-

reau and census work by the present chief clerk, Mr. Charles F. Pidgin, who has been connected with the office since 1873.

Perhaps a few words in reference to the penalty which our legislature imposes for refusals to furnish information may be of interest. As you are perhaps aware, all of our facts in the census are collected under penalty. I consider the penalty of value as a moral force, but it is of no other value, for it has never been the practice of the bureau to attempt to enforce the penalty, and I trust it never will be necessary to change that practice. The fact that the penalty exists is of assistance, in that it shows the intention of the legislature that the information shall be furnished; but it has never been necessary to resort to the law in order to secure returns, and I do not apprehend that it ever will be. We have always been able finally to secure replies voluntarily, but I would rather have 1,000 schedules which are thus filled by the persons from whom we are seeking information than to have 4,000 collected at the point of the bayonet. I went into this subject quite fully at our last convention, you will remember, and need only allude to it here.

Mr. Clark: How are the enumerators paid?

Mr. Wadlin: They are paid by the day. In 1885 they were paid two dollars and a half for ten hours' work. In the present census they are paid three dollars for nine hours' work. The enumerator is required to swear that the service has been actually performed. He may work eighteen hours per day if he desires to do so, and overtime is paid for at the same rate. The enumerators are paid out of a special appropriation for the decennial census, which so far is \$200,000 with a possible increase later on. The legislature is generous in that matter. We have never had any difficulty in getting appropriations to carry on the census work. The first appropriation I asked for was \$200,000. No one can guarantee just how much work of that character will cost. We exercise the greatest possible economy, but of course such work is expensive. The cost of the enumeration—that is, the field work—is inevitably large, and cannot be determined beforehand. If we need an additional appropriation I have no doubt we shall receive it.

Mr. Clark: In gathering your annual statistics you have regularly employed men, but you send out special agents in the performance of your census work, do you not?

Mr. Wadlin: In the work of gathering the annual industrial statistics our plan is this: The law contemplates that it shall be done by mail. About the 15th of December we send out the schedules, and about fifty per cent of these are returned by mail. Then we send out an additional postal card notice that the schedule has not been received as contemplated by law, and that it will be expected by a given date, and perhaps we receive ten per cent more in reply. Then we send out three or four special agents, assigned to specified territory, and they secure the delinquent schedules. The special agents are usually paid for this work three dollars per day and expenses. Of course, for the census work, we need a large number of people in order to get it done promptly.

Mr. Powers: How much do you estimate will be the cost of collecting the agricultural statistics of Massachusetts this year?

Mr. Wadlin: I have not made any estimate. It will cost us, I have no doubt, at least what it cost in 1885. It cost in that year about fifty cents per schedule, including compensation of the agents and their traveling expenses. I may say that the usual compensation allowed in the United States census of 1890 was fifteen cents for each schedule. The enumerator was paid fifteen cents for asking as many questions and recording as many answers as we paid fifty cents for. He did his work in the spring, when it was to the farmer's advantage to get away from him as quickly as possible, and of course it was for the enumerator's interest also to get away, because he was insufficiently paid, the result inevitably being in many cases a very defective schedule.

Mr. Powers: How closely will the acreage of farms in Massachusetts, as shown by the state census, approximate the acreage exhibited by the United States census?

Mr. Wadlin: We shall exceed it in every particular. The United States census of agriculture in Massachusetts bears no comparison, in completeness, with the state census, owing, principally, to the incompleteness of enumeration under the circumstances I have outlined. The United States census has sometimes drawn an arbitrary line as to what shall be called a farm, but in our census we make no such distinction. Besides this, our method of taking the census is adopted to secure results more nearly accurate. We gather our facts

by specially selected agents, who are frequently interested in the agricultural prosperity of the state, and who are therefore actuated not only by the hope of compensation but by a patriotic pride in securing correct results, and we collect our facts at a time when they can best be determined, the crops having been recently harvested.

Mr. Powers: I do not ask for this information through selfish motives. Of course, we are all interested in studying the statistics we ourselves gather when brought into comparison with those of the census, and in this work of our tax investigation to which I have referred one of the features I wish to present relates to the taxation of farms, as I mentioned this morning. In investigating the farm returns of the United States census for the State of Minnesota I find that the acreage of farms given is only about sixty per cent of the acreage actually subject to taxation, and I find that, in six agricultural counties of Minnesota, counties that are practically free from wild land or railroad land, the agricultural returns of the census give only eighty per cent of the taxable land. I want to know how the condition here, as I have described it, compares with the facts for Massachusetts. I think we ought to know just how valuable are the statistics which are being put forth by our government departments, and if we can gain a clear idea on this point from the results in Massachusetts it may help us in our individual studies.

Mr. Wadlin: It is only fair to say that probably under any system it would be impracticable to go into as fine details in a national agricultural census as we secure in a small, compact state like Massachusetts. I do not suppose that would be considered essential. I think that ought to be said, because I have suggested that we do not draw the line as they do in the United States census in determining what shall be considered a farm. I doubt if it would be worth while to attempt to go into details in the United States census of agriculture as we do in Massachusetts.

Upon motion of Mr. Clark of Pennsylvania the thanks of the convention were tendered to Mr. Wadlin for his address.

On account of the unavoidable absence of Hon. Hastings H. Hart, Secretary of the Minnesota Board of Corrections and Charities, his paper on "Statistics in the Study of Crime and Pauperism" was not presented to the convention.

Upon motion of Mr. Morse of Michigan, the convention accepted the invitation of President Northrop of the University of Minnesota to hold a session at that institution, and it was decided to meet there Thursday morning, at ten o'clock.

The convention adjourned until September 18th, at 10 o'clock a. m.

SECOND DAY.

MORNING SESSION.

The convention met pursuant to adjournment, with President Wright in the chair.

The President: Is there any general business to come before the convention?

Mr. Lewiston: In view of the increasing number of state labor bureaus, I would move that article 7 of the rules of this organization be amended so as to make the executive committee consist of seven members, instead of five, as heretofore. Rule 7 would then read as follows:

7. The executive committee shall consist of seven members, to consist of a chairman, who shall be the member residing in the state wherein the next convention is to be held, four members to be selected by ballot, and the President and Secretary-Treasurer of the association. It shall have charge of all preliminary arrangements pertaining to each convention that occurs during the term of said committee.

I would further move that the consideration of this matter be set for the morning session to-morrow.

Carried.

On motion of Mr. Clark of Pennsylvania, a Committee on Nominations was appointed, consisting of Messrs. Clark, Meriwether, and Morse.

On motion of Mr. Powers of Minnesota, a committee on resolutions was appointed, consisting of Messrs. Powers, Schilling, and Horne.

Mr. Lacy of North Carolina offered the following resolution, which was referred to the Committee on Resolutions:

Resolved, That it is the sense of the eleventh annual convention of the officials of Bureaus of Labor Statistics that the establishment of such an office as that now under consideration by the National Board of Trade would be of incalculable benefit to statistical work in the United States, and that the convention most heartily indorses the proposition.

The convention adjourned to meet at the University of Minnesota at 10 o'clock a. m., September 19th.

THIRD DAY.

The convention met pursuant to adjournment, President Wright presiding.

The President: The chairman of the Committee on Resolutions informs me that it is necessary for that committee to report at once, as Mr. Powers, in order to make proper arrangements for the reception of the members of the convention at St. Paul, is obliged to leave immediately. I would therefore suggest that the order of business be changed so as to let the Committee on Resolutions present its report now. While awaiting the action of the committee I will again remind the gentlemen present that we are to discuss this morning the question, "How far can the statistical method be applied in the investigation of causes?"

Mr. Powers: Mr. President: The Committee on Resolutions have had under consideration, first, the resolution presented by Mr. Lacy, relating to the action of the National Board of Trade, and desire to present instead of the resolution of Mr. Lacy the following, as a substitute; the preference being due to the fact that this states fully the proposed action of the National Board of Trade:

Whereas, The National Board of Trade is considering a plan for republishing in full or in a condensed form and in a form suited for wide circulation, all the important statistical publications of the leading nations of the globe, and also for publishing condensed summaries of the contents of the statistical publications of the several states of our American Union, thus creating what has aptly been designated "a world's statistical clearing-house" for the citizens of this country; therefore, be it

Resolved, By the National Association of Officials of Bureaus of Labor Statistics and kindred offices, in convention assembled, That we

heartily approve of the said proposed plan of the National Board of Trade, and that the Secretary of this association be instructed to send a copy of this resolution to the Secretary of said board, pledging our hearty co-operation in all practical work needed to carry the proposed plan into successful operation.

The resolution was adopted.

Mr. Powers: We also present the following resolution:

Resolved, That the thanks of this association be, and the same are hereby, extended to the officials of the Eastern Minnesota, the Duluth & Iron Range, and the Duluth, Missabe & Northern railways for their courtesy in furnishing free transportation for the excursion to the iron mines of Northern Minnesota; and

Resolved, That the Secretary of this convention be instructed to send copies of this resolution to the officials of those roads.

The resolution was adopted.

Mr. Powers: We also desire to submit the following resolution for the consideration of the convention::

Resolved, That the thanks of this association be extended to the Commercial Club of Minneapolis and the Minnesota State University for their courtesy in furnishing rooms for the meetings of this association, and for the many other courtesies which we have received at their hands, and which have so greatly assisted in making our visit to this city pleasant and profitable.

The resolution was adopted.

Mr. Powers: We also present the following resolution:

Resolved, That the thanks of this association be extended to Mr. T. B. Walker for his courtesy in opening his gallery of pictures for inspection by the members of this association.

The resolution was adopted.

Mr. Powers: I would like to submit one more resolution, which I think is of great importance. It is as follows:

Resolved, That in the call for future meetings the members of the convention who cannot attend be requested to forward in advance a written statement of their current work, in order that the Secretary may read the same under the call for "Current Work of the Bureaus."

The resolution was adopted.

Mr. Powers: We have not prepared resolutions of thanks to the St. Paul Commercial Club, the Trade and Labor Assembly of that city, and the Duluth people. We would prefer

to authorize the President or vice President to call the convention together after visiting those places and pass suitable resolutions, leaving the final adjournment until after we have visited the places named.

The President: If there is no objection, this recommendation of the Committee on Resolutions will be carried out.

Mr. Powers: If it is the pleasure of the convention, I will now submit my report as Secretary-Treasurer for the past year. It is as follows:

To the National Association of Officials of Bureaus of Labor Statistics and Kindred Offices in the United States:

The undersigned Secretary-Treasurer of your association herewith submits his report of receipts and expenditures for the official year ending with this convention:

A more detailed exhibit of receipts has been submitted to the Executive Committee, and a statement of all expenditures and vouchers for the same has also been so submitted to said committee. This condensed report upon the same is presented in this connection.

RECEIPTS.

Amounts received for proceedings of tenth convention.....	\$268.35
Amounts received as dues from different offices.....	95.00
Amounts received as return payment for expressage, cartage, etc.....	12.38
Total.....	<u>\$375.73</u>

DISBURSEMENTS.

To printing proceedings of tenth convention.....	\$245.85
Paid expressage.....	10.54
Paid cartage.....	.50
Paid for boxes and packing.....	2.00
Paid for printing bill-heads.....	1.50
Paid for printing call for convention.....	4.25
Paid stenographer of convention.....	45.75
Paid for postage and stationery.....	15.00
Paid for typewriting.....	10.00
Clerical work hired and performed.....	40.00
Balance on hand.....	.34
Total.....	<u>\$375.73</u>

Respectfully submitted,

L. G. POWERS,
Secretary-Treasurer.

The report of the Secretary-Treasurer was referred to the Executive Committee as an auditing committee, and that committee reported as follows:

The undersigned members of the Executive Committee, having examined the detailed statement of moneys received and the vouchers for money expended, have approved the disbursements made and have found the vouchers for the same to be correct.

H. G. WADLIN,
CHAS. H. MORSE,

After the foregoing report of the Executive Committee the report of the Secretary was upon motion duly accepted.

The President: The question which we are to discuss this morning is, "How far can the statistical method be applied in the investigation of causes?" The subject is now before the convention for consideration. Mr. Lacy, if you will take the chair, I will say a few words on this question.

Mr. Lacy assumed the chair.

Mr. Wright: Mr. President and Gentlemen: I consider this question as to how far the statistical method can be applied in ascertaining causes as one of the most difficult questions that statisticians have to consider. The statistical method is a scientific method. It is not necessary to discuss the question as to whether or not statistics is a science, because there is a difference of opinion on the subject, and it is not yet so thoroughly determined that men will accept the theory that statistics as a whole is a science; but it is agreed by every one, statisticians and political economists, that the statistical method is a scientific method; and that is sufficient, perhaps. It is scientific because it calls for the regular entry of facts, in some instances occurring from day to day and year to year, like the customs statistics, which consist of mere business entries, and the application of the statistical method is in collecting these daily entries into a body of facts. On the other hand, statistical information is gained by aggregating a vast number of facts, none of which alone would determine the truth. The chemist can tell at what point water will freeze by making one or two experiments, and when he has once found out at what point water will freeze he has determined the whole question; that is the end of that; water will always freeze at just that point. The statistician, on the other hand, in order to determine a truth is sometimes obliged

to take a variety of facts collaterally gathered and brought into correlation. In other directions he is obliged, in order to apply his method, to seek a variety of information which can only be indicative of the truth under analysis. A man a few years ago reported that 300 per cent of the Turks in Washington were criminals! Let it sink into your minds,—the absurdity of the proposition; yet statistically speaking the application of his method was quite correct. Under analysis it was shown that there was but one Turk in Washington, and he had been arrested three times. So the application of the statistical method means something more than mere figures and counting. It means an analysis of the figures themselves, taken in relation with other things, in order to ascertain a truth; and, gentlemen, the truth is the hardest thing in the world to find. You can find lots of things that indicate truth, but when you have determined exactly what you can say is absolutely the truth under the statistical method, you have done something more than mere counting. The little illustration I gave you is only one of a great many that are used to show the viciousness, if you will allow me to use that word, of the statistical method. How far can such a method be applied in ascertaining the causes of conditions? So far the psychological elements of social and industrial conditions have eluded, very largely, the efforts of the statistician. As a gentleman put it the other evening, it is easy to ascertain by the statistical method whether all persons have blue eyes, or how many persons out of a hundred thousand have blue eyes, how many gray eyes, etc. It is easy to ascertain how many criminals have been apprehended and convicted in a year; it is quite easy to ascertain how many arrests have taken place for drunkenness or for any other specific misdemeanor or crime,—the statistical method is sufficiently perfect to ascertain these things; but how far can it be used to get at the psychological elements of crime and determine why crime is committed? We can easily show by our statistical methods how many strikes have occurred in Minnesota during the past year; but can the statistical method go into the psychological elements of strikes and show why there were so many strikes? We can show what the wages are in any locality by the statistical method, but up to the present day the question of what makes the rates of wages has eluded not only the statistician but the political economist. As Professor Folwell told you the other day, there

can be many volumes spun out of the hypotheses as to what makes the rates of wages, but until all men will admit that a certain reason given by a certain man or certain men is the correct one it is not scientific. Science means classification of knowledge, and until a classification is made of a certain branch of information, so clear and so indisputable that it will be accepted by all, it is not scientific. It still lingers in the realms of controversy. Here is the difficulty. Yet there are very many branches of topics for investigation wherein the statistical method can reach the causes. Take the case of the investigation to which Mr. Meriwether referred the other day, relative to street railway franchises. There is a case, for example, where the statistical method can be used in the ascertaining of causes. If it is found, as was the case in a large city last year, where a great street railway strike occurred, with very disastrous results, that the franchise of a certain road had been given to a corporation without a price because of the petition of the incorporators that the building of that road would be of great public benefit, as the public would get back from their investment of capital more than it could possibly get for the franchises itself were a price set upon it. That is the usual stock argument used in securing public franchises from municipal governments. In this case—you will remember, if you catch the point, the city to which I refer—this freely given franchise was capitalized at millions of dollars,—after having been obtained for nothing it was capitalized at millions of dollars and all the street railways of that city brought into a consolidated company. What was the result of that? Simply this: The public, having given something freely, without a price, was then taxed, in the expense of transportation through its own city, to pay interest upon millions of dollars, upon an estimated value of its own free gift. That was the result. So, when the employees claimed that their wages had been cut down or kept down so that the corporation could pay a dividend upon a fictitious value, the public's interest was with the men. The public saw at once the trend of the whole matter. Now, it is just so everywhere, and the statistical method can be applied to ascertain just how far the adjustment of dividends upon assumed value is interfering with the interests of the public, and especially of the men who are paid so much a day for carrying on the work of such corporations. The statistical method can reach

such cases, and it can show, exactly and scientifically, how much wages would be if dividends were paid on actual investment instead of on watered and fictitious valuations. This one illustration covers the whole question of franchises, so far as the statistical method is concerned, and you, gentlemen, who are investigating this matter—Mr. Schilling in Chicago, Mr. Meriwether in St. Louis, and others who have mentioned their work—are now practically applying this statistical method to the causes of certain economic conditions that exist in your communities. And in this case the method is of great public value in both an economic and an ethical sense; for if a great corporation can earn enough out of a franchise which the public has given it,—for which it has paid nothing,—to pay dividends on a capitalization of \$20,000,000, there is a tax upon that public and upon the workingmen who operate the roads which ought not to exist, and the question may be raised, economically as well as ethically, whether or not the public is doing right by itself in allowing such a condition to exist. This illustration runs through all the question of watered stock, and I believe that the bureaus will ultimately reach a state of perfection in statistical methods which will enable them to disclose the exact facts in regard to the whole matter of making profits for the payment of dividends on something that does not exist and thereby sapping the resources of the community to that extent. This line of investigation is an excellent example of the application of the statistical method in ascertaining causes, and there are many other investigations where causes can be reached by the statistical method; but when it comes to a consideration of the psychological elements purely of industrial questions, so far the method has failed. Whether in the future it can be made to succeed or not depends more on the practical experience of gentlemen who compose such bodies as this than on any theoretical idea, and yet the theoretical side of investigation is all-important to us. We must not set aside theories absolutely, because it is always necessary, in taking up a question, to start with a hypothesis, which, as many of you know or claim, suggests the line of information which is to be sought. The only difficulty is that there is danger of seeking simply the information that will prove the hypothesis to be correct. That is partisanship in statistics, not science. But if a man's mind is sufficiently open to permit him to take up a hypothesis and run along in his sta-

tistical investigation, thinking that the results may prove his hypothesis correct, but not caring whether it does or not, then he can accomplish something and aid in bringing about a solution of this question we are discussing, as to how far the statistical method can determine the underlying causes of industrial and social conditions. If we go into the cities and use the method there in investigating social conditions the difficulties that beset us on every hand are very discouraging. The limitations of the method have so many ramifications that one gets discouraged when he undertakes to find out the number of people in the slums and why they are there, the number of people who are arrested for drunkenness and why they get drunk, and the facts in many other lines of inquiry that we are called upon to undertake are just as difficult to obtain. These are the elements which bother us, but on which we get more and more light from year to year as our practical work goes on. (Applause.)

The President (resuming the chair): I hope this discussion will be entered into by gentlemen who have tried the statistical method in various directions, so that we may secure as much light as possible on the subject.

Mr. Powers: I am sure those present would be pleased to hear some remarks by Professor Folwell on the subject under discussion.

The President: It has been suggested that Professor Folwell give us some points, and if there is no objection I will ask him to favor us with his views.

Professor Folwell: Mr. President: I feel complimented in being called on to address you, and I would like to be heard for a few minutes in this matter. What I want to say is that I conceive the statistical method to be something more than the mere collection of facts. That alone is pure drudgery, though very necessary drudgery; but the statistical method means more. It means the arrangement, the discussion, and the final interpretation of facts. If the statistician does not proceed, after the collation and tabulation of his facts, to the discussion and interpretation of those facts, he does not, in my judgment, perform his whole function. And this interpretation must take place according to some guess or hypothesis. As Colonel Wright has said, there must be some starting-point. Some one has said that a question well asked is half answered.

Mr. Schilling: I am very glad, Mr. President, that this question has come up. It is a subject about which I have been thinking a great deal during the past year or two, and although I have not attended your sessions here to any great extent, it has been my intention to bring the matter before the convention at the first opportunity. I now desire to present for your consideration a resolution which I think covers the ground. It is as follows:

Resolved, That the executive officers of this association be authorized to invite to our next annual meeting some of the leading representatives of the economic schools of thought, at their own expense, to appear before us and give their views as to what fields of investigation the bureaus of labor might best exploit for the benefit of the social and economic advancement of our American life.

Now, whether you pass this resolution or not, those are my views. I appeared before the last convention of this association and informed you that the bureau of our state had determined upon an investigation of the system of taxation. One of the daily papers in Chicago had been publishing some articles, in which they gave examples of the workings of our taxing system. They gave the rich man's property on one side and the poor man's property on the other. These articles indicated that the rich people were paying taxes on about ten per cent of the total value of their holdings, while the poor people were paying on a basis of from twenty-five to thirty-five per cent. Our commission felt, that, if such an extraordinary injustice was being committed upon the poor people of our state, it was our duty to investigate the matter and see what there was in it. But instead of taking up the special properties mentioned by the paper in question (which I felt would be unfair), we pursued this method: We went to the city of Chicago and selected twenty-two different neighborhoods which we thought were thoroughly representative of all the conditions of property in that city. When we had done that, we went to the recorder's office and selected 2,000 pieces of property, and ran it back for twenty-three years, found out all the facts which the records showed relative to the properties selected—the number of sales, the prices received, the taxes paid, etc. In this way we were able to keep tab on the rise in values in each of the neighborhoods under investigation, and the proportion of taxes paid by the properties involved. Now, instead of finding the remarkable

discrepancy which this newspaper indicated, we found that vacant land, held for speculative purposes, is assessed about five per cent of its total value; that the gilt-edged property down in the central part of town, which increases so fast by virtue of the growth of the community, is taxed on a basis of nine or ten per cent of its actual value, while the holdings of the working people, who struggle through bad times and sickness and finally succeed in getting a roof over their heads, are taxed on a basis of about sixteen per cent of their total value. Those are the facts as ascertained through our investigation.

As I stated the other day, in giving an account of our current work, we had intended to couple an investigation of the street railway and gas companies with our investigation of the taxation system, but we found that our volume was large enough without it, and that will go over to our next report.

I will hand the resolution which I have just read to the secretary and I trust it may be adopted, as it emphasizes what I would like to have done. I wish to say that I am somewhat disappointed that a larger number of commissioners did not come to this convention. I think there are not so many here as were in attendance in Washington, and I believe that if this resolution is adopted and it is known that Henry George, Benj. R. Tucker, Laurence Gronlund, and others are to address us, more representatives of the bureaus will attend our conventions; and not only that, but our meetings will receive a greater share of attention and consideration than they have heretofore received at the hands of the public.

Mr. Meriwether: Mr. President, if this resolution is adopted, it is to be hoped that the Executive Committee will exercise discretion in extending invitations. While I am sure we would all like to hear suggestions from such men as Henry George, Laurence Gronlund, and other gentlemen representing their line of thought, I think it would be unwise not to have all sides represented. For my part, I should like to have, for example, Mr. Edward Atkinson and men of his stamp, so that the convention may have the benefit of suggestions from men representing different lines of economic thought.

As to the extent to which labor bureaus can show the causes of existing conditions, as well as the facts, I think the "labor bureau method,"—I do not know whether I can call it the

"statistical method,"—can be used, and is daily being used, by a large number of bureaus to show not only the facts and figures pertaining to certain investigations, but also the causes of existing conditions among the mass of people. In Missouri, for example, there was for a long time much doubt in the public mind relative to the causes of the unusual amount of disturbance among the miners in the interior portions of the state. Those who read the associated press dispatches on the occasion of our great strike, when the militia was called out, stockades built, and cannon brought out, and all the forms of civil war introduced, will remember that ignorance existed as to why this condition of affairs obtained. Some thought it was because of the variety of nationalities represented,—that these different nationalities could not get along together, that there was a great amount of prejudice which led to friction, resulting in disturbances, and so on. But through the investigations of our Labor Bureau it was ascertained that a system of payment of wages obtained among the mine operators, known as the "truck store," or "check" system, by which in many counties in Missouri the workingmen were never paid in money, but were given checks on the company store, and these checks passed as currency instead of the legal money of the United States. The result was miners were obliged to pay whatever the stores, owned by their employers, saw fit to charge; and the employers, using the power given them by that system, raised the prices to such an extent, that, although the wages may have been at a fair living figure, if paid in money, the miners were really kept at the starvation point, and were finally forced to strike. The Labor Bureau showed the cause of these struggles, and I think good was done by throwing light on this subject, for it was the means of having much-needed legislation enacted. By awakening public sentiment on the subject good was done, although the system is not entirely eradicated. That is one way in which the "labor bureau method," if not the "statistical method," can do good in showing causes.

Mr. Powers: This subject of causes has interested me, not only since the time that I began the bureau work but long before. I have come to believe each year more and more that there are many subjects of investigations where our methods would lead directly to a disclosure of the causes of certain phenomena or certain events or facts. The President has

already called your attention to some of those, as Mr. Schilling and Mr. Meriwether likewise have. The field could without any doubt be broadened if we wished to go into detailed statement or discussion of the things where we can find the record of causes. It is more satisfactory, even to the individual investigator, at times to feel that he is getting down to the causes of particular things. These fields are a little more inviting. But it has occurred to me, and conviction has deepened with the passage of years, that the most important of the causes affecting the industrial or economic situation are of so deep and profound a nature that we can at most, as commissioners, gather only the isolated facts; but those facts will have a bearing on some of the questions of the day. The investigations that have been mentioned by Mr. Schilling and Mr. Meriwether throw light upon certain causes nearest to us. When fifty of these bureaus in this and in other lands have gathered up these facts and shown these nearest causes, ultimately some one, with a genius for a broader generalization, will take up these facts and be enabled by their use to show deeper and more profound underlying causes. Sometimes men have come to me and expressed the desire that we should get at certain causes that lie deeper than any of these that have been mentioned. I have been forced to say that I would like to get at those causes if I could, and I should be under great obligations if you would show us how we can reach a disclosure of those causes by investigation. I can see how we can reach a disclosure of certain near causes. I think, however, that we should never shut our eyes to the fact that there are some further off; yet we ought not to be discouraged because we cannot solve them, for the reason that many of these facts that we are bringing out relative to nearer causes will ultimately throw light upon the more distant ones. We ought not to say, because we cannot solve those remoter problems that they are insoluble. We should go on with our work, disclosing a cause where we can, but where we cannot, let the facts stand for themselves, resting assured that none of these facts, if they are real facts, will ultimately fail to bring forth fruit.

Mr. Schilling's resolution was referred to the Executive Committee, which reported in favor of its adoption, whereupon it was unanimously adopted.

The resolution submitted by Mr. Lewiston, to increase the membership of the Executive Committee, was taken from the table, and after some discussion, was defeated.

The selection of a place of meeting for the next annual convention being in order, Mr. Dowling of New York invited the association to meet next year in Albany. Mr. Schilling of Illinois nominated Boston as the place of meeting, and Mr. Wadlin of Massachusetts assured the members a hearty welcome should they decide to hold their convention in Boston. On a ballot being taken, Albany received a majority of the votes, whereupon that city was declared to be the place of holding the next annual convention.

The election of officers being the next business before the convention, the Committee on Nominations, through its Chairman, Mr. Clark of Pennsylvania, made the following report:

Mr. President:

Your Committee on Nominations has the honor to report the following nominations: For President, Carroll D. Wright; for First Vice President, B. R. Lacy; for Second Vice President, Lee Meriwether; for Secretary-Treasurer, L. G. Powers; for Executive Committee, Thos. J. Dowling of New York, Chas. H. Morse of Michigan, and S. W. Matthews of Maine. The chairman of the Executive Committee, we understand, would be Mr. Dowling, by virtue of the constitution and by-laws.

Upon the motion of Mr. Wadlin of Massachusetts, the Secretary was instructed to cast the ballot of the convention for the candidates named by the Committee on Nominations, and they were declared duly elected as officers of the association for the ensuing year.

Mr. Morse of Michigan introduced the following resolution, which was unanimously adopted:

Resolved, That this convention fully appreciates the cordial welcome extended to it by Governor Clough and the mayors of the Twin Cities to the North Star State and to the beautiful cities of Minneapolis and St. Paul.

The courtesies extended so lavishly by the business men and the press will always be remembered with pleasure. The stay in the state has been in every respect a most delightful one.

The thanks of the convention are extended to Col. Carroll D. Wright, for his efforts in promoting the welfare of this association and for the very able and efficient manner in which he has presided over the deliberations of this convention.

To Hon. L. G. Powers this convention is under more than ordinary obligation for his successful and untiring efforts in promoting the comfort and happiness of every delegate during the time spent in Minnesota, and to him the sincere thanks of the convention are especially extended.

The President: We have now completed our work, and a motion to adjourn is in order, but before that motion is made I desire to thank you, one and all, for your efforts to aid me in the work I have been delegated to perform as the presiding officer of this association. In saying good-by, I want to say one thing that may not occur to you, and that is, that our conventions are not to be gauged as to their importance by what occurs in our open sessions. We meet here for formal discussion and the performance of routine duties. Since the beginning of this work at Columbus I have attended every convention except the one held at Indianapolis, and I get great benefit from each succeeding convention; but I do not get quite so much benefit from the open sessions as I do from those private sessions we are constantly having during our conventions,—the consultations which we have individually, sitting down in a corner of the hotel and discussing the difficulties of our work. In those little conferences we come closer together and are able to consider the ins and outs of the difficulties which we are all trying to overcome. You must not consider, and the public must not consider, that the whole benefit of this convention grows out of our open sessions. I believe I know the feelings of every commissioner here this morning, and am confident you will all agree with me in this statement.

I thank you for your courtesy and for your vote of thanks.

The convention adjourned, subject to the call of the Vice President.

APPENDIX.

REPORTS OF CURRENT WORK.

STATEMENTS BY MAIL.

Indiana.—S. J. Thompson, Chief: The Indiana Bureau is unlike any other in the country. It was originally organized as an agricultural bureau, the labor part being added after several years. As now organized it embraces agriculture, mines, manufactures, and the gathering and tabulation of the business of courts, county auditors, sheriffs, superintendents of county asylums, railways, and various other statistical matters. As it has to do with and is the only source that collects statistics in the state, of matters pertaining to agriculture, the bureau secured the passage by the last legislature of a law requiring township assessors to collect and report such items as were desired by the chief. Under this law blanks were prepared containing sixty-four questions relating to farms, farm products, stock, etc. These 1,016 blanks filled by the township assessors were sent to the bureau and by it tabulated, necessitating a very large job of work. In other current work the way mapped out by my predecessor is being largely followed, except that many more factories have been visited and many more workmen been asked for statements.

The annual appropriation for the bureau for the past two years was \$9,000; for the two years beginning November 1st, the annual appropriation is \$9,200. This includes salary of chief, \$2,000, and is to cover every item of expense of the bureau except printing of the biennial report one year hence.

Kansas.—W. G. Bird, Commissioner: I am establishing a new precedent for commissioners of labor statistics in this state by going on the ground where there is trouble between

employer and employe and investigating the cause leading up to the trouble, and then making recommendations to one side or the other, depending where the justice lies. Usually the justice lies on the side of the employes, and I try to assist them in every legal or rightful way to get their demands. This does not suit the corporationist, who in turn goes to the governor and the governor in turn goes for me and asks me to resign, but I refuse for the reasons that: First, the charges against me are false, and, second, because he has no better place to appoint me to. Well, after I refuse to resign, then they take me into court, and from that day until this they have been handicapping this department. That was the reason they would not let me come to the annual convention, under the pretext that it was not legal to pay such expenses. An attorney general is a very handy man in this case with his legal opinions. I have been deprived of a stenographer and the auditor has disallowed a number of my vouchers for expenses in cases of investigations. My purpose is to make this department worth something to the working people or so obnoxious to the administration that they will abolish it. I do not believe in taxing people to maintain a place for "a good fellow," which reputation it now bears. My successor will have more work to do than my predecessor had, I will assure him of that—that is, if I have one. There is some talk in this state of abolishing the office. I don't think they will dare attempt it, though.

The legislature of Kansas at its last, or twenty-sixth, regular session made the following annual appropriation for the maintenance of the Kansas Bureau of Labor Statistics: Salary of commissioner, \$1,000; salary of clerk, \$800; incidental and traveling expenses, \$1,500; salary special agent, \$200; for postage and expressage, \$500; total, \$3,000.

No special appropriation is made for printing, but this is regulated by a printing committee from the state executive council, and requisitions granted by order upon the state printer. Regarding current work, our appropriation being insufficient for elaborate investigations into general industrial conditions, we will this year take up a few special large manufacturing interests, such as milling, packing, salt-producing, etc. Though thus handicapped, we hope to get out as complete a report as possible under the circumstances.

Montana.—James H. Mills, Commissioner: The current work of the Montana Bureau this year includes, for the first time, statistical reports covering the business transacted by the courts and officers of the several counties in the state, including revenues, expenditures, debt, taxation, etc.; also, industrial statistics covering the production, cost of living, wages, etc.; mineral, agricultural, stock growing and crop statistics; railroad traffic, wages, etc., as heretofore.

The appropriations for the bureau are: Salary of commissioner, \$3,000; for chief clerk, \$1,500; for expenses covering rents, printing of blanks, postage, immigration pamphlets, etc., \$1,500. There is also appropriated \$1,200 for pay of clerk in charge of free public employment office. The printing of the annual report is paid from general printing fund. It cost for 1894 \$761.21. All the work this year is necessarily being done by the commissioner and chief clerk, the appropriation not being sufficient to employ any special agents or other clerical help.

This is the census bureau of the state. The census was to have been taken this year, and preparation was made for it; but the legislature failed to appropriate any money for the purpose, and it has not been taken.

Maine.—S. W. Matthews, Commissioner: The current work of my bureau is an investigation into the conditions of the working people of the state on lines similar to those heretofore taken up; tabulations of returns obtained from the different manufacturers of the state, giving number of employes, wages paid, etc.; preparation of articles upon important industries, such as lime, slate, sardine, and some other special lines of business; and an exhaustive article upon the growth, development, progress, and present condition of manufacturing in the state. These are the main features of the work now being carried on.

The appropriations of the bureau for salaries and expenses, not including printing, amount to \$3,500 per annum. The printing is paid for out of the general printing appropriation.

Nebraska.—J. H. Powers, Deputy Commissioner: The legislature makes for the Nebraska Bureau of Labor and Industrial Statistics a biennial appropriation as follows: Salaries of deputy commissioner and clerk, \$5,000; books, sta-

tionery, and printing, \$500; postage, \$400; telegraph, telephone, and express, \$200; total, \$6,100.

The work we are endeavoring to accomplish this term is to show, as far as possible, the comparative profits of all branches of industry and business in the state; also, compiling a complete map of each county, with surface description of each township.

Iowa.—Mr. O'Brien, Commissioner: This bureau is pursuing a number of different lines of investigation. One is to ascertain the present condition of the wage earners of Iowa. Circular letters have been sent to the working people of the state and answers are being received, showing the nationality, residence, age, occupation, number in worker's family, average weekly wages, wages received in preceding year, savings in past year, amount of rent paid by those who are tenants and facts about ownership for the persons who own their own homes, and a number of like questions. A second line of work is to call general attention to the advantages of different localities of the state for the establishment of manufacturing industries. The object of this is to foster the growth of manufactories in Iowa, so that as nearly as possible her people may produce all the objects needed in her borders. The officers of the bureau are doing all they can to assist in securing employment for those out of work, and hope to have established in their state a free employment agency modeled after the plan of the Ohio bureau. The officers of the bureau publish a monthly bulletin, giving statistics as fast as they are gathered and tabulated, instead of waiting for their publication at the end of a period of two years.

The salary of the commissioner is \$1,500 per annum. In addition, there is appropriated \$3,000 for every two-year period for clerical assistance and traveling expenses. Printing and incidentals are furnished out of the general fund, and are not limited.

Ohio.—W. T. Lewis, Commissioner: The current work of this bureau is the collection of manufacturing statistics, with a view of comparing the industrial condition of 1895 with that of 1892. We are giving special attention to an investigation along these lines to the clay industry of the state. This will take the place of an investigation of the lake

traffic, which composed a part of our report last year. We shall continue our examination of the labor of children. The law charges us with the management of free public employment offices in five of our principal cities. Our report will include statements of the work accomplished through the medium of those offices.

There is appropriated for the maintenance of our office for salary of commissioner, \$2,000; traveling expenses of commissioner, \$550; chief clerk, salary, \$1,300; clerk, \$720; clerk, \$600; stenographer, \$720; contingent expenses, \$8,500. Out of this \$8,500 are paid the expenses of the five employment offices, which cost annually about \$2,200. This appropriation covers all other expenses, such as extra salaries, expenses of special agents, telegrams, expressage, etc. The printing of our office is paid for out of a state printing fund, and hence is not included in the above.

Texas.—A. J. Rose, Commissioner: The Texas Bureau was created by act of our fifteenth legislature, approved Aug. 21, 1876. It was first known as the "Department of Insurance, Statistics, and History," and its chief officer designated as the "Commissioner of Insurance, Statistics, and History." V. O. King, the first commissioner, was confirmed by the senate on Jan. 23, 1879, and was succeeded by A. W. Speight, who was confirmed on Jan. 26, 1881, and he was succeeded by H. P. Brewster, who was confirmed on Jan. 29, 1883, and died in office on Dec. 28, 1884. His successor was H. P. Bee, appointed on Dec. 30, 1884, and he was succeeded by L. L. Foster, who was confirmed on Jan. 20, 1887, and by act of the twentieth legislature, approved April 1, 1887, a bureau of agriculture was created and attached to the Department of Insurance, Statistics, and History, and the name of the department changed to "Department of Agriculture, Insurance, Statistics, and History," and its chief officer styled "Commissioner of Agriculture, Insurance, Statistics, and History."

Commissioner Foster resigned the office on May 5, 1891, and his successor, J. E. Hollingsworth, was confirmed on same day, and was succeeded by A. J. Rose, who was confirmed on Jan. 17, 1895, and is the present incumbent.

Arkansas.—W. G. Vincenheller, Commissioner: There was appropriated for the Arkansas Bureau of Mines, Manu-

factures, and Agriculture, including salaries, for 1894 and 1895, \$6,920. The state also made a very liberal appropriation for the Cotton States and International Exposition at Atlanta. This was also to be expended under direction of the commissioner of this bureau.

California.—E. L. Fitzgerald, Commissioner: We are at present particularly interested in the workings of our free employment department, which was opened on the 15th day of July. Up to the present time we have filled positions for 1,837 men and 966 women. The total registration is 8,346.

The public and the press of our state have taken this department up and lend it their hearty support, and at the next legislature I hope to pass a bill establishing these institutions in all first and second class cities of our state. Besides this department a great deal has been done in regulating the sanitary conditions of the workshops throughout our state.

Our annual appropriation is \$4,500 per year, which does not include the salary of the commissioner, which is \$3,000 per annum, nor that of his chief deputy, which is \$1,800 per annum. The printing for this department is furnished by the state printer, and is not deducted from our appropriation.

Colorado.—W. H. Klett, Deputy Commissioner: The current work of this office is as follows: The duties of the commissioner shall be to correct, systematize, and present in biennial reports to the legislature statistical details relating to all departments of labor in the state, such as the hours and wages paid, cost of living, amount of labor required, number of persons depending on daily labor for their support, the number of persons employed by the several industries within the state, description of the different kinds of labor organizations in existence in the state, and all other information in relation to labor as the commissioner may see fit to use; and the commissioner shall act as a mediator between employer and employe in case of a strike, when there are fifteen or more employes involved.

The commissioner's salary is \$1,800 per year, and \$1,500 per year for clerk hire and expenses.

New Hampshire.—Mr. Bourlet: The Bureau of Labor is engaged in making an investigation of the shoe industry of

the state, with a view to showing the extent of the industry, which has greatly increased during the past few years, and the progress made in methods of manufacture and the displacement of shoe labor by improved machinery. The general living conditions of shoe factory operatives, both in the workshop and in their homes, will also be looked into, and facts ascertained as to rates of wages paid both by the week and the piece compared with other states.

The hours of labor and the general working condition of street railway employes in the state is also being investigated; the retail prices of food and fuel in each city and town in the state in June and December of the present year is in process of collection; the strikes and lockouts of 1895-96 are receiving due attention; and "Statistics of Manufacture," which has been a yearly feature of the work of the bureau since its establishment in 1893, are also being procured.

The bureau has also in contemplation an investigation into the primary causes of the conditions which leads capital to seek investment elsewhere at the expense of the state, with a view to encourage the building up of home industries.

The only official of the bureau whose salary is fixed by law is the commissioner, who receives \$1,500 yearly. The bureau employs a clerk, who is paid \$600 a year. No specific appropriation is made for the use of the bureau, the bills as contracted being presented to the governor and council for approval as provided by law. The total expenses of the bureau for the past fiscal year, aside from printing, rent, etc., was \$1,000. The printing of reports, blanks, etc., is paid direct from the state treasury. Hereafter reports will appear biennially, the change from annual to biennial having been made at the last session of the legislature, in January, 1895.

Maryland.—A. B. Howard, Jr., Chief: The fourth annual report of the Maryland Bureau will contain but two special subjects, besides detailing the strikes which have occurred in Maryland during the year.

The chief subject relates to the distribution of wealth, and is called personal property values. This subject was treated in the last report, but only as to Baltimore city. It is a statistical statement showing the number and value of the personal estates probated in each of the orphans' courts

throughout the state, and taken in connection with the showing made last year as to Baltimore city presents an interesting subject for discussion.

The other special subject is that of building and loan associations, and all of the data obtainable on this subject are presented.

The record of strikes will, of course, embrace all those strikes which come to the notice of the bureau. It will be the aim of this part of the report to show, chiefly, the cost of strikes, not only to the employe but to the employer as well.

In the selection of subjects the bureau has been greatly embarrassed by the small appropriation. The best subjects for investigation are very often those which it is impossible for the bureau to effectively handle, and the bureau is necessarily forced to the selection of subjects which can be easily handled and at small cost. The absence of authority on the part of the bureau is also a serious drawback, yet the Maryland legislature has never seemed to be in a frame of mind to give the bureau any further powers.

Ontario Bureau of Industries.—Established in 1882, with Mr. A. Blue as secretary. The Department of Agriculture was created in 1888, and the bureau attached to it, at that time as a subdepartment. Mr. C. C. James, the present secretary of the bureau, succeeded Mr. Blue in 1891. Thirteen annual reports have been issued to the present. Hon. Dryden is Minister of Agriculture.

EXCURSION DURING THE CONVENTION.

SIGHT-SEEING IN MINNEAPOLIS.

Tuesday, September 17th.

On Tuesday evening the commissioners visited the Diamond Sawmill, owned by Smith & Richardson, and located at Eighteenth avenue north, on the bank of the Mississippi river. This mill has a capacity for sawing 200,000 feet of lumber every ten hours. It operates two band saws and a gang for the manufacture of boards. In addition to these large machines the mill contains a multitude of smaller saws and other apparatus of various kinds for edging and trimming the boards and for the manufacture of shingles, lath, and wood from the refuse of the lumber. The logs are brought to this mill, as to all the other dozen mills of the city, from the woods by being floated down the Mississippi river. From the river they are taken by machinery and conveyed into the mill. The commissioners spent two hours watching the operation of lumber making in this mill. The work in the evening was conducted by the aid of electric lights, and these lights seemed to cast a weird spell over everything, and the sight of the huge logs moved by automatic machinery acting with a seeming human intelligence made the visit one to be long remembered by all. Nothing seen in Minnesota seemed to attract so much attention and elicit so many remarks as did this visit to one of Minneapolis' great sawmills. In this, as in nearly all the other Minneapolis sawmills, the motive power is produced by steam engines. The fuel used is the sawdust produced by the mill itself. This sawdust is automatically carried from the machinery producing it to the furnaces and fed into the same. The mills are unable to consume all the dust created by them. The excess is sold for fuel, and used in other manufacturing establishments of the city. Thus all the material of the log is utilized in some form or other, and has a market value.

Wednesday Morning, September 18th.

The convention, after a short session Wednesday morning, as shown by the minutes of the proceedings, adjourned to visit the Chamber of Commerce. Here the commissioners had an opportunity of seeing the methods of buying and selling the wheat in the markets of Minneapolis, the city which at present receives more wheat than any other city in the world. All this wheat is sold on the floor of the Chamber of Commerce visited by the commissioners.

After spending some time on the floor of the chamber and learning something of the methods of the sales of wheat by sample, and also the speculative trading in wheat by grades, the commissioners visited the offices of the Pillsbury-Washburn Flour Milling Company, which are located in an adjoining building. Here they were shown, by the courtesy of Mr. Pillsbury, one application of statistics in the flour business. The commissioners were shown the monthly balance sheet of the company, in which were exhibited the total expenditures for each of some twenty different items, being all the expenditures of the company. The same sheets contained a statement of the number of barrels of flour manufactured each month and the average cost of producing that barrel, that cost being divided under each of the many heads shown by the balance sheet. Similar sheets were exhibited for the business of the year. During the visit to the office of the Pillsbury-Washburn Company by the commissioners, the manager of that company, Mr. C. A. Pillsbury, was visited by a deputation of his workmen asking for an advance of wages. The commissioners were present during a portion of this interview, and thus had a practical illustration of one phase of the labor problem, which it is their function at all times to study in the several states.

After leaving the office of the flour milling company many of the commissioners and their friends accepted the invitation of Mr. T. B. Walker to visit his choice collection of paintings in his art gallery at his residence, corner of Hennepin avenue and Eighth street south.

Wednesday Afternoon, September 18th.

At two o'clock on the afternoon of Wednesday carriages were provided by the courtesy of the Commercial Club and

the mayor of the city, and the commissioners were taken around the city and for a ride over a portion of the extensive boulevard system of Minneapolis. They were driven past Central Park, along Kenwood boulevard and by the shores of the beautiful lakes, Cedar, Lake of the Isles, Calhoun, and Harriet, all of which are in the city limits and with other similar lakes are a part of the Minneapolis park system. After stopping at the pavilion at Lake Harriet, the commissioners continued to drive a short distance along the Minnehaha boulevard, and then turning drove into the city past several beautiful private residences, the city high school, and through the business portion of the city to the "A" mill of the Pillsbury-Washburn Company. After being shown through this large mill, with a capacity of 9,000 barrels a day, and receiving a souvenir of their visit in the form of a small sack of flour, the commissioners closed their collective sight-seeing in Minneapolis. Individual commissioners, however, later visited the falls of Minnehaha, and other points of interest about and in the city.

SIGHT-SEEING IN ST. PAUL.

Thursday, September 19th.

On this day at two in the afternoon the commissioners took the interurban cars and went to St. Paul. Upon arrival in that city, they stopped at the rooms of the Commercial Club. At 3 p. m. they were taken by the committee of the Commercial Club via the cable line of cars to the intersection of that line of cars with Summit avenue, the most beautiful residence street of St. Paul and one of the most beautiful residence streets in America. Here carriages furnished by the Commercial Club were awaiting the party, and they were taken for a drive along Summit avenue and over a number of other beautiful residence streets. After such a drive for a number of miles the commissioners were transferred to a special electric car of the street car system, and were rapidly taken over the line of that system to Como park and thence to Indian Mound park and back to the hotel, a distance of some twenty-five miles. In the evening the commissioners met in the rooms of the Commercial Club, where they were given a reception by the members of that club and those of

the St. Paul Trades and Labor Assembly. President Footner of the Commercial Club extended a hearty welcome to the visitors, and assured them that he and the rest felt honored at their presence in the city.

Hon. Carroll Wright, United States Commissioner of Labor at Washington, responded in behalf of the guests, and said that they all fully appreciated the honor that had been bestowed upon them, and hoped at an early day to have the opportunity of reciprocating. He spoke of the solidity of the great Northwest, and the great and growing and prosperous Twin Cities. He marveled at the fact that 2,000 carloads of wheat are received here daily, and mentioned other astonishing truths which were sources of great surprise to the people of the East.

Commissioners Charles H. Morse of Lansing, Mich., spoke of the fallacy of free silver, and was followed by Hon. Lee Meriwether, commissioner of labor, of St. Louis, Mo., who addressed the company at some length on the great strides made by humanity during the present century, which, said he, were greater in many respects than during the past 2,000 years. Commissioner Powers of Minnesota explained the vast amount of freight that is handled at the head of the lakes, which, he said, is greater than in any other city in the world. He mentioned the prospect of Minnesota for furnishing more iron than Great Britain or Europe. Mr. Morrow showed how labor and capital are not antagonistic, and spoke hopefully of the future, which, he said, has much good in store for all.

At the conclusion of Mr. Morrow's remarks, President Wright called the association to order in accordance with the resolution adopted at Minneapolis before adjournment, and Hon. J. M. Clark of Pennsylvania presented the following resolutions in behalf of the committee on resolutions, which, upon motion, were unanimously adopted:

Resolved, That the convention of commissioners of Bureaus of Labor extend to Mr. W. J. Footner, president, and Mr. D. R. McGinnis, secretary, and to the Commercial Club of St. Paul, its thanks and heartfelt appreciation for the courtesies extended our association, and for the delightful and comprehensive view thereby afforded us of this city of superb homes and vast and growing industries.

Resolved further, That we extend our thanks to Mr. Samuel Brant, who, as representative of the Retail Clerks' Association, aided in making our visit agreeable as well as profitable.

Resolved further, That we express our pleasure at meeting the delegates and representatives of the Trades and Labor Assembly, and the many other representative citizens who have given us their greetings.

Upon motion, the meeting of the association adjourned subject to the call of Vice President Lacy.

EXCURSION TO DULUTH AND THE IRON MINES OF MINNESOTA.

By the courtesy of the railroads leading from the Twin Cities to Duluth and the iron mines of Minnesota, the commissioners were furnished free railroad transportation for an excursion to the northern part of the state. At the close of their reception at the Commercial Club of St. Paul, on the evening of September 19th, the commissioners took a sleeping car on the Eastern Railway of Minnesota at 11:30 p. m., and arrived in Duluth at seven on the morning of Friday. The party was joined at Duluth for the trip by Mr. A. McCallum, president of the Trades Assembly of Duluth, Mr. James McDowell, and Capt. Joseph Sellwood. After breakfast at Duluth the party left via the Duluth, Mesaba & Northern Railway for a visit to the mines of Northern Minnesota. They reached the town of Virginia at 11 a. m., and by carriages visited all the principal mines at that time being operated in or near Virginia, and of which more detailed information is given in another place. At 3:30 p. m. the commissioners left Virginia via the Duluth & Iron Range Railway for the mines on the Vermillion Range, located at Ely, Minn. They arrived at this town at 7:30 p. m., and after supper Mr. John Pengilly, the superintendent of the Chandler Mine, assisted by a number of mine captains, conducted the party down 700 feet into the mine mentioned, and two hours were employed in examining the methods of mining in use upon that section of the Vermillion Range. In the evening, Vice President B. R. Lacy called the association to order in the powerhouse of the Chandler Mine, and upon motion a vote of thanks was extended to Superintendent Pengilly and to the Chandler Mine for their courtesies in connection with their visit to the mines and for the hospitality extended to them in their entertainment at the hotel. After putting the motion, one of the commissioners called for three cheers for Captain Pengilly, which

were given with an energy and enthusiasm that showed that it came from the heart of all who had enjoyed the courtesy of the superintendent and of the Chandler Mine Company. Leaving Ely at 7:30 a. m. on Saturday via the Duluth & Iron Range Railway the commissioners reached Duluth at 12 m.

SIGHT-SEEING AT DULUTH.

In the afternoon the party was taken for a ride about the head of Lake Superior and the harbor of Duluth and Superior, Wis., on the steam yacht Nautilus, owned and managed by Captain B. Howard, a wealthy citizen of Duluth. At the close of the boat ride Captain Howard furnished carriages for a ride to the Duluth High School building and back to the hotel. The citizens of Duluth had arranged originally for a longer ride, but this was prevented by the storm which arose in the afternoon.

In the evening an informal banquet was tendered the visiting commissioners by the Trades Assembly of Duluth. At this banquet short addresses were made by several of the visiting commissioners and by the representatives of labor there present from Duluth. At its close Vice President Lacy, in the absence of President Wright, called the association together, and upon motion the thanks of the commissioners were given to Captain Howard of the Nautilus and to the officers and members of the Chamber of Commerce and the Trades Assembly of Duluth for their courtesies. Then Vice President Lacy, upon motion, declared the eleventh session of the association adjourned *sine die*. After adjournment the commissioners returned to Minneapolis via the Eastern Railway of Minnesota, and then separated, taking trains over various roads to their several homes.

THE IRON ORE OF MINNESOTA AND THE LAKE SUPERIOR REGION.

The most interesting and profitable feature of the meeting in 1895 of the Association of the Officials of Bureaus of Labor Statistics was the excursion to the iron mines of the northern part of Minnesota, of which a brief account is given on preceding pages. The members visiting those mines having expressed a desire for the same, the secretary has prepared the following brief statement of the discoveries and exploitation of the iron ores of the Lake Superior region of the United States and the relative amount of ores mined in the several states belonging to that region and in other parts of the United States and of the world.

The iron ores of the Northwest, especially known as those of the Lake Superior district, were discovered by surveyors employed under the direction of the state geologist of Michigan, Douglas Houghton, in 1844. The geological reports of that state, and later those of Wisconsin and Minnesota and of the United States government, have brought out and given to the public many facts concerning the iron ore deposits of the Lake Superior region. Those reports, valuable and reliable in all respects, have served as authority on all the questions discussed therein, and have aided in many ways in the material no less than in the scientific development of the iron ores of the Northwest.

The first shipment of ores from the Lake Superior region was in 1849, five years after their discovery by the state geologist of Michigan. The first shipments from Wisconsin were in 1880 and from Minnesota in 1884. The ore deposits thus far exploited in the upper peninsula of Michigan are in a wedge-shaped area lying against the State of Wisconsin, and in two instances the interstate boundary cuts the "strike" of ore bodies or "ranges," as they are termed. Those in Minnesota occur in two practically parallel ranges. The general designation of ores of the Lake Superior region localizes them in five ranges according to "The Production of Iron Ores in Various Parts of the World," as follows:

"1. The Marquette range, located in Michigan, which was first exploited in 1849, up to and including 1893 had supplied

40,750,000 tons of iron ores. Its ores are shipped principally from the ports of Marquette on Lake Superior and Escanaba and Gladstone on Lake Michigan. A small amount was formerly sent from L'Anse on Lake Superior and St. Ignace on Lake Michigan.

"2. The Menominee range, partly in Michigan and partly in Wisconsin, opened in 1877, which had furnished a total of 18,600,000 tons to December 31, 1893. Its ores are shipped from the ports of Escanaba and Gladstone on Lake Michigan.

"3. The Gogebic range, like the Menominee, is situated in both the States of Wisconsin and Michigan. Its first shipment of ore was made in 1884, and in ten years has produced 15,250,000 tons of ore, which were sent to points of consumption principally from the ports of Ashland, Wis., on Lake Superior, and Escanaba, Mich., on Lake Michigan.

"4. The Vermillion range, in the northeastern portion of Minnesota, which first made shipments in 1884, had up to the close of 1893 produced 6,250,000 tons of iron ores, the bulk of which was forwarded from the port of Two Harbors, Minn., on Lake Superior.

"5. The Mesabi range, which was first exploited in 1892, and during two years has mined 700,000 tons of ore, which were sent to lower lake ports via the ports of Superior, Wis., and Two Harbors to Duluth, Minn., on Lake Superior. The report upon domestic iron ore production in 1894 demonstrates that this new development is rapidly assuming a most important position as a source of supply."

Iron ores were discovered in Minnesota, as in Michigan, by the state geologist. The Minnesota discoveries were twenty-one years later than those of Michigan. In 1865 Mr. H. H. Eames, the state geologist, made an official announcement of the existence of iron ores in considerable quantities in the northern part of Minnesota and especially in the region now known as the Mesaba range. The investigations of Mr. Eames embodied in the foregoing mentioned announcement were authorized by the legislature of the preceding winter. The development of the Minnesota mines did not follow so soon after the discovery as did those of Michigan. The first ores were shipped from Minnesota in 1884, nineteen years after Mr. Eames' report, while shipping began in Michigan only five years after Mr. Houghton's report. The state geologist of Minnesota in succeeding years called attention to the

importance and value of the iron ores of the state. Thus Professor Winchell in his report for 1878 called attention to the subject. So also does he in his reports for 1880, 1881 and 1882. The report for 1882 calls attention to the field and laboratory researches in the Mesaba and Vermillion region by the Minnesota Iron Company. This was the first company to enter upon the systematic exploitation of the mines of this region. In his geological report for 1884 Professor Winchell gives a succinct account of the results of the first year's mining of this company and a description of the various openings made by it at Tower near the Vermillion lake. This report of 1884 embraced numerous chemical analyses of the ores then for the first time mined for shipment. The mines opened in 1884 shipped in that year 62,124 tons. These were conveyed by rail to Two Harbors on Lake Superior, whence they were taken by boat to Eastern ports for smelting. The Minnesota Iron Company shipped from the mine at Tower the following amounts of ore: In 1885, 225,484 tons; in 1886, 307,948 tons, and in 1887, 511,953 tons. In 1888 ore was shipped for the first time from the Chandler mine at Ely. This mine, visited by the commissioners, is one of the best ore producers in the world. Ore from it was shipped in 1888 to the amount of 56,712 tons and in 1889 to the amount of 306,000 tons. In the latter year the first shipments were made from the Pioneer Mine, located also at Ely, its output for that year being 3,100 tons.

Though iron was first mined at Tower and Ely on the Vermillion range, and though the deposits on the Mesaba are at present attracting the most attention and are likely soon to greatly exceed those of any other ranges in the United States or the world, it seems strange that these Mesaba ore deposits were carefully surveyed and analyzed so long before their exploitation. They were thus surveyed by Professor A. H. Chester in 1875. The geological formations are much different upon the two Minnesota ranges. Full particulars concerning the subject can be found in "The Iron Ranges of Minnesota," by the State Geologists, Professors N. H. and H. V. Winchell, 1891, and in later bulletins of the geologic survey of Minnesota and in the geologic reports of the United States and in "The Production of Iron Ores in Various Parts of the World," the latter a publication of the United States government.

In 1894 Michigan mined 4,419,074 long tons of iron ore. This was 37.20 per cent of the total iron ore production of the United States. This state ranked first in iron ore production in that year, as it had every year since 1889. Minnesota in 1894 mined 2,968,463 tons, or 24.99 per cent of the total product of the nation. This made Minnesota rank second in ore production. The product of Wisconsin made that state rank sixth in the Union. That product was 347,501 tons or 2.93 per cent of the whole. The product of both Wisconsin and Michigan was less than in 1893, while Minnesota of the large ore producing states alone showed an increase in that year. The revival of iron business in 1895 has been felt in all the Lake Superior region and especially in Minnesota. The total product of Minnesota mines for that year was 3,997,193 long tons. The corresponding figures for Michigan and Wisconsin and the other states of the Union are not at hand, but enough data has been secured to show that Minnesota has increased its percentage of the total output of iron ores for the nation, and also of the Bessemer ores mined in this country.

The following table shows the output from the various mines now worked in the state in 1895 and the output from the two ranges each year since the first ore shipments in 1884.

MINNESOTA IRON ORE PRODUCTION—1895.

Mine	Production. Tons.
Chandler	600,990
*Oliver	505,000
Minnesota	431,589
Franklin	410,000
Auburn	374,208
Canton	359,020
Mountain Iron.....	355,000
*Biwabik	275,000
Mahoning	141,460
Fayal	136,601
Norman	93,400
Pioneer	40,053
Lake Superior.....	50,000
*Adams	50,000
*Sellers	50,000
Vega	47,700
*Ohio	30,000
Hale	29,896
Cincinnati	17,186
Total	3,997,193

Number shipping mines in state close of 1895.....	19
Number shipping mines in state close of 1894.....	12
Number shipping mines in state close of 1893.....	14
Number shipping mines in state close of 1892.....	3

The total yearly ore shipments from Minnesota since the year of first mining, 1884, are as follows, in tons:

	Vermillion Range.	Mesaba Range.
1884	62,124	.....
1885	225,484	.....
1886	304,396	.....
1887	394,252	.....
1888	511,953	.....
1889	844,652	.....
1890	880,894	.....
1891	894,618	.....
1892	1,167,650	4,245
1893	820,621	613,620
1894	948,513	1,785,839
1895	1,072,632	*2,922,368

*Estimated.

In addition to the mines enumerated in the foregoing list there are many new mines that will ship ores in 1896, both from the Mesaba and Vermillion. The great relative increase in the iron ore output of the Lake Superior region is due mainly to the fact that the mines of that region furnish the larger share of the ores used in the manufacture of "Bessemer" steel, and the more recent increase in the demand for iron is largely for the Bessemer product. The general increase of Bessemer iron as compared with non-Bessemer may be noted by the following percentages: In 1887 the Bessemer pig iron produced in the United States constituted 44.8 per cent of the total pig iron output of that year. In 1888 it was 40.6 per cent. The corresponding percentages for later years are as follows: 1889, 41.4; 1890, 44.5; 1891, 41.9; 1892, 48.5; 1893, 50.9; and in 1894, 57.2. The greater share of the ore for this Bessemer iron is obtained from the Lake Superior region. Hence the main cause for the development of the iron ore industry of the three states referred to in this article and all of the five mining ranges mentioned by name.

Another and special reason for the development of the ore industry in the Mesaba range is the cheapness of mining in

that region. Much ore is being there mined in surface pits by the use of the steam shovel and with comparatively small expense. The more rapid growth of the Bessemer product indicates the continued prosperity of the iron ore business in all the Lake Superior region and the cheapness of the mining on the Mesaba is a prophecy of the especial development of the mines on that range.

The iron mines are reached at present by three independent lines of railway. The first to be built was the Duluth & Iron Range Railway. This road has its ore dock at Two Harbors. The second railway entering this region was the Mesaba & Northern Railway, with ore docks at Duluth. A third road which strikes the ore bodies at one or two points is the Duluth & Winnipeg Railway. This also has its ore docks at Duluth. The shipments from Minnesota were in 1895 limited only by the capacity of the railways to convey the ore to the docks on Lake Superior or by the carrying capacity of the lake vessels that were available for the ore trade of the state. This will in all probability be the case again in 1896. To meet what is expected to be the increased demand for Minnesota ores the Duluth & Iron Range and Mesaba & Northern railways are double-tracking a greater part of their lines, and they and the Duluth & Winnipeg Railway have ordered a great addition to their rolling stock equipment. Two new lines into the iron region from Duluth have also been projected and will doubtless be completed before the close of 1896. Many vessels are being built upon the great lakes for the iron ore transportation. Michigan and Wisconsin are sharing in the same development of the iron ore business as Minnesota, but to some lesser extent.

The increased and increasing demand for "Bessemer" ores guarantees for some years to come the continued development of the iron ore business in all the Lake Superior region and especially on the Mesaba range of Minnesota. Those mines in the three states of the Northwest will in 1896 produce more than one-half the ores of the United States, and a quantity which will approximate, if it does not exceed, that mined in any nation on the globe outside this country. This fact alone explains the growing importance of the iron ore business of Minnesota and the request of the working commissioners for a brief summary of the same, as has been exhibited in these

pages. More detailed information concerning the subject can be found in the official reports of the three states and of the United States, to which reference has been made in these pages.

The output of iron ore in Minnesota for 1896 will doubtless exceed 6,000,000 tons. This is half that of Great Britain or Germany, the two greatest iron ore producers of Europe. It also equals the Bessemer ores produced in either of those countries at the present time. Discoveries of new ore bodies are constantly being made on the Mesaba and Vermillion ranges, and if the iron business of the United States continues to grow as its friends believe it will, the demand for good Bessemer ores and the cheapness of mining in Minnesota will before the year 1900 make the iron ore product of Minnesota greater than that of any European nation at the present time.

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