

Chapter 6: The Making of a Scientist

✨ Summary: The Making of a Scientist

By Robert W. Peterson

This is the **inspirational story** of **Richard H. Ebright**, who became a renowned scientist because of his **intense curiosity**, **supportive mother**, and a **strong desire to learn and experiment**.

😊 Early Life and Interests

- Richard Ebright was an **only child** raised in **Reading, Pennsylvania**.
- After his father died when he was in the **third grade**, his **mother became his constant companion and guide**.
- With **few playmates**, he spent his time **collecting things** like:
 - Butterflies 🦋
 - Rocks 🪨
 - Fossils 🦴
 - Coins 🪙
- He was also an **amateur astronomer**, often spending nights stargazing.

👩 Supportive Mother

- His mother was **instrumental in shaping his future**:
 - Took him on trips 🚗
 - Bought scientific tools 🔬 (microscopes, telescopes, cameras, etc.)
 - Engaged him in learning activities every evening 🧠
- She introduced him to a book that changed his life:
"The Travels of Monarch X"

📖 The Book That Changed Everything

- The book explained how **monarch butterflies migrate** to Central America.
- It inspired him to:
 - Tag butterflies for scientific research 📋
 - Collaborate with **Dr. Frederick A. Urquhart**, a researcher from Canada.
- He began **raising butterflies in his basement**, studying their life cycle from eggs to adult butterflies.

🩹 First Scientific Setback and Lesson Learned

- In **7th grade**, he entered a **county science fair** with slides of frog tissues but **won nothing**.
- He realized that successful projects involved **real experiments**, not just neat displays.
- This failure **motivated him to focus on real scientific work** in future competitions.

Experiments and Projects

1. **8th Grade: Studied a Monarch Caterpillar Disease**
 - Tried to prove it was spread by a beetle.
 - Didn't get conclusive results, but showed genuine effort → **Won a prize** 🏆
2. **Next Year: Tested the Viceroy–Monarch Theory**
 - Theory: Viceroy's mimic monarchs because monarchs taste bad to birds.
 - His findings supported this theory → **Placed 1st in Zoology and 3rd overall** 🏆 🏆
3. **High School: Discovery of a New Hormone**
 - Studied **gold spots** on monarch pupae.
 - Found they release a **hormone essential for development**.
 - Built a device to test this theory → **Won county fair & entry to International Science Fair** 🌍
4. **Further Research in Senior Year**
 - Grew monarch wing cells in lab.
 - Showed these cells developed normally only when given hormone from the gold spots → **1st place at International Fair again** 🏆

Breakthrough at Harvard

- While at **Harvard University**, Ebright studied the **chemical structure of the hormone**.
- This led to his **new theory on how cells read DNA** 🧬
- Collaborated with roommate **James R. Wong** to:
 - Build models
 - Write a paper on how DNA controls cell function
- Their paper was published in a prestigious journal — a huge accomplishment 🎓

Talents Beyond Science

- Richard wasn't just a scientist:
 - **Debater** 🗣️
 - **Public Speaker**
 - **Canoeist** 🚣
 - **Nature Photographer** 📷
- He admired and was inspired by his **social studies teacher, Richard A. Weiherer**, who helped him expand his thinking.

Qualities of a Scientist (as shown in Ebright)

- **Curiosity**
- **Bright mind**
- **Persistence**
- **Drive to do the best, not just win**
- **Passion for discovery**

Legacy and Potential

- Ebright's research may help understand **DNA mechanisms** and possibly lead to **cancer research breakthroughs**.
- His story shows that great scientists are made through:
 - Encouragement 🧑🏫
 - Curiosity 🔍
 - Dedication 💪
 - Doing science, not just reading it 📖