

**BIOLOGICAL LABORATORY. BULLETIN
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BULLETIN ON INSECTS OF THE
CACAO: PREPARED ESPECIALLY FOR
THE BENEFIT OF FARMERS**

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Prepared Especially for the Benefit of Farmers by Charles S. Banks

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CHARLES S. BANKS

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1903.—No. 11.

DEPARTMENT OF THE INTERIOR.

BUREAU OF GOVERNMENT LABORATORIES.

BIOLOGICAL LABORATORY.

ENTOMOLOGICAL DIVISION.

BULLETIN No. 1.

PRELIMINARY BULLETIN ON INSECTS OF THE CACAO.

PREPARED ESPECIALLY FOR THE BENEFIT OF FARMERS.

By CHARLES S. BANKS,

Entomologist, Bureau Government Laboratories.

MANILA:

BUREAU OF PUBLIC PRINTING.
1904.

FRONTISPIECE.

[Drawn from nature, by Charles S. Banks, 1908.]

LEGEND.

- FIG. 1. Cacao pod, showing mealy-bug, natural size, and the attendant ants and sheds built by the latter.
2. Female mealy-bug and young, enlarged four diameters.
 3. Egg about to hatch, enlarged forty diameters.
 4. Young insect just hatched, showing filamentous mouth-parts, enlarged one hundred diameters.
 5. Female mealy-bug, enlarged nineteen diameters.
 6. Male mealy-bug, adult, enlarged twenty-one diameters.
 7. Ant, attendant to the mealy-bug, enlarged nineteen diameters.
 8. Hymenopterous parasite of the mealy-bug, enlarged nineteen diameters.





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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF GOVERNMENT LABORATORIES,
OFFICE OF THE SUPERINTENDENT OF LABORATORIES,
Manila, P. I., September 14, 1903.

SIR: I have the honor to transmit herewith "A Preliminary Bulletin on Insects of the Cacao," by Mr. Charles S. Banks, Entomologist, Bureau of Government Laboratories.

I am, very respectfully,

PAUL C. FREER,
Superintendent Government Laboratories.

HON. JAMES F. SMITH,
Acting Secretary of the Interior, Manila, P. I.

ILLUSTRATIONS.

Cacao mealy bug	Frontispiece.
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