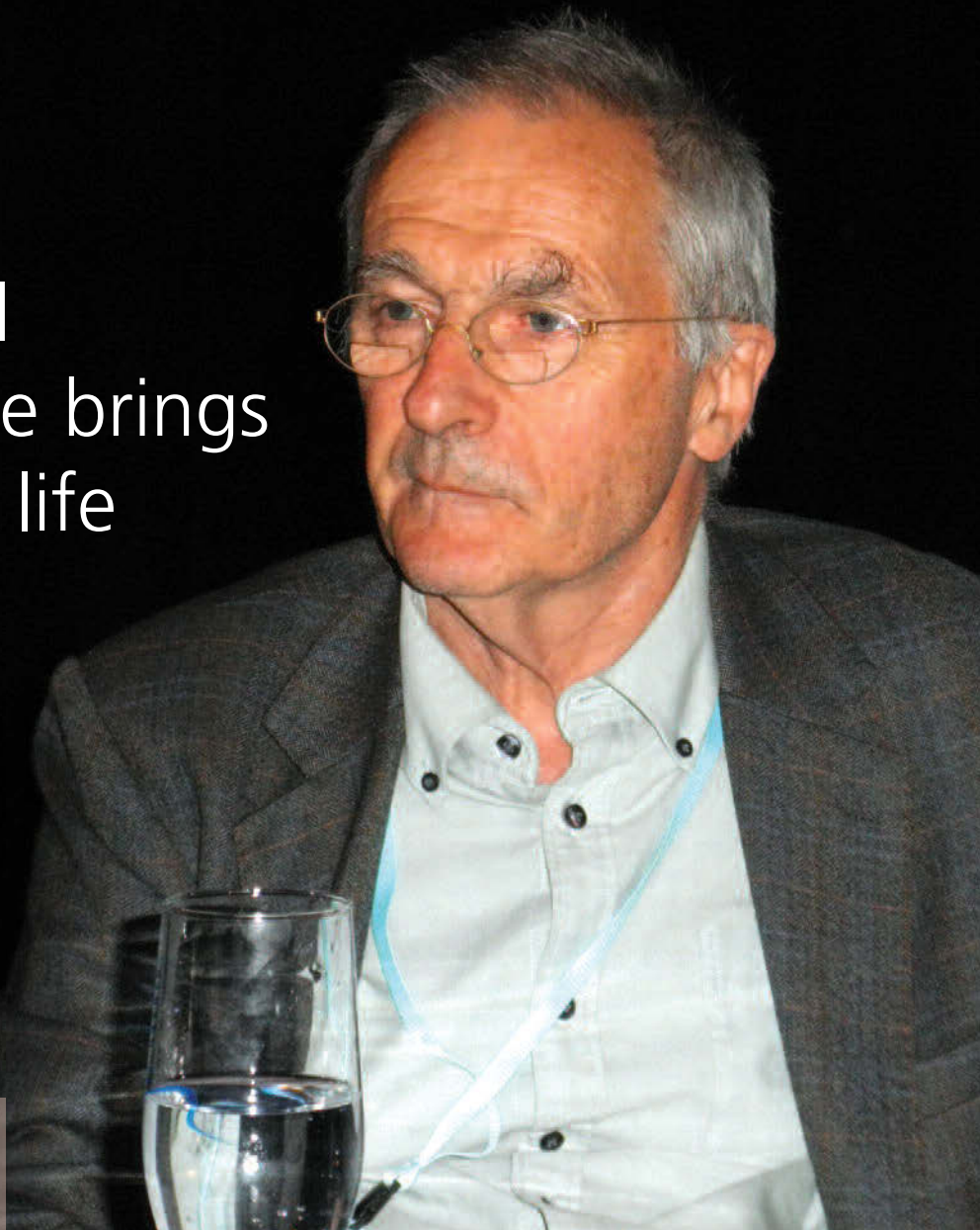


First hand experience brings nature to life



Prof Steve Jones.

Professor Steve Jones reflection on the importance of first hand experience

A couple of sentences from Charles Darwin's autobiography, written just before he died: "When ten years old I went for three weeks to Plas Edwards on the sea-coast in Wales. I was very much interested and surprised at seeing a large black and scarlet Hemipterous insect, many moths (*Zygæna*) and a *Cicindela*, which are not found in Shropshire". Even when a mere boy and – unlike many of his contemporaries, who were basically stamp collectors – Darwin did not just collect his specimens, but was "interested and surprised" by the difference between the two places: and that sense of deep engagement with the living world meant that at last he came up with a theory, evolution, that more or less invented the modern science of biology.

Another, and gloomier, recollection of his time at Shrewsbury school: "The school as a means of education to me was simply a blank". And, at Edinburgh University "I attended lectures on Geology and Zoology ... but they were incredibly dull. The sole effect they produced on me was the determination never as long as I lived to read a book on Geology or to study the science". And yet, in the next sentence, he says that on seeing the famous Bellstone in Shrewsbury (a glacial erratic) "This produced a deep impression on me, and I meditated on the wonderful stone"; and, later, of course, Darwin became a major figure in the history of earth science.

Where a trip to a Field Studies Council Field Centre can end up: a (considerably younger) Steve Jones and colleagues on a field trip to collect fruit flies in the Anza Borrego Desert in California. On the left is Theodosius Dobzhansky, the founder of modern evolutionary genetics (Steve Jones still has his moustache in an envelope somewhere).



Reading, or listening to lectures, about science is not like doing it. For a biologist, or a geologist, the easiest way to do that is simply to go outdoors and see what is going on. That experience used to be almost universal among school and university students, and the Field Studies Council has played a central role in ensuring that it did. I have vivid memories, once I had escaped screaming from my grammar school chemistry lab, of being taken at the age of fourteen on a trip to the Field Studies Council's Malham Tarn Field Centre in Yorkshire; and being enthralled by the possibility, even in the rain, of actually discovering something about animals (fresh water snails, as it happened) in the wild. That first exposure to field work formed my scientific career as it has that of many others far more distinguished than myself. Paul Nurse, who won a Nobel Prize for his work in cancer genetics (I, foolishly, stuck to snails and fruit flies), speaks passionately about how his interest in science was fostered by counting spiders' webs in his garden.

Anyone who has taken students on field courses, and I have run many, knows just what the experience can do even to the most apparently uninterested participant. And yet, somehow, that great tradition has been partly lost. There is huge interest in natural history in the UK – as manifest in the enormous audiences for David Attenborough programmes, but students have less and less chance to become involved in geology, biology – even maths, physics and chemistry – in the open air.

The study of biology, geology and the rest is a living experience, and without field work it can be (and often is) killed stone dead. FSC reports and campaigns such as *Outdoor Science* and *The Year of Fieldwork* set out to breathe new life into the appreciation of nature – and even if they get British schoolchildren and students wet and cold as they sometimes will, I hope that they succeed. One of FSC's ventures is to remind city children, many of whom have scarcely seen the countryside, that cities themselves are formed by – and form – nature's productions, with a daring scheme to set up, in conjunction with my own university, UCL, an Urban Field Centre on the site of the Queen Elizabeth Olympic Park.

That may not bring us the new Darwin, although it may well will bring us a new Paul Nurse, but it will show all those who take part – both students and teachers – that, in Darwin's own words, science is both interesting and surprising: a lesson crucial to everyone, whether or not they themselves go on to become scientists. <<<<

Steve Jones is Emeritus Professor of Genetics at UCL: his latest book, No Need for Geniuses: Revolutionary Science in the Age of the Guillotine, has just been published.

