

TRAVELING INTO THE WORLD OF BUTTERFLIES AND MOTHS: PART IV

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[Ed. Note: This article is the last in a four-part series on the study and science of Lepidoptera by Vladimir Kachan from Belarus. Readers can contact the author via email at: vladimirkachan@mail.ru, or post at: P.O. Box-36, BY-220089, Minsk-89, Republic of Belarus.]

4. Significance of Butterflies and Moths in Nature

USEFUL BUTTERFLIES AND MOTHS

A great quantity of butterflies are either neutral or useful and they must be protected. Butterflies play an important role in raising the productivity of agricultural plants, fruit plantations, meadows, and pastures, by being their pollinators. Every plant species has its own pollinator that is adapted to the biology of their flowering.

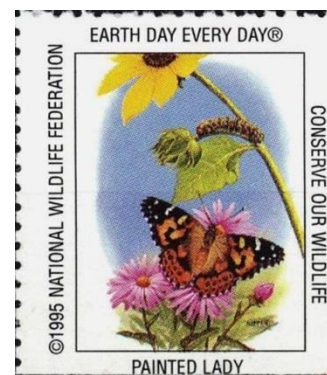


Cactoblastis cactorum
Ascension Island Sc#692

Most active pollinators are the butterflies of family Papilionidae. Some species of butterflies and moths whose caterpillars feed exclusively on weeds, are used as a biological control agent.

The use of the Cactus Moth (*Cactoblastis cactorum*) is widely known. Its caterpillars live on *Opuntia* cacti. In Australia, for eradicating the cacti, the moth was honored with a monument.

Other cases of weed eradication involve the mass reproduction of the Painted Lady butterfly (*Vanessa cardui*). There are butterflies that consume coca plants, the leaves of which are used to prepare narcotics.



Vanessa cardui
NWF label

From prehistoric times, man has been producing beautiful textiles made of natural silk from chrysalises of the Silkworm Moth caterpillars (*Bombyx mori*). At first silk was only produced in China. According to legend, the empress Leizu “discovered” silk four thousand years ago. She had tea in the garden, and a cocoon of a silkworm fell in her cup by chance. Trying to take it away by silk thread, she got the first thread, having unwound the chrysalis.



Bombyx mori
Brazil Sc#1669
larva with cocoon

Silk fiber, from which chrysalises are composed, is the main material for silk producing in textile industry. One gets from 300 to 1000 meters of silk thread, sometimes even up to 4000 meters.

From the chrysalis of the Chinese Tussah Moth (*Antheraea pernyi*) they get light golden tussah silk, an excellent hard-wearing fabric. The textile industry uses chrysalises of the Ailanthus Silkworm (*Samia cynthia*) as well.

The caterpillars and chrysalises of some species of moths are used in cookery by many peoples, especially those of Africa, South America, and Australia.

Recently silkworm caterpillars been used by biology technology specialists in Japan for industrial production of interferon—a preparation against viruses.

The unique wing designs of some butterflies are used by artists to create new fabric designs. The wings of some tropical butterflies are used in jeweler’s art.



Samia cynthia
N. Korea, 1965 issue
preliminary artwork

HARMFUL BUTTERFLIES AND MOTHS



Tineidae
FSAT, 1972 Sc#51

There are a considerable number of pests of agriculture plants and forests among butterflies and moths. The moths of family Tineidae damage clothing and agricultural crops. Moths of the Pyralidae family do harm in food storehouses by enmeshing food in a net of fiber.

The caterpillars of the Pieridae butterfly family (*Pieris rapae* and *Pieris brassicae*) destroy garden plants. The caterpillars of the Magpie Moth (*Abraxas grossulariata*) of Geometridae family damage the buds, leaves, and flowers of apple, pear, cherry, and quince trees.

Lackey Moths (*Malacosoma neustria*) are a pest of fruit gardens, especially of apple-trees and also of oak groves. The caterpillars of this moth damage the leaves all fruit species, making large web nests.



Pieris brassicae
Switzerland Sc#B261



Smerinthus ocellatus
Hungary, 1969 Sc#1967

The caterpillars of the Eyed Hawk-Moth (*Smerinthus ocellatus*) damage apple-trees, eating around the leaves in fruit arbors and young gardens. The caterpillars of the Giant Peacock Moth (*Saturnia pyri*) damage the leaves of plum, cherry, apricot, pear, apple, and walnut-trees.

The caterpillars of the Large Tortoiseshell butterfly (*Nymphalis polychloros*) eat the leaves of pear, cherry, and elm trees. The Black-veined White butterfly (*Aporia*

crataegi) does great harm to gardens and forests. Its caterpillars damage the leaves of fruit trees.

The caterpillars of Garden Tiger Moth (*Arctia caja*), Cream-spot Tiger Moth (*Arctia villica*), Small Emperor Moth (*Saturnia pavonia*), and the Silver-washed Fritillary butterfly (*Argynnis paphia*) feed on the leaves of raspberries, strawberries, and other garden plants.



Arctia caja
Ireland, 1994 Sc#931



Aporia crataegi
Romania postal card, 1956

The Nun Moth (*Lymantria monacha*) is a pest of pine forests. Its caterpillars feed on needles. The Gypsy Moth (*Lymantria dispar*) is one of the most widespread pests of forests and fruit gardens. It can be found almost all over the world. The caterpillars of that moth do harm to more than 300 different species of plants.



Lymantria dispar
Romania, 1964 Sc#1619

The caterpillars of the moth families Cossidae and Tortricidae live in the roots, branches, and trunks of leaf-bearing trees, where they make long passages, resulting in killing the trees.



Cossidae
Mongolia, 1974 Sc#756



Tortricidae
Norfolk Island, 1989 Sc#451



Hepialidae
Faroe Islands, 1993 Sc#257

The caterpillars of the moth family Hepialidae harm the trunks and roots of trees and cultivated grass plants. The caterpillars of the Mourning Cloak butterfly (*Nymphalis antiopa*) are dangerous for poplar, birch, willow, and aspen.

PROTECTION OF BUTTERFLIES

Under the conditions of industrial and technological development, the biosphere gets polluted. The dynamic balance between nature and human society becomes disturbed. Biological conditions for existence of the wide and varied animal world are getting worse, and among those affected are many different butterflies. The reduction of habitat and the quantity of butterflies occurs because of building and road construction, the felling of trees, grubbing out and ploughing up of forests, and draining marshes.

That is why the main way to save butterflies is regional protection of their habitation, which can include nature reserves of a common profile and a specialized network of small protected territories. Microreserves serve not only to protect species from disappearance, but help increase the number of insect pollinators.



Daisetsuzan National Park
Japan 1940 Sc#304

For example, rare butterflies are protected in Daisetsuzan National Park in Japan, Gunung Mulu National Park in Malaysia, Iguaçu National Park in Brazil, Mercantour National Park in France, Abuko National Park in Gambia, and Kedrovaya Pad Nature Reserve in Russia.

Among international organizations considering the problems of nature protection, the International Union for Conservation of Nature Resources (IUCN), formed in October 1948, plays a leading role. Nowadays IUCN unites governmental and social organizations of 160 countries. Its main duty became the protection of nature and the natural riches of the globe.

The practical activity of IUCN is aimed at carrying out nature protection programs as a source of scientific and cultural riches and as a necessary basis for further economic and social development of mankind. The supreme organ of IUCN is the General Assembly consisting of delegates from the member states. It considers the proposals of a broad nature protection scheme, on which resolutions are adopted. General Assemblies are held periodically in different countries of the world. The IUCN fulfills its mission through six permanent commissions.



IUCN promotion
Jordan Sc#1712



Erebia aethiopella
Mercantour National Park
Monaco 1984 Sc#1428

The Species Survival Commission, whose members are well-known scientists from almost every country, in the early 1960s concluded that it was necessary to issue a "Red Data List." This Red List includes information about all rare, disappearing, and threatened species. Red is the color of a danger. The first volume of the Red List was published in 1963.

As the study of the wild world became more profound, the number of species included in Red List had to be increased, and to our disappointment there are not many examples of removing species from Red List as a result of human care. IUCN published the last new volume of Red Data List in 2012. It lists rare and disappearing species of butterflies and moths from all over the world.

In 1961, in the Swiss city of Morges, the World Wildlife Fund (WWF) was formed. WWF has its sections in 30 countries. It is a voluntary fund raising organization whose main tasks are financing of nature protection measures developed by IUCN and promoting publicity to persuade governments to take measures on saving of nature riches.

In due course, they began to form regional Red Books in many countries. Red Books or Red Lists, including state and regional lists, dealing with butterfly protection are in Australia, New Zealand, Papua New Guinea, Japan, Canada, USA, India Austria, Belgium, Bulgaria, Great Britain, Hungary, Spain, Luxemburg, Poland, Finland, France, Germany, Czech Republic, Slovakia, Switzerland, Russia, and Belarus.



Butterfly species on the Red List
Burundi, 2012 Sc#1125



Ornithoptera alexandrae
Papua, 1988 Sc#698
with WWF panda logo

One of the most important links of butterfly conservation must be an active and wide popularization of entomological knowledge, promoting a new attitude of the population towards insects, and appreciation of their beauty. The variety and coloration of wings compare butterflies to the most beautiful creatures on Earth.

A wide variety of philatelic materials allow creation of topical philatelic exhibits. On the basis of this information, in 1990, the author created a philatelic exhibit, "World of Butterflies and Moths," awarded a Large Vermeil medal at the World Philatelic Exhibition PORTUGAL-2010 and PHILANIPPON-2011.

I hope this article will help popularize entomological knowledge. I can always help in creation of a butterfly or insect philatelic exhibit. (I have many duplicates in this theme.) Please contact me either by e-mail or post at the addresses listed above.