



GLASGOW NATURAL HISTORY SOCIETY NEWSLETTER

May 2005

David Palmar
(Newsletter Editor)

Next Newsletter Deadline
1 August 2005

GNHS is a Registered Scottish
Charity Web-site:

<http://www.gnhs.freeuk.com/>

GNHS SUMMER SOCIAL

Hazel Rodway

The summer 2005 social is on Tuesday 14th June, and will begin with a visit to Greenbank Gardens, repairing thereafter to Giotto's near Clarkston railway station for the dinner. A minibus will leave from Kelvin Way close to the car park entrance for the Museum and Art Galleries at 6pm, and costs £8. The dinner will cost £15. NTS members have free entry to Greenbank; others will need to pay an entrance fee of £4. **Hazel must know by Sat 28th May** to give numbers to the restaurant (otherwise you've had it! – she says!) Please note that this is a **change of venue** from what is printed on the excursion form. The form should still be used for booking, however. Contact Hazel at 33 Oran Gate, Glasgow G20 8DA, 0141 946 1777.

BOTANICAL SOCIETY OF SCOTLAND Atlantic Oakwood Symposium

This will be held in the Corran Halls, Oban on the 14-16 September 2005. There will be two days of talks and discussion followed by a field excursion to study some of the local examples of these woods.

The aims of the meeting are

- to bring together research scientists, land managers, conservationists and all who share an interest in these woods
- to provide a forum in which to present current knowledge on the ecological diversity and past management of the woods
- to identify needs for conservation and further research. The proceedings of the symposium will be published in a Symposium Special Issue of the Botanical Journal of Scotland.

The programme comprises 8 sessions, each with two or three speakers. These are:- Definition and Distribution; Genetic History; Cultural History; Present Structure and Composition (diversity and plant species groups -3 sessions); Faunal Relationships; Conservation and Management Policy. There will also be a poster session.

The Symposium will be organised by the Botanical Society of Scotland and sponsored by the Forestry Commission, Forest Research and the British Ecological Society.

Booking forms and further information will be available from 28th February 2005 and can be obtained from Shiela Wilson, Institute of Geography, University of Edinburgh, Drummond Street, Edinburgh EH8 9XP, or from the website. <http://www.geos.ed.ac.uk/abs/bss/> A limited number of bursaries will be provided for students.

THE ANCESTOR'S TALE: A Pilgrimage to the Dawn of Life.

Richard Dawkins. 2004 Weidenfeld Nicolson, UK, illustrated 520pp,
ISBN-0-297-82593-8 £25 hardback
2005 Phoenix, UK, ISBN-0-7538-1996-1 £9.99 paperback.

This is a big book, a good book, full of information, facts, speculation, and occasional provocation. It is presented as a story of living beings tracked backwards in time from us humans through the succession of our evolutionary antecedents, by our genetic confluence with others that evolved from the same "Concestor" (last shared ancestor) and so on to the earliest, most uncertain forerunners. Modelled on Chaucer's *Canterbury Tale* of pilgrims journeying to Canterbury, each stage stops at rendezvous points along the (backwards) way, where each Concestor signals the joining of species that diverged (forwards) from our line, starting from number 0 = "humankind"; no.1 = chimpanzees; 10 = rodents & rabbit-kind; 21 = sharks & kin; 31 = sponges; 39 = eubacteria - & terminal uncertainty. Concestors and selected others are described and discussed with colour pictures and diagrams to make important points of form, function, and evolutionary processes through modern genetics.

I agree with Alister McGrath, his worthy opponent in controversy (see below), that Dawkins' text is "fascinating to read...a wonderful way with words...lucidity of expression and superb illustration of often complex points...". It is light in touch, often humorous, pleasantly conversational, often like thinking aloud. Evidence is given, its strengths and weaknesses recognised with the possibilities of revision by new evidence, especially as the "journey" ends. Dawkins, atheist and controversialist, takes opportunities to ridicule dogmatic creationists; from Darwin's Victorian critics to the present day.

DAWKINS' GOD: Genes, Memes, and the Meaning of Life

Alister McGrath 2005, Blackwell, Oxford, illustrated, 202 pp.
ISBN-13:978-1-4051-2538-3 paperback.

Alister McGrath, molecular biophysicist turned theologian, a worthy opponent, takes Dawkins on in this pleasantly readable little book. He points out that many of the beliefs and attitudes criticised by Dawkins are obsolete in current, still-evolving Christianity (but they still influence the minds of many). He dodges criticism of "faith" by claiming that to modern theologians the word means something different (what?). He also derides Dawkins' occasional rhetoric (a debating technique also used by McGrath himself). How we and all life originated may remain unknown, even unknowable with the gap unbridgeable between believing deists and atheists, each ultimately resting on "faith" - belief without evidence.

Those interested in these philosophical matters will appreciate both these up-to-date books. But Dawkins' "Tale" stands on its own right to be enjoyed by Natural Historians.

OBITUARY

We have been informed that Mr T.E. Kinsey has passed away and has made a bequest to Glasgow Natural History Society. If you knew Mr Kinsey we would like to know what his interests were so that the bequest can be put to an appropriate use.

MEMORIAL

Becky Hothersall

On Friday 6th and Saturday 7th May, giant fungi will spontaneously appear in Chatelherault Country Park, Hamilton. Two sculptures with a mycological theme will be carved from fallen trees as a memorial for Caroline Walker, a keen naturalist and Botany graduate of Glasgow who died in September 2003.

Chainsaw artist Pete Bowsher will inscribe a large beech trunk near Cadzow Castle with symbols dear to Caroline and a quote reflecting her love of nature. Volunteers will be able to take part in carving the letters and the surrounding wood will be inoculated with native fungal spores to allow the log to develop into a living memorial as it decays. A more formal memorial in the form of a large mushroom with a seat around its base will be sited next to the park's wildlife pond.

We are very grateful for financial assistance from the Glasgow Natural History Society, the University of Glasgow and the John Muir Trust. Some of the participants are working towards a John Muir Discovery Award will carry out tree and wildflower planting activities in the area at a later date.

EXCURSION REPORTS – received some time ago, but there was no room in the previous Newsletter. Sorry - Editor

Glasgow Necropolis (VC 77) July 21st 2004

Peter Macpherson

Eight members attended the meeting, one purpose of which was to attempt to re-locate Heath Pearlwort *Sagina subulata* first seen by one of the group in 1976. In this we were unsuccessful.

However, despite the fact that most of the area is grassed over and closely mown, in one & a half hours 107 different species were recorded. Two of those attending had been to the area before while recording for *The Changing Flora of Glasgow* (Dickson *et al.* 2000) and remembered having seen Soapwort *Saponaria officinalis*. This was duly re-found. We were interested to see Wall-rue *Asplenium ruta-muraria*) and Maidenhair Spleenwort *A. trichomanes* growing together on a wall, a site also for Early Hair-grass *Aira praecox*. None of the plants was of any great rarity, but six were new records for the tetrad.

A tiny rosette at the side of a track gave rise to differences of opinion as to its identity. Accordingly, it is now in a pot in a conservatory in the hope that we may get a definitive diagnosis!

Dickson, JH, Macpherson, P & Watson, K (2000). *The Changing Flora of Glasgow*, Edinburgh University Press, Edinburgh.

Strathclyde Falconry Sunday 22nd August 2004

Six lucky GNHS members enjoying two hours in the excellent and instructive company of falconer Graham Neilson, being told about the various hawks and owls that he flies and being able to hold some of them on the fist. There were great opportunities for close up photos of the birds who were not shy, apart from the tiny Kopp's Owl who could turn his head faster than the shutter. Graham has had most of the birds from a very early age and obviously enjoys their respect and trust. He took us out into a big field next to his mews and showed us how to stand so that a

hawk could land safely on our gloved fist. We all got several opportunities of having birds fly to us and receive their titbit. At the end of the demonstration in the field Graham took the Harris Hawk, which he uses for hunting, round to the back of the Hotel where there were more open trees for the Harris Hawk to perch in. He doesn't carry this bird – it just flies along and comes back to him when called. He had hoped we might flush out some small mammals, but after we had all had the chance to have the hawk fly down to us to get a bit day old chicken it was time to take him back to the mews where he was given a whole live day old chick to reward him for his efforts. We made a donation to the mews and admired his lovely ferrets before we left after a thoroughly enjoyable and exciting afternoon.

Chatelherault, Sunday 6th September 2004

Graham Walker led four keen fungi hunters and a dog on a six hour stroll down one side of the river beside the Cadzow Oaks and back by the other, covering various habitats. We had never seen so many *Macrolepiota rhacodes* – there was a very abundant crop of Shaggy Parasols and at least three of us feasted on them that evening! Graham filled four pages of species noted – and quite a number were uncommon. *Telephora terrestris* was new to me as was a species of *Helvella* and *Peziza*.

EARLY SPAWNING BY FROGS

John Mitchell

Duncan Brown, a former SNH colleague who lives near Cashel on Loch Lomondside, passed the following observation to me. His attention having been drawn by a grey heron repeatedly visiting a pond in the garden, a check made on 12th December 2004 revealed the presence of frogspawn in the shallower water.

Common frogs breeding so early as December is certainly not unknown in the south-west of England and southern Ireland, but its occurrence in Scotland north of the Highland Line must be an unusual event even with the mild winters we have now come to expect.

FROM THE REVIEWS EDITOR

Ruth Dobson

1 Will all those with books to review please send their reviews to me before June 15th - Ruth Dobson.

**2 Books Received in Exchange for Reviews in *The Glasgow Naturalist:*
History of Life **Richard Cowen**
Blackwell Publishing **2005** **£32.50****

This book was written specifically for a course in 'History of Life' and has gone on to become a best-selling textbook aimed at students, but also for anyone interested in the subject. It explores the 'whys' of events that occurred and, in this newest edition, it takes a closer look at the evolution of the physical earth and the strong interactions between organisms and environment. The book's coverage includes geography, climate, atmosphere, ocean and land, while following the interplay between organisms. Also new to this edition is a dedicated website

www.blackwellpublishing.com/cowen

Keys to the Freshwater Fish of Britain and Ireland with notes on their distribution and ecology Peter Maitland
Freshwater Biological Association Scientific Publication No 62
2004 **£22.00**

This book contains all the information required to identify accurately the 62 species of fish occurring in fresh waters in the British Isles. Keys to family level are also provided for the eggs and small (post-larval) stages, and the scales of adult fish. Numerous line drawings, 48 coloured plates and distribution maps are provided, and conservation is discussed.

Fossil Plants Paul Kendrick and Paul Daw
Natural History Museum **2004** **£16.95**

This is an accessible introduction to fossil plants and how they can be used to unravel the history of life. Weaving together strands from the past and present, snapshots of ancient and modern environments are illustrated with images of fossils and their 'living relatives'. This book paints a picture of the greening of the world.

Vertebrate Palaeontology 3rd Edition Michael Beaton
Blackwell Publishing **2004** **£29.95**

This is a complete up-to-date history of the evolution of vertebrates. The third edition has been extensively revised to incorporate the latest research, including new material from North and South America, Australia, Europe, China, Africa and Russia. It is a source of the latest broad-scale systematic data on vertebrate evolution, and is essential reading for all interested in the subject. **The New**

Encyclopaedia of Birds ed. Christopher Perrins
Oxford University Press **2004** **£35**

This large volume gives comprehensive coverage of all the bird families of the world, with spectacular photography of birds in their natural habitats. It is a hugely attractive, up-to-date reference work of unsurpassed scholarship, presented in everyday language.

Wild Reckoning – a Book Review Julian Jocelyn

Wild Reckoning, an anthology provoked by Rachel Carson's Silent Spring
Calouste Gulbenkian Foundation, 2004 **Poems, some new** **£7.50**

It was an exciting day at the office in Glasgow when in 1962, Rachel Carson's *Silent Spring* arrived, to be read in Infestation Control. It is therefore fitting to note the publication of *Wild Reckoning* in 2004 to mark the 50th anniversary.

The initial reaction to *Silent Spring* has been forgotten. It was unfavourable, being dismissed as a record of misuse, rather than drawing attention to the risks of using DDT normally. The author's contention that humans would be affected was a scare story. The threat to wildlife was real enough, but it was not appreciated that the danger lay in the food chain, as well as the more obvious effects, e.g. killing fish.

The compilers of *Wild Reckoning* on giving DDT a passing notice refer to Rachel Carson's assertion that the water supply would be contaminated. What is not

mentioned is that this very point was dismissed in reviews as insignificant! Our knowledge has increased since, but the position is not substantially different as far as this is concerned. It is the amount which counts, and it would be as well to acknowledge this. However, this does not detract from the message of Silent Spring as a whole, which is now common knowledge.

OPTICAL ODDITIES

Norman Grist

As animals, we are equipped with various senses which evolved to help us recognise features of the world about us, to navigate safely within it, to recognise faces, food, potential prey or predator. As primates, our most important and highly developed of these senses is sight, served by a major proportion of our brain. "Seeing is believing", a familiar adage and concept, was less convincing to myself as a virologist working with "invisible" life forms below even the size revealed by optical microscopes (and without an electron microscope until late in my career) - but other evidence confirmed their reality!

Recently it has emerged that what we "see" (perceive & recognise visually) is not just what is actually there but the "best fit" judgement of it made by our brain in the light of available evidence and its past experience. As children we have been amused by our "blind spot" in either eye when the other is covered, making the end of a pencil or finger disappear as its image falls on the small area of the retina where the optic nerve enters and there are no light receptors. The brain fills the "gap" to resemble its immediate surroundings - the sky, wall or whatever. The missing information about the invisible small finger tip or pencil end is normally "filled in" from the other eye when both are used, so that we are usually unaware of these blanks corresponding to blind spots in what we see.

Most of the time the difference between what we consciously "see" and what is actually there is trivial and unimportant, though examples such as "the man in the moon", "castles in the air" and amusing "optical illusions" (many of which were recently illustrated and discussed by Al Seckel of the California Institute of Technology (Seckel, 2002)) provide familiar examples of discrepancies and imaginative misinterpretations. Also, often when we *think* we see something (a bush or fence post, for instance) it may suddenly be recognised to be a person or perching buzzard etc. weeping across the German plain with infantry in April 1945 one dawn, morning mists slowly cleared to reveal to me sinister dark figures of hostile soldiers which quickly resolved as scattered juniper bushes as light improved.

A phenomenon first recognised by most of us in early life is the after-image of a bright object as a corresponding dark image as our gaze shifts from the dazzling sun or reflection. The after-image of "bright" is its opposite, "dark", but soon we also notice that the after-image of a coloured object is likewise its opposite, the complementary colour - red as green etc. Other examples can be found, of which I find most intriguing the after-image of motion - complementary apparent motion in the opposite direction. Describing my first experiences of this, I quote (Grist, 1999):

"It was over 50 years ago, one of those sparkling summer days of childhood when corncrakes rasped from every cornfield and yellowhammers jingled their "Little bit of bread and no cheese" from every hedge row. I lay on the grass in Hexthorpe Flatts beside my seated parents while a silver band entertained relaxing

Doncaster citizens that sunny Sunday afternoon. For some minutes I idly gazed fixedly at the hub of a water-pumping windmill silhouetted against the blue sky. I then rolled over to look at a humming bee on nearby daisies - and was amazed to see an area of the greensward corresponding to the windmill vanes "rotating" smoothly in the opposite direction, slowing gradually to a standstill. The edge of this "rotating" area did not split itself from the adjacent non-moving image. The phenomenon was repeatable and I recognised it as analogous to the familiar complementary after-image after gazing at a bright light or objects".

The same phenomenon can disturbingly show an area of deck of a ship to be "moving" in the opposite direction to the bow wave at which one has stared for some minutes; and sometimes a railway carriage in which one has been travelling beside the window apparently rolls backwards for a few moments after it comes to a standstill. One can also become imbalanced from staring long at a waterfall.

A more surprising example of this drew my attention during military service when sitting in the back of covered truck gazing at the receding landscape. When the truck stopped I had a strong impression that it was rolling backwards. This was particularly noticeable on the long desert road from Amman to Baghdad. The field of vision backwards under the canopy, previously filled by images converging to the far point, was now occupied by elements apparently diverging for a while - yet not visually "overflowing" onto the canopy - but again soon slowing to stable normality. Once more, this was an "after-image" of opposite sensation, showing that perception of "movement" was independent from perceptions of brightness, colour, contours and so forth. "Motion is a specific sensation from a particular class of neural mechanism, just as colour is a sensation" (Morgan, 2003). Modern neuroscience is unveiling visual sensations as dealt with by separate brain areas of which the five best known deal with interpretation of shape, size, depth, colour and *movement*. We now recognise 30 such visual centres intercommunicating in the back of our brains (visual cortex) as pointed out by the 2003 Reith Lecturer, V.S. Ramachandran (2003) and discussed in greater detail by Michael Morgan (2003). Information from these areas must be integrated and interpreted to best ability before reaching our consciousness.

High visual sensitivity to motion has been important during our evolution, providing instant awareness of possible danger (e.g. from predator) or presence of prey (e.g. deer). However, I have not noticed corresponding effects from stopping *forward* movement. Thus after running, or driving a car and braking to a standstill, one has no false sensation of reverse movement. Perhaps sensitivity to such effects during forward flight or pursuit might be too dangerously disorienting and has been selected against during our evolution. Sustained backward movement is not a "normal" experience, and in past life would not have been sufficiently frequent to elicit adverse selection. Lateral motion (as through the carriage window) can produce the effect but without sufficient probable danger to elicit adverse selection.

The importance to perception of movement in the visual field can be seen in a simple experiment. Gaze fixedly at a small object or point. This is not easy because ones eyes normally sustain constant, tiny but consciously imperceptible, movements to maintain sharp recognition of what is to be seen. However, try hard to stop the movement, and slowly the objects seen lose contrast, dim down & become hard to distinguish from the background until one becomes for a moment "blind"(as in "snow blindness", without contrast in the uniform whiteness). This

effect is hard to achieve for more than a brief moment, but as ones eyes wiggle slightly, trying to regain their usual state, the images perceived become "vignetted" with exaggerated edges. Recognition of "edges" of objects (lines of high contrast between adjacent areas) is yet another component dealt with as a separate component of vision.

Now compare the common feral pigeon and the grey squirrel. Within sight of both, throw a few peanuts on the ground. Both see & recognise the tasty morsels. Both fly, jump, run to get them. The pigeon homes in to every one in sight, even after the nuts have come to rest. The squirrel likewise runs swiftly to the site, but does not recognise where the individual nuts are once they have stopped rolling. The squirrel sniffs around, seeking and apparently finding them by smell - it is amazing to watch a questing squirrel step over a nut without noticing it. So the squirrel "sees" moving objects, without clearly distinguishing those that are stationary. How then does it cope with aerial acrobatics, leaping from branch to branch and rarely missing its foothold? While it moves in the branches, these branches, whether or not moving in the wind, are in *relative* motion to the moving squirrel which thus perceives them clearly as moving objects. Exquisite sensitivity of the squirrel to movements of objects in its field of vision also partly explains the bold indifference of some squirrels to the proximity of a predatory cat, even when this is behind the squirrel and close to its tail. The squirrel's confidence also comes from near all-round vision (eyes near the sides of the head), sensitivity to movement, and of course its speed & agility. In addition, if cornered, squirrels have long, sharp claws which I have seen brandished in the face of the threatening cat in a stand-off before making a lightning-fast escape, faster than the cat could recognise and react to.

References

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NATIONAL COUNCIL FOR THE CONSERVATION OF PLANTS AND GARDENS Strathclyde Branch

Do join us on a visit to Cambo House, Kingsbarns, Fife

By popular request – A return visit, this time in the autumn to see their colourful *Colchicums* and their famous late summer borders

**Depart at 9 am from George Square Glasgow
On Sunday 18th September 2005**

(When we went to see the Snowdrops we had a waiting list for places)

BOOK NOW TO AVOID DISAPPOINTMENT

Contact June McKay for more information

Deadline for next Newsletter – Monday 1st August 2005

If you have already typed an article on a computer, please send it on a floppy disc if you do not have email, to avoid unnecessary retyping!

The Editor is grateful for the valuable contribution to the Newsletter made by other members, who regularly give up their time proofreading the Newsletter, stuffing it into envelopes and posting it.