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Short Learning Objects for E-learning and MOOCs

As part of one week Faculty Development
Programme on
“MOOCs and E-content Development”
organized by Mahatma Gandhi University
during 4-8 February 2019

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2019

Spiders of Western Ghats

Dr. Sunil Jose K⁷

Abstract: - An e-content on the spiders of Western Ghats has been developed during the workshop. The e-content will provide awareness on the diversity of spiders found in Western Ghats. Common spiders such as jumping spiders, crab spiders, wolf spiders, orb weaver spiders, cob web spiders and tarantulas are shown in the presentation. The content is rich in various multimedia elements like images and videos and extends to 4.35 minutes. The e-content will be useful for anyone interested to study the diversity of our spiders. The e-content also mentions the uses of spiders to mankind.

Keywords: - Jumping spiders, crab spiders, wolf spiders, orb weaver spiders, cob web spiders and tarantulas

Introduction

The spiders are the most successful predators in the animal kingdom. They are one of the most seen, least known animals in India. For most people spiders are highly fearful and disgusting creatures. There are 48,066 species of spiders all over the world. Of these only 30 species are responsible for human deaths. Except Antarctica spiders are found in all continents, even on the top of Mount Everest spiders are recorded. They occupy almost all habitats except air and sea.

The spiders belong to the order of animals called Araneae. They can be distinguished from insects by the number of legs. Spiders possess eight legs, whereas insects have only six legs. The studies of spiders is known as Arachnology and the fear about spiders is called Arachnophobia. India is a country rich in the diversity of spiders. There are about 1600 species of spiders reported from India. Western ghats has more than 600 species of spiders. There are several types of spiders living in Western Ghats. Here I will introduce you to some of the most common spiders in Western Ghats, such as Jumping spiders, Crab spiders, Wolf spiders, Orb weaver spiders, Cobweb spiders and tarantulas.

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Jumping Spiders

Jumping spiders belong to the family Salticidae. They are known for their ability to jump and pounce upon their prey. More than 5,000 species are known from the world. Their body is often brightly coloured or strikingly patterned. Jumping spiders have keen vision and are active during the day in sunny areas. At night they hide in closely woven nests under bark, stones, or leaves.

Crab spiders

Crab spiders belong to the family Thomisidae. They get their name from their crablike appearance, and their ability to walk sideways. They do not spin a web but they wait in hiding for prey. Many of them are found on flowers and are remarkable for their ability to change colour.

Wolf spiders

Wolf spiders are members of the family Lycosidae. They get their name from the from the Ancient Greek word Lycos meaning "wolf". They are robust and agile hunters with excellent eyesight. They do not spin webs and live and chase their prey like wolves. Some wait for passing prey near the mouth of a burrow.

Orb-weaver spiders

Orb-weaver spiders are members of the family Araneidae. They are the most common group of spiders building wheel-shaped webs in our gardens, fields and forests. It is due to the circular webs they spin, they are called orb weavers. They build sticky webs during the early evening often across pathways. These webs remain up only during the night and are taken down at dawn when the spider eats its own web.

Cobweb spiders

These spiders belong to the family the roridae, they are popularly called cobweb spiders and comb-footed spiders. These spiders have a

comb of serrated bristles on the tarsus of the fourth leg. The bristles help the spider wrap its silk around captured prey. They build irregular, three dimensional webs of sticky silk. The webs are found in dry, protected locations, such as dark corners of buildings like garages and sheds.

Tarantulas

Tarantulas are large and hairy spiders belonging to the family Theraphosidae. These primitive spiders and live in burrows. They wait at the entrance to its burrow to ambush passing prey. Compared with other spiders they are larger and live upto 20 -30 years. Their bite is often painful and leads to intense muscular spasms.

Conclusion

Before we conclude let us see some of the uses of spiders. Spiders are important predators of insects and are used in biological control of prey. The spider silk is used for making dress, bullet proof vests, sutures in surgery, haemostatic bandages. They are stronger than steel of equal diameter hence known as biosteel. Next time when you see a spider I hope you will not consider it as an ugly, useless creature. Spiders play an important role in maintaining the ecological balance of nature. Their known uses can provide important contributions to mankind in future.

References:

- [1] Siliwal, Manju, S. Molur and B.K. Biswas (2005) Indian spiders (Arachnida: Araneae): updated checklist 2005. ZOOS' PRINT JOURNAL 20(10): 1999-2049
- [2] P A Sebastian; K V Peter. Spiders of India (2009) Universities Press (India). P- 1-599 World Spider Catalog (2019). World Spider Catalog. Version 20.0. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, accessed on {date of access}. doi: 10.24436/2

Action Script: Short learning object.	
Spiders of Western Ghats	
Video	Audio
Insert 1- Video showing spider building a web	The spiders are the most successful predators in the animal kingdom. They are one of the most seen, least known animals in India. For most people spiders are highly fearful and disgusting creatures. There are 48,000 species of spiders all over the world. Of these only 30 species are responsible for human deaths.
Insert 2- Image of insect and spider	The spiders belong to the order of animals called araneae. They can be distinguished from insects by the number of legs. Spiders possess eight legs, whereas insects have only six legs.
Showing Teacher on the Screen	The study of spiders is known as Arachnology and the fear about spiders is called Arachnophobia . India is a country rich in the diversity of spiders. There are about 1600 species of spiders reported from India. Western Ghats has more than 600 species of spiders. There are several types of spiders living in Western Ghats, Here I will introduce you to some of the most common spiders in Western Ghats, such as Jumping spiders, Crab spiders, Wolf spiders, Orb weaver spiders, Cobweb spiders and tarantulas
Video showing jumping spiders Insert picture	Jumping spiders Jumping spiders belong to the family Salticidae . They are known for their ability to jump and pounce upon their prey. More than 5,000 species are known from the world. Their body is often brightly coloured or strikingly patterned. Jumping spiders have keen vision and are active during the day in sunny areas. At night they hide in closely woven nests under bark, stones, or leaves.
Insert 3- 6 -four images of Crab spiders one after another.	Crab spiders Crab spiders belong to the family Thomisidae . They get their name from their crablike appearance, and their ability to walk sideways. They do not spin a web but they wait in hiding for prey. Many of them are found on flowers and are remarkable for their ability to change colour.
Insert 7-8 two images of Wolf spiders one after another.	Wolf spiders Wolf spiders are members of the family Lycosidae . They get their name from the Ancient Greek word Lycos meaning "wolf". They are robust

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<p>Video showing wolf spiders</p>	<p>and agile hunters with excellent eyesight. They do not spin webs and live and chase their prey like wolves. Some wait for passing prey near the mouth of a burrow.</p>
<p>Insert -four images of Orb-weaver spiders one after another.</p> <p>Video showing orb spider spinning web.</p>	<p>Orb-weaver spiders Orb-weaver spiders are members of the family Araneidae. They are the most common group of spiders building wheel-shaped webs in our gardens, fields and forests. It is due to the circular webs they spin, they are called orb weavers. They build sticky webs during the early evening often across pathways. These webs remain up only during the night and are taken down at dawn when the spider eats its own web.</p>
<p>Insert 9-14 -six images of Cobweb spiders one after another.</p>	<p>Cobweb spiders These spiders belongs to the family Theridiidae. They are popularly called cobweb spiders and comb-footed spiders. These spiders have a comb of serrated bristles on the tarsus of the fourth leg. The bristles help the spider wrap its silk around captured prey. They build irregular, three dimensional webs of sticky silk. The webs are found in dry, protected locations, such as dark corners of buildings like garages and sheds.</p>
<p>Insert 15-18 -four images of Tarantulas one after another.</p>	<p>Tarantulas Tarantulas are large and hairy spiders belonging to the family Theraphosidae. These primitive spiders and live in burrows. They wait at the entrance to its burrow to ambush passing prey. Compared with other spiders they are larger and live upto 20 -30 years. Their bite are often painful and leads to intense muscular spasms.</p>
<p>Showing Teacher on the Screen for 10 sec</p>	<p>Before we conclude let us see some of the uses of spiders. Spiders are important predators of insects and are used in biological control of pests.</p> <p>The spider silk is used for making dress, bullet proof vests, sutures in surgery, haemostatic bandages. They are stronger than steel of equal diameter hence known as biosteel.</p>
<p>Showing Teacher on the Screen.</p>	<p>Next time when you see a spider I hope you will not consider it as an ugly, useless creature. Spiders play an important role in maintaining the ecological balance of nature. Their known uses can provide important contributions to mankind in future.</p>



FACULTY DEVELOPMENT PROGRAMME

(One Week Faculty Development Programme on MOOCs and E-Content Development during 4-8 February 2019)

Organized by:

MOOC Programme Co-ordination Cell, Mahatma Gandhi University in Association with School of Computer Sciences, School of Pedagogical Sciences & University Centre for International Co-operation (UCIC)

General Convener:

Dr. Bindu V. R.

School of Computer Sciences

Co-ordinators:

Dr. Sajimon Abraham, UCIC
(Technology Aspects),

Dr. Sajna Jaleel

School of Pedagogical Sciences
(Pedagogical Aspects)

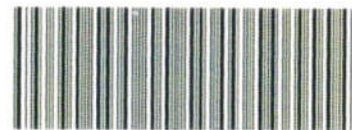
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978-93-80419-42-8