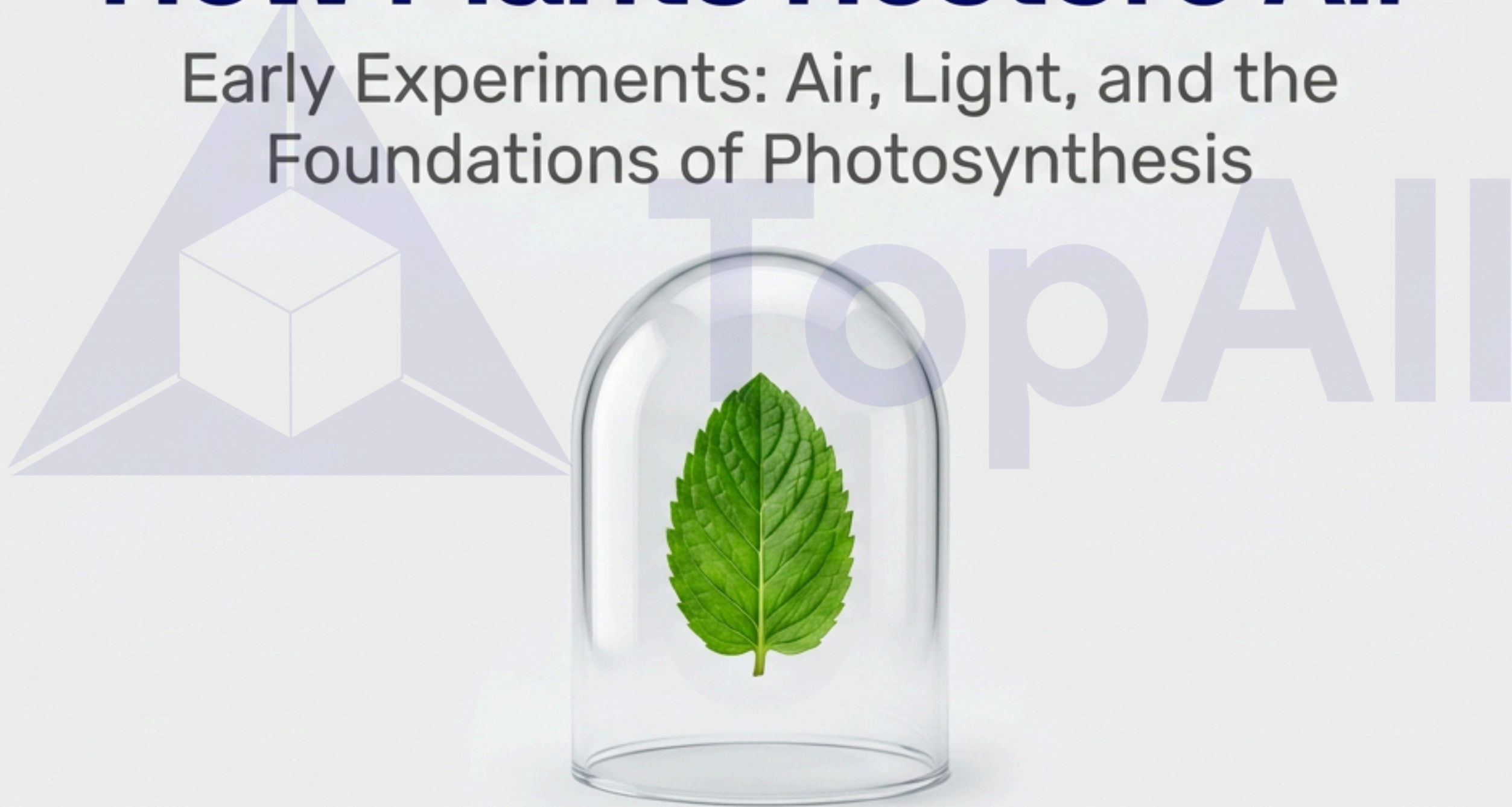


DATE: 1770-1779

SUBJECT: Photosynthesis

How Plants Restore Air

Early Experiments: Air, Light, and the
Foundations of Photosynthesis



The Experimental Setup (1770)

Joseph Priestley performed a series of experiments to reveal the essential role of air in the growth of green plants.



The Closed Space
(Bell Jar)



The Consumer
(Live Mouse)



The Combustor
(Burning Candle)



The Restorer
(Mint Plant)

The Problem: "Damaged" Air



A candle burning in a closed bell jar soon gets extinguished.

**CRITICAL OBSERVATION:
AIR DEPLETED**



A mouse placed in a closed space soon suffocates.

Priestley concluded that both a burning candle and a breathing animal somehow "damage" the air, making it unable to support life or flame.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now



At prep.topall.app

Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



The Solution: Biological Restoration



- ✓ The mouse stayed alive.
- ✓ The candle continued to burn (when rekindled).

PRIESTLEY'S HYPOTHESIS

Plants restore to the air whatever breathing animals and burning candles remove.

Priestley's Experiment Reconstructed

STATE A



Flame goes out.

STATE B



Mouse suffocates.

STATE C



Flame burns.

STATE D



Mouse lives.

The presence of the mint plant acts as the critical independent variable that reverses the effects of enclosed, depleted air.

Jan Ingenhousz: The Role of Light

Using a similar setup, Jan Ingenhousz proved that the plant's purifying process is strictly light-dependent.

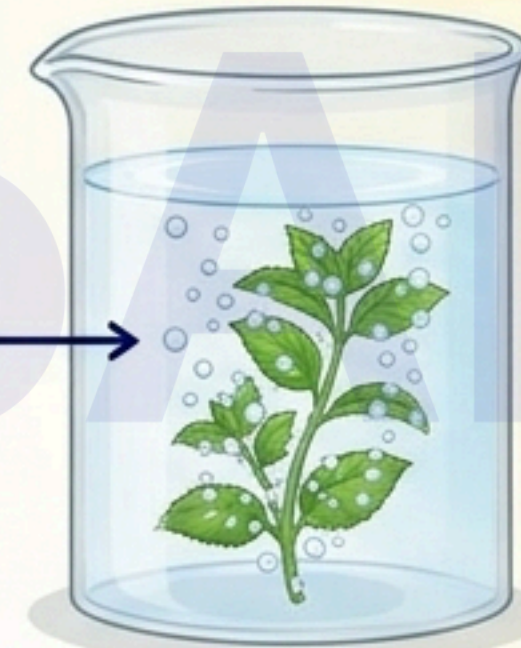
DARKNESS



No bubbles formed.

BRIGHT SUNLIGHT

BUBBLES = O_2
(OXYGEN)



Small bubbles formed around the plant.

Ingenhousz later identified that only the green parts of the plant possess the ability to release these oxygen bubbles.

The Foundation of Photosynthesis



Green plants use sunlight to purify and restore air by releasing oxygen, creating a life-sustaining balance for all breathing animals.

PLANT + SUNLIGHT -> RESTORED AIR (O₂)



Air

Plants recycle the exact elements that animals deplete.



Light

Solar energy is the essential driver of the process.



Chlorophyll

Only the green parts of the plant possess this chemical ability.



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis