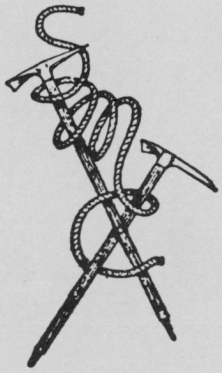
THE SCOTTISH MOUNTAINEERING CLUB JOURNAL



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CONTENTS

	PAGE
SILVER THREADS AMONG THE CLOUDS By Mike Jacob	181
A RIBBON OF LIGHT By Donald M. Orr	188
THE BLACK SHOOT CENTENARY By H.M. Brown and Andy Tibbs	192
BEATING THE RECESSION By G.J.F. Dutton	197
SPILLITUDE By Grant Urquhart	201
THE KEEPSAKE By Donald M. Orr	204
THE GEOLOGY OF BEN NEVIS By Rod Burt	205
'YOU CAN TRACE OUR LITTLE FOOTPRINTS' By Robert Aitken	225
IMPACT OF HILL WALKERS By Adam Watson	233
PECULIARITIES OF THE HIGH CLIMBER By W.H. Murray	242
SPORT CLIMBING – A RATIONALE By Rab Anderson	246
PANCH CHULI – 42 YEARS AFTER By Graham E. Little	252
GREENLAND 1992 By Ian Angell	259
THE GAFFER, A GILLIE, AND SOME GRANITE By Brian Hill	262
PRESIDENTIAL PERORATION By I.H.M. Smart	265
NEW CLIMBS SECTION	272
MISCELLANEOUS NOTES	300
MUNRO MATTERS	302
SCOTTISH MOUNTAIN ACCIDENTS, 1992	308
IN MEMORIAM	335
R. D. WALTON	335
WILLIAM BENNET	336
GRAHAM J. TISO	337
THEO NICHOLSON	339
DR. ANGUS MCINNES	340
NORMAN SINCLAIR TENNENT	341
PROCEEDINGS OF THE CLUB	343
JMCS REPORTS	344
SMC AND JMCS ABROAD	347
REVIEWS	350
OFFICE BEARERS	363

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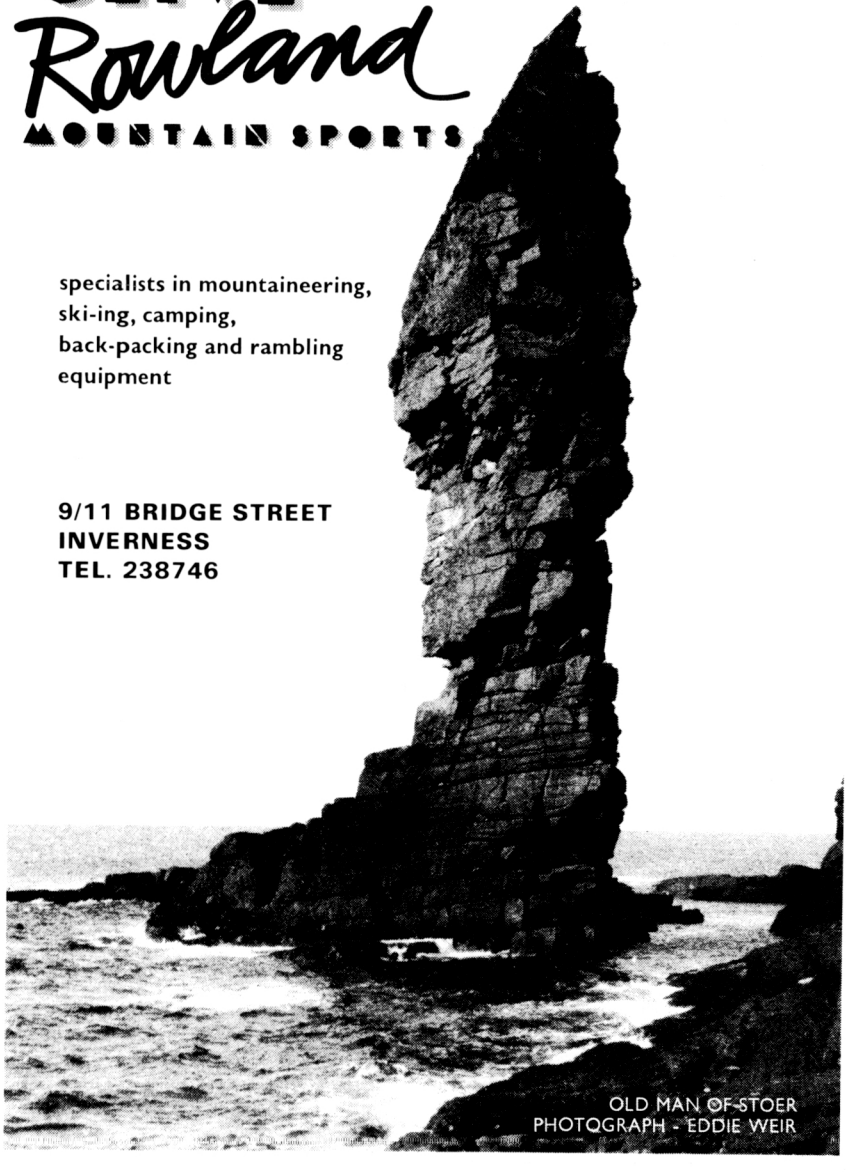

OLD MAN OF STOER
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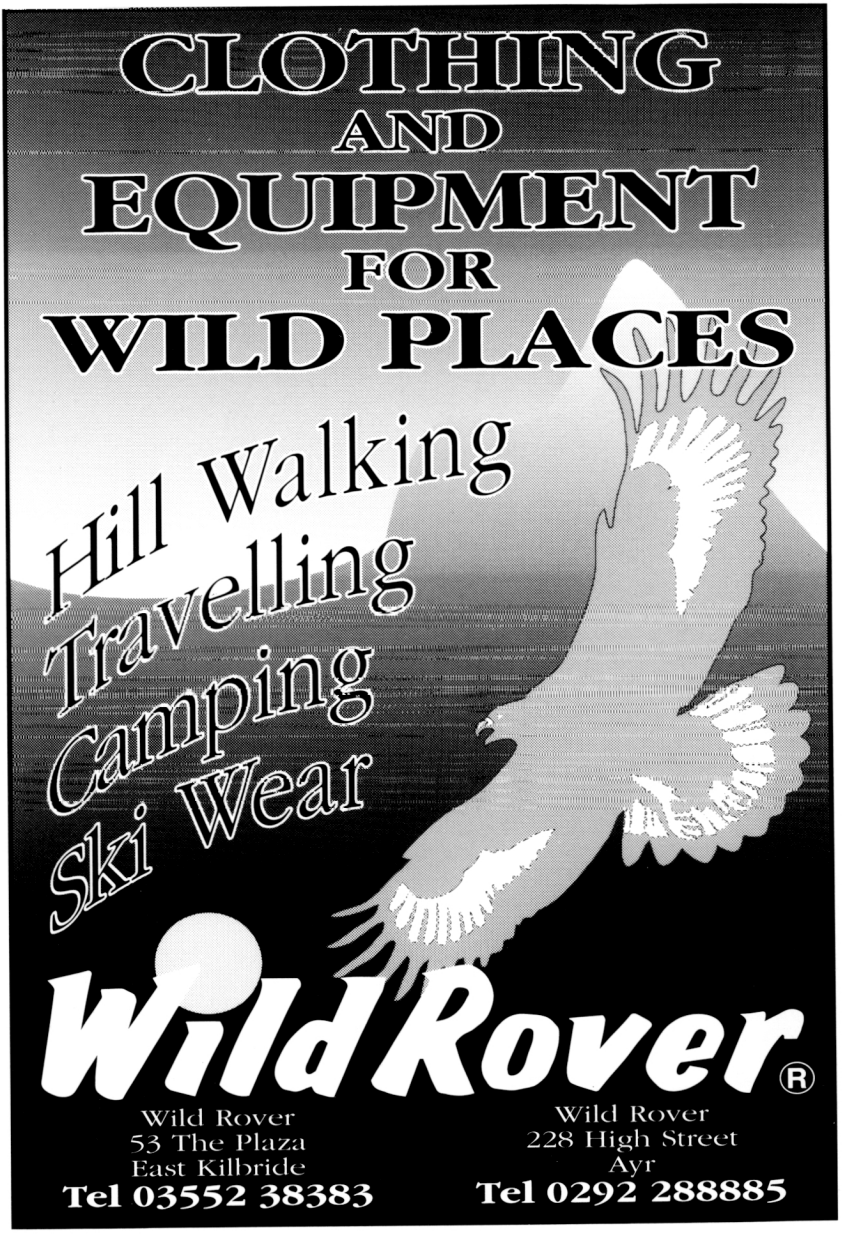
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SILVER THREADS AMONG THE CLOUDS

By Mike Jacob

There is a region of heart's desire
Free for the hand that wills;
Land of the shadow and haunted spire,
Land of the silvery glacier fire,
Land of the cloud and the starry choir
Magical land of hills;
Loud with the crying of winds and streams,
Thronged with the fancies and fears of dreams.[1]

MY DREAM was that Ben Nevis in April would give us an Alpine-like weekend, rock and snow and sun and long days of blue skies; but here we were as the rain lashed down on a black and evil night and a disturbing roar somewhere away to our right.

It was the Allt a' Mhuilinn in full and dangerous spate after days of heavy rain and rapid thaw. I felt dizzy and weak; a combination caused by a virulent virus earlier in the week, a tiring drive from Dumfries negotiating heavy traffic, oily spray and the frustrating convoy by Lomond-side, my mind going through pointless mental exercises as I had tried to calculate by how much I would need to increase my speed to keep my rendezvous with Peter in Fort William. I had given up chasing time as I sat impatiently at another set of traffic lights when I should have been doing 150 mph across Rannoch Moor, and plans of an early walk-in had escaped out of the car window.

Late, and with a spinning head, I had offered my profuse apologies, which had been accepted with good grace. So we had dallied in the pub, debating the futility of it all but then, for no logical reason, had set off on that sweaty, body-numbing haul with overladen sacs. My need for long rests and drinks even before we had reached the dam had suggested a sensible retreat, especially since the forecast for the weekend, as warm fronts chased each other over Scotland, was 'rain, thaw and more rain', but we had kept plodding on, Peter waiting patiently for his languishing partner, for I had the key to the CIC hut and the Gaffersnake might be waiting outside.

Then, through the driving rain, a distant light flashed and disappeared; heads bowed in silent submission, we flogged our wet way through mud and peaty bog, over boulders and heather, occasionally picking up the path which was, by now, like the bed of a burn. We were both wet, despite wearing full sets of hi-tec waterproofs; perspiration had nowhere to go and rain found its way down necks and up sleeves. In these conditions, concepts such as 'breathable fabrics' were just meaningless. I discovered that wearing my climbing helmet, which I had been carrying so that I could scoop up large quantities of water to quench my thirst, now made a reasonable sou'wester.

It always seems impossible to establish any rhythm on the climb to the CIC hut and, consequently, to drift into that state where the mind can leave the body to act mechanically and, whilst fantasies and imaginings are lived out, time and distance pass quickly by. However, on this occasion, perhaps because the conditions were so awful, I did seem to find strength from some kind of cerebral introspection; I was buffeted and drifting on a storm-tossed sea in an open boat, while the bulk of a huge oppressive ship, felt rather than seen, thumped mercilessly towards me, the noise getting louder, its shiny, black flanks streaming surf as it Towered over. The light flashed again, nearer now; it was time to cross the Allt. The roar was deafening; in two circles of torchlight all we could see was a mass of foaming water in violent turmoil, black pools of unfathomable depth swirled away down, down. This was the normal crossing below the hut, but only one or two slimy-looking boulders showed just under the surface, too far apart to use as stepping stones. We tried further up, above the hut, but here the water funnels in a suicidal ravine, the welcoming light from the hut window a few impossible yards away. We looked up and down in vain, the whole hillside seemed to be awash, ankle-deep everywhere. Soaked, and now rapidly chilling, shivers setting in, opening my rucksack to get a pile jacket merely allowed the deluge to pour in.

We poked and tested boulders for security but each time stepped back from the racing torrent for we could see no way to go. As the water raged we could hear the muffled thuds as rocks were pounded into each other and memories of school geography lessons on the 'erosion by water' flashed

through my mind but the situation was too fraught for such things and, as quickly, they were swirled away. We hesitated, unsure quite what to do next. Peter hinted at a sensible retreat and it began to seem the inevitable final option. In desperation I took off my pack, tied on the rope and, belayed by Peter, staggered and hopped a crazy dance from one foaming lump to the next, each time managing to keep my balance as boulders moved under my boots, water up to my knees. If I had slipped I would have been washed away on to the rope, there was no doubting the force of the water. I lunged at a rock on the far side and hugged it gratefully for not rolling on top of me, then fixed the rope as a hand-rail, the whole escapade taking over an hour. Well after midnight we squelched into the hut and sat soggily down on the benches in the porch, water draining from us as if from huge sponges. The Gaffersnake, with his usual Irish luck, had chanced into a descending Godefroy Perroux and acquired his key. Roused from his bunk he provided us with hot sweet tea for were we not, after all, in a state of shock?

There are perils of knightly zest
Fit for the warrior's craft;
Pitiless giants with rock-bound crest,
Mystical wells for the midnight rest,
Ice-crowned castles and halls, to test
Steel with the ashen shaft;
Realms to be won by the well-swung blow,
Rest to be earned from the yielding foe.

All night the wind and rain battered the hut, and the scene at first light was one of low cloud and streaming rock, reminding me of childhood trips in the Welsh mountains; always, it seemed, with mist swirling round wet and intimidating rock towers. I lit the gas heaters in the drying-room and went back to my sleeping bag, for there seemed little point in doing anything else. The hut was surprisingly quiet for an Easter weekend, a pleasant change; there were no crowds of climbers congregating near the hut so it was possible for emerging occupants to avoid running the gauntlet of glowering 'outsiders'. Eventually, after a leisurely breakfast, and because it had actually stopped raining, we ambled up towards Coire na Ciste, negotiating pools of water and wondering if there was any snow left to be found. There was, and so we slipped a soggy way to the cliffs only to retreat quickly as a waterfall blew sideways on to us. Everywhere we looked there was bare rock and water; we needed to go higher and the choice was, like the routes, lean. So, more in hope than anticipation, we toiled upwards again, through the thinning mist towards No. 3 Gully Buttress. Miraculously, the cloud level rose and the freezing level dropped. Almost immediately, the snow became crisper and the water stopped

dripping. In the afternoon we had a fine climb, with ice pitches and sensational positions, which would stay long in the memory but for the next day.

Frosted cities of timeless sleep
Wait for the errant knight;
Kingly forest and frowning steep,
Spirits of mist and of fathomless deep,
Snow-winged dragons of fear that keep
Watch o' er each virgin height;
Treasure of dawn and a crown of stars,
His who can shatter the frozen bars.

The freezing level continued to fall and there was verglas outside the hut the following morning, which was too good to be true, yes because, with the arrival of one of the avalanche-forecast team, was the warning of imminent warm front and more rain. But the sun shone and the sky was blue so I planted the seed of an idea and watched while it germinated. The Gaffersnake knew that he would never get a chance like it again, none of us would for, as he said later, you don't get many mountaineering days like that in a lifetime. So, Observatory Ridge, his last Nevis classic ridge, a route that, I knew, had been an objective for a long time. It was also one that held an aura of seriousness, not least because of the tales of difficulty and frights with which we had been regaled by various strong teams, and the rescue we had witnessed a couple of years earlier, with a clattering helicopter hovering over the hut in the middle of the night, spindrift blasted by the down-draught from the rotor blades in a pool of white from a powerful searchlight.

There was no hurry as we strolled up past the Douglas Boulder, stopping two or three times in the sun to remove clothing for, despite the overnight freeze and slight snowfall, now, in the middle of April, the sun was gaining in strength. We picked our way over avalanche debris, compact lumps of concrete-like snow, and scree, at the foot of Observatory Gully. A pair of climbers were retreating from Point Five, the first pitch incomplete, whilst further up Tower Scoop gleamed green and blue amongst rocky walls. Slingsby's Chimney, a shallow gully, was completely bare; yet only a month earlier we had scraped our way up powdery snow, until, high up, the blizzard had arrived, and we found ourselves in a much more serious situation. A struggle to complete the dangerous traverse from the First Platform of North-East Buttress to Coire Leis in the gloom as nightfall approached and a hurricane-force wind tore our shouts to shreds, battered us and instilled doubts. It all looked so innocuous now, like the burn-crossing near the hut, gone the short daylight hours and grey, dour Scottish winter for an 'och, man, ye dinnae need a torch'.

Away from the sun, dwarfed in the shadows at the foot of Observatory Ridge, we soon replaced our clothing, or was it the chill of expectation? There was verglas on the rock as I set off, a consequence of the earlier thaw; now all the nooks and crannies and sloping holds were plated with black ice. An apparently straightforward chimney took a lot longer than I had expected. Suddenly, I had doubts. This wasn't the Diff. climbing I had been expecting and I was well aware of what the guide book had to say about such conditions. I could see a flicker of worry in Peter's face when he joined me at the terrace where some people traverse in from the foot of Zero Gully. We had to wait while the Gaffersnake tussled. We were climbing as two parties, for the Gaffersnake had been joined by Andy the previous evening and they had gained the lead. A light wind blew an air of tension; I put on a cagoule and looked over to the crest of Tower Ridge where groups made rapid progress by our standards. Impatient to be moving, I climbed up about 20ft to a piton at a small overlap and waited again. The shiny new karabiner that the Gaffersnake had discovered on his arrival at the same point had been removed, and now glinted incongruously at his waist, looking out of place amongst his small collection of faded old tapes. I think that most of his gear had been found on a climb in Ireland when we had discovered every stance littered with abandoned goodies.

Eventually, momentum lost, the way ahead was clear. The next moves were made trying to avoid the ice smears, a few feet of friction climbing on frosty rock with no satisfying hand-holds, then I reached a groove with a good runner and a dry mouth. I suppose the next pitch, a very steep and smooth slab, with crampon scrapes like the scratches from a large cat's claws, which testifies to its difficulty when covered by snow, is the normal crux. It felt secure enough despite a drooling smear of thick ice just where I needed a left foothold. In the end I managed an inelegant thrutch but Peter, sensibly, smashed the ice away with a large nut like a weird game of conkers, to reveal a crucial hold. Conscious of the deepening void into Observatory Gully, a traverse right, under an overhang, took us on to a huge wall suspended over the drop, but the terrain was much easier with large blocks and secure belays. Now back in the sun, verglas was no longer a problem, and, after a couple of pitches, we reached the crest of the ridge with a large tower looming above. It was well after lunch-time but we felt the need to keep moving for we had lost too much time on the lower buttress.

The others had only just surmounted the next barrier and it transpired that Andy had gone off route and fallen a short way before managing to stop himself. I got vague answers to my enquiries as to where he had been, but he didn't know that I knew that he hadn't known about the Richardson Step – 'an incut foothold in a blank wall beneath an overhang where you must move left; it's normally hidden by snow, the bloody English don't know about it and get stuck'. Precisely so, for this was the scene of the rescue that

we had witnessed. However, we did know, and so up we went to be greeted by the sight of lots of snow and ice in superb condition. I looked up to see the Gaffersnake's loose crampon bindings on a pair of what looked like old walking boots; Terrordactyls hung from his wrists and these concessions to modern ice climbing matched his miner's helmet. I remembered him climbing at Lochnagar with his trusty old walker's axe, and crampons with no front points, as we chopped steps up in yet another storm. The nickname came earlier, from a home-made Snakes-and-Ladders board which had been constructed as we kicked our heels in Greenland waiting for the arrival of the boat with our equipment, each snake featuring a member of the expedition.

It was time for us to put on our crampons and unstrap our ice-axes. Peter, happier on this sort of terrain, led up and traversed right to and round a corner, out of sight. I had time to sit and gaze around me. For all our climbing, we were still only level with the bottom pitches of Point Five. What a theatre for the struggles, dramas, tragedies, successes and climbing history enclosed within those rocky walls. I looked around – Carn Mor Dearg became a Himalayan giant, with a sea of mountains and cloud stretching to the far horizons; a party on Tower Ridge were having a slow fight up the Walker Spur on the Grandes Jorasses; the Orion Face looked both awesome and committing, the ultimate challenge. I was glad not to be there and looked away yet, glancing back, fancied that I saw two figures, in anoraks and tweed breeches, cutting steps up this daunting arena and I marvelled at their courage. I focused on a crystal in the rock, had anyone seen it before? A distant shout, a pull on the ropes and I was drawn back to reality, the appreciation that it was late afternoon and that we still had another 1000ft to go and that we had had no food or drink. Steep but straightforward ground, with excellent belays, led to the famous knife-edge arete overlooking Zero Gully, into which we traversed, discretion taking precedence over the purity of the direct line. Somewhere over to the right was a huge sheet of thick ice, dominating the whole upper part of the face, like a great white sheet draped over the cornice.

The ice was excellent, axe placements secure. We were bombarded by our friends with lumps of hard snow, and even **with** a Friend, as the Gaffersnake attempted to redress the balance between his pitiful supply of gear and Andy's prodigious quantities. A couple of pitches from the top of Zero Gully, in the confines of a short but steep ice-step, I found a perfect thread belay and hung securely in my harness as I brought up my partner. The sun was setting behind bruised, purple clouds gathering in the west while a chill wind started to moan around the cliffs. Slowly, steadily, safely we reached the end of 2000ft of mixed climbing, the grade irrelevant. Swathed in rope, we stood on the freezing plateau, warm from the knowledge that it had been committing enough to put us to the test and that we had each won our own fights.

In the twilight we shook hands, and then, in the last of the fading light of Easter Sunday, somewhat wearily headed for the top of No. 4 Gully; there was still a tension inside, perhaps a mixture of reluctance to be leaving the scene of a memorable experience, and the awareness that it was too soon to relax. We slipped carefully down the steep snow until, near the lochan, we finally stopped in pitch dark. At that moment Ben Nevis was ours; overhead the stars twinkled, reflecting the silence and solitude of that massive presence. A verse from Geoffrey Winthrop Young, echoing through my mind since I had glimpsed the ghosts on Orion Face, were the only words that I could find –

All that the wanderer's heart can crave,
Life lived thrice for its lending,
Hermit's vigil in dreamlit cave,
Gleams of the vision that Merlin gave,
Comrades till death, and a wind-swept grave,
Joy of the journey's ending:-
Ye who have climbed to the great white veil,
Heard ye the chant? Saw ye the Grail?

Rummaging for my torch I realised that I had left it, against my better judgement, in the hut. My companion, however, had not been so foolish and provided the light to illuminate our way down the series of cliffs from Coire na Ciste, whilst I, at least, could provide the memory of the way down.

We burst ecstatically in on an elated Gaffersnake, for Andy had already departed, and drank pot after pot of tea, talking like wee boys at a midnight feast, too high for sleep as we re-lived the day and the weekend. To me, Ben Nevis was like an over-familiar drunkard, switching inexplicably from quick-tempered aggression to placid somnolence, losing the inhibitions which mask the moods of everyday life – the 'Benigma Variations' – a mysterious theme, one of adventure and ambivalence.

Very early the following morning the Gaffersnake disappeared out of the hut, apparently, and strangely, concerned about being late for work. Myself, well I think he was trying to avoid scrubbing his porridge pot. I reached the door shortly later and yelled after him, but he was too far away to hear my shouts questioning his parenthood and merely turned and waved. A couple of hours later, after cleaning up the hut we, too, headed down, racing the descending cloud and with the wind, for once, at our backs.

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[1] We acknowledge the publishers, Methuen, for the use of verses from G.W. Young's 'Knight Errantry', published in his 'Collected poems'.

A RIBBON OF LIGHT

By Donald M. Orr

THE GREYNESS seemed to rise from the sea. It suffused the air and filtered into the landscape a still, damp aura of gloom. Footsteps were deadened in the dank, moist atmosphere and the lack of movement in the air increased the humidity leaving him almost breathless. He scanned the area beyond his immediate gaze. Coloured lights were held in their own reflection by a foggy halo that isolated them like lost embers. The pebble beach undulated dully down to the flat-oxide water. Farther out he noticed wavelets struggling to rise from a seemingly starched element that, at its edge, had set and moulded to the contours of the stones. The architecture of the promenade merged into a series of greys and ochres that crept off into the recesses of the night and invoked in him the same feelings of dread as the half hidden chambers in a Piranesi prison.

The seaside town, shrouded in melancholy, exuded disinterest and ennui through the staleness of the evening air. A last claim to gaiety was staked by neon illuminations flickering into life along the main street but this dipped the scene towards the garish and revealed nothing but the organised supply of baser instincts. He headed home slowly, trying to balance the clarity of the day with the turgid nuances of the evening.

The morning sun had drawn him out of bed early and, seen from the kitchen window, the crags high on the escarpment overlooking the town caught the sun's rays on their southern margin and beckoned him with their glimmering edge. To keep him in trim for tomorrow's course a work-out on the steep slabs set into the side of the moorland plateau would be a perfect solution to his solitary day.

By mid-morning the rock was hot to the touch and he was glad of the onshore breeze that carried up the low tide tang of serrated wrack and, above that, the woody verdure of the farmland immediately below him. Perched on the wall, absorbed in the quiet technicalities of his craft, he became aware of a muffled, rhythmic thumping and turned to see a paddle steamer come into the pier far beneath. Moving up a broad corner on slim holds he reached a ledge below the crest and sat relaxing, resting his arms and chalky fingers, in the sun. The twin funnelled ship was now leaving the bay and heading out to the islands. The heavy wooden paddles churned the sea into a lather and drove the ship out over the blue firth, streaked offshore by amethyst reflected from the heather hills of the islands. The sound and colour of the scene enveloped him in the folds of his boyhood summers.

The casual jumble of images, of hot sand, sea and the endless days of beach activities revolved with the memory of his parents. He smiled sadly at the recollection and rose to stem further reminiscences. The steamer was now well down the channel and starting the slow turn round the southern end of the large island when a single wave from the wake caught and held the sun's brilliance, converting the sea foam into a rod of liquid light.

The Geliasin (4170m), highest peak in the Cilo Dag, Kurdistan. Climbed by Tom Weir and Douglas Scott in 1957. Photo: Tom Weir.





He lay in bed considering the arrangements and mentally ticking off the equipment for the next day's climbing course. As he settled down his abstracted mind was drawn again to the single wave of floating luminescence that had flashed across the sound, thrusting behind the rocky foreshore of the island promontory. The shimmering light beat towards him, widening and expanding, approached closely, wrapped him in opalescence and soft warmth and bore him off to sleep.

Much later, in the chill of the night, his snorted bursts of breath broke over grey rock. His vision was limited to a few feet around him as he levered out on a ragged undercut and his body recognised the spasm of hurriedly placed protection. Sweat coated the holds within his dream ascent on steep, nigrescent crackline charred against the dark. A dim, deeper edge of blackness flanked his left and coldly he knew this was the border of stone and sanity where rock and reality become something else. On the rock rim, clinging to the stone margins he waited, recognising in the planned movements of the climb a formula for his own decline. The blend of age and skill balanced at the precise moment when strength splits from will. Gripped in sleep he paused and broke the code that held the secret to those mystic rites of passage. He breathed the runic, rounded vowels of 'Porphyry' and turned away from the night's game and into a sounder slumber.

It was still quite early in the morning when they crossed the roaring, boulder strewn river by the narrow, wooden bridge spanning the gorge, and started padding up into the valley. Later it promised to become one of those hot, cloudless mountain days that memory could burnish into gold but then, as they carried the heavy sacs up to the cragfoot, it was still cold in the shadows of the deep defile that held the crashing torrent. They moved higher, quickly threading their way through the boulderfield and contouring across the coarse screes whose sands and gravels had been sucked away by successive floods. Above a small waterfall they stood for a moment breathing deeply, sucking down the chilled air in the shadows and drinking handfuls of cold water as their sweat-soaked T-shirts turned to icy rags.

He looked over to David and they both grinned. It was going to be a great day – the final fun day of a short course they had been asked to run by the group assembling below. The sense of pleasure and confidence had grown as the team developed competence very quickly on single pitch routes and basic techniques on a weekend visit to the Lakes. They had all climbed before, one way or another, and had now come together to gain more experience. This would be their second spell on multi-pitch routes, working through moderate standards of climbs to polish their abilities in leading, protecting and belaying.

Looking up and across at the high wall of sunlit, pinkish rock he traced the lines of the climbs that they would use later with the group, then slowly raised his eyes higher to the heather and juniper terrace above the cliff.

David Rose on 'Hadrian's Wall', Ben Nevis. Photo: Tom Prentice.

Two crows took flight silently from a distant sunbathed ledge. In the early morning light their black plumage appeared to be edged with an ivory luminescence as they drifted quietly up and away from the crag, utilising the updraught of thermals from the wall. The gleaming wave floated to the forefront of his mind and in a dazed and absent way he heard himself whisper the word 'Porphyry'. His eyes glazed and a dizzying awe overtook him. The birds met the crosswind at the lip of the coire, the second crow cawed and shot out a streak of silver from its rear. We watched it, as a rippling ribbon of light against the sharp blue of the morning sky, holding its glittering shape in view as it snaked down to splatter somewhere on the rocks above.

A cold, hard fear crashed through his brain with the casual ferocity of a blunt instrument. He knew immediately that they should not climb on this wall today. He knew also that there was no way of explaining this rationally to David or to anyone in the group that he could now see down in the valley starting on the ascent.

Stunned at the link to the day before and his dream during the night, he stood in utter confusion. Fortunately, David had skelped on up the path and he had time to gather his sac, breath and will to stumble on. Staring at the track and concentrating on the simple motion of upward progress he tried to rationalise what he had experienced.

He wondered if the sudden gulps of cold water could have brought on some spasm but he knew that a message had been transmitted clearly and accurately. As he climbed he scanned again the wall above. He knew this wall well, and all the routes on it. All the hard routes were above the terrace where they would not be working. Balancing out his feelings he felt good about this area, only sheer stupidity could lead him to have an accident here. Instantly, another wave of terror broke over him. Feeling cold and sick his stomach was wrenched by the easy torque of fear as he sensed this inexplicable, sinister warning was perhaps aimed at one of the group.

By mid-morning they were all in the full comforting warmth of the sunlight and had geared up the group, explained the layout of the crag and selected climbing teams. While talking through the final points of the day's organisation his voice cracked and he stuttered attempting to regain the flow. It was so obviously a nervous reaction that he saw David stare, his eyebrows drawn in and down, puzzling at him. By tilting his head slightly and raising an eyebrow David silently asked the natural question. Back in control he shook his head at him while continuing the run-down of events for the day.

The early warm-up climbs went well. He and David soloed around checking nut placements and anchor points, shouting encouragement and offering advice. Lunch, at the foot of the crag lying in a saucer-like depression of cropped grass soaking up the sun's rays eased some of the feelings of dread, but the sense of foreboding would not die. Only when they left the crag would it depart. The strong afternoon sunshine could not

melt his anxiety, only blend with the beauty of their situation to form a dramatic juxtaposition with his fear.

At some point during the afternoon he was standing, belayed, in a recess of reddish purple rock, watching Jenny lead up through some easy broken ground towards a terrace. On his left, Valerie was on a small ledge just below the crux moves of a crack climb; about 80ft above her partner and maybe 15ft from her last runner. He looked back to Jenny as she pulled on to the wide heather-covered ledge and turned smiling and excited.

He returned a strong-arm wave of congratulations and she moved back to rig up her belay. His eyes drifted back to Val on her ledge. She was placing a chock above her head and her long black hair blended with her dark T-shirt and navy breeches in forming a single sombre shape against the light coloured rock. She fixed the runner in place, checked it and stepped back – and off.

He stood, stunned by the realisation of what he was witnessing and the feeling of guilt that burst inside him as, silently and seemingly slowly, Val fell the length of the crackline. At 30ft she jerked and then continued accompanied by a brief whirring from the hex that had ripped out. John, on the belay, was suddenly aware that something was wrong as loose coils of rope piled around him. He watched Val hit a sloping ledge 10ft out from John and bounce off over the edge, whipping the line away as quickly as it had landed.

Apart from the noise of the rope slithering over the rock the valley was still as if silently witnessing the hushed, slow flight of a falling climber.

In the same way that a depressed switch immediately lights a darkened room the tightening of the lead rope on John's Sticht plate triggered them into action. Val uttered a long, distressed moan, John screamed after her and roared for David as he tore at the belay roped around him. David appeared on the buttress and prepared to abseil down the crack, telling him to go up and get Jenny and the team he had been working with down from the terrace. He raced uphill collecting equipment and people as fast as their questions would allow. By the time he had led the remainder of the group down the path and around the foot of the crag back to their base David had finished the first aid work. A wrist, two fingers of the opposite hand and her nose had been broken and a ragged cut under her chin would require several stitches but she was up and talking – frantically chatting, explaining, crying and laughing, bubbling with the relief of being alive.

They packed up quickly and quietly with the same blend of concern and embarrassment and no one could know that his relief was tinged a different colour from theirs. As Val was nursed down the hill he looked at the blood stain on her face that had snaked out from her broken nose and wondered again at the notion of the silver wave, his bizarre dream and his certainty about the crow's 'warning'. On gaining the path he stared again at the wet blood as it caught the reflected sun's glare, changing the blood streak into a ribbon of light.

THE BLACK SHOOT CENTENARY

By H.M. Brown

A HUNDRED years ago the first ascent was made of the Black Shoot of Stob Maol. This forgotten route is worth remembering however, if not for itself, then for what it stood for and the spirit which made its ascent possible – at a fourth attempt.

Climbing, as we define it today, was in its infancy in Scotland but was more centralised and cohesive than south of the Border, thanks to the newly-formed Scottish Mountaineering Club, which enrolled in its membership most of the active Scottish participants and Alpine Club types from further south. It was all very gentlemanly, (it took a century for ladies to gain a foothold in the SMC!) and at the third dinner 'some good songs and recitations were contributed', while much talk was no doubt about the newly-published Tables compiled by H.T. Munro, a fairly cataclysmic event. One contemporary guide book suggested there were perhaps 30 hills over 3000ft. Suddenly, to find there were hundreds was an astonishing treat. Exploring this inheritance was at once desirable, and several Meets a year were instigated and proved very popular. There was quite an emphasis on winter activity (still a club membership perquisite) and everything was enthusiastically recorded in the early journals. It must have been great – and unique – fun then with everything new.

To many, Scotland was basically a practice ground for the Alps, so Skye was the Valhalla, with its crown, the Inaccessible Pinnacle, falling to the Pilkington brothers in 1880. As Professor Ramsay, first president of the SMC, rather long-windedly put it at the first SMC dinner, 'Whereas of old it was thought that every mountain had but one top, and that there was but one way, and that the easiest way, to the top of it, the Alpine Club has discovered that the number of ways to the top of any mountain is infinite, and that that way only is to be discarded which is easiest.'

Thus the club gathered at Loch Awe for the Hogmanay Meet of 1892. The weather was mixed. On one day we read that 'some of the party ensconced in armchairs before a blazing fire felt inclined to leave the hills alone' – but still ordered a trap and trotted off to ascend the Taynuilt Peak of Cruachan. On the last day Munro and Rennie took the train to Tyndrum, bagged the four Ben Lui Munros, (the nickname was in use within a couple of years of the Tables' appearance), and returned, afoot, to the Loch Awe Hotel after a 10-hour expedition. On the first of January, a party made the third attempt on the Black Shoot, a climb which could well be called 'the first great problem' and which had been attracting attention for several years.

Messrs. W.R. Lester and R.A. Robertson 'looked at it' first of all in December 1889, when descending Beinn Eunaich. It was described as a narrow chimney nearly 400ft high in the side cliffs of the great coire of Ben Anca (Beinn Eunaich) overlooking Glen Strae. They called it the Black Shoot of Stob Maol, which on maps now is given to the spur of Eunaich which runs south to Castles Farm and hides the coire from distant view. The Cruachan group of hills must have many comparable gullies so I should think it was chance as much as anything that brought this one to brief prominence. Lester wrote that, being struck by the unusual appearance of the shoot, they went up to prospect as far as possible under the 'not very favourable conditions, all the rocks being coated with snow and ice and we being equipped with nothing more formidable than walking-sticks'. They actually climbed 100ft then, but Robertson dropped his stick and they were reduced to picking holds or melting the coat of frozen ice with their finger tips, a situation described as 'neither speedy nor agreeable'. They wisely retreated.

On the second attempt (April 1890) the party was Lester and Fraser Campbell. This time they took a rope. The snow and ice had all gone but was replaced by slimy moss and water, 'easier but quite as disagreeable as before'. They climbed 30ft higher before being freaked out. Lester reported, 'We came to a stop, feeling very doubtful whether it was possible for us or any one else to go higher. All that could be seen above was an exceedingly steep and smooth chimney, which had to be approached over slabs equally smooth.' They worried too about being able to exit on to the hillside at the end. Sounds familiar doesn't it? And of course they returned to the Black Shoot.

The Dalmally Meet at Easter 1891 also had a look at the Black Shoot: Messrs. Gibson, Campbell, Lester, Stott, Munro and Robertson. 'Absolutely impractical' in the conditions they declared. Some of the party went on to fight their way up a nearby route, a four-hour battle with driving spindrift and bad snow. They noted plenty of other good lines. (Given a good freeze-up this could be an area to look at again.) Munro and Stott went up Eunaich after soloing routes of their own. Munro had quite a saga. They reached the summit in the worst gale and visibility Munro had ever known. On the descent there were moments when they were blown to a stop by the wind.

On New Year's Day 1892 the A-Team of Messrs. Gibson, Naismith, Thomson and Lester set off on the third attempt and, as Douglas wrote, reporting the meet, 'Although fully equipped with alpine appliances, including ropes, axes and even spikes, the attempt was unsuccessful'. (Could the spikes be nascent ice pitons one wonders?[1]) Lester's euphemistic cry this time was, 'This was extremely trying.'

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[1] More likely crampons. Ed.

They roped up at the start and, with axes, made rapid progress to the previous highest point reached. No mention of standing on each others' shoulders and other such antics. Another familiar truism was noted. 'It seemed remarkable how, on each attempt, we, with perfect ease, reached the highest point previously gained, surmounting without difficulty obstacles which had before taxed us severely. Only past these points difficulties seem to begin. The unknown above seemed to magnify the obstacles in every first ascent.'

This third attempt had failed at a wedged boulder. Lester had led up the vertical chimney (back and knee work in a waterfall!) but the icy boulder defeated his best efforts nor was there room for more than one person so, after three hours, they packed it in.

The fourth attempt was made in May 1892 and Lester could write, at last, 'The Black Shoot has now succumbed ... to four members of our Club on the Queen's Birthday holiday – Messrs. Gibson, Naismith, Douglas and Lester.' Oddly, Lester, an original member, fades from the record after this saga (its account is his only Journal contribution) yet, he was on all the attempts (it was 'his' climb) and he brought together the formidable trio for the successful climb. He died in 1946.

They quickly reached the jammed block and Gibson, leading, soon climbed round it, belayed, and brought up the other three to a somewhat crowded stance on a ledge 'under a small cascade'. There they suffered for an hour while Gibson tried and failed on a couple of lines before finally climbing a third choice of continuation. The angle eased after that but loose rock made for considerable danger. One dislodged rock fell 20ft, hitting the last man on the shoulder, luckily with little damage resulting. Two and a half hours of climbing saw them out on to the hillside above. They decided not to try and descend by the same route! 'Feelings of exultation were considerably damped by the thorough soaking we had got. A quick scamper over the hills to the top of Ben Eunaich helped to bring back our normal temperature and the evening saw us safely back at Dalmally. As to the Black Shoot, on one point we all agreed – that it would never see any of us again.'

Of course not. Climbers look forward. Without the Black Shoot of Stob Maol we would not have had the Waterpipe Gully saga, or the Clachaig Gully climb or Zero Gully or ... but who knows what lies ahead? Such changes in a hundred years yes, but also, happily, how little has really changed. Lester introduced his story of the Black Shoot by stating that the climb was 'a pure piece of mountaineering gymnastics' and was 'a case of seeking out a difficulty for its own sake'. That was new then and being our inheritance ever since, it is worth remembering.

A second ascent was made at the New Year Meet of 1897 by Bell and Napier and that year's Winter Meet saw Harold Raeburn and Maclay climb it. They even did the avoidable lower section and were thoroughly soaked

as was usual. The boulder blocking the chimney had disappeared. On the last day of 1900 Raeburn returned with Sang and Mackay to climb the Black Shoot again in decent conditions – and found a very worthy climb. His article in the SMC Journal vol. vi pages 161-166 is the best help today for finding and/or climbing this route. I'd always assumed it was low-down and seldom in condition (the name Stob Maol is so placed) but it lies between the 1750ft-2100ft levels and Dr Clark's photograph makes it look 'interesting' even now. If only they had used grid references in those days. (149 322 is my guesstimate from the data available.) The SMC Journal vol. vii p. 94 also gives a route description in its Guide section and ever-shorter help appears in the Central Highlands General Guide. The SMC Journal vol. 30 p. 21 (1972) has an article by the editor, Robin Campbell, on the Black Shoot, probably its only ascent since the early days. 'Pink Elephants in the Black Shoot' has 'wit well-seasoned by awe'. Given our gear what might they have done a century ago.

Raeburn was an outstanding climber, one of the first to use 'delicate balance' rather than force and wedging tactics. He kept out from the gully as much as possible – and stayed dry – or climbed the side walls. The Shoot itself is still a deep-cut, overhanging cleft, a technical challenge and perhaps worthy of investigation in the centenary year. Any takers? I dare a team to don period costume and climb it using the equipment of a century ago. As a concession wet suits may be worn below Inverness capes and tweedy knickerbockers

A HUNDRED YEARS ON

By Andy Tibbs

Unknown to H.M. Brown, and oblivious of his gauntlet, a team of young worthies from the SMC did, in fact, pursue a Centenary ascent in traditional style. Tormented by problems of ethics and botany, they describe below their fresh look at an old route.

THE CENTENARY fell on a Tuesday; a baking hot weekend in the Cuillin had been abandoned and a day's valuable holiday had been sacrificed for the venture

Shaw had done his research well and had issued Bearhop and myself with a chunky, photocopied pamphlet which he called, 'The Black Shoot Fact Sheet'. The plan was to make an ascent in traditional style and the car drew to a halt amidst a heated debate on the ethics of arriving by motor vehicle – shouldn't we have caught the train to Dalmally and walked the extra three miles? But ethics can be taken too far.

We were one short of the first ascent team of four – should we have brought along a stuffed effigy of W.R. Lester to make up the numbers?

It was warm work trudging across the dried-up bogs, conditions were far from ideal, it was far too hot and dry and such a climb would inevitably lose much of its character. As we turned the corner of the glen a steepening of the hillside came into view above. With club ties loosened the pace hotted up in anticipation and we soon reached a gully feature which could only be the Shoot itself.

A consultation with the fact sheet revealed that Robin Campbell had walked straight past 'the scruffy little crag' in 1971. Not wishing to repeat this mistake we made our final mental preparations, posed for the team photograph, then set off into the bowels of the mountain. A few moments later we were back at the gully mouth repulsed by a severe overhanging pitch reminiscent of Waterpipe Gully a few days' earlier.

Our respect for the pioneers mounted as we decide to reconsult the fact sheet, things didn't seem quite right. According to Raeburn the climb starts with a '*Luzula*-bedecked wall of very considerable steepness', and although we had no idea what a *Luzula* was we felt sure we'd recognise it when we saw it. Exploration further to the right revealed a long cave-like feature high on the crag; below this was a shallow gully and cascading over the steep rocks at the foot was a fine ribbon of green vegetation. 'Surely this must be *Luzula*'.

Fortunately, the *Luzula* was in good condition and with Bearhop kicking steps out in front the path was easy to follow. The climb continued in a similar vein over a well-bedded chockstone to the foot of the notorious 'twisted chimney'. At this point Shaw was prodded to the front, the whole idea was his in the first place. We were treated to a masterly display as his tweed adhered where lycra would have failed.

Eye, mind and muscle coordinated, he drifted upwards and disappeared from view. Even Raeburn or Lester might have been faintly impressed. Bearhop and myself were admiring the view through a thin drizzle of plants and other organic matter when the scratching and grunting above came to an abrupt halt – he was at the belay. We followed without incident though we were mildly surprised at the quantity of rock the pitch had to offer.

The final pitch was mine and after a short, steep bulge the climb finished as it had begun at a steep *Luzula*-bedecked wall with bits of dead tree for runners. Soon the gully petered out and we assembled on a grassy ledge for a bite to eat and further ethical debate. 'Do we really have to go to the summit of the mountain?' The rain answered the question for us and we bounded back down the hill to Glen Strae.

We all slept well that night, content and smugly proud of our achievement. It's a fine climb with plenty of character, but slip in a nylon rope and don't forget to go in the spring when the vegetation is fresh and firm to the touch.

BEATING THE RECESSION

By G.J.F. Dutton

IT WAS a fine late-October day, in the middle of well, either Gaick or the Monadhliaths, we are not supposed to say which. We strode over snow-freckled heather, across a plateau of bowed heads similarly dusted. Between them, huge declivities of black glens. Above us, the cold blue sky of early winter.

We always came here at this time, to breathe the change of air and tread freshly-frosted earth. Soon all over Scotland the gullies would be in condition, the faces beckoning with ice. A glittering prospect. It should be a good winter. Why, there was even a fair stretch of snow already in the little coire just below us.

We ran down to it. Just to get that hard slither beneath our heels again. It was snow right enough, an inch or two on top of old hard stuff. Really old snow, dirty, scattered with bits of twig and spruce needles. Spruce needles! Here in the middle of the treeless plateau of – er – Gaick. 'Updraughts', explained the Doctor. But he could not explain the depth of old snow, at this time of year. Nor – look – the spoor of tracked vehicles across it. We kicked – hard as ice. The Doctor screwed in his axe (he'd brought one, to make things look wintry); but couldn't reach bottom. Last season's? Not possible, these warm years, at just under 3000ft. But, still, the coire faced north-east and could catch miles of blown snow from every direction on this table-land.

Then we saw snow fences, to gather drifts and encourage them into the coire. And machinery – a snow-maker with its hose snaking into a plastic lochan, and a couple of piste-bashers, pistie-beasties. And coloured sticks marking the slalom course. Obviously a good snow reservoir like this had been taken over by the Ski Industry. Yes, a track led up from below. With a truck, tractors and bulldozer. And workmen. And buildings down there, and a cable over pylons – clearly restaurants and chairlifts ...

We hurried over. The Doctor was astonished. 'No mention of skiing here in any plans I've seen. The main road, yes; not here. Must find out!'

The truck and bogeys were being loaded with great heaps of stuff cleared off the snow, and taking them down the roadway.

Heaps ... of spruce branches! Spruce branches ...?

Ecological snow fencing? Why taking them away, then? We went up to the gaffer and enquired. Pure nosiness, of course. He gave a slow smile.

'We're jist makkin ready for the winter. Now the hard weather's settin in. Clearin awa the cover.' And would not be drawn further. 'Na, ye'll hae to ask Dr MacPherson. It's his affair.'

A bell rang under the Doctor's fishing hat. 'Archie MacPherson?' he asked.

'Some might call him Erchie,' was the experienced reply. 'But he's owre there', pointing.

The Doctor peered. 'It is, it is old Archie. Lord, I knew he was back, what a coincidence. Fancy him starting a Ski Resort. At a time of Recession, too. Let's go and ask him about it.'

On the way he explained that Archie, a fellow-student of his, though older and studying geology, had gone abroad and struck it lucky with oil in Alaska. Had made a fortune. A prudent man, hard-headed, very reserved. In fact, downright Mean, but possessing a fairly mineralogical sense of humour. He'd retired early, come back a few years ago and bought an estate in the old MacPherson country. A sentimentalist, like all these self-made men. A hell of a lot of land, the Doctor recalled, here in (shall we say) Gaick. 'So that's what he's up to. Ski resorting – strange; he never used to like people.'

Archie MacPherson, a short powerful pipe-smoking man in an old cap and filthy raincoat, did not seem to like us, at any rate. He grimly surveyed the Doctor, and ignored the Apprentice and myself. But we overheard.

Yes, this was his estate. Then a pipe-smoking silence. The Doctor, avoiding the main question, chose to ask:

'Spruce branches ...?'

'From my woods in the glen.'

Yes, but why moving 'em down again?

'Because I brought them up here in the summer.' Stare, puff.

The Doctor, pipeless and thus at a disadvantage, could only venture further in pure nosiness. 'Why bring them up in the first place?'

MacPherson looked him over, then examined us carefully. We stepped back. The Doctor began to re-introduce us but the pipe waved him down. We had, however, passed scrutiny. The pipe answered.

'To preserve the snow. I am building up snow here, year after year. This coire collects a great amount, I bring in more, and it's sheltered from any warm wind. The branches keep off the sun. Give insulation. We get very little thaw even in a hot summer: even after a poor winter.'

So things became clearer. It was for skiing. Year after year, and we'd never heard of it. Archie had bad P.R. But a wonderful idea, trying to keep last season's snow to gain an early start to this one. We asked the direct question, indirectly:

'You're certainly making a fine place here for skiing in the winter. It should become very popular.'

He withered us. Skiing? Skiing!

'Do you think I've nothing better to think about than ... Skiing! Nothing better to spend my time and money on a childish self-indulgence like that?' He put away his pipe. His eyes became dreamy. 'I suppose you've heard how they've managed to bring back ospreys? And sea eagles? And reindeer? And how some people – good luck to them! – want to bring back bears and wolves? A kind of paleo-conservation mania, for reintroducing

the Post-Glacial fauna?' We nodded, quite at sea (was he going to suggest Polar Bears?).

'Well, I am bringing back – a GLACIER. I am reintroducing a Late-Glacial inhabitant. I have brought back a glacier, the beginnings of one, and here I am conserving it. I know something about glaciers, I worked with them long enough in Canada and Alaska. This,' he stamped vigorously on the snow, 'is a glacier. Now' – he stared fixedly at us – 'I am being confidential. I don't want it blabbed around, encouraging' – he stared at us one by one – 'fools here to poke and prod and break up the surface. The first few years of a glacier's life are critical. Disturbed, it never develops, fades away. Mind you, once settled in, it makes its own climate, doesn't need cossetting like this' – he waved at truck and tractors – 'keeps on growing, cooling things down. Positive feedback.' He took out his pipe again, a little warmed by our astonishment. He struck matches, the flames quivered.

He was fiercely possessive of his glacier. Any suggestion that it might merely be an occasionally perennial snowfield like the one below Cairn Lochan provoked wrath. He flung the last match away.

'I've piled enough depth here now for the bottom to be pressed to ice. It's begun to FLOW. A whole metre forward this last year – look how those sticks have moved. Internal strains developing too – subsurface cracks and incipient crevasses – found 'em by sonics and lasers. Yes, it's a glacier right enough. Though for Final Popular Proof,' he added scornfully, 'we'll need open crevasses, I suppose.' He glared at us.

Alas, we failed to disguise our doubts sufficiently. He plucked out his pipe, spun round, waved dismissively and marched off to a rusty Land-Rover. So much for the hospitality of an old friend.

'A hard man, Archie, a difficult man,' observed the Doctor, lighting up now the competition had gone. 'But a wonderful depth of cold compressed motivation. He'd wear down any opposition. Just keeps pressing on.'

We strolled over his acre or so of proto-glacier. If only it were a glacier; the first for 8000-odd years. We began to thrill. One man alone, fighting Global Warming. Reconstituting his own glacier. A world-wide recession of them, but not here. Private enterprise, indeed.

We inspected the outfall, a mini-snout, its progress being measured weekly with the latest apparatus by that dour-faced Archie, kneeling in the patched puritanical breeks of a visionary millionaire. Soon, perhaps, it would spill over and down the burnside, through the old gap its predecessor had made, re-enter its rightful glen, grunting and shoving aside with piggy delight turf and trees, piling up boulders, heaving itself into great blue and white icefalls between scoured cliffs – making wonderful climbing ... It would chill all its fellows into resurrection: the A9 would run a gauntlet, fanged and grinning above you. And here we were at the start of all this!

We sighed and gazed around at the resolutely unglaciated landscape.

Ah, well. Then – a crack. The Apprentice had disappeared. He was not there when we turned in alarm. Just a hole. And a furious voice from below.

He had fallen through the crust. Was jammed about five feet down in a baby dimple that hugged him lovingly – and our rucksack and spare line.

'A real crev ...' gasped the Doctor, stepping back: and vanishing likewise.

I made for the side and sank slowly; my last view was of a couple of grinning tractor men and a grimly complacent pipe.

We were cold down there in the pale blue, damnably cold. But we needn't do a Joe Simpson; it was an infant catastrophe, the glacier was just learning: not deep – we were all unhurt and loudly demanding a rope.

Archie took his time. He needed photographic proof, he explained, and sampling of the failed crust before it was messed up by things like rescue operations. Great probes and instruments with winking lights purred about us unfeelingly, intent on their own personal business. Things like huge dentists' drills – quite on their own – operated small toothy saws, trepanning the ice alarmingly near our immobilised heads. We supposed it really was very necessary – after all, this glacier was on a Life Support System.

Eventually all was completed and we were hauled out – by floodlight. We stood grey, frozen and shivering on the heather as the men jovially slapped us down. We stared at the equipment still trundling up and down the cables from the laboratory twinkling below. Like a dream. We were speechless. And Archie?

Archie was as pleased as ever he allowed himself to be. As pleased as if he'd introduced bears and they'd eaten someone. His glacier felt at home, had asserted its place in the Late-Glacial biosphere. He twinkled icily beneath the stars. He crackled orders. Cameras still flashed: holes, footsteps and broken-up surface were recorded.

Archie in fact exuded a kind of Polar bonhomie. Although we had messed up his – Scotland's – glacier inexcusably, we had provided Final Popular Proof, and our hungry (and thirsty) expectations rose, not to mention hopes of a roaring wood fire. Yes, he had thawed; he took us down in the Land-Rover, the gaffer driving, and remarked how cold and hungry we must be. Ah! – we stopped at the Big House (dark and shuttered). Archie got out. 'You'll be mighty glad, I'm sure, of a good meal right now.' Splendid man! We agreed heartily and half-rose in our seats. 'Now they do you a fine one at a little place in Dalwhinnie' he went on, describing a ghastly refrigerator we'd suffered in before, 'it's rather late, but just mention my name and they'll likely open for you. It's quite cheap, too. Well, good to have met you. And thanks for the Subsurface Monitoring,' he added. 'Quite useful, in fact.' Slammed the door, waved, and went.

The gaffer dropped us at the car. He seemed damnably amused about something. We climbed stiffly into cold seats.

'A hard man, Archie,' the Doctor reaffirmed, as we drove off to pie, chips and a gas fire at Pitlochry, 'Mean as hell. But if anyone can encourage a glacier, it's him.'

SPILLITUDE

By Grant Urquhart

FAT GEORGE rolled from the passenger seat of the stationary Sierra on to the parched grass of Clachaig Green and lay moaning in the sunshine. This job with the distillers was certainly proving enjoyable. It looked like big routes on the Ben were out for today, though. Maybe something nearer, like Aonach Dubh.

A spot of breakfast in the Milk Bar had George looking as near human as he can get, and strolling gently up towards the East Face. Suddenly he stopped, a look of horror directed towards a group of matching cagoules ascending the path on the ridge above.

'What is that?'

'Synchronised hill-walking, George. Very popular these days. Probably be a demonstration sport at the next Olympics.'

This did not mollify him. Hill walkers on the climbers' descent path? Stentorian Glaswegian carried clearly through the shimmering air:

'You're going the wrong way!' Briefly, but fatally, the cagoules hesitated. This stimulated George to even greater decibels:

'You are going the wrong way up the mountain!' The victims were now seriously perplexed, and spent several minutes in a huddle, consulting compass and plastic-bag-covered map. Mercilessly, George administered the coup-de-grace:

'This is the Glen Coe Mountain Rescue Team. We strongly advise you to descend immediately!' Pathetically, but still in close formation, the cagoules turned to descend; hopefully to spend the remainder of that glorious day contemplating the folly of ovine behaviour.

It was some time before we were properly able to breathe, but eventually we resumed our snail-like ascent, pausing awhile for a chortle.

* * *

'George, there's absolutely no protection up here.' 'Don't be silly. There's sure to be some in the groove up there.'

'Are you sure this is the right way? It's far too scarey for the grade.'

No reply, just a pointedly bored look at the watch. What to do? Up or down, up or down? Death seemed easier to face than scorn, so I inched up the big bald forehead to its solitary wrinkle. Steep, fingery, and high enough to die; I needed a runner right now, but I couldn't find one. The

crack a mirage, a mere crease in the surface. I tried, though, every gadget in every possible combination, till a nut ripped free, tearing my knuckles, and I almost swung off; ragged fingers trying to squeeze blood from the rock, legs quivering, weighed down not only by gravity. Below, a small herd of tourists had gathered, sniffing the blood like hyenas.

* * *

The block looked like a trap: sitting squat in a little niche, glued in by mud and time. Forty feet up the wall on incut holds, pushing the boat out, no runners, no idea how to downclimb, and as usual a nagging hangover clouding the issue. A big chock went behind the block, psychological protection. But I just couldn't make the move into the niche; I'd tried the little I knew, and I was getting tired. Anyone with any sense would have gone down; a waist belay to an old piton, a useless runner, hundreds of feet of precipitous rock below. But not me. Going down was for women and old men. I was young and tough, and I only knew one thing about climbing: if you pushed on hard enough, somehow you would make it, somehow you wouldn't fall.

Then I had a great idea: if I could just get both hands on that block, and pushed straight down, and didn't pull outward, I could mantel up on to it. So I gingerly moved over and pushed down and was scared to pull out: and it felt horrible and wrong and I didn't even know enough to know that when you try to climb down you need to lean out to see where to put your feet: then there was this little sucking noise and this feeling in the pit of my stomach that the unimaginable was happening, that I was dying.

* * *

Plastered to the wall, torn between memory and ambition, between fear of death and fear of failure. I could have done without a visit from that old ghost. But he and I were old acquaintances: pay too much attention to his type and you'd soon be forking out a subscription to the local golf club. So toughen up: that micronut might not hold body weight but the arcane rules of the game say it's Protection; and there's sure to be a big hold, and a better runner, just over this bulge.

Well, there were neither, just more smooth, perfect rock with little flat edges scattered around and a couple more hairline cracks to take wee brass wires. And it was all technical and bold and magnificent and the adrenals were pumping pure 100 octane now. Just below the top there was a proper

runner, and I looked down at last to check that the tourists were suitably impressed: but they'd gone, and I realised it wasn't climbing they had stopped to watch.

* * *

Back on the Buachaille, things weren't going so well. No feeling of panic, certainly no desire to emit the cinematic shrieking diminuendo: just a big black hole with a burning white OH NO in the centre, and cold, quick thinking about how to limit the inevitable damage. Draw the legs up, cover the eggshell head with the arms, and wait, interminably, for that rope to come tight.

It could have been a lot worse. If the Big Man hadn't ignored the rope burns and the considerable risk to his own life, if the bendy old peg hadn't held both our airborne bodies, I wouldn't have ceased my descent unscathed. If it wasn't for the elastic recoil of kernmantel and the fact that the old Whillans harness tied on way below my centre of gravity, I wouldn't then have spun upside-down and cracked a few ribs against the mountain.

At least it gave me time to reflect, lying winded on the heather, on the follies of youth. Ruptured spleen, lacerated aorta, or perhaps a flail chest and slow asphyxiation? Gradually the indescribable pain began to ease; maybe just a pneumothorax, then? As the fear of immediate oblivion receded, it was replaced by an older and deeper horror: rescue! MacInnes being all sympathetic and serious on the telly. Oh, the ignominy, I would never get into the SMC now.

Well, I limped back to the car unaided in the end, and hirpled round the hills for many months, marvelling at the idiocy of those crazy men up on the crags. At length I did venture back on to rock, a Diff. in the Coe, Quiver Rib I think, up on Aonach Dubh ... and it felt bloody hard, but at least I knew one thing, now, that never again would I risk everything for a daft game, pushing my limits too far from safety ...

* * *

Luxuriating in the heather, letting the first rush of endorphins wash over me like a coral lagoon. All too soon, Fat George's grisly pow hoving into view.

'Not a bad route. Quite easy, though.'

'A bit necky for the grade, though, George.'

'Ah well, yes, that's why I had to hide the new guide from you down there. It's a couple of numbers harder now. Fuckssake, Grant, this belay is total crap ...'

Oh, what the hell, anyway, Just another wondrous day out in Glen Coe.

THE KEEPSAKE

A myrtle stone marbled curiously
green with the gardeners gift and rain,
perched deftly, when I grasped it
following a buttress on A'Chrois.

A metaphoric flake, loosely bedded
in the schistose bandings,
waiting silently to impart its gift
of fright and scarried tread

of boots on brittle edges,
as handhold in hand
I pivot to the winds delight,
granting a wider vista.

Retaining this lurestone
I pocket myth and memory
to later recall high rewards
as mica sparkles in my palm.

Donald M. Orr.

THE GEOLOGY OF BEN NEVIS

By Rod Burt

THE GEOLOGY of Ben Nevis is composed of a central core of volcanic rocks overlying an older metamorphic basement (Fig. 1). This core is completely enclosed within the Inner Granite, which is in turn partially enclosed along two thirds of its circumference by the Outer Granite. Together these components form the Ben Nevis Igneous Complex.

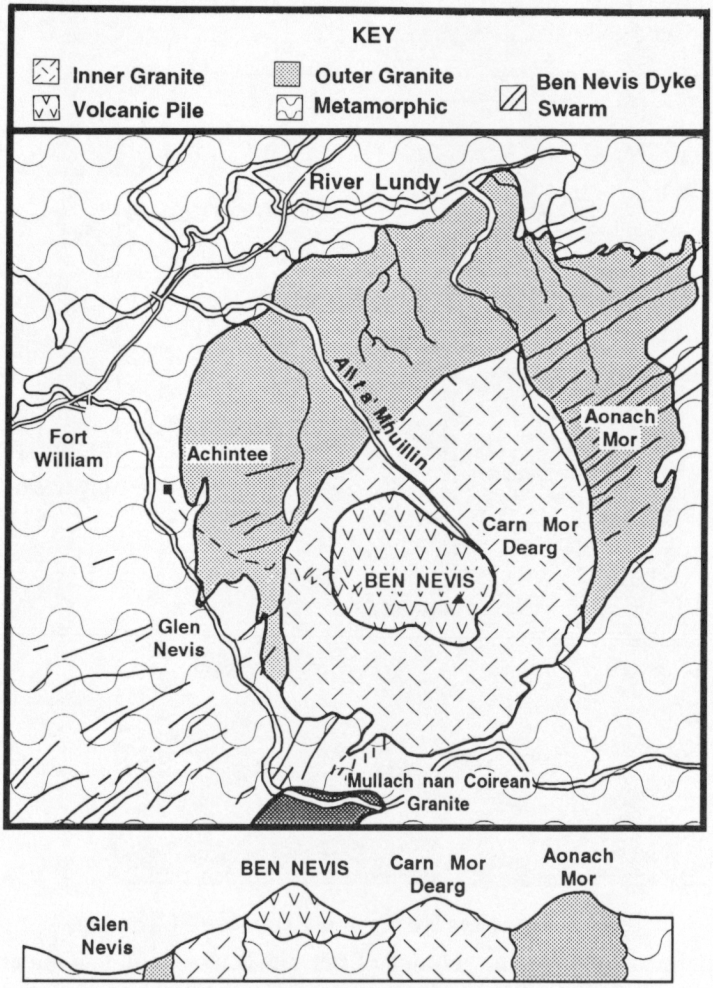


Fig. 1 The Geology of Ben Nevis.

A height difference of over 1350m (3900ft) occurs between the lowest exposure of the Outer Granite in Glen Nevis and the highest on Aonach Mor making this intrusion the largest vertical thickness of granitic rock exposed anywhere in the U.K.

Igneous rocks fall into two categories, intrusive rocks such as granite, are emplaced into the Earth's crust without reaching the surface. Extrusive igneous rocks are found on the surface either as a lava flow or a pyroclastic deposit. Lava is molten or partially molten rock whereas pyroclastics consist of fragmented volcanic material which has been blown into the atmosphere by explosive volcanic activity. A diagram of a volcano and its associated geology can be seen in Fig. 2.

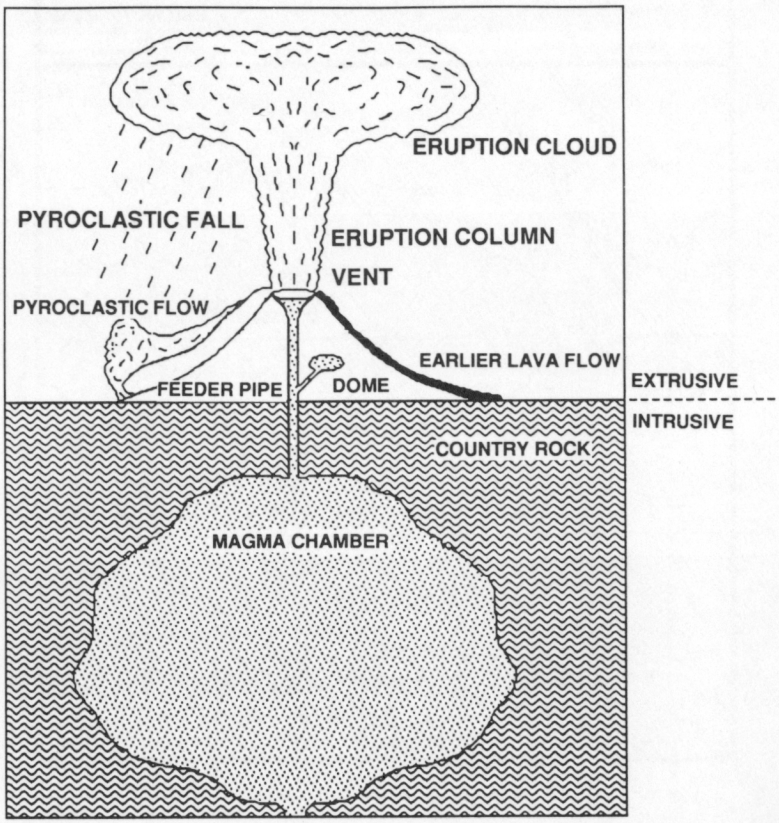


Fig. 2 Igneous Rocks and Explosive Volcanism.

Before examining the geology of Ben Nevis it is worth looking at the geological framework into which any model for the evolution of Ben Nevis must fit.

The Earth is believed to be some 4600 million years old (4.6Ga). The first traces of life occur in rocks that are nearly 3Ga but fossil remains are relatively uncommon until the evolution of organisms with hard shelly parts at the end of the Precambrian. The magnitude of geological time is difficult to comprehend. If the entire history of the earth is compressed into one year then the oldest rocks we know of date from mid-March and the earliest life forms appeared in May. The first land plants and animals evolved during late November, at around the same time as the rocks forming Ben Nevis were crystallising from molten magmas. Dinosaurs became dominant during mid-December but were extinct by Christmas and man-like creatures appeared during the evening of Hogmanay. The last Ice Age ended 1 min 15 secs before midnight.

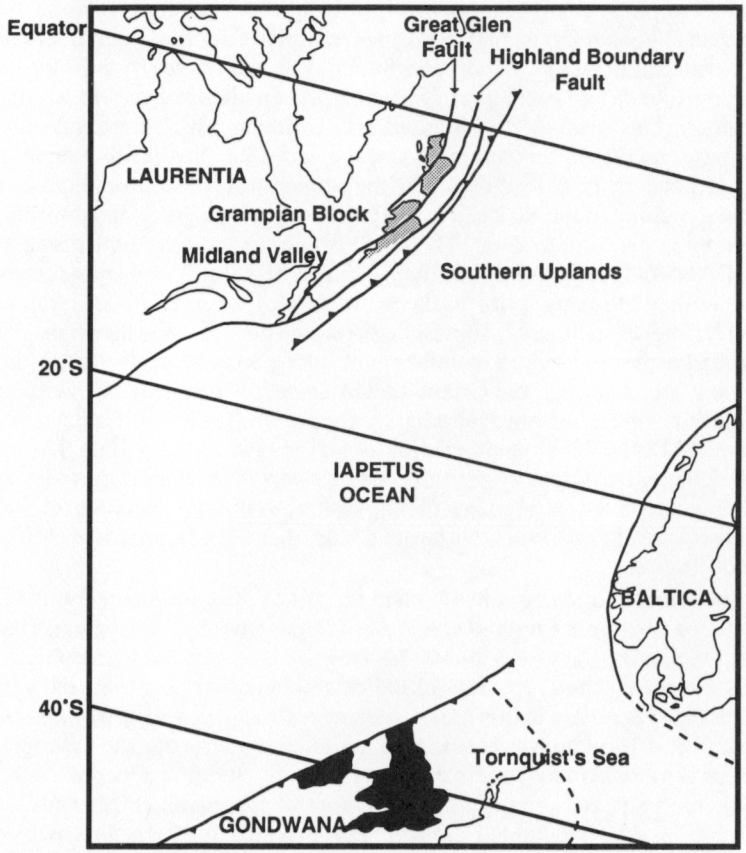


Fig. 3 Distribution of continents prior to closure of Iapetus.

Scotland's geology is dominated by the effects of the Caledonian Orogeny, a period of mountain building which ended around 390Ma. Modern ideas for the development of this orogeny are based on the movements of three ancient continents known as Gondwana (Europe and Africa), Baltica (Scandinavia) and Laurentia (the Americas and Greenland). The Iapetus Ocean (Iapetus, father of Atlantis in Greek mythology) separated Laurentia from Gondwana and Baltica. Closure of Iapetus led to the development of the Caledonian orogenic belt. The geographical distribution of the continents in the Cambrian is displayed in Fig. 3. An eastern arm of Iapetus, Tornquist's Sea, separated Gondwana from Baltica.

Ben Nevis is located in the area of Scotland known to geologists as the Grampian Block. This block is bounded to the northwest by the Great Glen Fault and to the southeast by the Highland Boundary Fault. Normally the surface geology of the Grampian Block is subdivided into three units; the Central Highland Division (CHD), the Grampian Group and the Dalradian Supergroup. Division, Group and Supergroup, are all terms used by the geologist to define packages of sediments or metasediments with similar geological histories. Metasediments are sediments which have been subjected to increased temperatures and pressures i.e. have been metamorphosed. If as in the case of the CHD, the temperatures are high enough then partial melting of the rock can occur producing a high grade metamorphic rock known as a migmatite. The CHD is believed to have undergone an earlier episode of mountain building and continental collision known as the Grenvillian Orogeny, prior to the deposition of the overlying Grampian and Dalradian sediments. The contact between the CHD and the Grampian Group has been obscured by movements along a fault line, the Grampian Slide Zone. Although the Grampian Group passes conformably (without noticeable break) into the Dalradian, in the area of Ben Nevis it is separated from the Dalradian by another slide zone, the Fort William Slide. During the Caledonian Orogeny all three units underwent several episodes of folding and at least one major metamorphic event. The Dalradian is now known to be entirely Precambrian, and older than 590Ma, as are the earliest fold structures.

Scotland is normally considered to be part of the Laurentian continent, and separated from England and Wales (Gondwana) by the Iapetus Ocean until the end of the Caledonian. The orogeny is associated with upheaval and violent volcanic activity, a kind of geological protest from the very bedrock of Scotland at this unholy alliance. However, recent work on the timing of deformation events in the Dalradian suggests that the Grampian Block is more akin to Gondwana than Laurentia. It is now recognised that orogenic belts are composed of a number of far-travelled 'terranes'. A terrane is a fault-bounded area or region which is characterised by a geological history distinct from that of adjacent areas. This process can be seen in present day southwestern America where the San Andreas Fault is moving California northwards relative to the American continent. If the

Pacific Ocean were to close in 100 Million years (Ma) time, and California has a velocity, relative to North America, of 8 cm/yr, then California will have travelled some 8,000km and the rocks exposed at the surface today will bear no relationship to those exposed whereever California finally comes to a rest. 8,000km would put California on the other side of the Pacific from its current location. The Grampian Block can therefore be analogous to a fossil California.

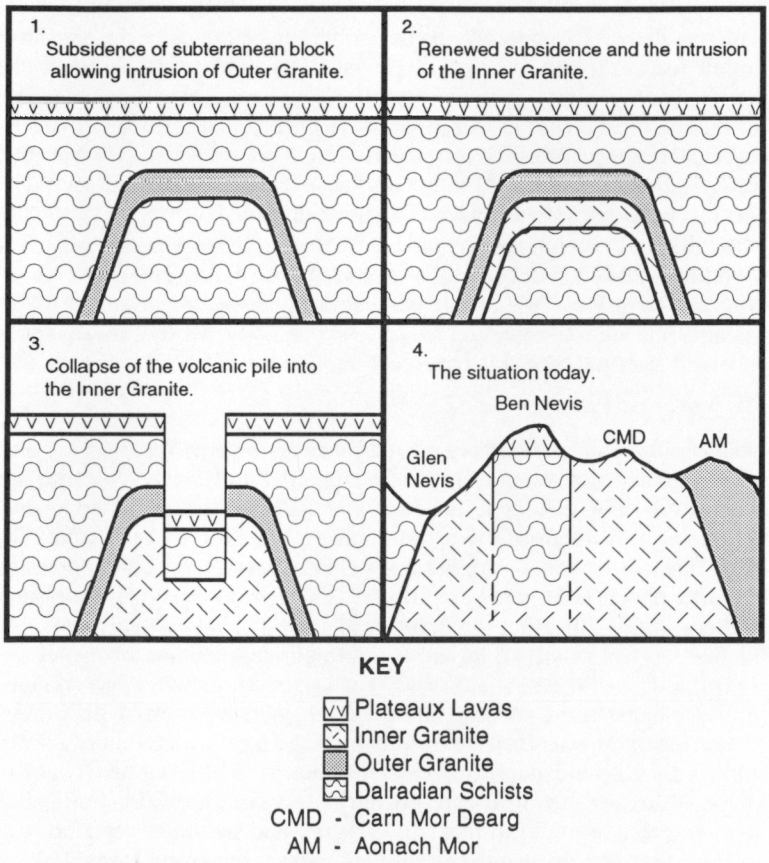


Fig. 4 Geological Survey Model for the Evolution of Ben Nevis.

During metamorphism the mineralogy of a particular rock type changes in a predictable way allowing the pressures and temperatures of metamorphism to be estimated. From such work, it has been suggested that the present day land surface was buried under a substantial thickness of rock, up to 35km in some cases, although 20km is a better average. This gives a total crustal thickness approaching that of the Alps or even the

Himalayas, suggesting that the Grampian Block metasediments formed the roots to a now vanished mountain belt at least as high as the Alps.

Prior to the intrusion of the Ben Nevis granites, the orogenic belt underwent uplift and erosion, reducing crustal thickness to values only a few kilometres thicker than today's. Many of Scotland's granites were intruded at this time, including Glen Coe, Cairngorm, Lochnagar, and Rannoch Moor and it is highly likely that the land surface was peppered with volcanoes located above the granites as they were forming.

Just as theories in geology have evolved over the centuries, so have models for the formation of Ben Nevis. Early models are based on the chemical precipitation of metamorphic and igneous rocks from an ancient ocean. The most recent model is based on work by the Geological Survey undertaken at the turn of the century. Ben Nevis is divided into two granite units, the Inner Granite and Outer Granite, and a central volcanic pile. The Survey model for their formation is shown in Fig. 4.

The degree to which the volcanic and the granite magmas are related is not clear. Detailed geochemical work is required before any firm conclusions can be made. This article concentrates on the development of the volcanic pile without resorting to black box geology. Most of the evidence on which the final model is based can seen in the field.

The Volcanic Pile:

No detailed study of the lava pile has been documented prior to my own work. This account is therefore the first detailed study of the volcanic pile to appear in print. Geology, like any other science, has developed its own terminology, furthermore this terminology has evolved over time. For instance, most accounts on the geology of Ben Nevis (tourist brochures and scientific papers alike) are based on the Geological Survey's descriptions of the volcanic pile (agglomerates and andesitic lavas). However, the fragmentary rocks which have been termed agglomerate are better described today as Volcanic Breccias. The use of agglomerate has changed from a blanket term encompassing all fragmentary rocks with a large proportion of igneous clasts to a more restricted term which should only be applied to volcanic deposits primarily composed of bombs (Clots of Magma) thrown out of a volcano during an eruption. The Ben Nevis 'agglomerates' do not fall into this category and should be referred to as volcanic breccias. Volcanic breccias are rocks which were formed by the fragmentation of pre-existing volcanic material by later explosive volcanic activity

Because of the degree of alteration and erosion that Ben Nevis has suffered (how good will you look in 400M years time?), analogies with similar but more recent volcanic complexes are crucial in understanding the development of the Volcanic Pile. In particular Broken Hill, Mount Belknap (Utah) and Mount Aetna (Colorado) are especially good analogies.

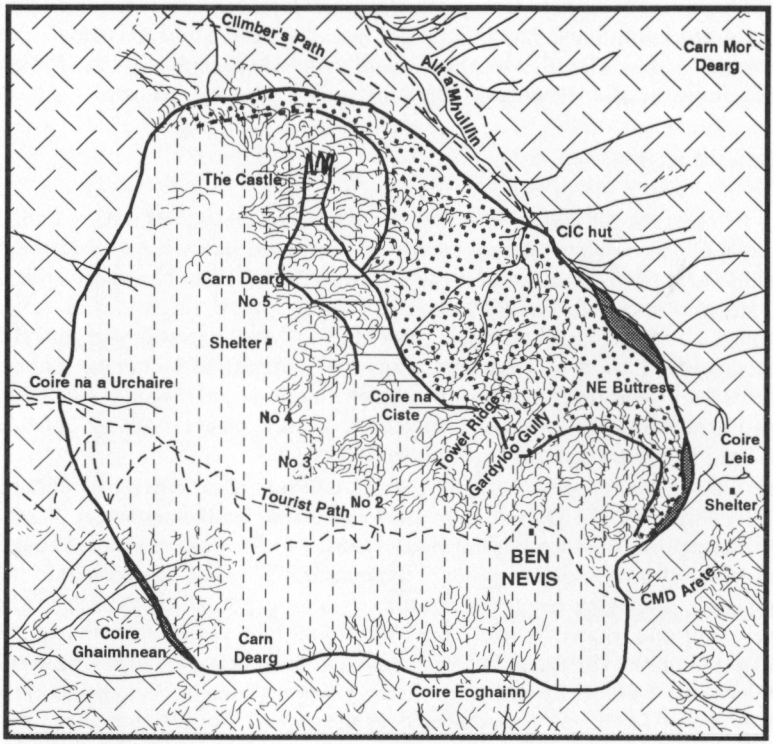


Fig. 5 Simplified map of Volcanic Pile.

The Volcanic Pile can be conveniently subdivided into three units; a pre-volcanic basement, a unit dominated by volcanic breccias and a dominantly andesite lava unit. The geographical distribution of these units is depicted in Fig. 5. Andesite is a type of volcanic rock with a particular chemical composition and typically found as lava flows. Not readily fitting into the above categories are a series of intrusive rocks which will be discussed after the three main units.

An important point to stress is the lack of lateral continuity to individual beds/flows within the volcanic pile. Where distinctive horizons have been identified, their lateral extent was found to be minimal. Any model for the development of the Volcanic Pile must account for this feature.

Basement:

The base of the volcanic pile is formed from Dalradian schists called metapelites (metamorphosed mudstone), exposed in the west bank of the Allt a'Mhuilinn some 200m upstream from the CIC hut. Normally underwater, but exposed during longer dry spells (there are some), a small exposure of quartzite (metamorphosed sandstone) outcrops beneath the metapelite. Two styles of deformation can be identified within the schists. An earlier fold-dominated style of deformation, presumably related to earlier Caledonide events, followed by a later brittle faulting episode related to the collapse of the Volcanic Pile.

A second outcrop of the Dalradian can be found in Coire Ghaimhnean (Five Fingers). The Dalradian in this location has been extensively altered by the action of hydrothermal fluids. Most significantly, this locality has the only examples of the regional dyke swarm (Fig.1) exposed within the volcanic pile. This important feature indicates that the formation of the volcanic pile, occurred at roughly the same time as the intrusion of the Outer Granite. The type of dyke exposed is extremely rich in silica, ie is a felsite. Elsewhere in the Ben Nevis Complex, felsite dykes are only exposed in a small nameless burn SE of the gondola base station and in Allt an't Sneachda, and appear to have been intruded early in the development of the Outer Granite.

Overlying the Dalradian in the Allt a'Mhuilinn, and also exposed between the North East Buttress and Brenva Face, is a sequence of fine grain muds and silts interbedded with much coarser sedimentary breccias. No sediments were found above the Dalradian in Coire Ghaimhnean. The fine grain sediments have none of the sedimentary structures present in typical marine sediments and a freshwater lake is the preferred environment. Into this lake flowed a series of mass flow units or landslides. These are represented today by heterolithic and poorly sorted breccias. Heterolithic and poorly sorted are terms which give the geologist some idea of the way in which a breccia is made up. A heterolithic deposit is one in which a large variety of clast types occur and sorting refers to the distribution or range of clast sizes encountered. A well-sorted deposit, depicted in Fig. 6, is one where all the clasts tend to be within a restricted range of sizes whereas a poorly sorted deposit will have a wide variety of clast sizes. Whilst clasts of up to 25cm in diameter can be found in the breccias, no igneous clasts are present, leading to the obvious conclusion that igneous activity had not yet begun in the Ben Nevis area.

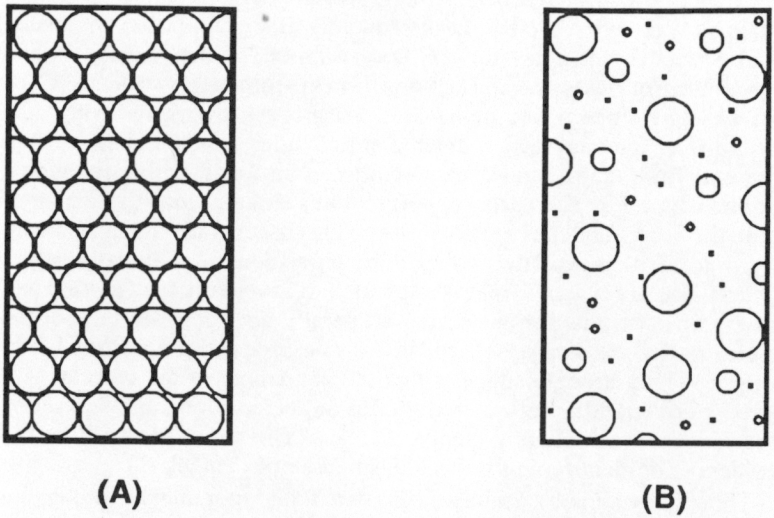


Fig. 6 Sorting and Support.
(A) Well-sorted Clast Support.
(B) Poorly-sorted Matrix Support.

Volcanic Breccia:

The breccias overlying the basement unit below the North-East Buttress differ from the main outcrop of volcanic breccia exposed around the CIC hut and below Coire na Ciste, and termed the Coire na Ciste Volcanic Breccia, in that they contain a significant fraction of metamorphic and sedimentary (Country Rock) clasts, up to 5%. Country rock clasts are few and far between in Coire na Ciste Volcanic Breccia. The proportion of country rock clasts decreases away from the basement unit and probably reflects swamping of the source areas by pyroclastic or lava flows. From a distance the clasts of country rock appear to be aligned in the same direction. The Coire na Ciste volcanic breccia does not show any alignment of clasts which may reflect a different emplacement mechanism to the North-East Buttress breccias, or that, because the igneous clasts tend to be equidimensional, they do not show a preferred alignment. It is not clear as to whether the North-East Buttress breccias were generated by landsliding or volcanic activity. Unfortunately, the contact with the Coire na Ciste Volcanic Breccias lies under the boulderfield between the Douglas Boulder, Allt a' Mhuilinn and the North-East Buttress.

The Coire na Ciste Volcanic Breccias range from a few metres to several tens of metres thick. Some of the thickest formations contain intermittent layers which are interpreted as separating individual flows with clast types and textures that are so similar it is not normally possible to identify

separate flows. Strongly sheared fine grain bases which coarsen up into the main body are often present. Less frequently, fine grain (ash?) dominated tops occur. The breccias are very poorly-sorted i.e. they have a chaotic assemblage of clast sizes, and lack any form of sedimentary structure. Clast sizes range from very fine grain particles (ash?) to a few metres. Alteration of the finer material has obliterated any textures which may have been present. Both matrix and clast support can be found within individual horizons; see Fig. 6. Matrix support requires simultaneous deposition of both the matrix and the contained clasts. This is generally associated with some form of mass flow, rather than deposition from flowing water. Glacial tills are typically matrix supported. It is very difficult to trace any of the breccia units for any distance laterally and the main bulk of the Volcanic Breccia outcrop is found in Coire na Ciste and around the CIC hut (Fig. 5). This strongly suggests that the movement of the breccias was gravity driven and therefore controlled by an ancient topography confining the breccias into natural drainage channels. This is an important line of evidence for identifying the mechanism of emplacement.

Thin, finely laminated muds and silts are found sporadically throughout the Volcanic Breccia sequence. Of limited lateral extent, these sediments appear to fill small localised depressions and probably represent the remnants of much larger lake-like bodies of standing water. An attempt was made to extract small fossils (microfossils) from some of these sediments but, unfortunately, none were found.

Several andesite units are found within the Volcanic Breccias. These andesites are of similar type to the main outcrop of andesite which will be discussed in the following section.

Andesite:

There are significant problems needing to be overcome before a fully detailed study of the andesites can be undertaken. This is due to problems of both terrain and weather. The great bulk of this unit forms the steep vertical cliffs of the Orion Face and North-East Buttress, as well as the cliffs around Castle Coire. On the summit plateaux, a large boulder field obscures much of the exposure.

Once again individual units are laterally impersistent. Each unit is of high aspect ratio, (Height/length) relative to typical plateaux lavas, such as those on Skye, Mull and other islands of the Inner Hebrides. This feature is controlled by the viscosity of the lava. Thickness of individual flows range from a few metres to, possibly several tens of metres. Flow banding or flow folding is not normally observed and the lavas are phenocryst-rich with very few vesicles and a chaotic joint pattern. A phenocryst is a large crystal relative to the much finer groundmass (igneous equivalent to matrix) and a vesicle represents a bubble of gas trapped during solidification of the lava. The andesite is normally brecciated throughout the entire

thickness of a flow. Brecciation, in this case, is referred to as autobrecciation, and has been caused by the way in which the lava flowed and not because of explosive volcanism or by sedimentary processes. This feature can be explained by proximity to the source vent and a high viscosity which would also explain the high crystal content and the lack of vesicles.

Between the Volcanic Breccia and andesite subdivisions, on the northern side of Coire na Ciste, a yet another type of breccia deposit is exposed. This breccia will be termed the Ledge Route Breccia (LRB) where it is particularly well exposed. In contrast to previously described breccias, the LRB are moderately well-sorted and it is suggested that these breccias, which can also be found on the Orion Face above the Basin, represent a pyroclastic airfall deposit. No connection could be found between the two areas, suggesting two separate sources vents which are nearby but not exposed. The LRB tend to have a well developed preferred orientation. This is not a normal feature for airfall deposits (but abnormality for the Ben is normal) and it is suggested that the breccias underwent downslope movement after being deposited on the land surface. Volcanic areas are associated with frequent earthquakes, which together with rapid deposition of material leads to the generation of unstable slopes prone to mass movement. The mass of moving material was enough to erode, and in some cases mix in the underlying sedimentary layer which can be seen at the southern end of the Coire na Ciste variation start to Ledge Route.

Intrusives:

Those rocks identified as intrusive, fall into six groups, listed below:

(i) Around the contact between the Volcanic Pile and the Inner Granite is an intermittently exposed intrusive rock, hereafter called the Fault Facies. A very strong contact parallel vertical fabric, defined by colour banding, preferred xenolith and felspar phenocryst orientation, can clearly be identified in hand specimen. Indeed the weathered surface texture of the Fault Facies and of the associated group (ii) intrusions, looks almost like sphaghetti, such is the strength of the fabric. Occasionally this fabric tends to a sub-horizontal orientation. Traditionally, this rock has been termed the Flinty Crush Rock (FCR) and was formed when the Volcanic Pile collapsed into the Inner Granite magma chamber. But evidence for fault related crushing has not been identified. Phenocrysts are not fragmented and the fabric has textures more akin to flow than crushing processes. The Inner Granite does not contain either amphiboles or xenoliths of country rock, both of which can be found in the Fault Facies. The significance of the Fault Facies will be discussed later.

(ii) Fine grain pink to pink brown rhyolitic (fine grain equivalent of granite) dykes veins up to 2m thick, penetrate the lower part of the volcanic pile. Individual dykes vary in thickness from 10cm to a metre or more. Along the length of the dyke, the rhyolite can be seen to diverge into

separate offshoots which may or may not link up again further on. Phenocrysts of plagioclase felspar and a streaky colour banding, define a strong fabric in a similar way to the Fault Facies. At least one example of this group, near the CIC hut, can be seen to pass into the Fault Facies. This group is especially common at the base of the Volcanic Pile; i.e. where it is closest to the Fault Facies, and can be traced for 100m or more.

(iii) In Gardyloo Gully and at the mouth of a steep sided gorge defining the southern end of the slopes leading up to Coire na Ciste, 5-25cm thick yellow-brown coloured dykes intrude the Volcanic Breccias in a present day vertical orientation. It is possible that these dykes were feeders to surface eruptions.

(iv) Semi-conformable (parallel to bedding) rhyolite lenses, up to 10m thick, form shallow hollows within the cliffs of Ben Nevis and Carn Dearg. The significance of these lenses has yet to be determined.

(v) On the opposite side of No. 4 Gully from Comb Buttress, a 15m. by 20m ellipsoidal vent intrudes the andesite. A strong vertical fabric to this rock unit and its fragmentary nature suggests that this may be a feeder pipe to a small explosive vent. In thin section, rounded clasts of Dalradian quartzite and pelite can be identified along with a suite of andesite fragments, within a very fine grain matrix.

(vi) Two small intrusive dome-like bodies of andesite, have been identified. In contrast to much of the geology on the Ben, one example is extremely well exposed just where Ledge Route flattens out above the amphitheatre of No. 5 Gully. This example is perhaps 12m thick by 50m wide and has its feeder pipes exposed.

Pyroclastic Deposits:

Pyroclastic deposits are subdivided into three groups, these being; pyroclastic flows, pyroclastic surges and pyroclastic falls. Each group has its own set of features by which it can be identified and represents a different emplacement mechanism. As Fig. 7 highlights, flows are confined by the topography and follow natural stream lines. Surges tend to be concentrated into areas of low relief but also mantle the topography. Falls, as the name suggests, fall out of the eruption cloud and so mantle all but the steepest slopes where slumping and sliding occurs – see the LRB.

Field relationships in the Coire na Ciste Volcanic Breccias indicate that these rocks are constrained by an ancient topography (Fig. 5). From this evidence alone it appears that the Coire na Ciste Volcanic Breccias are the pyroclastic flows. Depending on the number of vesicles in the clasts, pyroclastic flows can further be subdivided (this is a science after all).

Similar Volcanic Breccias to those found on Ben Nevis have been described from Mount Pelee, the eruption of which devastated Martinique in 1902. Here, angular to subangular andesite blocks rarely >6m, supported

in a matrix of smaller andesite clasts and ash were deposited by fast moving gravity driven pyroclastic flows. Clasts of older rocks are rare, and the largest clasts are dense juvenile (fresh andesite produced during the eruption) fragments. This type of deposit is termed a 'block and ash flow'.

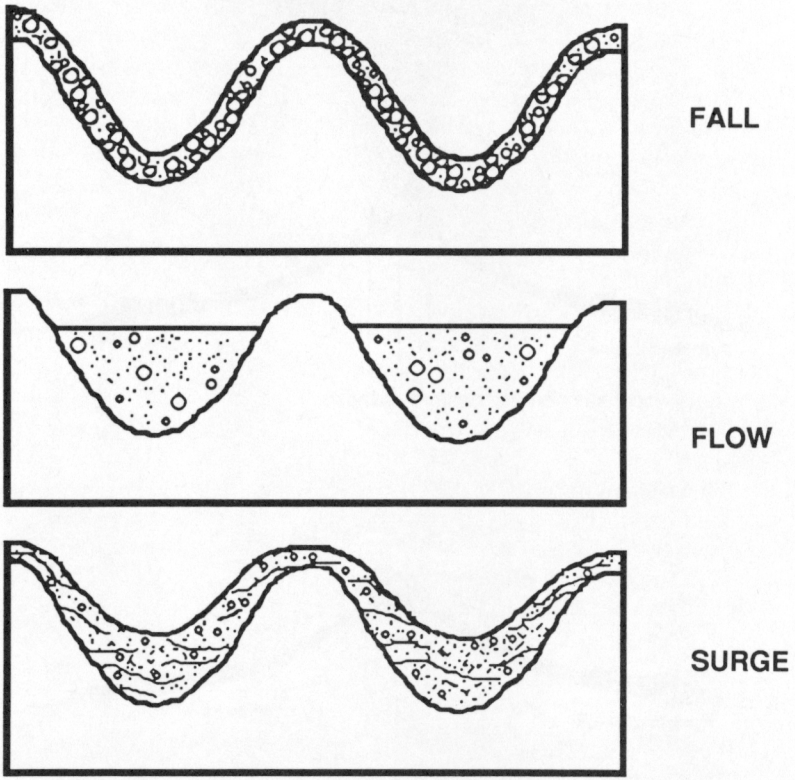
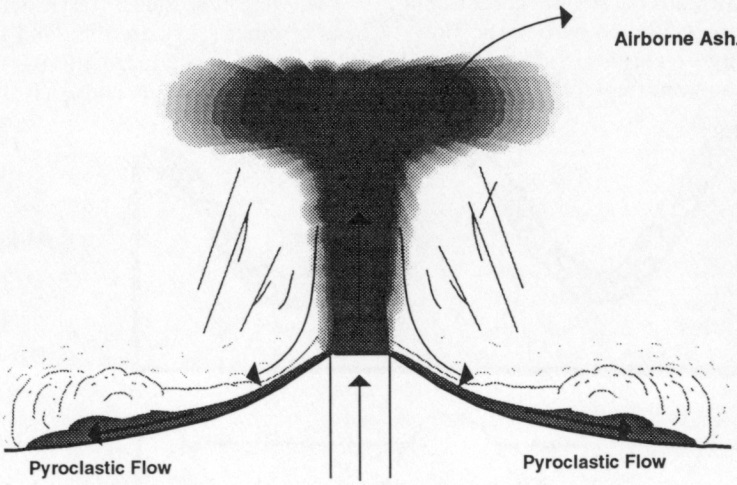
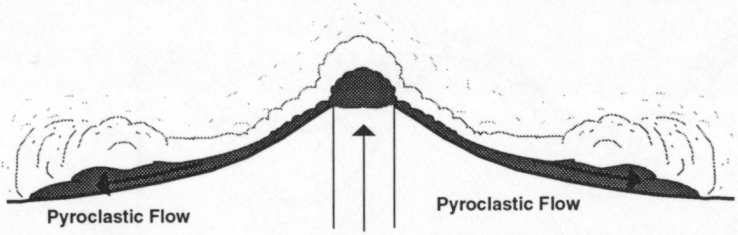


Fig. 7 Pyroclastic Deposit in relation to the Underlying Topography.

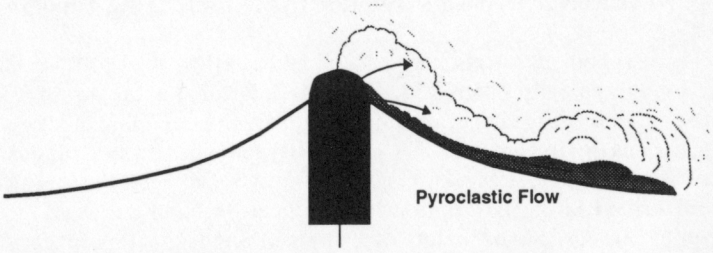
The text book description of a block and ash flow is as follows 'These are topographically controlled, unsorted deposits, having an ash matrix and containing large generally non-vesicular, cognate lithic blocks which can exceed 5m in diameter'. This is a pretty good description of the Coire na Ciste Volcanic Breccias. Cognate simply means that the large clasts were formed during the eruption that produced the block and ash flow. This requires the clasts to be mainly of a single lithology and this appears to be the case for the Coire na Ciste examples. Fig. 8 portrays the three mechanisms which produce pyroclastic flows. From these diagrams, it can be seen that Ben Nevis was not the site of a volcano but on the flanks and possibly several kilometres away.



A. Vertical eruption and column collapse.



B. Low Pressure boiling over.



C. Directed blast or Dome collapse. (eg Mt St Helens)

Fig. 8 Three mechanisms for the Generation of Pyroclastic Flows.

These eruptions are very violent, in human terms, were they to occur today. In geological terms, block and ash flow eruptions are rather small events compared to the much larger and very powerful caldera type eruptions which are discussed below.

Calderas:

Caldera formation is accompanied by exceptionally powerful eruptions. One of the more recent, Krakatau (Indonesia 1883), resulted in the deaths of 36,000 people, mainly due to drowning from tsunamis (tidal waves). Some 18km^3 of material was ejected out of the vent and the explosion could be heard as a thunder-like rumble some 1000km away. So much ash reached the upper atmosphere that the following year was known as the year without a summer. Many artists painted spectacular red sunsets, again an effect of the ash in the atmosphere. This eruption though powerful in human terms, was, on a geological scale, quite small. Some caldera-forming eruptions in the United States have ejected at least 1000km^3 of material onto the surface in the space of a few days.

Volcanic eruptions are essentially driven by the volatile content of the erupting magma (gases contained in solution within the magma such as water, sulphur, ammonia, carbon dioxide, nitrogen, etc.). Magmas with low volatile contents produce less violent eruption than magmas rich in volatiles. For a caldera to form, two requirements need to be fulfilled; the magma needs to be rich in volatiles and the roof of the magma chamber must be close to the surface and of sufficient strength to contain the gradual build up of magmatic pressure prior to catastrophic failure. Collapse occurs when the lithostatic pressure on the roof of the chamber exceeds the chamber pressure by the compressive strength of the overlying rock; i.e. the roof can no longer be supported by a combination of its own strength and the support of the underlying magma. There are several ways of achieving this and one of the simplest is to add fresh magma into the base of the magma chamber, increasing the volume of magma stored in the chamber. The easiest direction for the chamber to expand is up, putting the roof under tension. Rock is not very strong when stretched and the chamber roof may fracture, leading to the escape of magma to the surface. This reduces the support given to the roof which then fails along a ring shaped fault and collapses into the chamber, forcing large volumes of magma to be ejected via the ring fault.

When the roof of the chamber fails, the confining pressure is removed and volatiles flash out of solution. Explosion of gas bubbles causes fragmentation of the magma producing large quantities of fine grain ash and vesicle-rich lava (pumice) further increasing the volume of the chamber. As the fragmentation level descends deeper into the chamber, the overlying lava + gas mixture is forcibly vented onto the surface.

A large eruption column develops over the caldera site. Gravitational collapse of this column generates large volume pyroclastic flows known as ignimbrites. Close to the source, ignimbrites contain enough energy to surmount any topography. At greater distances, flows become channelised into pre-existing drainage channels. Finer particles are swept high into the atmosphere, affecting the Earth's climate. A depression forms above the collapsed block into which material from the eruption column may pond. Crater Lake is one example of a partially filled caldera depression The block which subsides into the chamber is bounded by a ring fault which may or may not contain remnants of the erupted magma.

Can Ben Nevis be identified as the site of a former caldera? If so, how do the rocks exposed today fit within the caldera-forming process described above? Older Geological Survey publications have the roof of the magma chamber simply collapsing into the chamber with no mention of caldera formation which was unknown at that time. The Flinty Crush Rock was identified as a product of faulting and friction. Such a mechanism cannot account for the flow type fabric, whole felspar phenocrysts and the contact with the Inner Granite. In fact it has all the characteristics of magma which was ejected along the ring fault during collapse. But no large volumes of ash and pumice are exposed on Ben Nevis today. The Survey Model does not explain the destination of the Inner Granite that must have been forced out of the way of the subsiding block. If the area of the volcanic pile is measured ($3.5km^2$) and multiplied by the minimum distance that the pile subsided into the magma, (650m) an estimate for the volume of Inner Granite which had to be displaced can be obtained.

$$3.5km^2 * 0.65km = 2.275km^3$$

This is a minimum figure because the edges of the volcanic pile were deformed as it subsided into the Inner Granite, giving the Volcanic Pile a bowl shaped cross-section. Also, the calculated figure represents the volume of ejected magma and no account has been made for the vesicle fraction which may have been very large. A basic assumption of the above calculation is that the block subsided in a single event or eruption.

There is a correlation between the volume of a pyroclastic deposit and the density of its fragments. Flows of small size contain dense fragments, whilst those of larger sizes contain highly vesicular fragments such as pumice. Using this relationship, it is expected that a $2.275km^3$ eruption will have a substantial vesicle component. The volcanic breccias consist of large blocks of solid andesite in a fine grain ashy matrix. The blocks do not contain evidence for large scale vesiculation. The ignimbrite must therefore have been lost to erosion and the volcanic pile represents a pre caldera sequence

The model is summarised diagrammatically in Fig. 9a, 9b, 9c, 9d.

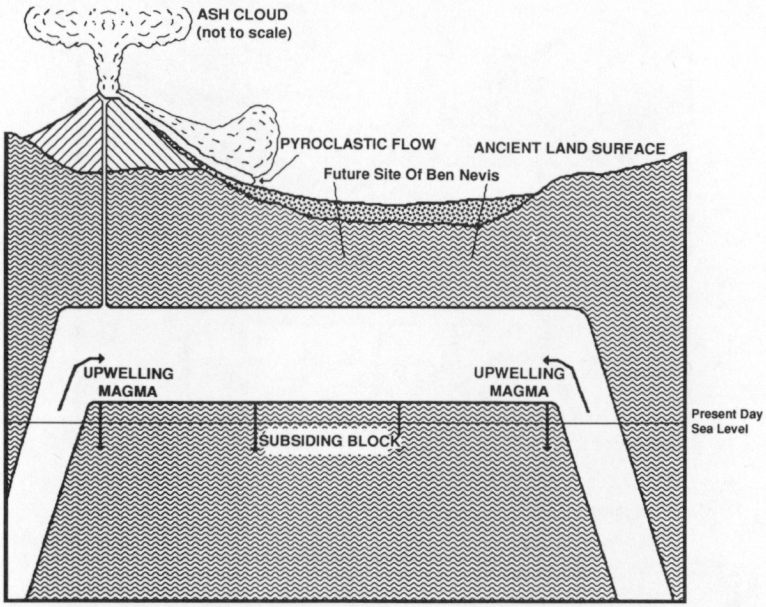


Fig. 9a Intrusion of the outer granite by subterranean cauldron collapse. Initiation of explosive volcanic activity on the surface.

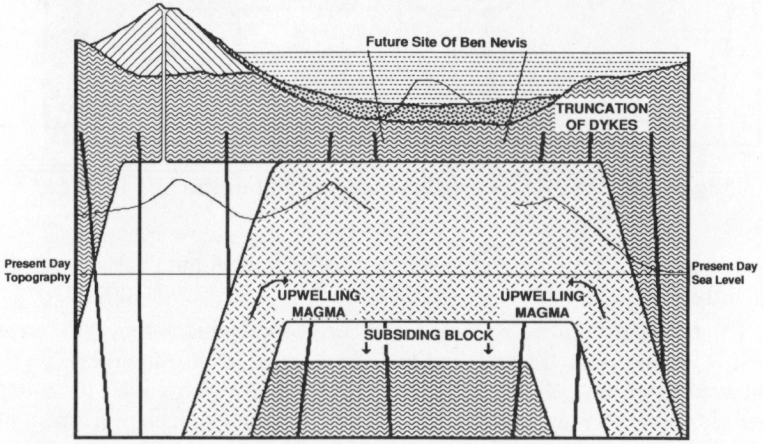


Fig. 9b Extrusion of lavas. Injection of the Ben Nevis dyke swarm prior to renewed cauldron subsidence and the intrusion of the inner granite followed shortly after by (Fig. 9c overleaf) failure of the magma chamber roof and the formation of a caldera.

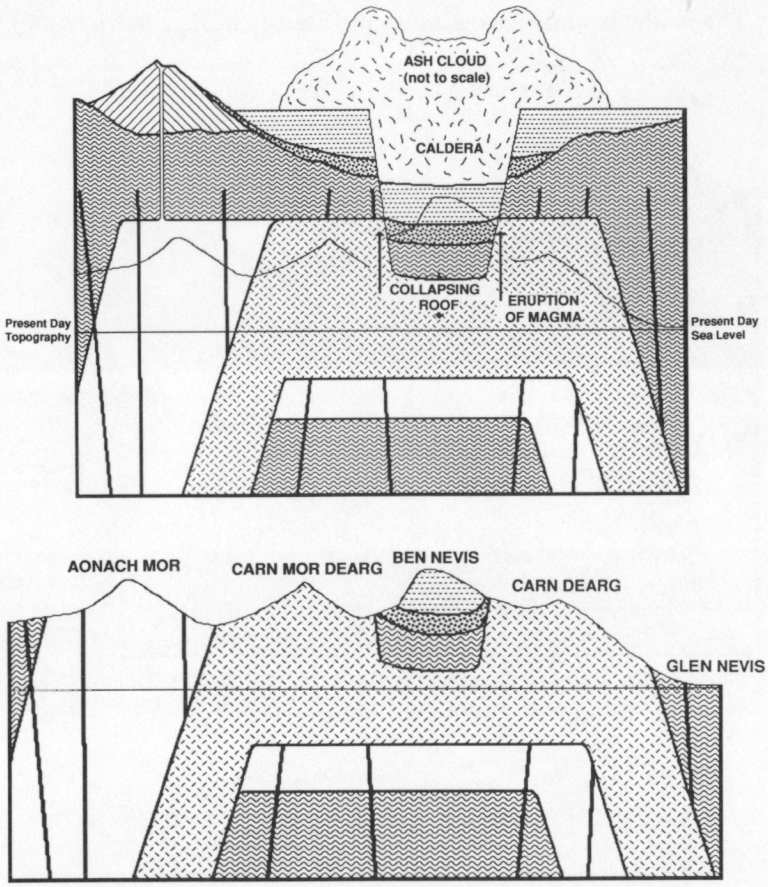


Fig. 9d 420 MYRS of erosion culminating in the last Ice Age.

Both Dalradian outcrops formed part of an ancient land surface subsequently covered by the volcanic rocks of Ben Nevis some 420Ma.

The basement unit provides no evidence of volcanic activity above or below ground. That the area was tectonically active (earthquakes) can be inferred from the volume of soft sediment deformation within the muds and silts and this may have been caused by the subterranean movement of magma. Whilst the area of Ben Nevis was situated in a low energy topographic low, not so far away considerable and rapid erosion spawned fast moving slurry-like mud flows, entering the lake with enough energy to rip up clasts from the lake bottom.

The absence of sediments above the Dalradian in Coire Ghaimhnean could be explained by the location of this area above the level of the lake and on the slopes of the depression, whereas Coire na Ciste and the area around the CIC hut were within the topographic depression infilled by the lake. Such a hypothesis may also explain the low volume of block and ash flows in the vicinity of Coire Ghaimhnean. Block and ash flows being gravity driven and topographically controlled would be confined by the topography and forced into the low lying areas of the ancient land surface. Igneous activity began with the influx of block and ash flows into the valley, possibly from a source several kilometres away. Small, near source lavas occur throughout the volcanic breccia unit. Also located throughout the Volcanic Breccia are small exposures of fine grain sediments representing periods of relative quiet.

The most extensive sedimentary band occurs at the base of the LRB and its thickness (20m+) implies a substantial period of quiet before the eruption of a small fire fountain type volcano. Rapid build up of material and continued earth movements led to slumping of the associated airfall deposit deforming the underlying sediment.

The andesite lavas above the Volcanic Breccias may represent the migration of the source for the Ben Nevis pile to a site closer to the Ben. Evidence for this is based on the occurrence of Felsite Dykes at the base of volcanic pile in Coire Ghaimhnean. This type of dyke was only intruded very early on in the intrusion of the Ben Nevis Granites, and it is possible that as the granite was being intruded below the surface a volcano was located above which generated the andesite lavas. Near source andesite lavas dominate the succession, again suggesting that the source to these rocks must have been fairly close. Sporadic horizons of Volcanic Breccia occur through the andesite sequence representing periods of violent explosive activity. The two types of deposit can be produced from the same volcano. Plugging of the vent would allow the build of magmatic pressure required to produce a violent eruption and the generation of a block and ash flow. Such an eruption would clear the vent allowing relatively quiet effusions of viscous, gas poor lava until the vent becomes blocked by one of these flows continuing the cycle again. How long this cycle of events went on for is unknown.

Intrusion of the Inner Granite buoyed up the roof of the chamber which subsequently failed and collapsed into the still molten Inner Granite, forcibly ejecting some of the magma out of the chamber and onto the surface in an extremely powerful and violent eruption. Enough ash may have reached the atmosphere to alter global climates by a few degrees.

Once the dust had settled, slowly and inexorably the forces of erosion, culminating in the last Ice Ages, sculpted Ben Nevis into the familiar hump we see today. The last Ice Age was punctuated by interglacials when the

temperatures were warm enough for hyenas and jackals to live in Westminster (some things never change). The last glacial episode ended around 10,000 years ago.

No trace of the ancient volcano, the caldera, or of the roof of the granite magma chamber has survived.

The pyroclastic flows and lavas of Ben Nevis survive because the collapse of the magma chamber roof allowed the mountain to subside into the magma chamber. Thus the rocks of Ben Nevis were formed some one to two kilometres above its present location which originally was a low lying area relative to the ancient land surface. Today, Ben Nevis is the highest mountain in the UK.

Useful Reading:

Cas, R.A.F. & Wright, J.U. (1988). *Volcanic Successions Modern & Ancient.* Unwin Hyman.

Johnstone, G.S. (1966). *British Regional Geology: The Grampian Highlands* 3rd edn. H.M.S.O.

Craig, G.Y. (1992). *Geology of Scotland* 3rd edn. The Geology Society.

Bailey, E.B. (1960). *Geology of Ben Nevis & Glen Coe.* Memoir Geological Survey U.K. 2nd edn.

Haslam, H.W. (1968). *The Crystallisation of Intermediate and Acid Magmas at Ben Nevis, Scotland.* Journal of Petrology vol. 9, pp. 24-104.

'YOU CAN TRACE OUR LITTLE FOOTPRINTS':

Reflections on Scottish Mountain Paths

By Robert Aitken

'In the mountains we find the last relic of the primeval in an otherwise ordered landscape, and this is their greatest attraction.'[1]

TEN YEARS ago the Countryside Commission for Scotland put in train a reconnaissance review of the condition of Scottish mountain footpaths. That review developed into the Footpath Management Project, a trial and demonstration project now under the aegis of Scottish Natural Heritage. The Project in turn spawned specialist contractors to tackle the challenges of mountain path management, the pioneer firm being Pathcraft Ltd. SMC members may well have encountered Pathcraft's big blue vans parked in Glen Coe, Glen Nevis or Glen Brittle, often with teams setting off up the hill into weather in which no sane climber would hazard his Gore-Tex. Members with an eye to the SMT accounts may also be aware that some of the Trust's money is helping to pay for these operations.

While the Journal has from time to time cast a generally benign eye on these proceedings,[2] it is perhaps timely to provide an outline of the issues we have been dealing with over those 10 years – a period in which the volume of work on hill paths has increased by about a hundred-fold – and to communicate something of what we have learned in the process. This review, though, aims to be impressionistic rather than technical.

The problem:

Like Jock Nimlin, many of us cling to a notion that in going to the hills we put ourselves in touch with a reality that is timeless and unchangeable, amidst the flux of our fairly insignificant and possibly rather pointless lives. We are familiar with the concept that the hills owe a good deal of their present shape to glaciers that wilted away only 10,000 years ago, and that, as Graham Holmes showed in the 1986 SMCJ,[3] considerable chunks may still slide or drop off them at intervals. We have also become accustomed, if hardly reconciled, to sometimes radical change in the hill landscape wrought by forces such as hydro development and afforestation. But we usually conclude that even if our mountains are not immutable, they will see us out.

Nevertheless, any moderately sensitive climber can see that our own use is changing the mountains in ways which may still be localised, but which are sharply deleterious to landscape and to the quality of wildness.

[1] J.B. Nimlin, SMCJ, xxiv, p8.
[2] SMCJ, xxxiii, 235, 354, 514.
[3] SMCJ, xxxiii, 292.

Footpath development and damage are now evident on all our more popular hills, and are increasingly to be found even on the remoter tops.

This damage is partly a reflection of the sensitivity of the Scottish mountain environment. Our hills are sub-Arctic in their exposure to wind and to frequent freeze-thaw cycles; they suffer heavy rainfall; they have thin, acidic, often waterlogged soils and a highly vulnerable vegetation cover. Contrast these conditions with the Alps, or even more modest ranges like the Vosges, where winter normally brings down a thick snow cover that shields the ground from frost; spring sees a rapid thaw, followed by a warm sunny summer that fosters strong growth. Soils are richer, wind exposure very much lower; steep slopes are often forested; and peat cover is virtually unknown. In a convergence of ecologically sound behaviour with natural inclination, Scottish climbers should ideally minimise their impact on our home hills by spending as much time as possible in more Alpine ranges.

But that points up the other side of the impact equation: increasing use by walkers, climbers, and the multifarious other recreations that now impinge on our hills – increasing not just in overall intensity, but in year-round activity. Our counts during path repair work show that very modest levels of use, below 10 passes per day on average, can cause acute spread and damage on vulnerable terrain.

The post-war period, and particularly the last two decades, has seen a great surge in numbers of visitors coming to the hills. This growth might have less impact if use were not so much concentrated by the car, which tends to fix the start-point, and locally by forestry, which often restricts the line of ascent. As a further concentrating force we have our curious fixation with peak-bagging, now trickling down from the Munros to encompass bumps of ever-diminishing orographic significance. Sociological theories of recreation have yet to account for this obsessional behaviour, which seems to have reached in Britain a pitch unknown elsewhere in the climbing world. I suspect it is a form of displacement activity with its roots in the Protestant work ethic.

Scotland's mountains were never designed with recreation in mind – or at least not the levels of walking and climbing, hill-running, mountain-biking, skiing and other activities that they are now experiencing.

The processes:

The processes that lead to path development and ground damage were minutely dissected in the early 1970s by Dr. Neil Bayfield, a researcher at what is now the Institute of Terrestrial Ecology at Banchory. His findings stemmed from detailed studies mainly on Cairn Gorm, but have been recognised as broadly valid by path researchers and managers around the world.

Simply put, three main physical factors contribute to path damage: *steepness, wetness,* and *roughness.* Of course they seldom operate in isolation. These processes and their effect can be illustrated very simply by examples.

Although the dynamics are not understood in detail, the impact of human trampling, of gravity acting on soil, and of water flow, combine to generate increasing ground damage with rising gradient. Over about 15° the effects of these processes become acute. 15°, roughly 1 in 4, is not a particularly steep slope by mountain standards. Perhaps the classic Scottish path site in this category, showing badly broken and actively eroding substrates, is the path down the west flank of Clachaig Gully, where the average gradient is over 25° and is locally above 40°. (See article by A. Watson, this issue.)

Wetness has two aspects – water on the path, in the form of scour and gullying, 'erosion' in our technical usage – and water in the subsoil, particularly in the form of peat, which can lead to extreme widening as walkers seek drier footing. The effects of water scour can readily be seen on the former path up the Buachaille behind Jacksonville, now a gully bed up to 2m deep in places. Extensive ground damage on peat is familiar enough from sites like the upper section of the Buttermilk Burn path to the Cobbler, or the bog flats above the dam on the Allt a'Mhuillin.

Roughness may relate to vegetation, but the more common effect is that the exposure by trampling of boulders or even just a stony substrate can lead walkers to seek softer going at the margins, and so foster considerable path spread. The Cuillins have a choice selection of examples, but perhaps the apotheosis of this process is the chaotic mid section of the Coire Lagan path, known among the pathwork cognoscenti as 'Shambles Hollow'.

In permutation with wetness or cross slope, roughness can lead to active migration of a path as walkers avoid damaged ground, where awkward bouldery substrates are exposed, in favour of the lower or outer edge of the path. The Northern Corries path on Cairn Gorm, and the path round from Coire Dubh to Coire Mhic Fhearchair of Beinn Eighe, show different styles of down slope migration on cross slopes. The long rise past the Foxes' Well on the approach to Lochnagar is an extreme and active example of lateral migration; the path appears to be moving northwards by several metres per decade, leaving behind a scoured boulderfield to be slowly recolonised by heather.

Where slope, drainage problems, peat and boulder roughness appear in combination, the results can be drastic damage, with severe incutting by water and with trampling damage spreading to scores of metres. Stac Polly illustrates the point most poignantly; there is probably no other site in Scotland where the character of the hill is so profoundly affected by path damage.

Once understood, these processes can be identified in almost any mountain country. The path northwards along the ridges from the summit

of Mount Kosciusko in the Snowy Mountains of Australia is a miniature study in migration that bears close comparison with the Northern Corries path. In Strathcona Provincial Park on Vancouver Island I have seen tree roots, exposed by trampling, forcing downwards migration on paths across steep slopes, exactly as granite boulders do on Cairn Gorm.

Peat, however, is something of a local speciality of British hills and moorlands, rarely found in fresh young Alpine-style mountain ranges. One standard American text on the management of wild land for recreation lacks any index entry for peat. It recommends with disarming blitheness that 'organic soils should be avoided wherever possible'. Nevertheless, Tasmania and parts of New Zealand do have path development problems on peat to compare with some of our British upland bog paths, and it is reported that Mount Kenya and the Ruwenzori are starting to show similar damage.

The remedies:

Why, we are sometimes asked, can't we build good paths like those in the Alps, or like the stalking paths of last century? The first is simple. As already suggested, environmental conditions in the Alps are vastly more propitious to the construction and maintenance of stable paths. But so too are social and economic conditions. Most Alpine communes, accustomed to collective action and seeing more clearly than we do in Scotland the crucial link between the quality of their landscape and its value for tourism and recreation, run a 'taxe de sejour' or 'kurtax' system. Every visitor, knowingly or not, contributes a small sum on bednights - in hotel, hut, or campsite – to a fund used by the commune to maintain local amenities including footpaths. For reasons I have never found remotely convincing, the Scottish tourist industry is immovably opposed to any tourism tax. The mere suggestion is guaranteed immediately to raise the temperature in any chilly conference room.

There is inspiration to be drawn from stalking paths. They demonstrate that good, durable paths can be built in the Scottish hills. Every climber has a favourite example, but exceptional networks can be found in the Mamores and locally in the Western and Northern Highlands from Arkaig to Assynt, with some of the best being in Knoydart. A romantic mystique surrounds their construction, sometimes tending towards what I characterise as the 'von Daniken' thesis: that these paths were built by Superior Beings drawing on a corpus of knowledge now lost to us. A historian of a Spenglerian turn of mind might regard this perspective as symptomatic of a late-20th century failure of confidence; I regard it as tosh. The basic principles used in the building of stalker paths are much the same as those underlying our current work. These paths are the product of vast amounts of cheap labour and regular maintenance, applied to alignments selected for dryness, for stability, and for the availability of local stone and

surfacing materials. Just how much toil was expended for how little pay may be judged by a contract for path construction on the Coulin Estate in 1869: the rate for the job was 'one penny halfpenny per lineal yard four feet wide with side drains where necessary'. Nowadays we reckon in terms of average costs of around £20 per metre.

The builders of stalking paths knew, or learned, about the need to control gradients and to provide effective drainage. They were, of course, building for laden ponies; their paths generally keep under 15°. I have heard from two independent sources that the superb grading of zig-zag traverses was achieved by driving an old cow up to the top of the relevant slope, setting it off downwards, and following its course with pegs or canes to mark its turnings. Such a vividly picturesque tale deserves to be true.

But what is very frequently overlooked is that while these paths were in process of construction, and for years afterwards, they must have looked like small bulldozed tracks. They would have been marked by raw cuttings and bankings, roughly excavated borrow pits, open ditches, bare gravel surfaces and spoil heaps. Contemporary path repair work which left such scars would bring rapid ruin and redundancy upon the contractor responsible. Wider survey and inspection also reveals that stalking paths show very variable standards of construction. For myself, while I greatly admire the skills and the labour invested in these paths, I am grateful that the network is no more extensive than it is; the stalker path is often a very imposed path style, a miniature hill motorway. It makes for quick and easy progress, but reduces the sense of intimacy with the country.

Contemporary path work rarely offers the luxury of a choice of the ideal route; usually we have to work to restore damage on paths that have evolved along walker desire lines – typically hard by burns in valley bottoms, regardless of wet ground, and straight up slopes irrespective of their gradients. Radical realignment is seldom a realistic option. In general, after much experiment with a range of materials – jute mesh, plastic drainage membranes, and sheep wool, to name just a few – and a diversity of techniques, we have largely settled for traditional manual methods using local materials.

On steep ground, stone-pitching – a form of modified cobbling rediscovered and now widely applied in the Lake District – is the key to stable surfacing. Open ditches, stone-lined cross-drains, and stone water-bars carry off the water. Local boulders are carefully moved and planted to redirect the walker and to close down braid paths. This heavy construction work is naturalised by intensive efforts in restoration and landscaping of damaged ground with local turf, either dug out of ditches or cut for the purpose. The Coire nam Beith path in Glen Coe, the subject of several lengthy bouts of work under NTS direction, is perhaps the most effective demonstration of the application of this approach on acutely difficult steep broken ground.

One area in which modern technology has made a substantial contribution is on peat, where geotextiles and geogrids – plastic membranes and meshes – have allowed us to float durable gravel paths over desperately wet ground. Former swamps such as the mid-section of Glen Rosa now offer pleasant dry walking. Masochists who mourn the loss of an intense bog trotting experience can find ample scope elsewhere in north Arran.

Ultimately, high-quality path work that respects its environment is correspondingly expensive. Since the best work is usually also the least conspicuous, it can be difficult to demonstrate value for money. Labour is no longer cheap. Path repair work also suffers from our society's generally negative perception of manual labour. Passing walkers often make plain their assumption that pathworkers must be expiating some dire crime, while senior officers of Government agencies have been heard to suggest that the mountain path problem could readily be resolved by large applications of unskilled, unemployed labour. In fact the best quality durable path restoration work requires the application of high craft, much of which can be learnt only by hard experience.

At present, we are spending something like £250-£300,000 per annum on upland footpath works in Scotland. We probably need to spend twice as much to get on top of the problem. That may seem a daunting figure, but in a very real sense we are facing the bill for 100 years of enjoyment, and for at least 20 years of failure to act when damage was developing rapidly. The contribution that the Scottish Mountaineering Trust makes to this expenditure is of immense political and practical significance, keeping the pressure on public agencies to face up to the scale of the problem. The willingness of the Trust's editors to amend guidebook directions to help reduce pressure on most vulnerable sites is also of great assistance.

The wider considerations:

Of course footpath work raises wider issues of wild land conservation. One line of criticism is that despite its good intentions path repair is reinforcing a vicious spiral, since it involves the improvement of the walking condition of paths, the encouragement of further use, and the generation of damage further up the hill: a subtle variant on Iain Smart's Curse of Sadim.[4] There is no doubt that the stabilisation or drainage of a path makes it easier to walk on. In our early strugglings we were inclined to leave what we ungraciously labelled 'granny-stoppers': unimproved sections at an early point in the path, often wet or broken, that we felt would help to deter ill-shod or inexperienced visitors. But we have largely abandoned this negative approach. Most of these obstacles were at best seasonal in their effect; in any event it is now plain that path damage is occurring so extensively that any effects induced by the incidental 'improvement' of paths through repairs are marginal.

[4] SMCJ, xxxi, 196.

We will never attempt to improve a rough section of path simply because it is rough, as long as it is stable and not a scar on the landscape. Thus we have left the 'waterfall traverse' section of the Coire nam Beith path alone, not least because it is a sporting scramble. It would in any event be almost impossible to render it easy.

Unna considerations loom too – and not only on National Trust for Scotland ground, because Unna's rules provide an almost perfectly cogent set of guidelines for low-key management in a much wider context. My own perspective on what Unna was aiming for is simple: he wanted wild land to be kept wild, and not turned into a national park with a wider social remit; he was manifestly resistant to any notion that, as A.D. Godley (who shared his view) put it, the mountains should be made safe for democracy.

In Glen Coe the most notorious departure by the National Trust for Scotland from Unna's prescriptions – in fairness partly pushed by mountain rescue concerns, and at the time connived at or at least tholed by the climbing fraternity – in building bridges first at the mouth of Coire Gabhail and later at Coire nan Lochan, has created very substantial problems of practical countryside management, quite apart from the principles involved. There would now be no sense whatsoever in removing one or other of those bridges, since the consequence would be the rapid development of severe path damage across very wet ground to connect the two coires. If either bridge goes, both should go.

Nevertheless, it should be borne in mind that the Coire nam Beith path, much less conspicuous but by most criteria much worse damaged than those other two paths, evolved without signposts or bridges, though it was one of Poucher's notorious 'white lines'. To its credit the NTS has invested large sums in restoring that route. Similarly the line up from Jacksonville towards the Buachaille wet and widespread below, badly gullied and spread above – owes nothing to signposting or bridge construction. One cannot quite imagine that Unna would approve of Jacksonville...

A personal perspective:

Work on mountain paths has more affinity with mountaineering than might at first appear. Most evidently, both activities relate intimately to mountains, and both engage intensely the physical senses and the percep tions. The path worker comes to savour the qualities of rock with some thing of the same tactile knowingness as the climber, but with an added dimension. He or she – for some are women – can sense the heft in the hand of a stone well suited for rock-pitching, or can find the fulcrum angle for a pinchbar to raise a big half buried boulder that will provide a durable cornerstone for a cross drain; can spy the weakness in a massive obstruct ing rock that will yield to the sledgehammer; can protect the veneer of moss and lichen on a boulder, so that, transplanted to shut off a braid path, it looks as if it rests where a late-Glacial sludge-slide deposited it 10 millennia ago.

The path worker knows the brutal obduracy of the Torridonian sandstone – surely among the most thankless building stones on earth; the rough crystalline surface and brittle core of Cairngorm granite; and the welcome crisp, clean faces and angles of the volcanic rocks of Glen Coe.

Climbing and path work both rely largely on simple tools. The familiar feel of the ice-axe in the hand is matched by the balance and the wooden grain of the ditching spade, or the heavy cool smoothness of the pinchbar. Both activities bring the quiet but intense pleasures of craft competently applied, and simple fierce physical delight in fitness and in withstanding the elements.

Ultimately path work brings a slower, more studied appraisal of the mountain environment than does climbing. There is necessarily less movement in it, and less change of backdrop. Path workers experience the constant presence of a single mountain facet, its moods over a lengthy period, and the slow tides of the seasons, the changing quality of the light and the subtle shading of vegetation, in a single landscape. So, from months of work on the southern flanks of Glen Coe over several years, I can evoke at will the slopes and facets, ribs and gullies, shapes and colours of the Aonach Eagach flank from Clachaig to Allt-na-righ, with an intensity similar to that of the climber at a belay, who looks out with heightened acuity on the mountain scene.

The moral:

Attunement to the rhythm of the mountain world tends to foster slow and portentous thought. One such reflection has grown upon me in the course of watching our mountain paths degrade over 10 years. Some of us go to the hills to escape from wider realities, or at least to seek a more objective view of them. One such reality that confronts us now is our relationship to the global environment. It is one that we cannot so readily escape, as we rush in our unsustainable, non-renewable-resource-consuming transport to the Scottish hills, the Alps or even the Himalayas; there to thrust our Vibrams into mutely suffering swards or noisily complaining screes.

Path damage is not caused merely by other people, by tourists, by Munro-baggers. In the hills, as in the global context, we are all part of the problem. The evidence of damage is there for any but the wilfully blind to see, as much or more on the Waterslide route up the Buachaille as on the tourist path up Ben Lomond or on Stac Polly: we are trampling down the mountains that we claim to cherish. The time has come for us to seek a new paradigm for our mountaineering: one that puts the mountains first; that acknowledges that they are not immutable and indestructible; and that recognises that we have a duty of care. It's time to give something back.

IMPACT OF HILL WALKERS ON SOILS, PLANTS AND ANIMALS

By Adam Watson

Introduction:

THIS ARTICLE is a brief selective review of a wide subject with a growing international scientific literature. Mountaineers should know something about environmental impact; if you are aware of the problem you are better able to see your own impacts on the hill and to reduce or eliminate them. Another reason for having some reliable knowledge about it is that some people misuse conservation as an argument for keeping other people out, even where the evidence for their case is invalid.

I use 'hill walkers' to include mountaineers and people rambling on lower hills and moors. Most impacts from mountaineers are of the same kind as from walkers. Mountain biking, other cycling, vehicles, downhill skiing at ski centres, off-piste skiing, cross-country skiing and other forms of transport have their own special impacts on soils, vegetation and run-off, and I exclude these. However, I include these categories when it comes to disturbance of animals, where again they have impacts of the same main kind as walkers. I exclude the controversial issue of the effect of walkers on field sports such as deer stalking and grouse shooting. I concentrate on Scotland, though using information from elsewhere if it is relevant to Scottish conditions.

As walkers prefer to use paths, and form new ones if there are no old ones, they tend to concentrate on paths and use the rest of the hill less. The result is that paths widen, erode and proliferate. In terms of the whole hill, the landscape damage and erosion due to paths are unimportant, but for walkers they are very important because they affect the immediate ground at close range (see Dr R. Aitken's article).

Context:

It is useful to set recreational impacts in context, by comparing them with other impacts (e.g. Watson 1990). By far the greatest environmental impact on Scottish hills in recent years, in terms of destruction and damage to landscape, wildlife and access to hill walkers, has been and continues to be large-scale dense tree planting using intensive methods, paid for by large public grants to private landowners and by taxpayers' money directly to the Forestry Commission. Long-standing major impacts are deforestation, prevention of natural regeneration of trees and scrub, conversion of heather to grassland, baring of ground, and soil erosion, all due to grazing by high densities of subsidised sheep, and in many areas due to high densities of red deer. Another long-standing one is poorly controlled muirburn. Two major impacts since 1960 are from bulldozed vehicle tracks and the more localised ski centres.

Impacts from walkers pale into insignificance compared with these. However, it does not follow that walkers can thereby shrug off responsibility. Adverse impacts are not acceptable just because there are worse events. Also, some of the above, larger impacts are mainly on lower ground and do not occur severely on all hills and coires, whereas walkers' impacts penetrate to the most remote hills. Even though the physical impacts of walkers on soils, vegetation and animals on remote tops are usually small, the psychological impacts on other walkers are often substantial. A discarded beer can appears more offensive on a remote hilltop than at a lay-by on the A9 road. The Americans and others ration the number of people going into their wilderness areas on a given day, partly to reduce these psychological impacts and so maintain the quality of the wilderness experience, and partly to reduce environmental impact on the wilderness itself.

Crags:

Mountaineers used to regard the removal of vegetation and soil from crags as beneficial or even altruistic, but times change and it is increasingly frowned on. Fortunately, most crags that are good habitats for plants are broken cliffs with earthy ledges, which are unattractive to climbers. Nevertheless certain parts of cliffs are attractive to climbers and plants, and so there is conflict. Bunce (1983a and b, 1985, 1988) has written useful articles and guidelines from experience in the Lake District, where impacts are generally more severe than in Scotland and where the zoning of different parts of a crag has found favour with climbers. Bunce noted how good liaison between climbers and bird protectionists has led to climbers cooperating by avoiding seabird cliffs in the nesting season, and cliffs where peregrine falcons are nesting.

Substantial impacts on hill ground and wildlife:

The most widespread severe impacts of walkers on vegetation and soils have been at Cairn Gorm. There, the easy access provided by building a public road on to Cairn Gorm and by operating chairlifts at all seasons led to big increases of summer walkers. Counts of people on the plateau have shown 60 times as many in summers since the developments as in summers before the developments (Watson 1991a). Summer counts on other plateaux in the Cairngorms without nearby new public roads and chairlifts showed respective increases of only 7-13 fold, reflecting the general increase of hill walkers on all hill areas. The impacts at Cairn Gorm are mainly in summer, but can be severe in winter and spring when walkers and skiers trample on thawed surface layers above frozen ground.

Vegetation damage, burial of vegetation by loosened sediment, baring of soil, consequent soil erosion, and increased run-off leading to deep rills and gullies have been severe on Cairn Gorm, spreading well beyond the ski area

on to the plateau, Ben Macdui and the Northern Corries (Watson 1985). Trampling readily breaks off bits of the 'reindeer' lichens, and these lichens show more damage even 50 metres away from heavily used paths on the plateau than near little-used paths (Bayfield *et al* 1981). On the most heavily disturbed areas away from paths, Watson (1985) found no lichens growing on soil, and markedly less blaeberry. Foot-slipping increased with slope gradient on disturbed but not on undisturbed ground; 79% of footsteps slipped on disturbed ground at 29° (Fig.1).

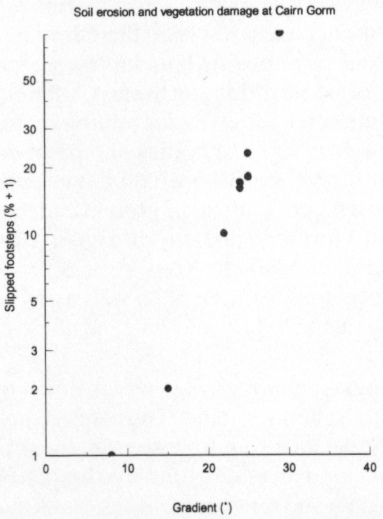


Fig.1 Percentage of slipped footsteps on slopes of eight different gradients on disturbed ground at Cairn Gorm. On slopes of the same eight gradients on nearby undisturbed ground there was no slipped footsteps. The sample size was 100 foot steps at each gradient on disturbed ground.

Each slipped footstep causes increased loosening of the slope, and makes future foot slipping more likely. The lesson is that walkers should try to avoid traversing partly vegetated steep slopes already loosened by human impact, as this adds greatly to an already serious problem. Recovery of disturbed ground at high altitudes is very slow, particularly on infertile granitic soils, and on the most exposed areas the evidence indicates that complete recovery will take many decades.

Other forms of human impact are frequent on Cairn Gorm and its plateau, such as ground disturbance due to a proliferation of cairn-building and bivouacs, rocks shattered by gem hunters, stones dislodged and rolled downhill (removing the more stable under-stone habitat for many invertebrates, and in turn lying on and killing vegetation downhill), stones thrown into pools and on to snow patches, litter, disturbance of snow patches by snow holing, and deposition of human faeces and urine (Watson 1981). Another impact is the dropping of food scraps, which have led to big increases of crows and gulls, and in turn at Cairn Gorm to increases of egg-robbing by crows and gulls upon hill birds such as ptarmigan and dotterel (Watson 1979, 1982). All the above impacts have occurred on other hills, but are more striking at Cairn Gorm because so many walkers go there.

Scree-running is a widespread activity that was formerly regarded as a useful and enjoyable fast way down a steep scree, somewhat akin to glissading, but is now increasingly considered damaging and selfish. Sliding down steep vegetation comes into the same category.

Camping impacts:

Favoured sites for camping are often small vegetated patches near water, in soft places that are prone to damage. Turf on the Cairn Gorm plateau appears flattened and pale in colour after a tent has been there for just one night. In many places, damage is done by removing boulders for weighing down tent edges, and then leaving the boulder rings on the turf, whereupon the turf eventually dies. Boulders are often removed for putting on top of faeces and litter, and other litter such as tins and bottles is thrown down holes between big boulders. Other faeces are left open on the vegetation surface. Faeces and urine cause nutrient enrichment of ground and nearby water, leading to further changes in a formerly pristine wild environment, including eutrophication of streams and pools. In North America, useful wild-land guidelines request campers to pitch their tents well away from streams and lakes, and not to wash their dirty dishes (and their dirty selves!), in the water.

Much of this also applies to bothying, although recovery is much more rapid at the lower altitudes where most bothies stand. The patch of nettles at the back of the bothy is a clear indication of nitrogen enrichment from human urine. Other impacts are the removal of dead and live branches for firewood, and similarly pulling heather and removing ancient roots in peat for burning in bothy fires. At heavily used places, this has led to a shortage of things to burn in the neighbourhood. Popular camp sites also suffer from removal of firewood and heath for the same reason. This has been well documented in the United States (Cole *et al* 1987), where research on such problems and expertise in wild-land management is far ahead of the little done so far in Britain.

Impacts on animal numbers and breeding success:

Trampling by walkers kills insects, spiders and other small animals. For instance, Bayfield (1979) found that the numbers of larvae and pupae of an abundant cranefly in blanket peat in north-west Scotland were markedly reduced by trampling. There is evidence that compaction of ground by trampling is also harmful, leading to substantially lower numbers of craneflies, beetles and other invertebrates on heavily disturbed parts of the Cairn Gorm plateau (Welch 1981).

Walkers occasionally trample inadvertently on vole nests and on bird eggs and chicks, but it is unlikely that this has appreciable effects at the population level as distinct from the individual animal level. On the Cairn Gorm plateau and a few other heavily visited hills, some walkers have been

seen deliberately causing severe disturbance to birds with chicks in order to get photographs, in several cases threw stones at birds, and often allowed their untrained dogs to run free, chasing and occasionally killing birds and mammals. However, most walkers cause unintentional, not deliberate, disturbance. Disturbed birds and mammals usually react by flying or running away. The evidence from a number of studies in different countries is that if this happens too often, the breeding success of individual birds can be reduced directly by nest desertion and by mortality of chicks that do not have enough undisturbed time for feeding, and indirectly by predators robbing eggs when parents are off the eggs too often because of human disturbance.

Walkers often disturb hares, rabbits, roe deer and red deer unintentionally. In winter this can force these animals to run uphill through deep snow, frequently to places with less shelter and food. 'This involves a high energy cost at a snowy time of year when these animals are short of food and shelter and might well increase the death rate of individuals that are already in poor condition. Cross country skiers should try to avoid herds of deer and make detours if possible' (comment by A. Watson in Banks1983). How damaging this is in terms of mortality has not been studied and so is still not known (Staines & Scott 1992). There is some evidence that disturbance of large woodland grouse such as capercaillie and black grouse in winter is harmful, and has led to fewer birds in heavily visited areas in the German Alps and elsewhere.

In some cases such as golden eagles in Scotland and bald eagles in the United States, adult pairs avoid areas used heavily by people. Golden eagles nested in the early 1900s in pines near Loch Morlich, and as human use of Glen More increased the birds nested increasingly further away, using more remote nesting sites, and stopped hunting on Cairn Gorm and Glen More. There is still a pair, however, so the disturbance caused a shift in eagle use of the area, not a reduction in numbers.

Studies have been done in the Cairngorms region over long runs of years, comparing adult numbers and breeding success of ptarmigan, red grouse, and dotterel, and numbers of other native hill birds and mountain hares, on heavily visited areas such as Coire Cas, the Cairnwell and the Cairn Gorm plateau, and on other areas comparable except in having very few human visitors (Watson 1979, 1988). The results showed no difference so far in adult density (number per unit area) and breeding success of these native hill species on heavily visited versus seldom visited areas. The only difference was that the mostly alien species that scavenge on waste food (crows, gulls, rooks, pied wagtails and snow buntings) and graze on reseeded fertilised grass (sheep, reindeer and mountain hares) were much more abundant on heavily visited areas.

Studies on heavily visited moors in the Peak District and other parts of northern England have shown no effect of recreational visitors on numbers

and breeding success of red grouse (Picozzi 1970; Hudson 1982). On the shores of Loch Morlich, however, where human impact has been far more concentrated than on the hills above, the numbers of common sandpipers and other waders have drastically declined over the last few decades, to the point where hardly any are left; this has not happened at the far less visited shores of nearby Loch an Eilean (Watson *et al* 1988). A snag about most of the above studies, and indeed about nearly all studies of human impact, is that the observations were done after the human impact was recognised as a problem, and so there were no observations before the impact took place. Hence differences, or lack of them, between disturbed 'experimental' areas and relatively undisturbed 'controls' might be due to inherent site features which have nothing to do with human impact. This snag, which is called pseudoreplication, has been well publicised but is often ignored. Nevertheless, in some cases such as the golden eagle, dotterel and the Loch Morlich shorebirds, there were some observations from before the period of major increase in human visitors, and these provide a more reliable basis for the conclusions and for generalising about them.

In recent years, several publications have claimed that the numbers and breeding success of golden plover have declined due to human impact on heavily visited moors in the Peak National Park (e.g. Yalden & Yalden 1989), and that numbers of golden plover, curlew and other waders are lower on heavily visited parts of other moors (Haworth 1987). In a report to the Peak Park Joint Planning Board, Anderson (1990) used these publications and other new surveys to recommend 'sanctuary areas' for birds. Such publications have been used by grousemoor owners to argue that people should be kept out for reasons of wildlife conservation. The Joint Planning Board accepted the Anderson report and decided to 'shelve' making proposed new access agreements on the Peak moorland. The Ramblers' Association, which already had doubts about the justification for this decision and about some of the publications which led to it, subsequently commissioned me to review the Anderson Report, and I produced a critique of it and its associated publications (Watson 1991b).

Haworth found fewer waders near roads and paths, and used 'indices of disturbance' based on the presence of roads and paths, but did not allow for the fact that people tend to make roads and paths on dry ground rather than on the wet ground favoured by waders. Hence his conclusion that disturbance caused the lower wader numbers was faulty; one would expect fewer waders near roads and paths for habitat reasons alone. The Yaldens' research was seriously flawed by inadequate scientific design and field work, and invalid statistical analysis. In particular, they produced an artificially high, inflated sample size by using repeated observations of the same individual birds rather than a randomly chosen observation from each bird. This violated the basis for the tests.

The effect was that the tests in turn showed far too low probabilities of the results being random or due to chance. High numbers of golden plover

in 1988 (which went against the authors' general case) were explained away unconvincingly by suggesting without any evidence that fewer birds deserted their territories, because 'recreation pressure' during Easter week 'seemed low' in association with bad weather. There were other serious faults with this study. The authors may be right that golden plover are vulnerable to human impact. However, their conclusions on this were overstated and the evidence presented was insufficient and too flawed to accept their conclusions as being reliable.

Following the publication of my critique by the Ramblers' Association, the Joint Planning Board's Chairman has stated that the Board stands by its policies as set out in its 1988 National Park Plan. As the Plan committed the Board to extend the area covered by access agreements, the Chairman's statement means that the Board have given up their decision to 'shelve' new agreements. I have given this example some prominence, partly because it is important for walkers' access, and partly because it demonstrates clearly that reliable scientific work must be objective, free from political or any other non-scientific influence, and above all critical and open to criticism at all stages from other workers.

Final remarks:

It should be realised that every plant, vegetation community, and animal individual and animal population has its threshold or limit to disturbance and other human impact, beyond which it will suffer damage, and that severe impacts can kill plants and animals, impoverish vegetation communities, reduce breeding success and numbers of animals, and even exterminate certain plants and animals locally. Where research has shown no good evidence of damage, all that this means is no good evidence so far. Mountaineers and everybody else should be aware of these problems and should take care to leave minimal impact behind them, so that the hills remain as wild and attractive to wildlife and people as we have been fortunate enough to find them.

Further reading:

A few detailed but readable reviews on human impact are: on soils and vegetation (Liddle 1975), on birds and walkers (Sidaway 1990), on red deer in Scotland (Staines & Scott 1992), and on birds generally (Hockin *et al*1992).

References:

Anderson, P. (1990). Moorland Recreation and Wildlife in the Peak District. Report to Peak Park Joint Planning Board.

Banks, M. (1983). Skiers take to the trails. *Geographical Magazine* 55, 620-623.

Bayfield, N.G. (1979). Effects of trampling on *Molophilus ater* (Diptera, Tipulidae). *Biological Conservation* 16, 219-232.

Bayfield, N.G., Urquhart, U.H., & Cooper, S.M. (1981). Susceptibility of four species of Cladonia to disturbance by trampling in the Cairngorm Mountains of Scotland. *Journal of Applied Ecology* 18, 303-310.

Bunce, R. (1983a). Is climbing killing off Lakeland's plant life? *Lakescene,* December number.

Bunce, R. (1983b). Tramp, tramp, trample, trample. *The Guardian,* March 30.

Bunce, R. (1985). Impact assessment of cliff vegetation in the Lake District. Institute of Terrestrial Ecology, Grange-over-Sands.

Bunce, R. (1988). Gardening. *High*, February number.

Cole, D.N., Petersen, M.E. & Lucas, R.C. (1987). Managing Wilderness Recreation Use: Common Problems and Potential Solutions. General Technical Report INT-230, Intermountain Research Station, Utah.

Haworth, P.F. (1987). Recreational disturbance, gamekeeping and moorland breeding birds in the south Pennines. Appendix 8 in Comments on the Government's Consultative Proposals for Further Legislation on Common Land (The Moorland Association), pp. 41-99.

Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V. & Barker, M.A. (1992). Examination of the effects of disturbance on birds with reference to its importance in ecological assessments. *Journal of Environmental Management* 36, 253-286.

Hudson, P. (1982). Red grouse production and management in relation to tourism. Moorlands: Wildlife Conservation, Amenity and Recreation (ed. by K.A. Hearn), pp. 45-54.

Liddle, M.J. (1975). A selective review of the ecological effects of human trampling on natural ecosystems. *Biological Conservation* 8, 251-255.

Picozzi, N. (1970). Breeding performance and shooting bags of red grouse in relation to public access in the Peak District National Park, England. *Biological Conservation* 3, 211-215.

Sidaway, R. (1990). Birds and Walkers. Report to Ramblers' Association, London.

Staines, B.W. & Scott, D. (1992). Recreation and Red Deer: a Preliminary Review of the Issues. Institute of Terrestrial Ecology, Banchory. Report to Countryside Commission for Scotland, Perth.

Watson, A. (1979). Bird and mammal numbers in relation to human impact at ski lifts on Scottish hills. *Journal of Applied Ecology* 16, 753-764.

Watson, A. (1981). Detailed Analysis. Evidence to Lurcher's Gully Public Inquiry, Kingussie.

Watson, A. (1982). Effects of human impact on ptarmigan and red grouse near skilifts in Scotland. Annual Report, Institute of Terrestrial Ecology, Cambridge.

Watson, A. (1985). Soil erosion and vegetation damage near ski lifts at Cairn Gorm, Scotland. *Biological Conservation* 33, 363-381.

Watson, A. (1988). Dotterel *Charadrius morinellus* numbers in relation to human impact in Scotland. *Biological Conservation* 43, 245-256.

Watson, A. (1990). Human impact on the Cairngorms environment above timber line. Caring for the High Mountains (ed. by J.W.H. Conroy, A. Watson & A.R. Gunson), pp. 61-82. Centre for Scottish Studies, University of Aberdeen.

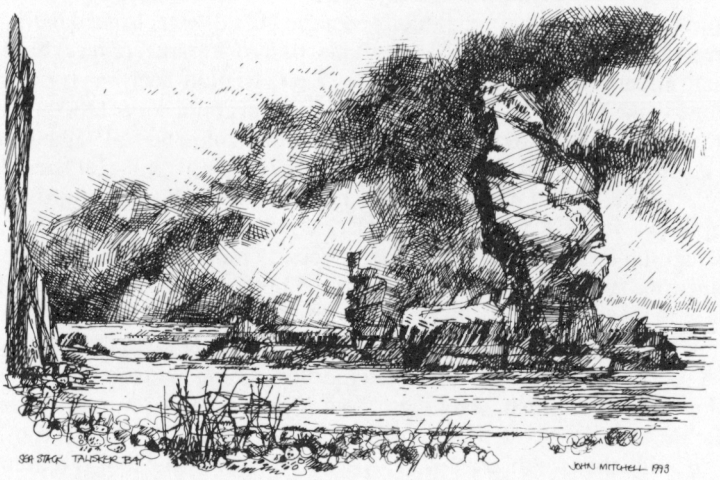
Watson, A. (1991a). Increase of people on Cairn Gorm plateau following easier access. *Scottish Geographical Magazine* 107, 99-105.

Watson, A. (1991b). Critique of Report 'Moorland Recreation and Wildlife in the Peak District', by Penny Anderson, Peak Park Joint Planning Board, 1990. Report to Ramblers' Association, London.

Watson, A., Nethersole-Thompson, D., Duncan, K., Galbraith, H., Rae, S., Smith, R. & Thomas C. (1988). Decline of shore waders at Loch Morlich. *Scottish Birds* 15, 91-92.

Welch, R.C. (1981). Invertebrates in relation to human impact. Supplement 5 in Watson (1981).

Yalden, D.W. & Yalden, P.E. (1989). Golden Plovers and Recreational Disturbance. Report No. 64 to Nature Conservancy Council, Edinburgh.



PECULIARITIES OF THE HIGH CLIMBER

By W.H. Murray

WHEN RECENTLY shredding old files, I came across a letter from the Mountaineering Federation of the USSR, which may interest Scottish mountaineers. In December 1962, when SMC president, I received this letter from Eugene Gippenreiter, saying that his Federation was collecting for study data on the qualities peculiar to high altitude climbers. The purpose was to work out how best to select expedition members. He asked six questions. They were ponderously worded – no doubt an effect of translation – so I re-express them in clear English:–

Q1. When choosing a team, is it important to pay attention to individual peculiarities?

Q2. Have you, or your team-companions, had difficulties in the work and life of an expedition caused by such peculiarities?

Q3. Specify the peculiarities most annoying at high altitudes.

Q4. If you have seen difficulties of that kind arise, do you know of any situations in ordinary life from which you might predict that difficulties could arise at high altitude?

Q5. What life-situations might be touchstones to determine psychological fitness or otherwise in a given person for expedition life?

Q6. Enumerate the personal qualities that in your opinion should be especially inherent in high altitude climbers, e.g., moral qualities: comradeship, collectivism, individualism, egoism, responsibility, patriotism, etc.? And what volitional qualities: boldness, resolution, persistence, etc.?

When I first read this list, I reflected how simple had been the choices I'd hitherto made. I chose companions because I liked them, trusted them, and knew them to be good for the job on hand, be it rock, snow, or ice. I had paid scant attention to anything else. However, I could see that for a huge country like the USSR, my simple prescription could be just too simple – although it had worked well enough for John Hunt, who in 1953 had used an equally simple system of the 'old-school, old-club' kind. But I could not say such things to Dr Gippenreiter, whose Federation comprised 15 Republics, most of which dwarfed Britain. Moreover, in the 1960s many of our club members had either been recently climbing in the Pamirs and Caucasus, or were hoping to go there soon (excluding me, who like Eric Shipton had already been damned in *Pravda*, November 1951, as 'a well-known international spy', and so felt wary of ending up in the Lubianka).

A reply was politic. But one from me alone being inadequate, I wrote to John Hartog, Hamish MacInnes, Tom Mackinnon, Tom Patey, George Ritchie, Douglas Scott, Malcolm Slesser (then writing *Red Peak*), and Tom Weir, and asked for their answers. After 30 years, I can no longer remember

what replies they made, or even if all did make them, but I was able to make the joint response to Moscow early in 1963. My original collation of these opinions has long since vanished into the abyss of the club's files, but among my own files I found the originals of the two replies sent to me by Hartog and Patey. It is these that I now offer to the editor of the Journal.

Both men were of quick, clear mind, but of such strongly different character and divergent background – the one Aberdonian, the other Westminster and Oxford – that readers may feel as entertained as I by the contrast of opinion. On their first ascent of the Muztagh Tower in 1956, they had by choice shared the same tent. Their opposite views on camptidiness (A3) may reflect that experience. For the rest, any Communist ideas on 'Collectivism' as applied to mountaineering was anathema to Patey. He goes for that red rag like a Seville bull, horns flashing; whereas Hartog, diplomatically aware, turns a deliberate blind eye. His strong control of emotion by reason was part of his life's training (part enforced, part voluntary).

A1. **Hartog:** Yes.

Patey: Yes. I would select a team of individualists, each with his own eccentricities – in preference to a team of essentially similar (and usually somewhat negative) personalities. I would *never* select a team comprised of members all sharing the same social background, i.e., pre-war British Everest expeditions or a team of obedient morons prepared to entirely subordinate their natural emotions 'for the good of the party' (so-called). But they would need to be through and through individualists – men possessing the strength of character and purpose to admire and respect the often conflicting viewpoints of their fellow climbers and still hold their own. Men who were completely and in every way sure of themselves, and would at any time be entirely self-reliant should circumstances demand this.

A2. **Hartog:** Yes.

Patey: Yes. But I have been equally annoyed by the type of climber who shows no individual peculiarities and *never* any marked reaction. In retrospect, and indeed often at the time, I have more respect and fellow feeling for the eccentric and the individualist than I have for the 'negative' man, who always does as he is told without asking why. Although I admit I have often been riled myself by the first category, any minor conflicts resulting have been quickly forgotten as one learns to 'give and take' without lasting recriminations.

A3. **Hartog:** (1) Lack of respect for other peoples' possessions: indiscriminate borrowing; failure to be tidy and to look after their own equipment. (2) Selfishness; lack of consideration for the well-being, comfort, or enjoyment, or fair shares for other members of a party.

Patey: Personally – being a naturally untidy person – I find a fastidious, tidy camper the most irritating of my fellow climbers.

A4 & 5. **Hartog:** Yes. This is particularly lack of maturity in the true sense. It does NOT imply that youthfulness of spirit is any bar to the likely contributions of a member. Usually these immature traits are hard to pick out in city life or at university, but in times of hardship they soon stand out. One must combine both hardship and some individual responsibility, e.g., some scientific, distasteful work, to measure up a man's real worth.

Patey: No. Living rough in the mountains anywhere, not necessarily in pursuit of technically hard climbs, but for lengthy periods of time in all weathers with only basic essentials. The greater the degree of squalor and general discomfort the more searching the test.

A6. **Hartog:** *Moral Qualities:*

(a) Comradeship and sensitivity to companions. (b) Unselfishness. (c) Sense of humour (not practical jokes). (d) Sense of fun (not at others' expense). (e) Responsibility, to one's own duty, to the object of the expedition, and to companions. (f) Persistence, patience, and drive. (g) Courage.

Volitional Qualities:

(a) Training and acquisition of needed skills. (b) Self-discipline. (c) Endurance. (d) Common-sense. (e) Apprenticeship to big mountaineering. (f) Understanding of mountain conditions, weather, snowcraft, rock-structure, glacier behaviour, nutrition, first aid.

Patey: *Moral Qualities:*

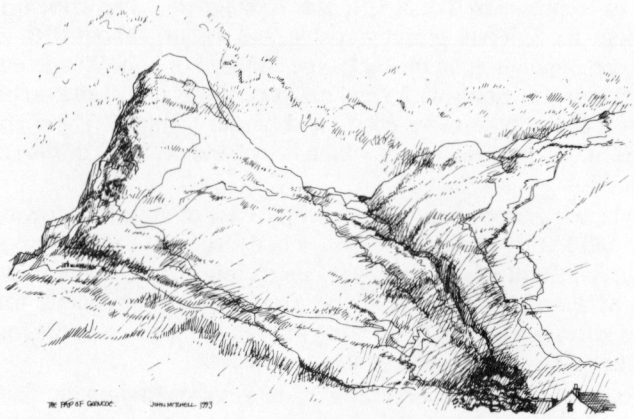
(a) Individualism – first for reasons aforementioned. (b) Comradeship, which must and can coexist with (a) if the right men are chosen. (c) Responsibility – a *sine qua non,* but I would have thought this should not arise in a final selection. (d) Collectivism – indicates too much subordination of individualism. (e) Duty – to what? To one's fellows – yes. To the expedition's patrons or organisers – doubtful. To one's country (patriotism) – certainly NOT. Mountaineering has no frontiers. (f) Egoism, as opposed to individualism – most definitely not. (g) Discipline, if self-discipline – certainly yes. There should be no need of discipline from any other source in a well-chosen party, which makes its own decisions, the leader acting merely as chairman with a view to reaching a consensus.

Volitional Qualities:

(a) Unremitting determination and ruthless self-discipline. (b) A definite dash of boldness, sufficient to take calculated risks, yet not amounting to rashness. (c) A sense of humour.

While it is interesting to see what replies were made, and to agree or disagree, I doubt whether Gippenreiter, or anyone else at Moscow, would take aboard the answers, whatever their source. It is not, I think, that he would disagree with Patey's heavy emphasis on individualism, provided that, like Patey, he equated that with the purposive and self-confident initiative that the big ranges demand (and develop), but rather that the questionnaire reads to me like the work of a bureaucrat in the Soviet

Ministry of Sport, as ignorant of mountains, mountaineers, and mountain eering as any of his contemporaries in the Scottish Sports Council. I felt confident that Gippenreiter, the mountaineer, would file away the answers as I filed away the queries, each knowing full well that we would choose our companions not by elaborate, psychological calculations, but by swift, common sense appraisal in the field. None the less, the questions had to come, granted the circumstances of the time (Moscow's need to delegate assessments), just as the reply had to be made. Both gave us brief fun, yet made us think.



SPORT CLIMBING – A RATIONALE

By Rab Anderson

The following text is an edited version of an illustrated talk given by Rab Anderson as one of a series of mini-talks before the Club AGM. The seminar, on bolting as currently practised, was enlivened by slides and by the presence of a mean-looking rechargeable drill.

I HAVE the feeling that in Scotland there is still some apprehension – and even resistance towards bolts. Like it or not, bolts are here to stay, as an integral part of climbing. I'm not saying that you have to endorse bolt climbing, just that you have to think about the subject and show consideration for others who have taken a different path. Bolt climbing is not new.

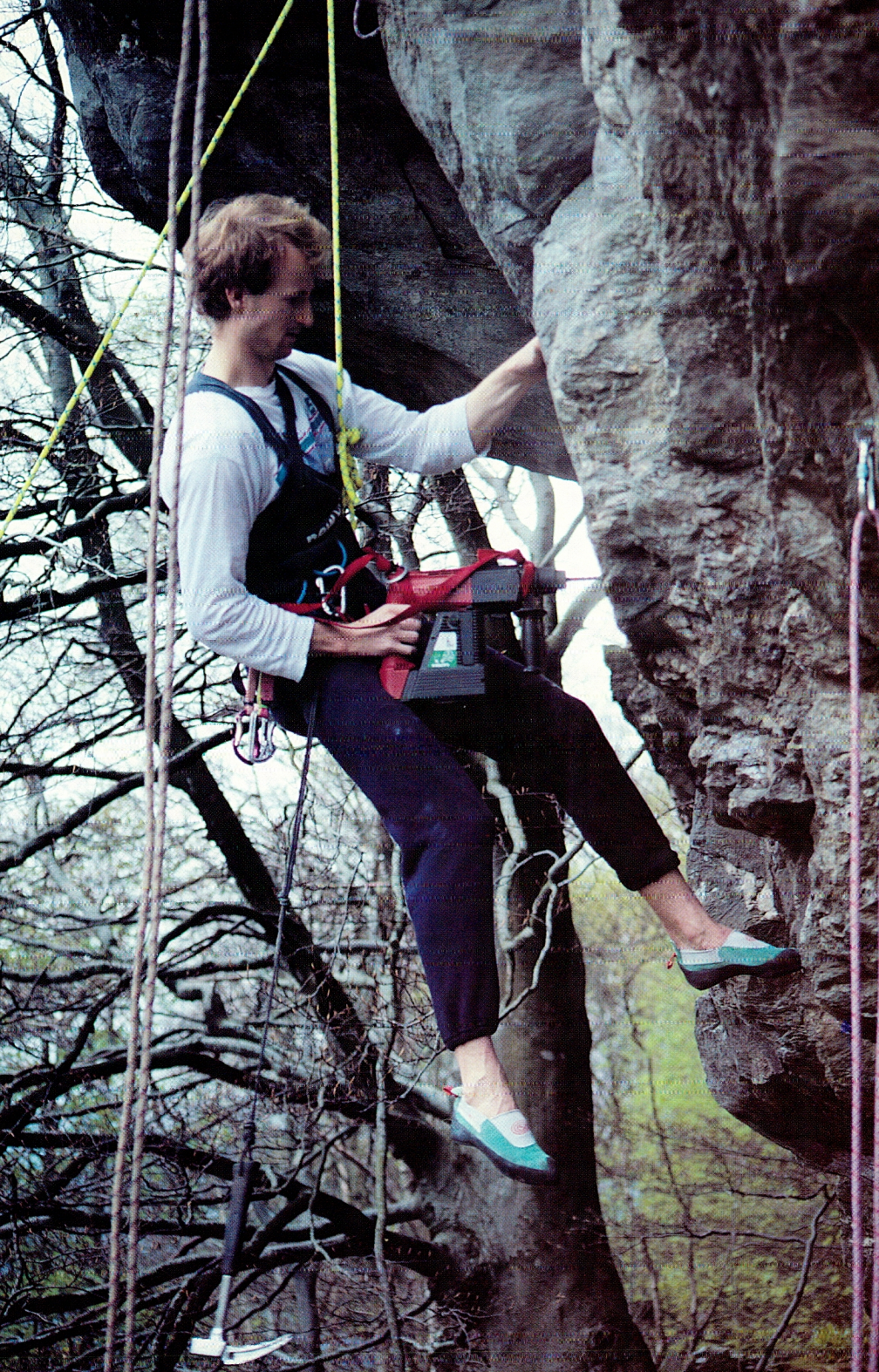
A good number of years ago, together with other leading Scottish activists (all of whom are now into bolts and sports climbing), I played an active part in holding back the introduction of bolts. The time wasn't right. We had not yet reached the stage where we were ready for the next step forward. Change can often be hard to accept, though it was about to happen. Rock climbing had reached an impasse, not for all climbers, but for many involved in the pure rock climbing side of the sport.

Traditional climbing, that is climbing with leader-placed protection, appeared to have reached a high point with a number of outstanding bold leads. There was nowhere to go for the leading climbers of the day. The sport had to progress. To sit still was to stagnate. The critical item of equipment, the bolt gun, is rechargeable, and will drill about 10 to 15 holes per charge, depending on the rock type and size of bolt. We are currently using 10 mm Hilti studs with Petzl hangers. Long, thick, glue-in bolts are the best, but are both more costly and harder to place. There are other methods of bolt placing, one of which is by hand drill, but this is slow and often painful.

The placing of bolts is not just a simple case of abseiling down a piece of rock and letting rip with the drill. Firstly you have to be sure that the intended route will actually provide a sport climb. I've abseiled down a line I thought about bolting and found good, though strenuous places to position wires – no contest. No bolts went into this line and the route was done, after a bit of thuggery, at about British 6c.

If a route will make a sport climb, in many cases finding the best places to put the bolts can be very time consuming, particularly on very steep

Bolting on Dunkeld. Photo: Rab Anderson.



ground. For instance you could spend a day cleaning the route, then a good few hours top-roping bits of it to find out where to put the bolts. You then have to take into account the time taken to bolt the route. After all of this, the route might be led in two minutes! This explains why in developing new routes climbers like to attempt the impossible, to find a route they cannot climb, so that they can work on the route over a period of time. It is common for climbers, even the best, to be physically incapable of stringing together certain moves on a route. The act of actually trying the move develops the strength to eventually do the move, and the next move, and so on. Added to this is the fact that the body is incapable of performing at such a high level of output for too long without resting. Power weight lifters do not do repetitions with full weights.

This, therefore, is how some bolt routes can take so long to do, 10-20 days sometimes. As I've said the actual placing of the bolts is important. Bolts are not supposed to be made any more difficult to clip, though in many cases if you are short, clips are harder. Rock allowing, bolts should be placed within most peoples reach, usually by the best hold.

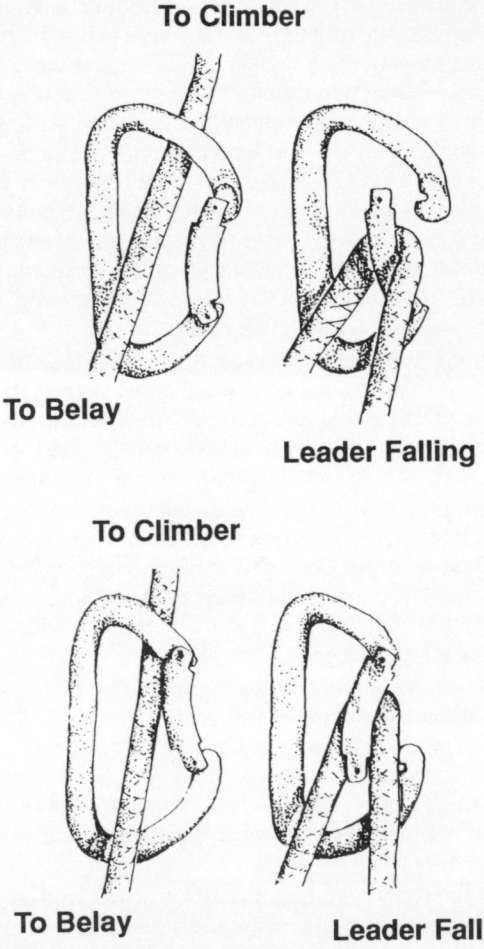
There is no point in having fixed gear which you cannot reach – all that will happen is that a sling will be added. Bolts should also be logically spaced so that you are not effectively top roping the route when leading. At the same time there is no point in placing the bolts so that you will hit the ground if you fall off. Hence the reason why the first and second bolts on a route are usually closer together.

Sport routes become popular and are climbed by many others, so there is no point in bolting the route up to suit your own individual needs. Having taken the decision to place bolts there is no point in making the route artificially harder than it is already. This would be almost as bad as minimalist bolting. That is, taking what is not effectively a sport route, for example a route with a bold section on it, and placing one bolt, to overcome that section.

Routes with fixed gear are commonly known as clip-up routes. Fixed gear is usually clipped with two crabs and an extender, commonly known as 'clippers' or 'draws', from quick draws. Fixed gear should never be clipped with a single crab. The crab can become captive and the rope can escape! However, it is common practice to sometimes clip the first bolt with a single screw gate. Crab on crab without the tape extender should be avoided.

They are not as strong and the forces applied in fall can open the gates. Because you take many falls in sport climbing and end up hanging on the gear you become very safety conscious. The crabs used usually consist of a straight gate for the eye of the bolt and a bent gate for the rope. Bent gates are easier to clip the rope into, but used incorrectly they can be lethal. The two different type of gates allow you to denote the crab which the rope should always be clipped into. Do not reverse these.

'Hamish Teddy's Excellent Adventure', Dunkeld. Photo: Rab Anderson.



In the course of his talk, Rab Anderson chilled the audience with a demonstration of what can happen if you clip into a runner using a bent gate karabiner upside down. The drawing should be self-explanatory.

The crab through the eye of the fixed gear, or wire for that matter, picks up scarring. It has been shown that a rope running across this scarring can have its sheath stripped. I become annoyed when other people using my rack just grab and clip and try to ruin my bent gates. This happens in winter, as do seconds hooking ice axes into my bent gates – one of the problems of using your rack both in summer and winter. Mind you, clippers and bent

gate crabs are much easier to clip with frozen fingers in winter. It is particularly important to clip the rope into the clipper the right way, particularly with bent gate crabs, no matter what type of climbing you do. Because you are in and out of your harness all the time and re-tying in all the time it is necessary to be much more aware of safety. It is too easy to become blase.

People have been known not to tie in properly – I've seen one of my partners do this, noticing just as they were about to jump off in the lead – he had to reverse to the nearest clipper, hang there and re-tie in. It also happened to one of the world's top climbers when she leaned back to lower off at the top of a route and fell about 100ft. into the ground. Luckily her fall was part broken by some trees, as indeed were a number of bones. Within a year she was back winning climbing competitions. Whilst on the subject of epics, do not put your finger through the eye of a Petzl bolt hanger. People often do this in panic. It means that you cannot clip the bolt. It also means, as in the case of a certain well known Scots climber, who tried it at Malham last year, that you could get your finger stuck with possible unpleasant consequences. Luckily, whilst others scrambled to get a top rope to this nameless individual, he managed to free his finger just as his strength ran out. This resulted in the fall he should have taken in the first instance! All of this was in front of an audience of about a 100 other climbers, who, whilst concerned at the time, will have no doubt spread the story far and wide.

One of the impressions that some try to give of bolted sports climbs, is that they make it easier to cheat. Yes they do – if that's the way that you perceive climbing and feel that that's what the bolts are for. This is the wrong attitude with which to approach bolted climbs. The bolts are there to enable you to make a clean ascent. The sport climbing approach has certainly helped clear some of the muddy waters surrounding traditional rock climbing ethics. Climbing has become more open and honest.

In sport climbing it doesn't really matter what you do to achieve the end result but that end result, if you want the leader's tick, must be a clean ascent – a redpoint. In other words you can top rope the route. You can bolt to bolt it. You can dog it, work it in sections, yo yo it. Anything you like but at some point you have to pull the ropes through, psyche up and go for it – a clean lead from bottom to top without weighting any of the gear. Not easy, and not the foregone conclusion that some of you might imagine, especially if you are climbing at your limit. I failed to redpoint a route in France last year and just had to go back this year to do it and get it off my mind. There are obviously better styles of ascent but the best and most coveted is the onsight flash – just as it is in traditional climbing. That is leading the route clean from bottom to top on your first effort, never having seen it before, knowing nothing about it. If you fall you fail and have to redpoint. Some people onsight flash to an incredibly high standard – this

is a measure of how good you are, hence the reason for competition climbing having taken off.

As an example – *Marlene* at Dunkeld is likely to have seen well over 50 ascents, but as far as I am aware has only had two or three onsight flashes. Climbing requires you to use skill and judgement to balance the mental with the physical. Whatever grade you climb at, whatever style of route you climb, it is a case of risk management, not risky management. It has been said that climbing is not just about physical gymnastics on rock. Neither is it the worry of serious injury all the time. Too big an issue is made of boldness. Although there are some who would like you to believe it, in reality there are not many who specifically seek out danger and less, if any, who do it on a continual basis. The risk of hitting the ground on sport routes may have been removed (even although many people still do for one reason or another).

There is, however, a different set of worries and dangers. Due to the extreme stresses and strains of asking the human form to perform continually at a high level, a catalogue of unpleasant injuries are occurring. Pulled and ruptured finger tendons are amongst the most common, as are tendon and ligament damage to the feet and legs from the falls. There are not many sport climbers who have managed to remain injury free. The mental worry in sport climbing can simply be the decision of how hard to pull on that one finger pocket – this is a case of balancing your desire to do the route with how long a ruptured tendon could put you out for! It can be the decision of how many bone jarring falls to take before packing it in. Two or three whippers (that is falls where you come slamming into the rock) of about 10-15ft. are usually enough to put me off for one day! The strain of repeatedly failing to redpoint your route is considerable – especially when your holiday is coming to an end after three or four weeks and you still haven't managed to redpoint your main project. If sport climbing is so safe, why is it that some who are unaccustomed to it are often conspicuous by their insecurity on bolts?

In some cases they will be climbing with double ropes, trying to wriggle in wires between the runouts, or refusing to push themselves into fall situations. A different approach is required, as in ice climbing and snowed-up rock climbing. It takes a bit to get used to falling onto a single rope, onto a single bolt with no back-up. In nut protected climbing if you are unsure of a runner you are often able to back it up.

Forcing yourself to cover the ground between the bolts can be very hard – it's a bit like that feeling of covering the ground between the blank runouts on the Etive Slabs. The feeling of being totally pumped and having to pull up the slack on your one and only rope to clip that bolt is something else. Sport climbing is not as easy as some people would have you believe, unless, that is, you climb safely, well within your limits – but then the same would apply to traditional climbing and as we all know, climbing is about

pushing yourself and your standards. The more you put in the more you get out of it. At one point it was expressed that the bolters would bolt up every piece of rock in sight, and that bolt ladders would be appearing on existing classic routes. This was a scaremongering tactic used by the anti-bolters. It hasn't happened and isn't likely to happen, for a number of reasons.

Quite simply, in this country we don't have enough rock of the type and difficulty required for bolted sports climbs. Another point is that many of the crags here are too far from the road – the spindly legs of some of the modern crag rats wouldn't be able to carry them for more than a 15-minute walk. There is another factor, one that is quite conveniently forgotten. There are many sport climbers who need traditional climbs. It's a fact that the hardest and the boldest traditional routes are being climbed by those regularly climbing on bolts.

Sport climbing is enabling climbers to develop the skill and stamina to push traditional standards even further. Some of the traditional routes of the past few years are quite exceptional. The freeing of *The Scoop* on Strone Ulladale springs to mind – this has now also had a number of repeat ascents. Former desperates such as *Agrippa* (the arete left of *Titan's Wall* on the Ben) have seen queues and are now considered modern classics. Quite simply, if you wish to get good nowadays it is well nigh impossible to do so without climbing on bolts. Sport climbing rather than threatening traditional climbing, complements it. The bolters are responsible people respecting the traditions of the sport and the ethos of leader placed protection. Many are deeply involved in all aspects of the sport. I have no desire, therefore, to change what is known as traditional climbing – I am an active participant. I do not intend to place bolts on the HVS climbers' traditional climbs, so why then does the HVS climber chop the bolts from the sports climbs? To do so is to deny others the freedom of choice to climb in the manner which they wish. To do so is also an attempt to try to prevent the sport from developing for purely selfish reasons.

Too many people view climbing as a selfish activity – if it was not for people it would not be worth doing. Climbing is enjoyed by others too. Isn't this why we are here today? There are some who say that sport climbing is elitist. It may well be, but that is a good thing. There has to be a cut-off point. There are few easy climbs. Rightly so. It prevents bolts from being placed on climbs that do not need them. Although standards are fairly high, there are many people prepared to put the effort in to be able to climb these routes. The beauty about climbing is that it has now developed into a sport with many different facets. There is room for everyone to derive some enjoyment from it. Some have dismissed sport climbing and bolts by saying that it not real climbing. Well I can assure you that it feels very real to me. I can quite easily say that sport climbing and bolts are the best things that have happened in my climbing career.

PANCH CHULI – 42 YEARS AFTER

By Graham E. Little

'One could not in this world find mountains more worthy of ascent. Their beauty of shape and situation are quite unusual. The final peak of the Panch Chuli stood right before our eyes, a shining chisel blade of ice. So thin were its upper edges that over a stretch of a thousand feet we could see the sun shining through.' – W.H. Murray, 1950.

WHEN I FIRST read these evocative words the conviction that I should climb Panch Chuli II, 6904m, was overwhelming. An application to the Indian Mountaineering Foundation in 1984 was rejected on the grounds that the mountain lay within a 'restricted' area. In 1992 I decided to try again, going for a post-monsoon expedition approaching from the south-east. As plans were progressing for this trip, I was invited to join a joint Indian-British expedition led by Harish Kapadia and Chris Bonington in the pre-monsoon season. Two expeditions to the same mountain in the same year – quite ridiculous – but who could resist?

My employers, who are now conditioned to my madness, were understanding enough to agree to one trip on annual leave and one as unpaid leave.

Although I missed the social events and expedition send-off from Bombay, I joined the team for a floodlit garden party at the International Centre in Delhi. Vast quantities of food and drink plus a bevy of autograph-hunting teenage girls provided a delightful contrast to the chaos and frustration of my previous departures from Delhi.

When it comes to Himalayan travel, Harish Kapadia, joint author of 'Exploring the Hidden Himalaya', successful businessman and consumer of vast and frequent meals, is an acknowledged expert. The six-day journey to base camp proved remarkably hassle free, only acute diarrhoea making my bus journey from Ranikhet to Munsiary a miserable experience.

Base camp at 3270m, below the snout of the Uttari Balati Glacier, is by Himalayan standards very low (the glaciers of the Panch Chuli massif descend to exceptionally low altitudes, fuelled, as we were soon to discover, by daily precipitation). Being there was a particular privilege for the British members of the expedition as the last Westerner to tread this valley was Heinrich Harrer in 1951 when he made a bold, lightweight attempt on the west spur of Panch Chuli II (the 1950 SMC team approached the mountain from the east).

Being an enthusiast for small, lightweight expeditions; six British climbers, five Indian climbers, a Liaison officer, a Sirdar, seven Kulu porters and a cook, not to mention over 80 porters for the walk in, seemed like a major happening. Such necessities of life as Chris's laptop computer

Chris Bonington descending the SW Ridge of Panch Chuli II (6904m) after the ascent of the West Spur. Photo: Graham Little.





and solar panels, Stephen Venables' collection of tripods and Victor Saunders' chess clock (I carried it out to India for Victor, convinced all the time that it was a wind-up) all served to emphasise just how inadequately equipped I'd been in the past!

The lower Uttari Balati Glacier has three major icefalls and very climber unfriendly they are. However, Dick Renshaw and I easily by-pass the first on the left, Victor and Steve Sustad the second by some increasingly hazardous seracs on the right (later to be abandoned for an equally hazardous by-pass across crumbling rock on the left) and the third and most frightening, thankfully, allowing Chris and myself to sneak up a snow gully to its left. High in this gully I pick up and admire a frail comatose butterfly, its wings pale yellow to olive green, each spotted with a brown and white 'eye'. The contrasts of scale, permanence colour and mortality are never greater than in the mountains.

Advanced base camp is established below a rusty outcrop (good bouldering!) at an altitude of 4840m. Chris and I are the first to settle in and quickly hatch a plan to tackle an acclimatisation peak. Although of comparatively low altitude, point 5782m (Sahdev West) on the opposite side of the glacier is a stunning mountain, defended by vast rock walls on all sides and rising in splendid symmetrical form to a pointed capping snow cone. A sharp edged rock ridge, dropping from its east shoulder, snakes for over half a kilometre to the east, rising to form a knife edged snow arete, terminating in an elegant snow peak (Sahdev East, 5750m).

Leaving the tents at 0145 we reach the bergschrund by dawn, encountering splendid, crisp snow conditions en route. The bergschrund, partly choked by unstable snow, leads on to the clean snow rib falling from the summit of Sahdev East (so clearly seen from ABC). What, from a distance, appears to be perfect neve turns out to be thick, unconsolidated snow overlaying ice and becoming progressively more unstable as height is gained. Our apprehension is however deflected by a stunning view to the west as the dawn sun bathes the great white wedge of Nanda Devi in golden light. She totally dominates the skyline, the lesser peaks crouched around, paying homage to her stature and beauty.

Belays become increasingly psychological as we gain height. Visions of a nightmare climb on Huandoy Este in 1988 flash into my mind – nothing could be as frightening as that! Sahdev East does its best and Chris expresses doubts over the sanity of our undertaking. I push on one more pitch, employing a swimming motion to make upward progress. The consequences of a slip cannot be contemplated.

Quite suddenly I'm there, axes hooking into a blade of crusted snow, cloud churning far below over the untrodden Dakhini Balati Glacier. Although higher peaks tower around me, I am on top of the Himalaya. Chris joins me with a broad grin, babbling about his best peak since Everest. Hyperbole I'm sure, but it captured the mood of the moment.

John Ashbridge on Parallel Buttress, Lochnagar. Photo: Simon Richardson.

The marginally higher Sahdev West is over half a kilometre along a snaking blade-like arete. To our later regret we decide to give it a miss and descend quickly to a greatly expanded advanced base and a warm welcome.

Our next outing turns into something of a fiasco and as it is detailed elsewhere I will not repeat the sorry tale. Suffice to say it resulted in Chris and I descending to base camp for a period of recuperation.

During our absence from ABC the four Brits have embarked upon a marathon traverse of Rajrambha 6537m, whilst the Indians have consolidated ABC and started to push out the route towards Panch Chuli II.

The day after our return to ABC we join Harish and company to follow their route through the icefall and up on to the Balati Plateau. The line of steps picked by Muslim Contractor (yes that's his name) and the ever energetic sirdar Pasang Bodh are very welcome but I am never at ease, being acutely aware of the avalanche prone state of the slope. With some relief we establish a joint camp at 5750m on a level area on the edge of the Balati Plateau (the term is something of a misnomer, the area to the SE of Panch Chuli II being more accurately described as a glacial basin).

Four inches of snow fall overnight. I wonder how the lads are coping on Rajrambha. It is a bitterly cold morning with a cloudless sky and splendid views. We stomp around in camera happy mood, freezing forever the deep dawn shadows and virgin snows. Nearly 3000m below, the long brown valleys are brimming with cotton wool cloud. It is an inspirational sight, a generous reward for our toil of yesterday. Chris and I prospect our way through a heavily crevassed area to make an equipment dump close to the toe of the west spur whilst the Indians push across the Balati Plateau to establish a well stocked camp on the south-west col.

Back at the communal camp we join Harish and Monesh for supper, talking of past trips and future plans.

An overnight fall of three inches, but it is another beautiful clear morning. I feel very rough having struggled with a splitting headache during the night.

Through Harish's powerful binoculars we can see tiny figures approaching the summit of Rajrambha – a fine performance.

Chris does most of the trail breaking to the equipment dump and we move on further to pitch our Gore-Tex mountain Gemini at a height of 6120m but well clear of debris fall from the ice glistening north-west face. We enjoy a sunny snow-free afternoon which is encouraging as the unstable snow lie is becoming very worrying.

Chris sleeps deeply, I battle with a hyperactive mind that refuses to take a break. Chris is the normal battery that gets switched off when not in use, I'm the Duracel that's permanently switched on!

We pack up and get moving by 0400. It is clear and cold, although the snow is still unconsolidated, and breaking trail to a platform at the base of

the spur is hard work. We cross the bergschrund with ease but are immediately confronted with a great sweep of brittle water ice that, despite its relatively modest angle, requires sound belays and occasional runners. Beyond this great tilted rink we gain a well-defined ice arete which provides beautiful climbing with the rising sun. In places, scales of crusted snow adhere to the ice – making progress easier. However, as we draw closer to the steepening of the spur, the snow starts to deteriorate, our steps collapsing until crampon front points make tenuous contact with the hard ice below. The serac wall above looks extremely difficult so we embark upon a traverse on to the north-west face, attempting to by-pass the steepest section.

Chris pushes out the boat with decreasing conviction. The prospect of a rising traverse on very unstable ground with scanty protection brings his doubts to a critical point and he voices them. My offer to lead the pitch, however, gives him new impetus and I'm soon following. Two more breath-holding pitches in a swirling mist, that has quite suddenly enveloped us, lead back on to the spur and a perfect tent-sized platform below a low, stable serac wall on the very edge. At 6610m it is an ideal camp site and we brew the afternoon and evening away, enjoying the brief glow of the sinking sun as clouds roll away and the temperature plummets.

By now I've sussed the reason for the man's impressive performance on the hill - he sleeps! It is a function that doesn't come naturally to me at altitude and one that seems to become increasingly evasive the greater my desire to enjoy it. Sleep deprivation, combined with a nagging headache is bad enough but lying next to Chris who is snoring blissfully is an added irritant! I shake off my wakefulness shortly before my watch alarm shatters this brief respite.

Much new snow has fallen overnight. Everything is white, frozen and inhospitable. We make a late start and plunge straight into knee deep dragging snow that takes an age to climb and saps our will. Chris dumps his sac to climb a serac wall then hauls it up. I follow on a tight rope, the good ice compensating for a dragging sac. We spot three tiny figures descending the south-west ridge. We shout and wave but elicit no response. They disappear into the swirling cloud. It starts to snow. We have gained only 120m of vertical height. At a height of 6730m we are less than 200m below the summit but decide to camp, trusting that the established weather pattern of clear mornings and cloudy afternoons will be sustained another day. A rightwards traverse to the end of a long crescent shaped serac leads to a potential campsite. We level off a powder snow arete where the soft swirl has formed a slight grotto at the merging of the icewall and icefield; it is precarious, but adequate.

My headache has intensified to a throbbing pain and I lie useless as Chris struggles with the bloody stove. By late afternoon it is snowing heavily and drifts pressure the tent sides.

The night is pretty grim but I snatch a few Temazepam assisted hours of sleep. I must look very bad as Chris says the summit is not important compared to my health! I'm grateful for this concern but assure him that I'm O.K. After a protracted stove coaxing session, we don gear, toes and fingers nipping in the intense cold.

We rope up but climb together, thankfully on good ice then neve. A stiff breeze blows away the night, mountain silhouettes turning amber in the first probing rays of the morning sun. We soon gain the final whaleback section of the south-west ridge, ripe cornices hanging to the east, long plumes of spindrift blowing far out to the west. A red scarf is semi-frozen into the ice, the light is bursting all around us, the angle eases and the panorama unfolds. We are on top, I am breathless with delight not altitude; Chris thumps me on the back in elation (causing my headache to instantly reappear). Only the horizon limits our view, a stunning 360° frieze of ice-clad peaks bending around the curve of the earth; the massive Gurla Mhandata, the sacred Kailash, the far Karakoram, the clean wedge of Nanda Devi, Api in Nepal; great peaks and ranges merging in their vastness into an endless collage of rock and ice, floating in a sea of boiling cumulus. Only to the south is there a beyond, the brown foothills falling down on to the great plains of India. I snap away in abandoned euphoria whilst Chris struggles with a recalcitrant camera. Bill Murray's words come to me from afar. I know he will enjoy these moments.

Reality sinks in: my highest summit, a first British ascent, a new route and a dream fulfilled.

The weather begins to change. From nowhere clouds are swamping the lower peaks and are building into great dark hammerheads. It is time to descend. Roped together we head down towards the icy wedges of Panch Chuli III, IV and V.

Our tent is swamped in drifting snow and the greying sky promises more. We pack up, regain the south-west ridge, then with a sense of urgency commence the long descent. The broad icy ridge narrows and steepens and we happily abseil from two pegs left by the Indian team during yesterday's descent. At the base of the step we are into deep unconsolidated snow, the tracks of our Indian friends just visible but completely filled.

A wave of tiredness threatens me but after some chocolate and a drink I rally and carry on over a snow hump gaining first sight of the Indians' camp II far below. We crampon down steepening ice to a shattered rock band. I rig up an abseil from dubious blocks and we are soon ploughing through slush towards the camp. The first few flakes of afternoon snow fall around us. Harish strides out to welcome me, a congratulatory hug saying more than words could ever achieve. Chris and I slump down with a cup of tea, bodies relaxing after days of tension. We learn that Muslim, Monesh and Pasang topped out on Panch Chuli II but did not enjoy our magnificent panorama.

Yet again there is heavy overnight snowfall and daylight filters reluctantly through a veil of thick mist. Route finding over the Balati Plateau is problematic but we feel strength in numbers. Harish breaks a cautious trail, we follow. At camp I the mist thickens but we are fortunate that the tracks of porters visiting yesterday from ABC are still just visible, leading us down on weary legs to comparative luxury below.

The rest of the Brits have descended to Base Camp after their successful traverse of Rajrambha. Chris and the Indians also head down after a good night's sleep. I stay on at ABC hoping, after a short period of recuperation, to climb Sahdev West either solo or with one of the Brits when they return.

It is strange to be at ABC on my own. It is also very enjoyable and peaceful. I spend the day lazing in the tent reading the brilliant 'Staring at the Sun' by Julian Barnes and making endless brews. A bright butterfly enters the tent, rests, then flies out. Before bedding down for the night, I look out of the tent flap, over the darkening glacier, past its vast hemming walls, to the moon-glowing final cone of Panch Chuli II, impossibly high, ethereal in the haunting silver light. I do not take a photograph – some moments can only be recorded in the mind.

I lie in a state of bliss, enveloped by an overwhelming silence. Distant footfalls break the magic. The lads must have come up from BC getting a late start. The steps get closer and I call out, 'Victor, Dick, Stephen' (one or both). There is no response. They are walking around the tent but still do not respond to my welcome. A chill shiver runs up the back of my neck and my body tenses. The contrast with my utterly relaxed state of minutes ago couldn't be greater. The footsteps make one circuit of the tent then fade into the night. I lie awake for hours then drift into a series of bizarre dreams.

The Brits arrive mid-morning after spending a night at the intermediate camp. There are mutual congratulations. To my great surprise none of them wants to climb Sahdev West, all being sold on the idea of a complete pull out and a relocation to BC on the Panch Chuli Glacier. Given the time scale, I can't see this as a feasible option for me but after some arm twisting and friendly advice on responsible behaviour (rather ironic) I agree to abandon plans for Sahdev West and to descend with them.

Deteriorating weather eases my conscience as I stagger down under a ridiculously heavy sac. Arrival at BC in torrential rain further enforces the wisdom of my reluctant decision to bail out. The whole expedition is together again which calls for a celebratory meal and large measures of whisky.

It is one of life's great mysteries that climbers of most other nationalities manage to look clean and smart in the mountains, yet the British, irrespective of the quality and quantity of the clothing they possess, always seem to retain an air of scruffiness about them. Even after scouring off multiple layers of sunblock and dead skin and donning clean clothing, I still resemble a down-and-out compared to the dapper Indians!

Base camp is alive with the black and yellow flutter of swallowtail butterflies and the buzz of plans to climb another of the Panch Chulis. However, it is time for my departure. With a feeling of both sadness and satisfaction I make my goodbyes and head for home.

With all the new growth over the last month the path through the jungle is hard to follow and I stray off on several occasions. A crashing in the foliage above causes me to look up and to be confronted by the frost rimmed face and dark wide eyes of a large monkey, fixing me for a second with fear and curiosity. Further on two lime green parrots break from the humid canopy in raucous flight. On the open hillside beyond, lilac tailed lizards scuttle ahead of me, the sun burns down, perspiration runs across my scalp and down my back, the rucksack straps bite without compassion.

I eventually collapse on a grassy alp, looking out across the deep Goriganga to the lights of Munsiary my unattainable destination. So near and yet so far! I have walked out in less than 10 hours the four days' walk in. I crawl exhausted into my sleeping bag, plug in my Walkman and drift asleep to 'On the Beach', the faint background buzz of mosquitoes and the distant grumbling of an electric storm to the West. My lone journey to Delhi is not without its difficulties and on arrival a temperature of 44°C and high humidity dictate that the only sensible course of action is to sit in a shower and drink chilled beer. Several bottles of 'Guru' later and all my cares and frustration have been washed away! The hotel advertises spacious rooms with designer style decor and floor carpets! – what more could a man ask for?

On visiting the Indian Mountaineering Foundation I am accorded celebrity status (such are the perks of climbing with Chris and Harish) but disappointed to be informed that the Indian Government have now refused permission for a post-monsoon attempt on Panch Chuli II from the East. The IMF invite me to choose a new objective. My thoughts immediately return to a conversation with Harish and his suggestion that I should climb Nilkanth. To quote Frank Smythe, 'There is no more majestic and awe inspiring peak of its height in the world' (The Valley of Flowers). Nilkanth it would be!Sitting in the lounge of the Inveroran Hotel, seven weeks after my return from India, the projector throws memories on to a white screen. The three living members of the 1950 Scottish Himalayan Expedition watch as Chris and I make the final climb along 'a shining chisel blade of ice' to the summit of Panch Chuli II. Forty two years have elapsed and yet time is reversed; they are there again, looking out over the Greater Himalaya, sharing the magic, reliving the joy that is forever within us.

Postscript:

From a base on the hitherto unexplored Panch Chuli Glacier several more peaks were climbed by the expedition, most notably the superb Panch Chuli V, 6437m, by Dick, Stephen, Victor and Stephen. On the descent Stephen Venables fell 80m sustaining severe leg injuries and had to be helicoptered out.

GREENLAND 1992

By Ian Angell

AT THE 1991 Annual Dinner an invitation to join the Wallace/Slesser/Smart trip to the Staunings Alps in East Greenland was appended – '... if you can be an independent, self-contained group of three ... '

Six months later Bob Barton, Tim Pettifer and myself joined the main group of six at Glasgow Airport. We were the rookies, as most of the others were names familiar from any reading of exploration in the Staunings and other parts of Greenland over the past 40 years. The first obvious signs came when, as a result of a bottle of Laphroaig changing hands in Iceland, boxes of supplies from the senior party were dropped out of the plane on to the Skel glacier. The value of this was apparent to us three hard days later.

Mestersvig, the landing air-strip, was everything somebody new to the Arctic could have hoped. Blue skies, deep snow, husky dogs, and surrounded by mountains. Rapidly learning, a half litre of Bell's procured two skidoos from the visiting Serius Patrol to carry most of our 150kg of supplies four miles to the 'little red house' 200m up the hillside. Built by the American, Washburn, it now seems to be available for use by such parties as ours and gave an ideal first night before pressing on.

The next two days, with unfitness, heavy loads, sledges overturning, skins not sticking, and difficult and dangerous snow all made for hard going but eventually camp was established besides the Skel glacier in a frozen wilderness. It came as a surprise to find that after all the effort we were 130m above sea level.

A cache of food and some equipment was left while a first sortie with four days' supplies and basic needs for Alpine-type climbing was packed. The glacial moraines of the Bersaerkerbrae were taken as a route past the icefall and a camp established about five miles further up in the middle of the glacier, which at that point must have been about a mile wide. From here three peaks were attempted, one with success, thus demonstrating where we were on the Arctic learning curve.

Harlech via the S flank and SE ridge: This attempt was halted by dubious snow even after waiting five hours for cooler evening conditions. The only time I would have welcomed hundreds of Austrians to piste the slope into submission.

Beaumaris from the Glamis Col: Our ascent was stopped with the summit seemingly assured, by a ridge corniced on one side and with snow giving increasingly loud crumping noises on the other.

Dunottar: The two earlier failures showed the virtue of north-facing slopes outside the middle of the day. A bivouac 300m below the summit, during which the first of the rare snowfalls of the trip were experienced, provided an ideal start at 8am, and after an icefall, rock and steep ice provided a safe

way to a superb summit. Airy in the extreme with magnificent surroundings it made for three happy boys.

Following a restock of food at our Skel cache, from which a fox had been helping himself to our box of pepperoni and chocolates, the camp was moved further up the Bersaerkerbrae so that the more remote peaks could be attempted. It was here that a welcome meeting with the main group was held as they returned from visiting the Col Major to reminisce.

Glamis was climbed via a hard technical route up the North Face and named after Bob's daughter, Flora, whose fifth birthday it was.

A bivouac was made under Col Major from where Point 2750m on the Hjornpieds ridge was reached. Very impressive surroundings and a good area for technical ascents as well as ski peaks.

Beaumaris was attempted again, this time successfully as a late evening climb ending in twin rock pinnacle summits which were carefully sat on.

This was followed by a crossing of Glamis col, considerably higher than the map or book suggests and a quick visit to a nearby peaklet followed by a beautiful ski return to the Skel base. From here heavy carries were made to a camp on the Gefion Pass and a round made of the very Drummochterish hills to the South, three peaks in all, loosely named as the ScheeleBjerg.

Finally a descent back to the Little Red Hut and a reunion with everybody, including the successful Peden traverse party.

An ill co-pilot gave an unexpected bonus of an extra evening at Mestersvig in which the full beauty of an Arctic evening was experienced and then flights home. The final treat was 'Executive Class' seats to Glasgow with free champagne.

Notes:

Food for three people for three weeks weighed 60kg, cost £192 to buy and £99 air freight Glasgow to Akuryreri, although this may have been reduced by Malcolm's persuasiveness with the carrier. The menu was determined by four main factors:

1. Maximum energy content. 2. Minimum weight. 3. Minimum fuel requirement. 4. Minimum wrapping disposal problems.

The result was porridge/muesli for breakfasts, chocolate, fruit, nuts and pepperoni for midday, pasta or smash plus varieties of soya and fruit with custard in the evening. Walker's fruit cake laced with whisky and wrapped at home was brilliant. Oat cakes with butter/cheese etc. took the place of bread. 13 litres of fuel was sufficient. Most of the rubbish was burnable, that which was not was buried or carried out.

The diet was reasonably interesting, sufficiently high in energy and ensured complete regularity.

The area of the Bersaerkerbrae was really ski approaches plus alpine climbing of the summits. Further inland ski summits may have been possible and the coastal peaks certainly were. Continuous daylight gave tremendous flexibility to travelling. The possible consequences of injuries were always apparent and perhaps meant more caution than on a normal Alpine trip. Some of the ascents were undoubtedly firsts in winter conditions, if that means anything, and quite likely to be new points or variations etc. The Glamis ascent must have been one of the earliest hard technical mixed routes in the area, 12 pitches of mixed climbing and say D sup. The scope remains vast with unclimbed faces similar to those on the Plan and Courtes there for the taking.

Equipment was more or less standard alpine with Scottish winter climbing gear. The air temperature rarely rose above zero but in the sun and moving it could feel quite warm. At night it was cold but good sleeping bags and insulation gave comfortable rests. A duvet jacket was taken but not really needed. For bivouacs, Gore-Tex covers were used with sleeping bags and all clothes.

Alpine touring skis were used with a variety of bindings and Dynastar Tourlite boots.

Cooking was with an MSR stove burning Jet A1 aviation fuel and using both petrol and paraffin nozzles. It worked well most of the time but despite insulating platforms still sunk into its own melt hole. A working stove is one of the few absolutely essential items and so a spare was taken.

We had a Vango Odyssey 600 tent which was excellent for the three of us with good storage space each end. During one night it stood up to strong katabatic winds well. Anchorage was variously with ski poles, ice axes and buried sledges.

Snow conditions – Bob Barton

The peaks of the northern Staunings are steep, rocky and surrounded by generally flat glaciers. In May, the ambience was not unlike the Mer de Glace or the Leschaux in winter, and although glacier travel was straightforward, the deep river beds testified to more exciting conditions in summer. The amount of snowfall during the winter seemed rather less than one would expect in the Alps.

We had generally good weather throughout. Early in the month conditions were wintry with nightime temperatures of -25°C and little melting except on south-facing rocks. Spring, however, advanced rapidly and by the month's end slopes exposed to the sun softened, even at high altitude, with heavy melting on the coastal strip.

The sun never attains a great height in the sky and thus its effects on other slopes is less pronounced. Its arrival or departure is not accompanied by the dramatic temperature changes familiar in the Alps; on one disappointing occasion on Harlech a two-hour wait in the shade failed to bring any improvement in the dismal quality of a south facing slope. Snow cover was generally uniform with little evidence of drifting but as we skied down from Col Major a strong wind rapidly transformed the glacier into a maze of sastrugi. A widespread and brittle suncrust made for tense downhill skiing on most of the steeper bits.

Paradoxically, we found snow conditions on easy-angled slopes the hardest to judge. From time to time such places emitted sudden and loud booming noises that seemed to radiate from the startled skier in a way that provoked anxious reactions out of all proportions to the actual risk – run first and ask questions later! The effect was very marked in the Tunnelelv Valley; at first I thought it was due to the low temperatures contracting a brittle suncrust but later came to the opinion that depth hoar was the culprit. A phenomenon that could be a common result of the shallow snowpacks and sustained low temperatures of the Arctic winter. The retreat from the first attempt at Beaumaris was another example.

We made some use of improvised shear tests; on Harlech a freely releasing slab confirmed the unsuitability of a sun warmed south face, whilst on the west face of Glamis deep drifts of powder stuck resolutely and surprisingly well to the underlying slope of steep hard ice and persuaded us to continue.

Higher up on the summit ridge of Glamis bottomless temperature grains were encountered, which in the absence of the correct swimming stroke totally defeated upward progress. I had never seen anything like this but had read of Willi Unsoeld meeting something similar in presumably like conditions on the lower Alaskan peaks.

Windslab was rarely seen and the major hazard is likely to be very large climax avalanches running on TG crystals (depth hoar). A very large slab, possibly of this type, had released above the Dunottar Glacier.

Greenland in May gave a fascinating insight into the natural history of snow in the wildest place one could wish for.

THE GAFFER, A GILLIE, AND SOME GRANITE

By Brian Hill

TWENTY-FIVE years later, I do not recall what sparked the outburst, just that the sanity of certain parts of my anatomy were called into question, and that my response, pontificating proof to the opposite, sounded petulant, as indeed it probably was. We sat around our base camp in silence, Graham, Willie, Roger, Tony and myself, having just moved from the east side of Alpefjord beside the snout of Gully Gletscher to the west side of the fiord on the north side of the Trekant Gletscher, East Greenland. The weather for the last few days had taken a turn for the worse, interrupting two weeks of perfect weather, and maybe that had something to do with it.

As evening approached, and with the overcast sky appearing less threatening, Tiso turned to me again and snapped, 'Grab your gear, we're going up there,' as he pointed to the adjacent ridge overlooking the Alpefjord and rising over a succession of minor peaks to its culmination marked on the map as Point 1904m. 'What, now?' I queried, it being almost 5p.m. 'Yes! We'll bivouac,' he replied.

Willie, Roger and Tony had long been eyeing a magnificent thumb of granite at the terminus of the ridge on the south side of the Trekant. That was their plan for the morrow. Graham and I were ready within minutes and trudged up the boulder strewn slope to the first peak, arriving there about 10.30p.m. We then looked for a bivouac site which we found in the upper reaches of a precipitous gully overlooking a hanging glacier above the Trekant Gletscher.

We slept fitfully for a few hours, I tucked up in my duvet and immersed in the Tiso Karrimor. We were up and away by 2.30a.m., our final goal the 1904m peak, a tor topped steep scree hill, a long way off in the distance with several intervening tops and rocky pinnacles along the way.

The going was easy down to the first col and for the first part of the next rise where the ridge narrowed and steepened into a succession of slabby walls of fragmented rock leading over a series of ill-defined pinnacles. These were serious enough to warrant roping up, I thought, and paused to wait for Graham, not far behind. He came up and went straight on through and up with rope and all, and I followed without a word. The climbing, however, was delightful. I do not remember it as being particularly difficult but as the ridge narrowed further I do recall some airy situations.

It was late in the afternoon by the time we cleared the difficult section and commenced the final trudge up the 1904m peak, first on a snow crest then

up boulders and scree towards the summit tor, reminiscent of those rocky protuberances in the Cairngorms and about 40ft high. With the tor on our right we contoured around looking, at this lateness of the day, for the line of least resistance. We passed by an obvious chimney-like cleft and nearing the end of the tor, I moved up the scree and broken rock at the back edge of the tor just following my nose. The rock steepened, forcing me round left on a series of snow covered narrow ledges; a few steep steps, not particularly difficult and we were up – 6.30p.m. Graham looked a little disturbed and agitated. The weather was threatening, it had been a long day and the steep scree slope to the south, though easy enough, was going to be a grind. After a summit puff, to my surprise, Graham took out and uncoiled the rope. Looping it round a summit boulder as big as his Porsche, he tossed the ends down the 40ft chimney we had bypassed. 'Surely, Graham,' I exclaimed, 'We don't have to abseil. It wasn't that difficult getting up, and besides, the rope will never run round that.' My words disappeared into empty space as he launched himself over the edge.

Once down, I yelled to him to try pulling on the rope to see if it would run, which he did and it didn't. Unconcerned, I unlooped the rope from round the Porsche and tossed it down to him, confident of my ability to reverse the pitch. As I moved to the top of the wall where we came up, I began to falter and simultaneously realised Graham's unease. I mean, there wasn't anything there, just the top of the wall and space, space, space for 4000-6000ft, I know not which, except it was a long, long way down. I had been so intent on the initial route finding that I had been unaware of the steps leading over that incredible drop. I hesitated and went back to look at the chimney. It was definitely more difficult but not exposed. Rationalising that the exposure had nothing to do with the difficulty of the climb, and that my original intention was to reverse the climb, I returned to the top of the wall and gingerly lowered myself down the snow covered ledges. Graham appeared at the base of the tor, below and to the right, rope slung about his shoulder. 'Come on! What's keeping you?'

We trudged down the steep scree and boulder slopes to the hanging glacier below and then down to the Trekant. I remember parts of it well – slipping, slithering over unstable boulders, unstable moraines, boulders and scree skiting over underlying ice, under tired and weary feet.

Graham was undaunted. We, in our early twenties, regarded him as the old man, though perhaps he was 10 years our elder. But he surprised me that day. For one who climbed then but rarely, his ability over the rocky sections of the ridge was such that I was pushed to keep up with him and now over this most trying of terrains, he could still maintain a goodly pace. We arrived back at base camp around midnight, exhausted, almost 30 hours since we set out. Willie, Roger and Tony also had a successful day.

I underwent some kind of metamorphosis during that trip. Nothing was ever the same again. Back in Scotland, while the love for the hills was the

same, the allure or fascination was missing. I knew that no new experience in these hills could equal the uniqueness I had experienced in Greenland. Old favourite routes, and ones that I had long intended to do had lost their appeal, and interestingly, my climbing diary which had recorded every climb, now went into limbo.

I recall thinking that perhaps if I did some really long route then that might restore some of the old enthusiasm and to that end we planned a weekend in Torridon, with the intent of climbing on the Triple Buttress of Beinn Eighe, which offered some of the longest routes in the Highlands.

I think we did the Central Buttress, walking in from the Loch Maree side, and what I remember most is not the details of the climb but of the walk in. I could now see where the glaciers had once flowed. Glacial features which a couple of months previously I was oblivious to, were now obvious, and as the path meandered through and along the ancient moraines, now long overgrown with heather, I tried to imagine how the scenery would have looked 10,000 years ago.

The Polar Bug had bitten. From then on the polar regions, and ice, have been at the centre of my career. First, to the Antarctic and then to the Arctic, for the first 17 years I was a regular visitor, if not, indeed, an inhabitant. During one of my Arctic trips, on an excursion to Yellowknife, I met my future wife, and in 1984 we moved with our two young children to near St. John's in Newfoundland, that other Polar Region, for in what other city can you watch icebergs sail by as you drive to work in mid-summer?

Several times in recent years I had thought of dropping Graham a line, just to let him know how I was getting on, and with a word of thanks – thanks for giving me that once in a lifetime opportunity. As the years slip past, most of us, I suppose, look back and try to identify that key point which dictates the course of future events.

For me, of course, it was the trip to Greenland, or the Edinburgh East Greenland Expedition 1968, as it was then known, which Graham had totally funded and which had been part of a charter flight to Greenland organised by Malcolm Slesser. Perhaps, denied this opportunity, events may have turned out the same – who knows ? – or perhaps I may have turned out as a fighter pilot, or an astronaut, but then, that would have been a different story altogether and you wouldn't be reading it here. At any rate, the letter never did get written. In Edinburgh, on vacation last year, I stopped by his store to enquire of him in person, and received the stunning news of his death, barely three short weeks before.

I cannot say that I knew him well, and except for a weekend in the Cairngorms trying out ice techniques before our departure to Greenland, the only time I climbed with him was on the trip. But, instrumentally, he influenced my future more than anyone else – and with no regrets.

Thanks, Graham.

PRESIDENTIAL PERORATION

By I.H.M. Smart

Some members asked the retiring President if he would write up his notes of the last part of his address as they were unable to follow it at the time due to being taken with drink. He can't remember what he actually said but here is what he thinks he said or, at any rate, meant to say. It includes some footnotes swept up from under the table by the hotel staff.

I WOULD LIKE to end my valedictory address as President by bringing to the Club messages from four distinguished people. They are Genghis Khan, J.R. Tolkien, Vladimir Ilyitch Lenin and Quintus Horatius Flaccus. What message can Genghis Khan possibly have for this Club? The one I would like to suggest to you this evening is contained in the following story. It must have been well told when I first heard it for I feel that I was actually there; I can remember it all so vividly.

One night we were camped on the high steppes of central Asia after a campaign of razing cities to the ground. I can remember the cold wind from the grasslands soughing in the guy ropes, the stars twinkling above like diamonds on black velvet, the sweet aromatic smoke from the brazier, the plaintive sound of a one string fiddle and a girl singing. After a bit of reminiscing someone (who must have been far from blate) asked him this question, 'Genghis, why do you always make us raze to the ground all these cities we overrun? Would it not be better to settle in one of them and keep the palaces, harems and pleasure gardens for our enjoyment instead of destroying them?' The great Khan replied, fingering the sharp edge of his sword and looking quizzically at his interlocutor, 'Because if we did we would lose our inner dynamic' (I am translating here fairly freely from the original Mongolian). 'We would lose our roots in the Steppes and become preoccupied with trivialities and as soft as the people we have just defeated; then it would be our turn to be dispossessed.'

I remember thinking at the time that the old boy had a point and that if ever I became President of the SMC I would bear this thought in mind. As a minimum I would increase the annual subscription from a mere fifteen quid to a requirement for all members to spend one night each year alone on a remote mountain. Such an annual vigil would be a reminder that the

home of the Club is on windy summer rock faces and inhospitable winter buttresses. It would serve as a counter to the constant attrition we are subjected to by mountaineering politics, the publication of our wilderness-destroying guide books and the wear and tear of that branch of the hotel trade we carry out in the administration of our huts.

I have often thought what a good idea it would be to raze all these activities to the ground as Genghis would have advised. As you will have noticed none of this has been done. Why? Because one role of your committee is to keep a very close watch on the President to make sure he doesn't get away with anything; I would never have got any of these proposals through either the Committee or the AGM. Genghis Khan never had much trouble with his committees. I suppose Graham Tiso is the nearest we ever had to a Great Khan in the Club. Maybe in the future we will have a strong President who can carry through these desirable reforms.

What then is the message from J.R. Tolkien? His tale 'Lord of the Rings' records a mighty conflict between the 'goodies' and the 'baddies'. Looking at the map of the supposed landscape in which this epic fantasy is enacted it is easy to see in which psychological territory the action is located. The land of Mordor where the shadows are coincides with the London-Birmingham megalopolis, the Great River is more or less in the location of the Severn, Mirkwood is the old Sherwood Forest, the Misty Mountain are the Pennines. The Shire, Rohan and Lorien are the surviving areas of England where the true genius of the land and people still survives.[1]

The underlying horror of the tale is that the megalopolis of Mordor will burst like an abscess inundating good land and good people, a cataclysm in which 'good nature' in both senses of that term will be destroyed. In Tolkien's tale the goodies won more or less comprehensively. Mordor was eliminated. The physical and intellectual environment was saved. In real life no such Utopian solution is possible.[2] The best we can expect is that Greater Londomancunobirmingham will be contained. At home if we get a grip of ourselves we have the possibility of something better for the environment of Scotland.[3]

One great asset possessed by the goodies in Lord of the Rings which was instrumental in their victory was a tradition of written lore that gave them a set of standards and a sense of past and future and, most importantly, an understanding of how Mordor worked. Without such historical and predictive wisdom and the loremasters to interpret it none of the goodies would have known what was going on or where the danger lay. Which brings me to our equivalent – the Club Journal.

The Journal has a circulation of about 1350. It is my impression that it is actually read by less than 50 people and properly studied by a mere handful of loremasters (not all of whom are members of the Club). This small readership is a pity but in one way may be a good thing. It means that

our Journal is a safe place to publish important information. Material appearing in the Journal will only reach an elite who can be trusted with potentially dangerous knowledge. To be on the safe side if you have such material publish it in the small print section.[4] If you have something really important to say I am sure the Editor would allow you to write it in Gaelic which in its ancient script is as beautiful and arcane as Elvish. Even within its present protective obscurity the contents of the Journal are far from secure. Remember Munro-bagging was once a harmless eccentricity that people indulged in rather shamefacedly. We even used to make fun of it. Somehow the whole absurd concept escaped from the great 100-year-wilderness of poetry, prose and polemic that is our Journal. That particular roebuck was somehow identified and put in a zoo.[5]

We must give thought on how our wild ideas can roam freely through the pages of the Journal yet escape the notice of the market economy. For members of the club the reading of one particular Journal article I would make a compulsory condition of membership and that is Robin Campbell's 'One Man's Meet'.[6] It was this article that enabled me to overcome my schoolboy aversion to the older members of the Club. As a consequence I gritted my teeth and with great condescension attended a meet. In so doing I met a generation that is now gone; in spite of their limitations they were actually quite interesting, well-mannered people and to my disquiet they (well, most of them) were better men than I was, something that I would never have thought possible.

I am not actually encouraging members to attend meets. I am just suggesting that in your own thrawn and uncooperative way you keep in the back of your mind the idea that maybe one day you too will, possibly, condescend to perhaps attend one. Speaking of thrawn individuals leads me on to the message from Vladimir Ilyitch Lenin, a ruthless romantic who thought he could bludgeon the world into the way he wanted it to be. Those of you who were around at the time will remember how he used to go on and on in these interminable discussions in that coffee shop in Zurich. The slogan of his I would like to draw your attention to is the one that goes: 'The capitalists will sell us the rope we'll hang them with.' As with many others he got the wrong end of this particular rope, too. It is rather that we give them the rope with which they hang us, indeed, we inevitably become 'them' and do our own hanging.[7]

It is we mountaineers who have commercialised our pastime and created the industrial age of mountaineering. We, the SMC, have profited from the outdoor leisure industry as much as anyone. We are as compromised and commercialised as the people we affect to despise. Can we really complain if the paths to the mountains get churned up and the summits look like hairbrushes? We, too, are caught in the mud. If we don't continue to publish better and better material, alas, someone else will. Something

compels us to catalogue every piece of steepish rock in the fair land of Scotland in case strangers do it for us. If we don't run huts, publish, and wield what little skill we have we will lose status as players in the poker game of environmental politics.

In the real world the hard fact is if we do not enter the game there are plenty of eager refugees from less fortunate, but more self possessed, communities than our own who would be keen to play our hand for us. So we must grit our teeth and, as intelligently as we can, play our bright quality cards on top of the heavy concrete trumps of the serious developers and the inelegant cardboard of their followers. In the process we too will become dirty. This is tough luck, but a lesser hardship than leaving the table entirely to the professional cardplayers.

How can we resolve all this conflicting advice? Genghis recommends radical surgery, a Utopian solution for which we have neither the means nor the resolve, Gandalf tells us we must join battle but use our heads to understand the global situation (mountains are only one of the chips we're playing for) and so evolve suitable strategies and tactics, yet there are a 100 things we'd rather be doing, Vladimir Ilyitch says we are going to get dirty and maybe become as bad as the rest of them and real life is so confusing you don't know where the front of battle lours, who exactly proud Edward is and what form the chains and slavery will take.[8]

Which brings me to Quintus Horatius Flaccus for the resolution of these conflicting messages. This Roman poet lived from 65BC to 8BC. He was an idealist, a supporter of a return to the high standards and high ideals of the Old Republic. He came out with such perennially goodie phrases as 'much communal wealth, little private means'.

He fought at the battle of Philipi against the move towards a centralising dictatorship with Brutus, Cinna, Metullus Cimber, the lean and hungry Cassius and all the others from Shakespeare's play. His side was defeated; he fled leaving behind his shield and spear on the field.[9]

Eventually he compromised, accepted that the world is the way it is and gained amnesty. His poetry, nevertheless, carries the message that it is incumbent on us all, however wearily, to do what we can to raise whatever standards we can; a flower growing among the rubbish is better than no flower at all.

He faced the fact that if you base your attitudes objectively you will be a pessimist but as far as day to day living is concerned it is better to grit your teeth and be an optimist. The disillusioned, after all, make the most effective idealists as they are aware of the realities of the world.[10] For us as a Club of winter mountaineers Horace is of particular interest as the author of the earliest surviving poem in praise of a winter mountain.[11]

He may, in fact be the father of the bothy ballad.[12] He certainly had a bothy of his own in the Sabine hills which our first President, George

Jas Hepburn on Frontier Ridge, Mont Maudit. Photo: Niall Ritchie.





Gilbert Ramsay referred to approvingly in the first Presidential Address ever made to the Club.[13]

If it were possible to confer posthumous membership of the Club on someone I would propose Horace as a worthy candidate but the Committee would never let me get away with that one either. The specific message from Horace I would like to leave you with is in a couple of lines spoken by a group of men exiled from their city of Salamis because of a disagreement about certain events in the Trojan War and the low standards of the incumbent administrators.[14]

They sail off to found a better city and after storm and adversity at last find a temporary harbour on a rocky coastline. They gather round a fire on the beach. The roar of the waiting wine-dark sea can be heard in the granite teeth at the harbour entrance. Darkness is falling. The slow moon climbs, the deep moans round with many voices and all the rest of it. The leader proposes the following toast as they share a flagon of wine:

'Brave comrades, we have endured much together,
And in the future worse may be in store,
So tonight let us drive away our cares with wine,
For we take the huge seas on again tomorrow.'

I would like to offer you the same toast of determined realism tonight altering the last line to read: 'For we take the great climbs on again tomorrow.' Comrades,[15] I ask you to rise and drink to the health of our Club. Long may we remain a crew of creative individualists, and at the same time may we be able to accommodate normal, stable personalities even if by our standards they rank as engaging eccentrics. May we continue to have the good sense to co-operate sufficiently to keep our vessel seaworthy and competently navigated and long may we refrain from jumping ship by sending in those pungent letters of resignation we all have already written somewhere in the back of our minds.

May we continue to make harbour each year on some congenial beach like the one we are assembled on tonight. May our annual dinner continue to be a harbour from which we emerge restored and confident to take on the great climbs of the future.

NOTES:

[1] The equivalent scene in Scotland would be the Central Belt, the Great Wood of Caledon and the rural lands within our borders. Megapolitan Glasgedinburgh is a formidable enough problem (everyone will be familiar with MacDermaid's antiheroic epic poems on Edinburgh and Glasgow) but minor compared to the effect on Scotland of the demographic collapse of our southern neighbour.

Ton Sai Bay and Tower, Phi Phi Doon, Thailand. Photo: Niall Ritchie.

[2] For those interested in the details: Elrond, the last friendly house, became a timeshare residential complex; the great north-south motorway, all six lanes of it, ran past its gates taking the traffic to and from somewhere or other. Lorien became a Disneyland, Rohan a dormitory suburb and Mirkwood was felled and put under Sitka spruce by private forestry. The Shire fortunately was bought by the National Trust and became something like the Lake District. The Misty Mountains were comprehensively explored and the climbs were written up in great detail in numerous first-rate guide books the most notable of which were published by the local equivalent of the SMC. They became a region of visitor centres, heritage centres, adventure centres, trekking organisations, climbing schools, goblin theme parks and purpose built resorts. It wasn't all bad; it did generate employment for decent people and retained a fantasy replica of the original wildness without the original discomfort and danger. Mordor also adapted to the prevailing circumstances and spread beyond its boundaries. The orcs became the eager beavers who eroded the community by trying to run it with the minimum number of people; the dark riders developed the crime industry and expanded the drug trade; annoyingly they created the only community offering full employment to its people and throve correspondingly. The dark lord himself did important work in laundering the proceeds into legitimate business and became too dangerous to annoy and so immune to investigative journalism. There were so many ugly and unacceptable faces of the system to enjoy that he really was glad his own alternative of spreading a rather pedestrian intellectual degradation had not prevailed after all. He even became trendy and advanced the doctrine of 'sustainable destruction' which, renamed 'efficiency', was found to be a profitable political philosophy. He became a successful politician, then a Lord of the Realm, if not of the Ring, and ended up as president of the Rivendell Golf and Country Club which he extended to twice five miles of fertile ground with walls and razor wire engirdled round. This was the first of the secure living areas where the hyperaffluent could enjoy their luxury in security. It did take in a couple of mountains which were proclaimed an animal sanctuary open only to residents – in effect these hills were privatised – but astutely so. With the skills of his calling he bent all the planning authorities. He won the test case as he hired better lawyers than the local objectors. The press which he largely owned hailed it as a triumph of common sense which brought jobs to rural areas. His private mansion 'Elfland' became the social hub and think tank for dubious land speculators, shady entrepreneurs, tacky fixers and other orcs and bolrogs.

[3] See, for example, *Slesser's Politics of the Environment,* Allen & Unwin, 1972.

[4] The small print is consequently the best part of the Journal. Can I commend to your attention the book reviews and SMC Abroad?. The book reviews are usually very perceptively written. As you can't read every book published this section gives you the gist of the matter along with an informed commentary. In this way you get double the entertainment and twice the instruction in half the time. SMC Abroad is also a source of pleasure and instruction for the aficionados of this section; Geoff Cohen's account of a year-long stravaig through India is a classic of Himalayan mountaineering painted in the wide context of greater India; A.L. Cram's notes about his travels in various odd corners of the world are collectable prose cameos. Dutton's prophetic writings in the small print of the Journals of the Sixties are of historical interest – a pity he now appears only in the ostentatious large print.

[5] For further information see Robert Graves' *The White Goddess,* Chapter 3, pages 53 & 54. Faber, 1971.

[6] SMCJ 1971, xxix, 351-355.

[7] SMCJ 1991, xxxiv, 593-596.

[8] Bruce and the spider is relevant here; the last thing we should do is give up.

[9] Ode II, vii. There is an interesting parallel here between Horace and Duncan Ban MacIntyre. Donnachaidh Ban also got involved in a war in which there were two wrong sides. He fought at Falkirk and like Horace, left the field prior to the final whistle, discarding the sword he had been lent for the occasion. Duncan Ban's great song *'In Praise of Ben Dobhrain'* should of course be known to every schoolchild in Scotland. Every Munroist should be required to

memorise its 500 odd lines before being admitted to the inner list of the fully compleat. We must be thankful that both Horace and Duncan Ban were prudent, if not frankly incompetent, warriors.

[10] Mao Tse Tung (you may remember the discussions round the campfires during the Long March) used to go on about the importance of objective thinking. Another thing he used to stress was understanding the mindset of the opposition and then changing the rules so as to invalidate their guiding concepts. The trouble here is that the exploiters seem to be much better at doing this to us than we to them.

[11] Horace's celebrated Soracte Ode, I, ix, verse 1. Freely translated and substituting Ben Nevis for the original Soracte it runs thus:

'See how the snow lies deep on white Ben Nevis,
The old woods sag beneath their heavy burden,
The frozen waters of the Allt a' Mhuillin,
Now run in silence past the distillery door'.

[12] ibid, verse 2.

'Dispel the cold with amber fire from logs,
Piled tinder dry upon the bothy hearth,
And pour the twelve year-old Glenlivet,
O Callum Mor, in generous drams from an ample jar.'

[13] SMCJ, 1890-91, i, 9.

[14] Ode I, vii.

[15] This is okay; 'comrade' is a common noun and includes both our worthy lady members.

