

A PRELIMINARY REPORT ON THE CULICIDAE (Mosquitoes) OF MISSOURI

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The purpose of this article is to start a series of papers on the **Diptera** of this State. The **Diptera**, or two-winged flies, constitute one of our largest orders of insects, and one of the most important. The **Culicidae**, or mosquitoes, come first to our attention largely through their public health relations, and it is deemed of economic value as well as of faunistic worth to submit the present list of species in this family of **Diptera** at this time.

Many species of mosquitoes are of wide distribution, some occurring not only all over this continent, but also in Europe and other parts of the world as well. As an example of these widely distributed forms, **Aedes vexans** (Meigen) may be mentioned. It has been found widely scattered in Europe, North America, Asia, the Philippines and elsewhere.

A generality of considerable interest is this: as we approach the North Pole, the number of species of mosquitoes decreases, but the number of specimens per species increases. And, of course, as we approach the Equator, the reverse holds true.

The number of species or kinds of mosquitoes in the world is not known, but a rough estimate of two thousand would probably be conservative enough—somewhat less than half of that number being found in the western hemisphere.

It is well known that the average locality in the United States should yield somewhere between twenty-five and thirty species of mosquitoes without being credited as a "mosquito" community. For instance, Ithaca, N. Y., has thirty-one species, and no one would designate that beautiful city as being infested with mosquitoes. The truth is only a few species become at all prevalent at times, the individuals of the other twenty-odd forms remaining very few in number. It is here estimated that somewhere between thirty-five and forty species ultimately will be found to occur in Missouri, and the following list is an approach to that end. Unless otherwise stated, all material was collected by the writer at Atherton, Jackson County, Missouri.

Megarhinus septentrionalis D. & K. A large tropical or sub-tropical form that has entered the State from the Southeast and has made its way as far north as Rankan, near St. Louis, where Dr. E. P. Meiners collected this material. This mosquito does not bite, altho its proboscis looks the part! Larvae live in tree holes, and sometimes in barrels and other artificial containers, where it is predaceous on other mosquito larvae.

Psorophora ciliata Fabr. (Gallinipper) With the foregoing, this is our largest mosquito, which is quite handy with its proboscis. Also tropical in origin, with larvae that live in transient rain pools. Eggs can withstand drying, even for three or four years.

As to the "remarkable" size of some mosquitoes, considerable myths obtain. The two species thus far listed in this paper are the largest found in this country. Any insect of larger proportions which the non-entomologist might mistake for a mosquito is in all probability a member of the **Tipulidae**, or crane flies—insects that look much like mosquitoes but belong to another family.

Psorophora sayi D. & K. Another biting form, but of smaller stature, whose larvae live in rain puddles. The winter is passed in the egg stage, which can withstand drying.

Psorophora discruciens Walker. Life history of this species is not very well known, but the larvae live in ground pools.

Psorophora cyanescens Coq. Develops rapidly in rain pools. Quoting

J. K. Thilbault: "The appearance of this mosquito immediately after rains is so strikingly characteristic that even people who never pay much attention to such things notice it. They are out in force for several days after a rain, and then only a few will be found till the next rain." Quoting Dyar: "It does not enter houses, but is very persistent out of doors, even in bright sunlight, and will often pursue a person. It is said to never quit biting voluntarily, but must be brushed off. Specimens have been seen on a horse for hours, voiding the surplus blood and sucking fresh." Additional specimens were collected at Hollister by Mrs. Vitae Kite.

Psorophora columbiae D. & K. A rather inoffensive mosquito whose larvae live in rain pools.

Culiseta inornatus Will. A large brown mosquito that is common all over the country, and prefers the larger mammals to man. The larvae live in permanent ground pools, and the winter is passed in the adult stage.

Culex restuans Theobald. This is our common house mosquito in the north. The larvae live in ground pools but will readily accept artificial receptacles.

Culex tarsalis Coq. Another common form that will enter houses. Its larvae are commonly found in grassy ponds and marshes.

Culex apicalis Adams. A form that is unusual in its colorational character, the white cross bands being at the apices of the abdominal segments instead of the base—hence the name **apicalis**. The original specimen of this species was collected in Arizona, but this mosquito has since then emigrated to all parts of North America, Europe and the Levant. It is quite harmless to man, preferring such cold-blooded animals as frogs and snakes.

Culex pipiens Linn. Another globe-trotter that is something of an annoyance in houses at night. The larvae live mostly in artificial receptacles. Dr. E. P. Meiners has taken additional specimens at Rankan, Mo.

Culex quinquefasciatus Say. This is the common house mosquito of the South. It has been accused of transmitting Dengue fever, but later students have gone to its defense in that regard.

Aedes trivittatus Coq. The larvae prefer ground pools that are the result of flood water, particularly in river valleys. The adults frequent bushes and trees. Mrs. Vitae Kite has collected additional specimens of this mosquito at Hollister, Missouri.

Aedes triseriatus Say. Larvae live in tree holes, and the winter is passed in the egg stage. Females are severe biters, but never abundant except at times in dry woods.

Aedes nigromaculis (Ludl). A form that is more common in the dryer regions in the west of us. Rather severe biter, and at times becomes relatively abundant.

Aedes vexans Meigen. This is the commonest woods mosquito throughout the country. The females are severe biters, but do not frequent the open. The males swarm in large groups after sunset. The winter is passed in the egg stage.

Uranotaenia sapphirina O. S. A small but very pretty mosquito that seldom bites. Upon superficial glance, the larvae resemble those of **Anopheles**.

Anopheles quadrimaculatus Say. Our chief malaria transmitter. The larvae are surface feeders, especially in permanent pools in relation to rivers. The winter is passed by the fertilized female. Very difficult to differentiate between this species and **A. maculipennis**, common on west coast.

Anopheles punctipennis Say. A malaria carrier, but not so active in that regard as the foregoing species.

Eight additional species have been reported from Missouri by other collectors, but the nineteen forms here listed are the only ones examined by the author.