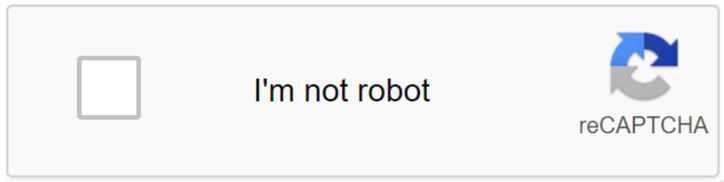

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Life cycle of bombyx mori pdf

The cycle of the life of a silkworm. Image copyright Ozgur Babacan 2015 Silk is a natural fiber that comes from silkworm cocoons, which are Bombyx mori silk moth larvae. Bombyx Mori silk moth, drawn to charcoal Ozgur Babakan. Copyright Ozgur Babacan 2015 Life Cycle of a Silkworm - Female moth lays 300-500 tiny eggs and after about 10 days the larvae (silkworms) hatch. - Silkworms feed on an exceptionally large number of mulberry leaves for 30-40 days. - Silkworms shed skin up to four times, or molt as they continue to eat and grow. - After their final molting, the silkworm builds a cocoon around it. A cocoon is a protective body swirling out of silk. - Inside the cocoon, the silkworm changes to the doll, the stage between the larvae and the adult moths. - After about two weeks, the doll comes out of the cocoon like an adult moth. - An adult moth is looking for an assistant so that the female can lay more eggs and start the cycle again. - A thread of silk cocoon when unwinding can be 900 meters long - More than 50,000 cocoons are needed to make 1 kg of silk - To feed 25 silkworms from egg to cocoon stage you need 10 feet of mulberry tree or 2 small bushes to provide enough leaves. - The silkworm increases its size by 10,000 times before it is ready to rotate its cocoon. The small branch is likely to last a week and it takes 4 weeks for the silkworm to grow before it spins the cocoon. Activity: Draw a diagram showing the silkworm life cycle. A silkworm material that consists of thin and continuous strands is known as fiber. Fiber can be of two types: natural fiber and synthetic fiber. Fibers derived from plants and animals are known as natural fibers, while synthetic fibers are materials made by humans. Examples of natural fibers are cotton and silk, while examples of synthetic fibers are: nylon, polyester, etc. Silk is a type of natural fiber or animal fiber. The silkworm is responsible for spinning the silk and it rises to produce silk. The history of silk was discovered around 3500 BC in China. For a long period of time, silk was shipped to other parts of the world through trade. Technological advances and new developments have allowed manufacturers to produce different types of silk from different silkworms based on brilliance and texture. Silk silk is the most common silk moth that is used to produce silk. The upbringing of silkworm is known as sericulture. The history of silk silk cycle The life cycle of silk moth begins when a female silk moth lays eggs. Caterpillar or larvae hatch from silk moth eggs. Silkworms feed on mulberry leaves and the possibility of a doll. In the doll stage, weave the mesh around the silkworm to hold itself. He then shakes his head, rotating the fiber from the protein and becomes a silk fiber. A few form a protective layer around the doll, and this coating is known as a cocoon. The silk thread (yarn) is derived from the cocoon of silk moth. The cycle of silkworm life is detailed below. Stage 1: Egg egg is the first stage of the silkworm life cycle. The egg is laid by a female moth, which is mostly the size of small dots. The female moth lays more than 350 eggs at a time. In spring, eggs hatch due to the heat in the air. This procedure takes place once a year. Stage 2: Silkworm hairy silkworm occurs after a cracked egg. At this stage, silkworms are growing. they feed on mulberry leaves and consume a large amount of these leaves for about 30 days before going to the next stage. Stage 3: Cocoon At this stage, silkworms spin a protective cocoon around itself. It is the size of a small cotton ball and is made of a single strand of silk. Stage 4: Pupa doll scene is a still stage. At this stage, people kill the doll, immersing the cocoon in boiling water and unwinding the silk thread. Stage 5: Moth At this stage, the doll changes to an adult moth. The female moth lays eggs after mating and thus the silkworm's life cycle begins again. Silk Silk Extraction from cocoon is known as silk processing. Silk separates from the cocoon, exposing it to sunlight. Once the silk wobbles are done, there is a process of unwinding silk from the cocoon. The silk thread is then bleached. Then the silk fiber is twisted into silk threads. Stay tuned with BYJU'S to learn more interesting topics in chemistry. Also, get a variety of eye-catching video tutorials to learn more effectively. The moth, mainly used in the production of silk SilkWorm, redirects here. For other purposes, see Silkworm (disambigation). The silk moth redirects here. For the giant silk moth, see Saturnine. Bombyx Mori Double Male (above), female (see below) Fifth instar silkworm Preservation status Domesticated Scientific Classification Kingdom: Animalia Phylum: Arthropoda Class: Insecta Order: Lepidoptera Family: Bombycidae Genus: Bombyx Species: B. mori Binomial name Bombyx mori (Linnaeus, 1758) Synonyms of Phalana Mori Linnaeus, 1758 Bombyx arracanensis Moore and Hutton, 1862 Bombyx brunnea Grunberg, 1911 Bombyx croesi Moore and Hutton, 1862 Bombyx fortunatus Moore , 1886 Bombyx sinensis Moore and Hutton, 1862 Bombyx textor Moore and Hutton, 1862 Silkworm (Bombyx mori)Silkworm in compaction script (above), Traditional (medium) and simplified (bottom) Chinese蠶rescript Chinese蚕FrancescriptInciponAnyu PinyinkanWeid-Gilests'a2IPA-tshǎn:WuSuzhounesez'HakkaRomanizationtsam2Yue RomanizationhamJutpingkaam4ipaz tshɐ̀:m Southern MinTay-latham (col.)tsham (lit.) Old Chinese Baxter-Sagart nameKanji蚕Kanaカコ TranscriptionsRomanizationkaiko Bombyx mori, a domestic silk moth, is an insect from the moth family Bombycidae. It is the closest relative of Bombyx Mandarin, a wild silk moth. Silkworm is a larva or a silk moth caterpillar. It is an economically important insect that is a major producer of silk. The preferred foods of silkworm are white mulberry leaves, although they can eat other types of mulberry and even orange osage. Domestic silk moths are closely dependent on humans for reproduction, as a result of millennia of selective breeding. Wild silk moths differ from their domestic relatives because they have not been selectively bred; thus, they are not commercially viable in the production of silk. Sericulture, a practice of breeding silkworms for the production of raw silk, has been going on for at least 5,000 years in China, from where it has spread to India, Korea, Nepal, Japan and the West. The domestic silk moth was domesticated from the wild silk moth Bombyx mandarina, which has a range from northern India to northern China, Korea, Japan and the Far Eastern regions of Russia. Domestic silk moth comes from Chinese, not Japanese or Korean stock. Silk moths were hardly bred within the country before the Neolithic era. Prior to that, the tools for the production of silk thread were not developed. Domesticated B. mori and wild B. tangerine can still breed and sometimes produce hybrids. (4):342 Domestic silk moths are very different from most members of the Genus Bombyx; not only have they lost the ability to fly, but their color pigments have also been lost. Mulberry silkworm types can be classified into three different but related groups or types. The main groups of silkworms fall under univoltin (uni- one, voltin and bivoltin categories. Type of univoltin is usually associated with a geographical area within greater Europe. , the feat was made possible through a somewhat warmer climate and resulted in two life cycles. Polyvoltin-like silkworm worm can only be found in the tropics. Eggs are laid by female moths and hatches for nine to 12 days, so the

resulting type can have up to eight separate life cycles during the year. Process Adult silk mole eggs take about 14 days to hatch in larvae that eat continuously. They prefer white silk, having an attraction for silky odorant cis-jasmone. They are not monophagive, as they may have other species of Morus, and other Moraceae, mostly mostly Orange. They are covered with tiny black hair. When the color of their head darkens, it indicates that they are about to be linad. After molting, the larvae of silkworms appear white, naked, and with small horns on the back. Once they shed four times, their bodies become slightly yellow and the skin becomes stiffer. The larvae then prepare to enter the navel phase of their life cycle, and enclose themselves in a cocoon, composed of raw silk produced by salivary glands. The final molt from the larva to the doll occurs in the cocoon, which provides a vital level of protection during a vulnerable, almost stationary umbilical state. Many other Lepidoptera produce cocoons, but few of them - Bombycidae, particularly the genus Bombyx, and Saturniidae, particularly the genus Antheraea - have been used to produce fabrics. If the animal is allowed to survive after the cocoon rotates and through the umbilical stage of the life cycle, it releases proteolytic enzymes to make a hole in the cocoon so that it can become an adult moth. These enzymes are destructive to silk and can cause silk fibers to spread from more than a mile long to random length segments, which seriously reduces the value of silk filaments, but not silk cocoons used as stuffing available in China and other places for doonas, jackets, etc. Heat kills silkworms and water makes cocoons easier to unravel. Often the silkworm itself is eaten. Since the process of collecting silk from a cocoon kills the larvae, the sericulture has been criticized by animal advocates and human rights activists. Mahatma Gandhi was critical of the production of silk, based on the philosophy of Ahims, so as not to harm any living person. This led to Gandhi working on cotton spinning machines, an example of which can be seen at the Gandhi Institute. He also promoted the silk of Ahims, wild silk made of wild cocoons and half-cornered silk butterflies. The moth, an adult phase of the life cycle, is incapable of functional flight, unlike wild B. mandarina and other Bombyx species, whose males fly to meet females and to evade predators. Some may arise with the ability to take off and stay in the air, but a steady flight cannot be achieved. This is because their bodies are too big and heavy for their little wings. The silk moth has a wingspan of 3-5 cm (1.2-2.0 inches) and a white, hairy body. Females are about two to three times more bulky than males (because they carry a lot of eggs), but are similarly painted. Adult Bombycidae have reduced mouth parts and are not fed. Cocoon B. mori Cocoon is made of 300 to 900 m (1,000 to 3,000 feet) long. The fibers are very thin and juicy, about 10 microns (0.0004 inches) in diameter. 2000 to 3000 cocoons needed to make 1 pound pound silk (0.4 kg). At least 70 million pounds of raw silk are produced annually, which requires almost 10 billion cocoons. Study of the silkworm egg from Micrographia Hook, 1665 1679 study of the metamorphosis of the silkworm Maria Sybil Merian, it depicts the fruits and leaves of mulberry tree and eggs and larvae silkworm moths. Due to its small size and simplicity of culture, the silkworm has become an exemplary organism in the study of lepidopteran and arthropod biology. Fundamental conclusions about pheromones, hormones, brain structures and physiology were made with silkworm. One example of this is the molecular identification of the first known pheromone, bombicol, which requires extracts from 500,000 individuals, due to the very small amount of pheromone produced by any individual silkworm. Research is currently focused on silkworm genetics and the possibility of genetic engineering. Many hundreds of strains are supported, and more than 400 mendele mutations have been described. Another source suggests that 1,000 inbred domesticated strains are stored worldwide. One of the useful developments for the silk industry are silkworms, which can eat food, except for mulberry leaves, including an artificial diet. Genome research also raises the possibility of genetically engineered silkworms to produce proteins, including pharmacological drugs, in place of silk proteins. Bombyx mori women are also one of the few organisms with homologous chromosomes held together only by synaptonemal complex (rather than crossovers) during meiosis. Kraig Biocraft Laboratories has used research from the universities of Wyoming and Notre Dame in a collaborative effort to create a silkworm that is genetically modified to produce spider silk. In September 2010, the effort was declared a success. Researchers at Tufts have developed spongy silk scaffolds that feel and look like human tissue. They are implanted during reconstructive surgery to support or restructure damaged ligaments, tendons and other tissues. They have also created implants made from silk and medicinal compounds that can be implanted under the skin for the steady and gradual release of time medications. Researchers at MIT Media Lab experimented with silkworms to see what they would weave when they were hunted on surfaces with different curvature. They found that on particularly straight web lines, silkworms would connect adjacent lines with silk, weaving directly on this form. Using this knowledge, they built a silk pavilion with 6,500 silkworms in a few days. Silkworms have been used in the discovery of antibiotics, as they have several beneficial features compared to other models of invertebrates. Antibiotics such as lysocin E, ribosome peptide synthesized by Lysobacter sp. RH2180-5 and are among the notable antibiotics found using silkworms. In addition, antibiotics with appropriate pharmacokinetic parameters were selected, which correlated with therapeutic activity in the model of silkworm infection. Domestication of domestic species, compared to wild species, increased the size of the cocoon, body size, growth rate and efficiency of its digestion. It has become tolerant of the presence and treatment of people, as well as for living in overcrowded environments. Domestic silk moths can not fly, so males need the help of a man in finding a partner, and he lacks fear of potential predators. Domestic colored pigments have also been lost, so domestic silk moths are Leichist, as camouflage is not useful when they live only in captivity. These changes have made domesticated strains completely dependent on humans for survival. Eggs are stored in incubators to help hatch them. Silkworms and mulberry leaves are placed on trays (Liang Kai in Sericulture c. 13th century) Silkworms were first domesticated in China more than 5,000 years ago. Since then, the production capacity of the silk species has increased almost tenfold. Silkworm is one of the few organisms in which the principles of genetics and reproduction have been applied to collect the maximum volume of production. It will only make corn die in the use of the principles of heterosis and interbreeding. (quote necessary) Cocoons pupae silkworm, weighted and sorted (Liang Kai in Sericulture) silkworm breeding, is aimed at overall improvement of silkworms from a commercial point of view. The main goals are improving fertility (egg-laying ability of the breed), the health of larvae, the amount of cocoon and silk production, and resistance to disease. Healthy larvae lead to a healthy cocoon crop. Health depends on factors such as higher levels of pupation, fewer dead larvae in the mountain, shorter larvae (this reduces the likelihood of infection) and bluish-tinged fifth star larvae (which are healthier than reddish browns). The amount of cocoon and silk produced is directly related to the rate of pupation and the weight of the larvae. Healthy larvae have high rates of pupation and cocoon weight. The quality of cocoon and silk depends on a number of factors, including genetics. Hobby Enhancement and School Projects In the U.S., teachers can sometimes introduce an insect life cycle for their students by raising domestic silk butterflies in the classroom as a scientific project. Students have the opportunity to observe the full life cycle of insects from eggs to larvae, pupae and moths. Domestic silk moth has been raised as a hobby in countries such as China, South Africa, zimbabwe and Iran. Children often pass eggs, creating a non-profit population. This experience children the opportunity to witness the life cycle of silk moths. Practice Practice Silk moths of children as pets, in non-silk agriculture of southern Africa, has led to the development of extremely hardy landraces of silk moths, because they are invariably exposed to difficulties without encountering commercially cultivated species members. However, these worms, without being selectively bred as such, may be inferior in the production of silk and may exhibit other undesirable traits. The genome of the full genome of the domestic silk moth was published in 2008 by the International Consortium of Silkworm Genomes. The draft sequence was published in 2004. The genome of a middle-class domestic silk moth with a genome size of about 432 megabases of pairs. High genetic variability has been found in domestic silk moth lines, although this is less than in wild silk moths (about 83 percent of wild genetic variations). This speaks of one domestication event, and that it happened within a short period of time, with a large number of wild silkworms being collected for domestication. The main questions, however, remain unanswered, according to Joon Wang, co-author of a related study published in 2008, who stated, Was this event in one place or for a short period of time in several places that cannot be deciphered from the data, and the study also still did not identify the area in China where domestication occurred. Kitchen Silkworm dolls dishes Packed silkworm snacks from Thailand silk moth dolls eaten in some cultures. In Assam they are boiled for extraction of silk, and boiled dolls are eaten directly with salt or fried with chilli or herbs as a snack or dish. In Korea, they are cooked and accustomed to make a popular snack known as beondegi (번데기). In China, street vendors sell fried silk moth dolls. In Japan, silkworms are usually served as zucchini (佃煮), i.e. boiled in a sweet and sour sauce made with soy sauce and sugar. In Vietnam, this is known as con nhộng. In Thailand, fried silkworm is often sold in open markets. They are also sold as packaged snacks. Silkworms have also been offered for growing astronauts as space food on long-term missions. Silkworm Legends China See also: Horse in Chinese mythology - The origin of sericulture in China, legend indicates the discovery of silkworm silk was an ancient empress named Leizu, wife of the yellow emperor, also known as Xi Linshi. She was drinking tea under a tree when a silk cocoon fell into her tea. When she chose it and started wrapping the silk thread around her finger, she slowly felt a warm sensation. When the silk ran out, she saw a small maggot. In an instant she realized that this caterpillar larva was a source of silk. She taught it to the people, and it it is widespread. Many more silkworm legends are being told. The Chinese guarded their knowledge of silk, but, according to one story, history, A Chinese princess married to a Khotanese prince brought the secret of silk production to the oasis, hiding silkworms in her hair as part of her dowry, probably in the first half of the first century AD. Vietnam This section does not cite any sources. Please help improve this section by adding links to reliable sources. Non-sources of materials can be challenged and removed. (September 2020) (Learn how and when to delete this message template) According to a Vietnamese folk tale, silkworms were originally a lovely maid, running away from their terrible masters and living in the mountains where she was protected by a mountain god. Once a depraved god from heaven came down to Earth to seduce women. When he saw her, he tried to rape her, but she was able to escape and hide from the mountain god. Then the depraved god tried to find and capture her by setting a clean trap around the mountain. With Guanyin's blessing, the girl was able to swallow the net in her stomach. Finally, the evil god calls her fellow thunder and rain gods to attack and burn her clothes, forcing her to hide in the cave. Naked and cold, she spit out the net and used it as a blanket for sleeping. The girl died in her sleep, and as she wanted to continue to help others, her soul turned into silkworms. The Silkworm disease Beauveria bassiana, a fungus, destroys the entire body of the silkworm. This fungus usually appears when silkworms are raised in cold conditions with high humidity. This disease is not transmitted to moth eggs, as infected silkworms cannot live to the moth stage. This fungus, however, can spread to other insects. Grass, also known as nuclear polygedhrosis, a dairy disease, or hanging disease, is caused by an infection with nucleopolihydrovirus Bombyx mori (aka Bombyx mori nuclear polygedhrosis virus, genus Alphabacusvirus). If the herb is observed in the chawkie stage, the chawkie larvae should be infected during hatching or during chawkie cultivation. Infected eggs can be disinfected by cleaning their surfaces before hatching. Infections can occur as a result of poor hygiene in the house growing chawkie. This disease develops faster at the beginning of the education of stars. Ebrin is a disease caused by a parasitic microsporidian, Nosema bombycis. Sick larvae show slow growth, low-tempered, pale and sluggish bodies, as well as poor appetite. Tiny black spots appear on larch integument. In addition, dead larvae remain rubbery and are not subjected to putrefaction after death. N. bombycis kills 100% of silkworms hatched from infected eggs. This disease can be transferred from worms to moths and then eggs and worms again. This microsporidium comes from the food that silkworms Moth females transmit the disease to eggs, and 100% of the silkworms hatching from sick eggs will die in the worm stage. To prevent this disease, it is extremely important to exclude all eggs from infected moths by checking the body fluid of moths under a microscope. Flacherie-infected silkworms look weak and are painted dark brown before they die. The disease destroys the intestines of the larvae and is caused by viruses or poisonous food. Several diseases caused by different fungi are collectively called Muscardin. See also the Cocoonase History of Silk Silk Road List animals that produce the silk Ofa Cynthia Thai silk Lao Silk Japanese Silk Links - E. J. W. Barber (1992). Prehistoric textiles: the development of fabric in the Neolithic and Bronze ages with special references to the Aegean Sea. Princeton University Press. page 31. 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