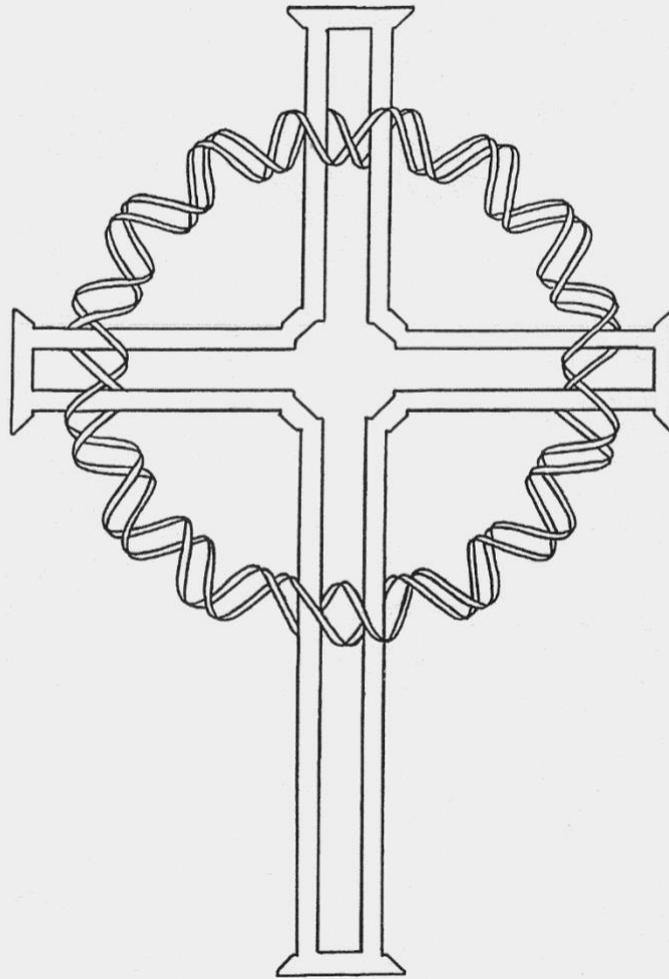


**SOCIETY OF
ORDAINED SCIENTISTS**



BULLETIN

AUTUMN 2021

Post-Gathering

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From: The Editor

Dear Friends

We held our first digital gathering in July this year and were blessed by a variety of inputs ranging from Worship to Meditations and small Group discussions. We loved Marilyn's Reflective Images and she has written a short article for us. Pan invited us to consider the universe in her meditation and then led us in discussion. She has contributed a Reflection for this publication. Roger spoke about Ecosystems as a God-given life support system and we have his presentation within the Bulletin.

Some of our members have been busy with the pen during lockdown and +David Atkinson has contributed two new books - the first on the Apocalypse and the second on the Psalms, while Rodney has written a tome on Ramified Natural Theology in Science and Religion.

Rodney has contributed an Obituary for John Polkinghorne, a member sorely missed.

At the request of some who prefer the hard copy, I have enlarged the print size. Please let me know if this helps. I do hope you enjoy being reminded of the Gathering, and that you may be moved to contribute to the next issue!

Maureen Palmer

From The Warden

Hopefully, by the time you read this, we are beginning to emerge from many of the restrictions imposed as a consequence of the COVID 19 pandemic. No doubt there are still difficult times to come and challenging decisions to be made as we evaluate the levels of risk as individuals, as communities and as nations. As a Society, despite our relatively short existence, we have already experienced several transformations as we encountered changes in technology, in society in general, and we can all be confident that we have more changes to come in our future as the human and physical worlds continue to change.

In the course of this last 15 months, we have been obliged to follow Government guidance and legislation in in order to protect ourselves and our neighbours. As elected officers of the Society within these constraints we have had much reason to closely examine both the Rules of our Constitution and the precedents reported in our Society's history 'We Are the Data', to try and understand what we are obliged to do, permitted to do, exceptionally allowed to do, coupled with what has actually happened in the past. In such new and unforeseen territory, we have had to make decisions based on the unwritten understandings of the traditions and aspirations of our Society.

We discovered in this process that our written Constitution did not entirely reflect our modern world, technology, or lifestyles. Some elements, over the years, have been adjusted here and there, some things have just developed beyond the original anticipation, and, rather more embarrassingly, some minuted changes to the Constitution have not been updated within the Constitution. Now, as a Society with a global membership, with restrictions on travel for reasons of health care, climate change, not to mention the difficulties of travel insurance, and yet with blossoming communications systems and facilities even Star Trek did not foresee, our Constitution is need of an overhaul to reflect the needs of a second generation of Ordained Scientists.

Over this next year or two Colin, Jennifer and I, along with other members of the Committee will be reviewing the Constitution with a view to amending and updating it to, not only reflect the present circumstances, but also to provide a degree of future proofing for at least another generation. We will endeavour to

maintain all the core values of our Society, and indeed, look to find new and different ways of expressing them. One key principle is that we are a Society of equals which means that everyone has a voice which should be heard. You may take this, even at this stage, as invitation to share with Colin or I, or at Chapter meetings, any hopes, concerns, or wishes that you have for inclusion, retention or removal.

Once again, the Warden's letter seems to be a promise of interesting and uncertain times ahead. However, there is one thing we can be sure of: each of us should be confident that we are prayed for each day, in general or particular, as a Society and as individuals.

With love and prayers for you all, and next year in Launde Abbey,

Stig

2021 Digital Global Annual Gathering

Warden's Address at Service of Reunion and Welcome

As I welcome you all here today, possibly already tomorrow in some cases, I am struck by the flickering models of reality. Whether we seek a fulcrum to move the earth, stand on the shoulders of giants to see further, attempt to open Schrodinger's box, reality and what we experience does depend upon our context and the tools we use.

As I look deeply into your eyes, that is to say, straight to camera, I can actually see 25 of you, well, thumbnail images of you. A click of my mouse and there is a different 25 of you, at a range of proximities, in shade or light or silhouette. And some who prefer not to share video. Is this reality or is it not? Especially with the backgrounds some of you have opted to display. Some of you appear to on board a space station.

There are those who believe, who argue, that we are merely part of a vast simulation, running on a vast computer, with technology vastly more advanced than we can possibly imagine. There are even researchers trying to spot granularities within the simulation – though if I can believe in such a near omniscient programmer, I can't believe that there isn't a toggle somewhere that says 'See evidence, recognise evidence, yes/no?' On the other hand, perhaps the evidence for a simulation and such a toggle is to be seen in some of the election results of recent years.

The baseline reality, for me at least, is that I am sitting in my chair in my house in South Warwickshire, England, on a very wet Tuesday afternoon, looking at my computer screen. But that baseline reality is too reductive to reflect my conscious reality. Tiny flickering images or not, I see people I know and love, people I pray for regularly (but never routinely) and with whom I share a common purpose, and a common Aim. We gather as individuals, as friends, and as a Society, in one another's presence, if not physical proximity. But more than that too. We are not just present now. We are present in time. I am very conscious as Warden addressing you, that in my mind's eye I can see and hear previous Wardens, Keith, Richard, Garth and Maureen addressing us in the chapels at Launde, Scargill and Sneaton Castle. There is continuity in our history too, because still in my mind's eye, there are Wardens earlier than my membership, Arthur as our first Warden and John his successor. We are the data indeed, but each datum, each pixel contributes uniquely to building a picture much greater than itself.

We may be the Data. But as Kant might insist, we are much more than that. We are also the instruments interpreting the data. We each have our own gloss of hopes and aspirations, fears and anxieties, culture and context of our lived experience and vicarious imaginings. We overlay our interactions with the world with knowledge gleaned from books, television and YouTube, and also narratives from family and friends. We move seamlessly from one universe, world, land to a different country, registering the transition only with conscious effort.

At another meeting I attended recently, still sitting in my office chair, a lady thanked Mike Kirby, one of our members, for his preaching, saying she had not been able to believe in God because science could not prove that God existed, but Mike had been able to help her with that. What a forlorn reality that must be, to live in a world which requires scientific validation before existence is admitted. Putting aside the thought that science is much better at excluding possibilities than identifying a sole solution, putting aside the capacity of science to work very successfully with irrational concepts which clearly cannot exist, putting aside the thought that great leaps in scientific understanding frequently rest, not in its infallibility, but rather those moments when we say with hindsight, 'Wow, we really got that wrong', putting all that aside, what is the difficulty with trusting all those intangible, ineffable, and indefinable experiences that are individual and personal but no less real.

I can feel the warmth of the sun on my cheek, I can feel the warmth in my granddaughter's, 'Hi Granddad' even though she is 7,000 miles away, I can feel the warmth of God's love for me and all creation, so why should I reject any of that, certainly at least as a working hypothesis. This my reality. This my truth. One can only speak to one's own experience but conversations with many of you over the years suggest that I am not alone.

God said to his people many times, 'I am with you'. Jesus said I am in you as you are in me'. Together, today, we are the body of Christ, with him and within him. We may be scattered around the globe, some of us may not have the option of daylight to warm cheeks - or any other part, but in this moment, and for the next three days, and hopefully for the entirety of our lives, we are one body, committed to exploring our relationship with God and exploring our understanding of the universe created for us.

'Unreal Stig, man, what planet are you living on?' Well, for us, it's this one, and we shall rejoice and be glad in it.

Welcome, and may God's love and peace permeate your lived experience, in this reality and in the next, now and always.

Sermon at our Closing Service from +David, The Visitor.

Yesterday afternoon, in a slot that sadly overlapped with the start of the second of our sessions that day, I spoke in the UK House of Lords, as part of the legislative process which will lead to a new Environment Act being placed on the statute books. The particular debate I was taking part in, was concerned with plans to require a minimum 10% net gain in biodiversity from planning developments. I had two minutes to link from the theology of creation through examples of how churches are practically promoting biodiversity, not least in churchyards, to end by urging members to amend the Bill to ensure commitments to net gain are adequately funded and not time limited. There's little point agreeing a thirty-year biodiversity plan with a landowner, if they can then plough it up and destroy it in year 31.

In both preparing and delivering my speech, I felt the strength of this Society behind me. If this is true for me, who am simply your Visitor, how much more can it be true for the members.

The worship sessions we have shared over these last few days play a vital part in assuring me that God is with us in our care for creation. The Meditations we have heard, have opened my mind even further to see the wonders of life on Earth and strengthened my resolve. When Pan spoke of the catastrophic events that have occurred in the history of this planet, it reminded me that life is both extraordinarily precarious and amazingly resilient. To live on a planet whose age is measured in billions of years, and bears the scars of those ages, is a far more miraculous and awe-inspiring truth than the 6025 or so years that Bishop Graham Usher reminded us his late namesake's calculations would have it now be. I was sorry to miss most of Roger's presentation last night, which I know from colleagues was equally inspirational. And indeed, to be detained, literally

at Her Majesty's Pleasure this morning, when conversation continued. Jared's meditation this afternoon helped me get more of a sense of how important is the work that my epigeneticist daughter and her research colleagues at Exeter University do.

Our plenaries and breakout groups have allowed us to explore the ideas presented to us in greater depth. For me at least, it is that close conversation with a handful of colleagues and friends which turns data into understanding, allows me to test my views in a safe and supportive place. whilst, in common with most bishops, I do a lot of talking, I also get talked at quite a lot. And no matter how well presented the arguments, I don't find I've properly processed them until I've taken part in some sort of conversation that tests my understanding.

Like many of us, I've relished the fact that holding our Gathering on line has allowed an ease of participation from members in many time zones. We have saved on costs of time and travel. But we have missed that particular dimension of human engagement that comes from meeting face to face. Some months ago, I compounded the quip, "God so loved the world that he didn't send a Zoom invitation". The doctrine of the Incarnation places on Christians, even more than anyone else, a priority to be physically present with one another. To attend to each other at a depth not possible from behind a screen. We above all should be hugely grateful for the science and technology that makes virtual conferencing on this scale available to an extent that less than a decade ago would have been hard to imagine. Like many other bodies, we now need to think hard about how we can blend virtual and physical gatherings together in ways that maximise participation, especially for a community as widely dispersed as SOSc. But I very much hope many of us are able to gather physically next year, in the USA in January and the UK in summer.

Meanwhile, in a few minutes time, our 2021 Gathering will be over, we will press the Leave button on our screens one final time, and return to the demands of our regular labours and routines. Yet we will do so carrying the Society and its members invisibly with us. The events of this week will colour our engagements over the time to come.

For my part, when I go into a debating chamber, especially one as demanding as parliament, and I intend to speak to a further series of amendments on forestry on Monday, I sense myself clothed with the support of this Society. I know that my concerns for faith and science are not some isolated peculiarity of my own. For me that makes all the difference. Whatever your own equivalent context

may be, as you journey back and forward exploring both science and faith, I pray that it may do so for you. May God go with you.

ECOSYSTEMS: OUR GOD-GIVEN LIFE SUPPORT SYSTEMS¹

Abstract

God created the wherewithal for all that ever was, is and can be - including the evolution of Earth's ecosystems, which are our life support systems. An ecosystem is a working assemblage of life forms, in shared and bounded surroundings. Biodiversity is the whole catalogue of life at three interconnected levels - genes, species and ecosystems. A typical ecosystem can be depicted as a pyramid of functional groups based on their trophic levels with primary producers at the base, ascending floors of detritivores, herbivores, omnivores and carnivores, top predators at the apex, and decomposers all around for recycling wastes. Ecosystems come in many shapes and sizes and are nested like Russian dolls with porous boundaries; e.g., tree, forest, catchment. Earth's biodiversity is astonishing with over 44,000 algal species and 34,600 finfish described thus far and indications of about 200,000 marine viruses. Ecosystems have shifting baselines and govern those who strive to govern them. Ecosystem abuse can lead to ecosystem collapse. The main drivers are human overpopulation and overexploitation of natural resources, often with unequal sharing. Ecosystem care and restoration are essential tasks for Christians and non-Christians. For most Christians, they are seen as an obligation to God and to all humanity as neighbours, and as an act of worship. Some, however, see paying attention to nature as diminishing the essential focus on Christ and the Gospel. Moreover, a Christian portrayal of all creation as fundamentally fallen, broken and groaning can discourage ecosystem care and restoration. This paper reviews ecosystem realities and issues and concludes with some suggestions for action.

Introduction: Creation, Ecosystems and Biodiversity

God created "*The heaven and the earth*" (Gen. 1:1), in other words, "*All things...*" (John 1:3). "*The Lord by wisdom hath founded the earth; by understanding hath he established the heavens*" (Prov. 3:19). God created the wherewithal for all that ever was, is and can be, including all the ingredients, evolutionary mechanisms and pathways.

The Universe around us has at least two trillion galaxies, among which our galaxy of 100 to 400 billion stars has one star, our Sun, energizing "*a biosphere, a*

¹ This paper was prepared to accompany the author's presentation as a meditation at the online Annual Gathering of the Society of Ordained Scientists on July 7, 2021.

complex web of life” on one of its planets (Folke *et al.*, 2021; citing Conselice *et al.*, 2016). On Earth and perhaps elsewhere, God’s creativity has enabled the evolution of biomes - biological surface cover such as coral reefs, rainforests and savannahs. A biome includes multiple ecosystems.

The Convention on Biological Diversity (CBD) defines an ecosystem as: “*a dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functional unit*” (CBD, 1994). In simpler terms, we can say: “*No living thing is an island. Each living thing depends on ecosystems, which are its life support systems; working assemblages of life forms, in shared and bounded surroundings.*”

In the public sphere, biodiversity is mentioned more than ecosystems and is usually taken as meaning ‘species richness’. The CBD defined biological diversity (i.e., biodiversity) much more broadly as: “*the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species **and of ecosystems** (present author’s emphasis)*” (CBD, 1994). In simpler terms, we can say that biodiversity is: “*The whole of life, interconnected at three levels - genes, species, and ecosystems.*” In short, ecosystems are part of biodiversity.

In its Decision V/6, the CBD explained that its ecosystem definition “*does not specify any particular spatial unit or scale*”; an ecosystem “*could, for example, be a grain of soil, a pond, a forest, a biome or the entire biosphere*”, and adopted an “*ecosystem approach... a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.*”

In addition to covering a wide range of scales, ecosystems are nested, like Russian dolls with porous boundaries. Examples include a tree, the forest or field around it, and the surrounding catchment area, and an island containing, *inter alia*, hill, forest, wetland, river and coastal ecosystems, its surrounding sea, and the wide ocean.

The rock-dwelling sulphur bacterium *Desulforudis audaxviator*, which is found deep in gold mines, is a rare example of a single species ecosystem, and is arguably the world’s “*loneliest organism*”, unchanged since the Jurassic (Anon, 2021). Most ecosystems have multiple species in functional groups and can be depicted as pyramids, with primary producers (microorganisms and plants) at the base, ascending levels of detritivores, herbivores, omnivores and carnivores of increasing size, top predators at the apex, and decomposers (bacteria and

fungi) all around, mopping up and recycling wastes. If we disturb any level too heavily, we change the whole ecosystem and threaten its life support services for us and other biota.

Detritus and its biota are major sources of food and energy in aquatic ecosystems. Detrital microorganisms process much of the wastes and pollutants that we pour into seas, as our free and taken-for-granted waste treatment lagoons. Detritus therefore figures strongly in aquatic ecosystem models built using Ecopath with Ecosim (EwE) (www.ecopath.org), which is based on trophic/energy levels and flows. A recent Irish Sea study (Bentley *et al.*, 2019) combined EwE modelling with fishers' knowledge.

Astonishing Diversity

Earth's biodiversity is astonishing. At the species level and excluding microorganisms, the beetles (Coleoptera) still top the charts with over 400,000 named species and many more to come - revealing the Creator's apparent "*inordinate fondness for beetles*"; a remark attributed to J.B.S. Haldane, but possibly from Darwin. About 34,600 species of finfish have been described thus far (www.fishbase.org) and several hundred new ones are added annually. There are about 44,000 valid algal species out of an estimated total of 72,500 (Guiry, 2012; www.algaebase.org).

Metagenomic studies indicate about 200,000 oceanic virus species thus far. A litre of seawater can contain billions of viruses. Marine viruses kill and enable a rapid (ca. weekly) turnover of huge biomasses of the bacterioplankton and phytoplankton that fuel marine food chains, produce oxygen and process wastes, including much of ours. Marine viruses have been called "*scythes of the seas*", engaged with phytoplankton in "*a dance of death*" (Anon, 2021b).

Ecosystem Change

Ecosystems are always changing and governing those who strive to govern them. For example, if you overfish in your aquatic ecosystem, you will eventually destroy your fishery. Pauly (1995) famously coined the phrase "*shifting baselines*" for ecosystem change. Many ecosystem baselines are now shifting rapidly towards degradation and loss of their services to us. This can go all the way to ecosystem collapse as, for example, when rivers, lakes and marine basins are turned into dead anoxic zones by pollution. Pathogens and pests can run riot through new introductions and/or juxtapositions of alien and native species; for example, potato blight, plague, and Covid-19.

Diamond (2005) described ecosystem collapse through societal choice, as in the deforestation of Easter Island. Diamond speculated thus: "*What did the*

Easter Islander who cut down the last palm tree say...Like modern loggers did he shout 'Jobs not trees!?' Or 'Technology will solve our problems...we'll find a substitute for wood'? Or we don't have proof that there aren't palms somewhere else on Easter, we need more research, your proposed ban on logging is premature and driven by fear-mongering'?" Fisheries collapse when similar attitudes rule (e.g., Pauly and Maclean, 2003; Roberts, 2007).

Climate change, in terms of extreme climatic events and inexorable global warming, will continue to shift ecosystem baselines far into the future and will make parts of the Earth increasingly uninhabitable (Wallace-Wells, 2019). Folke *et al.* (2021) summarized our situation as follows: *"Humanity is embedded within, intertwined with, and dependent upon the living biosphere. Humanity has become a global force shaping the operation and future of the biosphere and the broader Earth system. Climate change and loss of biodiversity are symptoms of the situation. The accelerating expansion of human activities has eroded biosphere and Earth system resilience and is now challenging human wellbeing, prosperity, and possibly even the persistence of societies and civilizations"*.

James Lovelock described the whole Earth is a self-regulating system, *"Gaia"*, keeping itself fit for life. This begs the question 'Fit for what life?' We are making Earth increasingly unfit for ourselves and many other life forms and there are limits to how far this can go before ecosystem collapse approaches a global state. Rockström *et al.* (2009) proposed nine *"planetary boundaries"*, representing *"specific thresholds"* that together would set a *"safe operating space for humanity"*: *"climate change; ocean acidification; stratospheric ozone; global nitrogen and phosphorus cycles; atmospheric aerosol loading; freshwater use; land-use change; biodiversity loss* (present author's emphasis); and chemical pollution." Rockström's (2021) video about planetary boundaries and the urgent need to change our behaviour is available through Netflix.

Bierman and Kim (2020) concluded that these proposed planetary boundaries have stimulated awareness and further research, but have *"limitations in terms of political impact"* and *"lack support from the Global South."* It's easy to understand why the 'Global South' does not like to be told what to do by the richer 'North'. Lessening inequalities is essential for effective care and restoration of ecosystems.

Mace *et al.* (2014) found problems with the proposed planetary boundary for biodiversity, including its use of species extinction rate as a metric, vertebrate-biased data, and insensitivity to changes in abundance and distribution. They proposed a *"biome integrity"* boundary, based on maintaining

“the functioning of the Earth’s major biomes (rainforest, savannah, coral reefs etc.)” and suggested that this *“would support Earth ecosystem function in a Holocene-like state largely by maintaining the structure and functional diversity of ecosystems* (present author’s emphasis).” They proposed three metrics: *“phylogenetic diversity representing the genetic library of life; functional-diversity; and biome condition and extent.”*

While we can learn much from these big picture models, the actions that match human needs with ecosystem care are best approached at the lowest appropriate scales, which is exactly what the CBD advised in its set of 12 principles for an Ecosystem Approach (CBD Decision V/6). Ecosystem care will always work best through cooperation among stakeholders, with equitable sharing. In this very unequal world, however, there are losers and winners among and within changing ecosystems and those who share and depend on them. This can apply at any scale.

Ecosystem Care and Restoration: Christian Attitudes and Obligations

Most Christians see ecosystem care and restoration as an obligation to God and to all humanity as neighbours, and as an act of worship. John Stott (2000) put this beautifully in his Foreword to *“The Care of Creation”* (Berry, 2000), noting that the twin assertions, *“the earth is the Lord’s”* (Ps. 24:1) and *“the earth he has given to man”* (Ps. 115:16), are complementary, and that *“God intends...our care of the creation to reflect our love for the Creator.”*

In his 2nd Encyclical *“Laudato si”*, Pope Francis (2015) stated: *“...we must forcefully reject the notion that our being created in God’s image and given dominion over the earth justifies absolute domination over other creatures...Each community can take from the bounty of the earth whatever it needs for subsistence, but it also has the duty to protect the earth and to ensure its fruitfulness for coming generations.”*

The care and restoration of ecosystems require that the human populations, whose lives they support, do not exceed their carrying capacities. Might not God want as many human souls on Earth as possible? No one knows, but this seems doubtful given His reported command to Noah and sons: *“Be fruitful and multiply and **replenish** the earth”* (Gen. 9:1). Alter (2019) prefers *“fill the earth”* (present author’s emphases) as a translation from the Hebrew. An overpopulated Earth will become increasingly depleted and less replenishable.

The Earth is already overfull and cannot provide for the reasonable needs, rights and aspirations of everyone in its present population, let alone for the 11-12 billion anticipated by this century’s end. Wallace-Wells (2019) cited UN data anticipating 200 million climate refugees by 2050 and another estimate that:

“Fifteen percent of all human experiences throughout history...belongs to people alive right now, each walking the earth with carbon footprints.”

Unfortunately, there are some negative attitudes among Christians concerning ecosystem care and restoration. Some see paying attention to nature as diminishing an essential focus on Christ and the Gospel. John Rutter’s lovely “*A Gaelic Blessing*” was once vetoed by a Pastor at the present author’s former church. Its lyrics call for “*deep peace*” from aspects of nature - “*the running wave...the flowing air.*” These were seen as too animistic, despite the beautiful concluding wish for “*Deep peace of Christ, the Light of the world to you.*”

Bishop James Jones touched on this issue in his Foreword to “*Creation in Crisis*” (White, 2009): “...we (Christians) *should not overspiritualize the beatitude which holds before us the promise of inheriting the earth. Christians should be grounded and earthed, treading the planet with humility and praying, as Jesus taught us, for the earthing of heaven. Shortly after my own conversion to this biblical understanding of the kingdom of God, a friend asked...if I had gone off the boil spiritually...others were beginning to wonder. The truth is that these discoveries of the earthly dimensions of God’s kingdom have enlarged my vision of Jesus.*”

That same volume includes the 1994 “*Evangelical Declaration on the Care of Creation*”, which begins thus: “*As followers of Jesus Christ, committed to the full authority of the Scriptures...we believe that **biblical faith is essential to the solution of our ecological problems*** (present author’s emphasis).” The “*solution*” will depend upon Christians *and* non-Christians convincing each other to work together. The latter will not recognize “*biblical faith*” as “*essential*” and some will be turned off by that message. All will be driven in part by what E.O. Wilson (1984) called our common “*biophilia*”, the “*human bond with other species*”.

What then are Christians to make of the command “*Love not the world, neither the things that are in the world*” (I John 2:15)? The present author once listed his worldly loves as including: “*Manx glens, Welsh mountains, Shropshire hills, coral reefs, music, fishing, Labradors and good guitars...*” (Pullin, 2014). But there is no conflict here. Love nature, the arts and indeed science, all in the *philia* mode, and avoid idolizing anything worldly. Love God and love “*thy neighbour as thyself*” (Luke 10:27) in the *agape* mode. Loving one’s neighbour implies helping to care for and to restore ecosystems that provide her/his life support.

What to Do? Some Suggestions

The world is pursuing the UN's Agenda 2030 and its 17 Sustainable Development Goals in the new *"Decade for Ecosystem Restoration, 2021-2030"* (UNGASS, 2019). So, what to do? We need a new economics. We must reject the ongoing model of maximizing GDP-based economic growth and discounting the future value of natural resources. This worldview is destroying the ecosystems that are our life support systems. We must support instead sustainable use and conservation of the Earth's limited resources. Action or inaction at the community, household and personal levels will determine much of what is achieved.

Here are some specific suggestions, which bear much repetition.

1. **Pray** - that God will guide everyone towards ecosystem care and restoration
2. **Change** - live more lightly; reduce energy use; recycle more wastes; eat more plant-based foods
3. **Shout!** - for ecosystem care and restoration
4. **Educate** – about ecosystems, at all levels
5. **Foster Biophilia** - especially in children

"May we raise children who love the unloved things, the dandelion, the worms & spiderlings..." (Nicolette Sowder; www.wilderchild.com).

Darwin's undoubted biophilia helped to spark this children's song (Pullin, 2017). Its message is applicable to all abused ecosystems.

*"What did Darwin see...when he went to sea?
Flying fish skimming by, and a bird that couldn't fly
Lots of life, living free, being all that life could be
That's what Darwin loved to see when he went to sea"*

*Now what do we see...when we go to sea?
Plastic stuff swirling by, life that meets it soon must die
Precious life in the sea needs our help again to be
Just like Darwin loved to see when he went to sea"*

Roger Pullin

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REFLECTION FROM PAN CONRAD

I live in a mostly deciduous forest, so you might imagine that at this time of year (autumn in mid-Atlantic North America), it is raining acorns, large nut pods and leaves on my home and on my head when I walk with the dog. This is a yearly experience, and I very much look forward to it, as I do putting the garden “to bed” for a restorative rest over the winter.

The celestial cycles are a comfort because of their reliability, so it can be disturbing when they seem to change— for example, if one of the seasons arrives much later or much earlier than it typically does for given coordinates on this planet. As Christians, we are additionally tied to the seasons whether or not they are geographically distinct. The liturgical seasons and the celestial seasons become tightly coupled, and whatever changes become evident in the Earth’s seasonal variations are stabilized (at least for me) by the relationship between the celestial and the liturgical.

Every now and again, rapid and large-scale changes announce themselves without ceremony, and they seem to upend everything. Perhaps they are of a scale that we would regard as catastrophic, and it is worth thinking about how both the Earth system and Christendom (also a system) respond to cataclysmic upheaval and then resume, though changed.

Our planet has undergone catastrophic change more than once in its 4.54 billion years, yet here we are. It has been formed and reformed. Species of life have come and gone as they environment has changed, yet life has persisted in one form or another for billions of years. We do not yet know if that has been true for any other planet in our solar system, but what we do know is that that the Earth will continue to evolve and change—it is a resilient planet.

And we know the Church will continue to evolve and change as well as we strive to become the inclusive Body of Christ that Paul spoke of in Galatians (3:28) *There is neither Jew nor Greek, slave nor free, male nor female, for you are all one in Christ Jesus*. Our history has been a bumpy one in which our human failings have often created barriers that caused people to feel unworthy or

separated from God when our commission has been the opposite-- to reconcile people with God. Yet we are still here, with whatever catastrophes the institution may have faced, the Body of Christ has endured.

As we humans make decisions that cause substantial changes to the habitable environments in which we live, we must ask ourselves whether we have considered the possibility that we may cause our own extinction. We have accelerated the pace at which despoil our habitable environments by clear-cutting forests, polluting the air and the waters, and knowingly continuing to engage in industries that are indisputably warming the planet at a global level. All this in the name of protecting commerce. Scientists concede that we have passed the point at which we could have prevented climate change, and now it cannot be stopped. However, we can moderate the effects to some degree and develop strategies to adapt to the best of our abilities.

God promised Noah never to destroy everything again after the flood, but there is no record of a promise from God to intervene to stop us from causing our own extinction. If we have covenanted to respect all people and love our neighbours as ourselves, honouring the Summary of the Law, and repenting when we fail and trying again may be the best chance we Christians have to move toward a strategy to preserve the Earth's habitability.

We are made in the Image of God and if that image has even a small reflection of the Creator's clever imagination, then I have confidence that we can develop approaches to live and thrive even within environments that are less optimal for human habitability than we have become accustomed to expect.

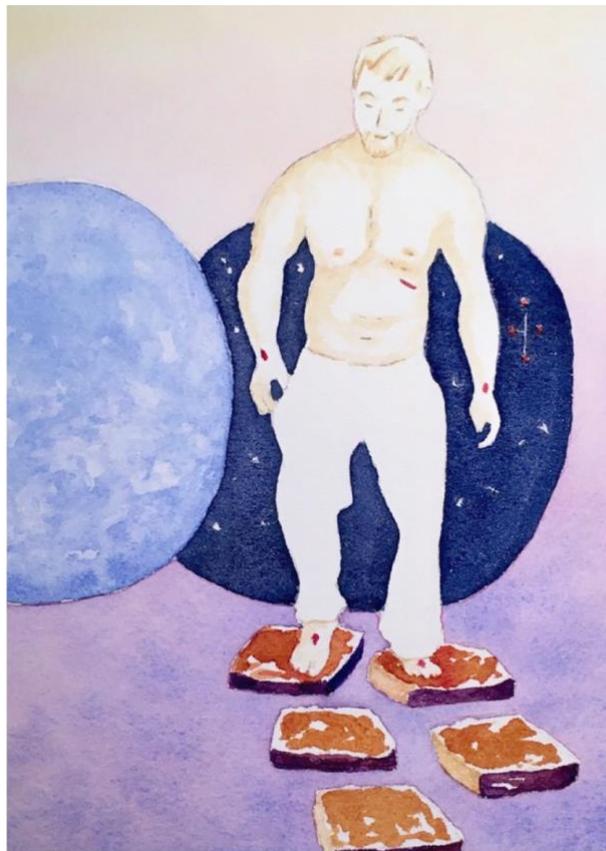
We are resilient because we are people of the resurrection. We have been fashioned from dust, the very same stardust from which this resilient planet was made, and we have everything we need to live and to live well. Resurrection is in our DNA, and God is the ultimate and inexhaustive source of energy that creates and does not destroy in the process. As ordained scientists, we have been given the tools and the love to make a difference, but to use the tools is still our choice. I have made my choice, and it is a commitment to be a resurrection person, as both a scientist and as a Christian. We all have the opportunity to do so, and I believe that in making such a choice, we will see that the stone has been rolled away.

FROM PULPIT TO PAINTBRUSH IN A TIME OF PANDEMIC

Here in BC, Canada, we spent Easter in the middle of a three-week circuit-breaker attempting to slow the escalating COVID cases as the Third Wave swamped efforts to halt its deadly progress. After tuning into the annual on-line Chrism Mass, I emailed our bishop saying that fulfilling our vows posed a dilemma, especially for most retired and assisting clergy who have had no access to an altar or pulpit. Have you also faced that problem during this past year? Feeling compelled to mark the events of Holy Week and Easter, I picked up my brushes to share the Gospel through quick water colours that kept pace with the events. I usually paint landscapes, so knew it would be a challenge when I had no access to models in our bubble except for my closest family and neighbours. That really brought the story home because my husband played several roles—as we all do in trying to live faithfully and fully into our vocation of being Christ in the world today. If you scroll through the pencil sketch and six paintings that Colin kindly distributed, not only will you therefore recognize some faces recurring in contemporary clothes, but other signs of the times like the Zoomed Last Supper, or modern symbols including: a watch that signalled Jesus' hour, cameras at the Crucifixion, and the 'Gardener' carrying living water in a plastic container. The Crucifixion (below) was left as a pencil sketch and under-exposed in the version I circulated to capture the darkness that descended, but as for the onlookers—what do they tell you?

The mystery of the Resurrection reveals my interpretation of the Cosmic Christ, depicting the empty tomb and stone that was rolled away in terms of space and sky—or is it some other world? With apologies to the astronomers in our Society, did you notice a celestial cross from the night sky above Gethsemane echoed in the eternity from which the Risen Christ steps towards us? The final image conflates three stories in which the Risen Christ appeared to the disciples who had imposed a lockdown on themselves, remaining in a secure room for their own safety—hence the closed blind. Sharing Christ's view of various reactions captures the belief that we too have received the Holy Spirit and been commissioned to hold out our hands by being Christ for others. The hidden figure recording the event on a tablet is ambiguous—are those a woman's hands? I leave you to figure out the meaning of the canned fish and sliced bread, but the picture hanging on the far wall captures fishers casting their net—or are they hauling it in? You must decide. Having been forced to find alternative ways of sharing the Gospel and reaching people proved a profound re-awakening for me, so I want to encourage others to do the same by being themselves in ways they don't normally think about—like an Ordained Scientist picking up a paintbrush. It would be wonderful to hear how others have experienced the isolation, perhaps using the time to think afresh about our vocations and experiment with gifts that may have been dormant.

For anyone who is interested, I prepared a separate invitation to collaborate in a project to bring together faith, science and the arts—in whatever fields you have expertise or an active interest. Hopefully, it will bear fruit as on-line presentations or workshops to ‘bring it all together’ rather than compartmentalize these gifts. I dream that it will help folk address our realities and future not in terms of issues that divide, but as topics to engage lively discussion that opens up possibilities rather than close down important views and voices of folk who feel stigmatized or defensive by the way important subjects are being handled by the media which forge opinions.





God Bless you and keep you safe,

Marilyn Hames

OBITRARY

The Revd Canon Dr John Polkinghorne KBE FRS (16 October 1930 – 9 March 2021)

John Polkinghorne was a pioneer of the modern dialogue between science and faith. He was a highly distinguished mathematical physicist who went on to ordination in the Church of England and to write numerous books bringing his science and his strong Christian faith together. He will be well-known to many of us in the Society of Ordained Scientists, having been a founder member and present at the Foundation Meeting cum first Annual Gathering in 1987. Particularly memorable was his series of reflections at the Launde Abbey Gathering in 2009. I am sure we shall all remember him as a convivial companion, notwithstanding his eminence as one of the most significant contributors to the field of science and religion.

John was born in Weston-super-Mare and lived in Somerset until the family moved to Ely in 1945, where his father was to be Head Postmaster. He then went to the Perse School, Cambridge. This was in the days of the direct grant scheme, which enabled the school to charge only modest fees, and John enjoyed the academic stimulation which this education brought. In later life he served as a governor of the school.

From the Perse he won a Major Scholarship to Trinity College, Cambridge, where he read mathematics. Then, as now, in the Mathematical Tripos one could specialise in applied mathematics and theoretical physics and this was John's chosen path. He got a first, then a PhD (supervised by Abdus Salam), and then a Fellowship at Trinity.

John was a lecturer in Edinburgh for two years before returning to Cambridge, being made Professor of Mathematical Physics in the Department of Applied Mathematics and Theoretical Physics in 1968. His research as a theoretical physicist was in quantum theory, the theory of the ultra-small which exhibits highly non-intuitive behaviour. Specifically he researched the way fundamental particles scatter in high energy collisions, thus making a contribution to the quark theory of matter. His work earned him the highly prestigious honour of being elected a Fellow of the Royal Society. In his autobiography this humble man relates how he struggled with the idea of wanting this honour and is honest in telling us both that he did want it and that it was a great source of satisfaction when this desire was achieved. He made a wider impact by writing popular books on quantum theory.

John felt that a mathematician or theoretical physicist's best work is done young, and coming up to age 47 this feeling coincided with beginning to discern a call to ordination. Two years later, in 1979, he went to Westcott House, Cambridge, to train. Following Westcott he became a curate in Cambridge and Bristol, and then Vicar of Blean near Canterbury.

It was inevitable that John would be called back to academia and so in 1986 he was, first as Dean of Trinity Hall, Cambridge, and then as President of Queens' College, Cambridge, a position he held from 1989 until his retirement in 1996. In retirement he continued to preach and celebrate the Eucharist at his local church in Cambridge, and of course his writing and wider speaking ministry continued to flourish for many years.

John served on many national committees during his long career, including the Science Research Council, the Nuclear Physics Board, the Medical Ethics Committee of the BMA, the Human Genetics Advisory Commission, the Committee on the Use of Foetal Material, and the Doctrine Commission of the Church of England. He was appointed KBE in 1997.

In his extensive speaking and writing John expounded a number of key themes in what he described as the 'cousinly relationship' between science and faith. Thus science tells us how things happen and theology tells us about purpose and meaning, and both are needed for a full account of 'the way the world is'. Moreover, John saw a role for a modest 'natural theology'. In particular, the orderly structure of the cosmos investigated by science is best explained by a divine mind behind the universe, as is the 'unreasonable effectiveness of mathematics in the natural sciences' (Eugene Wigner). Likewise divine creation provides a more comprehensive explanation of the universe's fine-tuning than a multiverse, a vast collection of unobservable universes in which multiple possibilities are realised. John was also keen to show that God's action in the world and our human free actions are not precluded by scientific laws. For this he appealed to quantum theory which is indeterministic and, more especially, chaos theory which shows inherent unpredictability.

John saw both science and the Christian faith as 'motivated belief'. The philosophical position of 'critical realism' precludes certainty in both science and religion. However, we have sufficient reasons to believe in the truth of Christian claims, most especially the resurrection of Jesus, so as to commit ourselves to Christ, just as we have sufficient reasons to believe in the truth of scientific claims and commit ourselves to the scientific quest. The truth of the resurrection fed into John's writing on what theology and science say about the ultimate fate of the universe. He also saw the doctrine of the Trinity as consonant with the entangled world of quantum theory.

John was happily married to Ruth, whom he met when both were members of the Cambridge Inter-Collegiate Christian Union and reading mathematics, for 51 years until her death in 2006, and he is survived by two sons and a daughter. Ruth's death occurred in the week leading up to the first course run by the newly formed Faraday Institute for Science and Religion, and John bravely insisted on still giving the talk he had committed to – indeed he thought it would help the grieving process to be occupied in that way.

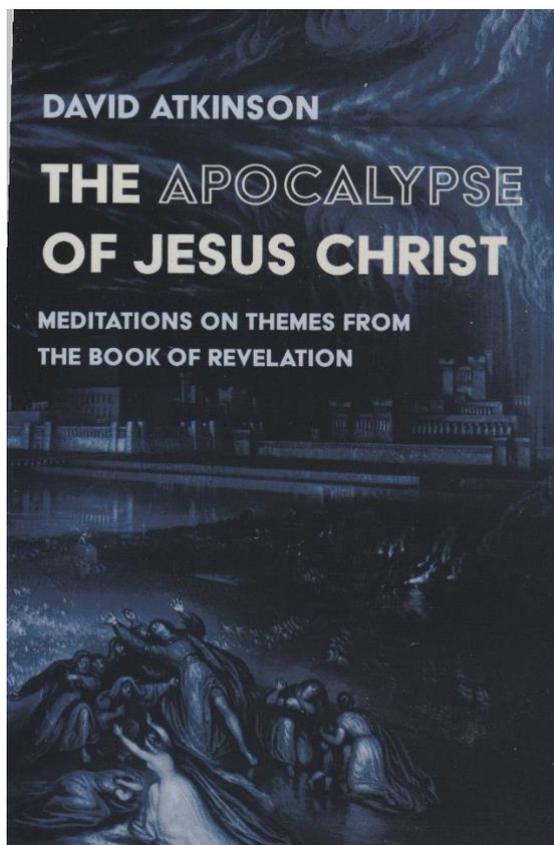
I have mentioned John's modesty and have a personal instance of it to recount. In 2002 I was Chaplain of the English Church in Heidelberg, when John came out to work for six weeks with a friend and colleague in the Theology Faculty there. John turned up at church on the Sunday morning following his award of the prestigious Templeton Prize a few days earlier. He said to me, 'Rodney, I'll do anything you like or nothing. I can preach if you want or just administer the chalice at Communion.' Here was a highly distinguished man – KBE, FRS, Templeton Prize winner – yet at the same time a wonderfully humble man. Of course it was unthinkable not to use John. I did ask him to preach and we ran a series of evenings on science and faith with some coming from as far away as Strasbourg to attend.

John was a great support and mentor to me personally, as well as, I am sure, to many others. In particular he endorsed several of my books and wrote the forward to one of them. He did not use email but one always got a reply to any request by return of post or from a telephone conversation. The review which he wrote of my first book was presented to me (I had not seen it before) at the interview I attended in order to be accepted to do the Oxford BA in theology as part of my ordination training, and I am sure this was instrumental in forwarding the academic side of my priestly vocation. He was also an invaluable wise voice on the Advisory Board of the Faraday Institute from its inception, and a frequent speaker at courses. I remember especially some classic panel discussions with John interacting with other giants in the field of science and religion such as John Hedley Brooke and the late Ernan McMullin. He will be sorely missed.

The Revd Dr Rodney Holder, Emeritus Course Director,
The Faraday Institute for Science and Religion,
Cambridge UK

NEW BOOKS

FROM +DAVID ATKINSON



If you find the Revelation a strange book to study, I can thoroughly recommend +David's short text. It began its life as a Study Course during Lent in 2019, and although brief, in the Introduction it gives the 'themes' of the Book:

- The kingdom of God and himself as the coming King
- The call to follow Christ with patient and persistent obedience
- The worship of God - in fact the whole book is about worship
- The unveiling and revelation of Christ.

In each of the study sessions, the themes are dissected, challenging us to understand not only the culture of persecution of Christianity during the period of the late 1st Century but also the issues of persecution in our own day. +David writes:

'This book is the Revelation of Jesus Christ - about the disclosure and unveiling of Jesus Christ, living and reigning' on earth as in heaven.

The material is divided such that by focusing on the figure seven; covering the seven letters to the churches, the Lamb opens the seven seals, seven angels with seven trumpets, seven bowls of wrath yet Jesus the Righteous Judge. We then move to the concept of a New Heaven and a New Earth: a renewal of the whole created order.

At the end of each meditation there is a hymn for reflection and some material for reflection, prayer and discussion: much of this challenging to us in this time of climate change and natural disaster, as well as in the war against materialism and indifference!

Maureen Palmer

A second book 'A Light for the Pathway' explores the Psalms. Christopher Wright, who penned the Foreword writes: 'David Atkinson's book helps us to explore and appreciate the breadth and depth of this wonderful world of biblical worship that embraces all human life, all creation and the ultimate future. Contact +David for information on how to purchase these books.

FROM: RODNEY HOLDER

I am pleased to let members know that my latest book *Ramified Natural Theology in Science and Religion* was published by Routledge on 16th October 2020:

<https://www.routledge.com/Ramified-Natural-Theology-in-Science-and-Religion-Moving-Forward-from-Natural/Holder/p/book/9780367373191>

As you will know, natural theology is concerned with what we can know of God purely by being human, and so without recourse to any special revelation. The subject has had a chequered history but is alive and well today, and discussed widely by philosophers, scientists and theologians. As such, it has been the main focus of my academic work over many years now. In particular, I have examined the fine-tuning argument which came out of modern cosmology in some detail in articles and books. I have also looked at the challenge posed to natural theology from within systematic theology by Karl Barth, including reactions to Barth from scholars sympathetic to his approach and those more critical. In short, I believe that natural theology provides good arguments for the existence of God.

What natural theology can tell us about God is, however, very limited. Traditionally it has been held that we need revelation to tell us more, indeed to tell us what it is most important to know. In this latest book I argue that the distinction between natural and revealed knowledge of God cannot be strictly maintained. This is because what is purported to be revelation needs to be evaluated using reason and evidence in like manner to that in which what nature may tell us about God is evaluated. One reason for this is that there are competing revelations which say contradictory things about God, so critical evaluation is needed to choose between them. There has thus arisen a distinction between 'bare' or traditional natural theology and 'ramified natural theology' which argues for the particularities of religious belief, and indeed the focus of such work has been on the particularities of Christianity. Just as much

of natural theology involves dialogue with the sciences so ramified natural theology involves dialogue with historical-critical study of the Bible. Utilising Bayesian confirmation theory, a tool widely deployed now in philosophy of religion and pioneered in seminal work by Richard Swinburne of Oxford University, I argue that the data we have strongly supports central Christian claims regarding the person of Jesus Christ.

FROM: MARTIN KING

'The Awakened Brain: The Psychology of Spirituality and Our Search for Meaning'. by Lisa Miller

Publisher : Allen Lane (17 Aug. 2021)

Language : English

Hardcover : 288 pages

ISBN-10 : 0241401933

ISBN-13 : 978-0241401934

I've been more excited by what I've learned from this book than any other in the last 25 years. Its perspectives range from published neuro-physiological research, through in depth experience of clinical psychology, to a deep appreciation of the human realities of life in the current culture of the United States, and in particular an autobiography of the author's own difficult path to motherhood of a family.

The core thread of spiritual experience ranges from those of recidivist patients in mental hospital wards, young people facing life challenges as students or in early career stages, to a wide range of people with well-developed vocations, often involved in supporting other people. It presents a remarkable synthesis of observable brain function with behavioural psychology and spiritual experiences. In particular it presents convincing evidence of close correlations between observable patterns of activity in different parts of the brain, spiritual experiences, and the likelihood and effective cure of clinical depression.

The spirituality transcends religions, while echoing much Christian teaching on spirituality from Augustine's "our heart is restless until it rests in you." through Ignatius and beyond. It discusses the relative contribution of genetic make-up and developmental influences on the degree of spiritual awareness of individuals. Nonetheless, the evidence points to all humans being capable of life-enhancing spiritual awareness, when balanced with what the author calls "achieving awareness", though that might be better thought of as personal drive. It describes a wide range of ways of developing spiritual awareness, or muscle, with a range of different types of spiritual experience.

The author's clinical training experience was characterized by high reliance on medication for disturbed individuals and both psychodynamic treatment models and CBT, but even as a junior intern she became deeply dissatisfied with the

impersonal nature of these. She managed to get away with a few very different interventions involving much closer personal interactions, including strikingly effective examples of mutual support and healing among those largely filed by the orthodox treatments. I was struck by the similarity with the person-centred approach of Carl Rogers and particularly the emphasis on loving personal relationship of his British disciple Brian Thorne.

I recommend this as a must read to anyone with an interest in neuro-physiology and its relationship with faith or spirituality.

CHANTRY LIST TO 2021

Peter	Arvedson	
Michael	Benton	
Sjoerd	Bonting	
Robert	Buckley	
Mary	Catterall	
Peter	Fulljames	2020
Tim	Gouldstone	
+John	Habgood	2019
Richard	Hills	
Jack	Hird	
Eric	Jenkins	
Lucius	Johnson	2020
Hubert	Makin	
Philip	McPherson	
Michael	Meredith	
David	Moore	
James	Moran	
Rowland	Moss	
Arthur	Peacocke	
John	Polkinghorne	2021
Michael	Pragnell	2020
Barbara	Pursey	
Michael	Ranken	
Robert	Semeonoff	
James	Skehan	2020
Helen	Stacey	
Bill	Stoeger	
George	Tolley	
Frank	Topham	
+David	Young	