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THE HOUSE FLY

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Introduction.—From earliest times the House Fly has been known as a troublesome pest about the habitations of man, and at the present time it is distributed over almost the entire globe. But it has been only within the most recent years that the House Fly has been recognized in its true light—that is, as a dangerous enemy of mankind because it aids in the transmission of some of our worst infectious diseases. In the light of these facts therefore, the House Fly takes on a new interest, and it is the purpose of this circular to give something of the life history of the House Fly, pointing out its relation to diseases and suggesting some of the more practical remedies for its control.

Life History

The House Fly, like many other insects, passes through four distinct stages: (1) the egg, (2) the larva, (3) the pupa and (4) the adult. The adult fly lays the eggs in a suitable place. Each egg hatches into a soft-bodied larva or "maggot," which in turn when full grown changes to a pupa, from which the adult fly emerges. This cycle is known as a generation. The number of generations of house flies annually varies greatly with the climate, abundance of food and other factors. And the fact that the generations are apt to overlap very much makes it hard to say just what the number of generations is for any particular place. The number for this State would undoubtedly be from ten to fourteen broods annually.

In order to understand the House Fly better and to be better able to control it, it is necessary to understand more of its life history by examining more in detail each of the four stages of its life.

The Egg.—The egg of the House Fly is very small, whitish object shaped more or less like a slender grain of wheat and, like it, has a groove on the side. It would, however, take about twenty of them laid end to end to make an inch. They are laid by the adult fly, preferably in horse manure just beneath the surface. However, the fly has been known to lay its eggs in cow dung, in human excreta, in decayed vegetables and decayed meats. Although these latter are exceptional, they should be remembered as possible breeding places of this pest, though the "maggots" which commonly infest spoiled meats are principally of other species which are distinct from the House Fly. The eggs are usually placed in irregular clusters. The eggs hatch in favorable weather in a few hours. In unfavorable weather this stage will be somewhat prolonged. But it is doubtful if it ever exceeds a day very much. At Raleigh in middle October the time required was twenty-four hours.

The Larva.—The larva, or "maggots," as they are called, are at first very small, but they grow rapidly, shedding their skins three times, and when full grown are about one-third of an inch long, pointed at the other end. In hot weather during mid-summer the larva may become full grown in five days, but later in the season or in cooler weather the length of the larval life

becomes much longer. The time required at Raleigh in October was from ten to eleven days.

The Pupa.—The last or third time that the larva molts it changes to a resting stage or pupa within the larval skin which turns brown, dries and wrinkles up, forming a hard protective covering for the soft-bodied whitish pupa within. This is known as a puparium. This stage also may be as short as five days in summer but varies remarkably with the weather conditions and the House Fly often passes the winter in this pupa condition, emerging as an adult in the spring. At Raleigh in October nine days were required for the completion of this stage.

The Adult.—The adult House Fly is a familiar object to all, yet it is apt to be confused with other kinds of flies which are often found in houses. But at least 95 per cent of all of the flies found in our houses are the true House Fly. Another fly often found in houses is the so-called "stable fly" which superficially resembles the House Fly very much. But the stable fly has sharp pointed mouth parts capable of piercing the human skin, whereas the mouth-parts of the House Fly are soft and blunt at the end and are adapted only to lapping up liquids and are in no way capable of piercing human skin. The presence of the stable fly about houses, especially just before rains, has led to the popular and erroneous notion that House Flies bite before a rain.

The true House Fly is a dull grayish fly about one-fourth of an inch long with its body streaked with blackish-gray. The body of the House Fly and especially its feet and legs are densely covered with minute hairs, which form a most convenient place for the lodgment of filth of all kinds, and hence an excellent place for the retention of disease germs. House Flies reach their greatest abundance in the hottest weather, and as the season begins to wane their numbers are gradually reduced. In the fall it is not an uncommon sight to see flies on the window panes surrounded by a whitish ring or halo made by the minute spores (seeds) of a fungus disease. They are also preyed upon by a small reddish mite which attaches itself to the body of the fly and sucks out its juices. Many others are killed in various ways, so that by the time winter sets in their numbers are vastly reduced. The remaining individuals hide in out-of-the-way places about buildings where they pass the winter. In the spring they emerge, lay their eggs and start another brood.

Relation of House Fly to Diseases

The House Fly is admirably fitted as an agent to carry diseases. His body is thickly clothed with short hair and his well-known habit of feeding on filth as well as upon human food makes it an excellent carrier of germs from the one to the other. The diseases that it might carry in this way are many, but the insect is especially dangerous as a carrier of the various intestinal diseases such as typhoid fever. It is a well-estimated fact that a person who has contracted typhoid may emit the typhoid disease germ for several weeks previous to the

time that the disease becomes marked enough to be recognized, as well as for several weeks after all symptoms have disappeared and the patient is evidently cured. Now, a fly visiting the deposits of such a person, either to lay its eggs or to feed, is almost sure to gather some of these germs upon its feet and legs and fly away, often only a short distance to the kitchen, there to walk about over the food prepared or being prepared for the table. And wherever he goes he leaves behind him a track of deadly germs.

In New York City trap cages were placed in various localities about the city and careful counts showed the greatest prevalence of the House Fly during the hottest part of midsummer, and when compared with the statistics of the time of contraction of all known cases of intestinal diseases, were found to agree almost perfectly. These diseases have long been known as hot weather diseases, and undoubtedly the hot weather does reduce the vitality of the patients, thus making them more susceptible to the disease. But that does not alter the fact that it is necessary for the germs to be carried from one person to another, and House Flies have been proven beyond the shadow of a doubt to be active agents in carrying these germs. Counts of the number of germs on House Flies have shown as high as 100,000 fecal bacteria on a single individual. It naturally follows that the greater the number of flies the greater the number of germs apt to be carried and the greater the number of persons that are apt to be infected.

In the same way the peculiar germ of tuberculosis (consumption) may be spread from one individual to another. The sputum ("spit") of a person with tuberculosis swarms with bacteria, and a fly crawling over this sputum entangles many germs among the hairs on its legs only to fly away to some kitchen or dining room, spreading the germs wherever it goes and exposing persons to the danger of the disease.

The above methods are by no means the only way of spreading the diseases mentioned, but it seems quite evident that the House Fly is more to blame than appears at first thought.

Remedies

It is very hard to control the House Fly owing to its widespread abundance. The following considerations are given to the more practical remedies;

Screens.—All windows and doors (especially those that are opened frequently) should be carefully screened. This applies with increasing force to all sick rooms, to kitchens where food is prepared, and to dining rooms where food is eaten. Care should also be taken to see that odds and ends of food are not allowed to accumulate about kitchens as these act as very powerful attracting agents to House Flies.

If all foods were kept stored in dark closets till ready to be used and all waste scraps removed at once, it would go a long way towards controlling this pest. People should insist also that meats and other foods in stores and markets be kept carefully screened from flies.

Sticky Fly Papers.—In addition to screens on doors and windows, sticky fly papers should be used in the house. Sticky papers have their disadvantages, but they are at the present time our most effective method of controlling the House Fly in houses

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JUDGE ROBINSON'S STRONG WORDS.

Thinks the President Has Insulted Every Republican Lawyer in the Eastern District.

Raleigh News and Observer.

Ex-Judge W. S. O'B. Robinson, of Goldsboro, does not conceal his condemnation of the action of President Taft in giving the high office of judge of the Federal Court in the eastern district of North Carolina to a Democrat. Some of the ablest Democrats in the State had endorsed Judge Robinson, as they had endorsed other Republican aspirants under the belief that the vacancy would be filled by the appointment of a member of the party that elected Mr. Taft to the presidency.

"What do you think of Mr. Taft's refusal to appoint a Republican as judge, after he said he would name a Republican if he could find a suitable one in the eastern district?" was the question put to Judge Robinson.

"I think," said the ex-judge, with emphasis, "that it was a direct insult to every Republican lawyer in the district. I now see no reason why any self-respecting gentleman should join the Republican party in North Carolina.

"I do not hesitate to say that I shall relieve my sons from any filial obligation either to join or remain in the party. If it were not for the fact that I am so dishonored and disgraced, so far as Republican President can disgrace or dishonor me, I would quit the Republican party and join the Democrats or the next best party, if there be any such thing.

"My respect for the office of President of my nation prevents me from speaking of Mr. Taft as my inclination now would prompt me to do.

"I resented with due respect the slurs that were cast upon Mr. Taft when he was spoken of so disparagingly by Democrats of high standing last year, but I rather think they were right in the estimate they then placed upon him.

"I say this without one word of criticism of Judge Connor. He is an honorable gentleman, a lawyer of ability and has no superior upon the bench of any State in the Union. He has more than once espoused my cause with warmth. He has rejoiced with me in my good fortune and was with me in my great sorrow. I would be more than a churl if I did not follow Scriptural injunction as to Judge Connor and rejoice with those who rejoice.

"But I can say that I still have a burning contempt for President Taft. If I could use the vernacular of the blackguard, I'd say 'damn him,' and thus in some degree corroborate Mr. Taft's estimate of my character."

Maxims for the Married.

Never both be angry at once.
Never taunt with a past mistake.

Never meet without a loving welcome.

Never forget the happy hours of early love.

Never talk at one another, either alone or in company.

Neglect the whole world besides rather than one another.

Never let the sun go down upon anger or grievances.

Never speak loudly to one another unless the house is on fire.

Let each one strive to yield of tenest to the wishes of the other.

Never make a remark at the expense of each other, it is a meanness.

Never sigh over what might have been, but make the most of what is.—Exchange

Cloers Get Two Years.

Statesville, May 20.—The May term of Iredell Superior Court in session here this week with Judge Jones, of Winston, on the bench, has disposed of a number of interesting cases, the most important of which were the cases against Robert and Joe Cloer, the noted check-flashers, who have been confined in Iredell jail for some months, although they made a number of efforts to escape from the jail. The Cloer brothers submitted to the two cases against them in this county and their final sentence was two years in the State penitentiary.

The Cloers are such smooth articles, however, that it is doubted if they will remain in the penitentiary very long. Solicitor Hammer urged Judge Jones to send the forgers to the chain-gang because Sam Carlton, who was convicted of arson at the last term of Iredell court and sentenced to the State prison, escaped after serving only two weeks, and the Cloers are "sharper" than was Sam. In compliance with the solicitor's request the judge's first sentence was two years on the chain-gang, but Mr. N. B. Mills, chairman of the county commissioners, appeared before the court and asked that the prisoners be sent to the penitentiary instead, he believing they would be as safe in the penitentiary as on the chain-gang. The sentence was changed and the noted Cloer brothers will go to Raleigh.

The sentence imposed on the Cloers is considered rather light, they themselves admitting that they expected a much longer sentence. There are cases against Robert, however, in Surry, McDowell, Catawba, Wilkes, Forsyth, Lincoln and other counties of the State, and when he finishes his first term he will probably be tried in some of those counties and sent back to the pen.

Winston Sentinel to Build.

Winston-Salem, May 20.—The Sentinel Publishing Co. announced to-day that it will erect at once a modern newspaper building on Liberty street, just off the court house square. J. G. Zimmerman is the architect. The building will be two stories in height, of mill construction. The Sentinel is the afternoon paper, and has to give up its present quarters in the Gray Block, the site to form part of the foundation of a new structure for the Owens Drug Company.

Brothers Fought Duel.

Pensacola, Fla., May 21.—Joseph and Monk Bray, brothers, to-day fought with shot guns and Monk Bray met death. They had quarrelled over the dividing line some land. Monk Bray, it is said, cursed his brother and then fired at him. Joseph Bray then leveled his shot gun and with the statement, "I hate to do it," fired, the contents entering the breast of the brother, who fell dead.

Young Girls Are Victims.

of headache, as well as older women, but all get quick relief and prompt cure from Dr. King's New Life Pills, the world's best remedy for sick and nervous headaches. They make pure blood, and strong nerves and build up your health. Try them 25c. at Ashcraft Drug Co.

How Old Major Preached a Sermon.
A cold northeast storm swept against the kitchen window and Mr. Leeds, who was shaving, paused long enough to inspect the elements critically, then returned to his former task.

"Terrible bad weather, this," he said. "It would hardly be merciful to take old Major out this morning. I calculate we would better stay home from service to-day."

Mrs. Leeds stopped in her preparations and looked at her husband. "We aren't in the habit of staying home from church on account of the weather, father," she said. "It don't seem the proper thing to do, but it's for you to say."

John came in the kitchen, banging the door after him.

"It's getting worse every minute father," he said. "We shall need plenty of blankets. Old Major is rough shod. I don't think it will hurt him.

"We'll spend the day at home, John; it hardly seems fair to take the Major out such weather. A righteous man considers the life of his beast, is scriptural doctrine."

"I suppose the doctor and Mrs. De Yoe will be there," said Mrs. Leeds, mildly, as she seated herself by the window with open Bible in hand.

"Well, yes," said Mr. Leeds, regretfully, "and I calculate that is about as far as numbers go to-day. Grandfather Strouble may be there, but he has only to step out of his back door into the side entrance of the church. It is too hot for it across the piazza to do."

So Mr. Leeds seated himself with the church paper and John sat pouring over a book until the clock struck twelve, when Mrs. Leeds rose to make preparations for dinner.

"I'll run out and feed Major," said John. "It isn't storming quite as hard as it was."

"Give him plenty of oats. You know he always has extra on Sundays."

"Father," cried John as he came bounding into the kitchen, forgetting to close the door in his excitement. "Old Major has slipped his halter, and I can not find him anywhere."

"Here he comes," said Mrs. Leeds, "trotting along down the road as sedately as you please. I do believe he has been to church after all."

Sure enough, just as Dr. and Mrs. De Yoe were entering the churchyard, struggling between them to hold an umbrella, old Major walked up the drive, paused a moment at the church porch, then sought the shed where he had been sheltered every Sunday morning for eleven years.

"I never heard a sermon which touched me to the quick like that preached by old Major," said Mr. Leeds, in recounting the incident later.

Mrs. Leeds was busy at the kitchen sink, but she looked over her shoulder in the direction of Mr. Leeds and smiled. "We aren't going to mind the weather next time, are we, father?" she said.

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Greensboro, N. C.