

CLASS – 10

ENGLISH

Footprints without Feet

CH-6 : The Making of a Scientist

Part – 2

The Power of a Good Book

ARPITA SHARMA



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OVERVIEW

1. Richard Ebright: Curious young collector

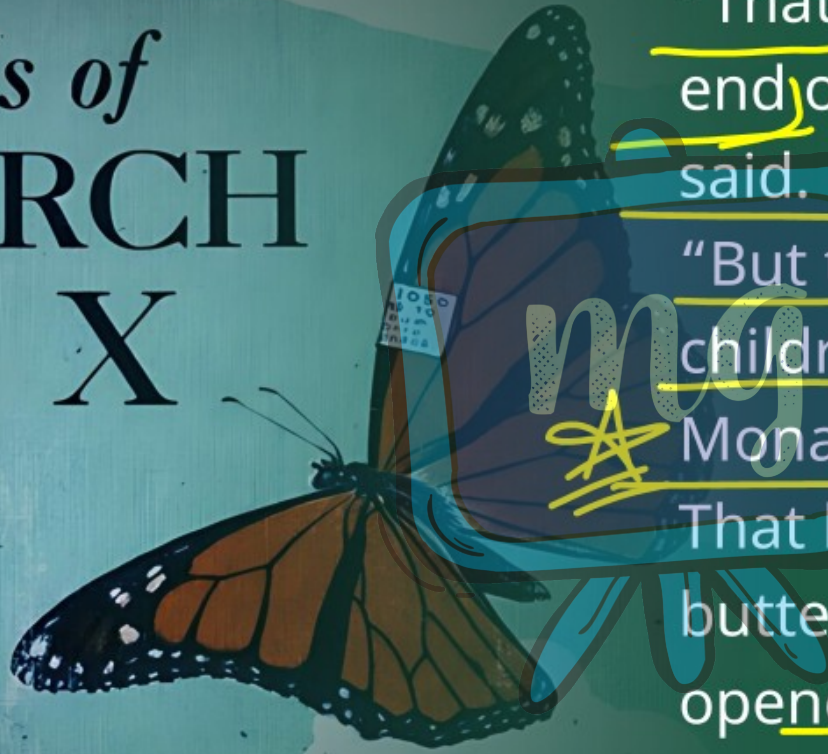
2. The Power of a Good Book

3. Richard's Science Fair & Research

4. Ebright: Emerging Scientist



The Travels of MONARCH X



“That probably would have been the end of my butterfly collecting,” he said.

“But then my mother got me a children’s book called “The Travels of Monarch X.”

That book, which told how monarch butterflies migrate to Central America, opened the world of science to the eager young collector.

By ROSS E. HUTCHINS

Migrate : पलायन करना

At the end of the book, readers were invited to help study butterfly migrations.

They were asked to tag butterflies for research by Dr Frederick A. Urquhart of the University of Toronto, Canada. Ebright's mother wrote to Dr. Urquhart,

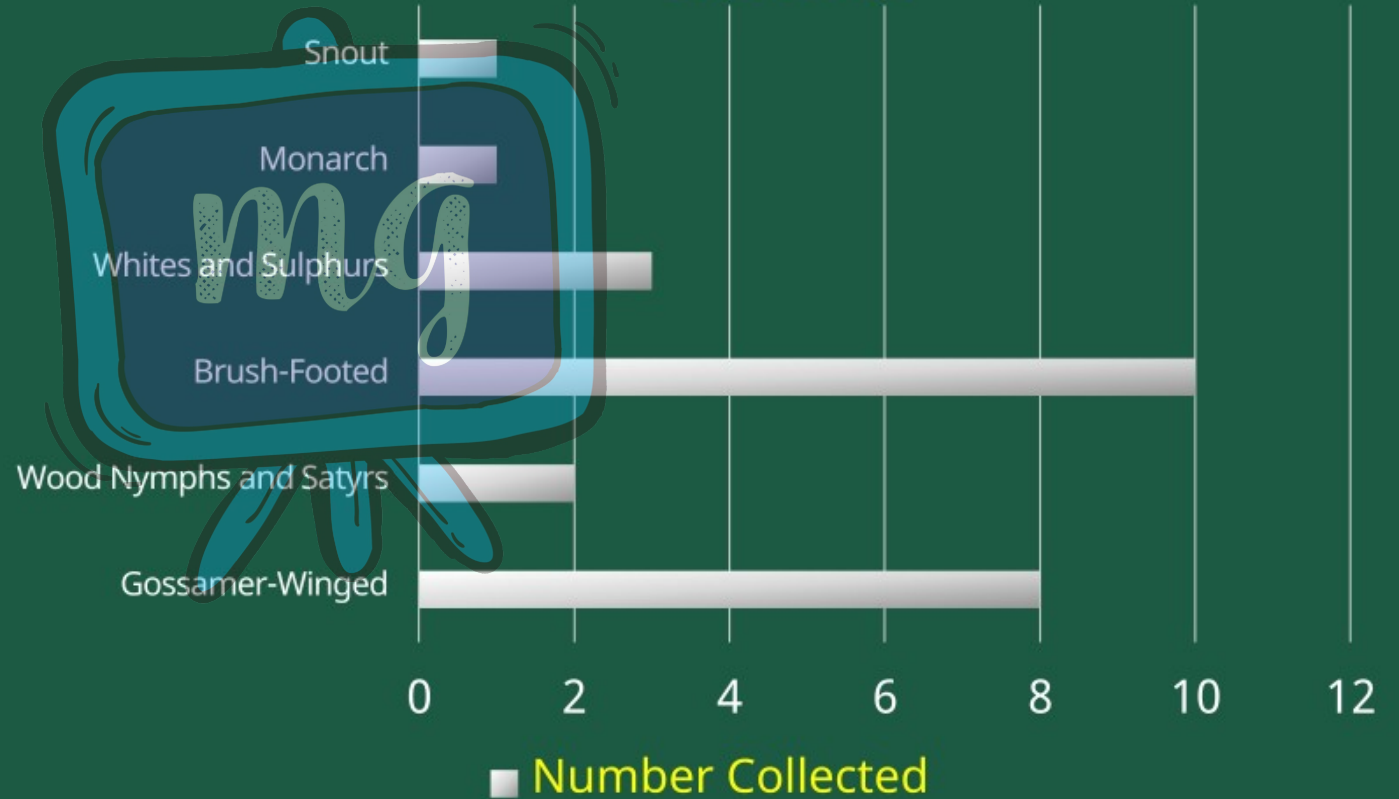


and soon Ebright was attaching light
adhesive tags to the wings of monarchs.

Anyone who found a tagged butterfly
was asked to send the tag to Dr
Urquhart.

The butterfly collecting season
around Reading lasts six weeks in late
summer.)

Number and Kinds of Butterflies Collected in Six Weeks



If you're going to chase them one by one, you won't catch very many.

So the next step for Ebright was to raise a flock of butterflies.

He would catch a female monarch, take her eggs and raise them in his basement through their life cycle,

Flock : समूह



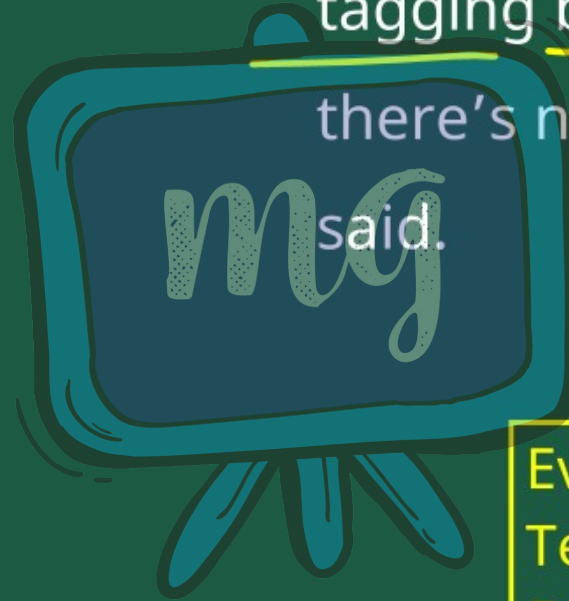
from egg to caterpillar to pupa to
adult butterfly.

Then he would tag the butterflies' wings and let them go.

For several years his basement was home to thousands of monarchs in different stages of development.

Pupa : कोषित

“Eventually I began to lose interest in tagging butterflies. It’s tedious and there’s not much feedback,” Ebright said.



Eventually	:	अन्त में
Tedious	:	थकान भरा
Feedback	:	टिप्पणी सूचना

"In all the time I did it," he laughed,

"only two butterflies I had tagged
were recaptured - and they were not
more than seventy-five miles from
where I lived."

Then in the seventh grade he got a
hint of what real science is when he
entered a county science fair - and
lost.

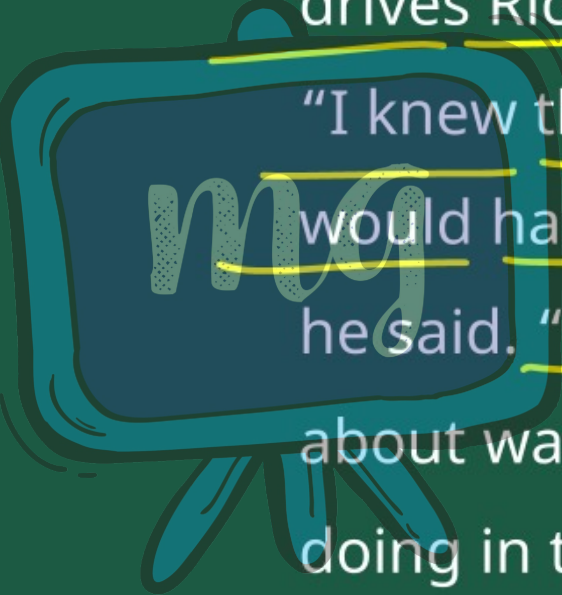
"It was really a sad feeling to sit there and not get anything while everybody else had won something," Ebright said.

His entry was slides of frog tissues, which he showed under a microscope.

He realised the winners had tried to do real experiments, not simply make a neat display.

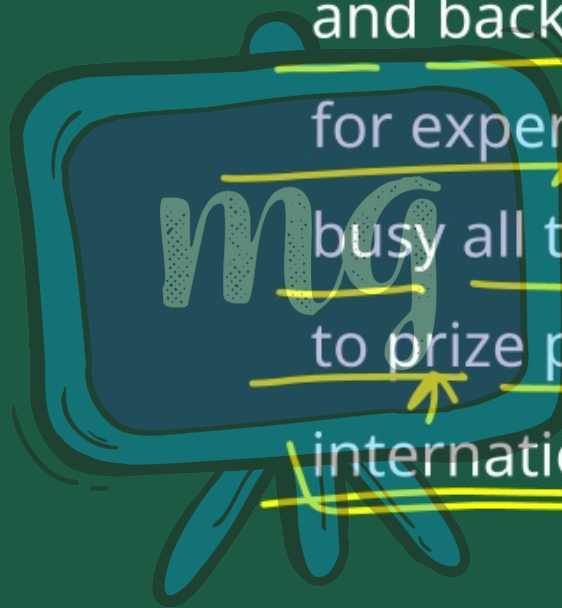
Experiment(s) : प्रयोग

Already the competitive spirit that
drives Richard Ebright was appearing.



"I knew that for the next year's fair I
would have to do a real experiment,"
he said. "The subject I knew most
about was the insect work I'd been
doing in the past several years."

So he wrote to Dr Urquhart for ideas,
and back came a stack of suggestions
for experiments. Those kept Ebright
busy all through high school and led
to prize projects in county and
international science fairs.





For his eighth grade project, Ebright tried to find the **cause** of a viral disease that kills nearly all monarch caterpillars every few years. Ebright thought the disease might be carried by a **beetle**. He tried raising caterpillars in the presence of beetles. "I didn't get any real results," he said.

Cause : कारण

Beetle : भौंरा

“But I went ahead and showed that I had tried the experiment. This time I won.”

The next year his science fair project was testing the theory that viceroy butterflies copy monarchs.



The theory was that viceroy look like monarchs because monarchs don't taste good to birds.

Viceroy, on the other hand, do taste good to birds. So the more they look like monarchs, the less likely they are to become a bird's dinner.

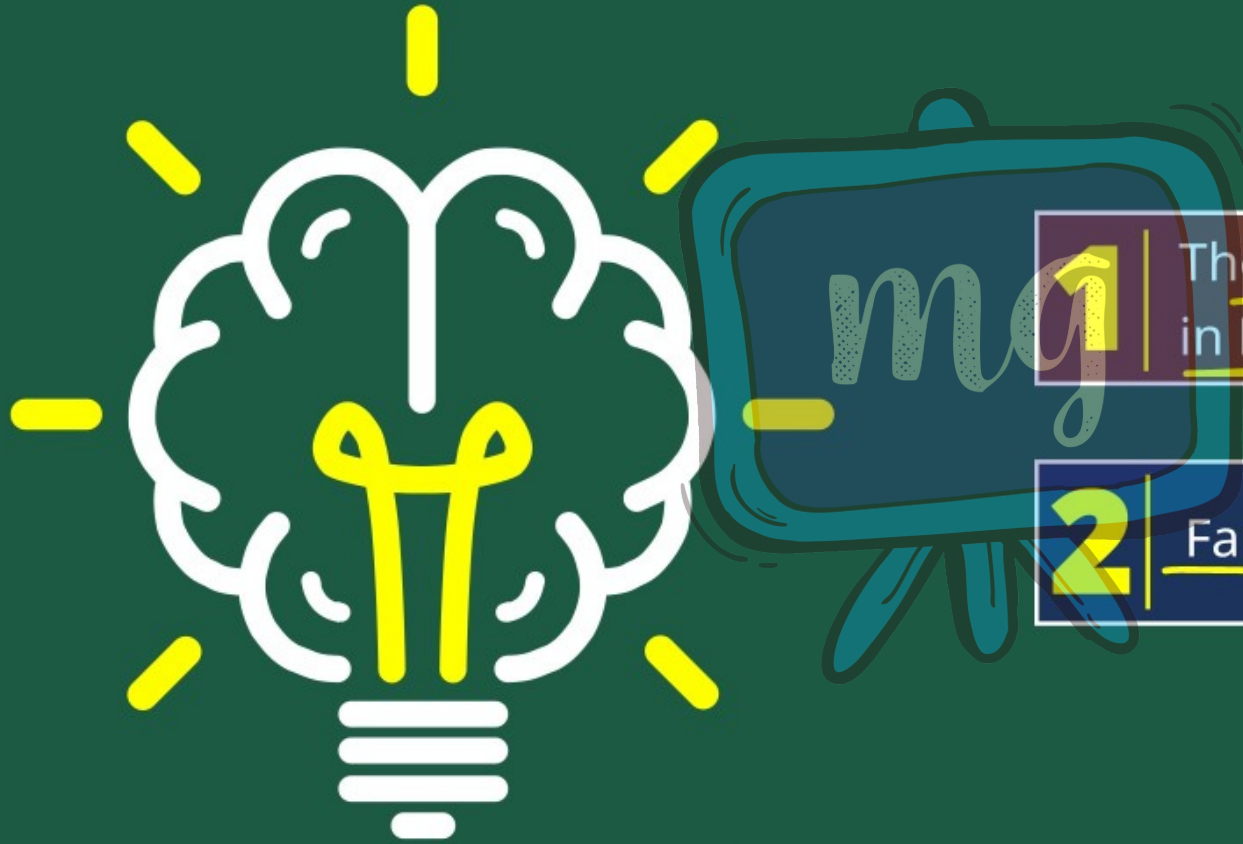


Monarch

Viceroy

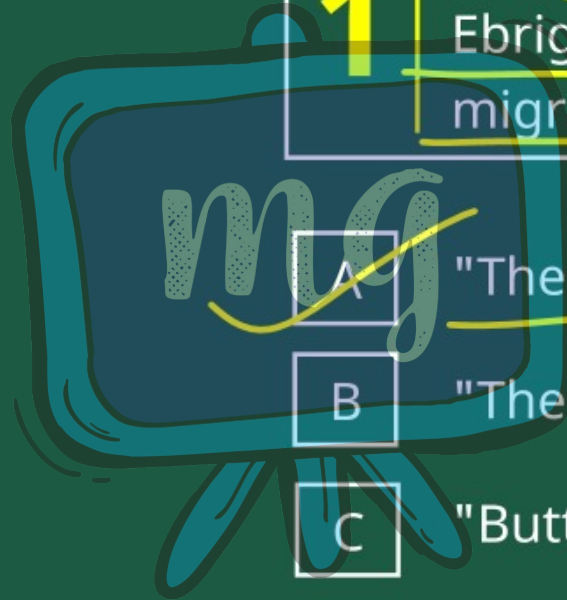
How is the monarch butterfly
different from the viceroy butterfly?

LEARNING OUTCOMES



1 | The Role of Practical Exploration
in Learning

2 | Failure is a Part of Life



1

Which book introduced Richard Ebright to the concept of butterfly migration?

- A "The Travels of Monarch X".
- B "The Butterfly Collector's Guide".
- C "Butterflies of the World".
- D "The Secret Life of Butterflies".

2

How did the boy learn science in his early years?

A

By reading textbooks only.

B

By memorizing facts.

C

Through hands-on experiments and observations.

D

By attending school regularly.



3

What was the focus of Richard Ebright's eighth-grade science fair project?

A

The migration patterns of monarch butterflies.

B

The effect of gold spots on butterfly pupae.

C

The cause of a viral disease affecting monarch caterpillars..

D

The mimicry of viceroy butterflies.