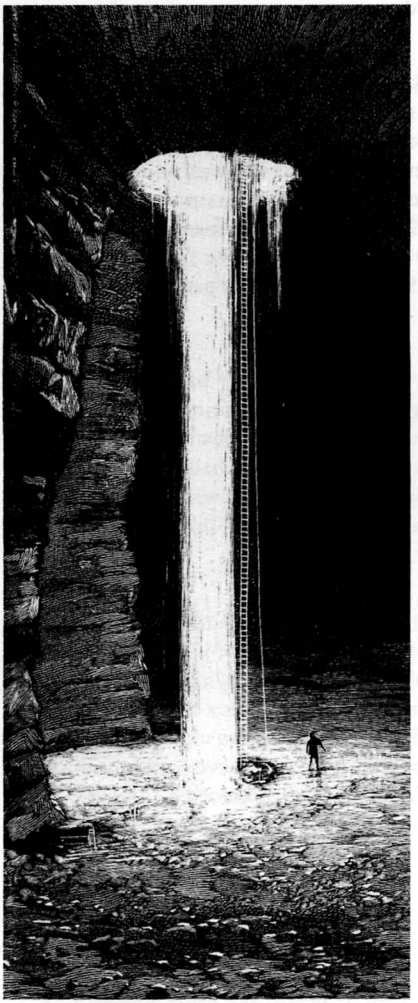
Since 1971 there has been a change. Perhaps it is because improving techniques have lessened the commitment necessary to do big walls, that the commitment of climbers to this aspect of the Chief has reduced. The old Squamish clique has largely scattered (some to the higher ranges) and the area is being viewed more as a spring climbing and practice ground than a complete climbing environment. Short, high-standard free routes have become the focus of innovation here as elsewhere, but it remains to be seen to what extent this will maintain the old Chief in the centre of the spotlight.

38 Gaping Ghyll Main Chamber



39 Martell descending Gaping Ghyll

Both reproduced from 'Irelande et Cavernes Anglaises' by E. A. Martel, 1897

Eighty years of British caving

J. D. Hanwell

British caves now total over 300 km of known and largely mapped underground passages. No individual length or depth records can be claimed on a global scale, although the 37 km network of Ogof Ffynnon Ddu in S Wales creeps into the top 10 to date. However, it hardly stands comparison with the 232 km Flint Ridge–Mammoth Cave labyrinth in the United States. As might be expected, the vertical depth of British caves is puny against those in alpine areas. France, the birthplace of speleology, still boasts the deepest caves; Gouffre de la Pierre St Martin in the Pyrenees and Gouffre Berger beneath the Vercors plateau near Grenoble being the only two yet to bottom the 1000 m level below their entrances. Both these explorations were achieved during the 1950s, the decade when caving, like climbing, moved into its modern phase. Expeditions are now combing high altitude limestone outcrops for possible caves and recent discoveries such as the Grotte de Rakhiot Pic near Nanga Parbat in Kashmir along with several deep shafts in the Peruvian Andes point to the future.

Back home, cavers rarely squeeze below 200 m owing to geological constraints and, surprisingly, the deepest known single shaft is still that of 110 m into Gaping Gill Hole, West Yorkshire, which was first descended by the doyen of European caving, Edouard Alfred Martel in 1895. Those who frequent the fells of the Dales National Park may well have seen the impressive pot-hole into which Fell Beck tumbles after gathering upon the grits and peat hags flanking Ingleborough. Some may have taken the opportunity afforded by either Bradford or Craven pothole clubs over bank holidays to descend the Main Shaft by powered winch. If so, they will have some appreciation of Martel's pioneer achievement in making the initial descent with guttering candles for lighting. He was then 35 years old having taken seriously to cave exploration 10 years before as a member of the CAF. Having abandoned a promising career as a lawyer, he devoted his entire energy to the discovery of caves throughout France and much of Europe. The fruits of his prodigious endeavours are superbly documented in over 900 papers and classic volumes, the last of which was published only 2 years before his death in 1938. Few have accomplished such prolific physical and intellectual feats in 77 years.

Martel was the timely catalyst needed to fire the imaginations of kindred spirits here at the height of a romantic era during which sport and the quest for new natural environments blended perfectly and purposefully. Bring this together with growing archaeological and geological evidence from caves to ferment the great debates on Darwinism, and sport joins with science to produce the unique wine which Martel himself dubbed as 'speleology'. A long tradition of mining in the Carboniferous Limestone uplands and nearby coalfields, added that sparkle of myth and folk lore which wets the appetites of connoisseurs. Long before, in about 1674, Beaumont and his lead miners had broken into Lamb

Leer Cavern on the Mendips, Lloyd had descended the yawning Eldon Hole in the Peak in 1770 whilst an energetic group of dalesmen led by Birkbeck, Farrer and Metcalfe made the first significant discoveries in West Yorkshire in 1837. Indeed, the intrepid John Birkbeck was lowered about 60 m down the Gaping Gill shaft 23 years before Martel's successful attempt. It is interesting to reflect that, during the same period, explorations in Moravia and the karst type terrain bordering the Julian Alps penetrated caves from 100 to 300 m deep. The lure of the fells and its potholes gave birth to the famous Yorkshire Ramblers' Club in 1892. The first truly national body specifically concerned with caving was the Société Spéléologique de France founded, naturally enough, by Martel fresh from his success in England. Its 120 founder members were undoubtedly more than the whole of the rest of Europe could muster at the time. Compared with climbing caving had a much later and slower start; indeed, most of the early SSF cavers were already members of alpine clubs seeking weekend adventure nearer home.

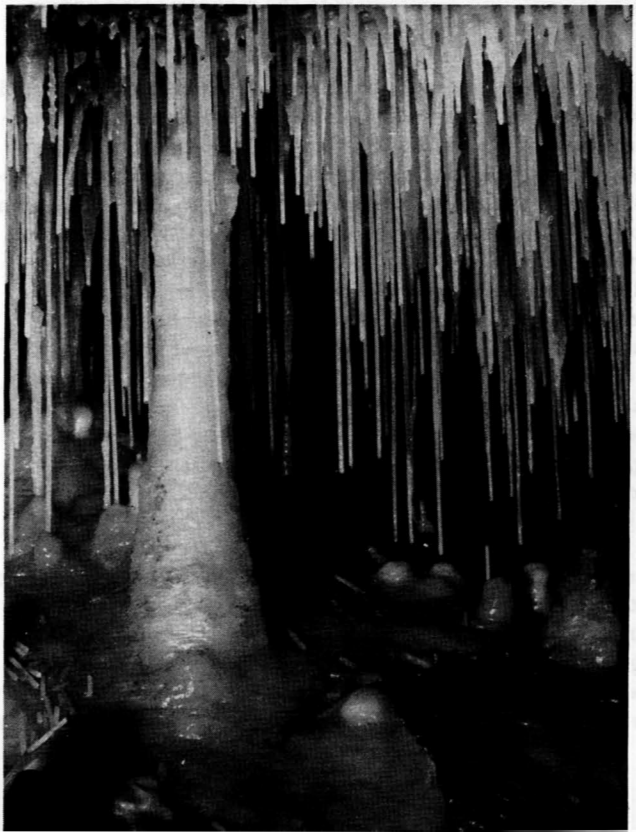
If the mileage of known caves in Britain has increased some 200-fold this century, then the number participating has exploded to a present estimate of 4000 in clubs throughout the country. The time is near, if not past, when over 1000 cavers a week descend holes in our limestone uplands. This growth is largely confined to the past decade and results from the great emphasis upon recreative pursuits and ease of travel. New equipment and residential accommodation in the hills have seen off seasonal preferences, for underground environments vary little throughout the year. The 'seventies see the emergence of both National Caving Association and British Cave Research Association, committees, conferences and inevitable controversies. Many caves and landowners are showing signs of wear and tear which are no less alarming than their counterparts in the climbing world. In general, it is difficult to escape from the view that the 'golden age' has passed.

The first authority to champion and popularise the sporting appeal of caving was Ernest Baker in his book 'Moors, Crags and Caves of the High Peak' published in 1903 when he was a leading member of the Kyndwr Club. Like so many of his contemporaries and disciples, Baker typifies those who found a natural marriage between their first-love, climbing, and caving. Indeed, late in life, his reminiscences in 'Caving' (1932) are introduced by a succinct appraisal of the subject as 'mountaineering reversed'. It is no accident that this stimulating autobiography is dedicated to Martel thus; 'Auquel les explorateurs Anglais sont redevables d'un exemple magnifique d'entreprise et d'énergie'. So, the lineage may be traced into the halcyon days of Edwardian England and the more difficult years to the 'twenties. During this significant period, the delights and disappointments of British caves became apparent. Major sites of stream engulfment on limestone hills, often called 'swallets', were opened up and descended; for example, Swildon's Hole and Eastwater Cavern on Mendip, Eldon Hole, Giant's Hole, Speedwell and Peak caverns in Derbyshire and many spectacular river caves in Ireland.

Meanwhile, the tally of Yorkshire 'firsts' underlines the uniqueness and lasting appeal of essentially vertical potholing. The aptly named Juniper Gulf, Marble

Steps, Gingling and Rumbling holes are now synonymous with the lore of the fells. Many of the classic pots are still considered as 'severe'; Lost John's, Meregill, Nick, Rift, Rowten, Swinsto and Washfold making a worthy bag for any modern caver. Add the Diccan Pot route to the splendid abyss of Alum Pot and the alternative Flood Entrance into Gaping Gill, and it is clear that Yorkshire explorers were at the vanguard of British caving, particularly in equipment and techniques to descend deep shafts. The succession of fluted pitches sculpted by torrents off the gritstone caps probably come closer to climbing than any other type of caving.

Elsewhere, similar patches of light blue on the new Geological Survey maps were magnets to those seeking adventure underground. Wherever streams were found sinking on the hills and welling-up beneath the limestone escarpments, cavers sought to follow them aspiring to the promise of deafening cascades and limpid lakes along hitherto unseen watercourses. This subterranean scene would be enriched with ever larger galleries decorated by stalagmite formations both exquisite and grotesque. They were wild and beautiful places 'where there is no ear to hear and where no footstep ever treads'. The thick deposits of dripstone indicated immense periods of time in formation; thus, to be first to cut the perpetual darkness became the caver's climax. The key to cave discovery simply lay in 'following the streams' and the promise of a 'through trip' from sink to rising the ultimate objective.



40 Formations in Easegill Caverns. This and next photo: A. C. Waltham

In a few cases, these dreams were realised; but, in truth, it became increasingly clear that tantalisingly high stream discharges could flow easily through very small joints and bedding planes in the limestone. Responding to the slow and intermittent processes by which water levels have dropped in recent geological time, the streams had scoured out ever different routes rather than enlarging a single channel. Flood debris, collapses and flowstone often constricted or blocked the fossil streamways. Soon, 'crawl', 'squeeze', 'ruckle' and 'choke' became all too familiar in caving parlance. Entrance passages abounded with such obstacles so that the caver's repertoire required expertise at digging out fills and blasting away offending rocks. On Mendip, for instance, every major swallet system has been dug open and the thinnest member of an exploration team often acquired the dubious honour of being 'ferret'. The art of grovelling through tortuous squeezes distinguished caver from climber.

The 'bottoms' of caves usually came to ignominious ends at impenetrable fissures or chokes. Even worse in days when saturated tweeds and woollens were sole protectors against exposure, precious matches and candles the only 'dependable' illuminants, the roofs of active streamways dipped close to or below water level to form 'ducks' or 'sumps'. No name typifies such dashed hopes more than Disappointment Pot. Here Blackburn-Holden and Simpson, with high hopes of gaining yet another route into Gaping Gill, were thwarted by a constricted sump. Nearly all first explorations ended thus, and do so today. The purpose of caving became that of finding or even making a way on; there being no comparable underground counterpart to the mountaineer's known summit.

By the beginning of the 'thirties, most of the obvious systems had been visited and explored to the fullest extent permitted by pre-War manpower and equipment. The caving fraternity was a small, close-knit group of enthusiasts; individuals becoming noted for specialities like digging, handling explosives, climbing, surveying, photography and so on. Personal invitations to join exploration teams were common and summer camps and expeditions to caving regions became a popular way of spending holidays. The serious business of planning, organising gear and travel restricted weekend jaunts to smaller, well-known caves. The long-lasting carbide lamp and miner's helmet were beginning to oust the candle but, otherwise, the garb of cavers had changed little. Heavy hemp lifelines and massive coils of rope ladders with thick wooden rungs were laboriously man-handled underground. Trips lasting most of the day required the porterage of food, stoves and even spare clothing. As the paraphernalia mounted, sheer logistical demands began to hamper the prospects for original exploration. On Mendip, even a long canvas 'hose' had been used on a wet Forty Foot Pot to keep climbers dry!

Nevertheless, important breakthroughs were achieved. Two stories will serve to exemplify the great potential for new cave exploration prior to the last war. The first in the ever-popular Gaping Gill system underlines the advantages to be gained by the lightly ladened, faster moving caver whilst the second, in Swildon's Hole, opened up new vistas for the more amphibious-minded explorer Both give a preview of the sort of caving to become more commonplace following 1945.

Both Main Shaft and Flood Entrance routes into Gaping Gill gave access to about 2 km of large bore fossil streamways running E and S of the former. After its magnificent 100-m fall from the surface, the Fell Beck was soon lost beneath the boulder strewn floor of the huge Main Chamber. During a winch meet in 1937, the comparatively unknown Eric Hensler crawled into a hitherto unobserved bedding plane heading SE. Alone, he pushed forward some 400 m, squirming flat out and crawling painfully along the relentlessly low passage which now bears his name. Eventually, he came into a larger active streamway which was undoubtedly the elusive Fell Beck. Progressing downstream, he then encountered yet another, even larger unknown inlet from the right. Beyond the confluence, the way ahead assumed the long dreamed of 'Master Cave' proportions. Realising its significance, Hensler pressed on to the inevitable sump before tediously but joyously retracing his steps. He had added some 1.5 km of new cave, found the master way towards Ingleborough Cave and Clapham Beck Head and chanced across the Disappointment Pot inlet for good measure. In 1972 the writer had the good fortune to join with Eric Hensler in celebrating no less than his 65th birthday by re-visiting his Gaping Gill discoveries. With the benefit of 35 years' hindsight, this solo venture still remains a great milestone in British caving history. It is fitting that Hensler was recently appointed first Chairman of the newly formed British Cave Research Association.

Swildon's Hole on Mendip had seen a similar lull in exploration since the famous discoveries during the drought summer of 1921. The barrier forestalling progress was a sump whose roof failed to yield to fearsome explosive charges despite their disturbance of Priddy village over 150 m above! Determined to settle the score, the dynamic Graham Balcombe enlisted the support of Jack Sheppard and local cavers from Wells. The hard hats and air lines then used by divers would hardly have passed through the entrance of the cave let alone the 1000-m journey to the sump; so, Sheppard set about designing a special breathing apparatus and suit. This underwent ingenious and alarming trials and modifications before working successfully. Balcombe organised the assault and years of persistence were finally rewarded when Sheppard carefully submerged and surfaced beyond the sump in October 1936. It proved sufficiently short for Balcombe and others to follow free-diving in ordinary clothing. This great achievement paved the way for terminal sumps to be dived in other caves and was a major factor in the subsequent success of the new Cave Diving Group.

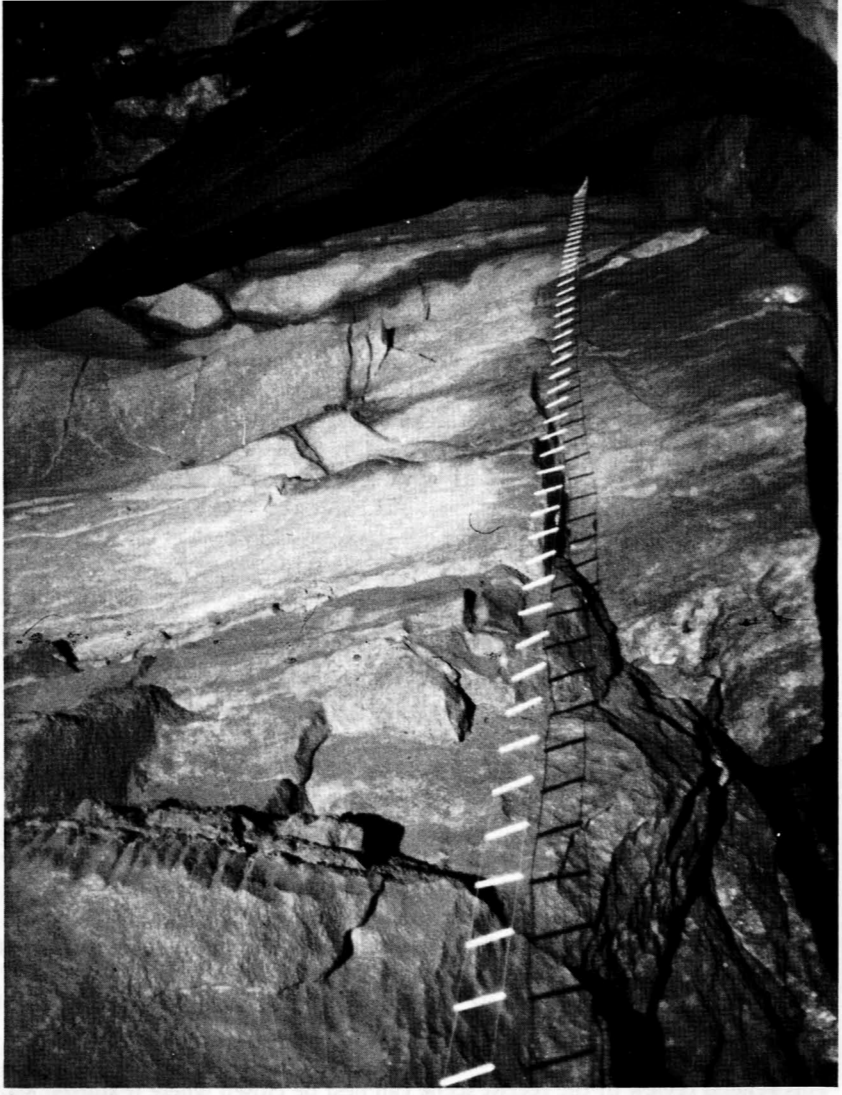
It would be foolish to think that the past 30 years of British caving can be adequately reviewed in anything short of a large tome. Most of the work done has been well recorded in innumerable club journals, district guides and regional books currently being published by the BCRA. All the extensive systems and the majority of smaller caves have been painstakingly surveyed to a high degree of accuracy and also published. Modern photographic gear has been to the most inaccessible parts of almost every cave and there is a growing library of ciné films recording numerous aspects of exploration and even actual rescue work. Gone are the days of monstrous but fragile plate cameras, temperamental magnesium ribbon and acrid flash powders. Here, we can best summarize by reference to changing techniques and their part in the most notable post-War discoveries.

The sale of surplus Service equipment following the War was crucial in providing cheap bits and pieces which cavers could adopt or adapt for their purposes. The demise of coal mines brought tough, long-duration and rechargeable batteries on to the second-hand market. Submariner's underwear, denims and boiler suits made exhausting wet trips more tolerable whilst compact rations were a boon. Closed circuit oxygen rebreathing apparatus from the Navy made sump diving less hazardous and various types of sea rescue exposure suit afforded unheard of luxury. Sophisticated light alloys and wires perfected during wartime, were ideal to replace outmoded ladders of rope and wood; many clubs went into the ladder construction business. Collapsible entrenching tools and other digging implements made long range excavations more attractive. So, by the 'fifties, cavers had the equipment to tackle ventures which hitherto had been foolhardy or out of the question.

On the borders of Lancashire and Westmorland, the first notable discovery came with the exploration of the Lancaster Hole–Ease Gill complex below Casterton Fell. Their connection produced a labyrinth totalling over 20 km and some of the most beautiful subterranean scenery yet seen in the Dales. Further E, on the flanks of the sphinx-like Penyghent, Northern Pennine Club potholers entered what was long to be regarded as the most arduous pot in the country. This mile-long, flood prone system, named for the hill, descended 13 very sporting pitches to a previously unattained depth of 160 m. Equally notorious was the geologically unique Mossdale Caverns sandwiched between gritstone beds beneath Conistone Moor. The opening of of the New Entrance considerably reduced the very high risk of being trapped by flash floods in the 5 km maze of passages. However, this notorious system eventually claimed the lives of 6 very experienced cavers following a downpour on 24 June 1967 in what is by far the worst tragedy in the history of caving in Britain.

None of the contemporaneous discoveries on Mendip could match the length or grandeur of the Yorkshire finds; inclined strata hastened swallet drainage to saturation levels and individual systems barely reached a paltry 2 km by comparison. Yet, the aggregate of over 12 km of new cave dug open and explored there during the decade following the War vindicated the faith and fortune of the enthusiastic few involved. GB Cavern, Longwood Swallet and Stoke Lane Slocker are at opposite ends of the Mendip range. Nowhere in Britain has the science of speleology and the sweat of diggers been applied more rigorously in the search for fresh sites. Few karst areas have prompted so many doctoral pundits in the specialist fields of speleology and seen theory and practice mingle so successfully. Thus, the entry forced into the extensive St Cuthbert's system feeding the famous Wookey Hole Caves in 1953 was virtually a foregone conclusion. Similarily, by dint of prediction and much hard graft, a long fossil series was found by-passing the worst of the sumps in Swildon's Hole during the late 'fifties.

In Derbyshire, at the same time, attention focused upon known caves and lengthy extensions found in Peak Cavern and Giant's Hole were notable achievements. Much interest too was generated in descending old mines to check out



41 Ladder pitch in Lancaster Hole

underground drainage lines or legendary tales of natural caverns entered by particular levels. A good case in point was the Oxlow system.

The biggest news of the day, however, was to come from the few Wessex Cave Club and Cave Diving Group members who ventured W of the Severn to the limestone skirting the N of the S Wales Coalfield. Despite pioneer work by F. J. North and others during the 'thirties and compelling river sites such as Dan-yr-Ogof, Porth-yr-Ogof, White Lady Cave and Ogof Ffynnon Ddu in the Neath and Swansea valleys, the need for diving and lack of obvious swallets had curtailed serious caving until their arrival. An impressive glimpse of the area's rich potential for large river systems was revealed when the first upstream passages of OFD were entered. Caving in S Wales had begun in earnest.

The 'sixties brought a revolution in techniques and a near realisation of old dreams of through trips from sink to rising. With an honourable tradition of borrowing equipment developed for other pursuits, cavers had soon adopted the skin-diver's wet suit whilst divers quickly modified miniature sub-aqua kits to meet the greater dangers of sumping in caves. For the first time, neutral buoyancy and finning proved practical in cave diving and sparsely clad parties of highly mobile cavers penetrated further into both sink and rising systems to narrow the gaps between them. Most of the successful operations hinged around the exacting business of diving and digging deep underground. Accurate surveys and electromagnetic induction-coil methods enabled surface teams to pinpoint cavers deep down. Thus, alternative access for non-divers could be engineered by excavating and blasting artificial entrances. The model for subsequent ventures of this sort was in the rapidly expanding OFD complex in S Wales where it is now possible to traverse the entire 37 km via any of 3 entrances By going in at the Top Entrance and coming out at the original Bottom Entrance one also descends a record height range of 258 m.

Similar through trips have been made elsewhere. In W Yorkshire, the connection of the old Rowten, Simpson's and Swinsto pots with the Kingsdale Master Cave provides one of the most aesthetically rewarding through trips in the country whilst giving credence to visions of 'trans-dales' systems of Mammoth Cave proportions. The connection between Giant's Hole and Oxlow Cave in Derbyshire gives a height range which closely rivals that in OFD. The St Catherine's to Doolin System in County Clare totals over 10 km and blasting completed a connection between the long known Poulnagollum and Poulelva caves to produce 12 km of the finest river passages in the British Isles. Further north, in County Fermanagh, there are even more aquatic through trips. Indeed, the possibilities and permutations in most of the caving regions are becoming endless and only Mendip cavers are denied such scope to date; but, not for the want of trying. Divers are currently busy at no less than the 12th sump in the 7 km Swildon's system and have recently reached the handsome 22nd chamber in Wookey Hole Cave; a dive which goes over 300 m from base and reaches a record depth of about 20 m before ascending.

This general review of the recent scene can best be closed where it started 80 years ago in Gaping Gill. During the Whitsun meet in May 1968, the Bradford Pothole Club winched a record number of cavers and sightseers down the Main Shaft. Among them was a small group who found that the ominous sump at the end of Far East Passage had acquired a constricted airspace. Returning the following week, they widened the hole and, enticed by the resultant draught which howled out, squeezed through to the open rift beyond. Spending most of the day exploring the new passages that continued ahead, which they called the Whitsun Series, they discovered that it went over 600 m SE to a boulder choke beneath Clapham Bottoms. Interest in Gaping Gill was thus given a fillip once more and in June that year University of Leeds speleos made another significant breakthrough. Blasting open a calcite squeeze high above the impenetrable sump ending Hensler's Stream Passage, they broke into a kilometre of fossil cave also running SE. This find, aptly named the Far Country, was also found to end beneath Clapham Bottoms in a huge boulder hall. Later, from

the known rising in Ingleborough Cave, divers led by the intrepid Mike Wooding sumped N way below Trow Gill towards an upstream rendezvous; but, he too came to a halt in a boulder complex under Clapham Bottoms. Accurate surveys of both systems revealed a frustrating gap of a few metres between their end points. For once, geological history had played a cruel trick in severing the main drainage line by a major fault of foundered limestone. A blocked connection undoubtedly exists but, as always, the rub lies in finding it! Thus, the Gaping Gill system refuses to yield completely after being wooed for over 80 years.

And what of the future? Armed with every climbing aid and abseiling and prusiking pitches, the modern exploration party has become even more mobile. A golden age may have passed in nostalgic terms but the next 80 years could be even brighter and at least as exciting. Much as this short article has been unable to do justice or to mention many miles of glorious cave scenery in Britain, so cavers can be assured that there is still a lot to do.