

# Plant life

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## Tony Watkins interviews Professor Sir Ghillean Prance, who was then Director of The Royal Botanic Gardens, Kew

*Space-Time Gazette* was the student magazine of Christians in Science which I started and edited (and wrote most of!). Interviewing Sir Ghillean was a great privilege and enormously enjoyable. He's so busy yet was prepared to make time to talk to me at length and was so gracious. Just a shame he didn't have time to show me round Kew ...

### How did you start getting interested in the natural world?

As a child. I just loved nature around me. I first remember that in my very early years on the Isle of Skye - a wonderful place for natural history. Then my parents moved to Gloucestershire, right out in the country. Nature was all around me and I started getting curious about it and studying it from a very early age.

When I was a small boy, birds and plants were the two things that particularly appealed to me and I did a great deal of bird-watching. Gradually, I became more interested in plants than in birds. Perhaps it was due to the influence of my two Aunts who were very keen amateur botanists. They were very pleased with my interest in plants so they started teaching me how to use floras to identify plants; they were familiar with the latin names of plants and referred to them in that way. So they probably slanted me more towards botany.

Later, when I went to Malvern College, the House Master was a biology master. He was wonderful and took us all over the country collecting plants. There was a group of us in his house who were interested in natural history. He really helped to determine my career towards being a botanist.

### What was family life like for you?

My father died when I was eight years old but I had remarkable mother who brought up myself and my two younger sisters alone. She had been widowed before so I had an older half-brother. She was just amazing at making a stable home as a single parent. One of the great features of her was that she saw my interest in natural history, and although that wasn't hers, thought that one's interests like that

should be allowed to develop. She didn't mind that I had whole attic of the house turned into a natural history museum. She was very tolerant of that sort of thing.

### **When and how did you start getting serious about the Christian faith?**

My parents went to church and my mother wrote a lot of religious plays. We performed them and I took parts in them. I certainly learnt a lot about Christianity and thought a lot about it when I was at school but I really made a personal commitment in my third week at Oxford University through the CU, at the OICCU sermon on a Sunday evening.

### **Did you get very involved in the CU?**

Yes I was the prayer secretary. It was absolutely invaluable to me because all the teaching, and taking part in things as well, gave me the firm foundations I needed for when I went out somewhere else.

### **When did you first come across tension between your faith and your science? How did you deal with them?**

Very soon after becoming a Christian. I then began to think about the two and what I should do now I was a Christian rather than thinking purely in terms of my science. At first the tensions were more how you put together science and Christianity; creation and evolution and these sort of things. Later on, much more environmental issues. I read quite a lot of books and discussed these issues with various people. There was quite a lot of teaching about it in the CU which was very helpful to me.

### **Are there still tensions that you struggle with?**

Yes there are. I think one always will have a certain amount of tension. I'm very confident about my faith but there are obviously tensions and one is often asked questions that are difficult to answer.

### **What sort of questions do you particularly find difficult at the moment?**

I think, questions about origins.

### **How do you think life began?**

Life is such a complicated thing and I really believe it was started by God. I'm a believer in evolution because obviously as a scientist who's observing life, I see that it's developed gradually. But there are two things that I think one cannot explain in science. One is the actual beginning of life. No-one's been able to recreate life as such - they've taken bits of what already is life and made other organisms but they haven't really started it off from the beginning. The DNA molecule is such a

wonderful thing that I can't imagine that it didn't come from an act of God. And the other thing that is certainly true is that at some stage God used a particular organism to give a soul to and created man in his image. That's a very important step in creation.

### **What does it mean to have the image of God put in us?**

It means that we have a consciousness; that we are different from all other organisms that have been created and that we have that power entrusted to us that gives us dominion over the rest of creation. There you get onto what I talk about a great deal and that is creation theology and the Christian responsibility for taking care of creation. It also gave us a special relationship with God.

### **Some Christians consider that to be a Christian and an evolutionist is a contradiction in terms. Do you have any problems reconciling the two?**

No, I don't at all now and I'm sorry that this is such a bone of contention within Christianity. I think it's not doing us any good to ignore the scientific facts. It's not helping Christianity that people are denying what we can see are facts or are trying to distort the facts. The Bible is not a science text book. What is remarkable is that when it recounts creation it's in stages - it's not in one big event - showing a gradual development. The seven days, I think, correspond to ages. It's a controversy I come up against. We have just opened an exhibition at Kew on plant evolution. It goes back 4000 million years to the beginnings of life and where plants began, and then takes you through the history of plants with a mixture of models of fossil plants and some of the more primitive plants up to the flowering plants. I've had several letters from fundamentalist Christians about it. And I've answered those personally because, although I've got lots of other Christians on staff, I feel in a way I am well qualified to give an answer to that.

### **Taking the view that days in Genesis 1 are ages, do you see any contradiction between the order of things there and the geological record?**

There's a slight contradiction but generally it's along the line of the geological record. And, as I said, the Bible shouldn't be treated as a scientific textbook - it wasn't written for that. The important thing it tells us there is that God created and that the Spirit was there hovering over creation. That's what the first chapters of Genesis are there to tell us.

### **Have you found it difficult to work as a Christian within the reductionist framework of science?**

Yes I have. I'm not a great believer in reductionist science. I am, much more, a naturalist who likes to observe things out in the field and put everything together. I think there's a danger of taking too much of a reductionist approach. I suppose if I was a reductionist there might be more of a conflict trying to put

everything into tiny little boxes. I'm much more interested in the way these boxes interact with each other.

**Darwin's abhorrence of the apparent cruelty in nature seemed to be a key factor in him losing his faith. How do you handle that apparently cruel side of nature?**

That is, maybe, one of the hardest areas to explain. I think that one is told in the Bible that both plants and animals are there for the use of man. After the flood it specifically says that the animals are there for the benefit of man. So it's acknowledging that it is part of God's plan in creation. The Bible refers to predatory animals as much as to ones that are not - wonderful stories in Job about how the eagle feeds her young etc. The Bible is not trying to hide that. Later, in the prophets, we come to the new creation and the wolf lying down with the lamb etc., so there does seem to be a plan in creation to end that sort of cruelty in nature.

**How do fellow scientists view you as the Director of Kew and a Christian?**

I think some of them are surprised about that. But you'd be surprised at how many fellow scientists are also Christians. I've had good fellowship with some other scientists who have helped me along the way. I feel very much that part of being where I am is God's call to me to put me in this position and it's somewhere from which I can testify - to be known as a Christian. I have opportunities to testify to my faith in all sorts of ways; not just in Christian journals like this, but to the secular press. I mentioned my faith on Desert Island Discs for example. It's the sort of opportunity that I feel I must make use of and I'm not afraid to.

**What advice would you give to Christian students on science courses, hopefully with a career ahead of them?**

To learn their Bible at the same time as learning their science. And to pray. That is what really built me up in the Christian faith and it's very important to give time for that.

Another piece of advice I would give is something I've done ever since I became a Christian and that is I have never worked on a Sunday, however busy I've been even when studying for finals or in the many crises when I've been in a very busy position a lot of the time, so there's a day for the Lord and a day for one's body to rest. I feel very strongly that what the Bible says about the seventh day was not given just as a platitude, and it's repeated so many times in so many ways that I'm very disappointed that the world is losing the concept. My advice to Christian students is not to lose that. They'll do much better in their work, in their science, in everything if they keep the sabbath. And I mean that it's a day to relax as well - to do something different.

## **What ethical questions come up for you as a Christian professional scientist?**

I think, particularly now, the ethics of the environment because that's what I'm deeply involved in: the destruction of the environment and whether that's right or not; the use of plants and animals; the questions of intellectual property rights for them - that comes up from both secular and religious points of view. Something that I'm questioned about quite a lot is genetic engineering. I'm frankly quite glad that we're not into genetic engineering at Kew so it doesn't come up as a personal conflict within what we're doing. We are working with DNA but we're working with it to understand the classification of plants; we're not working with it to move pieces from one plant to another. That's an ethical issue that's very much coming up today. I'm glad I work with plants and not with animals and getting involved with moving around the DNA. I think there are really serious ethical issues when you talk about human genetic engineering.

## **Why is biodiversity so vital to preserve? Species have always gone out of existence. Are attempts to preserve species part of an environmental bandwagon and rather a waste of time?**

No, definitely not a bandwagon. To start with, the most important thing to realise is that the rate of species extinction at the moment is 10000 times greater than the natural rate of extinction. There have been some spasms of mass extinctions that are quite well documented. The time when the dinosaurs went extinct is one of the more recent recorded times. But we need many species for many different reasons. We need them because it's the natural ecosystems - forests, rivers, seas, savannahs - that keep the world working. Our climate would change radically if we got rid of all the rainforests. So we need to value them for the effect biodiversity is having on giving an atmosphere in which life can exist on earth. That can only continue with a diversity of species because different species have different functions within creation.

We need them from a more selfish human point of view, and that is we use the species of plants and animals in the world in many, many different ways. And there are many other ways in which we'll need them in the future. Medicines: 50% of prescriptions that are used today come from plants originally. So as diseases come, to combat them we need the plants to still be in existence. New foods, fibres, almost anything that comes from plants - we need a variety of plants to find these things. I believe as a Christian that it's not right for humans to allow things to go extinct that we can avoid. So we should stop what is man-made extinction. Underneath that there will always be a natural level of extinction that seems to be a part of the progression of God's creation.

## **What do you consider to be the greatest threat to a global ecosystem?**

Overpopulation. As a biologist I know that there is a carrying capacity of this earth - the number of people that can survive and get a reasonable standard of living. What I want to see is a lot more justice and equality amongst people. But if the

population goes on increasing, to attain that sort of goal will be absolutely impossible because there is a limit to the number of people that we can feed and give a reasonable standard of life. I'm very sorry that the church not faced up to this because it is so basic: if there is to be a future for life on Earth we must start addressing population growth very seriously. Its almost too late now. If we don't, then ultimately it will crash. God may have to intervene for us.

### **Do you think we have gone too far already?**

Almost. I think, ideally, one would not want there to be many more people than there are now. That seems to be a reasonable population. I think the world will be able to sustain more than today but I'm dubious that it will be at a reasonable standard of living. But it won't be able to sustain it if population growth is not stopped very very rapidly. And I'm not afraid to say that because I see as a biologist the experiments with anything from one-celled organisms to animals and what happens when you allow a population to go beyond its resources. I want to see that there are enough resources that everyone has proper food and clothing and shelter rather than the population going on increasing and more and more people who have don't have those three basic requirements that I think any human being has a right to. And Christians have a responsibility to help them so I'm very much in favour of the sort of work that some of the Christian relief organisations are doing.

### **What else can a Christian in this country achieve, if anything?**

Set an example in that and in all other things to do with the environment. And also support the organisations that are doing something about relieving poverty: supporting Christian relief organisations as well as Christian missionary organisations. They're just as important to be contributing to, and to other Christian environmental groups that are doing positive action.

### **Is it legitimate for Christians to be militant environmentalists? Should we all be joining the road protests?**

There is a place for people to do that. But I think Christians could do a lot more by being positive about it and contributing positively to the environment rather than by joining those sort of protests. I'd rather see Christians setting a very fine example by their lifestyle, in how they use their resources, rather than out on the protests. I think if there is some major ethical issue that is plainly against christian principles, it would be legitimate to protest against it but I would not advocate as a principle that Christians should be part of the very strong activist movement. They should be showing christian love and care wherever possible

### **The aesthetic aspect of the creation is very important to you. Why is that?**

I think that God revealed himself in two ways: through the Bible and through creation. I think it's very important that we maintain that side because it will help to

show other people God. I know a lot of people who get inspiration from going out into creation. I feel that a role of a botanic garden like Kew is being an oasis in a built-up place like London. One of the Garden's roles is as a place where people can gain spiritual refreshment. You'd be surprised at the number of people, Christian and often non-Christian as well, who have said that this is what keeps them going. People like an airline pilot or an air hostess who have a very hectic life. My wife was talking to an air stewardess who she met out in the garden and she said that what keeps her going is coming and relaxing and getting spiritual refreshment in Kew Gardens.

The only thing I would add to that, which is very important, is that we see it as a revelation of the Creator. We do not worship creation; we worship the Creator. Where the New Age has gone wrong is that they worship creation. I think it's very important that whenever you talk about the aesthetic nature of creation to remember that it is a revelation of God but it is not God. So it will lead you to the Creator but don't start worshipping the trees or the animals around. If you look in the Bible its full of praise of creation. The Psalms are just one long praise of creation. When God wanted to reveal himself to Job in Job 38-42 he didn't talk about repentance and salvation, he talked about 'Do you know who formed the earth? Do you know how the wild goats behave? Do you know the habits of the ostrich?' He pointed out the wonders of creation but it was to point to God not to make you worship those wonderful things that are recounted there. A good creation theology needs to be developed so that you are not carried away by New Age thinking.

### **So you wouldn't be a tree hugger?**

No. Well, a tree hugger may be somebody who is protecting a tree from the bulldozer. And to that extent, if it was to stop some real atrocity, I would join the tree-huggers to stop them cutting down a certain area. Some of those brave people in India and in Brazil have at times halted the deforestation. I wouldn't out go and hug the trees but I might be led to praise God, and I have been many times. I've been to the most wonderful places in the world in the course of my job, travelling all over the place from the rainforests to Antarctica. I think you can't help but be moved from the aesthetic experience you get there. To me, it makes me break out in praise of the Creator.

### **What makes a good creation theology?**

First of all, a good creation theology has got to be based on the Bible so that it has studied what the Bible has to say about creation from Genesis to Revelation. It doesn't stop with the first two chapters of Genesis - it goes throughout Job and the Psalms and the prophets; it goes to the fact that Christ was in creation. That is stated very clearly in John 1 and it's stated in Colossians and Ephesians. Life began in a garden and it ends in a garden in Revelation. So a good creation theology talks about that but it also doesn't ignore the scientific facts.

## Biography

Born: 1937; educated at Malvern College and Keble College, Oxford (BA, MA, DPhil); married to Anne. 1963-1988: worked for New York Botanical Garden. 1988: made Director of the Royal Botanic Gardens, Kew. Awarded Linnean Medal in 1990; made FRS in 1993; awarded Royal Geographical Society Patron's Medal in 1994; knighted in 1995.

His biography, *A Life in Plants* by Clive Langmead is published by Lion