



50 YEARS AGO

OBITUARY — Prof. Albert Einstein. My first contact with Einstein was in Vienna in September 1913... he lectured to the Physics Section on "Gravitation", and his lecture quite obviously impressed most of his hearers as the work of a master-mind. But it was clear in the discussion which followed that many German-speaking men of science were not yet converted to his ideas... Einstein remained smilingly unperturbed and said he was prepared to stand or fall by the results of an empirical examination of his predictions. He had not very long to wait, for when I translated his popular work on "Relativity" in 1920, I suggested to him that he might like to include an appendix on the experimental confirmation of the theory...

His world-wide and unsought fame undoubtedly reached its zenith with the confirmation of his predicted gravitational deflexion of light rays by Eddington and others in 1919... His first comments in Britain on the results of the solar eclipse expeditions were published at the request of *The Times*...

Referring to this in a letter to me, he wrote: "It cannot do any harm, for, thank God, the solar eclipse and the theory of relativity have nothing in common with politics... I should like to utilize the favourable circumstances to contribute as much as possible towards the reconciliation of German and English colleagues." **Robert W. Lawson**
From *Nature* 28 May 1955.

100 YEARS AGO

On Friday, May 12... Lord Avebury, on behalf of his fellow trustees, received from Mr. Andrew Carnegie the gift of the full-sized model of the skeleton of the gigantic American dinosaur known as *Diplodocus carnegii*, which has been mounted in the reptile gallery of the Natural History Branch of the British Museum... It is almost an appalling thought that the skeleton of a creature which lived at least several million years ago should have come down in such a marvellous preservation to our own day.

From *Nature* 25 May 1905.

PLANT BIOLOGY

Auxin action

Judy Callis

Farmers and gardeners have long taken advantage of the growth-altering properties of the plant hormone auxin. The discovery of the elusive auxin receptor hints at how plant cells 'sense' and respond to this protein.

Even after 125 years of research in plant biology, we cannot answer the puzzle posed by this jaunty children's nursery rhyme:

*Oats and beans and barley grow,
Oats and beans and barley grow,
Can you, or I, or anyone know,
How oats and beans and barley grow?*

One reason is that plant growth involves at least eight different classes of compounds to coordinate growth, development and responses to the environment. One class, the auxins — from the Greek *auxein*, meaning to grow — stands out. Auxins are believed to be essential for plant life because, to date, no plant unable to synthesize auxin has been found¹. These proteins regulate many developmental programmes in the plant through their effects on cell growth, cell division and cell specialization. Yet how target cells 'sense' the presence of auxins has been unclear because, despite

many years of effort, no direct receptor for auxin had been isolated. In this issue, Dharmasiri *et al.*² and Kepinski and Leyser³ (pages 441 and 446) reveal a pathway for auxin perception that is mediated by a novel receptor.

The enigma of how plants respond to auxin has held since 1880, when Charles Darwin reported a growth-stimulating substance that moved within plants⁴. In the 1930s, the substance was identified as indole-3-acetic acid (IAA)¹, which is now recognized as the most abundant of the auxins. But even without knowing how auxins work, people have long used them in agriculture as safe and effective agents for weed control, and in horticulture, for example to promote root development in cuttings (Fig. 1). In the case of weed control, the adage 'too much of a good thing' applies — too much auxin and plants die.

The identification of a plant auxin-binding protein (ABP1) 20 years ago marked a major

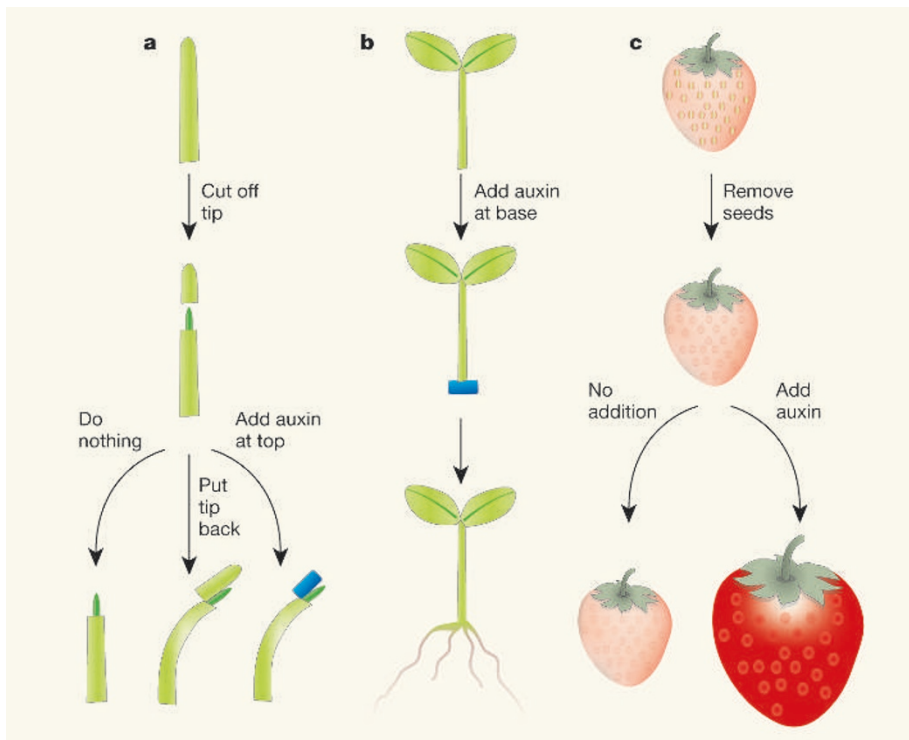


Figure 1 | Shoots, roots and fruits — the effects of auxin on plant growth. **a**, Grass seedlings have a sheath called the coleoptile that surrounds the first set of leaves. Growth of the coleoptile depends on the tip, and removal of the tip stops growth. Adding the tip back asymmetrically illustrates that the growth-promoting effect travels downward and not laterally, causing the seedling to bend because one side is growing faster than the other. Auxin can replace the tip for this effect. **b**, Stem cuttings can be induced by auxin to produce roots. **c**, Strawberries depend on auxin produced by their developing seeds for expansion and maturation. If the seeds are removed, little growth occurs. Normal growth can be restored with auxin.