The Edinburgh Geologist

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for the 169th Session 2002-2003

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Cover illustration

The Sgùrr of Eigg

The Sgùrr of Eigg, apparent pinnacle of pitchstone, as seen from Galmisdale

see articles in this issue on the Eigg Excursion on page 10,
What's in a Name? on page 20 and the review of
The Geology of Eigg on page 36.

Photograph taken by and published by permission of Caroline Paterson.

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Editor
Alan Fyfe
Struan Cottage
3 Hillview Cottages
Ratho
EH28 8RF

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Editorial

by Alan Fyfe

Geologists, and others who study the history of the Earth, if they have heard, read or watched *The Hitch Hiker's Guide to the Galaxy*, will not fail to grasp the significance of this issue of *The Edinburgh Geologist*, which is number 42. According to Slartibartfast, the Earth was created to let the mice know the phrasing of the ultimate question, for which the answer was 42. And if all that makes no sense, then I can only suggest that either you try reading the book... or you try this magazine instead.

The photograph on the front cover gives some flavour of what is in store for you. It was taken by Caroline Paterson on last year's week excursion to Eigg and Muck. Caroline has written for us an entertaining account of that excursion, illustrated by some of her own superb photographs. It is followed by the last in this series of *What's in a Name?*, which tells of the origins of the Gaelic word *sgùrr*, of which Eigg has the most famous, *An Sgùrr*. I have decided that this series has run its course and in the next issue, a new series on the geology of the Scottish mountains will begin. I have a few contributions promised for this, but if anyone would like to make an offering, please let the Editor know.

Back on the subject of excursions, David McAdam has just retired after ten years as Excursion Secretary. I visited him in North Berwick and talked to him about his experiences in the post and he regaled me with a number of entertaining anecdotes, of which I have managed to include a few here. I would like to thank him for being so willing a subject of my interrogation... and also for the lunch! I have had some positive feedback on these interview articles, and if any readers would like to suggest someone else who they would like to hear from, again, please let the Editor know.

Fellows have been confused about how to access *The Scottish Journal of Geology* on-line, so I have written a short guide in this issue (of *The Edinburgh Geologist*). It is a fairly intricate procedure to set it up, so I hope that this will help. Thanks to those who test-drove it for me. On our own web site, I have now finished uploading all the *Strange Earth* articles written over the years by Bill Baird. To celebrate this, I have asked Bill to write me another couple and the first of those, No 19, is published here. No 20 should appear in the next issue.

Bill's article is on ancient mining in Swaziland and, staying on the same continent, the *Geo-vineyards* for this issue is of a South African wine by the name of *Limestone Hill*. There is a similar link with an article by Eric Robinson and this issue's *Poet's Corner*. Eric has been clearing his loft recently and came across a letter from Archie Lamont, an eccentric Scots patriot, poet and geologist. In memory of Archie, Eric has sent me this, together with one of Archie's poems, *Palaeosmilia*.

Editorial

The first of the book reviews in this issue closes a loop. It is John Hudson and Ann Allwright's *The Geology of Eigg* and is reviewed by David Stephenson. The second book is Charles Hepworth Holland's *The Irish Landscape – a scenery to celebrate*, reviewed by Don Cameron. Thanks to David and to Don for reading and writing about these for me. As an update to literature previously reviewed in *The Edinburgh Geologist*, I am pleased to see that the leaflet on Barns Ness, developed jointly by the Lothian and Borders RIGS group and Girlguiding East Lothian, has been awarded joint first place in the ENI Geological Challenge. The judges (Richard Fortey, John Bell of ENI and Chris Darmon) all felt that it represented an excellent pieice of cooperation between adult geologists of our RIGS group and the children themselves. Well done, girls!

Lastly (almost) is Angela's latest *Rocksword Puzzle*. The answers are on the inside of the back cover.

This issue is completed with the Proceedings of the Society for the 169th session, 2002-2003. It has come to my attention that compiling the Proceedings for each session in the Spring following the end of that session means that by the time they are published, they are reporting on events up to eighteen months previously. In order to correct this, I am going to attempt to produce the Proceedings for this, the 170th session, in the Autumn. This means that next issue of *The Edinburgh Geologist* may not be with you until November instead of October, but at least the Proceedings will be a little more up to date.

Anyone wishing to contribute to the next issue is asked to write to me at any time up to the copy date, which is shown below. In the mean time, I hope that you enjoy this one, Earthmen...

Editor: Alan Fyfe
Struan Cottage
3 Hillview Cottages
Ratho
EH28 8RF

Telephone/fax: (0131) 333 4471
E-mail: eg_editor@edinburghgeolsoc.org

The copy date for the next issue of THE EDINBURGH GEOLOGIST **is Tuesday 31st August, 2004.**

Ten years as Excursion Secretary

the Editor interviews David McAdam

I searched David out in his new home out in North Berwick. There were workmen in creating a new wall and we retired to the quiet of his comfortable attic to chat.

Alan: *David, you've just completed ten years as Excursion Secretary. Tell us something of your earliest memories of the Edinburgh Geological Society excursions?*

David: Well, one of my first memories was when I moved up from the Geological Survey in Exhibition Road in London and transferred to Grange Terrace in April 1964. On my first day there, the talk in the tea-room was of the previous Saturday and the excursion that had been led by Malcolm Howells to Gosford Bay— and how successful that had been. It was a sudden introduction to the Edinburgh Geological Society and over the next forty years I was to be involved in excursions in many different ways.

In the early years, I remember coaches leaving St Andrew Square under the guidance of Charles Waterstone, Alec Mackie, Bill Harper and Ian Hogarth and how many varied and happy these days were. At that time, they ran two weekend excursions; they were on the May and September holiday weekends. Then in 1979, there was a trip to the Isle of Rum. Unfortunately I couldn't go on this, but they had a superb five days there, staying at Kinloch House and it was so thoroughly enjoyed that ever since, the Society has held a week excursion in May. The first one I joined was one to Islay. I had some family connections there and I arranged somewhere for them to stay. So having done that, I thought I had better join the excursion and it turned out to be a very successful and happy week.

My memory of Islay was turning up at the Machrie Chalets with the minibuses. We unloaded our stuff plus all the food and it was carefully divided into six for each of the six chalets. Muriel Hogarth had arranged all the menus for us, but there was an appalling moment when she discovered a problem with the packs of bacon. There were six chalets by seven days by five people and one of the elements had been missed out so we were three hundred rashers of bacon short. I suggested that as we were going to Port Ellen; we could get bacon there. So Muriel walked into the butchers' and said, "Can I have three hundred rashers of bacon please in packs of five." And the chap said, "Certainly," and picked up a side of bacon and started slicing three hundred rashers. Well, after about ten minutes, he didn't seem to have made much impression on the side of bacon but a had queue built up behind us. So he asked if we could come back later. It was all very entertaining.

I was on several week excursions and they were all very enjoyable. We gradually

worked our way up the west side of Scotland. One other story I remember is that we specially got an eightieth birthday candle for Alec Mackie's birthday, which was on one of the trips, I think somewhere near Loch Carron, only to discover that he was actually only 79! So we had to repeat it the following year.

And you know, the thing about those days is that the excursions were led by two members from the party, Wally Mykura and Frank May. And they did a tremendous amount of work in preparation. Of course, they were Highland geologists and the excursions were always in the Highlands so it worked out very effectively. Wally had a tremendous enthusiasm and Frank had a tremendous knowledge as well. Wally led and Frank backed up and filled in the gaps. They were very good. It was very sad when Wally died in 1988.

(*David rummaged around and took out a large rolled geological map of Scotland*)

I have this map which I made for an exhibit of in the early 1980s. It shows twenty years of localities to which excursions have gone and the spots cover most of Scotland. Perhaps it's time to update this and show where the Society has been in the past twenty years as well. There's virtually no part of Scotland where we haven't been in the last forty years. I haven't been on them all, but I've been on many of them.

So when did you become involved with the Excursions Committee?

I was Secretary of the Society in the early seventies so would have been on the committee at that time. One of the things I remember about the Excursions Committee is that was held in Ian Hogarth's house on a Saturday morning in early January and it was as much a New Year celebration as a discussion of excursions. But these committees were really think tanks— they put forward suggestions and then the Excursions Secretary arranged everything. The Excursions Committee is necessary as a sort of regulator on the Society's excursions but what happens is very much a result of the Excursions Secretary's benign dictatorship. So while the meeting was very effective, it was also a social highlight. And at that time, Ian not only arranged the Saturday excursions, he arranged the week and the weekend excursions too.

Then for several years I didn't go on many excursions because I had a family, but once they had grown up I found I could start going on excursions again. To tell the truth, they had landed a bit on hard times and they weren't going very well, so I thought that if I was going to go on them I could organise them as well. So I rashly volunteered to take over as Excursions Secretary in November 1993.

Were there any changes you made then?

I have to say I was encouraged in the way it built up quite quickly. For the Saturday

excursions, there were various places that were within an hour or two by coach from Edinburgh, most in southern Scotland. But we have some great geology in Edinburgh I tried to think of a number of Wednesday evening excursions, about four or five which covered the range of geology here. One thing I remember doing was an Arthur's Seat series; Arthur's Seat is too big for an evening and too close for a day— and there's a problem with toilets at lunch time: so we did five different bits of Arthur's Seat on Wednesday evenings over five years.

I remember when I came back from Hong Kong in 1997, the application forms for the excursions came out and I phoned you to ask you why were they back to front, with the first one at the end.

Well, there was a simple reason. One of my main objectives when I started was to make it user-friendly, to make it easy for people to book on the excursions. My idea was that you had all the information at the top of the page and you could cut off the slips off the bottom of the page and send them in one at a time. People in fact sent the whole thing in; they decided at the beginning of the year what they wanted to do and they sent me in the whole sheet— and they usually stick to it pretty well. I had thought people would think one at a time, but they actually think the whole summer programme. It's just the practicality of it.

But you farmed out the weekend and week excursions—

Yes. I am very grateful to Ian Jackson for building up the weekend excursion and to Caroline Paterson taking full control of the week's excursion. Caroline has been very efficient. She had organised trips of her own to Iceland and she put this experience to good use in arranging our week excursions. It's a lot of work. And the weekends actually hadn't been happening for several years but we managed to find a formula whereby we arranged a date, a leader, a location near a village and a list of accommodation. People made their own arrangements, which worked for several years. Now it's becoming more formal. The fact is that many of the members are growing older and instead of being happy with self-catering huts and school annexes, they really want the comfort of a hotel. That aspect is changing.

Tell us something of the logistics of planning a programme. How much do you consider the balance of the geology?

I try to think of it geographically— going out in different directions is one of the first thoughts; then there's geological diversity: I like it to be a mixture of Carboniferous, Devonian, Southern Uplands, Highlands, Quaternary and economic. I am also very much in favour of using our own talents. In the Society, we have so many talented people who can lead us and are usually very willing to lead us. And it's also easier to

organise with people that you know, so I've found it less and less necessary to go outwith the Society membership. If you look at the leaders over the years, you'll find certain people have been constantly leading excursions. It's disappointing in a way that other people are not being asked more often— there's people that have things to give to the Society which haven't been realised. But what is good is to see that we're beginning to get more younger people involved in leading excursions.

And as well as seeing a tremendous variety of geology throughout Scotland and the north of England, it occurred to me that over the ten years I've been doing it, there's over a hundred excursions that I've arranged, both Saturday and Wednesday and given an average turn-out of twenty or twenty-five, that's two and a half thousand outings that people have enjoyed over that time!

So what is it that you think makes a successful excursion?

Good weather, a good locality, a good leader—

One tends to think of weather in the context of excursions. As you know, you go to all the effort of getting the leader organised, getting the coach organised and getting to St Andrew Square, checking everybody in and then hope that it's going to be a nice day weather-wise. I must say that most days we've been blessed with good or at least acceptable weather— with one or two notable exceptions. I remember one day years ago when we were up the coast at Arbroath with Mike Browne and it rained and rained and rained. On the converse I can think of another Mike Browne excursion when we were doing the Kirkcaldy-Kinghorn shore and we looked across to Edinburgh which the whole day seemed to be plastered with rain and we had it dry the whole time. And when we returned people couldn't believe that we'd had a dry day.

Just to go back to the excursion where it rained... how did people cope with it?

They weren't discouraged. You know the members of the Society— a little bit of bad weather doesn't put them off. Having said that, it's much more enjoyable when you get a nice sunny day on a beach locality. We've had many great days out on the Fife coast and much of the Lothian coast— I seem to be attracted to coastal excursions.

I suppose that if the weather's nice people can just lie on the beach. We've talked about the localities; what about leaders?

It's difficult— there's a range of leaders. A good leader for an Edinburgh Geol Soc Excursion is somebody who can embrace the whole range of knowledge. I try to remind leaders that this may be the first geological excursion, even the first experience of geology for someone— and you've got to cater for them as well, to bring them in. It's the same as with a lecture— I feel that one has to be able to get through to the

whole range of your audience, from the merest beginner to the expert. You also have to have some of the serious detailed geology which will remain a mystery to the person who doesn't know very much but will tell something to the expert who wants to discuss the various geological controversies. It's as true of an excursion as it is of a lecture. And a good leader is able to do both.

And of course, he has to know his subject very well.

He or she! I say 'she'— I don't want to mention names but there are people like Suzanne Miller for example, who can lead at a high level but can take everybody with her. You get other people who, after the first S1 and S2, have lost their audience.

Tell us something of the highlights of the last ten years.

Well, there's both highlights and lowlights! One nice thing that happened was on an excursion led by Maxine Ackhurst to Dumfries-shire. At lunch time, we had lunch on a bridge over a river and a birthday cake was produced for my fifty-ninth birthday. It was a nice surprise that had been kept from me.

What I've found doing the excursions is it's been a lot of work. Each excursion I've been thinking as much about the logistics and the organisation as enjoying the geology. You appreciate just how much the participants are enjoying it and it's nice to have letters and cards of appreciation. It makes doing the job seem worthwhile.

Do you get many of those, then?

Well, just the odd one. I have a small book of them, but it makes it seem worthwhile when you get a little note to say thank you very much for arranging the excursions for the past year. I even got a bottle of wine the other month to say thank you for running the excursions!

We've had no real disasters, perhaps the worst year was the Foot and Mouth, when there was a constant worry as to whether the programme would work. It was arranged just before the epidemic started. It was in a position to go out at that time, so we put it out... but things that should have happened then didn't happen.

Effectively what I had to do was to make addendum slips for the billet and hand them out or send them out to people. The main misfortune of that was the cancellation of the Anglesey trip, and it's never happened. It was the week excursion, and it was to one of the worst-hit areas.

There are various factors to take into account on dates, as well as trying to get a nice spread of dates that work, it is important to avoiding things like home rugby matches. But there are things that excursions do clash with. One I remember— we were going

to Lesmahagow on the same Saturday as the very first Gardens Scotland was at Strathclyde Park. The news on the Friday night was that they were expecting the area to be solid with traffic jams. And it was through the middle of that that we were planning to go so I had to work out a devious route to avoid it.

On another occasion, having arranged to be picked up from St Andrews Square, we discovered that the town centre was closed because 10,000 pipers were marching along Princes Street. You know these things are sent to try you as it were. I couldn't get in from Coprstorphine— the bus went round via Melville Street and Queensferry Road and I wondered what was going on. And cycling events have affected us as well, events such as the St Andrews cycle ride. We met that several years in succession. They didn't slow us down but we just had to drive through these hundreds of cyclists. We just happened to be going out by South Queensferry on the critical Saturday each year.

How does it work with the Glasgow Geological Society? Do you plan the programmes independently?

Traditionally we try to have a joint excursion each year, alternating who arranges it. I remember a couple of years ago, having planned an excursion to Lesmahagow which we held jointly with the Glasgow Geological Society, I was counting the people through the first gate. When I got above fifty, I realised that we had a big turn-out. These joint excursions are very successful, but they tend to be getting a bit too large to have them too often. But both Societies are doing quite well and can each get twenty-five or thirty people turning up. When you double that, you get a very large number. Lesmahagow could take that but at other localities it wouldn't be so easy.

I remember when I first joined the Society, I used to go on quite a lot of excursions to begin with and I think nearly every time we stopped for High Tea. That was something that somehow fell by the wayside, but I think that you have brought back again.

Yes, well, when I first went it was compulsory. I was just a participant but I was aware that it was part of the Excursion Secretary's remit to provide High Tea at every excursion. I think this involved actually going out to find somewhere to have High Tea, which was quite an imposition on the Excursions Secretary. When I took over this had stopped happening and I thought it would be a nice idea to re-introduce it. I thought that we could do it for the last excursion— so we tried it and it was quite popular. And as a variant of this, a few years ago we were doing an excursion to Stirling, which ended up near Tom and Alison Kerr's house. So I jokingly said that we could go back there for a meal afterwards, but Alison took me up on that! We had

a lovely walk into the hills and back out and into Bridge of Allan and we ended up with a very pleasant meal at the Kerrs'. It's happened once or twice now. Suzanne and Keith Miller had us to her house in Pittenweem, after a walk from St Monans. The Robbs entertained us to a barbecue in Haddington, while we took turns in viewing Jane's superb mineral museum. Then last year the Society came back here to our new house in North Berwick after a five-mile walk along the East Lothian coast; the fresh air certainly gave people the appetite to do justice to the meal that Valerie had prepared.

And perhaps this brings me to the point where I should maybe give due credit to Valerie who through the ten years has supported me and stood by me. She has come on many of the excursions and given me a helping hand. She has seen me out to the bus, driven the car round to Barnton to be picked up in the evening again. She has given me a lot of moral and actual support. When she was new in Edinburgh, she joined the Society and it gave her friendship, meeting a number of new people. Unfortunately it landed her up in North Berwick!

Actually, it was Valerie who pointed out to me that we've had people going to excursions from eight to eighty, the eight being Jane Robb while people like Bill Harper are still in their eighties. But participants in the excursions seem to be more and more the amateur members. In a way, it's disappointing that less professionals tend to go. In the early years when I went, a high proportion of professional people went. We don't seem to be involving quite so many younger professional geologists unless they're actually leading.

That's reflected in the Society in general isn't it?

Yes, and the other thing that strikes me as odd is that every year we get new members of the Society but remarkably few of these come to the excursions. I would have thought that when you first join the Society, you might want to find out what it offers.

So does it tend to be the same people who go on all the excursions?

My first reaction would be 'yes' but I'm sure If I looked over the lists of people that had come over the ten years, it would be a totally different list of people coming in 2003 from 1994. Some people are the same, but there has been a regular slight change over the ten years— which is encouraging. There is clearly a demand in the Society for the excursions and I am pleased that I'm able to hand over to Con Gillen a programme which is well supported. I've enjoyed my time as Excursions Secretary and I wish Con all the best in keeping the excursions going.

An excursion to Eigg and Muck

by Caroline Paterson

Cake, a glowing woodstove, long days on our feet, rain showers in the wind, idyllic island sunshine, shudderingly cold showers when the generator failed, more delicious cake – these are the memories of the Society's week on the Isle of Eigg in May 2003. With Professor John Hudson of Leicester University as leader, helped by his wife Nora and a junior colleague, Ann Allwright, 20 members of the Society had a wholly happy week exploring the islands of Eigg and Muck. Anyone wondering why such an apparently small arena for our annual Long Excursion was chosen must read John Hudson's description of Eigg and its geology in the millennium number of the *Scottish Journal of Geology*. Here is someone with a deep love of the island and its history as well as an expert knowledge of the Jurassic of the Inner Hebrides, nowhere better displayed than on Eigg and Muck. Knowing that John runs an annual course on the island's geology for the general public we could hijack his course to give a customised presentation for the Edinburgh Geological Society. And so it all fell into place.

We were based in the Glebe Barn Field Centre, set up by Simon and Karen Helliwell in a stately old building to provide a hostel for field groups and individuals visiting the island. Arriving on the CalMac ferry from Mallaig on a damp and windy day, we step through the ferry side on to the 'flit-boat' which shuttles in through rocks and shallows to the island's small jetty. "Jump when it comes level" says the kind ferryman, helping old ladies across the gap between the ferry and the boat. Then a brisk walk up the hill to the Glebe Barn while our baggage trundles up in Simon's trailer. First impressions of the place are enhanced by Karen's welcoming tea and cake. Only time before dinner for a quick stroll out to get a view of the trap basalts at this southeast corner of the island, and to be impressed by the commanding rampart of the Sgurr of Eigg towering to nearly 1300 feet above the bay.

Sunday we spend along the south coast where cliffs of basalt back a grassy shoreline with views to Muck and the Ardnamurchan peninsula. These basalts are products of the Tertiary igneous activity known so well from nearby Rum, Skye, Mull and Ardnamurchan. The post-glacial sea has eroded a series of caves out of the highly vesicular lava flows along the cliff base, two being sites of events in the island's history. Cathedral Cave, high-roofed as its name suggests, is said to have been used for church services at the time of the nineteenth century Disruption in the Presbyterian Church, when the parish minister left his own church and manse and with his congregation joined the newly formed Free Church of Scotland. Nearby Massacre Cave has a grim history. Sometime in the 1520s the whole population of the island, some 395 people, crowded into it to escape pillage by a party of MacLeods from

Skye in what seems to have been a revenge attack between the traditionally feuding MacLeod and MacDonald clans. The MacLeods lit a huge fire across the narrow mouth of the cave which asphyxiated all inside, either by smoke inhalation or by heat and oxygen deprivation. Hugh Miller, visiting this notorious cave three centuries later in 1844, describes in *The cruise of the Betsy* seeing the bones of adults and children in family groups with the charred remains of their straw mattresses and small household objects. All were finally removed for burial in hallowed ground. A grisly lunch-spot in 21st century sunshine. Only a few of us venture through the very narrow entrance into the large cave behind.

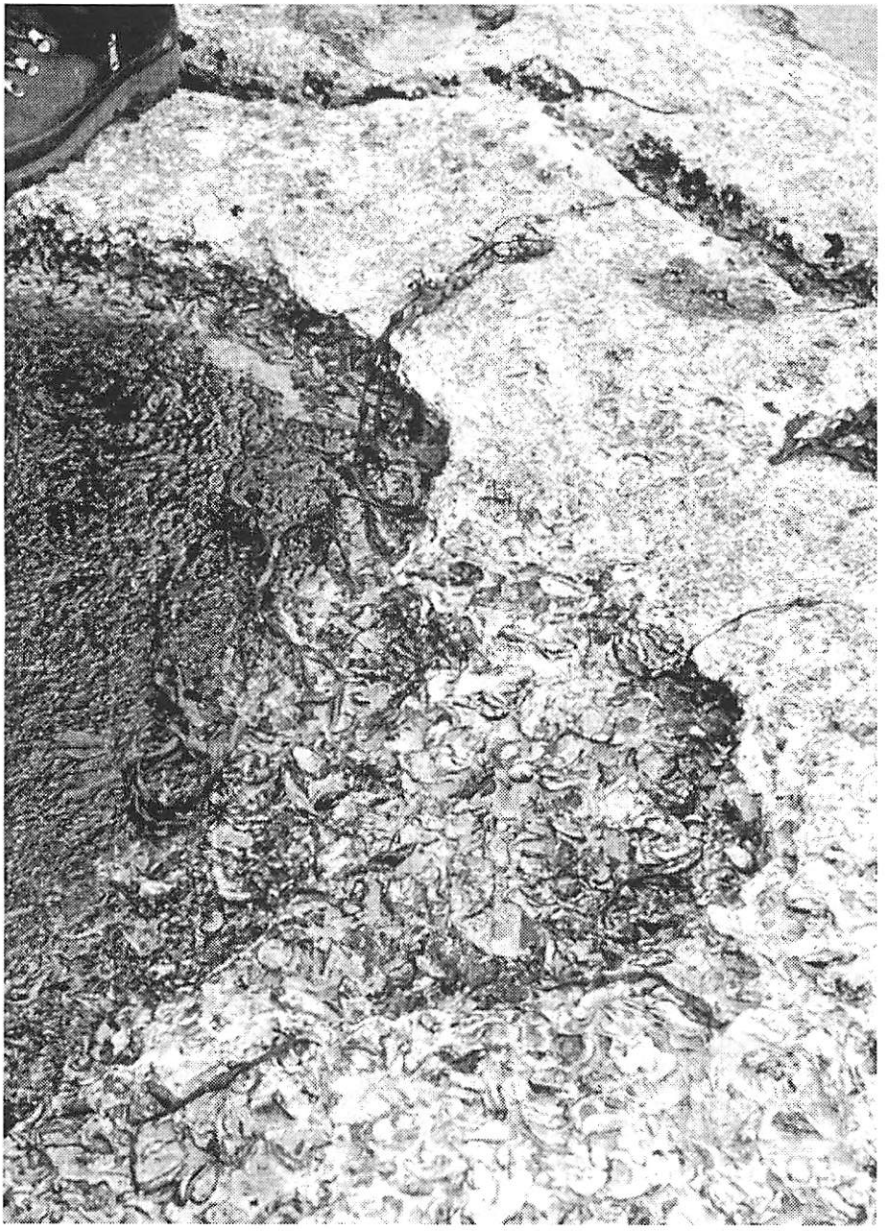
The afternoon is occupied with a gentle potter back along the coast to see several pitchstone dykes, presumed to be related to the pitchstone of the nearby Sgurr of Eigg. The Eigg pitchstone is the youngest rock known in the Scottish Tertiary,

Deltaic sandstone overlain by a sandy limestone in the Valtos Sandstone Formation, Laig Bay. A large calcareous concretion is in the sandstone by the head of the rightmost figure, and one lies loose on the tidal platform at the bottom left.

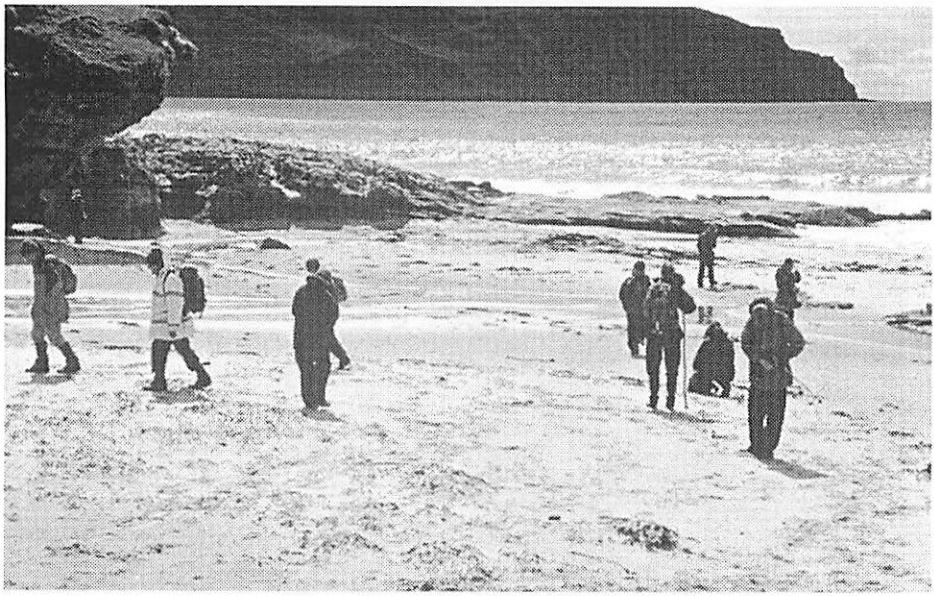
produced at a late stage of the whole Tertiary igneous event. Then on past the pier, café and shop (centres of the island economy) and out along the coast towards Kildonnan to look at more dykes and the basic 'Kildonnan sheets' which evidently belong to a late cross-cutting intrusive event. Handsome basalt columns of an immensely thick lava flow form an impressive cliff face above our homeward path back to showers, drinks and an excellent dinner.

Monday takes us north up the island's only road, over the col which divides eastern and western parts of the island, to Laig Bay and Cleadale, site of some of the best crofting land on the island. A wide amphitheatre of croftlands occupies a raised beach area half a mile wide, backed by high basalt cliffs, and facing west over the Sound of Rum towards the ever-present bulk of the hills of Rum. Today the view to Rum is, as they say, somewhat obscured by rain, but the showers pass and we have sunshine on the Jurassic beds of Laig Bay. The low cliff behind the beach and the intertidal rock platform are in the Valtos Sandstone, in the Great Estuarine Group of the Middle Jurassic. Sandstones interspersed with highly fossiliferous limestones record freshwater delta conditions alternating with periodic inundations of deltaic lagoons by the sea. The Jurassic oyster *Praeexogyra hebridica* (see over) flourished in the brackish water conditions and shell beds in the limestones are crammed with these small oyster shells. Occasional horizons containing the delicate little bivalve *Neomiodon* also occur. An impressive feature of the sandstone itself is the huge concretions, some as much as 2 metres across, which have formed by migration of calcite within the sands after burial (a process calculated on one model as taking about 5 Ma to reach the size now seen). These protrude from the cliff face, and the rock platform below is littered with these 'doggers' which have been eroded out of the cliff.

Walking northwards along the cliff top we have an excellent view of the many dykes coming from the Rum volcanic centre which cut across the Jurassic sandstones of the intertidal platform. Behind us inland, the same set of dykes runs through the basalt cliffs which back the Cleadale croftlands, forming the prominent ribs in the cliff face. We reach the Singing Sands of Eigg in the small bay of Camas Sgiotaig, its white beach formed of quartz sand weathered from the Jurassic sandstone. All fall to tramping the sands with a skating motion, but they are too damp from the morning's showers to sing for us. A couple of picnicking families are enjoying the novelty of the caves and arches in the cliff at the back of the beach. Northwards again along the shore is the furthest point of the day, exposures of the Valtos Sandstone containing pieces of fossil driftwood. From here it is a short walk to the Helliwell's own house, built on a former croft with stunning views over to Rum. Mugs of tea and a generous



Jurassic oyster beds packed with fossil Praeexogyra hebridensis, *Camas Mor, Muck. Note the boot for scale, top left.*



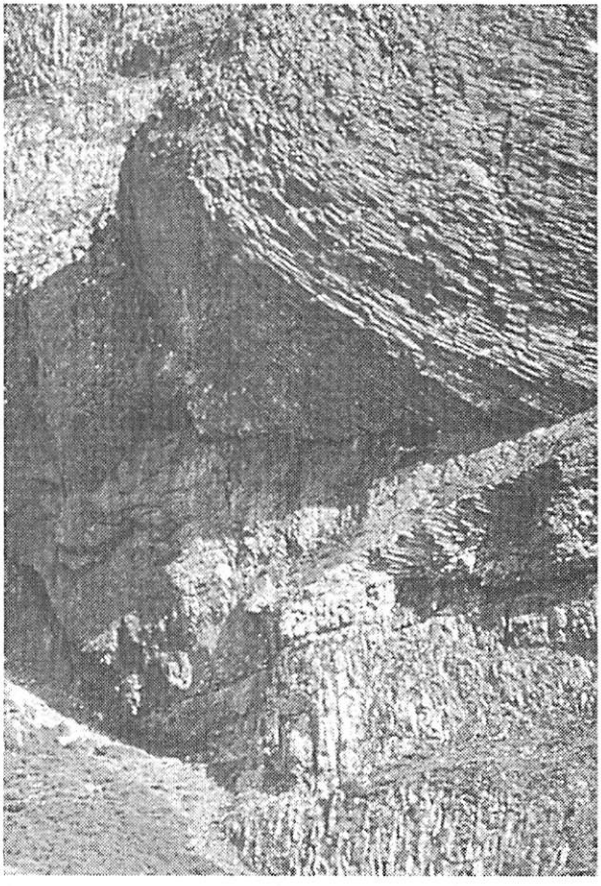
Tramping the singing sands to make them sing!

serving of Karen's cake revive us as we lounge on the grass in the afternoon sun before the long tramp back along the road to the Glebe Barn. A few, nursing injuries or just over-exhausted, are grateful for a lift back along the 3 miles of road in Simon's car.

On Tuesday the decision is made to tackle the longest itinerary on the island, walking the eastern coastline below the basalt cliffs of Beinn Bhuidhe to the island's most northerly point, and returning by the road through the centre of the island. This traces the steps of Hugh Miller, whose discovery of fish remains and dinosaur bones in a red limestone of the Jurassic on Eigg he graphically describes in *The cruise of the Betsy*. There is great anticipation in the feeling that we are treading in Miller's footsteps of nearly 160 years ago, and we are not disappointed. The route north along the coast from Kildonnan follows the base of the Tertiary lavas and the top of the Jurassic, though the latter is extensively landslipped along much of this shore. The most recent fall in the winter of 1999/2000 brought down a huge slab of the Valtos Sandstone from the cliff above. On the foreshore about a mile and a half north of Kildonnan are exposures in the Lealt Shale Formation, the lowest Jurassic found on Eigg, where a series of shales, siltstones and limestones with their fossil fauna again record salinity changes in a coastal lagoon. The lowest bed exposed above the low tide mark is the only known outcrop of Miller's Reptile Bed, where he discovered

plesiosaur vertebrae and rib and pelvic bones. No hammering here! An hour or so looking at the fossiliferous beds (lots of the mussel *Praemytilus strathairdensis*) and we take lunch on the landslip and continue northwards up this charmingly wild bit of coast. With celandines and bluebells decorating the slopes and buzzards wheeling overhead, this is a perfect island day.

Finally at the north end of the island we reach a bay with a stony beach opposite the skerry of Eilean Thuilm, the Seal Island. The beach has sea-worn boulders of a densely shelly red limestone, packed with with gastropod and bivalve fragments and with fish scales, fin bones, teeth and bone fragments. These loose blocks are the source of the plesiosaur bones and teeth found by Hugh Miller in 1844, then 'a thing new to Scotch geology'. Though not here seen in the bedrock, they have a lithology identical to that of the Reptile Bed we saw in the morning. We are less lucky than Miller in discovering reptile remains, but fortunately John Hudson and Tony Irving have some of their own specimens on display back at the Glebe Barn for us to see. Turning for home, we are once more welcomed at the Helliwell's house in Cleadale for tea and cake before beginning the weary tramp back along the island road.



Columnar jointing in the Sgurr pitchstone on the south side of the Sgurr ridge

The next day we head for the Sgurr. There is a well-worn tourist path to the summit and we are soon skirting the foot of the vertical face of the Nose, with its handsome

columnar-jointed pitchstone, to the point along the north face where a sharp scramble up a gully gets us onto the top. Seen from here, the Sgurr ridge is an irregular lumpy feature snaking a complex path northwestwards for about 2 miles towards the west coast of Eigg. The orientation of the jointed columns runs in many different directions in different places. We have much discussion about the mechanism of jointing perpendicular to complex cooling surfaces. The inferred origin of the Sgurr, as an acidic lava flow or tuff filling a valley eroded in earlier basalt lavas, accounts for the columns perpendicular to its base, but not for the much more chaotic jointing patterns which one sees along much of its length. Our evening discussion at the Glebe Barn argues the problems of distinguishing lava flow from ash flow or ignimbrite, of defining one or many phases of emplacement, and of possible sources of this acid magma very late in the Scottish Tertiary igneous event. An enigmatic structure.

From the summit we have a panoramic view of all the nearby Tertiary volcanic centres of the islands and the mainland, but it is not a place to linger in today's chilly wind and we are soon on the steep descent back round the foot of the Nose, following the contact of the pitchstone with the palaeovalley side as it cuts down through the underlying lavas. This is steep, scree-strewn and heathery terrain where walking sticks are a distinct asset for the less agile among us, but finally we reach easier ground along the south side and head for a point where the base of the pitchstone is undercut to form a series of overhangs much valued by the local sheep who use them for shelter. These notches are key sites for understanding the form of the pitchstone as a valley fill. Standing under the actual base of the pitchstone one looks up at the ends of its hexagonal columns. Beneath our feet (among the sheep dung) is a conglomerate, originally covering the palaeovalley bottom, while at the back of the recess, between conglomerate and solid pitchstone, is a much altered breccia of black pitchstone pieces in a crumbly yellow matrix, the cooled and altered rubbly bottom of the pitchstone body. Digging with a pick in the conglomerate, Hugh Miller found and carried away large pieces of fossil wood, named *Pinites eiggensis*, evidence of vegetation originally growing in the Tertiary valley. We have to be content with photographs of a few putative wood fragments in the conglomerate.

Thursday sees the party divided. Six walk the length of the south side of the Sgurr to get a view of the exposed base of the pitchstone, and the conglomerate valley fill beneath, where it emerges in a high sea cliff on the west coast of the island displaying a vertical section through the whole structure. The rest go north again to explore the Laig Gorge where the Jurassic Duntulm and Kilmaluag Formations, stratigraphically above the Valtos Sandstone seen on the shore of Laig Bay, are exposed along the bed of a burn where it cuts into the post-glacial sea cliff backing Laig Bay. In the upper

part of the gorge is a small remnant of the Cretaceous, a conglomerate, sandstone and limestone, overlain in turn by basalt flows. A wonderful sunny island day this, with a clear blue sky and for the Sgurr party a view of the Outer Isles - the outline of the hills of South Uist, the island of Barra and the chain of little islands running south to Mingulay are clearly distinguishable, and sharp eyes pick out the Oigh-sgeir lighthouse, sited on the only other known outcrop of pitchstone like that of the Sgurr. Warned not to disturb a pair of nesting eagles on the Sgurr, we are rewarded by good views of both in flight. They seem more disturbed by a troublesome raven which perpetually harries them.

On Friday we are up for an early breakfast, and down to the pier by 8.30 to meet the two 'Seafari' inflatables hired from Armadale on Skye to take us across to Muck. Used for wildlife and whale watching, each carries about 12 people seated on long saddles as on a bucking bronco, with handles to grip for safety. David Blythe, with his brilliant yellow work-wear, is co-opted to be an additional crewman. It is cold, grey and windy and the sea looks rough, menacing and wet. The ten minutes it takes to bounce us over the waves to Muck must be the most exhilarating the Society has ever experienced. Spray-soaked but cheerful we assemble for the 45 minute walk

Embarking in the inflatable launches for the crossing to Muck

across the island to Camas Mor, the Big Bay, where there is a most impressive succession in the middle Jurassic Great Estuarine Group from the Valtos Sandstone up through the Duntulm and Kilmaluag Formations. Several hours are spent exploring the succession of oyster beds, algal limestones, laminated mudstones and thin sandstones recording the gradual withdrawal of the sea from this region. After lunch there is about an hour to see the great gabbro dyke, over 50 m wide, which forms a cliff along the east side of Camas Mor. Cutting the Jurassic limestones, this dyke has generated a large number of exotic minerals along the contact where the limestone is dolomitised and assimilated into the gabbro. A Mecca for keen mineralogists this: Sinclair Ross and Julian Overnell have spent the whole day on the dyke. The complexity of the contact between dyke and limestone is a subject of some argument, not resolved by the time we have to get back to the pier to catch the ferry. Hot coffee in the island restaurant and gift shop is most welcome while we wait for the Sheerwater, which operates daily from Arisaig, to take us back to Eigg. Another excellent dinner in the Glebe Barn and we gather to award the Strontian Hammer to Tony Irving, expert fossil-finder, a man much in love with this island who comes back to it every year.

So we leave Eigg to get back to 'normal' life on the mainland, full of happy impressions of this charming island. With the community buy-out of the island from its former owner by the Isle of Eigg Heritage Trust in 1997, island residents are working hard to create a new island economy to rescue the place from its former moribund state of decaying houses and empty crofts. The island now seems a busy place. New houses have gone up, though many others still await renovation. A new pier is under construction at which the CalMac ferry will be able to dock rather than having to transfer people and freight via the flit-boat. I for one will be back.

(I am indebted to David Blythe for his field notes which I have relied on for detail of a few parts of the geology which I did not attempt due to an injured ankle.)

Members and friends taking part in the week were: Ann Allwright, Tony Benfield, David Blythe, Anna Bostock, Mike Cotterill, Henry Emeleus, Rosalind Garton, Angus Harkness, John Hudson, Nora Hudson, Tony Irving, Dennis Jeffery, Alison Kerr, Tom Kerr, Rhoda MacKenzie, David Moseley, Julian Overnell, Caroline Paterson, Sinclair Ross, Margaret Rusbridge, Myra Smith, Christine Thompson and Brian Upton.

The Isle of Eigg has its own website with details of accommodation, transport and island facilities at www.isleofeigg.org The Glebe Barn's website, giving information on their facilities and various courses, is www.glebebarn.co.uk

Further Reading

An account of the human history of Eigg from prehistoric times, through the clan system of the 16th to 18th centuries, 19th century destitution and troubles with absentee landowners of the 20th century, to the final community buy-out of the island:

Dressler, C. 1998. *Eigg, the story of an island.* Polygon, Edinburgh.

A compelling read both for Miller's account of Scottish geology as he understood it in his time, and for his wonderful descriptions of places, scenery and weather just as we know them today:

Miller, H. 1858. *The cruise of the Betsey, with Rambles of a geologist.* Thomas Constable and Company, Edinburgh. Facsimile edition published by NMS Publishing, National Museums of Scotland, Edinburgh, 2003.

Geological references

Emeleus, C.H. 1997. *Rum and the adjacent islands. Memoir for 1:50 000 geological sheet 60.* The Stationery Office, London.

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Hudson, J.D. 1966. Hugh Miller's Reptile Bed and the Mytilus Shales, Middle Jurassic, Isle of Eigg, Scotland. *Scottish Journal of Geology*, Vol. 2, pp 265-281.

Hudson, J.D. 1983. Mesozoic sedimentation and sedimentary rocks in the Inner Hebrides. *Proceedings of the Royal Society of Edinburgh*, Vol. 83B, pp 47-63.

Hudson, J.D. 2000. That man is little to be envied ... *Scottish Journal of Geology*, Vol. 36, pp 1-3.

A geological guide to Eigg, used by us on our week's excursion:

Hudson, J.D. & Allwright, E.A. 2003. *The Geology of Eigg.* Isle of Eigg Heritage Trust, Isle of Eigg [see page 36 of this issue for details of how to get hold of a copy of this book].

Caroline Paterson is retired from a career in biomedical science as a Lecturer in the University of Aberdeen. In mid-career she enrolled as a student with the Open University and fulfilled a long-held ambition to get informed about geology. Ten years ago she rashly volunteered to take charge of the organisation of the Society's annual Long Excursion. Any errors in the description of the geology of Eigg and Muck are hers alone, and due entirely to her lack of proper attention in the field.

What's in a Name?

Sgurr-mongering

Sgùrrs, Sgòrs, Skerries and cold porridge

When you think of Eigg, what first comes to mind is that great eminence, sticking out of the island, much more like a sore thumb than many other things that are so characterised— the Scurr of Eigg, *An Sgùrr*.

The Sgùrr of Eigg from the southeast (photo Caroline Paterson)

But where does the word *sgùrr* come from? Edward Dwelly's Gaelic dictionary translates *sgùrr* as a high sharp-pointed hill or a large conical hill… and points us in the direction of *sgòr*. This he defines as a sharp steep hill rising by itself or a little steep precipitous height on another hill or mountain. He also gives it as a peak or pinnacle, a tail of a bank in the sea or a concealed rock jutting into the sea. Peter Drummond suggests that *sgòr* also has the nuance of a rock cleft or notch.

The association between *sgòr*s and concealed sea-rocks would make you wonder whether the word is connected to a skerry, an offshore rock. This comes from the Norse word *sker*, which is closely related to the Gaelic *sgeir*. According to Dwelly,

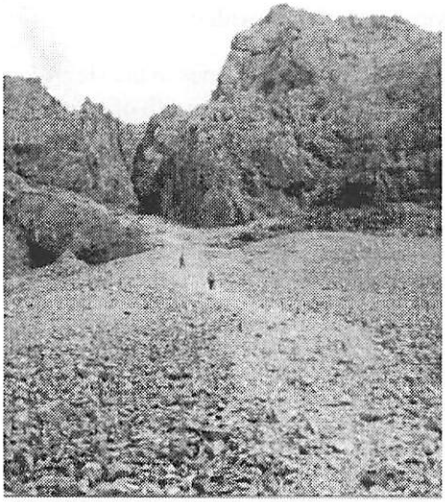
this is much more narrowly defined as a 'rock in the sea nearly or quite covered by neap-tides and quite covered by spring-tides'. Alternative meanings are peat-bank; cliff; sharp, flinty rock; or a covering top-layer as on cold porridge.

Somehow a Norse root seems more likely because many of the names in the Hebrides date from when the Vikings ruled the seas around Scotland and the north of England. Indeed, Eigg itself stems from an old Norse word meaning a notch. Peter Drummond suggests an interesting derivation of the Gaelic word *sgùrr*. It is dominantly a west-Highland word and rather than *An Sgùrr* being derived from the Gaelic, he puts the cart before the horse and suggests that the Gaelic word *sgùrr* might come from *An Sgùrr*. And he suggests that this comes from a Norse word *sguvr* meaning a cliff.

The word *sguvr* has several descendents as well a *sgùrr*. It is responsible for the Scots word *scaur*, meaning a sheer rock, precipice or steep, eroded hill (Concise Scots Dictionary). From this comes another Scots word, *score*, a crevice, cleft or gully in a cliff face. Perhaps the best known Scores are those that run along the cliff tops in St Andrews, parallel to North Street. The English word *scar* can also claim paternity from the Norse *sguvr*. The Lake District has a profusion of fells and pikes, respectively coming from the Old Norse *fjall*, a mountain, and *pik*, a peak. And they all come together in Sca Fell Pike... the peak of the cliff-mountain, which is just what it is. More mundane *scar*s can be found in Scarborough, the town of the cliff, and perhaps Ravenscar, further up the coast.

But back to *An Sgùrr*... Peter Drummond suggests that with this prominence on Eigg being called '**The** Scurr' as it were, many other similarly shaped hills in the area were called *sgùrr*s after it. The Skye Cuillin are almost all *sgùrr*s:

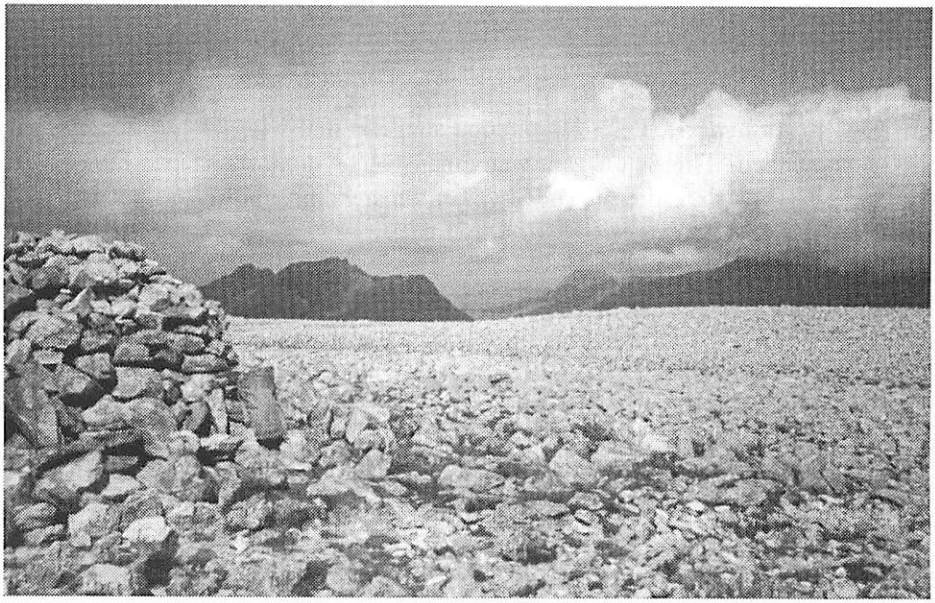
Sgùrr nan Eag	peak of the notches
Sgùrr Dubh Mor	big black peak
Sgùrr Alasdair	Alasdair's peak (after the first man to climb it)
Sgùrr Mhic Choinnich	McKenzie's peak (after a Cuillin mountain guide)
Sgùrr Dearg	red peak
Sgùrr na Banachdich	the milkmaid's peak
Sgùrr a' Ghreadaidh	peak of torment
Sgùrr a' Mhadaidh	peak of the fox
Bruach na Frithe	slope of the deer forest
Am Basteir	perhaps The Baptist
Sgùrr nan Gillean	peak of the gullies



Black gabbro of Sgùrr Alasdair and the Great Stone Shoot (photo Alan Fyfe)

Not all of the Skye Cuillin mountain names have a geological connections, though some do. *Sgùrr nan Eag*, for example – the notches are a result of preferential weathering in the gabbro. Incidentally, *eag* comes from the same Norse notch as the island of Eigg.

Sgùrr Dubh Mòr is that colour because of the darkness of the gabbro. The *mòr* identifies it from *Sgùrr Dubh an Dà Bheinn*, the black peak of the two hills, while *Sgùrr Dearg* is red because the same gabbro is here weathered due to there having been more iron in the magmatic fraction. Lastly, the gullies of *Sgùrr nan Gillean*, like those of *Sgùrr nan Eag*, result from the preferential weathering in the ultrabasic rocks.



White quartzite on the summit plateau of Sgùrr Bàn, Fisherfield (photo Alan Fyfe)

While we are on the geological significance of colour, there are a few other *sgùrr*s that might be of interest – *Sgùrr Bàn* in the Fisherfield Forest and *Sgùrr Fiona* on nearby *An Teallach*. Both of these are white peaks.

Peter Drummond again:

> There are three 'whiter shades of pale' in Gaelic, with *bàn*, *fionn* and *geal*. Often translated simply as white, they have in fact distinct nuances. While both *bàn* and *fionn* mean pale, white, wan or fair – and *fionn* hints also at the colour of lilac and at the condition cold – *geal*... means white, clear or bright.

And so to complete the trio, there is *Sgùrr nan Clach Geala*, which is the peak of the white stones. All these whites stem from the Cambrian quartzite that covers their tops. With frost action, this breaks along the joint planes into rectangular blocks and these spill down the face of the mountain, giving it the appearance of being iced like a cake. From a distance, that is... close-up it is a different matter because the rectangular blocks make for extremely uncomfortable walking.

Further to the east, the *sgòr*s have similar colours, though not always for the same reasons. In the Cairngorms, *Sgoran Dubh Mòr* is the big black pinnacle even though it is granitic— but it lies in the shadow of *Sgòr Gaoith*, the windy peak. And in Appin, are the Munro *Sgòrr Dhearg* and its subsidiary Top *Sgòrr Bhan*, red and white peaks respectively and both again granitic. There's another red peak, of course, *Sgòr Ruadh*, in the Torridon area, but that is another story altogether.

References:

Bearhop, Derek, Editor, 1997. *Munro's Tables*, Scottish Mountaineering Trust.

Drummond, Peter, 1991. *Scottish hill and mountain names*, Scottish Mountaineering Trust.

Dwelly, Edward, 1973. *The illustrated Gaelic-English dictionary*, 8th edition, Gairm Publications, Glasgow.

Robinson, Mairi, Editor, 1999. *Concise Scots Dictionary*, Scottish National Dictionary Association and Polygon at Edinburgh, Edinburgh.

This article completes this series of What's in a Name? *The next issue of* THE EDINBURGH GEOLOGIST *will see the start of a new series on* Mountain Geology, *where you can read further on the comforts of walking on different mountains in Scotland as well as which hills are gabbroic, which granitic and which arkosic.*

The Scottish Journal of Geology on-line

a guide for readers

Fellows of the Edinburgh Geological Society may have heard rumours that they can access the Scottish Journal of Geology on-line. This is true, but it requires a little perseverence. The following notes, written by one who has persevered on your behalf, should help to make the process just a little bit easier.

Before you start, you will need to know your subscription number. This appears on the label on the outer plastic cover in which your journal arrives. It is a four digit number including any leading zeroes. If you have just thrown that away, then you can find it out by contacting the Membership Secretary.

First of all, in the address or location box on your browser, type in the address for INGENTA, which is the company that organises the whole thing for us. This is:

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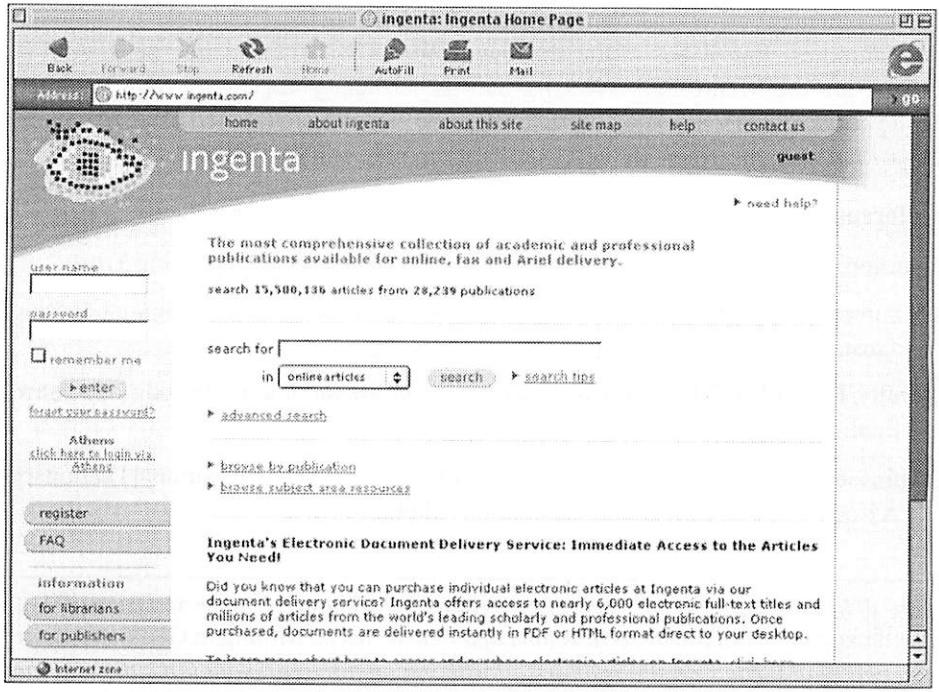
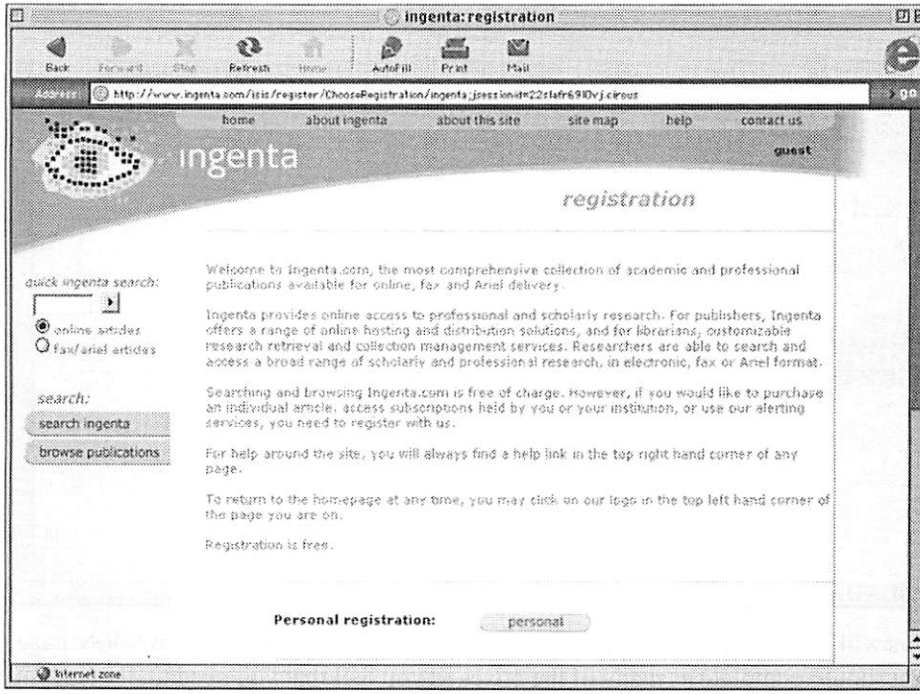
The following web page should appear. This is the INGENTA HOME PAGE:



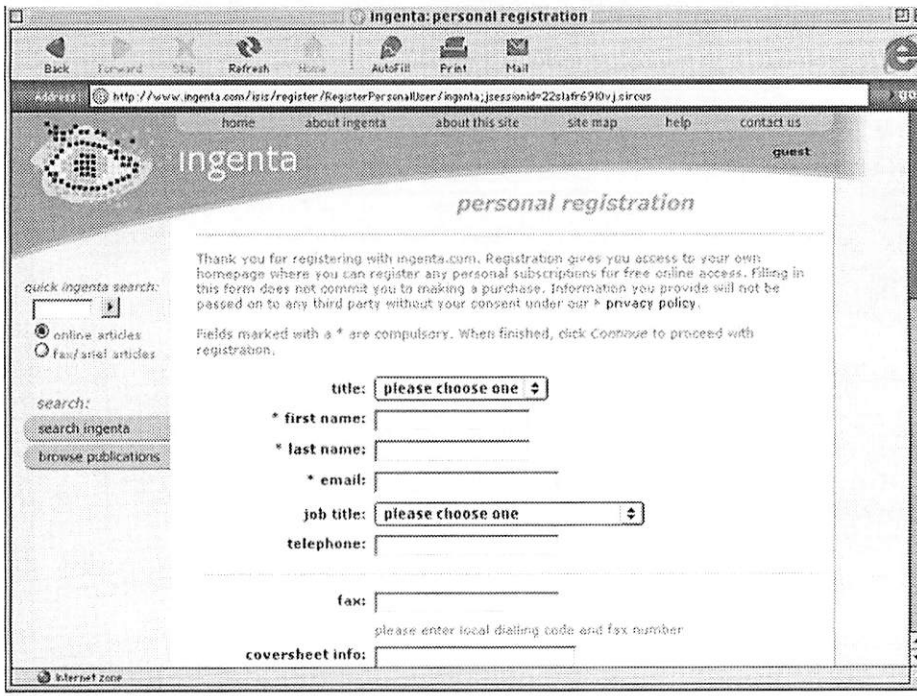
On the left hand side of the page are a number of blue tabs. Click on the one marked <register>. This will take you to INGENTA REGISTRATION page, which is shown below. For the moment, you are recognised as a guest.



It is worth saying a little on INGENTA at this stage. This company deals with the publishers of academic and professional journals, providing a service so that you can look up the abstract of virtually any publication and then, for a fee, obtain a copy of the paper. They make their money from that fee. There was a rival company but INGENTA have swallowed them up and this one stop can now provide you with virtually any paper you want, providing that it is held electronically.

There is no such difficulty in accessing THE EDINBURGH GEOLOGIST, which is electronically published on our own web site (www.edinburghgeolsoc.org). The indexes to all issues are there and if you want to have a look at an article that is not yet on-line, all you need to do is to contact the editor.

But back to the Scottish Journal of Geology! The registration page tells you all that you need to know about INGENTA and possibly a good deal that you may not need to know as well. What you are wanting is a personal registration, so all you need to do is to click on the <personal> button.

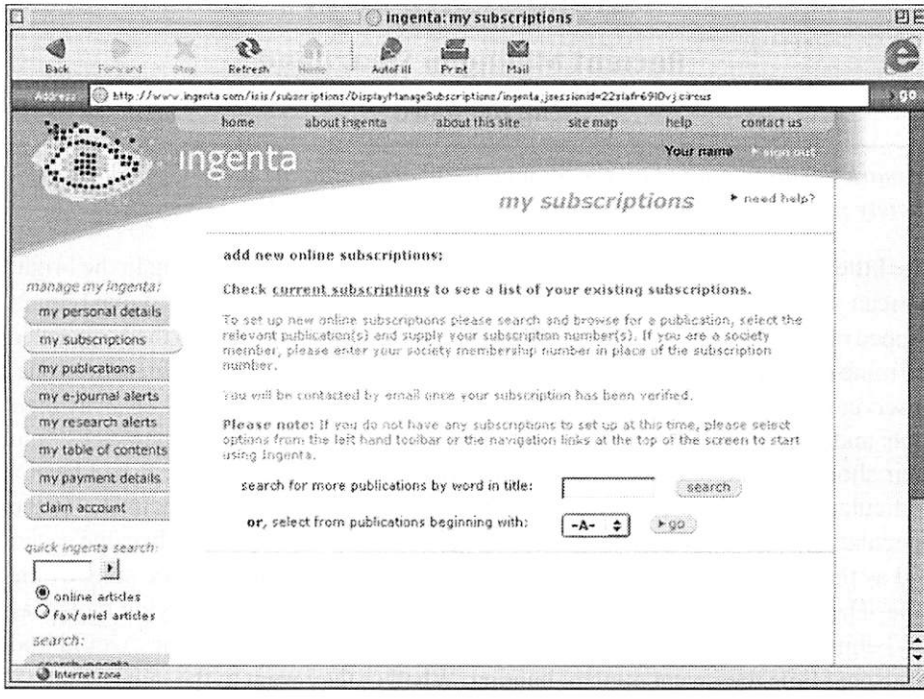


This will take you to the web page shown here, the PERSONAL REGISTRATION page. You should complete as many of the boxes as you feel that you need to, though you should note that those marked with an asterisk are compulsory. In some cases (such as 'title' and 'job title'), you can choose from a menu by clicking the twin arrows.

At the bottom of this page are three boxes, in which you should fill in a user name, a password and confirmation of that password. Your user name can be anything, though I would suggest that entering your own name makes good sense! The password must contain at least five characters. Enter it again in the third box, just to make sure that you have not made any mistakes the first time.

Once you have completed all the boxes to your satisfaction, click on the <continue> button. This will take you to the MY SUBSCRIPTIONS page, which is shown opposite.

This seems to give you the opportunity to check your current subscriptions, but as you are still registering, clearly you do not have any at this stage, so refrain from clicking on that option! Instead, enter 'Scottish Journal Geology' in the box marked 'search for more publications by word in title'. These are enough key-words to take you to the next page, so now click on the <search> button.



This will take you to a very similar page. Click the box beside the words 'Scottish Journal of Geology' and a tick should appear. It is at this stage that you should enter your subscription number. This should be the letters EG, followed by a four digit number (including leading zeroes). Click on the <add selected to list> button.

This will take you to another similar page in which your subscription number is entered for you as well. Click on the <submit> button, which will take you to the MANAGE SUBSCRIPTIONS page. This will inform you that your subscription request has been sent to INGENTA who will contact you once your details have been verified. Click on <sign out> in the top right hand corner of the page next to your name.

You will be contacted by e-mail within a day or so and you can then start using the system. The e-mail will confirm your name and other details that you entered and will remind you of your user name and password.

To use the system, enter the user name and password in the left hand panel on the INGENTA HOME PAGE and this will take you to the MY SUBSCRIPTIONS page. You should be able to read those parts of the Scottish Journal that are currently on-line.

Strange Earth No 19

Ancient Mining in Swaziland

by Bill Baird

To mark the uploading of all the Strange Earth *articles to the Edinburgh Geological Society web site, I asked Bill to write another one or two. Here is Number 19...*

The little man squeezed out from a crack in the rock and stood blinking in the bright African sun. As he snuffed out his makeshift wick light, another red stained miner popped out to join him. Together they turned and carefully blocked and then concealed the mine entrance. Satisfied that the entrance was not now easily visible to the casual observer they examined the material they had excavated and then packed away their tools and specimens. After a last look around they hoisted their leather sacks onto their shoulders and started to pick their way carefully down the hill. It had been a particularly good days collecting and they each had several fine specimens of the Specular Iron Ore they had been seeking. After a little while the path became easier and as they were approaching home they began to sing a popular little song of the time. The fact that the taller of the miners had realised one of his digging tools was left behind back in the mine was annoying him but he reasoned that they would find it the next time they went mineral hunting. Whether they went to the mine again we do not know, but they were wrong about the lost tool— it would be found by a Japanese sailor, nearly fifty thousand years later.

Iron ore in its various forms is a major mineral resource in Southern Africa. When Europeans first visited the area around Postmasburg in the Northern Cape around 1800 they found various sites where mining of red ochre and specularite had taken place. Local people such as the Tswana and Hottentots were familiar with these workings but mostly they attributed the tunnels and shafts to the 'old people', the Khoisan. Some of these tunnels extended over 100 metres underground and into areas where specularite was available. This mineral was more highly prized than either ochre or haematite and could be widely traded with other people who were not fortunate enough to have a source in their area. The mining operations showed a high degree of skill, knowledge and daring.

When prospecting operations were carried out in 1957 in an area known as the Bomvu Ridge in the Ngwenya massif of Swaziland they estimated some 30,000,000 tons of iron with a mean value of 60% metallic iron content. The Swaziland Iron Ore Devolopment Corporation decided to mine the ore body and production started in 1964. The ore was taken by rail to the port of Maputo in Mozambique and from there shipped to Japan.

During the mining so many ancient stone tools were found that the news reached the archaeologist Professor Raymond Dart in South Africa. Dart sent a knowledgeable colleague called Adrien Boshier to investigate these finds and report back. What Boshier found was amazing, specialised stone tools made of dolerite, which is not a local stone, had been left behind by the early miners. These choppers, picks and hammerstones were not just on the surface but also deep underground. It seems that these early miners removed at least 1,200 tons of soft haematite ore rich in specularite from one particular mine, Lion Cavern, alone. The question was how old were these mines? Archaeologist Peter Beaumont was producing evidence which suggested that these mines had been operated in the Iron Age, Late Stone Age and possibly even Middle Stone Age. However, hard evidence was still required in order to put a more precise date on the ancient mines. Then in 1967 charcoal nodules from some of the more ancient adits were sent to Yale and Groningen universities for Carbon 14 testing. The results that came back were astounding, dates of around 41,000 to 43,000 were obtained. Later from another early mine complex the buried skeleton of a child was dated at over 50,000 years.

By 1980 over 20,000,000 tons of high grade haematite had been removed and shipped to Japan and the mining operation was closed down. The mining company had left over a million tons of ore which underlie the ancient mining adit at Lion Cavern. This site is now listed as a national monument and can be visited if one is accompanied by a game ranger from the local Malolotja nature reserve.

If you want to read further, there are many sources including:

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Beaumont, P.B. & Boshier A., 1974. Report on test excavation in a prehistoric pigment mine near Postmasburg, Northern Cape, *South African Archaeological Bulletin*, Volume 29, pp. 41-59.

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Zaslavsky, C., 1984. The Yoruba Number System *in* Sertina, I.V. (ed), *Blacks in Science Ancient and Modern*, New Brunswick, U.S.A., Transaction Books, p. 110.

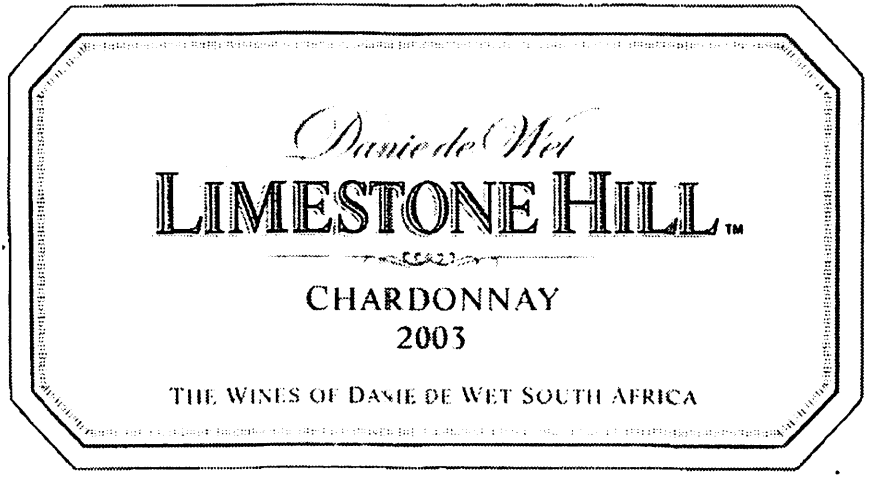
Internet: http://www.sntc.org.sz/cultural/ironmine

Bill Baird is a long-time member and past President of the Edinburgh Geological Society. For nearly forty years, he was on the staff of the Royal Scottish Museum (now National Museums of Scotland). He has an interest in volcanoes, landscape, fossils, and holes in the ground in general.

Here is a list of Bill's earlier Strange Earth *articles, all now on the web site:*

1 Galloping glaciers ..... Issue No. 16 (Autumn 1984)
2 Eruptions of washing soda ..... Issue No. 17 (Spring 1985)
3 Natural glass from hay ..... Issue No. 18 (Autumn 1985)
4 Hot sea water on tap ..... Issue No. 21 (Winter 1988)
5 Lake Tanganyika ..... Issue No. 21 (Winter 1988)
6 Streams of stones ..... Issue No. 22 (Spring 1989)
7 Clastic dykes ..... Issue No. 22 (Spring 1989)
8 Roving stones ..... Issue No. 23 (Winter 1990)
9 Stone spheres ..... Issue No. 24 (Spring 1990)
10 Ancient nuclear reactors ..... Issue No. 24 (Spring 1990)
11 Maleficent lakes of the Camerouns ..... Issue No. 25 (Spring 1991)
12 Flexible sandstone ..... Issue No. 27 (Autumn 1993)
13 Singing sands ..... Issue No. 27 (Autumn 1993)
14 Tektites ..... Issue No. 27 (Autumn 1993)
15 The up-escalator of Papua New Guinea ..... Issue No. 28 (Autumn 1995)
16 Enigma of the big brain ..... Issue No. 29 (Winter 1996)
17 The Gibralter Waterfall ..... Issue No. 29 (Winter 1996)
18 The mud springs of Wootton Bassett, Wiltshire .. Issue No. 38 (Spring 2002)

Geo-vineyards



Information

The label notes inform us that grapes from which this Chardonnay is made are grown in the beautiful Breede River Valley in the Robertson region of South Africa. They tell us that Danie de Wet is a pioneer of Chardonnay in South Africa and uses traditional wine-making techniques combined with modern technology, to create a wine with rich yet elegant tropical fruit flavours.

From a geological point of view, the Breede River is bordered by Silurian sandstone ridges. The older terraces in the wine-growing areas tend to be the reddish-brown, calcareous, gravelly soils on the hills, with still higher weathered shale being used more and more. Other vines grow on alluvium along river banks. The grapes of Limestone Hill are grown high on the slopes of those calcareous hills.

I saw this wine in Sainsbury's and bought it purely for its label, paying rather more than I normally would for a bottle of vin de table. *I should say that the inclusion of a wine in this magazine is not necessarily a recommendation to buy... especially in this case! Please keep the labels coming in!*

Archie remembered

by Eric Robinson

All older members of the Edinburgh Geological Society will remember Archie Lamont, thorn in the flesh of the English, although content to teach them Geology at Birmingham University for many years. A staunch Scots patriot, he coordinated the activities of what he called The Scottish Secretariat from his turbulent home, Jess Cottage in Carlops, publishing pamphlets against the Union and the twisted skein of History.

For one reason or another, Archie always bore a grudge against the Survey, or, as he termed it, 'the English Geological Survey'. At a BA meeting in Edinburgh in 1951, he stood up and made a public complaint about the undervaluing of Scotland's wealth by the English Survey. He seemed blissfully forgetful of those in charge at the time, including E B Bailey, A G Macgregor and J G E Anderson. Our DG in North-east England was Tom Robertson. Maybe he thought that they had 'sold the pass'.

A visit to Jess Cottage was an experience. Surrounded by collections of fossils, rocks and the all manner of things which he accumulated, strong tea with condensed milk from the tin was just one of the memorable courtesies extended to the visitor seeking assistance with due deference.

Archie collected assiduously from all parts of the Palaeozoic of the Southern Uplands, especially from the Pentlands, and recovered specimens out-of-the-ordinary from the most unlikely of localities, as Ian Rolfe can testify. Often, quite exasperatingly, Archie would tuck his new species, sometimes even genera, into the pages of *The Quarry Manager's Journal*, a publication not taken by many of the academic libraries. As much was true for his reading of Siluro-Devonian successions in the Borders, bringing us lithological markers such as the Shepherd's Tartan and Haggis Rocks, not to mention the Pentlandian Stage. Often known for his outbursts, fired by some sense of injustice personal or national, he had a warm and friendly side to a novice ostracod worker in the early 1950s which the following letter might reveal.

After moving to University College London, I kept up a hobby interest in Carboniferous rugose corals, stemming from Arthur Raistrick and a Palaeotographical Society Monograph on Scottish Rugose Corals by Dorothy Hill. Above all, the corals were so direct a means of teaching palaeontology through serial sectioning and peeling. In the midst of this, I came upon a poem entitled *Palaeosmilia* by Archie, one of a collection in his *Selected Poems* of 1946. It was inspired by a coral, *Palaeosmilia*, standing out on the weathered surface of a limestone grave slab, or so it seemed. I had to write and ask 'where?' out of curiosity. It took a year to get the reply, but the outcome was quite disarming. It went as follows:

Dear Eric Robinson,

I'm afraid it was my father who used to study tombstones (and genealogies). He was very good at making Wills in Bute as he knew all the relationships. His partner, on the other hand, made very bad Wills which were always being disputed. Now the truth is I imagined that Tombstone, and used Palaeosmilia because it sounds like some smiling ancient Mona Lisa. There is of course, a similar tombstone in Hugh Miller's "First Impression of England and the English People". I'm sure you could trace and photograph it, but I expect its Dibunophyllum or Cystiphyllum on it.

About forty years after writing the poem I did find Palaeosmilia on stone in a Durham graveyard and even, I think in the Cathedral. So that made it OK for factuality. The family gravestone at Cnoc-an-raer, Port Bannatyne, adjacent to megalithic remains, was a dark Ayreshire limestone with a Communion Cup carved above it, but it had no corals. When it crumbled a little on the surface (pyrites?) some idiot gave it a coat of paint and in due course it became quite scabby looking. It was then replaced by a Creetown grey granite stone, but that was after I wrote the sonnet.

I've been in very few kirkyards except when looking for platforms & terraces. My favourite is Highgate because of the juxtaposition in death of Herbert Spencer & Karl Marx; that's better than John Henry Newman & his pal Ambrose St John at Rednal, Birmingham to which I used sometimes to take field mapping classes, so as to surprise them that "Lead Kindly Light" was written in the Mediterranean about the flames of Etna and Doubt, as far as is known. My own "Mediterranean Spring" was written in bed, out of Marion Newbiggin's geography book! I didn't get to the Mediterranean until I was 53 years of age.

As Descartes said; 'Thought is perhaps even more important than fact at least in some stages of development'. Maybe.

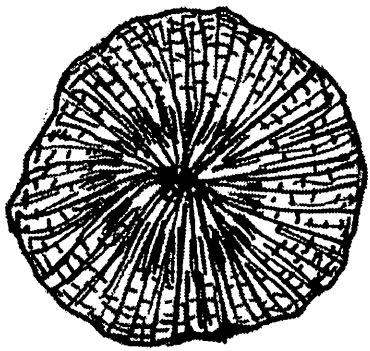
Yours ever,

Archie Lamont

PS If you see Michael Abercrombie give him my regards.

Archie was right about Hugh Miller, and what he himself saw at Durham Cathedral were slabs of Frosterly Marble, a Namurian limestone from Weardale, famous for its crowds of contorted dibunophyllids. We can give him licence to have seen *Palaeosmilia* amongst them although it isn't too likely that it is part of the assemblage. What is important, however, is that whoever the grave slabs commemorate is completely erased from the record, so profound has been the surface loss over time. So, the vanity of human life is put into perspective, and fossil Nature reasserts itself, a fitting message for many a sermon as I have worked it. As for Highgate, well, Archie did often visit London from Birmingham staying in nearby Hampstead and that coupling of Marx and Spencer is also a story worth retelling. Nearby, the Scot, Dr Grant, the first teacher of palaeontology in London University, is buried for good company to those more famous thinkers. Newman? Well, that must have been pure Lamont mischief along with those frank admissions.

I can still taste that tea.



Eric Robinson's drawing of a section through the Carboniferous coral Palaeosmilia murchisoni

Eric Robinson taught at University College London for 48 years, retired in 2001, but was retained as a supernumery. He was through much of that time involved with the GA (1961-2001) as Librarian, Circular Editor and President. He says that he gets his greatest pleasure in teaching geology through buildings and building stones.

Poet's Corner

The poem in this issue leads from the article by Eric Robinson, who remembers the geologist Archie Lamont.

This is one of Archie's poems, a sonnet, written in 1930 and taken from his *Selected Poems*, published in 1946. Eric's article (page 32) centres around his own quest to find out more about the tombstone in question.

Dedicated to a fellow tombstone geologist

PALAEOSMILIA

Two hundred years did the dark limestone hold
A script, but all the letters have been lost;
The dead lie nameless. Acids of the mould,
Sharp agencies of wind, crystals of frost,
The drifting rain, the sun, the winter cold,
Splintering tightest atomies apart,
Shew forth the hidden threads of corals old
On the smooth stone traced with minutest art.

Over the myriad centuries between
Nature remains thus faithful to her own,
Dissepiments like a thin veil are seen
About the theca of the hollow cone,
Calyx, tabulae, septa live again
Longer than bones and epitaphs of men.

BOOK REVIEWS

I have two reviews for this issue. The first ties in with earlier articles in this issue, and describes the geology of Eigg. It was the basis of last year's Edinburgh Geological Society excursion reported in Caroline's article on page 10 and is reviewed by one of BGS's Highland geologists, David Stephenson. The second review follows on from those in the last issue on the geology and landscape of Scotland. This one celebrates the landscape of Ireland and is reviewed by Don Cameron, a geologist working for BGS and himself an Ulsterman.

The Geology of Eigg **review by David Stephenson**

On visiting Eigg for the first time, many people are amazed at the wide variety of geology and landscape within an island that is only 8 km by 5 km. It also exhibits some of the most spectacular geological features in Britain, hosts the most recent lava flow in the British Isles and was the scene of one of Hugh Miller's most famous fossil discoveries. Its delights were well known to Archibald Geikie, Alfred Harker and Edward Bailey. Yet up until now there has been no readily available modern account of the geology of this gem of the Inner Hebrides, apart from detailed sections within the British Geological Survey's memoir for the Small Isles by Henry Emeleus and others, published in 1997. So it is with great pleasure that I am able to report that this gap has been filled admirably by this excellent, handy sized and affordable publication by two people whose work contributed significantly to that memoir.

John Hudson has spent a large part of his career at the University of Leicester studying the Mesozoic sedimentary rocks of the Hebrides and has supervised several PhD students on Eigg alone. Ann Allwright mapped the Palaeogene lava sequence on Eigg as part of an MSc study of volcanic rocks in the Small Isles at the University of Durham. In recent years they have both been involved in the organisation and leading of field excursions to the island, including the highly successful trip by the Edinburgh Geological Society in 2003. These excursions have been based at the fully restored Glebe Barn, which offers self-catering accommodation for groups or individuals and makes an excellent field base in the centre of the island.

The book is aimed at a wide-ranging geological clientele, which is no easy task. It is written in an easy-going style that will be readily understood by people with only limited background knowledge, and yet it contains a wealth of detail that will leave the experts well satisfied. I was impressed from the start by the manner in which the geology is introduced. Instead of the dry way in which geologists usually wade through geological history, we are first introduced to the main processes that have sculpted

the landscape; then to how and when Eigg became an island; and then (and this is the really neat bit) the essential elements of the broader geology of the surrounding area are introduced in a section entitled 'Eigg in the Hebrides'. Here, the geology of everywhere from the Outer Isles in the west to the mountains of the mainland Highlands to the east is described in context as it can be viewed on a clear day from the hills of Eigg. Only then do we get a brief summary of the rocks to be seen on Eigg itself. Throughout these introductory sections, the authors manage to gently alleviate the misconceptions that too frequently confuse the reader who is not familiar with geological time and processes – 'a succession of lost landscapes far different from the present one', 'the peak of the Sgurr is not a volcano', 'our mountains and coastlines are quite young features of the last few thousand years', 'for most of geological time Eigg had no separate existence'. Many books allegedly aimed at general readers leave them floundering with such concepts, but I don't think this one will.

Having set the scene, the descriptive part of the book is then free to work systematically through 'Jurassic rocks and fossils', 'Cretaceous rocks; Scotland at a time of chalk' and 'The Tertiary [*sic*] Igneous province', before we come to a confusing title, 'Eigg's beginnings', which is actually once again about Eigg becoming an island. Then finally we have 'During and since the Ice Ages'. But these are not dry systematic accounts. They are livened up throughout by subtitled diversions, the sort of thing that other publishers often put in highlighted text boxes, on such subjects as 'Hugh Miller and the Eigg plesiosaur', 'The Valtos Sandstone and its concretions' and 'The Eigg pine'. And of course the story of the Sgurr of Eigg, the 100 m-high pinnacle of pitchstone that dominates the island, is given much prominence. There is a clear detailed account of its origin as a lava infilling a valley and subsequently exhumed by erosion of the softer basalts that formed the original valley sides, and a history of how this idea has evolved and withstood challenges since it was first proposed by Geikie in 1871.

For many people the most valuable part of the book will be the final section, which consists of six excursion itineraries – with some refreshingly 'sensible' advice on safety and conservation. The excursions cover the whole of the island and all of the best localities, including the huge cannonball concretions and 'etched' dykes of Laig Bay, the Laig gorge and its nearby kettle-hole lochan, the Singing Sands, the landslips of the north, the dramatic and historical caves of the south coast, and the Sgurr itself. I was delighted to see that my favourite short walk in the whole of the Hebrides (or Scotland, or even Britain) is included – the complete circuit of the Sgurr by traversing beneath its dramatically overhung base on the south side, scrambling to the summit and descending to the north. This walk is spectacular even without the geology and it seems strange that, although the southern and northern approaches to the Sgurr are well described as separate routes, the complete circuit is added only as an afterthought.

But what the book does not do (thankfully) is direct you to my special place – the tiny rock-cradled reedy lochan where the red-throated divers nest, with the most amazing view over to Rum. If you have been there, you will know exactly where I mean, and if you have not then use this book and its descriptions as an impetus to go to Eigg; if you follow all the excursions, you might just stumble across it yourself.

THE GEOLOGY OF EIGG
by John Hudson & Ann Allwright
published on behalf of the Isle of Eigg Heritage Trust
available from the Isle of Eigg Craft Shop, The Pier, Isle of Eigg, PH42 4RL
Price £5 plus £1 p&p (cheques made payable to *Isle of Eigg Craft Shop Ltd.*)

The Irish Landscape - a scenery to celebrate **review by Don Cameron**

A first cousin to Con Gillen's 'Geology and landscapes of Scotland', this book is rather different in style and content. Ireland does not lend itself so readily to subdivision into geological provinces. Instead, our author Charles Holland has adopted the commendably practical approach of leading us on a clockwise tour of Ireland's peripheral mountainous regions, beginning and ending in the city of Dublin.

On first impression, this book scores very highly indeed. Ireland's landscape is beautifully illustrated by more than 60 colour plates, most of which are credited to the author himself. So many are stunning, and particularly those from Ireland's Atlantic-facing western fringe. But this is not a coffee table book – its content and compact size (240 x 180 mm) are designed instead for carriage in a glove compartment or rucksack, and for reference by the tourist or long-weekender with an enquiring mind rather than the expert.

Our odyssey starts with a well-crafted description of the influence of its underlying Cambrian and Carboniferous strata on the landscape of Dublin Bay, where 'holidays in Ireland often start and finish' (though rarely from these parts). From there, the trail takes us southwards at a leisurely pace over the top of Leinster's granite massif to the Precambrian gneiss and Lower Palaeozoic strata that are partly concealed beneath Wexford's fertile countryside. Two short chapters later, we arrive in the rugged scenic grandeur of Cork and Kerry's Variscan fold belt, an area that our author clearly holds in great affection.

However, it is as our itinerary turns north that the armchair reader will encounter difficulties. The book is interspersed with seven summary geological maps which, presumably for economy, are ornamented in black and white. The maps contain a

smattering of place names to guide our travels, but in one short paragraph chosen at random, we pass through Joyce's country to the Kilbride Peninsula and hunt for Wenlock graptolites at Doon Rock and Owenduff Bridge – none of which are featured on any of the maps (something for the second edition?). This is a recurring feature in the west, but in mitigation the tourist will have a good map or road atlas at hand that should allow the itinerary to be followed in detail.

This is a minor distraction from our journey, that next passes through the barren karstic landscape of North Clare. After a diversion inland to visit the elevated inliers of Lower Palaeozoic and Devonian rocks in the Devilsbit and Galty Mountains, we reach Connemara with its quartzite-cored Twelve Bens – so spectacular that they're photographed twice – in autumn splendour and evening silhouette. Soon we reach my favourite part, Donegal, and I was mildly disappointed here that the Rosgill Peninsula, with its dramatic scenery sculpted from Ireland's equivalent of the Appin succession, was omitted from the itinerary. Still, in a slim volume of 171 pages including illustrations you can't please everyone.

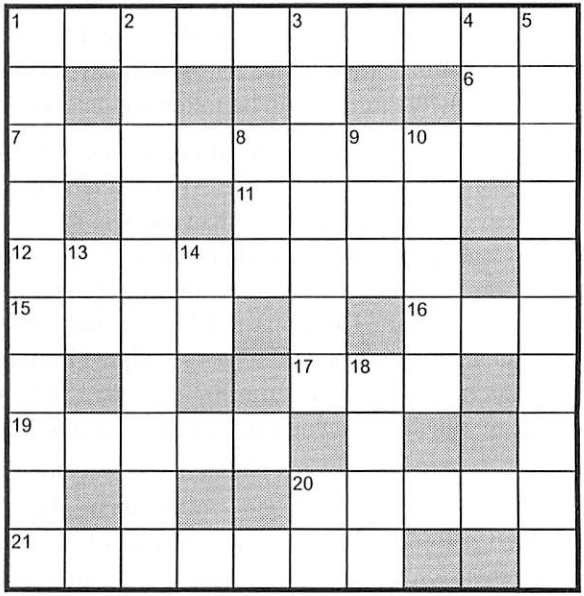
In his introduction, Charles Holland braces us for 'a straightforward introduction to rocks and to the processes which affect them'. I felt over-qualified to assess this, so I passed it to my wife, who knows little of geology. To my relief, she did find it comprehensible and instructive, and she earned multiple brownie points by professing puzzlement that the summary of the geological history of Ireland (Figure 79) is upside down relative to the geological time-scale featured on Figure 3! She suggested that a glossary rather than an index of technical terms would have been a useful supplement, perhaps with illustrations of some of the rock types described (again something for the second edition?)

Having completed our tour in a single cover-to-cover read, it's unlikely that Charles Holland would have expected this of us. Indeed, those intent in planning their own itinerary will greatly appreciate the book's organisation into county-sized chunks. It will appeal in particular to those appreciative of grandiose scenery and wishing to gain insight into the fabric of the landscape as each new mountain range or solitary peak appears over the horizon. It will inform the Irish resident, but I would also strongly commend the book as an excellent travel companion for those from farther afield. I'm delighted to have it on my bookshelf, but then our editor did promise that I would get to keep my review copy for free!

THE IRISH LANDSCAPE - A SCENERY TO CELEBRATE
by Charles Hepworth Holland
published by Dunedin Academic Press, Edinburgh: £20
ISBN 1-903765-20-X

Rocksword Puzzle No. 11

compiled by Angela Anderson



Clues across

1. Chops entry into large crystal (10 letters)
6. Exclamation (2)
7. Sluice tarn into Lake District (10)
11. Que sera, sera over the ages (4)
12. Craters I turn over for odd blocks (8)
15. Soap over senior citizens (4)
16. One Italian (3)
17. Short P.M. (3)
19. Occurrence in seven times (5)
20. Ring ran to a sum of money (5)
21. Use a try over river mouth (7)

Clues down

1. Lower part of the Cenozoic (10)
2. Tramp over scene of prominent cliff line (10)
3. About trice in a yellow quartz mineral (7)
4. He is on a line to inherit from father (3)
5. The tool I'd even put up for surveying (10)
8. As a bed, it can be bottom, fore or top (3)
9. Initially the Royal Automobile Club (3)
10. In this, sue for topic (5)
13. Ran into sun god (2)
14. In like manner (2)
18. To a great extent (4)
20. Geo. Rex (2)

This is Angela's eleventh Rocksword *puzzle, and there are some great geological clues here. To maintain the geological theme, I wondered whether to suggest that 15 across refer to 'old fossils', but I decided that Angela's 'senior citizens' is a more tactful alternative.*

The answers to this puzzle are to be found inside the back cover of this issue.

Proceedings of the
Edinburgh Geological Society
for the 169th Session 2002-2003
No. 33

Membership

The total membership of the Society at 30th September 2003 was (with last year's figures in brackets) 565 (591) comprising:

Honorary Fellows	6	(6)	Senior Fellows	43	(42)
Corresponding Fellows	11	(12)	Family Fellows	40	(38)
Distinguished Fellows	2	(2)	Glasgow Associates	10	(13)
Life Fellows	17	(17)	Junior Associates	12	(13)
Ordinary Fellows	424	(448)			

Changes in membership from session 2001-2002 are summarised as follows: 19 new Ordinary Fellows were elected during the year while 31 resigned, were removed from the membership list or moved away. 9 Ordinary Fellows were transferred to Senior Fellowship. 1 Senior and 3 Ordinary Fellows died during the year and their deaths are recorded below. 5 new Family Fellows were elected and 2 resigned. One Corresponding Fellow (Prof L C King) has moved away.

Deaths It is with regret that we record the deaths of Senior Fellow George Metcalfe and of Ordinary Fellows Martin Munro, Donald Pettie and Elspeth Reid.

George Metcalfe was a one-time lecturer at Lauder College in Dunfermline and was an active member of the Geologists Association, for whom he organised a field excursion to Orkney in the late 1970s. This was led by Wally Mykura and several Fellows of the Edinburgh Geological Society joined in the trip.

Martin Munro had been a member of the Department of Geology and Mineralogy at Marischal College in Aberdeen. He worked on the Foyers Granite but, above all, was an outstanding field geologist and, in that rôle, inspired the likes of Alister Skinner, Stuart Monro and our President, Doug Fettes.

Donald Pettie was a dedicated amateur geologist. He had a degree in Electrical Engineering (Glasgow, 1959) and, after he retired, joined the Edinburgh Geological Society in 1997.

Elspeth Reid died tragically as a result of a vehicle accident. At one time an OU student, she became one of their tutors and went on to teach Earth Sciences at Inverness College, part of the University of the Highlands and Islands. She was a very active member of the OUGS and the Highland Geological Society.

Council elected 25th November 2002

President: Peter Dryburgh

Vice-Presidents: Douglas Fettes, Graham Smith

Honorary Secretary: Mike Dean

Honorary Treasurer: David Gould

Membership Secretary: Christine Thompson

Excursions Secretary: David McAdam

Lectures Secretary: Don Mallick

Assistant Secretary: Ian Jackson

Assistant Secretary (Billet): Caroline Paterson

Assistant Secretary (Web site): Diane Mitchell

Proceedings Editor: Alan Fyfe

Librarian: Bob McIntosh

Publication Sales Officer: Ian Jackson

Scientific Editors: Philip Stone, Emrys Phillips

Ordinary Members of Council: Sarah Arkley, Ian Gray, Bob Reekie, Charlotte Vye, Tom Wilson, Angus MacPherson

Trustees: Ian Rolfe, William Harper, Ian Hogarth

Independent Examiner: Dalgliesh & Tullo, Chartered Accountants

Business Council held six meetings during the session, discussing a number of issues including:

movement of the Hutton Plaque to St John's Hill
the Society web site
donations to Wanlockhead Museum and the Scottish Geology Festival
obituaries for deceased Fellows
updating the Membership Roll
possible change in format of the annual Social Evening
funding for affiliated RIGS groups

Lecture Meetings were held as follows:

16th October 2002	**Dr. P. Kokelaar**: Glen Coe Caldera-Volcano Complex: a new classic
30th October	**Dr. A. Hall**: Former ice caps in the Cairngorms: some fascinating problems of reconstruction
13th November	**Prof. R. Nesbitt**: The joy of rocks: mantle magmas in space and time
27th November	**Dr. M. Searle**: Geology and Exploration around the northern frontiers of Pakistan, Hindu Kush and Karakoram (followed by the Annual General Meeting)
11th December	**Dr. R. Holdsworth**: Tectonic reactivation - a weakness for faults
15th January 2003	**Dr. P. Dryburgh**: Presidential Address: Crystals, crystal growth and geology
29th January	**Dr. M. Romano**: Tracking Jurassic dinosaurs: the print is the Key to the past
12th February	**Fellows Night**
26th February	**Dr. J. Preston**: A small corner of Scottish geology - a return to Tertiary Education
12th March	**Dr. D. Millward**: Ordovician supervolcanoes in the Lake District
26th March	**Dr. J. Treagus**: Faults in the Dalradian - they are not all mine! (Dr Treagus was awarded with the Clough Medal at this meeting)

The **Clough Medal** was awarded to Dr J E Treagus of Manchester University for his work on the structure of the Dalradian rocks of the Grampian Highlands.

Publications

The *Scottish Journal of Geology* vol 38 part 2 and vol 39 part 1, and *The Edinburgh Geologist* nos 39 and 40 were published this year. No new publications were produced this year, though the Society made a contribution of £2000 towards Alex Livingstone's *Minerals of Scotland.*

Field Meetings were held as follows (number of participants in brackets):

23rd April 2002	**Richard Gillanders**: Scottish Mineral & Lapidary Club (7)
26th April	**Suzanne Miller & Fiona McGibbon**: Glen Esk (22)
10th-17th May	**John Hudson & Ann Allwright**: Eigg week (20)
21st May	**Bill Baird**: Vogrie (21)
7th June	**Colin MacFadyen**: Saltcoats & Dalry (27)
20th-22nd June	**Phil Stone**: Ballantrae weekend (14)
5th July	**Rosalind Garton & Mike Browne**: Kincraig (33)
16th July	**Lothian & Borders RIGS group**: Craigleith (16) (jointly with Edinburgh Natural History Society)
2nd August	**Mike Browne & David McAdam**: Redheugh & Siccar Point (35)
13th August	**Andrew McMillan**: Calton Hill (14)
30th August	**David McAdam**: St Baldred's to Tantallon (22)
20th September	**Alison Monaghan & Neil Gray**: Glentaggart Opencast Coal Site (17) - jointly with Geological Society of Glasgow, culminating with High Tea
4th October	**Mike Browne & David McAdam**: RIGS in West Lothian (23)

Average attendance at field meetings was 28

Lothian and Borders RIGS Group

Work has continued with the production of interpretive posters and site information leaflets. Three posters and five leaflets were published in the year 2002-2003. The group helped to host the 6th UK RIGS annual conference at Oatridge College, West Lothian, running field trips to RIGS sites in the Lothians and Stirling area. The RIGS Group officers were Mike Browne (chairman) and David McAdam (secretary). Cliff Porteous has resigned as treasurer.

Accounts

A summary of the accounts for the year ending 30th September 2001 follows:

REVENUE ACCOUNTS FOR THE YEAR ENDED 30th SEPTEMBER 2003

	General	Publications	Clough	Mykura	Total	
					2003	2002
INCOME	£	£	£	£	£	£
Gross income from investments	1,534	711	520	141	2,906	2,952
Net gain (loss) on disposal of investments	(252)	(117)	(85)	(23)	(477)	(250)
Bank interest	105	49	36	9	199	180
Subscriptions	7,420	-	-	-	7,420	7,400
Tax recoverable on Deeds of Covenant	920	-	-	-	920	879
Legacies and donations	527	-	-	-	527	330
Grants	-	-	-	-	-	500
Social evening	76	-	-	-	76	16
Sales of publications	-	3,902	-	-	3,902	3,415
TOTAL INCOME	10,330	4,545	471	127	15,473	15,422
EXPENDITURE						
Adminstrative Costs						
Printing, Stationery, Postage	399	102	-	-	501	208
Insurance	329	-	-	-	329	280
Fund management charges	470	-	-	-	470	499
Miscellaneous	99	-	-	-	99	150
Printing publicity sheet & certificates	325	-	-	-	325	-
Independent Examiner's fee	670	-	-	-	670	644
	2,292	102	-	-	2,394	1,781
Direct Charitable Activities						
Lecture costs	1,905	-	-	-	1,905	2,063
Printing of billets	1,950	-	-	-	1,950	1,863
Postage of billets and Ed' Geologist	997	-	-	-	997	805
Award and Medal expenses	-	-	368	-	368	361
Excursions	1,297	-	-	-	1,297	1,203
RIGS Group	(151)	-	-	-	(151)	13
Refurbishment of Clough's grave	-	-	-	-	-	806
Edinburgh Geologist	-	1,858	-	-	1,858	2,242
Special Publications	-	171	-	-	171	1,073
Scottish Journal of Geology Vol 39	-	2,750	-	-	2,750	-
Grants made	475	-	400	200	1,075	2,100
	6,473	4,779	768	200	12,220	12,529
Cost of Publications sold	-	2,606	-	-	2,606	2,133
TOTAL EXPENDITURE	8,765	7,487	768	200	17,220	16,433
SURPLUS (DEFICIT) for year	1,565	(2,942)	(297)	(73)	(1,747)	(1,021)

BALANCE SHEET AT 30th SEPTEMBER 2003

	2003		2002	
	£	£	£	£
FIXED ASSETS				
Investments at Market Value		50,230		54,992
Tangible assets		-		-
		50,230		54,992
CURRENT ASSETS				
Stock of publications	34,206		34,487	
Other stocks	543		620	
Debtors and prepayments	631		517	
Taxation recoverable	42		82	
Bank accounts	16,415		9,847	
	51,837		45,553	
Less				
CREDITORS REPAYABLE WITHIN ONE YEAR				
Sundry	1,410		755	
Scottish Journal of Geology Vol 39	2,250		-	
	3,660		755	
NET CURRENT ASSETS		48,177		44,798
NET ASSETS		98,407		99,790
REPRESENTING				
FUNDS				
Permanent Endowment		43,990		47,130
Unrestricted		54,417		52,660
		98,407		99,790

prepared by David Gould, Honorary Treasurer

approved by Dalgliesh and Tullo, Chartered Accountants

adopted on behalf of Council on 26th November 2003

Solution to Rocksword Puzzle No. 11

Clues across

1. PHENOCRYST
6. OH
7. LACUSTRINE
11. ERAS
12. ERRATICS
15. OAPS
16. UNO
17. EVE
19. EVENT
20. GRANT
21. ESTUARY

Clues down

1. PALAEOGENE
2. ESCARPMENT
3. CITRINE
4. SON
5. THEODOLITE
8. SET
9. RAC
10. ISSUE
13. RA
14. AS
18. VERY
20. GR

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