Mus på flaske-eksperimentet
(oppdagelsen av oksygen fra planter)

Credit: The National Science Teachers Association

I 1772 plasserte Joseph Priestley en mus i en flaske med luft, og forseglet den. Etter en stund døde musen. Men hvis han gjentok eksperimentet med en plante i flasken sammen med musen, levde den mye lengre. Av dette kunne Priestley trekke den konklusjonen, at planter forandret (tilførte) luften noe (oksygen), som musen trengte for å leve.

Tidligere hadde Priestley plassert et brennende talglys og en plante i en (forseglet) flaske med luft. Etter en stund slukket lyset. Han ventet 27 dager før han på nytt tente lyset (uten å åpne flasken). Da brant det en stund igjen. Konklusjonen av eksperimentet var at planten tilførte flammen noe som lyset trengte for å brenne (oksygen).

Advarsel: Det er dyreplageri å eksperimentere med mus på denne måten (på Priestleys tid var man ikke riktig så nøye med sånt...).

Spørsmål: Hvordan klarte Priestley å tenne talglyset uten å åpne flasken?

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Experimentarius forklarer:

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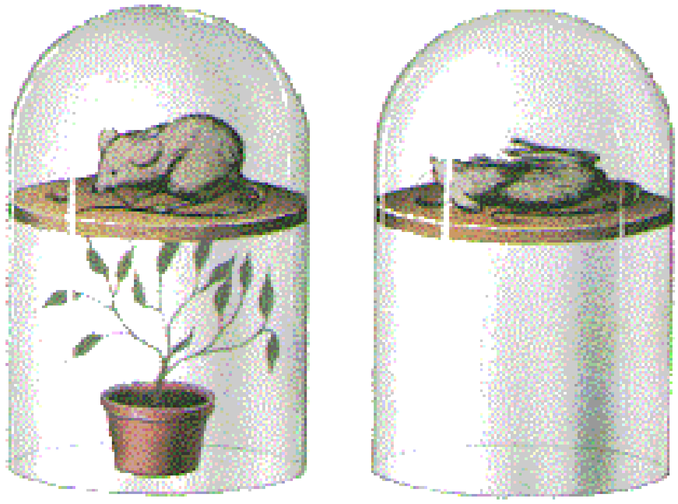
Oxygen from Plants



Credit: The National Science Teachers Association

In August 1771, Joseph Priestley, put a sprig of mint into a transparent closed space with a candle that burned out the air until it soon went out. After 27 days, he relit the extinguished candle again and it burned perfectly well in the air that previously would not support it. And how did Priestley light the candle if it was placed in a closed space? He focused sun light beams with a mirror onto the candle wick (Priestley had no bright source of light, and had to rely on the sun). Today, of course, we can use more sophisticated methods to light the candle like focusing light from a flood light through a converging lens, or by an electrical spark.

So Priestley proved that plants somehow change the composition of the air.

In another celebrated Experiment from 1772, Priestley kept a mouse in a jar of air until it collapsed. He found that a mouse kept with a plant would survive. However, we do not recommend to repeat this experiment and hurt innocent animals.

These kinds of observations led Priestley to offer an interesting hypothesis that plants restore to the air whatever breathing animals and burning candles remove - what was later coined by Lavoisier "oxygen".

In these experiments, Priestly was the first to observe that plants release oxygen into the air - the process known to us as photosynthesis

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