



SOME BIOECOLOGICAL CHARACTERISTICS OF MANTIS RELIGIOSA

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Annotation. *The article provides information about the Mantis, perhaps one of the most amazing and strange insects on the planet, its habits and lifestyle, some of its features may surprise us a little.*

The scientific name of the mantis was introduced to the science in 1758 by the great Swedish naturalist Carl Linnaeus, who drew attention to the fact that it is very similar to the condition of the mantis in ambush and guarding the prey. A man who opened his hands in supplication to God. Due to such a striking similarity, the scientist gave the insect the name "Mantis religiosa", "praying mantis", which is translated literally as "religious priest" in Latin.

Key words: *predator, cannibalism, female, male, antenna, copulation, pheromone, thermophile.*

Аннотация. *В статье представлена информация о богомоле, пожалуй, одном из самых удивительных и странных насекомых на планете, его повадках и образе жизни, некоторые его особенности могут нас немного удивить.*

Научное название богомола было введено в науку в 1758 году великим шведским натуралистом Карлом Линнеем, который обратил внимание на то, что оно очень похоже на состояние богомола, находящегося в засаде и охраняющего добычу. Человек, открывший руки в молитве к Богу. Из-за столь поразительного сходства учёный дал насекомому название «Mantis religiosa», «богомол», что дословно переводится с латыни как «религиозный жрец».

Ключевые слова: *хищник, каннибализм, самка, самец, антенна, копуляция, феромон, термофил.*

Annotatsiya. *Maqolada Mantis, ehtimol, sayyoramizdagi eng hayratlanarli va g'alati hasharotlardan biri, uning odatlari va turmush tarzi, uning ba'zi xususiyatlari bizni biroz hayratda qoldirishi mumkin bo'lgan beshiktebratarlar haqida ma'lumotlar berilgan.*

Mantisning ilmiy nomini 1758-yilda buyuk Shved tabiatshunosi Karl Liney fanga kiritgan bo'lib, u pistirmada va o'ljani qo'riqlayotgan mantisning xolatiga juda o'xshash ekanligiga e'tibor qaratgan. Xudoga iltijo qilib, qo'llarini duoga ochgan odam. Bunday ajoyib o'xshashlik tufayli olim hasharotni lotinchada so'zma-so'z "diniy ruhoniy" deb tarjima qilingan "Mantis religiosa", "ibodat qiluvchi mantis" degan nomni beradi.

Kalit so'zlar: *yirtqich, kanibalizm, urg'ochi, erkak, antenna, kopulyatsiya, feramon, termofil.*



Mantis (Mantoptera, Mantodea) - family of insects. The body is large and elongated. The head is clearly separated from the body, very mobile. It has large faceted eyes on both sides of its head. Oral organs are rodent type. Sternum very long. The front legs are large and long, grasping, with large spines on the inside. The other legs are runners. The wings are well developed, reticulate. When in danger or hunting for prey, it swings its front legs and the front part of its body up and down [5].

The female is larger than the male, and lays her eggs in a special egg bag (ootheca) in the fall on the branches of plants, on stones or other objects. Larvae hatched in the spring develop through metamorphosis, jump 5-8 times and become adults. One generation develops during the year. The Mantis is a predator, its larvae catch and eat small insects (plant aphids, ants, flies, beetles, etc.), and in the adult period they catch and eat grasshoppers, crickets, wasps.

About 2000 species are known, mainly distributed in tropical and subtropical regions. There are about 20 species in Central Asia, especially in Uzbekistan. The Mantis family is divided into the empusidae (Empusidae) and the original Mantis families.

There are 3 types of Mantis in Central Asia. The common praying mantis (*Mantis religiosa*) is large, green or sometimes brown in color. The tree weevil (*Hierodula temidentata*), endemic to the Central Asian fauna, differs from the common weevil by having a white spot (eye) on the upper wing. It lives a solitary life in trees, bushes and vines. The gray or tortoiseshell Mantis (*Bolivaria brachyptera*) is common in the desert and dry foothills. It is found among grasses and bushes at an altitude of up to 2000 m. The smallest Mantis belonging to the genus *Armene*, especially *A. pusilla*, can be found on dry rocky mountain slopes.

Mantis religiosa is an insect that belongs to the true Mantis family. A large carnivorous insect whose front legs are adapted to receive food. Length 42-52 mm (male) or 48-75 mm (female). It is the most common species in Europe. Its color changes very quickly and can change from green to yellow or brown-gray to dark brown. In addition to feeding, it also uses its front shovels for movement. The hind legs are considered running. Wings are well developed in both males and females. Females cannot fly well due to their large size. The abdomen is ovoid and large.

Although females of *Mantis religiosa* are larger and heavier than males (7-9 cm vs. 6-7 cm), males have larger antennae and eyes than females. Along with forward-facing, complex eyes, simple eyes are also found on the head. Males are often more active and agile, while females are physically stronger [4]. Adult females are usually too large and heavy to fly.

The color variation of *M. religiosa* with its various shades of yellow, brown, green, and sometimes black has been the subject of much speculation and research for over 100 years. However, no generally accepted answer has been found regarding the cause, benefit or mechanism of discoloration or discoloration.



Di Cesnola observed in 1904 that green beetles were found on fresh green grass, while brown ones preferred dry brown grass. Almost all "mismatched" Mantis were killed by predators, such as birds, when they were forced to relocate to avoid matching the color of their habitat. This color indicates the purpose of the change [2].

Przibram observed in 1907 that changes in temperature can cause color changes: Mantis hatched in a cold environment turned green after being provided with heat and sunlight. No color change occurs without temperature change and only spot color change [1].

A few days after *M. religiosa* become adults, they begin to show interest in the opposite sex; this state is defined as reaching sexual maturity. Males were most attracted to females in the middle of the day when temperatures were hottest. Female pheromones are theorized to be most volatile during heat, and as thermophilic insects, males are most active [6],[7].

Sexually mature males approach mature females, but due to the physical dominance of females, males of *M. religiosa* face certain difficulties in this regard. When females see a male, they are more likely to attack and kill him, that is, sexual cannibalism can be observed in them. Therefore, it can be observed that men approach very slowly and carefully; after seeing a female, the male usually remains motionless and turns his head to look directly at her. Because his eye sockets point straight ahead, he can see the female in the clearest and most detailed way and track her every move.

Mantids are very good at detecting moving structures, but they can't see almost anything that doesn't move. Using this "stop and go" tactic, the male gets closer to the female. This can often take several hours. Depending on the environment, males sometimes display a slight "shaking" behavior that mimics the foliage of surrounding plants and blends in with the background.

Spawning interval after copulation depends on food intake and general fitness of the female. It takes an average of 11 days for a female to produce and lay an ootheca containing 100 to 200 eggs. Copulation usually occurs in September or October, but the eggs overwinter and the larvae do not hatch until the following spring. The release process is strongly influenced by environmental conditions such as temperature (at least 17 °C) and humidity. Females lay their eggs on hard substrates in warm and sunny places.

Hatched insects look very similar to large forms. Stages 2-6 of development each last about 14 days. During this time, growth of around 6 mm can be observed at each stage, and at stage 7 it takes on a more compact form. Wing pads will be visible. In the next stages, mature insects appear and their wings are fully developed. The fact that females take longer to develop and produce more feathers may be due to differences in sexual maturity [7].

M. religiosa hunts from an ambush for prey, actively scanning its environment and feeding on many small insects by rapidly extending its predatory legs. Only live



and moving prey is caught and eaten immediately with the help of their powerful mandibles [4].

The large compound eyes that make up most of the head clearly show that vision is important to *M. religiosa*. Their hunting and mating behavior relies almost exclusively on sight and motion detection. Catching fast-flying prey from the air is impossible without a high degree of accuracy. Here, the location of the direction and distance of the prey is of decisive importance.

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