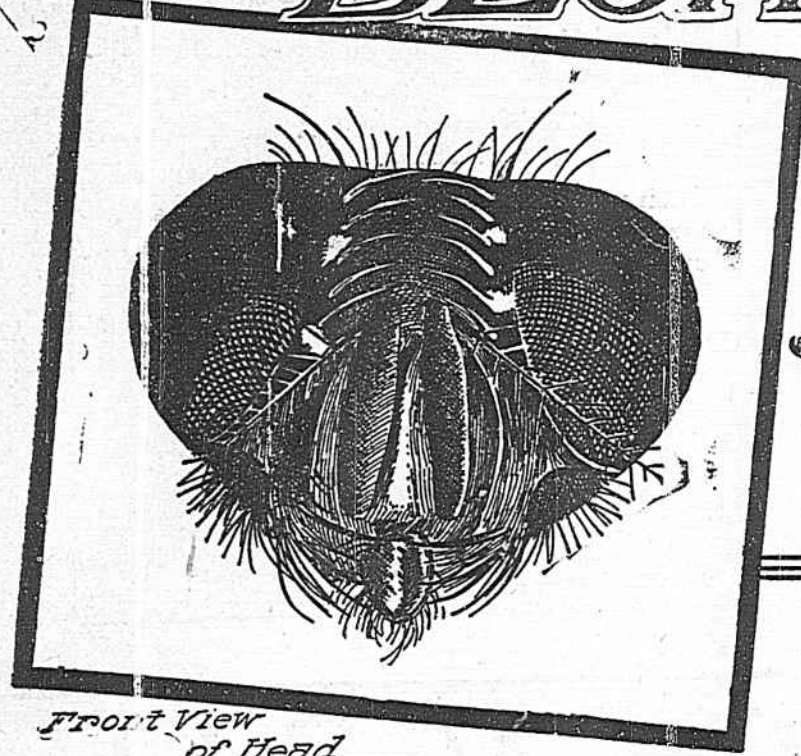
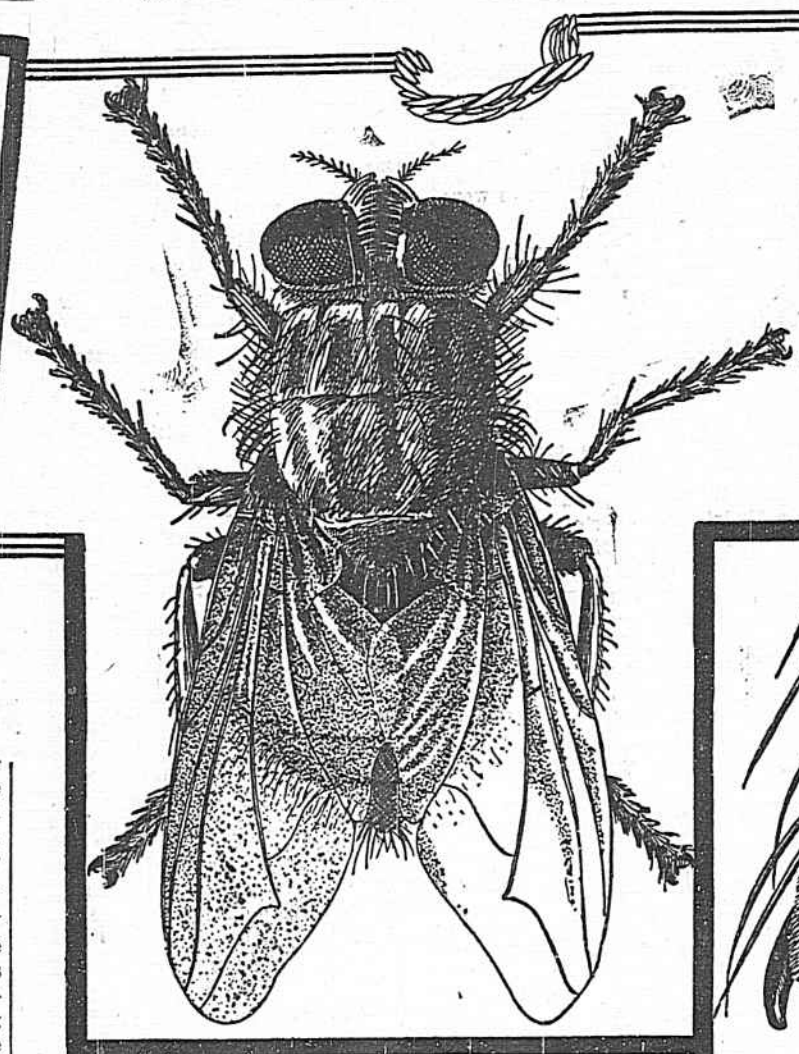


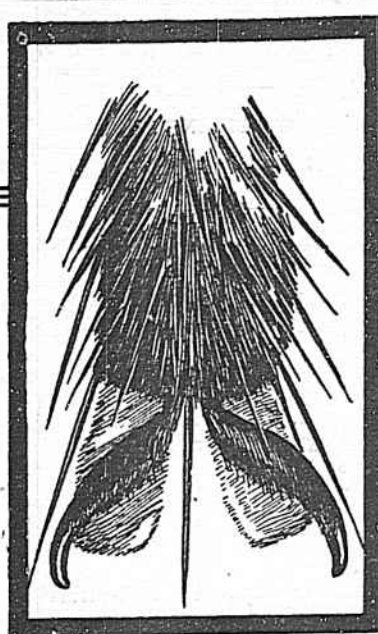
The BLOW-FLY



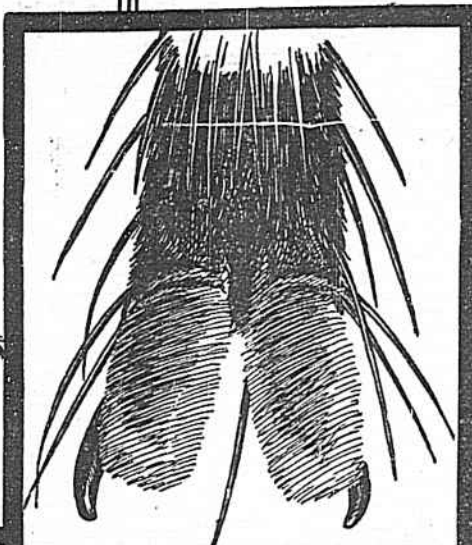
Front View of Head



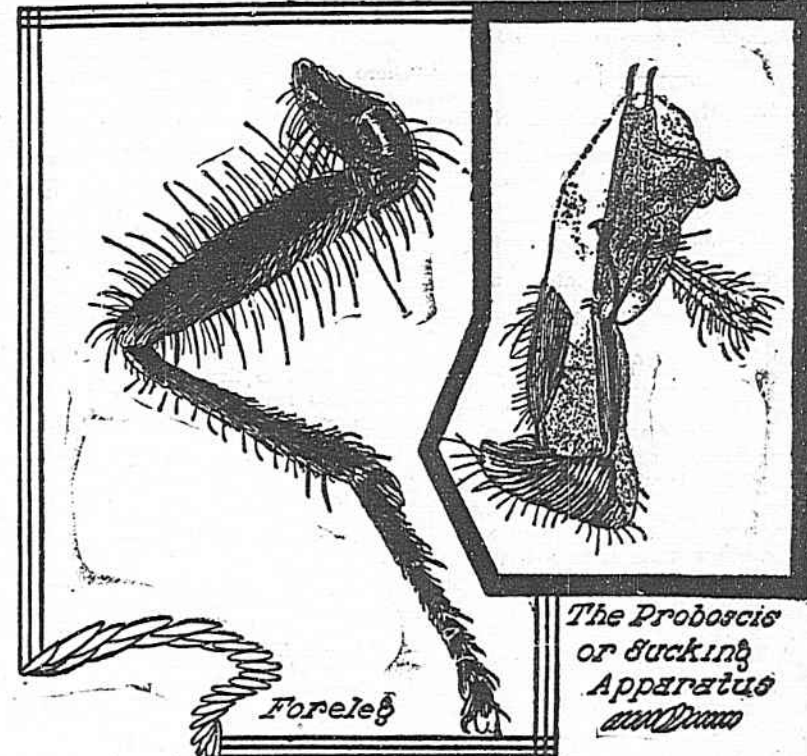
The Blow-Fly



Top of Forefoot



Back View of Forefoot



The Proboscis or Sucking Apparatus and Pump

So much has been heard regarding the disease-carrying abilities of flies that we have begun to look upon them as most dreadful creatures. We well know that they are accustomed to light upon very objectionable substances after which we do not care to have them any nearer us or our food than we can help, if for nothing more than a matter of cleanliness.

A health officer recently told me a little story of how some of these little mischief-makers were apparently "caught in the act" of spreading disease among the soldiers at a certain camp where typhoid fever had claimed many victims. The flies were suspected, and so several men went to an old dump of waste at the flies' mess time and were not disappointed in finding the place well attended by the enemies they sought. With considerable skill they succeeded in throwing some flour over them as they were enjoying their repast.

A little later in the day it was noticed that flies well dusted with flour were marching over the meat and other eatables in the large kitchen where food was in course of preparation for the soldiers. Army authorities see to it nowadays that "mess" houses are thoroughly screened, as well as other places where food is exposed so far as it is possible to do it.

While the common house fly, or the blow-fly here described, are not poisonous or infectious in themselves, they may carry impurities from place

to place, and when we examine one under a microscope, or even a good magnifying glass, we will find them well fitted to carry foreign matter about on their hairy bodies and legs.

Possibly every "pest" has its redeeming qualities, and certainly the blow-fly for example, and besides this he now has the distinction of being studied as the most promising pattern for a flying machine by one scientific man. This fly is readily distinguished from the house-fly, being larger and of a blackish color, with steel-blue abdomen. He shows his good taste by his strong attraction to the odor of cooking, especially of meat and vegetables. When he has nothing else to occupy his time he amuses the baby by buzzing down the window pane, and then walking up the glass and repeating the novel performance.

He ceases to be amusing to the housekeeper, however, when she finds, notwithstanding her carefulness, that some fresh meat she put on a shelf, until a place could be made for it in the refrigerator, has been "fly-blown." That is, the blow-fly has deposited their eggs on it. This is one of the objectionable tricks of these fellows, nor do they select fresh meat as a cradle for their offspring necessarily, as decaying flesh or cheese and nitrogenous vegetables are also favorite places.

It is far from pleasant to imagine the sufferings of wounded soldiers during hot weather when visited by these pests. However annoying is

the blow-fly on every occasion where opportunity offers, his clue as a scavenger in warm climates would be difficult to calculate.

From the occupation of a carrion remover alone the great naturalist, Linnaeus, declared that the progeny of but three such flies would consume the carcass of a dead horse as speedily as a lion! This statement, although somewhat exaggerated, furnishes some idea of the wonderful egg-laying power and rapid development, as well as the astonishing voracity of the immature members of this family.

The eggs are deposited in great numbers, and hatch in twenty-four hours, and the numberless myriads of maggots soon make way with the substances upon which they are placed. In a few days they attain their full development, when they crawl aside into a place for protection and transform into pupae, or little cases

from which they later emerge, full-fledged flies.

An interesting fact about flies, which many do not know, is that they do not grow. That is, they attain their full size in the pupa state and emerge from this state full grown. Therefore the small flies you see will never grow any larger, as they belong to a smaller species. When one of these flies is examined under the magnifying glass or microscope there is much to be admired about him, even if some of our friends of the gentler sex call him "perfectly horrid," after taking a peek at his grotesque countenance under a glass.

A very low power is used, of about ten to fifteen diameters, and even then the whole fly cannot be seen at once. Under the microscope, a front view of the head of a blow-fly is shown in Fig. 1. The "thousand eyes," or composite eyes, are best observed from this view. The beauty

of coloring or marvelous construction of a fly's eye cannot be well described in printer's ink. It must be seen to be appreciated.

However, for the time being you may imagine the appearance of an enlarged, convex, oval-shaped organ dotted all over its surface with geometrically perfect hexagonal-shaped depressions, as if made by a metal worker. You may well imagine the beauty of such a wonderfully checkered surface when the light brings out its rich maroon coloring, of rich golden brown and changeable greens as are found in some specimens. After seeing this spectacle you feel that there is nothing else on this creature worth looking at—but there is. I would call your attention to the delicate, fern-like antennae, the bristly ant-like hairs on the front and top of the head, also the black bands resembling "patent leather," which borders the

eyes, separating them from the middle part of the head.

The mouth is very complicated and is provided with a proboscis or sucking apparatus, the end of which is seen at the lower middle part of the head. A detailed drawing of this from a mounted specimen is shown in Fig. 3. It suggests the fur-covered foot and leg of an Esquimau. The "foot" part reminds one of a red-ribbed bed-room slipper. The ribs serve the purpose of stretching out the elastic and elaborate sucking surface, which you have seen so often planted upon a stray grain of sugar which fell out of its proper place.

The dark front and back muscles and their attachments are very clearly seen under the microscope, as shown in the drawing. The darker parts are reddish in color, while the other surfaces are of a yellowish color. The two little thorned organs at the back are feelers. When the proboscis is drawn up they are in just the right position to examine anything which is near that organ.

A foreleg of this animal is shown in Fig. 3. Under a low power objective it looks like a small, black tree trunk, covered with small hairs, and in some parts with very large sharp, stiff bristles.

The most interesting part of the fly's leg is the foot, which we all know performs such wonderful feats as walking up and down the window pane, across the smooth ceiling or on anything—except the fly paper! Drawing No. 4 shows the top of this foot, much enlarged. You will see that these wonderful feet are provided with a pair of hooks, as well as two pads back of them, which later are better brought into view in Fig. 5, which gives the back view of

the same foot.

The hairs appear like very large bristles in these views. The pads are supposed to be slightly sticky, which provision aids them in holding on to glazed or smooth surfaces. They may serve also, with the bent joints, to receive the shock of alighting upon some hard surface, although flies seem to be able to withstand a good deal of rough treatment on various parts of their bodies, for we know how readily they re-establish themselves after a pretty hard slap with a fan.

Drawing No. 6 shows the whole fly, the most wonderful flying machine, as well as the bravest of creatures, for there is no beast in warm climates, however savage, nor any pestilence which can scare away this warrior.

The framework of the wings, as well as the wonderful membrane stretched over it, is all very interesting to view under the microscope. To the naked eye it seems rather plain, even if very delicate, but you would be filled with astonishment to behold it under the microscope. You would find its whole boundary bordered with small thorns, becoming very large at the point joining the body, and the entire surface of the membrane, covered with unnumbered thousands of minute thorns, which are not to be seen even under a good magnifying glass, but which show up most beautifully under the more powerful microscope. These little thorns serve as a protection for the membrane of this delicate little wing, which certainly meets a good deal of trouble when the housekeeper gets after him with here duster or broom!

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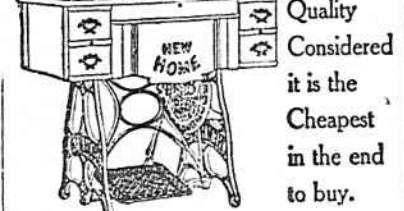
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