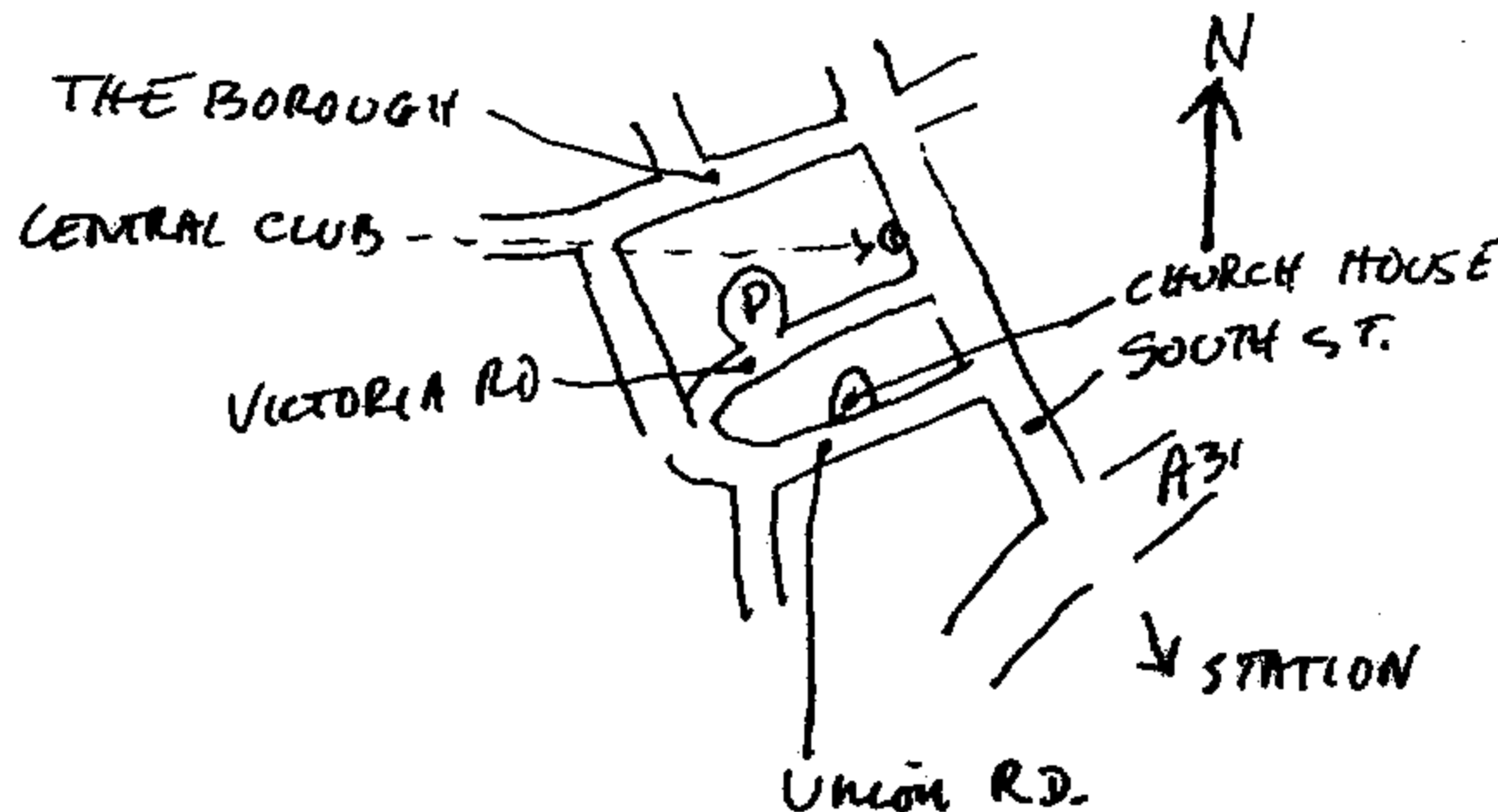


(A Local Group within the Geologists' Association)

Newsletter May 2001 Vol. 4 No. 4

Members of the Society who take the Farnham Herald will have read in the 12 Jan 2001 issue the startling news that the Central Club is to close in September this year. Our Society will therefore have to find a new venue for its activities. Our last meeting at the Central Club will be the Members Evening on July 13th.

Committee members have been examining localities and Peter Cotton reports that the Committee have investigated no less than six alternative venues for our Friday meetings, and have decided to book the Church House in Union Road from September onwards. The Central Car Park in Victoria Road is only about a minute's walk from Church House.



We are completely in the dark about the future of the Central Club, and we obviously would like to return to it if at all possible.

Meanwhile despite soothing words from No. 10 the countryside is closing down. A footpath just a quarter of mile from our house, bordering a cow pasture had been closed off and a warning notice put up although there is no Foot and Mouth Disease in our area. However a second visit to the spot later showed that the notice had gone and the plastic strip left lying on the ground nearby as a piece of non-biodegradable litter. It hardly needs repeating that most of the quarries and pits that our Society is wont to visit are in the country.

We have to thank Peter Cotton for the article on Easter Island, the most remote isle in the Pacific and two thousand miles from the nearest mainland. The present islanders know nothing about the builders of these remarkable effigies.

Alan Comer provides some interesting thoughts on the Ostrich. Shirley Stephens explains the new numbering of the Newsletter while Mike Weaver brings us up to date with details of the Society's Web Site.

Desk Top Publishing has an interesting article on our Newsletter.

David Caddy
Editor

The Geology of Easter Island and its Monolithic Monuments

Easter Island (or Rapa Nui) is located 3700 Km off the coast of Chile just south of the Tropic of Capricorn. It is a small island of about 150 square kilometres, less than half the size of the Isle of Wight. It is right in the middle of the most uninhabited part of the South Pacific ocean with thousands of kilometres of ocean separating it from other land masses. For this reason East Island was referred to by its ancient inhabitants as 'Se Pito o Se Henua' - the navel of the world!

Geologically speaking Easter Island is similar to other Pacific Islands such as the Galapagos chain where a mass of lava has poured out from the ocean bed and built a large dome below sea level which then served as the base for subsequent building of volcanoes above sea level. In the case of Easter Island there were three main volcanic cones pouring out lava and pyroclastic emissions which over a period of some three million years up to 10,000 years ago created a triangular land mass with a volcano at each of the three points of the triangle. In addition to the three main volcanoes there are numerous smaller cones some of which became the source of the materials used by the inhabitants for building their monuments and making their tools and weapons. The youngest of the three volcanoes, Maunga Teresaka, is situated at the northern point of the island and forms the highest point at around 500 metres above sea level to which must be added the 3000 metres dome below sea level to give an overall height of 3.5 kilometres.

Easter Island has already been compared with the Galapagos Islands and they both rest on the eastward moving Nazca Plate which is subducting below South America. However, unlike the Galapagos Islands where the hot spot is still active and creating new islands to the west, the volcanic activity under Easter Island seems to have halted some 10,000 years ago. It is therefore a "lone ranger" riding to eventual destruction under South America a few million years hence.

So what sort of igneous rocks are to be found on Easter Island? Well as might be expected in this situation, the eruptions are basaltic in character. One can see layered basalt, trachyte, obsidian and, last but not least, the two materials used by the early inhabitants for the construction of the world renowned monuments known as Moai which represented the ancestors of various clans who inhabited the island. These materials are firstly a volcanic tuff which is a greyish yellow rock formed from compacted volcanic ash with incrustations of small pieces of basalt; and secondly a red scoria found in a secondary crater in the west of the island.

Dealing first with the volcanic tuff, this is found in one location in the east of the island where a secondary crater of the oldest volcano called Rano Rapaku yields in the crater walls a material ideal for carving the huge moai monuments. This location became a moai manufacturing site where it is estimated that nearly 800 of them were carved and then transported to their designated sites round the island. At this stage only the front of the moai had been carved and then undercut for transportation on wooden rollers to their final position facing away from the sea where the back was sculpted. Visiting the Rapaku crater today one sees in and around it hundreds of partly finished moai, one of them a huge partly-carved slab nearly 22 metres in length which could probably not have been moved. There are, however, some huge moai over 10 metres high in position which weigh up to 60 tons.

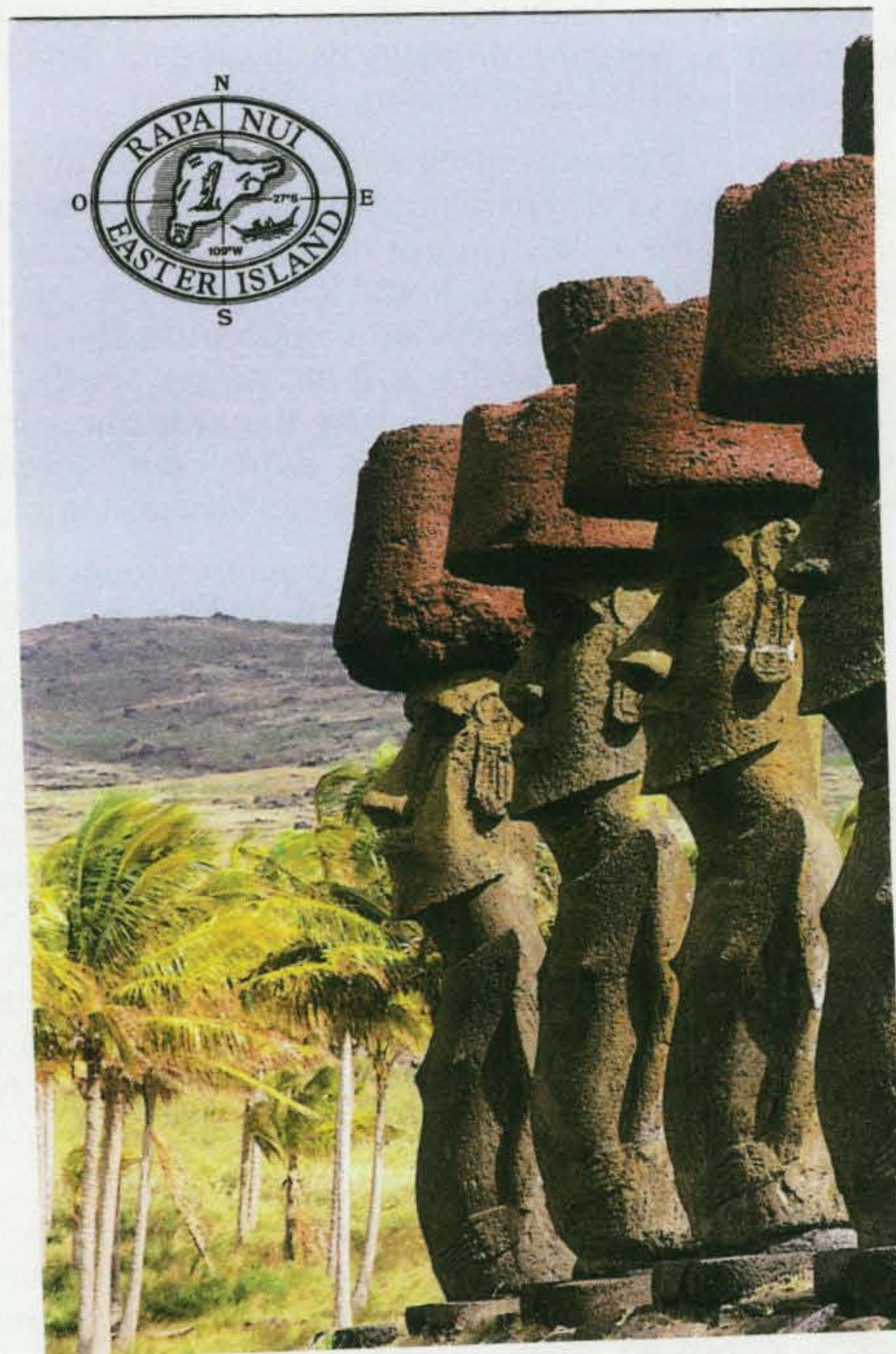
Placed on the heads of some of the moai are red "topknots" (proper name pukao) which themselves weigh several tons and are believed to represent a hairstyle common at the time. These topknots were carved from the red scoria already referred to and, like the moai, had to be transported all round the island and hauled up to sit on the head of the moai where a cavity at the base of the topknots allowed them to fit onto the narrow top of the statue.

Finally in relation to the famous monuments it is important to note that the moai stand on substantial platforms of rock, some beautifully crafted, called ahu. The ahu was in fact more important than the

several moai standing on it because it was the resting place for the bones of the ancestors. One of the ahus has 15 huge moai standing on it.

This brief article has dealt with the creative processes that formed the island itself and those representing the massive efforts needed to create the ceremonial monuments round the coast. Unfortunately there has been much destruction by warring clans in the past who, when the defeated another clan, toppled the moai and destroyed their ahus. In fact the first western explorers found no moai upright and those now to be seen are the result of costly restoration work financed mostly by Japanese businesses. Apart from the destruction at the hands of tribesmen where has been damage by earthquakes and by a massive tsunami in May 1960 following the disastrous earthquake in Southern Chile which set a tidal wave of 10 metres height crashing onto the coasts of Easter Island and carrying away ahu and moai alike. As a final comment on the destructive processes, the need to fell trees for the creation of rollers to transport the huge statues has left Easter Island with few areas of woodland.

Finally on a positive note it can be reported that Easter Island is now a peaceful and relaxing place and well worth a visit when you can be certain of a warm welcome from the Rapa Nui inhabitants.



Four MOAI on Easter Island

Struthio Camelus

There have been reports in the newspapers recently that *Struthio camelus* (Ostrich) farming is increasing in this country, nearly forty farms being currently in production, with several more proposed in the near future. However, difficulties have arisen. There is apparently a good market for the feathers and the meat, and the skin makes a very useful leather, but unfortunately neither British regulations nor those from the EEC give any guidance to our abattoirs about how these creatures should be dealt with - they certainly are not large four-legged animals, as they should be as their meat is classified as red, but on the other hand the biggest birds envisaged are turkeys which, large as they can be, are never eight feet tall and as strong as horses.

I wonder whether geologists should not offer a little advice.

For example, I think we could advise with reasonable confidence that fine feathers do not necessarily mean fine birds. It now seems clear that all our feathered friends have their evolutionary roots among the little dinosaurs, the mososaurs now being retired by majority consent. Nowadays there seems to be a strong belief that all feathered creatures are birds, those that cannot fly having lost that ability over many generations when it was not needed, among them being the Dodos and others including the Ostriches, but this is not the only interpretation that fits the fossil record. Once mature feathers had evolved there might well have been alternative routes for further development, the suggestion being made as long ago as 1959 to my knowledge that primitively protoavian creatures might have taken to the water to live as penguins do today, without ever developing the ability to fly. (Time, Life, and Man in the Fossil Record. Stirton, 1959)

Such radical ideas are not always pursued, but speculation outside mainstream thinking is always entertaining and can often be helpful. The smallest dinosaurs, some only about the size of chickens, must always have been at risk from larger predators of the time. Reptilian scales on the skin would help, possibly against tooth and claw but certainly against thorns and rocks when they sought concealment, and evolutionary modifications to enhance these qualities might well result in spines, quills, and ultimately feathers which would provide the added bonus of keeping the animals dry and warm. They would then be able to extend their territory into higher, more open country not so well suited to un-feathered dinosaurs, despite the wider diurnal and annual temperature ranges they might encounter.

Of course predators would ultimately catch up with them, but by this time the ability to run across the open plains would be well developed, with their feathers contributing to enormous leaps away from danger when they beat their arms downwards as they ran. Thus the smaller ones would take the first steps towards ultimate flight, which, in due course, would allow migration if their territory became untenable, so that these survived when other dinosaurs failed. But amongst them would be slightly larger, heavier varieties, also feathered and well adapted to life on high, open plateaux where few predators could catch them, large enough if cornered to do battle and probably win without the need to leap. These survived without ever needing to fly, to become masters of their territory which they still occupy on the open plains of Africa, South America and Australia. The African variety we call Ostriches. In common with the birds, all these flightless feathered creatures have lost the teeth that can be seen in *Archaeopteryx*, and their tails have reduced to a more manageable length, but in all other respects they remain the last living representatives of the dinosaurs, a long step beyond *Struthiomimus* which some think may also have had feathers.

It must be admitted that not everyone will unconditionally endorse these opinions, but as there is certainly some support for them, particularly across the Atlantic where such a lot of work is being accomplished on the subject, it is surely right to keep Brussels informed of the possibility. My own opinion is that, because of the controversy ostriches should no longer be classified for commercial purposes as ordinary commonplace birds, but that their dinosaurian roots should be recognised, though I wonder whether European bureaucracy is up to providing rules for the slaughter of Dinosaurs in our abattoirs. Perhaps this will be one of the final scientific jokes of this century if they have to try.

August 1995

Membership News - M J Weaver

Readers may be interested to know that on 1st April 2001, Society membership was 113; this number is made up of 76 Ordinary members, 24 Family members, 9 Associate members and 4 Honorary members. I am pleased to report that this year the Society has already gained 4 brand-new members, together with another 4 'new' members who have rejoined after a year's absence. The aim of the Committee is to keep membership at over the 100 mark, and ALL members are urged to keep an on-going lookout for possible new recruits.

Society Web-site - M J Weaver

By way of an experiment, your Committee has been giving some thought as to what should be included in a Society web-site. If you find computers and their associated jargon of *e-mails, web-sites, surfing the net* etc a complete mystery, then read no further: but, if you have mastered this emerging technology, then you may be interested to note the addresses of two experimental FGS web-sites that are currently up and running on the World Wide Web (www).

Both sites contain almost identical information, but are presented in two contrasting styles. Members who have access to the web are invited to 'browse' both sites, as the Committee is anxious to get feedback from members as to what should and should not be included in its web-site, together with style of presentation etc.

Currently both sites are taking advantage of the free web-space made available to two Committee members by their own Internet Service Provider (ISP). For the time being therefore, the addresses of these two experimental sites should not be disclosed to anyone who is not a member of the Society.

The two site addresses are:

- 1 http://website.lineone.net/~shirley_stephens
- 2 <http://homepage.ntlworld.com/mjweaver/fgs.htm>

Please make your views known (either in person or by e-mail) to either Shirley Stevens (dandsestevens@lineone.net) or Mike Weaver (mjweaver@ntlworld.com).

Many thanks for your anticipated interest and comments.

NEWSLETTER & MAGAZINE DESIGN

This issue we take a look at the Farnham Geological Society's newsletter

The subject of this feature on newsletter and magazine design, the newsletter of the Farnham Geological Society, is different in one respect to most that we have covered in the past – normally it goes nowhere near a computer. It is edited by the father of one of our readers, Jennifer Caddy, who is very interested in dtp and what it can be used for. At the Wakefield Show Jennifer visited our stand and showed us this newsletter which she had originated, and she agreed we could feature it in this column. Let Jennifer take up the story.

"I designed this issue of the newsletter as a challenge. My father, who is in his eighties and has never used a computer in his life, is the editor. He produces three or four editions per year when he has enough material. Typically everyone in the society wants a newsletter but no one wants to contribute.

"A local secretarial service types the text for him on sheets of A4 paper, cuts and pastes the logo and any pictures and then photocopies the result. The newsletter, though adequate, is uninspiring.

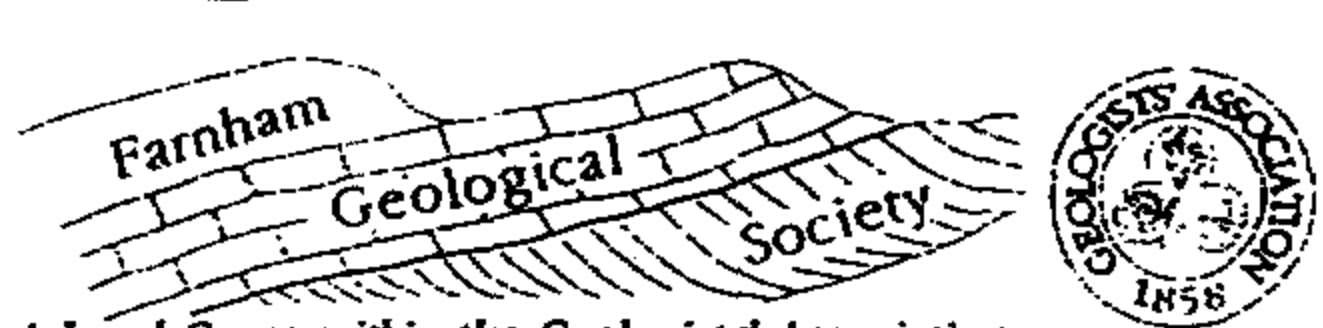
"I chose an A5 layout because it looks more professional than A4 stapled top left and is also the same format as the parent Geological Association's own newsletter. As the text contained long scientific words and the readers were likely to have difficulty reading small print I used a single column to allow more words per line and thus reduce the chance of ugly white spaces in the body copy.

"The logo, which was hand-drawn, I scanned as a sprite and then, somewhat laboriously, drew over the sprite in ArtWorks with the line editing tools. I did the same with the maps which were also (rather poorly) hand-drawn. The clip art was from Bitfolio. I used it to break up the text. The cartoons I added as I had run out of suitable geological clip art. I have yet to find any clip art of fossils.

"My father was pleased with the result. He was amazed that this sort of thing could be done on a home computer and said he'd ask his secretarial service if they could do something similar. I await their reply with interest."

Jennifer is a keen reader of Acorn Publisher and has corresponded with us in the past on dtp issues, so it is interesting to see how she has risen to the challenge of this newsletter. The issue which Jennifer edited is 16 pages in length and uses two fonts, Calisto for the body text and Abadi for headings. With the single column of text and wide margin the newsletter has a spacious feel to it and the text is clear and readable.

Below, the front cover of the newsletter designed by Jennifer Caddy



Farnham Geological Society
A Local Group within the Geological Association

Newsletter	Comment
April 2000	We have just returned from the first Field Trip of the New Millennium—purists would say (correctly) that we are in the last year of the Old Millennium. Eighteen members attended under the expert leadership of Dr Paul Davis. We were accommodated at the Bay Hotel, right on the sea front of Lyme Regis. The food and service was excellent and some members even had a view of the grey sea from their bedroom windows. The weather did not smile on us and we hardly saw the sun at all. However we all enjoyed the trip and it gave us the chance to get to know some of the newer members.
	The strength of our society is reflected in the activities of its members. Field Meetings offer a much better opportunity for people to become acquainted than attendance at lectures. Moreover they give one the chance to visit other parts of the country or even go overseas. And what is more they are fun.
	We congratulate Dorcas Cresswell on acquiring the degree of BSc Hons in Combined Science with the Open University. How she managed to combine the Course with being an active member of our Society, to say nothing of ordinary daily life shows great organization skills.
	We thank Peter Cotton for the second half of the Eclipse Trip Report. We thank Colin and Jill Brash for the report on the Lake District trip.
	There is a brief report on the Isle of Sheppey trip.
	Peter Cotton has provided geological details of our recent visit to West Dorset. A fuller account of the life and times of Mary Anning is provided in the Field Notes of our visit by Dr Paul Davis.
	The quiz and the Committee poem (by Anon) are from a family newsletter. No prizes for the quiz.

Contents
Comment 1
Lake District 2
Isle of Sheppey 2
Lyme Regis 3
Mary Anning 3
Eclipse tour 3-13
Future trips 14
From the Net 15

GEOLOGY FIELD & DAY TRIP REPORT FOR THE MAY NEWSLETTER

FIELD TRIPS - 2001

NORTHERN IRELAND AND EIRE 12 – 27 MAY with Sinead Young

NORTH WALES 3-10 AUGUST with David Cronshaw

EAST SUFFOLK – SEPTEMBER with Paul Davis

We are also hoping to arrange a week-end visit to the GA Festival – November 2-4th if anyone is interested.

DAY TRIPS - 2001

THE WESTERN WEALD – 16th SEPTEMBER with John Gahan

ASHDOWN FOREST – TBA with Sue Hay & Brian Harvey

FIELD TRIPS – 2002

ITALY 13TH – 27TH APRIL with Paul Olver

PORTUGAL 24TH – 1ST OCTOBER & 1ST OCTOBER – 8TH OCTOBER with Lyn Linse

FIELD TRIPS - 2003

AEGEAN in MAY with John Williams

FIELD TRIPS 2004

GRAND CANYON with John Williams

If you wish any further details or would like to put your name down for any of the trips do contact Dorcas Cresswell (Field Secretary) on 01252 793884.

INSURANCE

Several members have asked why do they need to take out personal insurance cover when the Club already has an insurance policy. The answer is that these two insurances are completely different.

- 1) The Club's insurance policy is a Public Liability policy covering the club and it's members whilst engaged on club activities for negligent acts to a third party.
- 2) Personal Insurance policies provide individual members with cover for a trip such as; cancellation, personal accident-death and disability benefits, loss of baggage, medical expenses.

PLEASE NOTE

THE ANNUAL DINNER THIS YEAR WILL BE ON FRIDAY 26TH OCTOBER, AT THE FARNHAM HOUSE HOTEL NOT AS STATED ON THE PROGRAMME.

Numbering of FGS Newsletters

For some time I have been advocating numbering our newsletters and have been given the go ahead at last. Consequently I have been delving through all the newsletters in the FGS archives and find that the first one was optimistically given a No. 1 but was not actually dated. However the first field meeting of the society was held on Sunday 12 July 1970, when 12 members met at Burrington Combe and visited 11 localities in one day! The first indoor meeting was held on 6 August 1970 at the Adult Education Centre, Potters Gate, Farnham. There had been geology classes run by the WEA for some time so there was a nucleus of people interested enough to form a society. If you want to know more about the beginnings, see the March 1988 Newsletter where David Caddy wrote a more full account of the start of the FGS. I have only looked at the newsletters not the minutes or correspondence. No subsequent ones were numbered. It seems that at about that time Audrey Hewins found a silver pot which was sold to the Guildford Museum and the proceeds were used to fund the society. During the first 10 years up to 1979 there were 15 newsletters produced all A4 size and I suggest these be regarded as Vol. 1 Nos. 1-15.

Then came the 4 super journals 2 years later in an A5 format, edited by Paul Over who was also the chairman of the society at the time. They date from February 1981 to December 1984 and were numbered Vol. 1 Parts 1-4. Those will now be regarded as Vol. 2 Nos. 1-4. In one of them Lyn Linse was thanked for her mastery of the new word processing techniques! Unfortunately they proved to be too expensive and no more were produced.

In January 1985 and again in an A4 format and photocopied, the newsletter was given a No. 1. The next one was handwritten by Cath Clemesha but no further ones were numbered. Since then there have been 23 newsletters to December 1999. I suggest they be regarded as Vol. 3 Nos. 1-15. Now I trust you will all be rushing to number your old copies!

In the year 2000 3 more newsletters were produced and they will be the beginning of the next volume Nos. 1-3. You will have noticed no doubt that this newsletter is named Vol. 4 No. 4. Long may they continue.

A MOTHER'S LETTER

Dear Son

Just a few lines to let you know that I am still alive. I am writing this slowly because I know that you can't read fast. you won't know the house when you come home; we've moved.

about your father; he has got a lovely new job. he has 500 men under him. he cuts the grass at the cemetery. your sister Mary had a baby this morning. I haven't found out yet whether its a boy or a girl, so I don't know if yore an aunt or an uncle.

I went to the doctors on Thursday and your father came with me. the Doctor put a small tube in my mouth and told me not to talk for 10 minutes. your father offered to buy it from him. Your Uncle Harry drowned last week in a vat of whisky at the local brewery. some of his work-mates tried to save him, but he fought them off bravely. they cremated him and it took three days to put the fire out.

It only rained twice this week, first for 3 days, then for 4 days. we had a letter from the undertaker. he said if the last payment on your grandmother's plot wasn't paid in 7 days, up she comes.

Your loving mother.

P.S. if you don't receive this letter, write and let me know.