

## ON THE ISSUE OF THE PROSPECTS FOR THE USE OF JAPANESE OAK PEACOCK EYE IN SERICULTURE IN UZBEKISTAN

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**Annotation:** *the article provides information about the Japanese oak peacock-eye, potentially promising for sericulture in Uzbekistan in the form of a silkworm*

**Key words:** *Japanese oak silkworm; true silkworm; Quercus spp .; oviposition; caterpillars; beech; chestnut; hawthorn; pupae; introduction*

Japanese oak peacock eye or Japanese oak silkworm ( *Antheraea yamamai* ) is a butterfly of the Peacock-eye family ( *Saturniidae* ). This type of butterfly is sometimes called the "Japanese oak silkworm", due to its use in sericulture. However, butterflies of this species do not belong to the family of true silkworms and are representatives of another family of peacock-eyes. Their wingspan is 110-160 mm. These butterflies, with the same markings and coloration, do not resemble any other European saturniids , with the exception of the introduced *Antheraea pernyi* , but are easily distinguished from this species by an elongated, solid black spot on the outer edge of the spot on the hindwing. In males, the forewings are distinctly sickle-shaped. The color of the representatives of this species is very diverse: from the typical sand-yellow color of the female to brownish gray, chocolate brown, bronze, reddish brown, from khaki to chrome yellow. The latter color form, with red and pale pink markings, is rare in males. These nocturnal butterflies inhabit deciduous forests and tree-rich lowlands dominated by oaks. ( *Quercus* spp . ) . Most adults appear in the late afternoon or evening. Mating usually occurs shortly before midnight and lasts about three hours, after which the male flies off in search of another female. The fertilized female lays her eggs in neat rows on nearby branches. The reason for this strange behavior is that most females initially lay too many eggs and have a "heavy abdomen ". The process of laying eggs of the first portion continues until about 30 eggs are laid. The rest of the eggs are laid by the female in a wider range. Both sexes of this species are attracted to light, and even during the day they can be found on poles and walls of buildings. Adults are often preyed upon in the foliage of trees by the Golden Oriole ( *Oriolus oriolus* ) .

In the conditions of European countries, this species brings one generation per year. The flight of butterflies of one generation is mainly from the second week of August to September. However, in northern Italy, the flight of butterflies is noted even at the end of June. It should be pointed out that the greenish-yellow caterpillars feed mainly on the leaves of oak, chestnut and hornbeam and overwinter in the pupal stage. Eggs are round

to slightly oval, dorso -ventrally flattened, 2.6 x 2.5 mm, porcelain white with a brown border, eggs are laid in chains of up to eight on the branches of the host plant and hatch in April of the following year. The larvae feed mainly on *Quercus* oak leaves, but they can be found on beech (*Fagus sylvatica*), sweet chestnut (*Castanea sativa*), hornbeam (*Carpinus*), wild rose (*Rosa*) and hawthorn (*Crataegus*). Sometimes other trees or shrubs also serve as hosts for plants, for example: *Salix caprea*, but this rarely happens. The newly hatched larvae, 5 mm long, eat part of their eggshell and then crawl away for some distance in order to find places suitable for resting among the oak leaves. Young larvae are mostly greenish-yellow in color with five longitudinal black stripes. Dorsal and dorsolateral tubercles yellow, with black setae; ventrolateral tubercles black. At the second instar, the body color of the caterpillars becomes apple-green, the longitudinal black lines disappear, the lateral yellow tubercles turn blue, the head and legs turn brown, and a pale yellow stripe appears above the abdominal spiracles. Starting from the third instar, many larvae show a kind of "wanderlust", they feed in one place for about four days and crawl along the branches to a new place. This can be explained by the survival strategy, i.e. foraging for food as the larvae absorb large amounts of foliage as they age - the thick and compact larvae rely on their mysterious protective coloration of the body, merging with the green of the foliage. The main color scheme of the body coloration is preserved until the sixth instar, but the head becomes greenish, and metallic "drops" appear on the sides at the fourth instar. At the fifth age, the tubercles become inconspicuous, they are replaced by bunches of yellow hairs. The newly hatched larvae need several days to settle under the leaf. Pupa size: 35-45 mm, its shape is cylindrical, but tapering towards both ends of a reddish-brown color. The caterpillar develops into a dense, hard, oval, solitary, airtight yellow to bright green cocoon with a loose whitish outer shell. The cocoon is initially soft, but then hardens by soaking in the quenching liquid, which dries, leaving a white, powdery residue. The cocoon is folded into a bundle of leaves, but attached to a nearby branch by a silken stem. The butterfly emerges at the end of summer, softening and partially dissolving one end of the cocoon. An introduced species whose natural range is the eastern Palearctic (Japan). Currently, the Japanese oak silkworm is widely distributed in Central Europe in northeastern Italy, southern and eastern Austria, southern Bohemia, western Hungary, Slovenia, Croatia, Bosnia and Serbia. In recent years, this species has spread more widely; individual individuals have been found in Montenegro, Romania, and eastern Bavaria. Some hobbyists often release this type of butterfly for wider distribution in nature. The introduction of this species in Europe was registered by Bostian Dvorak. In 1868, several adults of butterflies were found in the forest, a few years later, larvae of the Japanese oak silkworm were found in the wild. Since that time, these butterflies have been found in August-September on the walls of houses and buildings, and in nearby forests. This subspecies of the oak silkworm has also been induced in Sri Lanka and India. This species is widely distributed in the Far East region. However, there is no consensus on the issue of its endemism.

Conclusion. The Japanese oak silkworm has been used in sericulture in Japan for over 1000 years. The silk thread obtained from it is soft, thick, shiny, it is equal in strength to the silkworm thread, and surpasses it in elasticity. It can be concluded that this species is promising for silk production in Uzbekistan. Since these butterflies feed on the leaves of oak, chestnut, hawthorn, which are widespread in our region.

Oak silkworm caterpillars are more tolerant of the use of chestnut leaves and other alternative food plants cultivated in recent years.

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