

ANNUAL REPORT

OF THE

NEW JERSEY STATE  
MUSEUM

Including a Report of the Insects  
of New Jersey

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1909

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TRENTON, N. J.  
MACRELLISH & QUIGLEY, STATE PRINTERS.

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Commissioners of the New Jersey State Museum.

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

STATE GEOLOGIST, HENRY B. KÜMMEL, *Secretary.*

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

PRESIDENT OF THE SENATE, SAMUEL K. ROBBINS.

SPEAKER OF THE HOUSE OF ASSEMBLY, JOHN D. PRINCE.

SILAS R. MORSE, *Curator.*

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

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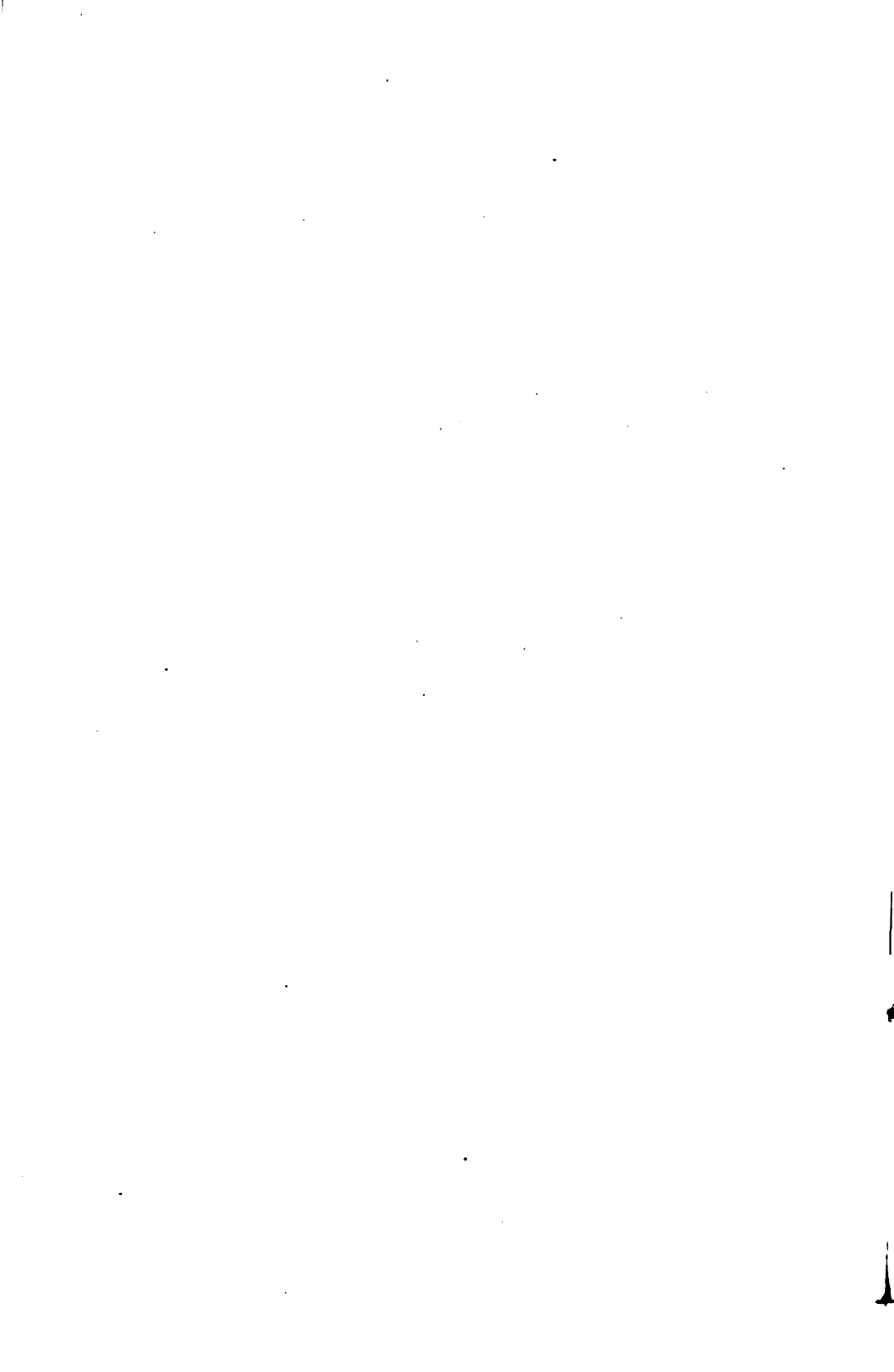
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JOHN B. SMITH, STATE ENTOMOLOGIST,  
*Entomology.*

JAMES T. MORGAN, DEPUTY OF BUREAU OF LABOR STATISTICS,  
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WILLIAM H. WERNER, *Taxidermist of Museum.*

HERBERT M. LLOYD, SECRETARY OF GEOLOGICAL SURVEY,  
*Archæology.*



## Letter of Transmittal.

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TRENTON, N. J., November 30th, 1909.

*To the Honorable John Franklin Fort, Governor of the State of  
New Jersey:*

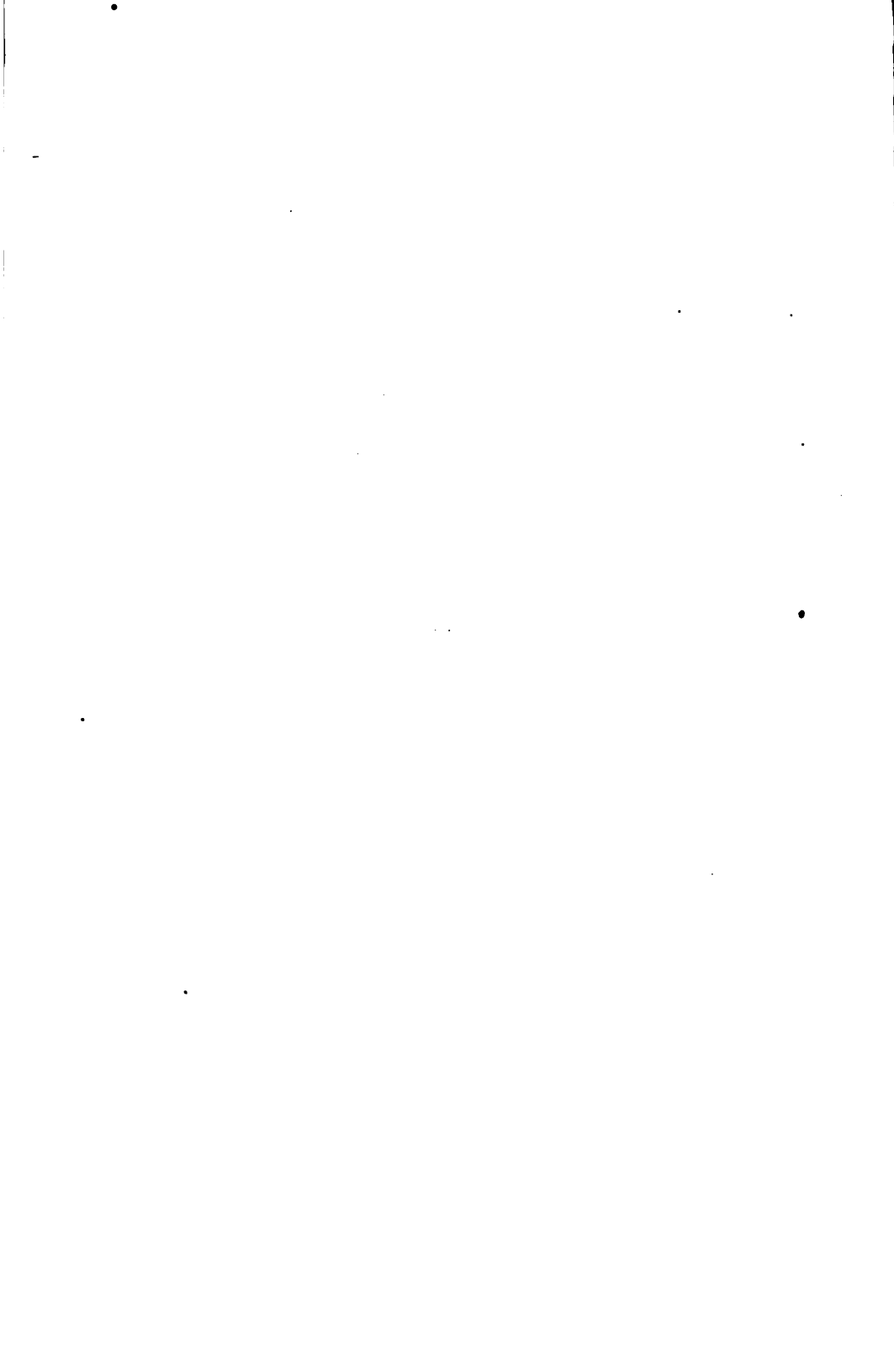
SIR—I have the honor to present, for the Commissioners of the New Jersey State Museum, the annual report, including a Report of the Insects Found in New Jersey.

SILAS R. MORSE,  
*Curator.*

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## Order EPHEMERIDA.

The members of this order are popularly known as "May flies" because of the time of their greatest abundance, or "day flies" because of their short life in the adult stage. The ordinal term here used is based upon this same peculiarity in their life cycle. The adults have two pairs of wings, very closely net-veined, frail in texture, and the anterior much larger than the posterior. The head is large, set on a distinct neck, the mouth parts are aborted, the eyes prominent and the antennæ very short. The body is loosely jointed and the abdomen has long anal filaments, varying from three to five in number. The insects are attracted to light and on favorable evenings in early summer often come in swarms to the electric lights in cities or towns on lake or river banks. The early stages are passed in the water, the larvæ feeding in the mud and ooze, sometimes for a considerable number of years, before they attain maturity.

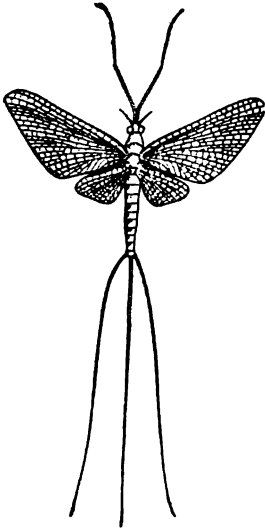


Fig. 4.—An adult May-fly.

There are many interesting and peculiar structures in this, perhaps the most ancient of the existing types of insects, and the enormous numbers of individuals that still occur, even though the number of species is limited, indicates the richness in organic life of the bottoms in which they feed. They are not of economic importance from any point of view.

### POLYMITARCYS Eaton.

*P. albus* Say. New Brunswick in July.

### HEXAGENIA Walsh.

*H. bilineata* Say. Caldwell (Cr); New Brunswick (Coll); Westville VI, Riverton VII, (Jn).

*H. limbata* Pict. Echo Lake, Passaic Co. VII, 2, Normannock VII (Ds).

### EPHEMERA Linn.

*E. decora* Wlk. Caldwell, common (Cr).

### LEPTOPHLEBIA Westw.

*L. cupida* Say. (*Blasturus*) Great Piece Meadows IV, 10-28, very common (Gr); Caldwell (Cr); Ft. Lee V, 1, Staten Island IV, 17, 27 (Ds); Jamesburg, Trenton IV, 30, Lahaway IV, 1 (Coll); Westville IV, 9 (Jn).



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- L. *mollis* Eaton. Recorded from New Hampshire to North Carolina.
- L. *nebulosus* Wlk. (*Blasturus*) Caldwell (Cr).
- L. *præpedita* Eaton. Riverton V (Jn).

### HADROPHLEBIA Eaton.

- H. *americana* Banks. Passaic (Berry); the type locality.

### EPHEMERELLA Walsh.

- E. *excrucians* Walsh. Lake Hopatcong VII, 7, New Brunswick (Coll).

### CÆNIS Steph.

- C. *diminutiva* Wlk. Occurs from New York to Florida.
- C. *hilaris* Say. Riverton VII (Jn).

### BÆTIS Leach.

- B. *propinquus* Walsh. Delaware Water Gap VII (Jn).
- B. *unicolor* Hagen. New York to District Columbia.

### CLEON Leach.

- C. *vicina* Hagen. Caldwell, common (Cr).

### CALLIBÆTIS Eaton.

- C. *americanus* Banks. Staten Island (Ds).
- C. *ferrugineus* Walsh. Ranges from Canada to the Southern States.
- C. *undatus* Pict. (*Cleon*) New York to Cuba.

### BÆTISCA Walsh.

- B. *obesa* Say. Caldwell, not rare (Cr).

### HEPTAGENIA Walsh.

- H. *canadensis* Wlk. Del. Water Gap VII (Jn); Caldwell (Cr); New Brunswick (Coll).
- H. *flaveola* Pict. (*Bætis*) New Brunswick VIII, 1 (Coll).
- H. *fusca* Wlk. Caldwell, not rare (Cr).
- H. *maculipennis* Walsh. New Brunswick V, 22, VII, 10 (Coll).
- H. *interpunctata* Say. Riverton VII (Jn).
- H. *pulchella* Walsh. Del. Water Gap VII (Jn).
- H. *simplex* Walsh. New Brunswick VII, 24 (Coll).
- H. *terminata* Walsh. Princeton VI, 11 (Coll).
- H. *verticis* Say. Ranges from Canada to Georgia.
- H. *vicaria* Say. Recorded from Canada to Georgia.