REPORT
OF THE
NEW JERSEY STATE MUSEUM.

1904.
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The New Jersey State Museum
ANNUAL REPORT

OF THE

New Jersey State Museum

Including a list of the Specimens received during the year

FINANCIAL REPORT

With a Report of the

STATE EXHIBITS AT THE LOUISIANA PURCHASE EXPOSITION HELD AT ST. LOUIS, 1904.

In which the Museum was interested, including the Educational, Geological, Fish and Game, Forestry, Salt Water Fish, Oyster and Insect Exhibits.

1904.

NEWS PRINTING CO.,
State Printers,
PATERSON, NEW JERSEY.
1905.
The New Jersey State Building, Louisiana Purchase Exposition, St. Louis.
Planned after Washington's Headquarters
Morristown, N. J.
Commissioners of the New Jersey State Museum.

STATE SUPT. OF PUBLIC INSTRUCTION, CHARLES J. BAXTER, President.

STATE GEOLOGIST, HENRY B. KUMMEL, Secretary.

PRESIDENT STATE BOARD OF AGRICULTURE, E. B. VOORHEES.

PRESIDENT OF THE SENATE, EDMUND W. WAKELEE.

SPEAKER OF THE HOUSE OF ASSEMBLY, JOHN BOYD AVIS.

SILAS R. MORSE, Curator.

Heads of the Several Departments of the New Jersey State Museum.

C. J. BAXTER, STATE SUPERINTENDENT OF PUBLIC INSTRUCTION, Educational.

E. B. VOORHEES, Rutgers College, Agriculture.

HENRY B. KUMMEL, STATE GEOLOGIST, Geology.

JOHN C. SMOCK, EX-STATE GEOLOGIST, Forestry.

AUSTIN C. APGAR, STATE NORMAL SCHOOL, Birds and Botany.

JOHN B. SMITH, STATE ENTOMOLOGIST, Entomology.

JAMES T. MORGAN, DEPUTY OF BUREAU OF LABOR STATISTICS, Manufactures.

WM. H. WERNER, Taxidermist of Museum.

HERBERT M. LOYD, Archaeology.
New Exhibit Hall, New Jersey State Museum.
Negatives by S. R. Morse, Curator.
Trenton, N. J., November 30th, 1904.

To the Honorable Franklin Murphy, Governor of the State of New Jersey:

SIR:—I have the honor to present for the Commissioners the annual report of the New Jersey State Museum, including a report of the New Jersey State Exhibit in which the Museum had a part at the Louisiana Purchase Exposition at St. Louis.

SILAS R. MORSE,
Curator.
Front of New Jersey Education Exhibit.
Negatives by S. R. Morse.
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New Jersey was the First.

New Jersey was the first to establish an Educational State Museum.

How many other states and cities are following its example? As will be seen by this report at the close of the World’s Fair at Chicago in 1895, it was decided, that the excellent state exhibits at the Columbian Exposition should be preserved, and placed permanently where they could be seen by the people of the State; and each year have new exhibits added to them.

The governor being in accord with the idea, spoke in favor of it in his message, as follows:

EXTRACT FROM GOVERNOR’S MESSAGE OF THE SESSION OF 1895.

Governor George T. Werts, in his annual message of 1895, in speaking of the exhibits at the Columbia Exposition at Chicago in 1893, said: "The exhibits (at the World’s Fair) included the educational, agricultural, geological and seacoast exhibits. These exhibits were very fine and cost large sums of money. If preserved intact they are now worth more than their original cost, as it would be impossible to duplicate them. The furniture was quite costly. The exhibits and furniture are now stored in the Fidelity Storage Warehouse in the city of Trenton.

In my opinion the exhibits should be preserved, and the State should provide some place or places where they may be placed as a museum or educational exhibit. They should not be sold as a whole, and to sell them piecemeal would produce but an insignificant sum, and destroy what can never be replaced."

LAW.

In accordance with this recommendation of the Governor, the Legislature passed the following law:

Chapter CLXXXIII.

An Act to establish and maintain a State Museum.

Whereas, The Governor of this State has recommended that the exhibits of the several departments of the state government at the Columbian exposition at Chicago be placed on permanent exhibition; and, whereas, said exhibits would form a nucleus of an exhibit, which would be of great value in showing the educational, agricultural and industrial development of the state; therefore,
1. Be it enacted, by the Senate and General Assembly of the State of New Jersey, That the commission now having charge of the restoration of the state house shall have power, and it shall be its duty, to cause to be prepared, suitable rooms in said state house for a museum for the preservation and display of the exhibits of the several state departments at the Chicago exposition, and for such other exhibits as may from time to time be placed therein by the commission having control of said museum, as provided in the second section of this act, and the expenses incurred in the preparation of said rooms shall be paid on the warrant of the comptroller out of any moneys in the state treasury not otherwise appropriated.

2. And be it enacted, That the state superintendent of public instruction, the state geologist, the president of the state board of agriculture, the president of the senate and the speaker of the house of assembly are hereby constituted a commission, which commission shall have control of said museum, and shall make all necessary rules and regulations for the proper care and maintenance thereof, and said commission may appoint a curator, who shall under the direction of said commission, arrange and classify the several exhibits, and shall have charge of said museum and exhibits, and shall perform such other duties in connection therewith as shall be directed by said commission, and he shall be paid such a compensation as said commission shall determine, but not to exceed the sum of fifteen hundred dollars per annum, which compensation shall be paid by the state treasurer in equal monthly installments upon the warrant of the comptroller.

3. And be it enacted, That this act shall take effect immediately.

Approved March 20, 1895.

It will be seen that the act made it the duty of the Commission having charge of the restoration of the State House to have prepared suitable rooms for said Museum. Before any action was taken the Commission was abolished, and in 1896 the following amendment was enacted, making it the duty of the Museum Commission to prepare plans for such alterations as were necessary to provide suitable rooms for the Museum in the State House, provided that such plans should be approved by the State House Commission and the work done under its superintendence:

AMENDMENT TO ACT OF 1895.

Chapter 195 of the Laws of 1896.

An Act to amend an act entitled “An act to establish and maintain a state museum,” approved March twentieth, one thousand eight hundred and ninety-five.

Be it enacted, by the Senate and General Assembly of the State of New Jersey:

1. Section one of an act entitled “An act to establish and maintain a state museum,” approved March twentieth, one thousand eight hundred and ninety-five, be and the same is hereby amended so as to read as follows:

Be it enacted by the Senate and General Assembly of the State of New Jersey:

1. The commission provided for in the second section of the act to which this is an amendment shall have power and it shall be its duty to cause to be prepared plans to provide suitable rooms in the state house at Trenton for a museum for the preservation and display of the agricultural, geological
REPORT OF NEW JERSEY STATE MUSEUM. 11

and educational and other exhibits of the state departments at Chicago exposition, and for such other exhibits as may from time to time be placed therein by said commission, and the expenses incurred in the preparation of said rooms and for the care of said exhibits shall be paid by the state treasurer on the warrant of the comptroller; provided that the plans for the alterations necessary to provide said rooms shall be approved by the governor, comptroller and treasurer, or a majority of them, and the work done under their direction, and no work shall be commenced or contract entered into until a specific appropriation is provided for the purpose set forth in the act to which this is a supplement.

2. This act shall take effect immediately.

Approved April 21, 1896.
Organization of the Museum.

Under the first act the New Jersey Museum was organized. The first Commission consisted of the President of the Senate, Hon. E. C. Stokes, now Governor-elect of the State; Hon. Jos. Cross, the Speaker of the House of Assembly, and will no doubt be the President of the incoming Senate; A. B. Poland, State Superintendent of Public Instruction, now City Superintendent of Public Instruction of the City of Newark; John C. Smock, State Geologist, and Hon. D. D. Denis, then president of the State Board of Agriculture. The Board was organized March 26th, 1895, by electing A. B. Poland President, and E. C. Stokes as Secretary.

Silas R. Morse was selected Curator, and Dr. Poland and Mr. Smock appointed a committee to formulate rules and regulations for the government of the Museum. Rooms on the third floor were assigned by the State House Commission, for the use of the Museum, and the Curator was instructed to place the several exhibits in the same, which was complied with at once. The room assigned was inadequate for the exhibits. At a subsequent meeting of the Commission Messrs. Smock and Morse were instructed to have plans drawn for an addition to the State House, which should have a suitable room or rooms for the Museum.

After consulting Mr. Scott, the head carpenter of the State House, plans for an addition to the back part of the State House, extending back to the water-power canal, was presented to the Museum Commission, and these plans were approved by it and afterward submitted to the State House Commission as required by law, who adopted the same with a few changes.

In 1900 the Legislature made an appropriation to build the addition, and the State House Commission were empowered to have plans made and the addition erected. The plan sub-
mitted to them by the Museum Commission was adopted. The third story was assigned to the State Museum. It was finished in 1901. It is a very nice room, a credit to all concerned. It was occupied early in 1902.

At present it is entirely too small, and when the exhibits from the St. Louis Exposition are returned and placed in the Museum there will not be room sufficient for them, and more room should be provided at once.

THE FOLLOWING STATES HAVE ADOPTED THE NEW JERSEY MUSEUM PLAN.

As far as is known this plan has been adopted by the following:
New York State, Minnesota, Pennsylvania, California and Louisiana. No doubt several other States and cities have or will follow New Jersey in this as in other things.

ADDITIONS TO THE MUSEUM DURING THE YEAR.

FISH.

Through the interest of the State Fish and Game Commission especially the President of the Commission, Benjamin P. Morris, we have added several fine specimens of New Jersey fresh and salt water fish to the Department of Natural History in the Museum. For the interest taken by the Commission and the specimens donated to the Museum, the Commission of the New Jersey State Museum are gratified, and appreciate having a State Fish and Game Commission that will work in harmony with the aim of the Museum Commission to make the State Museum one that will make every Jerseyman proud.
December 7, 1904.
The Fish and Game, etc., Packed to Ship Home.
SPECIMENS IN THE ROUGH SUPPLIED BY THE FISH AND GAME COMMISSION.

Two very large and fine Sea Salmon (22 lbs.).
Two fine specimens of Mackerel.
Two fine specimens of Shad.
Four fine specimens of Yellow Perch.
One very large striped Bass. (16 lbs.).
One Frost Fish.
One Square tailed Ball Fish.
Two Sea Bass.
Two Cat Fish.
Two German Carp (large).
Two Porgies.
One Polluck.
One King Fish.
Two Butter Fish.
One Fluke.
One Weak Fish.
One Black Fish.
Two Blue Fish.

OTHER FISH SPECIMENS RECEIVED DURING THE YEAR.

Four Salt Water Bottle Fish.
One five pound Pickerel.
Two Yellow Perch (large).
One very large lobster from Atlantic City.
Four Brook Trout caught by Hon. E. C Stokes and S. R. Morse.
Two Cucumber Fish.
One Sea Eel.
OTHER SPECIMENS ADDED TO COLLECTION DURING THE YEAR:

Two Yellow Leg Snipe (large).
Two Yellow Leg Snipe (small).
One Arcadian Owl.
One Black Hawk.
One Red Sparrow Hawk.
One Long Eared Owl.
One group of Ruffed Grouse old and seven young.
One Shelldrake Duck.
One Bald Eagle, old bird.
One group. A house of all kinds of Swallows (very attractive), with birds nests and eggs.
One Red Shouldered Hawk.
Two Holbell's Grebe.
One Buffed Head Duck.
One Black Duck.
Two Mallard Ducks.
Two Cooper Hawks.
Two Sharp Shinned Hawks.
Two Snow Buntings.
Two Ruby Crowned Wrens.
Two Yellow Leg Snipe (small).
One Golden Eagle.
One Owl.
One old Muskrat and five young.
One Fisher.
Two Red Foxes.
One old Rabbit and seven young.
One Chipmonk.
Two Belgian Hares (from Game Commission).
Four Fox Squirrels.
## Financial Report For 1904.

### Amounts Expended

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<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>J. W. Parsons, for mounted specimens of birds, etc.</td>
<td>$16.50</td>
</tr>
<tr>
<td>Horner R. Dills, for mounted birds, etc.</td>
<td>$27.00</td>
</tr>
<tr>
<td>American Entomological Company, insect supplies</td>
<td>$12.69</td>
</tr>
<tr>
<td>Per J. B. Smith</td>
<td></td>
</tr>
<tr>
<td>Howard Parsons, mounted specimens</td>
<td>$18.50</td>
</tr>
<tr>
<td>D. E. Heywood, natural history specimens</td>
<td>$35.00</td>
</tr>
<tr>
<td>J. W. Parsons, mounted animals</td>
<td>$13.00</td>
</tr>
<tr>
<td>J. W. Parsons, mounted specimens</td>
<td>$18.00</td>
</tr>
<tr>
<td>Postage</td>
<td>$20.00</td>
</tr>
<tr>
<td>J. L. Murphy, stationery</td>
<td>$30.50</td>
</tr>
<tr>
<td>Wm. H. Werner, mounted specimens</td>
<td>$80.76</td>
</tr>
<tr>
<td>Crosby &amp; Company, mounted fish</td>
<td>$228.05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$500.00</strong></td>
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Amount of appropriation for 1904. $500.00
New Furniture to Come into the Museum.

Three large upright double show cabinets, 3½ by 13½ and 7½ feet high for mounted specimens.
Two small upright single glass globe cabinets 3x4x6 feet high for animal groups.
Two 13 feet tables for globes containing mounted groups of birds.
One long plate glass tank 3x8 feet, 2½ feet high and metal base with table used for the live oyster exhibit.
The tables, cabinets, etc., of the insect exhibit (mosquito) and everything belonging to it as follows: 26 small boxes or trays containing insect and other specimens; one salt marsh tray; 12 charts showing the development of malarial parasite; 104 transparencies; 83 fish specimens and 34 in vials; 87 specimens of mosquito enemies in alcohol and 37 in glass vials; 613 mounted specimens; 1,600 specimens of mosquitoes in alcohol and 158 in vials; 1,500 pinned specimens; 56 drawings and plates; 23 vials of repellants and 14 other specimens of materials used to kill or repel mosquitoes.

WHAT THE NEW JERSEY MUSEUM DID FOR THE STATE EXHIBIT AT ST. LOUIS.

It has been claimed that with a State Museum such as the State has and the Museum Commission expect to make it, New Jersey can at any time make an exhibit in the several departments at short notice and at little expense. This has been demonstrated at the Pan American and St. Louis Expositions.
The several exhibits made by the State all except the Good Road Exhibit, came in part, or wholly, from the Museum.
The Geological, the Fish and Game, the Forestry, Insect, and in part the Oyster, and the Educational, was inspired by t.
THE GEOLOGICAL EXHIBIT.

This is fully described in a paper by the State Geologist, Henry B. Kummel, in this report, as is also the Insect Exhibit by Professor John B. Smith, State Entomologist.

The Educational is described in this report by State Superintendent, C. J. Baxter, in a report to United States Commissioner Harris, and also by other reports and illustrations by the director. The Fish and Game Exhibit was wholly taken from the Museum, and will soon be returned to the State House and placed in the exhibit rooms at Trenton.

Much of the credit for the success of the New Jersey State Exhibit at St. Louis is due to the following:

The New Jersey Commissioners for the Louisiana Purchase Exposition at St. Louis, Foster M. Voorhees, Chief Commissioner, Elbert Rappely, Edgar B. Ward, Wm. H. Wiley, Edward R. Weiss, James T. McMurray, Ira W. Wood, C. E. Breckenridge, Johnston Cornish, Harvey Humphreys and Richard W. Herbert, and especially to its Secretary, Colonel Lewis T. Bryant, who did everything in his power to make the New Jersey Exhibits a success. Also to State Superintendent of Public Instruction, C. J. Baxter, State Geologist, Henry B. Kummel, State Taxidermist, Wm. M. Werner, and State Entomologist, Prof. J. B. Smith. The success of the Educational Exhibit is largely due to Superintendent C. J. Baxter, who has done so much to advance the cause of education in New Jersey.

We cannot give too much credit to Secretary Colonel Lewis T. Bryant for the interest and assistance he has given us to make the exhibits a success. Never before has a secretary of a Commission done so much. He not only secured the space for the Exhibits at St. Louis, at a very early day, but had them all ready to receive the exhibits when they arrived in the buildings. Besides he provided a first-class home, in the State Building, for those who superintended, and those who cared for the exhibits, making it pleasant for them, and saved the State many hundred dollars.

The New Jersey Louisiana Purchase Exposition Commission is to be congratulated on procuring such a capable person to look after its interest.
The Geological Exhibit at St. Louis, 1904.

To be placed in the State Museum.
JERSEY DAY, OCTOBER 6, 1904.

AT THE ST. LOUIS FAIR.

What Governor Murphy said about the New Jersey Exhibits.

When the procession had passed, former Governor Voorhees, chief state commissioner, called the assemblage to order and introduced President Francis, who said some complimentary things about New Jersey. Governor Murphy was then introduced and said:

THE GOVERNOR'S WORDS.

"We come as Jerseymen to celebrate New Jersey day, and we have come a long journey to pay our respects not only to the great event which this marvelous exposition commemorates and to the able men who have organized and carried to successful completion this wonderful enterprise, but especially to join with those citizens of New Jersey who may be here in paying tribute to the skill, energy and enterprise of our state, as shown in the wide range of attractive exhibits which are here displayed to the gaze of the world.

"When I heard a year ago that it was proposed to have an exposition that would be nearly twice as large as the Chicago exposition, which was the greatest in the world at that time had ever seen, I said it is impossible. But when I came here a month or two ago and saw with my own eyes the wonders that had been accomplished I said the half had not been told.

"To this great exposition New Jersey has contributed her share. Here may be seen intelligently displayed its public school system from the time the child begins to learn its A, B, C's until the mature student gets his or her diploma at the Normal school.

"I think it is not going too far to say that the educational exhibits of the state of New Jersey surpasses in completeness that of any other state, and it shows what may be done in developing a public school system in a state where the cause of education, like the cause of justice, is taken absolutely out of politics.

"The state also presents an exhibit of its methods of road building and shows samples of its stone and shell and clay roads. Ours was the first among the states to furnish state aid for the construction of public roads, and we have today more than 1,200 miles of roads, samples of which are here shown, extending over the state. These improved roads have been of almost incalculable advantage to the people, and especially to the farmers.

"By common consent New Jersey stands at the front of the development of road systems, and for many years has been the example from which our neighboring states have taken pattern.

"The geological formation of our state is shown and our agricultural experiment station makes an exhibition of dairy management, as well as methods of soil investigation, which are full of interest and value.
THE NATURAL HISTORY EXHIBIT OF THE STATE MUSEUM.

This occupied a space 60x30 feet near the center of the building and next to the salt water pool. It was one of the best locations in the building, and was secured at an early date by the Secretary of the New Jersey Commission.

This space was divided by an aisle through the center. The first section consisted of five large double plate glass show cabinets and two smaller ones. The large cabinets contained about seventy-five mounted specimens of fish, one hundred and fifty mounted specimens of birds and fifty specimens of animals such as are found in New Jersey. The two smaller cabinets were filled with groups of opossums, skunks, muskrats, rabbits with their young, nests, etc.

The next space contained thirty-six glass globes containing groups of birds showing male, female, young, eggs and nests. These were placed on long tables made especially for them. This was the only exhibit of the kind at the fair, and was admired by all. This is one of the features of the museum.

The other side from this was rock work on which were placed mounted specimens of birds and quadrupeds.

Above on the wall, were hung twelve long photographs of New Jersey scenery, also maps, charts, etc. The next space, 10x12 feet was occupied by the Industrial School Exhibit of Hoboken, N. J., consisting of wood work, sewing, carving, turning, dressmaking, etc., done by the pupils of the school. This was placed here for want of space in the Educational Exhibit and was a fine exhibit. Next to this was the Oyster Exhibit consisting of a large plate glass tank 3x4 and 8 feet long. It contained salt water with a live oyster bed and clams to show how oysters and clams are raised in New Jersey and was a great attraction to many who never saw oyster beds. In addition there were show cases containing oyster shells of different years growth; also specimens of the friends and enemies of oysters and clams. Above these were photographs showing how oysters and clams are planted, gathered, etc. There was also a collection of the tools used by oyster men. It was prepared by Mr. A. T. Bacon, Superintendent of Oyster
Received Two Gold Medals.
State Museum Fish and Game Exhibit at St. Louis.
Commission, assisted by Secretary Bryant, and the Museum Commission.

At the right of the Oyster Exhibit was the cabinet of sliced woods containing over two hundred and fifty specimens so arranged between glass, in sliding frames, that each could be easily seen and studied. This method of exhibiting woods was designed by the Curator of the New Jersey Museum, and was conceded to be the best ever invented for that purpose. It was used first at the St. Louis Exposition.

The balance of the space was occupied by the Insect Exhibit, a full description of which will be found in another part of this report.

THE SALT WATER POOL.

In the center of the Fish, Game and Forestry Building, there was a large tank 40 feet long in diameter and 7 feet deep, made of cement, and filled with salt water brought from the Atlantic Ocean, in big tank cars by the United States Government, for the New Jersey Louisiana Purchase Exposition Commission. The water was kept clear and aerated by a pump and filter. There was a nice iron rail around the top of the pool for protection. The fish were contributed to the State by John L. Young, and caught from his Ocean Pier in Atlantic City. They were shipped in fish cars, loaned to the Commission, by the United States Government. The railroads freighted them free to St. Louis. This Exhibit was a great attraction, most of the visitors having never seen salt water fish. At first there was some trouble to keep the fish alive, but later they lived, and the Exhibit was a success.

Credit is due to Colonel L. T. Bryant for the success of this Exhibit. He had to overcome many difficulties.

EXTRACTS ABOUT THE FISH, GAME AND INSECT EXHIBIT FROM THE WORLD’S WORK IN AUGUST NUMBER.

Speaking of the Forestry, Fish and Game Exhibits:

H. H. Kopman says "By examination of the exhibits of Louisiana, North Carolina, Virginia, New Jersey and New York, especially because of their arrangement, one get very fair ideas of the comparative status of wild life —especially bird life."
Again he says: The New York, New Jersey and Pennsylvania exhibits, however, are the ones that show the best outcome of long contact by all kinds of interested agencies with natural resources. Man has there attained by education and science, the proper relation to the waters and forests and their citizens. Thus it is that we see the fruit of purely scientific investigations in the work of expert commissioners.

New York and New Jersey’s work in economic biology is illustrated by the very fine studies of tree-injuring insects. But the glory of New Jersey is the mosquito campaign exhibit, a resume of what has been done, and of what the state expects to accomplish. Briefly told the problem is one of draining and filling up of the breeding places of mosquitoes. The exhibit shows the enemies of the mosquitoes and how they may be utilized.

THE NEW JERSEY STATE MUSEUM AT THE WORLD’S FAIR ST. LOUIS.

Taken from the New York Herald, Sunday, June 5, 1904.

This is the first time the New Jersey State Museum has ever had a fish and game exhibit. Some of its features are the manner of presenting birds in groups consisting of male and female, the nests and eggs, and in some cases the young with the environments of the birds. No other exhibit at the World’s Fair has done this. This method is pronounced the best that has ever been shown at a world’s fair. The fish specimens are so well mounted that they seem real. The quadrupeds are also in groups, showing in some cases the male, female and young with their native surroundings. These attract much attention and are admired by all. Some of them are of the opossums, the skunks, the muskrats, young and nests, etc.

The oyster exhibit, consisting of a tank representing a real oyster bed, with other specimens, shows the manner of raising, taking and marketing them. The big pool, forty feet across, filled with salt water, contains fish from the Jersey coast waters. This is one of the features of the World’s Fair.

The insect exhibit, prepared by Professor John B. Smith, the State Entomologist, is pronounced the best of its kind ever made. It contains specimens of all the injurious insects and how to destroy them. It is being studied by experts from all parts of the world. The mosquito exhibit is the largest and excites the most interest. It is really wonderful and furnishes a complete course of education in mosquito extermination. It shows thousands of the different kinds of mosquitoes, the places in which they breed, the various stages of development, methods of draining mosquito pest holes, samples of the various small fish that feed on mosquito larvae, and enlargements of mosquitoes in all their various forms from the egg to the mature insect on transparencies. The spaces about this exhibit are always crowded by curious people. Mr. Morse, curator of the State Museum, who has been hard at work for almost a year in getting these New Jersey exhibits into shape, is very proud of the complete success that has crowned his efforts. Jerseymen who visit the Exposition should not fail to inspect their State exhibits.

THE NEW JERSEY SALT WATER FISH EXHIBIT.

Extracts from the Plainfield Express.

The exhibit of live salt water fish from this State, which is shown in its tank, forty feet across, is the only one worth mentioning at the fair, and will
undoubtedly receive the first prize. The water in the tank is kept constantly running by means of force pumps, and is also filtered every day.

In connection with this exhibit there is also shown a characteristic Jersey oyster bed, under running salt water, with the oysters living and growing, showing the bivalves in the various stage of their development, the whole presenting the life of the oyster exactly as it is under natural condition. This is the first time in the history of the world, as far as known, that such an exhibit has been made. This exhibit is one of the star features of the exposition.

THE NEW JERSEY INSECT EXHIBIT.

New Jersey's insect exhibit at the fair, which includes the collection of mosquitoes and a graphic exposition of the work being done in this State for their extirpation, is attracting the attention of scientists from all parts of the world, who are at St. Louis, and the part of this exhibit relating to the mosquitoes is being studied by foreign savants, with a view of adopting the Jersey methods in ridding other parts of the world of the troublesome insect.

USHER IS PROUD OF JERSEY AT BIG FAIR.

IN FACT STATE TAX EXPERT IS UNCOMMONLY PROUD THAT HE IS A JERSEYMAN.

Taken from the Trenton Times, August 23, 1904.

Thomas B. Usher, secretary of the State Board of Taxation and the Equal Tax Commission, has just returned from a visit to the Louisiana Purchase Exposition.

"The first impression the St. Louis Exposition made upon me," said he in speaking of his trip, "was that I felt uncommonly proud of being a Jerseyman. New Jersey's building and the showing in general which this state makes at the fair fully justified my pride.

"New Jersey's display is very prominent in almost every branch. More than one hundred manufacturers and other firms in this state have elaborate exhibits at the fair.

"This state is the only one which has an exhibit of live fish. It has a large tank in the centre of the fish and forestry building, in which there are various kinds of New Jersey fish.

"Something very unique is the New Jersey road exhibit, and let me say this is the only state in the Union showing a practical illustration of macadam road making.

MOSQUITO EXHIBIT.

"Among all the New Jersey exhibits the most unique and the one attracting the most attention consists of a number of glass tubes in which the development of the mosquito, from its inception to its full fledged growth and biting ability, is illustrated. In conjunction with this exhibit is shown a scientific process for exterminating the mosquito.

"New Jersey's best exhibit is its educational one, and teachers from other states, while visiting the fair, devote most attention to the New Jersey methods of teaching as demonstrated by the exhibit. Trenton's exhibit is the best from the state in water color painting and in music."
The following is a list of the prepared insect now belonging to the Museum.

Notes on the Collection of Insects Prepared for the State Museum.

In preparing the cases of insects forming the general collection two points have been kept in mind; first that the specimens should represent the New Jersey fauna; second, that as a whole, the collection should be educational, and that every box should be prepared with some particular object in view. In representing the New Jersey fauna it sometimes happens that its peculiarities can be better brought out by introducing as a contrast some representatives of another fauna; hence it is not intended to limit the Exhibit to local species so strictly as to exclude comparative forms.

It is not especially difficult to fill numerous boxes with specimens of butterflies, beetles and other insects, and, when these are properly classified and neatly arranged, they are useful and interesting. But it is impossible to go further and to make the exhibit educational as well: to give, beside the adult insects, also some idea of their life cycle, their method of development and the injury caused by them. The importance of the insect problem in agriculture and horticulture is now fully realized, and there is good reason why, in the State Museum, there should be a collection which in some measure at least illustrates some of the work done by the Experiment Station at New Brunswick.

Keeping these general points in mind, each of the 36 boxes which have been thus far prepared, illustrates one general subject and sometimes one insect only; indeed in the case of the Periodical Cicada or seventeen year locust, I have felt justified in devoting three boxes to the one species, because
The Museum Insect Exhibit at St. Louis received a Grand Prize and a Gold Medal.
of its interest and remarkable course of development. The larger proportion of the boxes illustrate insects injurious to shade and forest trees, and as our citizens are awakening to the importance of having trees in cities and towns, and guarding them afterward, it seems fitting that at this museum they should be able to learn something concerning their enemies.

This collection of what may be proudly termed forest insects has been very carefully prepared and was in whole, or in part, exhibited at the Pan American Exposition at Buffalo in 1901, at the Charleston Exposition in 1902, and at the Louisiana Purchase Exposition at St. Louis in 1904. In each instance it received an award as follows:

At Buffalo, 1901, a Gold Medal.
At Charleston, 1902, a Gold Medal.
At St. Louis, 1904, Grand Prize and a Gold Medal.

The following is a statement of the collection as it stands at the present time.

CATALOGUE OF COLLECTION PREPARED FOR THE NEW JERSEY STATE MUSEUM.

BY JOHN B. SMITH.


Work of *Dendroctonus*, showing pitch and outer sufrace of bark and inner sufrace of bark. 2 cards.

Galleries of *Tomicus cacographus* on inner surface of bark. 3 cards.

Galleries made by *T. calligraphus*. 1 card.

Burrows made in bark by *Crypturgus alutaceus*. 1 card.

Burrows made in wood by *Gnathotrichus materarius*. 3 cards.

No specimens of beetles.

2. Life History of *Attacus cecropia*.

2 males, 2 females, 2 inflated larvae, 2 larvae in alcohol, 2 pupae, 2 cocoons, 1 cocoon with moth emerging, 2 cocoons cut open showing contents, 6 parasites, *Ophion macrum*, and 2 parasitized pupae.

3. Insects Injurious to Pine.

Galleries made by larva of *Prionus*, sp. 2 cards.

Larval burrow and pupa chamber of *Monohammus titillator*. 2 cards.

*Monohammus titillator* larva and adults in alcohol. 2 vials.

*Prionus*, sp., larvae in alcohol. 2 vials.

*Prionus laeticollis*, 5 males and 1 female.

*Monohammus titillator*. 10 specimens.
4. Life History of *Samia cynthia*.
   2 males, 6 females, 3 larvae in alcohol, eggs in alcohol, 2 inflated larvae, 2 pupae, cocoons opened, 10 sound cocoons, 1 cocoon showing moth emerging, 1 cut open showing pupa.

5. American Silkworms and their Moths.
   A. *anquifera*, 2 males, 2 females, 1 inflated larva, 1 pupa shell, 3 cocoons, 1 cocoon open.
   A. *columbinia*, 2 males, 2 females, 3 cocoons.
   A. *promethea*, 2 males, 2 females, 2 cocoons, 2 parasitized cocoons, 2 inflated larvae, 2 larvae in alcohol, 1 pupa.

   2 males, 4 females, 2 inflated larvae, 2 larvae in alcohol, 5 cocoons, 2 cocoons opened to show pupa shell, 2 pupae. 2 *Opion macrurum*, 2 cocoons of same, 1 adult emerging from *Telea polyhemus* cocoon.

   Sections of oak cordwood showing galleries made by larvae. 3 cards.
   Oak bark separated from wood by larvae. 1 card.
   Section of young black oak showing work of larva in sap wood. 1 card.
   Section of dead oak branch showing space between wood and bark. 1 card.
   Section of wood showing pupal chamber. 3 cards.
   Pupal chamber of *C. femorata*. 1 card.
   40 specimens of *P. variabilis*, 2 vials containing the different stages of insects.

   Pupal cell in maple. 1 card.
   Borings in maple, pupa shells projecting. 1 card.
   Borings and girdlings on pear. 3 cards.
   Borings and girdlings on mountain ash. 1 card.
   Boring in silver sycamore maple. 1 card.
   1 blown larva, 1 pupa shell, 7 males, 5 females, moths; 1 blown larva in burrow. 1 bottle larva *in situ* in maple, 1 bottle full grown larva and pupae; total 7 cards, 2 large vials on blocks, 12 moths, 2 mounted; early stages.

   C. *regalis*, 3 male moths, 2 female moths, 2 inflated larvae, 3 larvae in alcohol, 1 pupa, 1 pupa shell.
   E. *imperialis*, 2 male moths, 3 female moths, 3 inflated larvae, 3 larvae in alcohol, 1 pupa.

    Female bag worms in alcohol, same broken open; full-grown larvae in alcohol, leaves of maple eaten by bag worms, in alcohol; 1 inflated larva, 1 larva in case, 1 pupa, 7 male moths, 6 bags opened to show contents, 1 branch bearing a number of bags.

11. Swallow-tailed Butterflies of New Jersey.
    *Papilio turnus*, 1 male, 1 female; 1 female var. *glaucus* moths; 3 inflated larvae, 3 alc. larva, vials; 1 chrysalis, 1 chrysalis with a hole made by parasite; 1 *Trogus exesoria*.
    *Papilio thoas*, 1 male, 1 female, butterfly; 1 inflated larva, 3 alc. larva, 2 in vials; pupa or chrysalis 1 chrysalis shell, 1 chrysalis shell, with hole made by parasite, *Trogus nezebiorius*.
    *Papilio asterias*, 1 male, 1 female, butterfly; 3 blown larvae, 5 alc. larve, different stages, in 2 vials; 2 chrysalis, 1 chrysalis shell.

12. The Woodpecker, the Oak and Carpenter Worm.
    5 cards with 8 specimens, illustrating work of Woodpeckers and the efforts of the tree to repair damage. All large, fine specimens. No insects.
13. **Some Common Scales found in New Jersey.**

- **Pernicious** or **San Jose**, 1 picture card. On peach, 1 card; on plum, 1 card; on plums, 1 vial.
- **Oyster-shell Bark Louse**, 1 picture card. On ash, 1 card; on butternut, 1 card; on lilac, 1 card.
- **Rose Scale** on raspberry, 1 card.
- **Scurfy Scale**, 1 picture card. On apple, 1 card, 2 vials.
- **Forbes Scale** on cherry, 1 card.

14. **Work of the "Carpenter Worm" or Larva of the "Goat Moth."**

- 7 male moths, 3 females; 1 inflated larva, 1 pupa shell, pupa and larvæ in alcohol, vial.
- Piece of oak showing burrows of larvæ. 1 card.
- Section of young oak showing exit hole. 1 card.
- Cross-section of white oak showing burrows. 1 card.
- Section from a young white oak showing burrows and woodpecker holes. 1 card.
- Section of an oak trunk showing exit and entering hole for larvæ. 1 card.

15. **Some New Jersey Hawk-Moths.**

- **The potato Hawk Moth**, *Protoparce celeus*.
  - 1 male; 1 female, 2 blown larvæ, 1 pupa, pupa shell, larva in alcohol, 1 vial.
- **The Lilac Hawk-Moth**, *Ceratomia undulosa*.
  - 1 male; 1 female, 3 blown larvæ, 2 pupæ, 1 pupa shell, larva in alcohol, 1 vial.
- **The Tomato Hawk-Moth**, *Protoparce carolina*.
  - 1 male; 1 female, 3 inflated larvæ, 1 pupa, pupa shell, larva in alcohol, 1 vial.
- **The Elm Tree Hawk-Moth**, *Ceratomia amyntor*.
  - 1 male; 1 female, 2 blown larvæ, 1 pupa, pupa shell, larva in alcohol, 1 vial.
- **White-lined Hawk-Moth**, *Deilephila lineata*.
  - 2 males, 2 females, 3 blown larvæ, 1 pupa, pupa shell, larva in alcohol, 1 vial.

16. **Hawk-Moths of the Vine.**

- **Philampelus pandorus**, 2 males, 2 females, 2 inflated larvæ, 2 pupæ.
- **Philampelus achemon**, 2 males, 2 females, 2 inflated larvæ, 2 pupa shells.
- **Thyreus abbottii**, 1 male; 1 female, 2 inflated larvæ, 1 pupa, 1 pupa shell.
- **Ampelophaga choerilus**, 4 moths, 2 inflated larvæ, 2 pupæ, 1 pupa shell.
- **Ampelophaga myron**, 4 moths, 1 inflated, 1 alc. larva in vial, 1 pupa, 1 pupa shell.
- **Amphson nesus**, 5 moths, 1 inflated larva, 2 pupæ.
  - All told, 23 moths, 11 larvæ, 13 pupæ.

17. **Moths and their Caterpillars Feeding on Forest and Shade Trees.**

- **Hyperchira io**, 4 males, 2 females, moths; 3 blown larvæ, 3 larvæ in 2 alcohol vials;
  - 1 pupa, 1 crippled moth emerging, 1 cocoon.
- **Anisota senatoria**, 2 males, 2 females, moths; 3 blown larvæ, many larvæ in large vials;
  - 2 pupæ, 1 pupa shell; vial with parasitized larvæ dry.
- **Dryocampa rubecunda**, 2 males, 4 females, moths; 2 blown larvæ, 6 larvæ in 1 alc. vial,
  - 1 pupa, 1 pupa shell.
- **Anisota stigma**, 2 males, 2 females, moths; 3 blown larvæ, 1 pupa, 1 pupa shell.
- **Anisota virginiana**, 5 male, 2 females, moths; 1 blown larva, 1 pupa, 1 pupa shell.
  - Altogether 27 moths, 11 inflated larvæ, 12 pupæ or shells, 5 vials alcohol larvæ.

18. **Some Hawk-Moths of New Jersey, together with their Larvae and Pupæ.**

- **Sphinx drupiferarum**, 1 male, 1 female, moth; 1 inflated larva, 1 pupa.
- **Sphinx eremitus**, 1 male, 1 female, moth; 2 inflated larvæ, 1 pupa, 1 pupa shell.
- **Ceratomia catalpa**, 1 male, 1 female, moth; 2 inflated larvæ, 1 pupa, 1 pupa shell.
- **Sphinx kalmar**, 1 male, 1 female, moth; 1 inflated larvæ, 1 pupa.
- **Sphinx luctiosa**, 1 male, 1 female, moth; 1 blown larva, 1 pupa, 1 pupa shell.
- **Sphinx luscitiosa**, 1 male, 1 female, moth; 3 blown larvæ, 1 pupa, 1 pupa shell.
- **Dolba hylæus**, 1 male, 1 female, moth; 2 blown larvæ, 1 pupa.
- **Smerinthus geminus**, 1 male, 1 female, moth; 3 blown larvæ, 2 pupæ, 1 pupa shell.
- **Triptogram modesta**, 1 male, 1 female, moth; 1 blown larva, 1 pupa.
- **Paonias erucocetus**, 1 male, 1 female, moth; 3 blown larvæ, 1 pupa, 1 pupa shell.
  - Altogether 20 moths, 19 blown larvæ, 17 pupæ or shells.
19. Some Oak Galls found in New Jersey made by Gall Wasps of the family Cynipidae.
Potato Gall by Cynips quercus-batatus on white oak. 1 card.
Galls of Cynips frondosa on Q. obtusiloba. 1 card.
Galls on tips of white oak twigs by Cynips quercus-tuber. 1 card.
Galls made by a species of Dryophanta. 1 card.
Galls on black oak by Andricus punctatus. 1 card.
Spiny Gall on twigs of swamp oak by Callirhytus corniger. 1 card.
Galls of Holcaspis q. globulus on white oak twigs. 1 card.
Galls made on white oak by Cynips quercus-ficus. 1 card.

20. Some Noctuidae or Owlet found in New Jersey.
Acronycta clarescens. Larval and pupal chambers in rotten wood. 1 card. 3 specimens.
Acronycta occidentalis. 1 vial containing larva; 9 specimens.
Heliothis armiger. Work in ear of sweet corn, 1 card; 2 vials showing work, 1 vial containing larva; 6 specimens.
Arzama obliquata. Work in cat-tail. 1 card; 3 specimens.
Lencania unipuncta. 1 vial containing larva; 12 specimens.

21. Some injurious Sesiidae injuring cultivated plants in New Jersey.
Sesia pictipes. 1 card showing work, 1 specimen of work, 1 larva, 1 pupa, 1 cocoon; 5 specimens.
Sanninoidea exitiosa, 2 specimens of work, 1 larva, 1 pupa, 7 cocoons, 1 vial containing larva; 11 specimens.
Sesia acernt. 1 card showing work in maple; 12 specimens.
Melittia cetu. 1 vial containing eggs and larva, 1 card showing work, 1 pupa skin, 9 cocoons; 13 specimens.
Podoseia syringae. 8 specimens.

22. Some Bombycine Moths found in New Jersey.
Symmerista albifrons. 1 vial containing larva, 1 larva, 4 pupae; 4 specimens.
Cerura borealis. 1 larva, 1 pupa, 1 cocoon, 1 vial containing larva; 5 specimens.
Cerura multiscripta. 1 larva, 1 pupa, 1 cocoon, 1 vial containing larva; 6 specimens.
Notolophus leucostigma. 2 cocoons with egg-masses, 5 larva, 1 pupa, 2 pupa skins, 1 moth emerging, 3 vials containing larvae, 2 females, 8 males.
Cerura cinerea. 1 larva, 1 pupa, 1 cocoon; 4 specimens.
Schizura concinna. 2 larvae, 1 pupa, 1 vial containing larvae and work; 3 specimens.
Heterocampa manteo. 1 larva, 1 pupa, 1 vial containing larva, 3 males, 2 females.

23. Insects injurious to Hickory. Borers and Bark Beetles.
Oncideres cingulata. 1 card showing girdling, 1 card showing work; 12 specimens.
Chramesus icorice. 1 card showing work; 11 specimens.
Cyllene pictus. 1 card showing larval galleries in wood, 1 card showing work in bark; 24 specimens.
Scolytus muticus. 3 cards showing work in wood and bark.

24. Scolytus 4-spinosus and Dicerca lurida.
Scolytus 4-spinosus. 1 card showing work of D. lurida in wood. 4 specimens of D. lurida.
1 card showing work of D. lurida and S. 4-spinosus in bark and wood.
S. 4-spinosus. 40 specimens.
1 card showing work in wood by adult. 1 card showing work in wood. 1 card showing work in bark.

25. Some Common Butterflies found in New Jersey.
Papilio troilus. 2 larvae, 3 chrysalids, 1 chrysalis shell, 1 butterfly emerging; 1 male, 1 female.
Apostura clyon. 1 larva, 1 chrysalis; 1 male, 1 female.
Pieris rapae. 2 larvae, 2 chrysalids, 1 vial containing larva; 1 male, 1 female.
Some Common Butterflies found in New Jersey.

- **Vanessa antiopa**, 1 egg mass on twig, 2 larvae, 1 chrysalis, 3 chrysalid shells, 1 vial containing larvae; 1 male, 1 female.
- **Pyrameis cardui**, 2 larvae, 1 chrysalis; 1 male, 1 female.
- **Pyrameis huntera**, 1 larva, 1 chrysalis; 1 male, 1 female.
- **Danainae plexippus**, 2 larvae, 1 chrysalis, 1 chrysalis shell; 1 male, 1 female.
- **Limenitis archippus**, 2 larvae, 1 larva case, 1 chrysalis, 1 chrysalis shell, 1 vial containing larva; 1 male, 1 female.
- **Limenitis ursula**, 1 larva, 1 chrysalis shell, 1 larva case; 1 male, 1 female.
- **Grapta interrogationis**, 2 larvae, 1 chrysalis, 1 vial containing chrysalis; 3 males, 2 females.
- **Grapta comma**, 3 larvae, 3 chrysalids, 1 parasite on chrysalis; 1 male, 1 female.
- **Euploea claudia**, 2 larvae, 1 chrysalis; 1 male, 1 female.

27. Some Bombycine Moths found in New Jersey.

- **Estigmene acrcea**, 2 larvae, 1 pupa; 2 males, 2 females.
- **Pyrrharctia isabella**, 2 larvae, 1 cocoon with pupa, 1 vial containing larvae; 2 males, 2 females.
- **Hyphantria cunea**, 2 larvae, 1 pupa, 1 vial containing larva; 3 males, 3 females.
- **Actias luna**, 1 larva, 4 cocoons, 1 pupa, 2 vials containing larvae; 3 males, 1 female.
- **Spilosoma virginica**, 4 larvae, 1 pupa, 1 cocoon, 1 pupa shell, 1 vial with larva; 2 males, 2 females.
- **Utetheisa bella**, 2 larvae, 2 pupa, 1 vial of larvae; 7 specimens.
- **Cycnia Egle**, 2 larvae, 2 pupae, 1 cocoon, 1 vial containing larva; 2 males, 2 females.

28. Some species of Notodontid Moths found in New Jersey.

- **Datana ministra**, 2 larvae, 2 pupae, 1 vial of larvae; 2 males, 2 females.
- **Melalopha inclusa**, 2 larvae, 2 pupa, 1 cocoon, 1 cocoon with parasites, 1 vial of larvae, 1 vial of cocoons; 4 males, 4 females.
- **Nadata gibbosa**, 2 larvae, 1 pupa, 1 vial containing larvae; 2 males, 2 females.
- **Datana Major**, 4 larvae, 1 pupa, 1 pupa shell, 2 vials of larvae; 2 males, 2 females.
- **Datana perspicua**, 3 larvae, 1 pupa, 1 pupa shell, 1 vial of larvae; 2 males, 2 females.
- **Datana integerrima**, 2 larvae, 1 pupa, 1 pupa shell, 1 vial of larvae; 2 males 2 females.
- **Datana angusii**, 2 larvae, 1 pupa, 1 pupa shell; 1 male, 1 female.

29. The Seventeen-year Locust, *Cicada septendecim*, showing females, and empty pupal shells resting on twigs. Also 8 cards of twigs—birch, pear, sassafras, oak, cherry, apple, peach, and seedling pear, in which eggs have been oviposited.

30. The Seventeen-year Locust, *C. septendecim*, showing exit holes in earth, some twigs in which eggs have been oviposited and 21 specimens, 5 of which are spread.

31. The Seventeen-year Locust, *C. septendecim*, containing 16 cones or towers and 47 specimens representing the development of the insect.

32. The Rose Scale, *Diaspis rosae*, Bouche; 6 vials containing infested twigs; 4 infested twigs pinned; 4 cards illustrating the insects and 1 card describing the injury.

33. Some Insects Injurious to Elm Trees. A number of specimens of *G. luteola*; 1 card showing injury to leaves, 1 card showing eggs masses, 1 vial containing larva, 1 vial containing pupa. A number of specimens of *Anthaxia viridifrons* and 1 card showing injury of larvae to elm branches. Eight males and 1 female of *Zeuzera pyrina*, and 1 card showing elm branch completely girdled by larva, 1 vial containing 1 larva and 1 vial containing 1 pupa.
34. Some Paper Wasps: 1 card showing comb of *Vespa maculata*, 1 card showing outer covering, a small nest and 25 specimens; 1 card showing combs of worker and female cells of *Vespa germanica* and 16 workers, 6 males and 3 females; 1 card showing unprotected paper combs of *Vespa* Sp. and 11 specimens.

35. The Large Carpenter Bee, *Xylocopa virginica*; 2 large and 2 smaller pieces of wood showing borings, 2 pieces showing cell divisions, 1 piece of wood showing cells or cases of leaf fragments and 15 specimens.

36. Mud Wasps and their Nests: 2 cards showing mud cells of *Pelopaeus cemeterius*, 1 card showing mud nest of *Pelopaeus cemeterius* on clothes hook, 1 card showing cells of *Pelopaeus* Sp., 1 card bearing nests of *Chalybion caruleum*, 2 cards showing nests of *Eumenes fraterna* on twigs, 2 tubes containing nests of *Eumenes fraterna* piece of shingle bearing cells of *Chalybion caruleum*; 14 specimens of *P. cemeterius*, 16 specimens of *C. caruleum*.

37. Short-Horned Grasshoppers or Acrididae: *Dissosteira carolina*, 5 specimens; *Melanoplus femurrubrum*, 10 specimens; *Schistocera cerambyciformis*, 5 specimens; *Melanoplus femurrubrum*, 10 specimens; *Trimerotropis maritima*, 5 specimens; *Arphia zanthoptera*, 5 specimens; *Chorthophago viridifasciata*, 10 specimens; one locust dissected mounted on card and all the parts named; drawing of side view of locust with parts named.

38. Long-Horned Grasshoppers or Locustidae: *Orchelimum agile*, 7 specimens; *Orchelimum vulgare*, 4 specimens; *Xiphidium fasciatum*, 7 specimens; *Conecephalus robustus*, 4 specimens; *Xiphidium brevipenne*, 10 specimens; *Scudderia texensis*, 7 specimens; *Microncentrum retinervis*, 7 specimens; 1 card showing leaves with Katydid eggs between the tissues; 1 card showing Katydid eggs on twigs; drawings of the ovipositor, fore leg showing ear in tibia, musical apparatus and palpus of a Katydid.

MORE INFORMATION.

To those wishing more information about the insects of New Jersey, how to distinguish them, how to destroy them, or how to study them, we would refer them to what we consider one of the best books ever issued on the subject. We refer to the Report of the New Jersey State Board of Agriculture, entitled “Insects of New Jersey,” by John B. Smith, Sc.D., State Entomologist, of the Agricultural College Experiment Station, at New Brunswick, N. J. It is a supplement to the Twenty-seventh Annual Report of the State Board of Agriculture.

Every farmer and horticulturist in the State should have a copy of it, if it can be procured. Professor Smith, the author of it, has charge of the insect or entomologist department of the State Museum. He has prepared the thirty-one cases now exhibited in the Museum. He is still preparing others which will from time to time be added to the present exhibit.
New Jersey Museum in Fish, Game and Forestry Building.
The Insect Exhibit—Woods, Oyster Exhibit.
NEW MATERIAL AT ST. LOUIS.

SOME TO BE ADDED TO THE COLLECTION.

This collection received the highest award at the Louisiana Purchase Exposition. A Grand Prize and two Gold Medals.

Written by Prof. John B. Smith.

It has been intended to add materially to this collection in pursuance of the general scheme outlined, but a fire in New Jersey Hall, in which the Entomological Laboratories were situated, put an end to all work in 1902, and damaged the cases which had been received from the Museum to contain the new collections.

When matters were in a condition so that work might be resumed, it was suggested that an exhibit might be made to represent the results of the mosquito investigation, at St. Louis. When, after consultation, the Commission finally decided that such an Exhibit was desirable, it was quite understood that while it represented the work of the Experiment Station, it was, nevertheless to form part of the Exhibit of the State Museum, and the repaired boxes belonging to the Museum were used to contain the Exhibit material. A free hand was given to the Entomologist to design the Exhibit cases, subject of course, to the approval of the Curator, who insisted on a retention of his unit system with no more modifications than the shape of the space assigned, demanded.

The Exhibit was completed and installed on the opening day of the Fair and attracted interested attention from the beginning. The opinion of the judges is indicated by the fact that they awarded to it one of the (10?) grand prizes given in the entire Forestry, Fish and Game Building and, in addition, awarded a Gold Medal to the Entomologist who prepared it—it is a rare honor for an Entomologist to receive a gold medal. These medals will be placed in the Museum when received with the other medals received by and through the State Museum at St. Louis.

The opinion of the scientific world was shown in part by the appreciative notices in their publications and, in part, by the
desire of one of the leading University Museums to purchase the collection. The interest excited in the practical man was shown by the numerous inquiries received from all States of the Union on subjects related to matters of mosquito control or extermination.

New Jersey is generally in the fore-front of progress and in this matter of mosquito investigation she stands first; after an investigation extending through three years the report that has just been published shows not only just what species inhabit the State, and just which of them are really troublesome; but it shows also just how they live, just how they may be controlled and just what has been already done in the way of practical work.

That report is epitomized in the collection now in the halls of the State Museum. It represents by its charts, its pictures, its labels and its specimens, the results of three year's work. It shows, first of all that the State is quite aware of the importance of the mosquito problem, realizes the fact that the problem is a living one within its limits, and is determined to solve it. A battle well begun is half ended, and with all the factors fully understood, the report already referred to shows that on all sides practical steps are under way to remove one of the few drawbacks which separate New Jersey from Paradise.

The general plan of the Exhibit as it stands at present, is as follows:

In the series of framed charts that forms the crown of the square is shown the life cycle of the organism that produces the malarial diseases in the human body; the insect that acts as an intermediary host is shown in the act of biting, and the differences between the malaria carriers or Anopheles and the common house mosquitoes is fully brought out. The way in which a mosquito bites is also shown. These charts are colored and were prepared by Mr. John A. Grossbeck under the direction of the Entomologist.

Between this series of charts which crowns the exhibit and the table cases, is a series of transparencies varying in size and showing:—
Insects Injurious to Forests. Received a Gold Medal at the South Carolina Inter-State and India Exposition and a Gold Medal at Louisiana Purchase Exposition, St. Louis, 1904.
1st. The development of the malarial parasite from actual photographs of blood-corpuscles taken from an infested patient.

2nd. The characteristic breeding places of the various pestiferous forms found in New Jersey.

3rd. The photographs of those who have been engaged in the mosquito campaign in the State.

4th. The methods employed in the work of actual control.

It is assumed throughout that whenever a community realizes the existence of a condition detrimental to its interests it will at once strive to remove those conditions and this brings out

5th. Samples of educational work done by publications of the Experiment Station and direct aid given by preparing maps of drainage schemes for mosquito breeding localities, etc.

On the series of table cases there are 26 of the unit museum boxes containing specimens. These specimens illustrate the commoner species of mosquitoes found in the State, their various stages and their natural enemies. Great care has been paid to the methods of exhibition and some of these are altogether original. Two of the boxes contain the common fresh and salt water minnows that feed upon the wrigglers and these are shown in vials glued to a glass strip, with a white background, so that they appear in a natural, swimming position. In each case the label gives not only the name of the fish, the character of the waters where found, but also a concise statement of how it is useful.

In fact throughout the Exhibit the explanatory labels form a text in which the whole subject is explained. The report already referred to shows what was done, in words, illustrated by figures; this collection shows the same thing by actual specimens and photographs explained in the labels.

In connection with the cases of salt water “killies” one end of the exhibit case represents a salt marsh in miniature—one-half with breeding pools for the migratory mosquitoes, the other drained naturally, by “fiddler crabs” and the like. The aim here is to show that there is a large section of “safe” marsh and that the problem is not so large as, at first sight, it appears to be. The association of marsh and fish is to bring
out the fact that where nature has produced breeding places she has also established checks, and it is for us to enable the killies to help us out on the marshes.

One box is devoted to the various materials that have been and are yet being used as larvicides or destroying agents against any stage.

Another box shows those articles that have been used as repellants to either drive or keep away the adults.

Four boxes are devoted to the insect enemies of the mosquitoes—Dragon flies, Diving beetles, Water-bugs and the like, and it is brought out hereby that in permanent bodies of water where other aquatic life flourishes, the mosquitoes are unable to maintain themselves. Besides the adults, which are pinned, the larvae of these beneficial species are shown in alcohol in vials, prepared as are the fish vials already referred to.

The remainder of the boxes are devoted to mosquitoes strictly speaking, and some 15—20 species are shown in great detail. Usually an entire box is devoted to one species and the life cycle is shown as completely as possible by specimens, drawings and labels. The early stages are always shown in alcohol and in vials so prepared as to bring out the details most clearly. The adult insects are shown pinned and in alcohol. The drawings bring out details not readily visible in the pinned specimens, and the labels tell where the insects breed and what their general habits are.

Returning to the transparencies they are planned to show by direct photographs, actual conditions; some of them in communities that have done nothing; some of them where active work was in progress. The second series shows what must and can be done by the localities suffering from the mosquito pest.

The whole thing is an illustration of the fact that just whenever the State of New Jersey really decrees war against the insects and supplies the necessary ammunition, the actual wiping out will prove easy along lines and plans already worked out in great detail.

The collection contains as follows:

| Boxes or trays, containing specimens | 26 |
| Salt marsh tray | 1 |
The Geological Clay Exhibit at St. Louis, 1904
To be placed in the State Museum.
Charts illustrating mosquito life history and development of malarial parasite .......................... 12
Transparencies of all sizes ........................................... 104
Fish specimens ......................................................... 83
   In glass vials ...................................................... 34
Mosquito enemies in alcohol, specimens ............................. 87
   In glass vials ...................................................... 37
Pinned specimens .................................................... 613
Mosquito specimens in alcohol ........................................ 1600
Contained in glass vials ............................................. 158
Pinned material, specimens ......................................... 1500
Drawings and plates, each with several figures .................... 56
Making a total of, vials ............................................. 158
Specimens, dry or in alcohol ....................................... 3183

There are also 23 vials of Repellants, and 14 specimens of other material used to either kill or repel mosquitoes.

THE GEOLOGICAL EXHIBIT.

This exhibit was prepared under the supervision of the State Geologist, Dr. Henry B. Kummel, assisted by Mr. S. H. Hamilton, of the New Jersey Geological Survey.

The work was commenced the first of September, 1903. It was installed for the opening of the Exposition on the 31st of April, 1904. It is fully described by Dr. Kummel in the report. It was a credit to the Museum, Geological Survey, as well as to the State
(See the report and awards received.)

THE GEOLOGICAL AND CLAYS EXHIBITS.

BY HENRY B. KUMMEL, STATE GEOLOGIST.

At the request of the New Jersey Commissioners to the Louisiana Purchase Exposition, the Geological Survey prepared an exhibit to show the mineral resources of the State and the work of the Survey in developing them. Specimens, maps, photographs and models were used to accomplish these results. The underlying principles controlling the selection
of material and its installation was an educational one. The effort was made, not only to display samples of the rocks, minerals, ores, etc., of the State, but to show their distribution, their value, the method of utilization, and in some instances, specimens of the articles made from them. Another part of the exhibit was designed to illustrate the work which the Survey had accomplished in investigation, and the dissemination of information regarding the State. The way in which these results were accomplished may be shown by a brief description of the exhibit.

**Geology.** A systematic collection of rocks, ores, minerals and fossils was arranged in a series of cases, to show in outline the geological structure and history of the State. Beginning with the extremely ancient rocks of the pre-Cambrian era, a suite of specimens was shown illustrating the main rock types belonging here. A small map showed the distribution in New Jersey of rocks of this era, and a brief descriptive label gave the important facts regarding the geography, culture and economic resources of the region underlain by them. The workable iron and zinc deposits of the State lie almost exclusively in these rocks, so that the specimens of iron and zinc ores, with maps showing the location of the mines, were placed here. So, too, the various steps in the processes by which the iron and zinc minerals crushed and separated by electrical methods from the accompanying waste rock, were illustrated by sets of specimens. Finally there were displayed specimens of the various minerals which are found so abundantly in rocks of this era at some localities, notably at Franklin Furnace. In this way all the information relating to the geography, geology, mineral resources and mineralogy of the pre-Cambrian rocks was grouped together and so arranged that the visitor might carry away a definite conception of these relationships.

Following the pre-Cambrian rocks, came those belonging to the Paleozoic era. These are chiefly sandstones, shales and limestones, belonging to the Cambrian, Ordovician, Silurian and Devonian systems. The principal economic products are Portland cement rock, roofing slate, and limestone for lime. They contain but few valuable mineral specimens, but the fossil remains of the ancient life of this time are of interest to the layman, and of great importance to the geologist.
Corner in Fourth Alcove.
The arrangement in these cases was similar to that of the previous ones. A small map showed the distribution of the Paleozoic rocks, and another the narrow bands of Portland-cement rock. Specimens of sandstone, shale and limestone illustrated the rock types, while other specimens showed the various stages in the manufacture and testing of Portland Cement. The unique forms of many of the fossils and their importance to the geologist were shown by specimens and drawings.

The cases containing material from the Triassic or Red sandstone formation were arranged on the same plan as the others. Samples of shale, sandstone and trap represented the rock types. A large number of beautiful mineral specimens occur in the trap, and these were well shown. The principal economic products are "brown stone" for building, crushed trap rock for concrete and road material, and native copper. The chief fossil remains are the footprints of the huge reptiles which walked the mud-flats, and the fish, which swam the shallow waters of those days, and representatives of these were here included. Maps showed the distribution of the sandstone and of the trap rock, and photographs made plain the columnar structure of the trap and the way the latter rested upon the gently inclined beds of shale and sandstone.

The Cretaceous rocks of New Jersey are sands, clays and greensand marl or glauconite, numerous samples of each of which were shown. Inasmuch as the clays and greensand marls are the only products of economic importance, considerable emphasis was placed upon their proper representation. Here, as before, maps, brief descriptions, mineral specimens and fossils make the exhibit a completed unit.

For the Tertiary and Pleistocene ages a similar arrangement of materials was adopted, but details are unnecessary. Enough has been said to show that in arranging the display of rocks, minerals, ores and fossils representative of the State, the effort was made to group these in their natural relations and to supplement the specimens themselves by the necessary maps, labels and photographs to make the whole intelligible.

Since the building stones of the State are widely distributed geologically, it seemed best to group the samples of these in
one central pyramid, which was capped by a polished cube of dark green serpentine, quarried near Phillipsburg, and used for interior decoration.

The center of the exhibit space was occupied by a restoration of Hadrosaurus Foulkii (Leidy). This was a reptile of the order of Dinosaurs which lived during the Cretaceous, their fossil-izen bones having been found at a number of localities in South Jersey, the best preserved individual being discovered near Haddonfield, about fifty years ago. “It was a herbivorous animal of heavy proportions and very long hind limbs; the fore limbs measuring less than half the length of the latter. * * * * * * Its great tail, hind limbs and pelvic bones were an efficient support, while it reached upward to the limbs of trees on whose foliage it fed. The fore limbs were chiefly used in drawing its food to it, though it probably rested on them as it stooped to the ground to devour vegetable matter there.” (Cope. Geology of New Jersey, 1868, p. 736).

Through the kindness of the Philadelphia Academy of Sciences, the Survey was permitted to reproduce in plaster the Haddonfield specimen. This was supplemented by material obtained from the American Museum of Natural History, New York, the National Museum in Washington, and the Yale Museum at New Haven. In this way the errors which had crept into some of the previous restorations through insufficient data, were avoided, and the result was scientifically accurate, as well as of popular interest. Other types of extinct reptiles and mammals which lived in New Jersey and whose remains have been found in the State were represented by small models or drawings. A gold medal was awarded the Survey for the exhibit of rocks, minerals, ores and fossils.

Since New Jersey is the chief clay-producing state in the country and stands third in the importance of manufactured clay products, it was fitting that a special exhibit of clays should be made. Sixty clays were taken, representing all grades of ball clay, fire clay, terra-cotta clay, hollow-brick clay, and clay for front and common brick. Bricklets of these were burned at various temperatures, so that by a comparison of the raw clay with the burned bricklets, the amount of fire shrinkage, the color and behavior in burning of each cay could be determined. Additional facts regarding the
Educational Exhibit at St. Louis

Alcove No. 3—Looking in.

High School Department.
chemical constitution and physical character of the samples were shown upon the labels. Forty or fifty other samples of raw clay completed this feature of the exhibit.

Specimens illustrating the origin of clays, the air shrinkage, the determination of the tensile strength, and the chemical, mineralogical and physical constitution were also prepared.

The breaking and crushing strength of New Jersey brick had been the subject of long and careful examination by the Survey. This phase of our investigations was illustrated by a display of the fractured specimens and labels giving the results of each of these experiments.

Maps showed the distribution of clay and the location of clay-working plants and the mining, preparation and manufacture of clay were illustrated by photographs as well as by a large model of Edgar Brothers' Clay-Washing plant near Sayreville, N. J. The latter was an exact reproduction of the clay pits, storage houses, washing troughs and sluices, by which the sand and other impurities are separated from the high-priced ball clay.

Samples of structural and fancy brick, floor and wall tile, terra-cotta, stoneware, fire-brick, etc., illustrated a few of the clay products manufactured from New Jersey clay, but there was no effort to make a complete exhibit of manufactured ware, the work of the Survey being with the raw materials. In this connection should be mentioned, however, the handsome terra-cotta columns, which marked the entrance to the New Jersey clay exhibit and which were contributed by the Perth Amboy Terra Cotta Company. The enamel brick piers on which they were erected were furnished by The Sayre and Fisher Company and the American Enameled Brick and Tile Company.

The clay exhibit was awarded a gold medal, and one of the judges a noted clay expert pronounced it the most complete exhibit of raw clays, and the methods of testing them he had ever seen.

New Jersey has the well-deserved reputation of having the best maps of any State. Emphasis was, therefore, laid upon this feature of the exhibit. A large copper relief map, 15 feet long and 8 feet wide, on a scale of one inch per mile, showed the topography of the entire State and was much
studied by visitors. Several smaller relief maps, some colored to represent geological features, gave in greater detail the topography of smaller areas. A complete set of the engraved topographical atlas sheets on a scale of one inch per mile, and of the larger-scale maps, 2,000 feet per inch, were on exhibition, as well as a great number of special maps, engraved and manuscript, illustrating different topics, such as the relation of geology and topography, the distribution of water-powers, artesian wells, seaside resorts, changes of the coast line, etc., etc.

The scenery of the State was shown by large photographs, some hung upon the wall, others arranged on an endless chain in a graphoscope, so that by turning a wheel they could be successively observed through a magnifying glass.

The judges awarded a gold medal for the exhibit of maps and models.

The study of thin rock sections under a microscope is a well-established and important branch of geologic investigation. In order that this phase of work might be brought to the attention of the public as well as to show the contrasted character of the various rocks when seen by polarized light, a magazine microscope was designed by which a large number of rock sections fastened to an endless belt which travels on a revolving drum, can be brought successively across the field of vision. The drum is rotated by a thumb screw, and by other screws the necessary adjustment of the focus and the analyser can be obtained. The entire apparatus is enclosed in a case from which only the eye-piece of the microscope and the thumb screws project. About seventy-five different rock sections can be shown, and the entire apparatus is so arranged that it cannot readily get out of order. It attracted much attention from the general visitors and was warmly commended by several prominent museum workers. It received a silver medal.

The preparation and installation of the general exhibit was in charge of S. H. Hamilton, who was assisted by C. B. Hardenberg. The clay exhibit was prepared and installed under the direction of the State Geologist. After it was installed, Julius F. Kummel was in charge during the greater part of the Exposition period. It is not possible to mention by name
New Jersey in the Swim.
all persons from whom specimens of various sorts were obtained for this would necessitate the listing of practically all the miners, cement manufacturers, quarrymen, clay miners, and many clay manufacturers of the State. Thanks are due to all who in any way assisted by supplying material. Especial mention should be made, however, of the kindness of Colonel Washington A. Roebling, who loaned a portion of his valuable mineral collection and who greatly assisted the preparation of the exhibit by placing at the disposal of the Survey ample storage and work room.

EDUCATIONAL EXHIBIT.

The space allotted for the installation of the New Jersey Educational Exhibit, 36x28 feet, was altogether too small for the proper display of the immense amount of school work received from the schools of the State. Application was made to the Exposition authorities for additional space, but the demands of the other States and of foreign countries made it impossible for them to increase our allotment. As all the space in the Palace of Education was assigned in the ratio of the amount of money appropriated for educational exhibits by each of the several States and countries, we were at a manifest disadvantage. Notwithstanding our inadequate space, New Jersey secured her full proportion on this basis together with a liberal additional allotment, because of her established reputation in the preparation and installation of educational exhibits.

The New Jersey Commission limited our educational exhibit to an expenditure of $6,000, the Massachusetts Commission was allowed $40,000, the Missouri Commission $60,000, and other States appropriated comparatively liberal amounts. Though some of them were allotted from two to six times the space secured by New Jersey, we displayed from two to six times the amount of school work.

The educational Pavilion and furniture were manufactured by the New Jersey School and Church Furniture Company of Trenton, N. J. This company also manufactured over twenty-five hundred of the New Jersey Educational Cabinets, used in other exhibits, in the Palace of Education.
The front of the pavilion was one of the most artistic and one of the most admired in the building. It was generously presented to the managers of the Educational Exhibit, by the said company, purely in consideration of its great interest in the success of the New Jersey Educational Exhibit. The front consisted of four circulars arches opening into as many aisles, each of which was connected with a broad aisle at the rear, extending the full length of the pavilion. Each aisle was lined on both sides with tables which held the New Jersey leaf cabinets, and above the cabinets were placed large frames containing mounted work, manual training, and specimens of drawing. The space under each table was occupied by drawers containing bound volumes and other exhibit work. The aisle at the back of the pavilion made the entire back wall available as exhibit space and provided a convenient place for the manager's desk. This system of utilizing the small space made it possible to show an immense amount of material, and also to arrange it, so that the work of individual schools, classes and pupils from any section of the State could easily be found.

The Exhibit comprised sixty-eight wing cabinets, each cabinet contained sixteen frames, and each frame held two cards 22x28 inches placed back to back. Thus each cabinet presented to view 33 large faces or pages. The specimens of work were mounted in large groups of four on each page and each group contained from ten to twenty-five papers. This arrangement made it possible to show from nine to twenty-four specimens of the average daily work of classes or pupils in a group, instead of a few selected specimens.

The utilization of the space under the tables with drawers was an entirely new idea and a distinctive feature of the New Jersey exhibit. The drawers afforded a place for hundreds of bound books, specimens of mounted work, sewing, etc., where they were easy of access and free from disarrangement and dust. This feature was complimented by many visitors, and, as in the case of the New Jersey Swing Cabinet will, no doubt be adopted by other States in future exhibits.

The space allotted to the New Jersey exhibit was certainly fully utilized. The system of presentation was such as to show the entire work of the State in classified order and give
a correct general conception, as well as to afford an opportunity for a careful examination of details.

New Jersey has again proved she has a genius for doing things, and that she leads rather than follows in the character of school work and in the method of exhibiting it.

WHAT THE EXHIBIT CONTAINED.

The exhibit contained work from the State Normal and Model Schools, the Bordentown Industrial School for Colored Youth, and from every county and nearly every city in the State. The Normal School work occupied three units, a unit consisting of a base containing six drawers and a shelf or show case, one wing cabinet, and a space of about eight feet above the cabinet. There were sixty-eight units all new. The Model School Exhibit occupied the same amount of space. The exhibits showed the pupils' work and was the most extensive of any schools of like character in the whole building. Each school received a gold medal. The work from the public schools was, as per instructions, divided into four departments: First the work of the Elementary schools, (all below the 9th grade); second, the High School work (the grades above the 8th); third, Manual Training and Industrial Work; fourth, Art Work and Drawings. New Jersey followed more nearly the instructions of the managers than any other state in classifying the exhibits. Much of the work was displayed in the cabinets and on the walls or on frames over the cabinets. There were also some twelve hundred volumes of pupils' work, bound in different colored covers, a separate color being used for each branch, only used by New Jersey. This proved to be very attractive, and was a great aid in locating the work from any school or pupil. The key to the Exhibit, which is explained in another part of this report, was a great help in finding work. It was used only in the New Jersey Educational Exhibit, being another improvement over former methods. It received a medal.

The Elementary work came from nearly every school in the State. It was typical of what such schools are doing. Over forty High Schools were represented in the High School Department. The Manual Training Exhibit was very complete,
nearly every school doing this work being represented. It gave a very accurate idea of what New Jersey is doing in this line. The State may well feel proud of such work.

The Art and Drawing Department had work from a large number of schools, and contained as good specimens as could be found anywhere.

There were over six hundred photographs consisting of exterior and interior views of school houses; classes at work, and of work done in the schools.

The Historical Cabinet attracted much attention. It consisted of photographs and open sketches, etc., of points and places of historical interest in New Jersey, with descriptions of them by the pupils.

The single exhibit, that attracted most attention, and was visited by the largest number of persons of any exhibit in the building, was the “Illustrated Elementary Music Charts,” which was prepared by the Music and Drawing Department of the public schools of the city of Trenton. The work was done in grades below the High School. This exhibit must be seen to be appreciated. It was the only exhibit of the kind in the whole World’s Fair, and it received a medal.

The Bureau of Information established by the State Board of Education for placing teachers in the schools of New Jersey, with no expense to the teachers or school boards, had an exhibit which was studied by many. Similar bureaus will be established in other States, counties and cities. New Jersey, as in other school matters, took the lead in this. It has been in operation about six years and has been very successful, several hundred teachers being placed each year.

THE WORK.

It would be hard to say which school had the best work, but it is certain that all did well. New Jersey had one of the best Educational Exhibits the world has ever seen, and every true Jerseyman can feel proud of it.

This exhibit will, on its return to Trenton, be placed in the Educational Department of the State Museum, where it can be seen by those who wish to examine it.
One Side of an Alcove in Educational Exhibit
St. Louis.
The Educational Exhibit received a grand prize, ten or more gold, eight silver and several bronze medals. It was considered the best of its kind at the St. Louis Exposition.

HOW THE EDUCATIONAL EXHIBIT WAS PREPARED AND INSTALLED FOR ST. LOUIS.

It was the last of October, 1903, that the State Superintendent issued the first circular of information to the County and City Superintendents, that the Louisiana Purchase Exposition Commission for New Jersey, had asked him to prepare an Educational Exhibit for the World's Fair at St. Louis, and that he had chosen Mr. S. R. Morse as Director of the Exhibit.

He also informed them that other circulars of instruction would be sent to them later. In all seven circulars were sent out to the superintendents and teachers from the State Superintendent.

Circular No. 3 with lists of Committees, and giving full instructions how to prepare the work and when it should be completed, was sent out November 20th, 1903. This gave the schools only about two months to prepare the work for the exhibit.

It will be seen by this circular that the work was to be prepared, selected and returned to the Department of Public Instruction at Trenton, on or before the 15th day of February, 1904.

It then had to be arranged, selected and mounted on cards, or bound in book form, put in portfolios, or framed to be displayed in the Exhibit at St. Louis.
NEW JERSEY COMMISSION LOUISIANA PURCHASE EXPOSITION.

Foster M. Voorhees, Chief Commissioner . .Elizabeth, N. J.
Johnston Cornish, Vice President ...........Washington, N. J.
Clarence E. Breckenridge ....................Maywood, N. J.
Edgar B. Ward, ................................Newark, N. J.
R. W. Herbert, ................................Wickatunk, N. J.
Harry Humphreys ...............................Camden, N. J.
James T. MacMurray ............................Plainfield, N. J.
Elbert Rappelye .................................Jersey City, N. J.
Edward R. Weiss ................................Paterson, N. J.
W. H. Wiley ....................................East Orange, N. J.
Ira W. Wood ....................................Trenton, N. J.

Col. Lewis T. Bryant, Secretary ............Atlantic City, N. J.

C. J. Baxter, Superintendent of Public Instruction, Trenton, N. J.
S. R. Morse, Director of New Jersey Exhibit .Trenton, N. J.

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CHAIRMEN OF THE COUNTY AND CITY EXHIBIT COMMITTEES.

COUNTY CHAIRMEN.

<table>
<thead>
<tr>
<th>County</th>
<th>Names</th>
<th>P. O. Addresses</th>
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<tbody>
<tr>
<td>Atlantic</td>
<td>Hon. S. D. Hoffman</td>
<td>Atlantic City</td>
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<td>Bergen</td>
<td>John Terhune</td>
<td>Hackensack</td>
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<td>Burlington</td>
<td>Herman A. Stees</td>
<td>Beverly</td>
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<td>C. S. Albertson</td>
<td>Magnolia</td>
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<td>Cape May</td>
<td>Aaron W. Hand</td>
<td>Cape May City</td>
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<td>Cumberland</td>
<td>John N. Glasspell</td>
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<td>Elmer C. Sherman</td>
<td>South Orange</td>
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<td>Jason S. Hoffman</td>
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<td>Mercer</td>
<td>A. W. Hartwell</td>
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<td>Middlesex</td>
<td>H. Brewster Willis</td>
<td>New Brunswick</td>
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<td>Monmouth</td>
<td>John Enright</td>
<td>Freehold</td>
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<td>Morris</td>
<td>W. B. Matthews</td>
<td>Dover</td>
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<td>Ocean</td>
<td>Peter Tilton</td>
<td>Toms River</td>
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<td>Passaic</td>
<td>Homer A. Wilcox</td>
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<td>Pennsgrove</td>
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<td>H. C. Krebs</td>
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<td>Sussex</td>
<td>Ralph Decker</td>
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<td>Union</td>
<td>W. J. Shearer</td>
<td>Elizabeth</td>
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<tr>
<td>Warren</td>
<td>Franklin T. Atwood</td>
<td>Hackettstown</td>
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</table>

CITY CHAIRMEN.

| Asbury Park     | Fred S. Shepherd                     | Millville                |
| Atlantic City   | C. B. Boyer, Supv, Pr.               | Montclair                |
| Bayonne         | J. H. Christie                       | Randall Spaulding        |
| Bloomfield      | W. E. Chancellor                     | Morristown               |
| Bordentown      | Wm. MacFarland                      | W. L. R. Haven           |
| Bridgeton       | E. J. Hitchner                       | Newark                   |
| Burlington      | Wilbur Watts                         | Dr. A. B. Poland         |
| Camden          | James E. Bryan                       | New Brunswick            |
| Dover           | J. H. Hulsart                        | W. C. Armstrong          |
| East Orange     | Vernon L. Davey                      | Orange                   |
| Elizabeth       | W. J. Shearer                        | W. M. Swingle            |
| Englewood       | Marcellus Oakey                      | Passaic                  |
| Gloucester      | Horatio Draper                       | F. E. Spaulding          |
| Hoboken         | A. J. Demarest                       | Paterson                 |
| Jersey City     | Henry Snyder                         | L. A. Goodenough         |
| Lambertville    | A. P. Kerr                           | Perth Amboy              |

(49)
SPECIAL COMMITTEES FOR EXAMINING STATE
SCHOOL EXHIBITS.

The following special committees were appointed for the purpose of assisting
the State Superintendent and the director in the final selection of work to be
sent to St. Louis. The performance of this duty did not debar a member of
any committee from giving his or her active co-operation in the preparation
of the work to be sent from his or her respective county or school district.

STATE NORMAL AND MODEL SCHOOL.
James M. Green.

SCHOOL GROUNDS AND BUILDINGS.

STATISTICS.

DRAWING.
Langdon Thompson, Miss Mary C. Fields, Chas. F. Jackson.

MANUAL TRAINING.
Eli Pickwick, Jr., H. E. Hilton, Miss Helen D. Meeker.

NATURAL SCIENCES.
Austin C. Apgar, Wm. A. Wetzel, Claude F. Walker.

PENMANSHIP.

GEOGRAPHY.
Miss Louise Connelly, Miss Sayre, B. C. Wooster.

MATHEMATICS.

KINDERGARTEN.
Miss Margaret McCloskey, Miss Catherine T. Bryce, Miss Cora F. Cadmus.

INDUSTRIAL SCHOOLS.
Chas. B. Colton, Wm. Plummer, H. B. McBride.

LANGUAGE.

PHOTOGRAPHY.

PHYSICAL CULTURE.
Marcus L. Glazer, Adolph Spiller, J. A. Wentzel.

HISTORY.
Miss Sarah J. Dyne, Amos H. Flake, E. A. Murphy.
Office of Educational Exhibit at St. Louis.
Department of Public Instruction, State of New Jersey.

Trenton, November 2, 1903.

To School Officers and Teachers:

We are again confronted by the duty of preparing an educational exhibit that will correctly represent the work of our school and our admirable school system.

Though it may seem to many that calls of this nature have, in recent years, been rather frequent, we are assured that there will be a much longer interval between this and the next exposition. In any event, the present opportunity is exceptionally important, and the benefit that will accrue to our public schools so certain, that we cannot afford to let it pass unimproved. No exposition previously held has made education so prominent a feature, and no other has ever been projected upon so grand a scale, as the Universal Exposition to be opened at St. Louis, Mo., on May 1st, 1904. It will, without doubt surpass all former expositions.

Not only in every State and Territory of the Union, but throughout the civilized world, school officials are formulating plans and preparing to make as creditable an exhibit of their school work as possible. It therefore behooves us to prosecute with vigor the work before us.

The successive exhibits held at Philadelphia, New Orleans, Chicago, Paris, Buffalo and Charleston, furnished unmistakable proof of a steady and rapid advance along all lines of human interest; that of education being the most marked.

In addition to this, many of the most progressive States have adopted our plan of exhibit, and are rightfully inspired by a friendly spirit of rivalry. Therefore, if we are to maintain our present educational prestige, we must strive toward still higher ideals.

Though the amount of space assigned us is not large, it is still our equitable share, and quite sufficient to enable us to
carry out our plan of exhibit. The contract for the enclosure and general equipment of the New Jersey Department has been awarded and we are assured of facilities for making an advantageous display. As no locality has a monopoly of talent and opportunity, and as a State exhibit should be thoroughly representative in character, the interest of each school board and teacher should be enlisted, and the best material secured from each school in the State that it is capable of producing. The most valuable results of preparing an exhibit for a world’s exposition are its effects upon our youth in the enlargement of mental horizon, the stimulation of patriotism and local and state pride, and the interest aroused in all lines of school work. Benefits that will tell for good in the subsequent history of both school and pupil.

The far better opportunity afforded us for preparation and display of material at St. Louis than at Buffalo, and your prompt, cheerful effective and well-nigh remarkable response to our belated, eleventh-hour appeal for a State exhibit at the Pan-American Exposition, warrant us in anticipating new laurels at the Louisiana Purchase Exposition.

C. J. Baxter,
State Superintendent.

Circular No. 6.

DIRECTIONS FOR MOUNTING WORK
FOR THE
EDUCATIONAL EXHIBIT.

When mounting the general work on cardboards, remember that any number up to 20 of the 8½ x 11 sheets can be placed in one package. These should be attached to the cardboard with brass paper fasteners at the top corners only. Four of these packages are to be pinned on each side of the cardboard.
Kindergarten work, sewing and the various lines of work in drawing can be mounted in the same way, thus economizing space and greatly increasing the amount of material exhibited.

Manual Training work that cannot be shown on cardboards or in cases should be mounted on boards not larger than 22x30. Photographs can be mounted on cardboard 16x20 or 22x28, placed in separate albums, bound with regular class work, or mounted with regular class work. However exhibited, all photographs should have name and description clearly and neatly written underneath. When forwarded to Trenton unmounted a full description should accompany each photograph.

S. R. MORSE,  
Director.

The plan outlined by Howard J. Rogers, Chief of the Department of Education, so far as such plan applies to public school-work, is as follows:

UNIVERSAL EXPOSITION
AT
St. Louis, 1904.
DEPARTMENT OF EDUCATION.
Extracts from Circular 2.

ISSUED BY HOWARD J. ROGERS,
CHIEF OF DEPARTMENT.

Plans.—The object of the educational exhibit is—first, to secure a systematic presentation of all phases of educational effort from the United States, and second, to obtain a comparative exhibit of the system of education of foreign countries.

Building.—The Educational Building is now nearly completed, and will be ready for the installation of exhibits by
September 1st, 1903, or eight months prior to the opening of the exposition. It is the first building ever erected at any exposition solely for educational exhibits. It is situated in the centre of the exposition activities, at the junction of the two main avenues, and, in general shape, resembles a keystone. The northern facade is 750 feet in length and the southern facade 450 feet. The two sides are 525 feet each. The style of architecture is modern classic. The building covers seven acres of ground, and has no galleries. It was designed by Eames & Young, and cost $350,000.

TIME.—The exposition will open April 31st, 1904, and will close December 1st, 1904. No final assignment of space will be made prior to June 1st, 1903.

CLASSIFICATION.—Education is given the place of honor in the classification of exhibits, as, in accordance with the theory upon which the classification is based, to education is ascribed the source of all progress.

The groups of Department A, Education, relating to public schools, are but two in number, and comprise the following six classes.

GROUP 1.

ELEMENTARY EDUCATION.

Class 1. Kindergarten.
Class 2. Elementary grades.
Class 3. Training and certification of teachers.
Class 4. Continuation schools, including evening schools, vacation schools and schools for special training.

GROUP 2.

SECONDARY EDUCATION.

Class 5. High schools and academies; manual training high schools, commercial high schools.

Class 6. Training and certification of teachers.

Legislation, organization, statistics.
Buildings: plans and models.
Supervision, management, methods of instruction; results obtained.

METHODS OF REPRESENTATION.

The following suggestions indicate some of the methods that may be used in preparing the exhibits:

(a) LITERATURE.—There should be included in this exhibit such books as the following: School laws, government and State reports, history and present condition of school systems, and of individual institutions; text-books and original contributions made by professors or students to each department of human knowledge; monographs on special topics. To these should be added programmes, rules and regulations, catalogues and other printed matter that would make the information contained in the exhibit as complete as possible.

(b) STATISTICAL CHARTS, DIAGRAMS AND TABLES.—No part of the exhibit will be of more interest and value to visitors than the graphic charts. Through graphics the important facts in regard to population, the number and kind of schools, the number of teachers, the number and age of pupils, the cost of instruction, and many other educational conditions, may be presented in a way so clear and striking that visitors can understand them at a glance. These graphic charts should be supplemented by statistical tables that will help to explain their meaning.

(c) MODELS.—Illustrated drawings and models will be very effective in showing the material equipment of educational institutions—i.e., buildings, with their furniture and fittings; play-grounds, apparatus used for instruction; and also results of original investigation along various lines.
(d) **Apparatus and Appliances for Instruction.**—All apparatus which illustrates a new method, or shows the latest development or new application of an important educational principle, and was invented at, or is peculiar to, an institution, should be exhibited. The commercial sections will display all varieties of geographical apparatus, laboratory materials and instruments of precision.

(e) **Photographs.**—Photographs should constitute a very important part of the educational exhibit. In an address which Commissioner William T. Harris delivered in 1898, on this subject, he said:

"The photograph has come more and more into requisition. It may show the school architecture at a glance, and also the personnel of teachers and pupils. Photographs of interiors may show the furniture and apparatus. An exhibition of photographs, showing every school building in the State, with its pupils and teachers in front of the buildings, would be the most unique attraction ever presented at an international exposition, for it would show the countenance, stature and costume of the pupils and teachers, and the degree of importance which the community placed upon the school by its costliness and improvements."

(f) **Pupils' Work.**—Literary, scientific, mechanical and artistic. An exhibit of pupils' work may be made to represent the work of a school with considerable clearness and fidelity; but, in order to do this, it must be honestly prepared and intelligently labeled. Very often exhibits of the written work of pupils are almost worthless as representation of the methods used, and the results obtained, because they show nothing of what has been done to prepare the pupil to produce the written work. Bound volumes of work arranged by years or grades, and illustrating fully the curriculum, are the solid, scientific and indispensable portions of an exhibit.

The following is taken from a letter of Howard J. Rogers, Chief of Department of Education, under date of July 16th, 1903:

"I shall grant the State of New Jersey floor space. You will be responsible entirely for the fitting up of this floor space — provide your own installation, partitions, booths, &c. I am asking those who have charge of the various State exhibits
to avoid duplication of material as far as possible; to make
the exhibit mean something—such, for example, as the com-
plete illustration of the curriculum of the schools; and to in-
troduce as much specialistic work in the various studies as it
may be possible to do. I should like to give the educational
exhibit a somewhat different stamp than the stereotyped
form that has hitherto been followed at every exposition.”

COUNTY AND CITY BOARDS OF EXHIBIT.

That the work may be properly distributed, it is recom-
mended that each county and city superintendent associate
with him several of his leading principals and teachers as a
County or City Board of Exhibit, of which he is the official
head. Each superintendent will subdivide his Board of Ex-
hibit into as many special committees as he may deem advis-
able. All expense incurred in the issue of circulars will be
borne by the commission.

It might also be well for each County or City Board of Ex-
hibit to assign to certain schools the line of work in which they
excel, and have them prepare only such work. This will
insure proper concentration of effort, and secure an excellent
and complete exhibit from each county and city, without re-
quiring a large amount of unnecessary work. The Boards of
Exhibit are expected to assist the superintendents in the se-
lection of work to be sent to the State committee at Trenton.
All work, except drawing, should be forwarded before Feb-
uary 15th, 1904.

Work that is to be shown in leaf cabinets, on the walls, or on
draw shelves, should be delivered in correct form to be mounted
on pasteboard card, 22 x 28.

The work of soliciting, preparing, collecting, classifying and
passing upon the work of the schools in the counties and cities
will be left entirely to the county and city superintendents
and their assistants.

In case a superintendent wishes to mount any portion of
his exhibit on cards, he should advise the department at Tren-
ton of such desire, and specify the amount and kind of work
to be so mounted.
LOCAL EXHIBITS.

In order to awaken a general interest in the State exhibit and insure its success, it will prove highly advantageous to hold county and city exhibits throughout the State before the work for the State exhibit is sent to Trenton. The holding of such local exhibits will prove beneficial in many ways. It will serve to excite a healthy rivalry among the different schools of the county or city, to give the parents and friends of the schools an opportunity to see the work done in each and to compare the work of their own school with that of others, and give each teacher an opportunity to become familiar with the best work of other schools.

Superintendents are urgently recommended to hold such exhibits in their respective jurisdictions. In fact, each school could, with great profit, hold an exhibit before its work is sent to the county or city exhibit.

If these local exhibits are properly managed, they can be made the most valuable and interesting feature of the preparation of a State educational exhibit.

There will be no assignment of separate space for distinctive county, city or individual school exhibits. Each will be an integral part of the State school exhibit.

The plan of display introduced by the manager of the New Jersey educational exhibit at Chicago, in 1893, has been adopted by all expositions held since, and will be the only method used in the Educational Department at St. Louis.

Make exhibits only in the lines in which you can do the best work.

GENERAL DIRECTIONS FOR THE PREPARATION OF MATERIAL.

I. Amount of Work Required.—The amount of material for exhibit that any one school will furnish must rest wholly with each superintendent, principal or teacher. As a general rule, it will not be well to attempt more than can be easily done prior to the date set for the local exhibit.
Many, if not all, of the cities and larger towns of the State will doubtless wish to be represented in all kinds of work. This will be left to the judgment of the superintendent.

II. Kinds of Work.—Three kinds of exhibits of pupils' work can be made—first, the entire work of a class; second, selected papers only; third, the entire work of individual pupils in all branches. Principals and teachers will exercise their own judgment as to which kind of exhibit to make. It is evident that the first method will give the most truthful picture of the average work of a class.

III. Quality of Work.—It is not quantity, but variety and excellence of work that counts. Too great care cannot be taken at the outset in the selection of topics and their assignment to classes and grades.

The tests employed to bring out the knowledge and skill of pupils in any subject, for instance, in arithmetic, should show the successive steps in the development of a topic, together with the pupils' power to solve difficult problems and to vary his work to meet accidental conditions. The greatest care should be taken that the tests be not unfairly difficult, nor beyond the age and grade of the class.

IV. When Work is to be Done.—It is not expected that many schools in the State have as yet done much in the matter of special preparation for the St. Louis exhibit; hence it will be necessary to do all the work in the next three months. It is recommended that, immediately on receipt of this circular, superintendents, principals and teachers proceed to plan their several kinds of exhibit and make all the necessary preliminary arrangements therefor.

Each city superintendent should call a meeting of his principals, and assign to them the various kinds of work to be done. County superintendents also will do well to call together the leading teachers of their counties for consultation and the assignment of work. The work in all subjects can be done simultaneously, or in successive weeks. The first thing to be done by any superintendent or teacher is to determine the precise amount and kinds of work that are to be offered for exhibit; next, to distribute the same among the different schools and grades. This work of preparation cannot begin any too soon.
V. How the Work is to be Done.—It is desirable that the results should fairly exhibit the standard efficiency of the schools of the State. The precise time, method and manner of securing these results must be left, however, to the judgment of each superintendent and principal.

VI. Form of Pupils’ Work.—The work of pupils will first be done on ordinary paper or slate. After a sufficient time has been given them to make their own corrections, unaided by teachers or others, they will copy their work upon the prescribed paper supplied by the State. Pupils should be particularly cautioned to observe all the directions given as to form, rulings, headings, subscriptions, non-ruling, non-folding, &c. Pupils’ work should be written on one side of the paper only, and a margin of one and a quarter inches at the left reserved for binding. A margin of three-fourths of an inch should be left on the right. In no case should pupils’ work be rolled or folded; it should be kept flat to facilitate mounting or binding. Whenever possible ink should be used; or, if not, a hard lead pencil. The general title of the exercise should be written at the top, and the pupils’ name, age and year of course (calling the lowest primary grade the first year, and counting upwards) at the bottom right-hand corner; also, the district or city, name of school and date at the lower left-hand corner, as follows:

Trenton, N. J. John B. Smith, U. S. Grant School, Aged 9 years, October 27th, 1903. 3d Year Grade.

Too great attention cannot be paid to the form and neatness of pupils’ work, and especially to the writing.

VII. Length of exercise.—Care should be taken that the exercise given be not too long.

VIII. Selection of Best Work.—It is recommended that, for “selected” work, the principal or teacher choose only the best papers in any one subject. The entire exhibit of the school should be carefully classified, labeled, &c., and sent to the county or city superintendent, when called for, with a carefully-made index of the different kinds of exercises contained. In order to avoid unnecessary labor, each package should have
Center of Educational Exhibit.
endorsed thereon the name of school, name of principal, subject of study and year of course. This will enable the classification to be made at headquarters with comparatively little trouble.

IX. **Statement of Teacher.**—Before sending them to the city or county superintendent, each teacher should make a careful statement to precede each set of papers. This statement should be made on paper of the same size and quality as that used by the pupils, so that it may be bound as a preface thereto. It should set forth briefly the general subject of the examination, the year of the course and the questions or topics submitted. Sample blanks of teacher’s statement will be furnished on application.

X. **Honesty of Pupils’ Work.**—Teachers and school officers should use every reasonable precaution to secure absolutely honest work. The chief value of an exhibit of this kind is that it illustrates the actual work of diverse school systems and renders comparison possible. If the exhibit of one State is composed chiefly of the “improved” work of the pupils, and that of another of “genuine” work, then there can be no reliable comparison of systems or results.

XI. **Time for Doing Work.**—It is absolutely necessary that all the work of the State exhibit should be done in time to enable every school to make its local, city or county exhibit before the 1st of February, 1904.

*The State Department cannot receive work, other than special, later than February 15th, 1904.*

XII. **Paper, Mounting, Binding, etc.**—The entire educational exhibit will be displayed at St. Louis on wall or surface, wing frames, New Jersey leaf cabinets, tables, draw shelves, bound volumes, &c. The written work of pupils will be regularly bound, or securely fastened in ornamental covers, or placed in portfolios, or mounted for display upon the walls, or in leaf cabinets. In order to secure uniformity the State committee has prescribed the form and character of all mounting and binding, and their regulations must be rigidly complied with.

All paper and cardboard needed for the *final work* of pupils will be furnished free of charge by the commission. It will be of uniform size for all subjects (except drawing), namely,
8½ x 11 inches, and with an inch and a quarter margin at the left for binding. Paper for trial work must be furnished by the district. All exhibits in penmanship must be sent unmounted. Drawing paper for final work will also be furnished, if requested. Paper for map-drawing to accompany the examination in geography and history will be of the standard size.

We desire to have as many photographs as possible. They may be sent in mounted or unmounted. The preferred size for mounting is 8x10 inches. Plans of school buildings, elevations, classes, interior views, &c., may be of any size. Photographs or drawings of any size will be accepted, with or without frames.

Whenever any city or school district does its own mounting or binding of pupils’ work, the expense must be borne by such city or school district, and all the regulations of the State committee, as to size, lettering, color of binding, &c., should be strictly observed.

Suggestions as to the character and cost of separate mountings and display can be had upon application to the director.

Specimens of plants, leaves, &c., must be sent in on regular mounting paper, which is 11½ x 16½ inches, or on paper of half that size.

Collections of minerals should be sent labeled, boxed and ready to be set up. The labels should state the name of the specimen, locality, where found and date; also the name of school, collector, together with his age and grade.

So, also, exhibits of home-made apparatus for physical or chemical experiments, and all product of manual training, should be sent in mounted or boxed and labeled ready for display.

All exhibits should be as nearly ready for final setting up at St. Louis as it is possible to make them, prior to shipment to Trenton.

While the exhibit will aim to be a State exhibit, and present a unity from that standpoint, the individuality of local exhibits will be preserved, as far as possible, by the arrangement and subdivision of the space. An official catalogue, giving the name of each school exhibiting, number and character of
exhibits, names of pupils whose work is accepted, &c., will be published by the State committee for free circulation.

All printed forms, shipping envelopes, labels, &c., will be uniform, and be furnished by the commission.

XIII. Correspondence.—It is desirable that all principals of schools who intend to make an exhibit should report at once to their respective superintendents, who, in turn, should report to the State superintendent or director, at Trenton, what kind of work they intend to contribute, its amount, and from what grades; also what photographs, charts, apparatus or other material they propose sending; also to what extent they will need aid in getting up their exhibits.

S. R. Morse,
Director of N. J. Exhibit.
NOTES CONCERNING ST. LOUIS EXPOSITION.

The Universal Exposition to be held in St. Louis, 1904, is the largest world’s fair ever projected. The fundamental appropriation consists of $15,000,000; $5,000,000 of which is subscribed by the citizens of St. Louis and the Louisiana Territory, $5,000,000 a grant from the city of St. Louis, and $5,000,000 a grant from the government of the United States. In addition to this, there will be an excess amount received on the sale of $250,000 worth of souvenir coins, the face value of which coins will form a part of the government appropriation. The government has also appropriated $1,308,000 additional to erect a government building and to pay the cost of the preparation of the government exhibits to be installed therein. When it is stated that the Chicago Exposition of 1893 had for a basic appropriation $11,000,000 and the Paris Exposition as a basic appropriation $12,000,000, the extent of the St. Louis organization may be judged. The fair is projected on a $30,000,000 scale.

The grounds which comprise 1,130 acres, are situated in the western part of Forest Park, which is in the extreme western portion of St. Louis and about seven miles directly back from the river. There will be fourteen great exhibit palaces, designed by the most eminent architects of the country. The area of the Chicago Exposition was 633 acres and that of the Paris about 600 acres.

While St. Louis lacks the beautiful background which Lake Michigan furnished to the White City, it has an amphitheatre of low hills surrounding the main picture of the Exposition, which are capable of a treatment which will heighten the general effect in a manner which will be as great a surprise to the general public as was the creation of the Columbia Exposition.
The Exposition will open April 31st, 1904, and will continue until December 1st, 1904, a period of a month longer than any other international exposition.

The international feature of the Exposition have been the constant care of the Exposition authorities and of the United States government since the beginning of the enterprise. On August 20th, 1901, President McKinley issued his invitation to the nations of the world to participate in the exhibition by sending such exhibits as would most fitly and fully illustrate their resources, their industries, and their progress in civilization. This invitation has been energetically supplemented by the efforts of President Roosevelt, Secretary Hay and the entire diplomatic service. At the present date twenty-three foreign nations have accepted the invitation. Among them are England, France, Germany, Belgium, Japan, China, India, Brazil and Argentina.

From the beginning the Exposition officials in St. Louis, under the energetic direction of Hon. David R. Francis, ex-Governor of Missouri and ex-Secretary of the Interior, have insisted that the Exposition should be in its nature educational rather than commercial. The sentiment behind the Exposition is the one hundredth anniversary of the purchase of the great Louisiana Territory from France, and it is the design of the Exposition builders to illustrate the methods and the spirit which has caused the tremendous growth and advance in this territory, rather than to simply advertise its commercial and industrial features.

The classification of the exhibits has been based upon this theory, and education made Group 1 and the foundation of the entire exhibit structure. In accordance with this view, also, education has been given one of the most beautiful palaces in the Exposition grounds and in almost the exact centre of the main architectural picture.

MEMORANDA CONCERNING THE EDUCATION BUILDING.

The palace of education is situated in the very centre of the exposition activities at the junction of the two main avenues. The building is the general shape of a keystone, with a northern
St. Louis.
Jefferson Guard Examining the Exhibit.
The following account of the New Jersey Educational Exhibit at St. Louis is to be published in the report of the United States Commissioner of Education.

W. H. Harris,
Commissioner.

THE NEW JERSEY SCHOOL EXHIBIT AT THE LOUISIANA PURCHASE EXPOSITION.

As the work of the New Jersey public schools had been so well and successively exhibited at the Exposition held at Philadelphia, New Orleans, Chicago, Paris, Buffalo, and Charleston, the State authorities were at first inclined to let the laurels already won suffice, and at the Louisiana Purchase Exposition make a special effort to secure a proper representation of our varied and important industrial interests. This plan of exhibit was, however, ultimately modified, but as a result of its consideration the decision to make an educational exhibit at the world's greatest exposition was delayed until late in October, 1903. As the Exposition was to be opened on May 1st, 1904, this gave a rather scant allowance of time for the formulation of plans, and the preparation, collection, selection, arrangement, shipment, and installation of work. Notwithstanding this unfortunate delay, of the thirty-five
states which made an educational exhibit, New Jersey's was the first to be in place and ready for inspection.

All local school authorities were at once notified of the decision to make an educational exhibit at St. Louis, but circular No. 3 outlining the plan of work, though dated November 2nd, was not printed and ready for distribution until November 20th.

The response to each of the circulars issued was prompt, cordial and very nearly general. The New Jersey school exhibit at the Louisiana Purchase Exposition included only the voluntary contributions of its public schools. The principal suggestions contained in circular No. 3 were as follows:

Each county and city superintendent was made Chairman of a Committee of his own selection, to take charge of the preparation of the work forwarded from the schools under his supervision.

Special committees, comprised of experts in each of the several lines of school work were appointed to assist in the final selection of material to be forwarded to St. Louis.

In order to stimulate healthful rivalry, awaken a general interest in the State exhibit and give the parents and friends of pupils an opportunity to see their work, a public exhibit of the work of each school was recommended before sending it to the county or city superintendent.

County and city exhibits were also suggested before superintendents forwarded the work received by them, to State Headquarters. This afforded an excellent opportunity for comparing the work of different schools and gave each teacher an opportunity to see what was best. The local exhibit is the most interesting and valuable factor that can be associated with the preparation of the work for a world's exposition. Nothing is more effective in strengthening educational sentiment or proves more helpful in establishing the closer bond of sympathy so much needed between the home and the school, than the local display in which each parent has an opportunity to see the work of his own and his neighbor's children.

In addition to the preceding, circular No. 3, gave extended, specific and general instructions for the preparation, classification and mounting of school work. All kinds of paper
needed for the final work of pupils and the cardboard required to mount it were furnished by the State.

The following special exhibits were solicited:—Specimens of minerals correctly labeled and boxed ready to set up, each label to state the name of the specimen, when and where found and the name, age and grade of the contributing pupil; mounted specimens of plants and leaves; home-made apparatus for physical and chemical experiments; text-books, monographs on special topics and other literary productions prepared by teachers, principals and superintendents engaged in public school work; photographs showing the architecture of school buildings, their class rooms, furniture, apparatus and the personnel of teachers and pupils; also any special literary, scientific, mechanical or artistic work of pupils.

In common with all other states New Jersey exhibited copies of school law, annual reports, courses of study, catalogues, rules and regulations, and the various blank forms found necessary in modern school administration.

The New Jersey Educational Exhibit differed in some features from that of other states. It had the same wing cabinets that were designed and used exclusively by the New Jersey Department of Public Instruction at Chicago in 1893, but for the display of books and various lines of work not readily shown upon the walls or in the cabinets, drawers instead of shelves were placed under the cabinets. These enabled the work to be put in convenient form for inspection and the additional merit of keeping it clean.

Another feature entirely new and used for the first time at this exposition was the Index Key of which the following is an explanation:

The Exhibit was divided into sections lettered from A to M inclusive, and these were subdivided into units numbered from 1 to 68 inclusive. Each unit consisted of a leaf Cabinet, with six drawers directly underneath.

The units from 15 to 21 inclusive were arranged to serve as an Index to the entire public school exhibit. Unit No. 15, for instance, directed to 1st year’s work and Unit No. 16 directed to 2nd and 4th year’s work, &c.

In order to find the work from a particular school it was simply necessary, first, to find in one of the Index cabinets
the card containing work from the county or city in which said school is located. This card directed you to the Section, to the Unit and to the volumes in which all the work of the school, except that placed upon the walls, could be found. Different lines of school work were bound in different colored volumes, as shown by Index cards.

Other unique features of the New Jersey exhibit were as follows:

The Manual Training work of each school was shown in connection with its academic.

An Exhibit consisting of sketches prepared by pupils of public schools, of historical events that have occurred in the State was accompanied by photographs of historical places and served to stimulate unusual interests in a most important line of investigation. The educational value of an exhibit of this character was duly appreciated even by unprofessional sight-seers.

A combined exhibit of Music and Art was exceptionally fine and attracted much attention.

By means of systematic arrangement a large amount of work displayed within small compass. The work in the Leaf cabinets was not shown in single sheets, but in the majority of cases from five to twenty sheets were fastened in a single space so that the entire work of a class could be conveniently inspected.

The general arrangement of the work in the New Jersey Educational Booth was as follows:

Beginning at the left entrance we first found that of the New Jersey Normal and Model Schools, next that of the State Industrial School for Colored Youth and then followed in regular order the general exhibit of Primary, Grammar and High School Work.

As per instructions received from the Chief of the Department of Education at St. Louis no work from private schools was included in the New Jersey Public School Exhibit.

The work of nearly all the schools, both rural and urban was represented and, under the skillful supervision of Director S. R. Morse, was so systematically arranged that a comprehensive panoramic view of the school work of the State was clearly presented, and the visitor furnished concrete proof of
of the progressiveness of the Garden State and the excellence of its public school system.

The New Jersey Fish and Game Exhibit was also prepared under Mr. Morse's direction and its success likewise largely due to his efforts.

The work of the New Jersey public schools, the Normal and Model School and the Manual Training and Industrial School for the Colored Youth constituted all that was shown in the New Jersey Educational Booth. The entire educational exhibit furnished by the State included an unique display of work from the Industrial School at Hoboken, the School for the Deaf at Trenton, the School for the Feeble-Minded at Vineland, the Baron De Hirsch Industrial School at Woodbine and numerous private schools. The work received from these various sources was not included in the public school exhibit.

C. J. Baxter,
Superintendent.

S. R. Morse,
Director.
St. Louis Educational Exhibit
Alcove No. 1.—Looking in.
New Jersey State Normal and Model Schools.

EXHIBIT TO THE LOUISIANA PURCHASE EXPOSITION AT ST. LOUIS.

The exhibit filled six cabinets besides a number of bound volumes and a considerable wall space of mounted work. The plan for the exhibit was as follows: To represent each grade, each class and each department of the school by a number of specimens of work so selected that they would show the development of the subject being taught, especially with reference to the object of the teacher, whether to convey academic information or a knowledge of the relative values of subject matter and their adaptation to pupils, as in Pedagogy.

The work sent was of course the honest work of the pupils, but it was the best work, as only that could give a clear idea through the pupil of the object of the teacher. To illustrate more fully, part of the exhibits were as follows:

NORMAL.

History.

Papers showing:

The Normal student's ability to compile an accurate, vivid, lucid narrative, based upon accounts given by several secondary historians. Specific references assigned by the teacher.

Student's ability to trace political and social development through various stages of progress. Specific references assigned by the teacher.

Student's ability to outline a topic assigned for study, and to select references to be used in investigation from three different libraries.

Student's ability to adapt subject matter on a given topic to a given grade, together with suggestions as to the treatment of the material and the use of pictures, maps and charts in a series of lessons planned.

English.

Work in composition under narration and description; sketches, descriptions, autobiographies, letters and themes. The art of correcting. Formal debates on practical subjects.

Character sketches based upon a study of classics. Comparative study of different versions of the same poem. Outlining of term's work.


(73)
The study of a particular period; e. g., the poets of the Nineteenth Century. The study of a single literary form e. g., the novel.

**Geography.**

Laboratory and library work. Reports of field trips and outlines of lessons based on field trips.

**Mathematics.**

Educational values in arithmetic. A primary course. Treatment of topics. Practical life relations.

Similar objects in Algebra and Geometry.

**Physics.**

Laboratory exercises. Written discussion of special topics showing the manner of treatment of the subject matter of Physics in its adaptation to the elementary grades. Application of Physics in bridge building, electric appliances, etc.

**Drawing.**

Exercises in construction; working drawings and patterns.


**Physical Training.**

Photographs of the Gymnasium and its equipment and of classes at work on the floor. Printed cards giving items of importance in a physical examination used as a foundation for hygienic advice to the students. Written tests on lectures to the Senior class on school and personal hygiene, with special reference to the effects of the muscular exercises, and the place of Physical Training in a scheme of education.

**Nature Study.**

Special topics requiring independent study and observation. Note books. Collections of insects. Habits and values of insects. The adaptations in the grades.

**Manual Training.**

Set of models involving the use of about fifty tools and some seventy exercises. Original work in design and decoration.

**Vocal Music.**

Essays on topics discussed in the class. Lesson plans for exercises in the elementary grades.

**Psychology.**

Outlines of each term's work prepared by students from class recitations.

Specimens of the various lines of child study.

General observation.

Continued study of an individual child.

Answers to a syllabus on language development.
Corner in New Jersey Educational Exhibit
St. Louis.
Essays:
The development of my constructive imagination.
The development of my interest in Chemistry.
My Psychology as an only child.
A statistical study—Children’s Womanly Ideals.

Pedagogy.
Specimen tests on outlines of class work. Reviews of authors.

Practice.
Discussion of lessons given by the regular teacher and observed by the practice class. Plans for teaching in different subjects. Papers in applied Psychology.

MODEL SCHOOL.
This work aimed to represent the academic practice of which the Normal was the theory.

Latin and Greek.

French.

German.
Grammar exercises. Exercises in German written from dictated English prose. Translation of Wilhelm Tell.

English.
The different steps in the development of style; the authors chosen to represent the great styles in composition; the plans of studying these authors.

Drawing.
Specimens of raffia construction. Designs in wood, glass, book-binding, posters, menu cards, dressmaking, etc. The use of color from the beginning of the course throughout.

The above descriptions give an idea of the exhibit, which included, as stated in the beginning, specimens from the Kindergarten to the end of the High School course, and which aimed to show the applications of the work with reference to interest and purpose as related to practical life.

There were exposed on the wall space a large sized water-color painting of the Normal and Model School Building, photographs of the exteriors, and various rooms of the interiors of all of the buildings, showing the laboratory, gymnasium and library equipment, etc. Also, photographs of various classes at work, and of various specimens of class work.

There were also plaques of burnt wood and tables of specimens of work done in the Manual Training Department representing the different features of the course, including construction, showing pieces of apparatus for lessons in Physics and other branches of science, and also articles of ornamentation and use such as tabourettes, Indian stools, etc.

There were also cases of insects collected by the students, herbaria, etc.

There were also copies of the books written by the various members of the faculty.

JAMES M. GREEN.
WHAT THE PRESS HAD TO SAY ABOUT THE NEW JERSEY EDUCATIONAL EXHIBIT.

NEW JERSEY AT WORLD'S FAIR.

EDUCATIONAL EXHIBIT ONE OF THE BEST ON THE GROUNDS.

EMPIRE STATE OUTDONE.

From a Paterson Paper.

New Jersey's portion of the Educational Exhibit at St. Louis includes the main exhibit of her public schools, also exhibits of the industrial settlement at Woodbine, the industrial school at Hoboken, the school for the deaf at Trenton, and the schools for the feeble-minded at Orange and Vineland. All these exhibits except the last were installed by Hon. Silas R. Morse, who has served the State in a similar capacity at every world's fair for twenty years, and who among the educators of all States has earned a reputation for skill in arrangement. He is relieved for the summer months by George H. Cresse, formerly a teacher of the State, at present a junior in Princeton, who catalogued the exhibits and installed the exhibit of the Vineland school for feeble-minded girls and boys.

Among the thirty-five States contributing, New Jersey has an enviable location along the north wall of the Palace of Education, with Connecticut on her left, Wisconsin on her right, Pennsylvania in front, directly across the aisle, and New York adjoining beyond. She occupies floor space forty by thirty feet, and fills 2,000 square feet of wall area with public school drawings and articles of manual training; also sixty of the famous Jersey leaf cabinets with representative written and graphic work of her students.

The visitor in registering is confronted by the printed statement that the State of New Jersey received at Chicago the highest award for her educational exhibit; at the Pan American Exposition at Buffalo, the only gold medal given to a State Exhibit. At Charleston "one gold medal for the educational work of the schools of the State; one gold medal for equipment and results; one gold medal for educational work of the State Normal and model school; one gold medal for the educational work of the school for the deaf." And on opening the cabinets he is convinced that the State's record is still maintained.

The general run of unprofessional sightseers pass through the Jersey booths exclaiming at the tasty arrangement of the articles of manual training. "See the advanced stage of work represented up there!" On the other hand, the teachers from every quarter of the Union open the cabinet drawers filled with the volumes that illustrate New Jersey's methods, and they take notes upon minute details by the hour. The scores of such books from the comprehensive exhibits of Newark, Atlantic City and Trenton are in such demand that teachers often need to wait their turn for a certain volume.

The pictorial illustration by the Plainfield children of their own language work, is excelled nowhere in the building. Paterson has proven herself to be Jersey's banner city in the art of wood carving and wood turning. Camden has illustrated best the utilization of advanced wood work in the making of mould for casting iron; and her steel products stagger the teachers of the Empire State. Trenton has water-color paintings that early arrest the attention of the superficial observer, and are also pronounced by experts to be unsurpassed in the building. Her correlation of music and drawing makes the most unique exhibit from the State. The State relies upon Mont-
Educational Exhibit, St. Louis.
Alcove No. 4.—Looking out.
clair for its exhibit of elementary science and nature study. The State Model School, Hoboken and Passaic, prove our state up to date by their photographs illustrative of physical training. Morristown and East Orange show to the other States what is a good all-round school attaining excellence in every line. Elizabeth has sent water-color portraits that would be no discredit to an academy of fine arts. The Staté Normal School has an exhibit which space forbids to be exhaustive, but which shows superb mastery in every department of intellecution from the folding of paper to the inquiry into the motives for Teutonic migrations.

New Brunswick, Bayonne, West Hoboken, Phillipsburg, Bloomfield, Union, Bridgeton, Vineland and the smaller towns of Freehold, Ocean Grove, Asbury Park, Long Branch, Bordentown, Lakewood, Haddonfield, and the county of Bergen, have furnished a great mass of classified practical school work, which shows that the whole state system rests on a solid basis. There is no educational exhibit at St. Louis that has received so much attention from educational journals at that of New Jersey, and, while it is one of the most unpretentious, it bears close examination the best.

New Jersey shares with Kansas the distinction of having the most extensive exhibit among the schools for the deaf. The detailed processes are illustrated by the inmates, of shoemaking, sewing, woodwork and millenery printing. The cabinets from the Woodbine settlement show how Hebrew youths are made into American citizens and taught the most up-to-date methods in agriculture, horticulture and dairying. Most conspicuous among institutions for the feeble-minded are those of the garden State. Orange and Vineland have contributed articles of sloyd, needlework and drawings.

NEW JERSEY AT ST. LOUIS.

SOME OF THE NEW JERSEY EXHIBITS AT THE WORLD'S FAIR.

Taken from the New York Herald, Sunday, June 5, 1904, N. J. Edition:

New Jersey has reason to feel very proud of its exhibits at St. Louis. They are pronounced by competent critics the best of their kind in the Exposition. They are superior in their intrinsic excellence and in the artistic method of their arrangement and exhibition. Besides the regular work from nearly all the public schools in the State, the following are some of the unique features of the New Jersey schools exhibited in the Palace of Education.

The exhibit is in a pavilion made by the New Jersey School-Church Furniture Company in Trenton and is one of the neatest in the palace. It is divided into four alcoves furnished with seventy New Jersey display cabinets on as many basis, having six drawers under each for books and other work. These drawers are used only by the New Jersey educational exhibit and are a new feature. The drawers keep the work clean and make it easy to be examined. The whole exhibit is divided into sections, and each cabinet and drawer is numbered.

One of the original features adopted by Mr. S. R. Morse, the director of the exhibit, and only used in the New Jersey exhibit, is the index key to the whole exhibit. It consists of eight units. Each unit consists of one cabinet and a set of six drawers filled with all grades of work from each county and city in the State. By consulting this key one will be informed where the work from any school having it can be found by its reference to the section, cabinets and books in which the work can be found. Every one who has seen the index key pronounces it one of the best features in any of the exhibits. It also has one unit and four books of work in the music and drawing combined, that no other State has. It is admired by all who see it. It also has a unit of historical pictures, sketches and descriptions of important events and places of New Jersey.
NEW JERSEY EDUCATIONAL EXHIBIT.

From the New England School Journal:

NEW JERSEY.

The New Jersey exhibit differs in some features from that of any other State. It has the same wing cabinets that were designed and first used by the New Jersey department of public instruction at Chicago in 1893, but for the display of books and various lines of work not readily shown upon the walls or in the cabinets, drawers instead of shelves are placed under the cabinets. These enable the work to be put in convenient form for inspection, and have the additional merit of keeping it clean. Another feature entirely new and used for the first time at the exposition is the Index Key, of which the following is an explanation:

The exhibit is divided into sections lettered from A to M inclusive, and these are subdivided into units numbered from 1 to 68 inclusive. Each unit consists of a leaf cabinet with six drawers directly underneath.

The units from 15 to 21 inclusive are arranged to serve as an index to the entire New Jersey educational exhibit.

Unit No. 15 directs to first year's work. Unit No. 16 directs to second and fourth year's work. Unit No. 17 directs to third and fifth year work. Unit No. 18 directs to sixth and seventh year's work. Unit No. 19 directs to eighth year's work. Unit No. 21 directs to ninth and tenth year's work. Unit No. 22 directs to eleventh and twelfth year's work.

To find the work from a particular school, first find in one of the index cabinets the card containing work from the county or city in which said school is located.

This card will direct you to the section, to the unit and to the volumes, in which all the work of the school, except that placed upon the walls, can be found. Different lines of school work are bound in different colored volumes as shown by index cards.

Other unique features of the New Jersey exhibit are as follows:

The manual training work of each school is shown in connection with its academic.

An historical exhibit consisting of sketches prepared by pupils of the public schools of historical events that have occurred in the State, accompanied by photographs of its historical places, has served to stimulate unusual interest in a most important line of information.

A combined exhibit of music and art is exceptionally fine and is attracting much attention.

By means of systematic arrangement a large amount of work is displayed within small compass. The work of the leaf cabinets is not shown in single sheets, but in the majority of cases from five to twenty are fastened in a single space, so as to be conveniently inspected.

The general arrangement of the work in the New Jersey booth is as follows:-

Beginning at the left entrance we first find that of the New Jersey Normal and Model Schools, next that of the State Industrial School for colored youth, and then follows in regular order the general exhibit of primary, grammar, and high school work.

As per instructions received from the chief of the department of education at St. Louis, no work from private schools is included in the New Jersey public school exhibit.

The work of a very large percentage of its schools, both rural and urban, is represented, and the garden state is ably maintaining the reputation won at former expositions.
A DAY AT THE PALACE OF EDUCATION, ST. LOUIS, MO.

BY JANE A. STEWART.

We had been told that it would require every day for a week to get a correct idea of the exhibit in the most beautiful of the Louisiana Purchase Exposition palaces, where you can see tout ensemble of educational process and progress spread out for ready assimilation, examination and comparison.

We had only a day to give to it, and had to be satisfied with that for the time being. But what a treat it was! Let me pass on to the readers of THE SCHOOL JOURNAL, a panoramic glimpse of what we saw in our first general view.

We stopped to rest a bit on the comfortable red cushioned benches within Connecticut's portals. Then examined the model traveling libraries: the "Birds and Nature" books; the beautiful water-color work from New Haven high school; and the pen and ink work from Hartford.

New Jersey's exhibit, adjoining, we declared unanimously to be perfect in design and systematic arrangement of work, though not so showy as many other installations. Mr. S. R. Morse, of Trenton, a veteran school man and educational enthusiast, was in charge. He is the originator, it seems, of the useful wing-frame cabinet which is in general use at exhibitions, and he has been constantly sought for suggestions and advice by the various exhibitors. A good idea which he has introduced at this exposition is that of putting various classes of printed and written exhibits within different colored bindings for easy reference, language papers for example, being red volumes, and State School statistics black, and so on. The wood work of the wall cases in New Jersey's section was tinted a restful green; and on the cornice of each case was the handsome coat of arms of the state done in colors on a white background, an idea in decoration which many other states have emulated. We spent a brief time in interested examination of the Trenton school work.

Louisiana with its quaint photograph of the oldest school in the Louisiana Purchase territory, and Oklahoma, with its big school-house map, could have but a passing glance.

Models of New York city schools—the DeWitt Clinton seating 3,800, and Public School No. 62, were prominent features in the Empire state's exhibit. Another unique model in this extensive and dignified display of advanced educational work and equipment was that of a doll house made by seventh grade boys for the first grade children, with wall paper designed by the children.

Pennsylvania's towering bronze walls were near at hand, and we slipped within the secluded, scholastic enclosure long enough to examine some of the finest wood carving shown in the Education Palace (that of the Central Manual Training School of Philadelphia), and to note the admirable arrangement of the exhibit, the work of Miss Zierden, of DuBois, Pa.
NEW JERSEY LEADS AT ST. LOUIS EXPOSITION.

ITS EDUCATIONAL EXHIBIT AS AT THE PAST FAIRS THE FINEST.

Silas R. Morse, curator of the State Museum at the State House, Trenton, and superintendent of the New Jersey educational exhibit at the St. Louis Exposition, has left for the fair to superintend the judging of exhibits and the awarding of the prizes. The judges began the examination of the exhibits a few days ago.

He states that the New Jersey educational exhibit is unquestionably the best of the kind at the exposition, and he expects that, following the securing by this State of gold medals for the most superior exhibit at the Chicago, Charleston and Buffalo expositions, other medals will be added to the number for the finest showing among all the states at St. Louis.

What John McDonald of the Kansas Educational Journal says:

Mr. Silas R. Morse, of Trenton, takes charge of the New Jersey School Exhibit because he loves the work. He might just as well be living at his ease on the Jersey coast, for he is a wealthy man. He not only supervises the educational exhibit, but the Fish, Game and Forestry and Insect exhibits from his State. Mr. Morse is curator of the New Jersey State Museum. He is the inventor of the swinging leaves in the cabinet cases so generally used in the Education Building. Mr. Morse has houses in Trenton and Atlantic City, and in the woods of Maine, and a hospitality which has no limits.

The people in Education Building refer to the Connecticut exhibit as "the orphan," because nobody looks after it. Why so attractive a display should be left to show itself is a mystery.
Fish, Game and Forestry Exhibit at St. Louis.
Also the Industrial Education of City of Hoboken.—Received Silver Medal.
The Awards Given to New Jersey State Museum and Other State Exhibits at the Louisiana Purchase Exposition Held at St. Louis, 1904.

These are from the first list sent out, and some changes may be made in this list:

In the Fish, Game and Forestry Department:

In this department there were given ten grand prizes in all, of which New Jersey got two, or one-fifth.

One grand prize for the pool of salt water, containing live salt water fish.

New Jersey is the first state to make a success of such an exhibit so far inland from the ocean.

A gold medal was also granted for the arrangement of this exhibit. (See description of the exhibit in another part of this report).

One grand prize was also given to the state for its Insect Exhibit, including the Mosquito Exhibit, and a gold medal for the arrangement of the Insect Exhibit.

A gold medal for the exhibit of birds, fish, etc., of State Museum.

A gold medal for specimens of woods, maps and the Forestry Department of State Museum Exhibit.

A silver medal was given for the Oyster Exhibit, which was installed with the Museum Exhibits.

A gold medal to the Curator, S. R. Morse, of the Museum, as collaborator.

A silver medal to the Hoboken Industrial School.
AWARDS RECEIVED FOR EDUCATIONAL AND SOCIAL ECONOMY EXHIBITS.

Grand Prize.
STATE OF NEW JERSEY.
For its Education Exhibit. (Collective.)
This includes all work from State Public Schools.

Gold Medal.
Department of Public Instruction,
Trenton, N. J.
For Administration Blank System, etc.

Gold Medal.
S. R. Morse, Collaborator, Group 8.
For the original plan of installing the Exhibit and improvements over old plans.

Gold Medal.
County Schools.
For the collective exhibit of the County Schools, which includes every county in the State (21), and each school that sent work for the exhibit.

Gold Medal.
Group No. 2.
The State Normal School for Collective Exhibit, including all branches of work.

Gold Medal.
Group No. 2.
State Model School for Collective Exhibit.
New Jersey State School for the Deaf.
Certificate of a Grand Prize for its part in the Exhibit for the Deaf.

Group No. 2.
High Schools.
Gold Medal.
Group No. 2.
Board of Education, Newark.
For High School Work, Night School and Manual Training.

Gold Medal.
Group No. 2.
East Orange Board of Education.

Gold Medal.
Group No. 2.
Montclair Board of Education.

Group No. 2.
Gold Medal.
Plainfield Board of Education.
High School Work.

Gold Medal.
Group No. 2.
Camden Board of Education.
High School and other work and Manual Training.

Gold Medal.
Group No. 1.
Paterson Board of Education.
Manual Training.

Group No. 1. Elementary.
Gold Medal.
Board of Education, Newark City.
Collective Exhibit.

Gold Medal.
Group No. 1.
Paterson Board of Education.
Manual Training and Drawing.
Gold Medal.
Group No. 1. Elementary.
Plainfield Board of Education.
Collective Exhibit.

Gold Medal.
Group No. 1.
Atlantic City Board of Education.

Group No. 6.
Silver Medal.
Board of Trustees.

Hoboken Industrial Training School and General Industrial Work.

Group No. 1.
Silver Medal.
East Orange Board of Education.
Collective Exhibit Elementary.

Silver Medal.
Montclair Board of Education.
Collective Exhibit.

Silver Medal.
Morristown Board of Education.
Drawing.

Silver Medal.
Trenton Board of Education.
General Exhibit with special mention of Music.

Silver Medal.
Group No. 2.

James M. Green, Principal State Normal and Model Schools.

Silver Medal.
Group No. 2.

S. R. Morse, Key to Educational Exhibit.

Silver Medal.
New Jersey Commissioners Louisiana Purchase Exposition.
For General Exhibit.
AWARDS FOR THE GEOLOGICAL EXHIBITS.

RECEIVED AT ST. LOUIS.

Gold Medal.
Geological Survey.
Group No. 117.
Maps and Relief Models.

Gold Medals.
Group No. 116.
Rocks, Minerals, Ores and Fossils.

Gold Medal.
For Clay and Clay Products.

Silver Medal.
Group No. 115.
For Microscope for Showing Rock Sections.

Silver Medal.
Henry B. Kummel, State Geologist, as Collaborator of the Clay Exhibit.

S. H. Hamilton, Collaborator for the Whole Exhibit.
SOCIAL ECONOMY DEPARTMENT.

MEDALS GRANTED IN THIS SECTION OF THE PALACE OF EDUCATION.

Gold Medal.
Group No. 131.
The New Jersey Bureau of Statistics of Labor and Industry,
Trenton, New Jersey.
For Exhibit of Industrial Betterment Institution, Bound Report, etc.

Gold Medal.
Group No. 140.
New Jersey State Board of Health Statistical Exhibit.

Gold Medal.
Group No. 140.
Dr. Henry Mitchell, as Collaborator.

Gold Medal.
The Baron DeHursch Agricultural and Industrial Schools,
Woodbine, New Jersey.
General Exhibit.

Certificate of Grand Prize.

In this division in most cases all Exhibits were placed in one Exhibit as a whole. The prizes awarded to the whole Exhibit, and the individual Exhibit received a copy of the grand prize when awarded.

Certificate of Grand Prize.
New Jersey Training School for Feeble Minded Girls and Boys,
Vineland, New Jersey. Collaborator.
Silver Medal.
New Jersey Training School for Feeble Minded Boys and Girls, Vineland, New Jersey.
For Exhibit of Pupils Work.

Group No. 11.
Bronze Medal.
Department of Public Instruction.
Commercial High School Work.

Group No. 4.
Bronze Medal.
Bordentown Manual Training and Industrial School for Colored Youth and General Work.

Group No. 7.
Bronze Medal.
New Jersey School for the Deaf.
General Work.

Bronze Medal.
Asbury Park Board of Education.
General Work.
December 7, 1904

Everything "Upside-down."

The End of the Educational Exhibit.