

Annual Review 2018/19

It has been another year of dramatic, anxiety-inducing headlines. No sooner had the implications of the latest IPCC* report sunk in – that we could reach 1.5°C warming in as soon as 12 years – than shocking pictures of fires in the Amazon assailed us.

In such a context it is easy to despair, but conservation is all about hope. And as I look back over the A Rocha headlines of the past year I see the impact of faithful perseverance. Look out for the Sustainable Development Goal symbols by each article which indicate how that project makes a difference.

This year's review includes stories of lasting change – change that is bringing back seabird colonies in New Zealand, creating a forest nature reserve in Kenya and helping young people connect with nature. These are changes that bring a new vision of how we should be living on this good earth.

Of course this 'new vision' isn't so new – in the Bible we are called to be earthkeepers not destroyers. You can read how that message resounds through A Rocha projects and continues to go global thanks to regional creation care conferences.

One great way to practice earthkeeping while giving to those you love is through 'Gifts with a Difference'. By choosing products that benefit both biodiversity and local communities, and are delivered

to families in the majority world by A Rocha teams, you can be sure that your gift does environmental good rather than harm. And the person it was 'bought for' receives a beautiful card. For the perfect gift go to shop.arocha.org look for the gift symbol by

Enjoy reading and thank you for your support,

articles with available gifts.

Chris Naylor

Chris Naylor Executive Director, A Rocha International (ARI)



Mel Ong)

^{*} The United Nations Intergovernmental Panel on Climate Change



Less plastic from source to sea

Around the world, the A Rocha family is helping to halt the flow of plastic into the oceans and clean up what is already there. It is estimated that over eight million tonnes of plastic find their way into the sea every year. Eight of our National Organizations took part in A Rocha's 2018 Global Plastic Cleanup, many doing this in partnership with others. Several of our National Organizations also made a contribution by cleaning rivers, preventing at least some plastics from reaching the sea.

We developed the Microplastics Toolbox for individuals, families, churches and other groups. It includes plastic-reducing lifestyle tips, a microplastic sampling protocol and photoguide, factsheets, bible study and prayer resources, and links to informative videos. It is free to download from arocha.org/microplastics-toolbox. Nurdle hunting is one of the most frequently used activities. A Rocha teams in Portugal. Kenva and the USA used the Toolbox to monitor microplastic pollution on local beaches and we have used it to give African schoolteachers and conservation educators the knowledge they need to reduce plastic pollution.

Our work in this area is likely to grow as we seek ways to reduce plastic use and stop plastics entering our waterways, and work with others to conserve important marine habitats and species. We want to love God and our neighbour and care for the 71% of this planet that is ocean by reducing plastic pollution from source to sea, transforming an ocean of plastic into an ocean of hope.

Helping wildlife and Syrian refugees

A Rocha Lebanon's work in Mekse Park is evolving. The objectives haven't changed but they are being worked out in a new way – Syrian refugees have created 'farms' which nestle between the trees that the project has planted. The farms are good for people and wildlife. They stop grass from overpowering the young trees and provide green manure which is good for the soil. Chickpeas, melons, cucumbers and peas have all been harvested. These



are grown organically and provide income for the refugee-farmers and, with the young trees, food and shelter for birds. Numbers of Graceful Prinia *Prinia gracilis*, Masked Shrike *Lanius nubicus* and Crested Lark *Galerida cristata* have all increased. And an Eastern Hedgehog *Erinaceus concolor*, a species threatened by habitat loss, hunting and the inevitable traffic, has been seen among the chickpeas!





















Wonderful though Asian Elephants *Elephas maximus* are, our interests can often conflict with theirs. The elephants of Bannerghatta National Park in India's Eastern Ghats frequently enter subsistence farms, damaging valuable crops and sometimes causing human fatalities. As a result, local people persecute elephants. It's a problem that A Rocha India has been trying to solve for some years.

In 2011 chili-tobacco ropes were introduced as an aromatic barrier – the smell was an effective deterrent but the method seems to be just too labour intensive. Enter the beehive fence, which has worked in Africa and is being tested in parts of India. Kenyan elephants don't like bees so their presence can be an effective deterrent. There is some resistance to change around Bannerghatta, so A Rocha India has placed beehives in

local communities to build confidence in the beehive fence – which would also provide income from honey sales as well as pollination services. A market for the honey has already been secured and five Bannerghatta farmers have been trained in beekeeping. We await their feedback, but hope to involve more people and to use these five farmers as community advocates. Given sufficient community interest, a trial beehive fence will be constructed. Let's hope that Bannerghatta's elephants are bee-phobic too.















Changes at Les Courmettes

The Domaine des Courmettes is the site of A Rocha France's head office and field study centre. It is set in a 600 hectare estate - a nature reserve within a Natura 2000 site in the Alpes-Maritimes, with views of the Côte d'Azur and the Mercantour Massif It is a private property that is open to the public and managed by A Rocha France, who provide residential and nonresidential opportunities that introduce many people to the natural world and a greener lifestyle. Every year about 50 volunteers assist the staff team and to help fund the work they host seminars, weddings and other celebrations and rent out holiday accommodation.

Local shepherds help with site management – their sheep and goats contribute to grassland management, with Patous – the Great Pyrenees guard dogs – mingling with

the sheep to provide protection from the wolves that have returned to the Mercantour. Forest, mostly of Holm Oak



Quercus ilex, covers about two-thirds of the estate. A Rocha France is exploring ways to manage this sustainably with the Centre Régional de la Propriété Forestière and using Natura 2000 funding to conserve ancient trees (bois sénescents) on the site. They are also exploring ideas for restoring seasonal marshland elsewhere on the estate with other partners.

The centre's education work has seen considerable growth and they aim to increase the number of schools that visit. Regular events for the public focus on beekeeping, nature discovery, cheese and bread making, stargazing and more.

















They live, learn and work in a beautiful heritage property in Surrey, British Columbia. The scientists among them could be helping with fish, amphibian or bird conservation, surveying vulnerable species, monitoring water quality or working in the plant nursery. Meanwhile, the educators might be working with young people from pre-school to 16-year-olds, low-income families or senior citizens. These interns learn interactive ways to inform and enthuse their students about salmon life-cycles, native species, gardening, and more. The agriculturalists help grow healthy,

delicious food in two acres of sustainable garden for use in the A Rocha centre and distribution via the local food bank. The food and hospitality interns use the home–grown food to provide farm–fresh meals in the centre. They preserve some of it too so that it can be enjoyed throughout the year.

And all of this is done in community, as an expression of faith that seeks a flourishing of people and place. Having been influenced by A Rocha Canada, the interns move on to influence the world they live in.













Above: A Northwestern Salamander Ambystoma gracile (Falling Frogs)



The Philippines

– a new Associated Project

A dream has come true in the Philippines, an island nation with a remarkable number of endemic species. Based in Quezon City (Metro Manila), Christians in Conservation (CIC) have been teaching people to care for the people and places around them since 2013. And they have now joined our global family as A Rocha International's latest Associated Project.

The CIC vision is to train people in earthkeeping, teach zero-waste management, and to establish a native plant nursery and seedling bank as an alternative, sustainable livelihood that benefits people and the planet. As is A Rocha's practice, the starting point is conservation projects with the local community and churches, alongside practical teaching on what the Bible has to say about caring for creation. With a broad spectrum of expertise - including church leadership and biology, and an office at the Asian Theological Seminary (Quezon City), CIC is poised for the challenge.



































2018 saw the launch of Climate Stewards' Seal of Approval (SoA) – a guarantee that an endorsed project really does make a difference.

It builds on 10 years of work with bio-sand water filters by A Rocha Uganda, where Climate Stewards' baseline surveys and monitoring demonstrated the carbon-cutting benefits of these life-enhancing devices. So far, two SoAs have been awarded, with the other going to cook-stoves installed by the NGO Rural Integrated Development Service (RIDS) in Nepal. Several other projects await endorsement.

The SoA will help our National Organizations, churches and other community-based groups verify the carbon offset potential of projects in the developing world and access funding to cut carbon and deliver biodiversity, health and financial benefits. And our method is cheaper than other schemes - so more of the income goes to local people.

Eco Church is making an impact

A Rocha UK's Eco Church programme has grown rapidly since it began in 2016 – a grand total of 1485 churches of various denominations have registered for the scheme in that very short time. Eco Church helps churches to celebrate their care for God's earth and work out their next creation care steps. To date, a total of 407 Eco Church awards have been earned, including 98 silver and four gold.

The scheme also operates at regional levels. Eco Diocese – for the Anglican church – now has 18 registrations and five have achieved a bronze award. In the St Edmundsbury and Ipswich diocese 80% of clergy housing now has solar panels – the other 20% were unsuitable. An impressive four out of 12 United Reformed Church synods have registered as Eco Synods, and Eco Circuit and District have been launched for the Methodist Church.















Atewa update

The campaign to save Atewa Forest in Ghana from bauxite mining has entered a new phase. Having published a report (aroc.me/biodiversity-Atewa) on the critical biodiversity in the forest and run a very successful exhibition at the British Council in Accra we were delighted that the World Evangelical Alliance and the Christian Council of Ghana joined their voices to ours, calling for Atewa to be set aside from mining.

Freshly cleared road in Atewa Forest (Ransford Agyei)

But in spite of these efforts and some hope that perhaps the Government was listening to our arguments rather than just pursuing economic interests, they continue to press ahead in their belief that mining Atewa must be the best idea for the forest and all who depend on it. Government bulldozers have now cleared roads through the forest to allow a geological exploration of the bauxite deposits, despite having failed to undertake any assessment of social or environmental impacts for either this activity or for that of the planned mining.

We continue to pursue every avenue we can to build public support to protect Atewa and dissuade any companies and investors who might be tempted to participate in Atewa's destruction. We need your help in this so please make sure you have signed our petition and

Help save the White-naped Mangabey













spread the word: aroc.me/atewa





The Dakatcha forest is home to no less than 10 red-listed species, including four that IUCN classify as Endangered – the Sokoke Scops Owl *Otus ireneae*, Clarke's Weaver *Ploceus golandi*, the Sokoke

Pipit Anthus sokokensis and

the Golden-rumped Sengi

Purchase land to protect endangered owls

Dakatcha woodland is rapidly disappearing due to illegal logging and clearance for agriculture (Colin Jackson)

Rhynchocyon chrysopygus. But it is threatened by illegal logging, charcoal burning and clear-felling for pineapple plantations. A Rocha Kenya is working with local people and buying land to secure a better future for Dakatcha, its people and its wildlife.

With funding from the A. G. Leventis and A. P. Leventis Foundations and members of the public, A Rocha Kenya has been able to increase its Dakatcha landholding from 90 hectares to 287 hectares. This is good progress but more needs to be done – the goal is a reserve that covers 800 hectares or more, which would protect the core of the Sokoke Scops Owl's distribution in Dakatcha, and of course, benefit the area's other threatened species.

Discovering Dakatcha's biodiversity

Work is ongoing to gain a more complete understanding of which species occur in the nature reserve. We have deployed camera traps to monitor the mammals, including the Golden-rumped Sengi. We have also been testing acoustic recording devices as a tool for monitoring Sokoke Scops Owls. The recorders enable simultaneous monitoring in multiple locations. This diminutive owl can utter its 1000Hz call 95 times a minute which the recorder can detect up to 120 metres away. Our monitoring work is helping to create a 'biodiversity atlas' and many records are being uploaded to the Virtual Museum for Africa. We are also publishing species lists and other data in the Global Biodiversity Information Facility database.

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Golden-rumped Sengi (Galen Rathbun) Sokoke Pipit (Nick Athanas) Sokoke Scops Owls (G Katana)

Engaging with people

Land purchase alone is unlikely to secure a long-term future for Dakatcha's wildlife. Local people need to be empowered to connect and care. To facilitate this A Rocha Kenya is working with local communities to train them to 'Farm God's Way' which



allows the soil fertility to increase over time through zero tillage, mulching and crop rotation. This approach is being used across Africa with some remarkable results. In Dakatcha, 12 farmer groups have been mobilized to take part in the training.

The team also works with churches and schools to help them understand the biblical basis for caring for creation. 11 schools are participating in A Rocha Kenya's environmental education programme and 11 churches have agreed to engage with the creation care training programme. Above: Sosoni Farmers, Dakatcha (Sarah Young)

211,858

Number of hectares of land where we advise, have management control or responsibility globally

2,040,002

Number of hectares of other land benefitting from our research and conservation activities globally

Portugal partnership reveals hidden wildfire Synthymia fixa, a common impact

species at the study site (with thanks to Ana Valadares)



A Rocha Portugal has been working in a scientific collaboration with Universidade de Évora in Portugal and the University of York, Newcastle University, the Centre for Ecology and Hydrology and Butterfly Conservation in the UK. Their research, published in the journal Functional Ecology, explored the impact of large wildfires in Portugal on flowers, moths and their interactions. They demonstrated, for the first time, the detrimental effect of wildfires on moths and their pollination services, and that wildfires increase local extinction risks for both the pollinator and the pollinated.

It was already known that a flush of pollen-producing wildflowers after a fire can be good news for those pollinators that work the day shift - bees and butterflies for example. But for nocturnal moths, it's a different story.

Moths are important pollinators - before the wildfires they carried the pollen of over 80% of the flowering plant species in the study area. But afterwards fewer moth species were found and they were much less abundant in the burnt area than in unburnt areas nearby. The total amount of pollen transported by moths was five times lower at burnt sites.

To quote co-lead author Paula Banza, of A Rocha Portugal and the Universidade de Évora:

'...we showed that plant-insect communities at burnt sites were less able to resist the effects of any further disturbances without suffering species extinctions'







Part of the study site, after fire, in the Serra do Caldeirão region near Faro (Paula Banza)







Delegates at the Lausanne/World Evangelical Alliance A Rocha South Africa)

28,841

Number of

participants in

A Rocha theological

education

worldwide

Pollinating the global church

A Rocha is unique – it is the world's only global Christian creation care organization. For Rev Dr Dave Bookless, A Rocha International's Director of Theology, this means a growing number of opportunities to influence, and difficult choices to make knowing which invitations to accept and weighing the carbon costs against the potential benefits of transformed attitudes and practices.

Dave is one of two Global Catalysts for Creation Care for the Lausanne Movement. 2018 saw him playing a key role at the 9th and 10th regional conferences on Creation Care and the Gospel (organized by A Rocha and Care of Creation under the banner of the Lausanne /World Evangelical Alliance Creation Care Movement). The first, in South Africa, attracted 90 participants from 13 African countries. The second, in Oceania, also had 90 delegates, this time from eight Pacific nations. Both conferences benefitted

337

Number of A Rocha speaking engagements at churches and conferences worldwide

from the planning skills of local

A Rocha organizations - South Africa, Australia and New Zealand.

To date over 1000 leaders from more than 100 countries have been

given biblical resources and practical ideas, which has led to the emergence of national movements and radical attitude change. Dave also spoke in the Philippines at the triennial

Micah Global Consultation on 'Resilience, Justice and Creation Care' - to 450 delegates from 70 nations. As a consequence, Micah Global now include creation care in

their definition of 'integral mission'.

Towards the end of 2018 Dave addressed 500 theological educators from across the globe as a plenary speaker at the International Council for Evangelical Theological Education in Panama. Imagine the impact of tens of thousands of pastors being trained in creation care! Young people help the Oi

The Grey-faced Petrel

Pterodroma gouldi, or the Oi,
breeds only around New Zealand's

North Island. They have returned to
the Whāingaroa coastline, where
15–18-year-old students from the Raglan Area
School act as their Kaitiaki, or guardians. The
students are part of the Manaaki Ao (Earthcare)
programme, created with the school by A Rocha
New Zealand and Papa Taiao (a sustainability
and ecological restoration training
organization), which introduces them to local
environmental issues and possible solutions.

Oi parents take it in turns to feed their single chick, bringing in food perhaps once a week or even once a fortnight. It's a lifestyle that results in the chick being left alone in its burrow, sometimes for weeks at a time, where it is vulnerable to predation by rats, cats, stoats and other introduced mammals. To give the Oi a helping hand the *Kaitiaki* have monitored its predators, cut tracks to gain access, and set traps to capture the unwelcome visitors. As well as the practical work, the students have also had teamwork, project planning and fundraising experience – it's a great personal development opportunity and makes a difference for nature.

With the help of local young people, the Oi is being restored

148
Number of species
we help that are
threatened or at
risk nationally

to New Zealand's coastline, bringing nutrient-rich marine guano to the soil, aerating the earth by excavating burrows, and delighting those that care, simply by being an Oi.



Oi or Grey-faced Petrel (JJ Harrison)

Restoring mistbelt forest in KwaZulu-Natal Number of species A Rocha South Africa is back in action on the IUCN Red on the Ferncliffe Reserve, close to List helped by our Pietermaritzburg. They are clearing work globally invasive vegetation from the 2.5 hectare reserve and planting native species in an area that had been commercial forestry after much of its original tree cover was cleared to provide timber for Pietermaritzburg's Victorian buildings. Old pathways are being restored too, allowing better access for visitors. and for species surveys and carbon sequestration Ferncliffe Forest (Murray Tessendorf) measurement. Ferncliffe Reserve is mistbelt forest. a southern extension of tropical Africa's montane forests which, as the name suggests, is

frequently shrouded in summer mist. Less than 0.5% of South Africa is natural forest with mistbelt forest accounting for about a third of this. Ferncliffe is part of 35,000 hectares of eastern mistbelt, spread among 108 separate forests, many of which have

The eastern mistbelt is home to the Southern Ground-Hornbill Bucorvus leadbeateri, Crowned Eagle Stephanoaetus coronatus and Bush Blackcap Lioptilus nigricapillus, all of which are globally threatened, as well as a number of regionally threatened

been degraded by firewood collection.

species and biome-restricted and range-restricted species. It is very rich in endemic invertebrates, particularly earthworms, snails, beetles, spiders and millipedes, many of which are still being described. Hopefully, the Ferncliffe Reserve will play a part in securing a better future for some of these species.







Ground-Hornbill

207

Water filters help forests and people

A Rocha Uganda has promoted bio-sand water filters for over a decade. Water is filtered as it passes through a biofilm and layers of sand and gravel. This natural filter is contained in a lidded concrete container and is highly effective at removing pathogens and suspended solids from polluted water. The 2,086 filters that have been distributed to families and schools have benefitted over 10,000 people.

Clean water brings noticeable health benefits to the people of Kampala. But that is not the whole story. When clean water is more readily available children drink more resulting in better performance at school. Using a bio-sand water filter is quick and simple compared to boiling water over a fire. This frees up time and reduces smoke inhalation, improving livelihoods and reducing poverty. There is also less need to collect firewood or burn charcoal so forested areas and their biodiversity are less degraded. Fewer fires means less greenhouse gases are produced.

The bio-sand water filter is inexpensive and made using locally available materials. It is just one part of A Rocha Uganda's work helping local communities build climate change resilient societies.

















Bringing hope to dry forest in Peru

Work has begun on a four-year project that aims to restore dry forest ecosystems along Peru's northern coastline, where some of the last remnants of this special habitat are found. With less than 5% of the original dry forest remaining, it is an international conservation priority.

Launched in January 2018, A Rocha Peru's project focuses on dry forest in Pacasmayo in the department of La Libertad, where the effects of poor land management, urban sprawl and climate change have been particularly detrimental. The active engagement of local people who depend on the forest for food, water and shade, and other local stakeholders is vital and has taken a variety of forms. Degraded landscapes targeted for restoration have been identified, conservation agreements and letters of commitment have been signed, hundreds of students have taken part in education sessions, and capacity building workshops and community

sessions on apiculture and 'algarrobina' production (a syrup made from Prosopis trees) have taken place.

Local people are demonstrating a genuine interest in sustainably managing the dry forest on which they depend – it's good for them, good for the forest and good for the threatened species that live there – the Peruvian Plantcutter *Phytotoma raimondii* (a bird endemic to Peru) and the Peruvian Desert Fox *Lycalopex sechurae* for example.



Planting Huarango tree seedlings at Santonte, Peru (Flor Hidalgo)

Expenditure, income and f

In 2018 the A Rocha family's global income remained constant at £5.3m. We thank the churches, trusts, foundations and many individuals that have supported us – which has enabled our long term scientific research, environmental education, theological teaching and community based conservation programmes across the globe to continue. You have helped us restore habitats and protect species, reduce poverty, improve community health, empower women, and equip refugees with environmental skills that they can take back to their own countries.

Although the family's global income remained constant, some A Rocha organization saw a significant rise in income such as A Rocha Ghana, Kenya, Lebanon, Portugal and Uganda, and Climate Stewards, but A Rocha Peru, South Africa and UK, and A Rocha International (ARI), saw a reduction in income. With additional funding ARI would be able to increase its support to other A Rocha organizations,

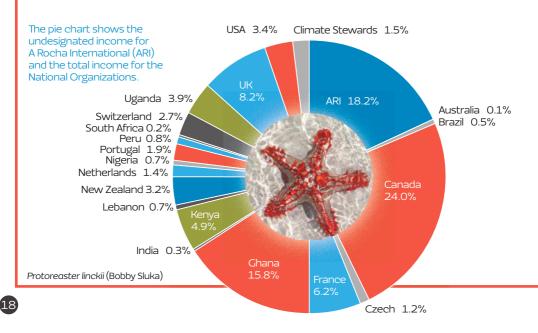
giving priority to the greatest need, and support the development of new A Rocha organizations.

Our projects help us meet at least 15 of the 17 United Nations Sustainable Development Goals – with your continued support we could do even more.

The chart opposite shows ARI's income sources and highlights the importance of individual donors.

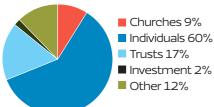
Through our 2018 Christmas appeal you enabled us to provide environmental education workshops for 40 Ugandan teachers who between them teach nearly 3,000 pupils, and to share environmental education best practice among a number of our A Rocha organizations.

Over 78% of our expenditure relates to staff employment costs. Two-thirds of ARI's expenditure was spent supporting A Rocha organizations, in advocacy, and in representing A Rocha at a global level at scientific and theological conferences.

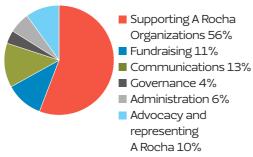


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A ROCHA INTERNATIONAL'S INCOME



A ROCHA INTERNATIONAL'S EXPENDITURE



Instead of wedding gifts, Lydia and Alasdair Grubb, asked their friends and family to give to A Rocha International.

'We thought this would be a really effective way of raising money and giving to a charity we think is important,' says Lydia. 'A Rocha is an organization that combines two things we both care very much about – our faith and the environment. I am an ecologist, Alasdair is the warden of a nature reserve and we are both Christians, so naturally we are very interested in the work of A Rocha. I was first introduced to A Rocha as a teenager, as many of my family and friends are supporters, and then worked with A Rocha France before I went to university. I had the most brilliant time helping with interesting and crucial research into the status of European Rollers and other key species in the area.'



St Luke's Church in Crosby, UK keeps bees in their churchyard. By selling some of the honey, they have raised £1000 to purchase beehives and plant trees in Kenya through Gifts with a Difference.

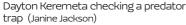
'Keeping bees seemed a natural extension of our work of caring for "God's acre",' says Steve Matthews, Coordinator of the Grounds Project. 'We have planted a series of gardens with a variety of flowers attractive to insects. When an expert beekeeper joined us, we developed hives in the vicarage garden too. So far we have produced 80 lbs of honey this year and 65 lbs last year, which we sell at our eco-stall, together with jams made from our home-grown fruit. The A Rocha beehives and tree planting projects are an ideal way to invest our profits to support bees and communities in Kenya.'



Lydia and Al on their wedding day (Emilie May Photography)

Inspiring young people





Dayton Keremeta is one of the young people who has been involved with the Manaaki Ao programme (see page 14), which is part of the Karioi Project in New Zealand. While he was a student at the Raglan Area School he was one of the Kaitiaki, a guardian of the Grey-faced Petrel Pterodroma gouldi, or Oi.





This meant time out of the classroom to help with predator control work, removing cats, rats and stoats for the good of the Oi. It was part of a pilot education programme which enabled its student participants to earn credits for a National Certificate of Educational Achievement (NCEA) through hands-on practical conservation and, hopefully, to acquire leadership skills, grow in confidence, and be better equipped for the workplace.

The programme started in 2017 and Dayton was one of the first students to sign up. Initially it was a shock for Dayton to see the numbers of non-native predators and the damage they caused. But working outdoors was a pleasure and he found a certain satisfaction in controlling their numbers - 'being able to work outdoors and getting rid of the pests is a good feeling' he said.

A Rocha International 89 Worship Street, London, EC2A 2BF. Tel: +44 (0) 300 770 1346 E-mail: international@arocha.org Registered Charity No. 1136041 Company Registration No. 6852417







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