EDUCATION DEPARTMENT BULLETIN, NO. 465, FEBRUARY 15, 1910; NEW YORK STATE MUSEUM, BULLETIN 136: CONTROL OF FLIES AND OTHER HOUSEHOLD INSECTS

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EPHRAIM PORTER FELT

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No. 465 ALBANY, N. Y. FEBRUARY 15, 1910

New York State Museum

JOHN M. CLARKE, Director
EPHRAIM PORTER FELT, State Entomologist

Museum Bulletin 136

CONTROL OF FLIES

AND

OTHER HOUSEHOLD INSECTS

BY

EPHRAIM PORTER FELT Sc.D.

ALBANY
UNIVERSITY OF THE STATE OF NEW YORK
1910

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New York State Education Department
Science Division, January 25, 1910

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SIR: In April of last year I communicated to you a bulletin by the State Entomologist entitled the *Control of Household Insects*. This publication, which was issued to a considerable edition, has been entirely exhausted and the demand continues. To meet this outstanding demand for knowledge in regard to household insect pests, I transmit to you herewith the manuscript for a new edition of this work, enlarged in its scope, and recommend its publication as a bulletin of the State Museum.

Very respectfully
JOHN M. CLARKE
Director

State of New York
Education Department
COMMISSIONER'S ROOM

Approved for publication this 26th day of January 1910

A. S. Draper

Commissioner of Education

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JOHN M. CLARKE, Director

EPHRAIM PORTER FELT, State Entomologist

Museum bulletin 136

CONTROL OF FLIES

AND

OTHER HOUSEHOLD INSECTS

BY

EPHRAIM PORTER FELT Sc.D.

INTRODUCTION

The discovery that the common house fly may, under certain conditions, play a most important part in the dissemination of tuberculosis, typhoid fever and other diseases of the alimentary tract, has effected in recent years a marked change in the attitude of the public toward this very prevalent nuisance. This statement should not be construed as meaning that the common house fly is necessarily the principal agent in disseminating the above mentioned diseases, though it would not be surprising, were we fully acquainted with the facts, to find that this familiar and almost universally tolerated species has been much more active in this respect than hitherto suspected. An insect, breeding as does the house fly upon organic matter, and feeding indiscriminately upon material which may be literally swarming with deadly germs, and other substances likely to be used as food, can hardly be regarded as other than a menace to human life and happiness.

Recent discoveries respecting the part played by insects in the dissemination of malaria, yellow fever and typhoid fever, read like a romance. Mosquitos as distributing agents of malaria have

been suspected for many years. An active impetus was given to this suspicion through the discovery by Ross that certain Indian mosquitos harbored a malarial parasite affecting birds. It was only a step from this to human malaria. The mosquito-malarial theory took such firm hold that in 1900 Drs Low and Sambon spent the summer on the fever-ridden Roman campagna, relying entirely for protection from malaria upon flimsy mosquito netting. Their field test was further confirmed by the shipment of malarial-infected mosquitos to London, where they were allowed to bite Dr Patrick Manson's son, who in due time came down with the disease though residing in a nonmalarious section.

The deadly, justly dreaded "yellow jack" has likewise been traced to its lair through the heroism of a few devoted scientists. Volunteers lived in a fever-stricken locality with no protection from infection other than the frail mosquito bar. They even slept in beds soiled by fever patients for the sake of demonstrating beyond question that the disease was not infectious. Drs Carroll and Lazear went further and allowed themselves to be bitten by infected mosquitos. Both contracted the disease, the latter losing his life on the altar of scientific investigation. This was true heroism. All honor to these martyrs. Theirs was not a useless sacrifice. Before their time, a yellow fever outbreak meant the loss of hundreds or thousands of lives, simply because there was no known adequate method of preventing the disease. Prolonged, arbitrary and wasteful quarantines were maintained. Thousands fled from infected districts. The horrors of the shotgun quarantine prevailed. The control of the yellow fever epidemic of 1905 in New Orleans is a most striking testimony to the value of the recent discoveries regarding this disease. This outbreak was handled as a mosquito-borne infection and for the first time the disease was stamped out before cold weather and with comparatively little loss in either life or property.

DISEASE CARRIERS

Typhoid or house fly[1]

The typhoid or house fly is such an extremely common species that a detailed description is almost unnecessary. Dr Howard's investigations show that fully 98% of the flies in houses are ordinary house flies. A few others are associated with this very

[1] Musca domestica Linn.

prevalent nuisance. The stable fly[1] may be rather abundant about houses in the fall and is responsible for the persistent belief that under certain conditions the house fly bites. Invariably the offender is this inhabitant of the barn, a form which presents an extremely close general resemblance to the fly and is perhaps best recognized by its bite. Another fly liable to be abundant about houses in the fall is known as the cluster fly[2] a species somewhat larger than the house fly and easily recognized by the yellowish hairs upon the thorax. The small, yel-

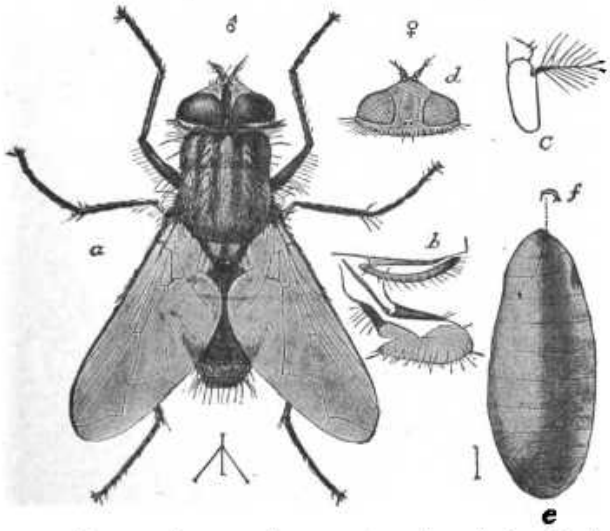

Fig. 1 Typhoid or house fly; *a*, male, seen from above; *b*, proboscis and palpus from the side; *c*, tip of the antenna; *d*, head of female; *e*, puparium; *f*, the anterior breathing pore or spiracle, all enlarged. (After Howard & Marlatt, U. S. Dep't Agric. Div. Ent Bul. 4 n. s. 1896)

lowish fruit fly,[3] only about 1/8 of an inch long, is sometimes rather abundant in houses and is invariably found in association with overripe or decaying fruit. These species, though annoying and under certain conditions dangerous, are insignificant offenders compared with the common house fly.

Description. The egg of the house fly is a slender, whitish object grooved on one side somewhat like a grain of wheat and only 1/20 of an inch long.

[1] Stomoxys calcitrans Linn.
[2] Pollenia rudis Fabr.
[3] Drosophila ampelophila Loew.