

CAVES AND KARST IN SWITZERLAND

by
Willi Grimm*

The Swiss Society of Speleology is the equivalent organisation of ASF in Australia. It was founded by the Geneva group in 1939, at this time the only caving organization. Until this foundation, not much interest was dedicated towards caving, although, some single caves like the 'Holloch', 'Schnurenloch', Beatushöhle' and others had been explored earlier.

The Swiss Society of Speleology is made up of 15 different groups, 9 from the French part of Switzerland, 6 from the German and 1 from the Italian part, which gives a total of approximately 500 members. The majority of the active cavers (38%) are aged between 20 and 30; 14% are below 20; 29% are between 30 and 40 and the remaining 19% are above 40.

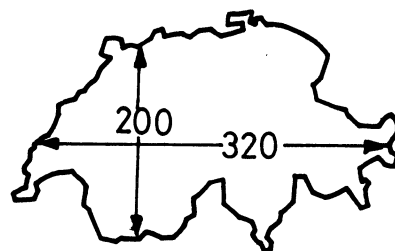
The Swiss Society of Speleology has available a total of 2000 metres of wire-ladders, 23 telephone sets, 13 rubber dinghies, 11 diving suits, 8 aqualungs, 7 climbing poles, 2 winches plus all the usual caving gear.

Swiss caving activities differ a bit from the Australian ones; not very much in purpose and aim, but mainly in techniques and gear and also the distances we have to travel to reach caves. For instance, a caver living in Bern, the capital of Switzerland, would travel 60 miles to Beatenberg, the most potential caving area. Of course, there are caves much closer, but you can also go further. Unfortunately, if you travel more than 150 miles in either direction, it means you are going caving in another country. Switzerland is 118 times smaller than Australia, just about half the size of Tasmania, and it measures only 320 miles across.

The majority of cavers wear an overall with a zipper and prefer carbide light. The footwear is either rubber boots or climbing boots. The first mentioned does not exactly fit in the ASF safety code but, in Switzerland, a lot of large caves contain rivers; there is not much mud, but only clean, eroded rock surfaces. The only passage-way is often the river. For expeditions lasting 10 to 30 hours, it is essential to keep your feet dry. Therefore even hip-high fishing type boots are used. Boots mounted with triqounis are seldom used.



Switzerland compared with Australia



The size of Switzerland in kilometres

The ropes used are mostly nylon and other synthetic fibres. Even kernmantel ropes are common. The conventional natural fibre ropes disappear steadily. Their only usage is for gear lowerings etc.

Also knots do differ from the ones used in Australia. Belaying is done over one shoulder. The method practiced here, in which the rope is around your waist is hardly known.

Caves can be found all over Switzerland. The Jura stretches from Geneva along the border towards Basel, and the limestone Voralps stretch from Leysin across the country to the Bodensee. They are very abundant in caves and extremely suitable for karstification.

* Schweizerische Gesellschaft für Höhlenforschung
Victorian Speleological Association

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- PREHISTORIC CAVE SITES
- MAJOR CAVE AREAS
- ▨ KARST

About 50 to 60 years ago was the time of important prehistoric excavations in the northern, central and eastern part of Switzerland. The "Schnurenloch", situated high on the western slopes of the Simmen Valley (Simmental) was obviously a dwelling for the extinct cave bear. Over a digging period of 10 years this cave yielded 16,000 bones and artifacts; 95% of all the bones found belong to the cave bear. The cave is 32 metres long and its width varies between 3 and 4 metres. The deposits, with a depth of 4 to 8 metres, showed a unique profile and they discontinued excavation to preserve the remaining 7 metres as heritage. A wooden barrier was built but has been removed on different occasions to allow scientists to carry out further studies.

On the northern side of Lake Thun (Thunersee) and Lake Brienz (Brienzersee) is a large karst area, covering 60 square miles. The karst is in altitudes between 1300 and 2200 metres above sea level. Throughout this area Cretaceous limestone is covered by Eocene sandstone. Glaciers removed the sandstone in some parts and exposed the limestone. The glaciers even

shifted layers of the bedded limestone away and today a well developed layer-terraced karst field is present. This section of uncovered karst spreads out over 15 square miles.

Since 1966 two groups of the Swiss Society of Speleology, Bern and Interlaken, have been systematically exploring the field. A paper was produced dealing with the basic questions and problems in exploring the karst and it was distributed to every caver involved. The surface was surveyed first and then was divided into rectangles 100 metres long and 50 metres wide. The first rectangle to be explored contained two erratics (Karrentische) with well defined pedestals, 3 canyons, 1 horizontal cave and 41 shafts. The cave seemed to be at a very young stage with elliptical passages, the total length of them being 200 metres. The shafts all ended on two levels, either at 6 or 15 metre depths. The bottoms are filled with frost shattered rocks.

On these levels the water disappears through inch high fissures along the bedding planes. One of the many questions was: where does the water go to? Three tracing tests gave a fantastic result. Forty kgs of sulforhodamine was dissolved in a deep shaft on the Schrattenfluh. After 40 hours spent travelling 20.8 km (beeline) the red water could be seen in the lake of Thun (Thunersee), near Interlaken. At a depth of 10-15 metres is an efflux merging into the lake which has about the same outflow as the nearby "Beatushohle". At the same time a fissure resurgence, the "Gelber Brunnen" (yellow fountain) showed the same red colouring. With this tracing one of the largest cave and karst waters in Switzerland was proved and a long awaited explanation to a puzzle had started to be answered.

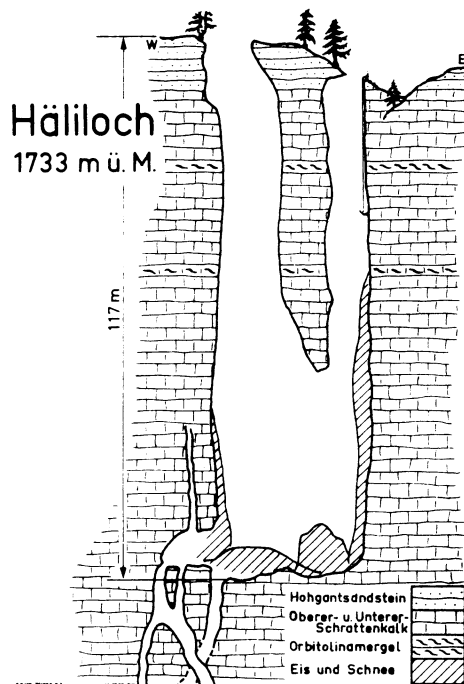
In 1928 an enormous amount of chaff and sawdust was thrown into the "Haliloch", a 117 metre deep shaft in the same area. After 7 to 9 days the chaff and sawdust was detected in the "Beatushohle". In 1946 a similar tracing was made but this time with fluorescein. It proved the previous tracing was right, but it appeared soon after 30 to 48 hours. The third tracing was in a shaft near to a large faultline which crosses the karst. It was thought to penetrate to great depth but because the shaft was acting as a sink, its bottom was blocked with rocks, soil and other material. However, the water could be traced with fluorescein. It proved this area also belongs to the Seefeld-Hohgant karst area.

The three longest caves in Switzerland are:

- | | | | |
|----|--------------------|----------------|----------------|
| 1. | Holloch | 103,705 metres | (64.436 miles) |
| 2. | Grotte de Milandre | 8,074 metres | (5.444 miles) |
| 3. | Neuenburgerhohle | 4,720 metres | (2.832 miles) |

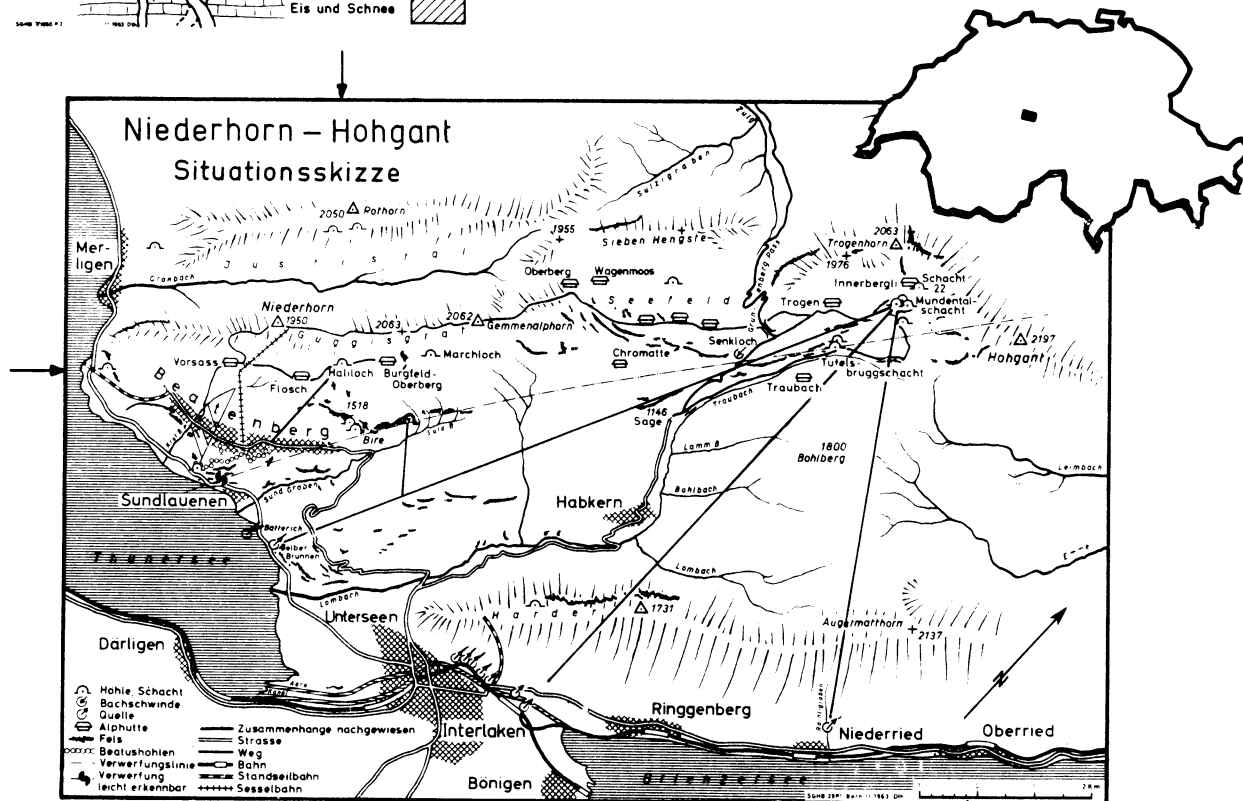
The three deepest caves are:

- | | | | |
|----|----------------------|---------------------------|------------------------|
| 1. | Holloch | 107 metres + 633 metres = | 740 metres (2428 feet) |
| 2. | Gouffre du Chevrier | 510 metres | (1673 feet) |
| 3. | Gouffre du Petit-Pre | 426 metres | (1397 feet) |



The Seefeld-Hohgant karst area

the arrows indicate the situation of the "Häliloch".



Translation of the signs as shown on the map above and in the same order:

cave, shaft
sink
resurgence
hut
rockface
Beatuscave
faultline
fault clearly visible

connections proved
road 2nd class
road 3rd class
railway
rail driven by cable
chair lift