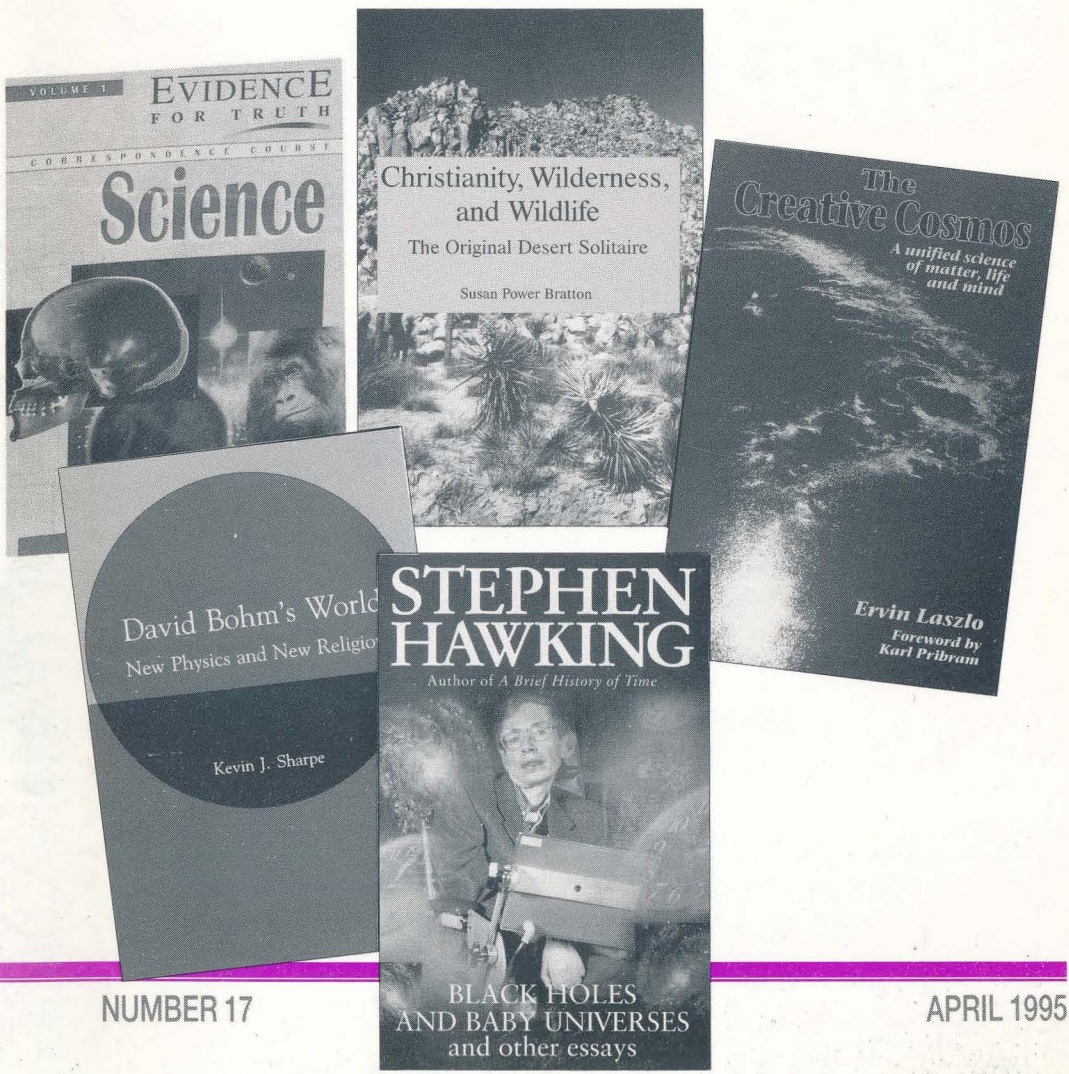
FAITH & THOUGHT

• BULLETIN •



NUMBER 17

APRIL 1995

EDITORIAL

The Victoria Institute was very grieved to hear of the death last year of Sir Norman Anderson, one of our distinguished Past-Presidents. Sir Norman served the Institute over many years, and was its President from 1977 intil 1985. A tribute to him will follow in a future issue.

The main article in this issue is the lecture given by Nigel Hepper at the AGM for 1994. It was a talk with many transparencies, and we hope that readers will not find the absence of illustrations to detract from the value of the lecture. It is obviously prohibitively expensive to reproduce colour photographs in the Bulletin.

The second article is a profile of Rupert Sheldrake, a controversial figure in science. It is reproduced by kind permission of 'Church Times', and we would welcome comments by readers on this.

Please take note of the Essay Competition for 1995. No prize was offered last year, and we hope that 1995 will produce a response.

VICTORIA INSTITUTE ESSAY COMPETITION 1995

This year the Institute will award a prize of £200 to the successful author of an essay on any topic which bears on the relationship between science and religion, particularly Christianity. The essay should not exceed 7000 words, excluding documentation, and should be addressed to the Honorary Secretary at the Institute's office (below) not later than September 30th, 1995.

The essay should be type-written, with double spacing and 2cm margins, and undersigned with a motto only. It should be accompanied by a sealed envelope with the motto outside and the author's name within. Each essay should be accompanied by a brief synopsis of 200 words, setting out which parts of the essay are claimed to be original.

The Council of the Victoria Institute will own the copyright of the essay, though will normally permit the author to embody it in a more comprehensive work later. The name of the successful candidate will be announced as soon as possible after a decision has been reached. In all cases the decision of the Council is final, and it reserves the right to withold the prize if no entry is deemed worthy.

Candidates are assumed to have assented to these rules when an essay is submitted. The Council office is: 41 Marne Avenue, Welling, Kent, DA16 2EY.

THE BIOLOGIST WHO THINKS THE UNTHINKABLE

Rupert Shortt

Rupert Sheldrake's reputation for mildness and urbanity is being tested when I arrive at his Hampstead home: preparations for his younger son's fifth-birthday party later in the afternoon are in full swing. But he turns from the fray and leads me up to his exotically stocked library. 'Before we married, my wife lived in a flat at the top of the house,' he says. 'Gradually, we bought up the lower floors, so the building has recovered its original unity, which is pleasing.'

Innocent yet knowing, this is a typical remark from the man whom it has become customary in scientific circles to venerate or (more usually) excoriate. The quasi-theological vocabulary is in point. Dr Sheldrake left academia 20 years ago to develop his ideas on holistic science and sit at the feet of various Hindu gurus. He subsequently became active in the Church of South India and was confirmed in 1976. In his first book, *A New Science of Life* (1981), he set out his theory of morphic resonance—a web of inherited memory linking creatures everywhere and allowing the experience of each to benefit all—and its radical implications for subjects ranging from scientific method to mystical experience. Such webs, Sheldrake suggested, involve the invisible transmission of information, and are responsible for self-organising systems at all levels of creation, shaping molecules, crystals, cells, organisms and societies of organisms.

The theory purported to explain longstanding conundrums at a stroke, from the distinctive characteristics of species to the collective unconscious in human beings. A now-famous editorial in the scientific journal *Nature* described the book as 'the best candidate for burning there has been for many years'; elsewhere, Sheldrake was hailed as 'one of the most perceptive thinkers of our time'.

Over the past decade, he has expanded his critique of mechanistic science in a string of further books, including *The Presence of the Past* (1988) and *The Rebirth of Nature* (1990). In his latest work, *Seven Experiments That Could Change the World* (1994), he carries his crusade beyond the professional battlefield by appealing directly to his readers to make 'simple, inexpensive' investigations designed to 'raise crucial questions about the psychic realm that have been neglected by generations of biologists and psychologists, and, for that matter, by theologians'.

The experiments address 'unexplained' phenomena such as the migration of birds across countries they have never seen; the 'baroque complexity' of termites' nests; and apparent capacities of our own, such as the sense we have of being stared at. One of the

tests, involving dogs and cats, has proved especially popular, Sheldrake says. 'Hundreds of readers have written in with evidence that animals have powers that go beyond those admitted by institutional science. Many pet-owners have noticed that their dog or cat seems to know when an absent member of the family is coming home, in some cases half an hour or more before the owner returns.

Anyone with a pet that does this can conduct an experiment for themselves. The person coming home should do so at a non-routine time, by a non-routine means, and the person at home should not know when to expect them. Does the animal still know in advance when they are coming? If so, this would indicate the existence of an invisible bond between the pet and the person that is not on the current scientific map of reality.'

Given his belief that modern science is premised upon 'questionable ways of regarding the world that were ushered in at the Reformation', Sheldrake repeatedly stresses the importance of religion to his scientific method, as well as to his life. But he recalls having had a very different sense of the links between faith and science during his schooldays at Worksop in the late Fifties. 'My family was Methodist, and I learned an enduring love of church music from my father,' he says. 'But by the age of 14 I'd become very sceptical about the Christian faith, and was encouraged by my biology master, who saw religion as a phase through which humanity had to pass in order to grow into the full light of reason, represented by science.

'So I developed a set of rather precocious atheistic views, which were furthered by reading works like Sir James Frazer's *The Golden Bough*. The main message of this book is that religions are methods of understanding the world devised by primitive cultures, and that Christianity is very similar to animistic systems. At the time it struck me as a damning criticism of the Church; now, of course, I see it as a great strength to be steeped in archetypal traditions and patterns of thought.'

Going up to Clare, Cambridge, to read Natural Sciences, Sheldrake became 'even more convinced that religion was just a matter of childish projection' through reading Freud and Marx; but at the same time he began to develop grave doubts about the mechanistic biology he was studying.

Recalling the evolution of his views at this time, he has written that 'as I advanced in my studies, I was taught that direct, intuitive experience of plants and animals was emotional and unscientific. According to my teachers, biological organisms were in fact inanimate machines, devoid of any inherent purposes, the product of blind

chance and natural selection; and indeed the whole of nature was merely an inanimate machine-like system. I had no problem in assimilating this scientific education . . . and acquired the necessary emotional detachment. But there was always a tension; my scientific studies seemed to bear so little relation to my own experience. The problem was summed up for me one day in a corridor in the biochemistry department when I saw a wall chart of metabolic pathways, across the top of which someone had written in big blue letters: KNOW THYSELF. I later came to recognise that the conflict I experienced so intensely within myself was a symptom of a split that runs through our entire civilisation. This split is experienced to differing degrees by almost everyone. It is now threatening our very survival.'

After his first degree, Sheldrake spent a year at Harvard studying the history and philosophy of his subject, and developed an interest in Goethe, who gave him 'an introduction to a holistic way of looking at science'. He then returned to Cambridge to do doctoral research on plant development. During this period he discovered that dying cells inside plants sacrifice themselves to produce the hormones that cause further growth; and believes 'the realisation that life comes through death in this way was very important to me'.

A fellowship at Clare, and a research fellowship at the Royal Society, followed on from the completion of his thesis; and for several years during the late Sixties and early Seventies he continued his work on plant development at Cambridge. The most important advances in Sheldrake's life in this period were a year spent studying rain-forest plants at the University of Malaya ('being exposed to Hindu, Buddhist and Muslim cultures gave me a very different perspective from what I'd known before'), and his joining 'the liveliest group of thinkers around in Cambridge', who were known as the Epiphany Philosophers.

'This was a basically Anglican group of scholars', he tells me, 'who were exploring the interface between mystical experience, science and philosophy. It included philosophers like Richard Braithwaite and Dorothy Emmett, and Ted Bastin, the quantum physicist. The group also included several monks of the Society of the Sacred Mission, and we used to meet for a week four times a year in a converted windmill on the Norfolk coast. The days would be punctuated by the recitation of matins and evensong, which I grew to enjoy, while not yet being a believing Christian, and by very vigorous discussions that were quite off the map of conventional academia. Among the topics we discussed were meditation techniques, parapsychology and the defects of mechanistic biology: all more fashion-

able now, but scarcely heard of then.'

By 1973, Sheldrake had concluded that he could not pursue a career in mainstream biochemistry, so he resigned his fellowship and went to live in Hyderabad in India, 'both to get immersed in a fascinating culture, and to do agricultural research on food production, and thus some practical good'. (His work has led to the introduction of a new cropping system involving multiple harvests from the same plants.) To begin with, Sheldrake's spiritual life was nourished almost exclusively by Eastern techniques such as yoga and transcendental meditation; yet it was in India that he discovered a side to Christianity he'd 'never dreamt existed', and embraced the faith.

'I slowly realised that you need to be an Indian to be a Hindu: it wasn't my cultural tradition,' he continues. 'And I realised how much of my make-up had been shaped by Christian culture: the fact, for example, that I considered it important to try and help other people, whereas most Hindus didn't think this was their concern at all. Furthermore, the gurus I consulted would say: 'All paths lead to God. You're from a Christian family and you should follow a Christian path.'

'So I started going to church; then my continuing sense of the inferiority of Western spirituality was transformed in 1977 when I met Bede Griffiths (the Roman Catholic Benedictine), whose ashram in Tamil Nadu, south India, formed a bridge between Christian and Hindu culture. Fr Bede himself was an immensely inspiring figure who combined a Christian core with great openness to other philosophies. Having met him, I left my job in Hyderabad and went to live in his community to write *A New Science of Life*. It was Fr Bede who introduced me to the Church's long mystical tradition, and under his guidance I steeped myself in the writings of the Church Fathers, and of Aquinas and Bonaventure.

'Through this reading, I realised that the Church had once possessed a far greater sense of the Spirit pervading all nature—a holistic vision that resembled animism—and that this was the culture that had given rise to the great Gothic buildings in England which my father had taught me to love as a child. I then saw that many of the most impressive features of Indian spirituality had been present in Europe until the 16th century.

'The Reformation did away with many of the traditions that rooted the medieval Church in its pre-Christian past—involving sacred places and festivals, and so on—which had great archetypal power. And while one can understand the historical reasons why people wished, as they saw it, to purify Christianity, I have come to see the threads of continuity as being much more compelling. For example,

there is a whole tradition of sacrificial kingship, such as the cult of Osiris in Egypt, stretching through ancient history, and in whose context Jesus may be located. I believe the power of eucharistic and other Christian symbols is meaningless without a grasp of this background, which goes back tens of thousands of years.'

In some ways, though, Sheldrake's views are at odds with Christian, not just scientific, orthodoxy. For example, he has misgivings about the Old Testament portrayal of the emergence of monotheism, and the accompanying polemic against other ancient Near Eastern religions. And he enthuses about a perceived continuity between the cult of the Virgin and earlier forms of pagan observance.

Yet there is much in his notion of morphic resonance that bears out the Church's traditional claims. 'A corollary of the theory is that those who follow a particular tradition, through observing its prayers, rituals and liturgies, are tuning into those who have done it before. The doctrine of the communion of saints makes a lot more sense in these terms. I believe that there are far more connections, in time and space, both among people, and between people, animals and nature, than science at present admits, because it's based on a fragmentary view of the world. The purpose of *Seven Experiments That Could Change the World* is to suggest that many of these connections are staring us in the face. What the household-pets test may show is that the mind is non-local in its effects, and that our intentions can affect other people, via morphic fields.

'Furthermore,' he continues, 'the implications of this view for intercessory prayer are considerable. At the moment, it's common in the Church to think of spirituality as involving machine-like minds, and of prayer as operating in a miraculous way, unconnected with the rest of nature. And, of course, for many other Christians as well as non-Christians, it's incredible to think of it in these terms. My conception helps to bridge the gap between the worlds of nature and spirit, and restores a much greater sense of the place of the soul, which was common to all Christian thought till the 17th century, before consciousness was abolished in the animal and plant kingdoms, and confined to a region of the brain in human beings.'

Sheldrake's standpoint has been endorsed by several prominent churchmen, among them Bishop Hugh Montefiore, who comments that 'Rupert, like Jim Lovelock (the Gaia hypothesis man), is a serious thinker who has liberated himself from the unspoken dogmas of orthodox science, while remaining committed to scientific methods. More evidence is needed to test some of his theories, but he has been courageous in exploring taboo subjects, like telepathy, that others refuse to confront.'

The comparison with Lovelock is instructive, since the cold reception Sheldrake has received from his fellow biologists is matched by his own warnings, echoing Lovelock's, about the dangers of science. 'Through the successes of technology, the mechanistic theory of nature is now triumphant on a global scale; it is built into the official orthodoxy of economic progress. It has become a kind of religion. And it has led us to our present crisis . . . We need to look at the attitudes that have led to devastation of the Earth, and to find a more harmonious way of living. And those of us who believe in the power of prayer need to pray for forgiveness and guidance.

'If a wiser and juster human order comes about, if a new harmony develops between humanity and the living world, this would indeed seem like an answer to prayer. I am a qualified optimist, but the future will be very bleak unless there is a spiritual revival.' So saying, he has another intuition—of an invasion of young children downstairs. He bids me a quiet farewell and glides to another part of the house.

The paperback edition of *Seven Experiments That Could Change The World* will be published on 20 February (Fourth Estate, £6.99). Dr Sheldrake welcomes letters from readers wishing to report the results of his suggested experiments with dogs and cats. His address is 20 Willow Road, London NW3 1TJ.

This article, by Rupert Shortt, is reproduced from the Church Times, February 3 1995 with grateful permission.

A BOTANIST LOOKS AT THE BOOK OF ISAIAH

F. Nigel Hepper

Today we are used to great cities with urban environments of 'concrete jungle', whereas the towns and even the cities of ancient times were little more than overgrown villages where the inhabitants spent the night. By day they farmed and gardened outside the city walls, or bought and sold local produce.

This was true of both the Old and New Testaments, so it should come as no surprise to us that the countryside with its plants and animals is mentioned in almost every chapter. Timber and farm crops, garden vegetables and herbs, as well as exotic spices are all there, and I have indexed them all.

The Psalmist and the Prophet painted word pictures or used similes to make a point that would be familiar to their hearers or readers. The Lord Jesus used parables that would relate to their experience—everybody knew the vineyards and cornfields; and fig-trees and garden herbs were facts of every day life.

For this paper there are several ways of tackling the subject. A dull catalogue of the different species is not acceptable as it is much more interesting to relate them to the biblical narrative by grouping them into some logical sequence. I have therefore made an outline study of the Book of Isaiah and I use his botanical references in order to look back at the Old Testament and forward to the New Testament.

This is no place to discuss the authorship of the Book of Isaiah, neither am I qualified to do so! Suffice it to say that the author (or authors) was knowledgeable about his environment, agriculture and industrial processes. Most of the references are illustrative or figurative using plants or vegetation for similes. There are graphic pictures of grass fires and destroyed forest, the glory of Lebanon and Carmel (showing he was well-travelled), and knowledge of the carpenter's trade—its tools and timbers.

I hope to show that an ecological view of the Scriptures is very consistent with the life and times of the people and the biblical narrative. We start with the environment taking the ecology of forests, water plants and the effect of fire on vegetation. For cultivated plants we shall look at gardens and agriculture with the seven species beloved by Jewish scholars, then fruits and vegetables, and conclude with herbs and spices from home and abroad. For the lecture itself, colour slides amplified the descriptions in this text.

> In that day the Branch of the Lord will be beautiful and glorious,
>
> and the fruit of the land will be the glory of the survivors of Israel (4:1)
>
> All the trees of the field shall clap their hands (55:12)

The botanist does not have very much to say in this area, since much of the language is pictorial—e.g. obviously trees don't clap their hands.

> He grew up before him like a tender shoot, like a root out of dry ground. He had no beauty or majesty to attract us to him (53:2)

Some of the dry roots in Palestine are not especially attractive, so Isaiah uses this to express his thoughts on the Suffering Servant to poetic effect. These verses are not acceptable to scientific analysis, but illustrations such as the parables of the sower and of the fig-tree were used to great effect later by Jesus.

Let us go on to the illustrations used by Isaiah concerning the different habitats found in Israel.

ECOLOGY

> The desert and the parched land will be glad, the wilderness will rejoice and blossom. Like the crocus [or rose] it will burst into bloom, it will rejoice greatly and shout for joy. The glory of Lebanon will be given to it, the splendour of Carmel and Sharon, they will see the glory of the Lord (35:1, 2)

Such pictures are also taken up in e.g. Psalm 104 and Song of Solomon. I remember being interviewed by Roger Royle on Radio 2, and saying that such verses in the latter were are a mine of information. This was misunderstood—at first—as a minefield! Perhaps some scholars do find the Song of Solomon a theological minefield. We find similar verses in Jeremiah too.

Another ecological fact is that of the succession of different sorts of vegetation. We know from our own gardens that weeds left unchecked spread and grow larger with time, and seem like a forest. We have this thought in Isaiah 29:17

> In a very short time will not Lebanon be turned into a fertile field and the fertile field seem like a forest (29:17)

Seasons figure largely in any climate, especially so in a dry situation like Israel's. Dew, hail and rain would be eagerly awaited under such conditions:

> They are like plants in the field, like tender green shoots, like grass sprouting on the housetops scorched where it grows up (37:27)

> All men are like grass and their glory like the flowers of the field, the grass withers and the flowers fall (40:6–8) (See also Psalms 103:15 & I Peter 1:24)

In countries where turfs are used for roofing, the dry winds will soon lead to scorching, and those who visit Palestine know very well that the spring flowers one day are often gone by the next.

TREES AND FORESTS

The desert does not usually have many trees, and so Isaiah's prophecy in chapter 41 has some point:

> I will make rivers flow on the barren heights . . . I will put in the desert the cedar and the acacia, the myrtle and the olive, I will set pines in the wastelands, the fir and the cypress together (41:19)

It is a puzzle why *acacia tortilis* is mentioned here, since it is a desert tree. In fact it is very important and gives the Shittim wood. This is a hard red wood used for construction. Early translators of the Bible were unaware of the acacia, and left the Hebrew word shitta in the English versions. The *myrtle communis* is a choice, fragrant tree, probably used in the feast of Tabernacles, together with palm, willow (or poplar). The olive is a fruit tree, much in demand, and the aleppo pine (*pinus halopensis*) was rarer in Bible times than today since it does not root very easily in dry soil. Both fir (*abies cilicia*) and cypress (*cupressus sempervirens*) are to be found in Lebanon. All of these trees, except for acacia, are evergreen from a mediterranean zone of vegetation, and contrast with the desert scrub in the Old Testament:

> The carpenter . . . cut down cedars or perhaps took a cypress or oak. He let it grow among the trees of the forest or planted a pine and the rain made it grow. It is a man's fuel for burning, some he takes and warms himself, he kindles a fire and bakes bread. But he also fashions a god . . . he prays to it and says 'Save me you are my god'. They know nothing. Shall I bow down to a block of wood? (44:13)

Here we have Isaiah's scornful remarks about idolatry—how stupid to bake bread on charcoal and worship a god made from the same tree!

When certain kinds of tree are cut down severely, it is not long before fresh growth is seen, which leads the prophet to use this as a picture of the stump of Israel:

> As the terebinth and the oak leaves stumps when they are cut down, so the holy seed will be the stump in the land (6:13)

Of course, the wood from these mighty trees could be used to make sea-going vessels:

> There the Lord will be our mighty one. It will be like a place of broad rivers and streams. No galley with oars will ride them, no mighty ship will sail them (33:21)

We have other references in Jeremiah 27:3–9, and in Exodus 6:14, where the gopher wood for the Ark was probably cypress (*cupressus sempervirens*). In the New Testament wooden ships sailed over lake Galilee (Luke 5:7) and the Mediterranean (Acts 27). There is a picture of timber being made into ships in Ezekiel (27).

WATER PLANTS

Material other than timber was used for ship-building, one of these being papyrus (Cyperus papyrus):

> Woe to the land of whirring wings [locusts] along the rivers of Cush which sends envoys by sea in papyrus boats (18:1, 2)

These papyrus boats were made of buoyant stalks bound together and they were meant mainly for local use. However, recently Thor Heyerdahl was able to sail in ships of papyrus over much greater distances, even across the Atlantic! Isaiah also refers to waterplants in a reference to fasting:

> Fasting . . . Is it only for bowing one's head like a reed (58:5)

With regards to papryus, we know that this was very important for use as writing material in Egypt and in Israel. The outer rind of the stalk was stripped off, leaving the interior, which was then sliced, laid together and flattened. Alternate strips were laid at right angles, hammered together, and formed into a dry sheet. The writing would usually be on the one side only; if the other side *was* used, the writing would be in the other direction. Such 'paper' was very strong if kept dry, but soon rotted if allowed to get wet. Ink for writing was based on carbon fron burnt plant material, mixed with gum. In this state it

(Cyperus papyrus)

was not likely to fade. The pens used would be of reed or rush. Much of the Bible may have been written on papyrus.

PLANTS AND FIRE

Isaiah refers to vegetation and the effect of fire on prickly plants in the dry climate:

> As for all the hills once cultivated by the hoe, you will no longer go there for fear of briers and thorns (8:25), and
>
> If only there were thorns and briers confronting me . . . I would set them all on fire. (27:4), and
>
> the people will be burned as to lime, like cut thornbushes they will be set ablaze. (33:12)

and grass is also easily set alight:

> As the tongues of fire lick up the straw, and dry grass sinks down in the flames, so their roots will decay and their flowers blow away like dust (5:24)

A particular verse in chapter 43 is interesting:

> When you walk through the fire you will not be burned (43:2)

If one is in the path of a spreading fire it is dangerous and the only way to escape is in fact to set alight the local area, and step into the cinders.

Chaff and straw left over from harvesting and threshing were used in bread ovens:

> You conceive chaff, you give birth to straw; your breath is a fire that consumes you (33:11)

CULTIVATION

Let us move now to the subject of cultivated land, first away from Isaiah. In Deuteronomy 8 we find a list of seven species or 'varieties' of the country:

> The Lord is bringing you into a good land—a land with streams and pools of water with springs flowing in the valleys and hills, a land with wheat and barley, vines and fig trees, pomegranates, olive oil and honey (Deut. 8:7–8)

Moreover, the Promised Land is different from Egypt in being hilly rather than flat:

> The land you are entering . . . is not like Egypt where you planted your seed and irrigated by foot as a vegetable garden. The land is a land of mountains and valleys that drinks rain from heaven. (Deut. 11:11)

Even today irrigation is 'by foot'. When the Egyptian farmer wants to water an area, he moves soil with his foot, so as to dam up one channel and open another.

GARDENS

There is a number of gardens mentioned in the Bible, e.g. Eden, Solomon's, Gethsemane, Golgotha. Eden is often a synonym for Paradise, such as the following from Isaiah:

> He will make her deserts like Eden, her wastelands like the garden of the Lord. Joy and gladness will be found in her (51:3). You will be like a well-watered garden (58:11)

Actually, we get the word Paradise from an anglicised Persian word for a walled garden—a bit of heaven in the desert!

Isaiah also knows something about gardening:

> As the soil makes the sprout come up and a garden causes seeds to grow, so the sovereign Lord will make righteousness and praise spring up before all nations (61:11)

In the grounds of St George's College next to the cathedral in Jerusalem a horticulturalist and I have been making a garden which embodies many elements of the Biblical story. Courses are run at the college for visiting clergy and lay-people, and the garden is a modern living demonstration of the Bible. Many tons of soil and rock had to be shifted to produce the finished effect when planted with species mentioned in the Bible.

But there were gardens and groves in the Old Testament which were used for the worship of Baal, so even gardens can be a snare:

> Those who consecrate and purify themselves go into the gardens behind one of your temples and follow those who eat the flesh of pigs and rats and other abominable things (66:17). You will be disgraced because of the gardens you have chosen (1:29)

AGRICULTURE

There is much reference in Old and New Testaments to agriculture.

One thinks of Cain and Abel, Joseph, Gideon, Ruth, and Jesus' parables of the sower, and of the vineyard.

In chapter 32 of Isaiah we see, within a prophecy, a description of the succession of growth:

> You women who are so complacent . . . you who feel secure will tremble: the grape harvest will fail, the harvest of fruits will not come . . . for the fruitful vines and the land of my people, a land overgrown with thorns and briers . . . a wasteland for ever a delight for donkeys, a pasture for sheep. TILL THE SPIRIT IS POURED FROM ON HIGH and the desert becomes a fertile field, and the fertile field is like a forest . . . my people will live in peaceful dwelling-places . . . sowing your seed by every stream (32:9 ff.)

Another prophecy says that:

> They will beat their swords into ploughshares and their spears into pruning hooks (2:4)

THE GREAT TRIO—CORN, WINE, OIL

Of the seven species already mentioned, the three which are most often referred to are corn, wine and oil. Leviticus 26:19–20 shows that if we reject the Lord's commandments the land will be as brass and these crops will fail. The corn was either wheat or in the hilly regions, barley (*Hordeum vulgare*). For sacrifice, fine wheat is mentioned (*Triticum aestivum*), which is the best. We can follow the progression of the agricultural year: sowing, reaping, threshing:

> He will also send you rain for the seed you sow in the ground and the food that comes from the land will be rich and plentiful (30:23)

But there is a warning about the thistles and thorns, such as we read about in the parable of the sower. (Luke 8:5ff)

Later in the year comes harvest, and the reaping of the corn with a sickle by hand:

> It will be as when a reaper gathers the standing grain and harvests the grain with his arm (17:5)

The tares (*Lolium temulentum*), referred to in Matt. 13, are hard to distinguish from corn since they are both grasses, and must be left until the harvest time. In chapter 41 of Isaiah we read about a threshing sledge, which was usually a board containing stones and

metal pieces which threshed the corn as it was towed along, separating the grain from the straw. Later the chaff was blown away from the threshed corn by throwing it up in the air, when the wind carried away the lighter material. Isaiah expressed it graphically:

> O my people, crushed on the threshing floor (21:10)
>
> I will make you into a threshing sledge new and sharp with many teeth, you will thresh the mountains and crush them and reduce the hills to chaff. You will winnow them, the wind will pick them up and a gale will blow them away (41:15, 16)
>
> Your enemies will become like . . . blown chaff (29:5)

The corn is bagged up for sowing for the next harvest, and the remainder is ground and kneaded with yeast (leaven):

> He kindles a fire and bakes bread (44:15)
>
> Why spend money on what is not bread, and your labour on what does not satisfy? (55:2)

WINE (*Vitis vinifera*)

The vine is often referred to as a symbol of Israel. Chapter 5 of Isaiah gives a description of the vineyard. Today, at Neot Kedumin east of Tel Aviv, there is a botanic garden of 700 acres (larger than Kew) and several acres of this is given over to grapes to illustrate this parable. If the walls of the vineyard are damaged then wild animals may get in and trample down the grapes (cf. Matthew 21 Jeremiah 2 and Psalm 80 8–11).

> My love had a vineyard on a fertile hillside. He dug it and cleared it of stones and planted it with the choicest vines. He built a watchtower in it and cut a wine press as well. But it yielded bad [sour] grapes . . . I will take away its hedge, I will break down its wall and it will be trampled. The vineyard of the Lord Almighty is the house of Israel (5:1)

When the grapes are harvested, they are trodden to crush the grapes:

> Why are your garments red like those of one treading the winepress (63:2)

But there is a danger of over-indulgence always present:

> Woe to those . . . who stay up late at night till they are inflamed

with wine. They have harps and lyres at their banquets, tambourines and flutes, but they have no respect for the Lord. (5:22–12)

Wine is very significant in the festival of Passover, and the Last Supper (Luke 22:17).

OLIVE (*olea europaea*)

The gleaning of olives by beating or shaking the tree can be seen in illustrations such as those on Greek and other vases:

Jeremiah wrote of Judah 'The Lord called you a thriving olive tree' (Jeremiah 11:16)

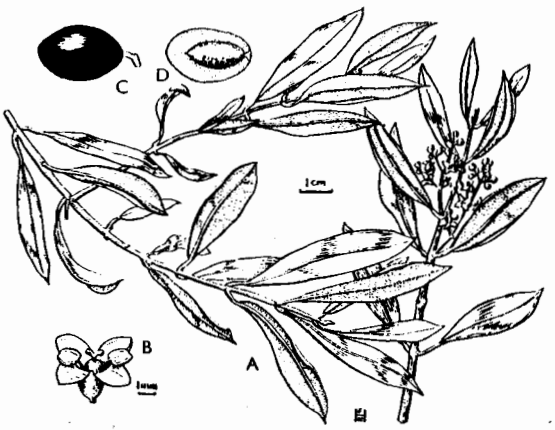
Isaiah also seems to have been familiar with olives and their harvesting:

Yet some gleanings will remain, as when an olive tree is beaten, leaving two or three olives on the topmost branches, four or five on the fruitful boughs, declared the Lord the God of Israel (17:6)

Olive oil was used in cooking, for medicinal use, and for softening the skin:

Wounds not cleansed with oil (1:6)

It is often questioned as to whether the olives in the Garden of Gethsemane are the original trees from New times. This is



OLIVE (*olea europaea*)

uncertain, but many were cut down by General Titus, and may have regrown to their present size. Other references to the olive are the garland of leaves worn by athletes in the games, and the use of the shade of the tree to suggest peace and plenty (see above).

Of the remaining seven species mentioned earlier, the following are also referred to by Isaiah:

FIG (*Ficus carica*)

> Like a fig ripe before harvest—as soon as someone sees it and takes it in his hand he swallows [or greedily eats] it (28:4)

> Do not listen to Hezekiah. This is what the king of Assyria says: Make peace with me and come out to me. Then every one of you will eat from his own vine and fig tree and drink water from his own cistern, until I come and take you to a land like your own—a land of grain and new wine, a land of bread and vineyards. (37:16, 17)

With regard to the fig's surprising medicinal use prescribed by Isaiah:

> Hezekiah became ill and was at the point of death . . . Then Isaiah said 'Prepare a poultice of figs and apply it to the boil, and he will recover' (38:21)

The fresh fig is precious, and a bad fig can be very bad (Jeremiah 24:2). In Masada, it seems that Herod stored many dried figs against the siege—probably with raisins and dates.

Later, Jesus used the fig tree in his parables: Learn a lesson from the fig tree (Mark 13.28)

SYCOMORE FIG (*Ficus sycomorus*)

This is not to be confused with the British sycamore tree (*Acer pseudoplatanus*). It is also used for timber as much as for its fruit:

> The Lord's anger against Israel 'who say with pride and arrogance of heart . . . "the sycomore figs have been felled but we will replace them with cedars" ' (9:10)

The prophet Amos was a dresser of sycomore, which involved climbing every tree, and cutting or gashing the fruit. It used to be thought that the purpose of this was to allow the insects (species of wasp) which had crawled into the sycomore fig to escape again. However it has now been shown that the wound causes ripening in

a matter of days, and short-circuits the pollinating process resulting in edible fruits without distateful dead wasps inside.

OTHER FRUITS NOT MENTIONED BY ISAIAH

The pomegranate (*Punica granatum*) has an attractive flower, and succulent fruit. As to the date (*Phoenix dactylifera*) we think of the date palm leaves cut down on Jesus' entry into Jerusalem. The almond (*Prunus dulcis*) is a harbinger of spring, and the apricot (*Prunus armeniaca*) may be the 'apples of gold' (Prov. 25:11). The sycamine tree (Luke 17:6) is probably the mulberry (*Morus nigra*). The carob tree (*ceraton siliqua*) was indigenous, and a valuable fruit, its husk referred to in the parable of the prodigal Son. It is much in demand today in health food shops instead of being fed to pigs!

TEXTILES AND FIBRES

Linen is derived from flax (*Linum usitatissimum*): the plants need irrigation to grow:

> When the Nile dries up 'Those who work with combed flax will despair, the weavers of fine linen will lose hope. The workers in cloth will be dejected. (19:9)'

> In that day the Lord will snatch away their finery . . . fine robes, and capes and linen garments (3:23)

Elsewhere in the Bible we read that linen was used in the Tabernacle (Ex. 26.1) for the priestly garments (Ex. 28:31) for the dead, such as Lazarus (John 11:44) and is symbolic of righteous deeds (Rev. 19:8)

VEGETABLES, HERBS, AND SPICES

Isaiah says nothing about the vegetables such as onions (*Allium cepa*) leeks (*A. porrum*) and garlic (*A. sativum*) that the Israelites longed for in the desert, and had grown in Egypt (Num. 11:5). An exception is the cucumber (cucumis melo) when he refers to the booths built in cucumber fields (1:8), and there is an interesting comment on herbs and sowing methods:

> Does he who ploughs for sowing, plough continually? Does he continually open and harrow the ground? When he has levelled the surface, does he not scatter dill (fitches, KJV), sow cummin,

and put wheat in rows and barley in its proper place and spelt as the border? (28:24–26).

Perfumes were placed in bottles or boxes (3:20) and were evidently luxury imports. The exotic spice trade was well developed:

'You caravans of Dedanites, who camp in the thickets of Arabia (21:13) All Sheba will come bearing gold and frankincense (60:6).

Frankincense is a resin from several species of Boswellia trees (*B. sacra*) in Arabia and the Horn of Africa, *B. papyrifera* in Ethiopia, *B. frereana* in Somalia and *B. thurifera* in India). Like the myrhh resin, obtained from Commiphora myrhha in Yemen, it exudes from cuts in the trunks. After collection and sorting, the tears of resin had to be transported by ass, camel or ship to the point of sale, by which time frankincense and myrhh had become a very valuable substance for fragrance and medicine. However, the offering of such things was not always pleasing to the Lord:

I have not . . . wearied you with demands for incense, you have not brought any fragrant calamus for me (42:23). Calamus is *Acorus calamus)*, a water plant originally from central Asia.

Whoever burns memorial incense is like one who worships an idol (66:3)

Because they burned sacrifices on the mountains, and defied me on the hill (65:7)

The sacrifices of God are a broken spirit, a broken and a contrite heart (Ps. 51:17).

As we conclude this brief survey, let us re-read the book of Isaiah, and look at the writer in a novel way. Like Jesus in His time, Isaiah used the environment with its familiar plants to drive home his parables with their spiritual content. He saw the earth defiled or polluted by its people (24:5)—a lesson in conservation and environmental awareness still not learnt in our day, which proves the relevance of scripture and its eternal message.

CORRESPONDENCE

Bishop Augustine of Hippo *The Literal Meaning of Genesis* (a translation by J.H. Taylor S.J. of 'De Genesi ad Litteram', publ. 415

A.D.) Newman Press, New York, 1982, $60.00. 352pp (incl. intro, notes and index) in 2 vols, ISBN 0–8091–0326–5, 0–8091–0327–3.

In none of the books I have read so far on evolution / old earth versus six day creation / young earth debate was any mention made of the fact that the fathers of the church might have taken up a different line from the modern fundamentalist position. One reason might be that up until 1982, this commentary by Augustine was only available in its original Latin, plus French, German, and Spanish. In form, it is a verse by verse commentary divided into twelve 'books' (corresponding roughly with our modern chapters), of which the first eleven cover the first three chapters of Genesis up until the expulsion of Adam and Eve from the Garden. The twelfth book is concerned with the vision of the third heaven seen by St Paul.

Augustine apparently had a strong interest in Genesis from at least the time of his conversion. For shortly after he became a Christian, he wrote two commentaries on it treating it as an allegory. However, in later life he decided 'to discuss Sacred Scripture according to the plain meaning of the historical facts, not according to future events which they foreshadow.' I found much in it of enormous good sense which the protagonists in the 20th century debates would do well to take to heart, as well as '... many tedious passages of speculation which are outdated and which can appeal only to an antiquarian curiosity' (quote from the translator's introduction). But Augustine himself said of this book: 'In this work there are more questions raised than answers found, and of the answers found not many have been established for certain. Those that are not certain have been proposed for further study.' Would that some modern authors with only a fraction of Augustine's learning were as modest!

One strong impression I came away with from reading it was that a very lively debate was current within and without the church in those far-off centuries. Augustine is constantly referring to the opinions, assertions and conjectures of others, and very often disagreeing with them. Rather than review it as one might a modern book, pointing out its strengths and weaknesses, I thought it would be more profitable to quote a few passages from it relevant to the fundamentalist debate in order to encourage you to read it for yourselves.

'Concerning the shape of the moon at its origin, many scholars engage in prolonged discussions. Would that they spoke as seekers rather than posed as teachers!'

'One might ask why brute beasts inflict injury on one another, for there is no sin in them for which this could be a punishment, and they cannot acquire any virtue by such a trial. The answer, of course, is

that one animal is the nourishment of another. To wish that it were otherwise would not be reasonable.'

'God does not say "Thorns and thistles shall it bring forth" but *bring forth to you*; that is, they now begin to come forth in such a way as to add to your labour, whereas formerly they came forth only as a food for other living creatures.'

'It is a laborious and difficult task for the powers of our human understanding to see clearly the meaning of the sacred writer in the matter of these six days.'

'. . . in all the days of creation there is one day, and it is not to be taken in the sense of our day, which we reckon by the course of the sun.'

'That day in the account of creation, or those days that are numbered according to its recurrence, are beyond the experience and knowledge of us mortal earthbound men.'

'. . . this sixfold or sevenfold repetition . . . took place without lapse of time. If you cannot understand it, you should leave the matter for the consideration of those who can; and since Scripture does not abandon you in your infirmity, but with a mother's love accompanies your slower steps, you will make progress. Holy Scripture, indeed, speaks in such a way as to mock proud readers with its heights, terrify the attentive with its depths, feed great souls with its truth, and nourish little ones with its sweetness.'

'Not everything has been written to tell us how time unfolded after the first creation of things and how there followed the production of the creatures which had been made in their first beginnings and completed on the sixth day. But as much has been told as was judged necessary by the Holy Spirit . . .'

Finally the last quote comes as a terrible rebuke to us all:

'Usually, even a non-Christian knows something about the earth, the heavens, and the other elements of this world, about the motion and orbit of the stars and even their size and relative positions, about the predictable eclipses of the sun and moon, the cycles of the years and the seasons, about the kinds of animals, shrubs, stones, and so forth, and this knowledge he holds to as being certain from reason and experience. Now, it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn. The shame is not so much that an ignorant individual is derided, but that people outside the household of faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we

toil, the writers of our Scripture are criticized and rejected as unlearned men. If they find a Christian mistaken in a field which they themselves know well and hear him maintaining his foolish opinions about our books, how are they going to believe those books in matters concerning the resurrection of the dead, the hope of eternal life, and the kingdom of heaven . . .?'

STEPHEN WALLEY

Dr Walley is a Research Associate at the Cavendish Laboratory, Cambridge

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Editorial address:
A B Robins BSc PhD
185 Wickham Road
Croydon
Surrey CR0 8TF

Administration address:
Brian H T Weller
Latchett Hall
Latchett Road
London E18 1DL
081-505 5224

ISSN 0955-2790