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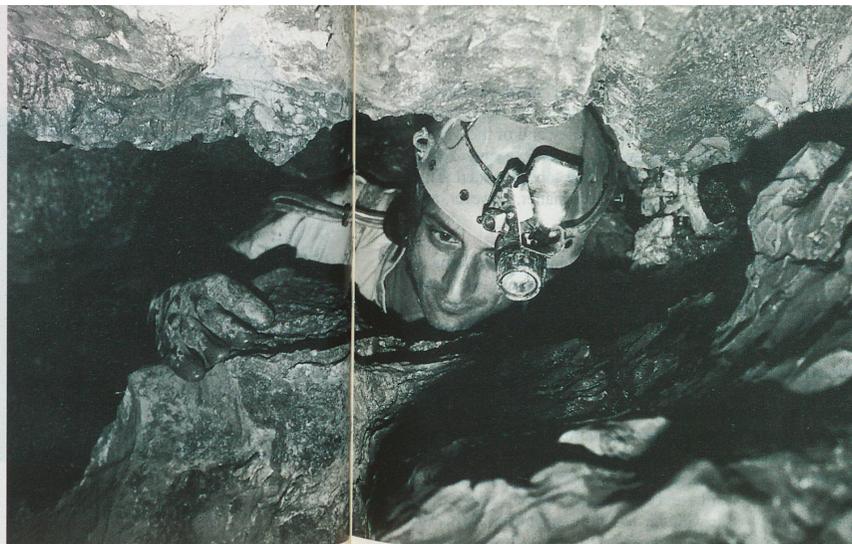
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A favourite Swiss hobby: speleology

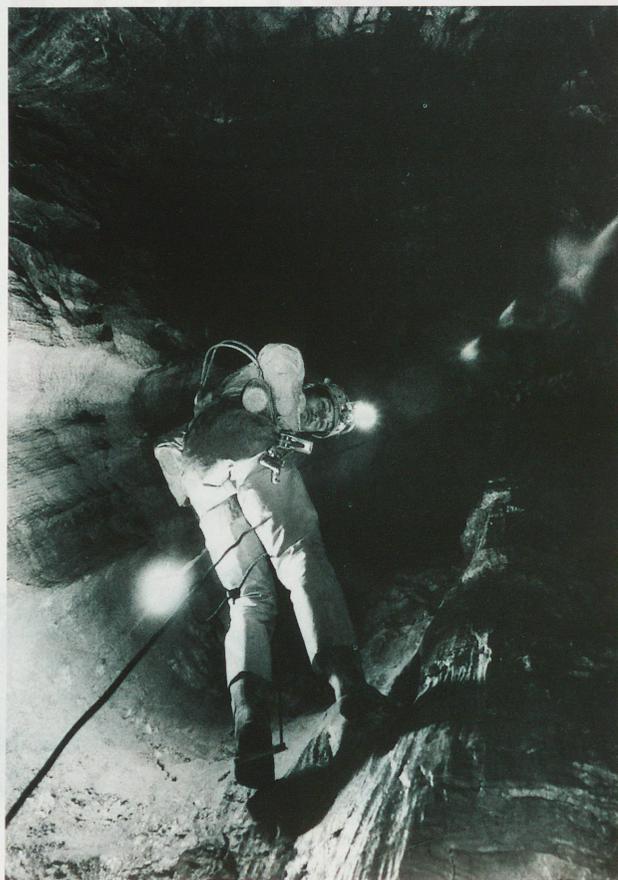
## One of the last adventures

**Researchers without textbooks, discoverers without patents, scientists without teaching posts, adventurers without onlookers: people who feel happy in the world underground fit into no pattern.\***

The starting point of our journey is Beatenberg in the Bernese Oberland. We cross the Bärenalp to reach a region of karst-like limestone which has been washed out by water for millions of years. Hohgant sandstone and layers of marl overlie the limestone. This is an ideal combination for the giant cave system which developed beneath the fairytale charm of the landscape at the foot of the Seven Stallions.



**"It can be as narrow as you like down here – but nowhere do you feel so free". (Photos: Hansueli Trachsel)**



We – mountain guide Martin Gerber, speleologist Roland Zurflüh, the photographer and myself the journalist – fill our Davy lamps with water from a wooden trough. A few minutes later we stand at the entrance to the caves. Preparing to venture in takes time; our two guides thoroughly check the equipment, which along with our wetsuits includes instruments of every description for climbing and abseiling.

The cave into which we then crawl bears the modest name of A2. It is in the vicinity of the «Seven Stallion Network» known to pot-holers all over the world and was discovered in 1973 by members of the Berne Speleology Association. It was 13 years before a team succeeded in blasting a narrow passage to penetrate this huge labyrinth, of which so far about ten kilometres have been mapped.

After 15 metres the first shaft appears – to the layman it looks like a yawning black hole. While we are still fumbling with our safety hooks at the top, Martin Gerber has already dropped 20 metres as quick as a flash. The glimmer of his Davy lamp at the bottom of the shaft gives us the courage to follow him down the rope, dangling in the dank air. Unfortunately we do not have much opportunity to admire the shell limestone on the slippery rock which he has described to us. The second shaft, which is immediately upon us, is «only»

\*This account is abridged from an article by Bernhard Wenger which appeared in the Berne daily, «Der Bund», on September, 8, 1994.

ten metres deep – as Roland Zurflüh hastens to console us.

In cavers' language, a meander is a horizontal, narrow and serpentine gallery, made by water erosion. At this point, the speleologists have had to blast

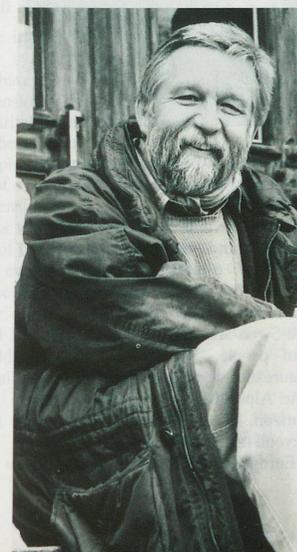
more than once in order to penetrate farther. The next shaft has another scare for the uninitiated: on the way you have to switch ropes without holding on – in other words sweating profusely, with a Davy lamp which keeps going out, you

Geologist Fredy Breitschmid on underground Switzerland

## “The earth may one day take revenge”

**Sand, loam, scree, rock: those who build on or into Switzerland's underground meet all sorts of surprises. The Berne geologist and lecturer in ecology, Dr. Fredy Breitschmid, is a man with an analytical mind.**

**Swiss Review: Glaciers are wasting away. The ever-frozen underground, known as permafrost, is beginning to melt. Climatologists paint horror scenarios of gigantic avalanches looming over us. All this means a tremendous amount of extra work for geologists. Has your profession really got a grip on the changes taking place in the Swiss Alps?**



Fredy Breitschmid: The earth is like a living being. It is always in movement. So we can never keep a complete grip on it. But we must distinguish between two types of change: that which is caused by human activity and that which takes place naturally. Disasters like earthquakes, volcanic eruptions and landslides – I am thinking, for example, of the one at Flims – occurred before the existence of mankind. We can do nothing to stop Africa, which is shifting millimetre by millimetre in Europe's direction and squeezing Switzerland together in the process. We try to think ahead, but we cannot halt such a development. When, for instance, a holiday camp is built on bad ground in Canton Fribourg, it is unfortunately bound to collapse in the long run. Let me put it this way: Switzerland is getting smaller without human inter-

vention, but it is getting more dangerous for and because of humans.

**Our Alps were always in movement, but suddenly everyone is talking about it. Why is that?**

Our mountain world has indeed always been in the process of change, and at present it is happening particularly violently. But it is not because of this. I have noticed that people are beginning to realise that humanity is part of nature and must therefore obviously behave accordingly. Our forefathers had good reason to fear the forces of nature. But we are now confronted with the consequences of our own bad behaviour. These are becoming clearer, and people are more aware of them. This is

the mountains only have disadvantages for Switzerland. It is not for nothing that the saying goes: «Switzerland is rich in poor natural resources». It is simply not worthwhile exploiting our small concentrations of gold, iron, uranium, etc. The natural gas found in the Lucerne countryside has already run out and been sold abroad instead of being kept for use in case of war or disaster. A large part of Switzerland's surface area – ice and snow fields, rock and scree – cannot be used for any purpose. The only advantage for us geologists is that we can learn a lot from the Alps and are therefore in some demand abroad. But there is also beginning to be a problem here too, since now specialists in applied geology are being sought,

cult. I do not see much difference between the people of the Hasli valley, of the Muotha valley and of the Valais. But the people of Geneva and Zurich are somewhat more open-minded. This is a topographical matter, however, and not a geological one.

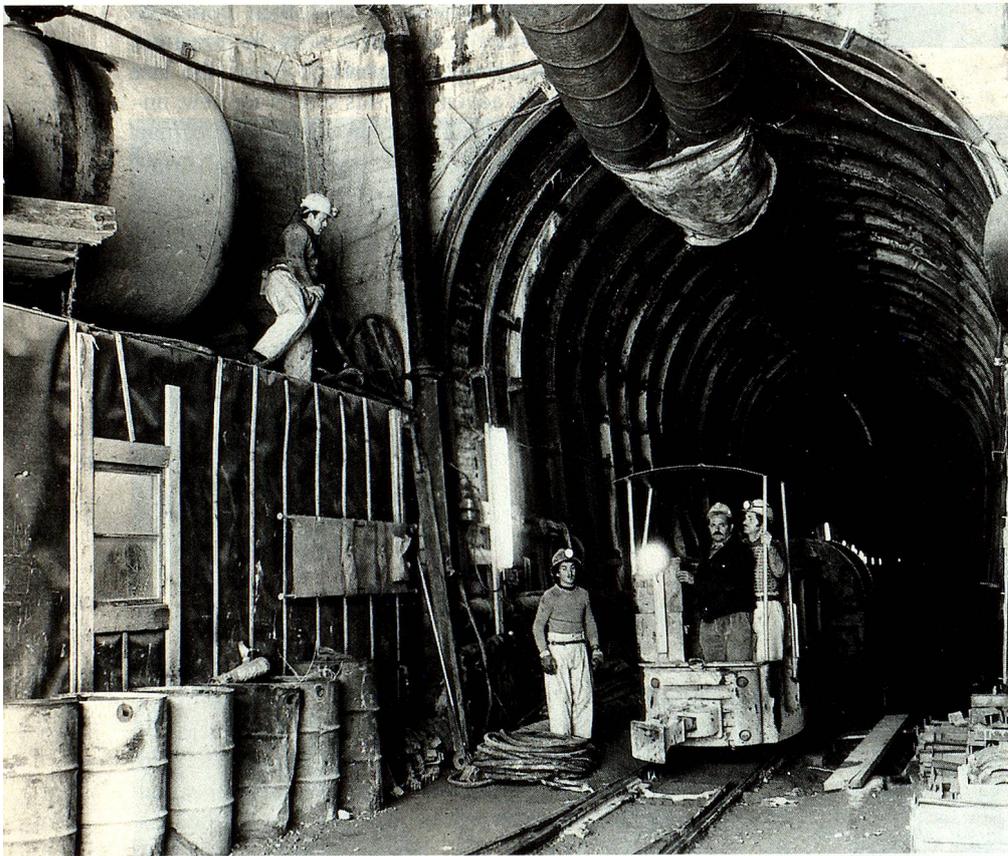
**You know the geological problems of the Gotthard and Lötschberg areas from your own experience. Is piercing through the Alps a nightmare from which there is no waking?**

Creating routes over and through the Alps is one of Switzerland's basic cultural duties. North-south transit is its contribution to a united Europe. The only thing which is incomprehensible is the haste demanded. For decades projects have been carried out in Switzerland with far too little scientific basis. The government and the railways have a policy of seeking out construction companies which offer low prices. Something must be "a bargain" before it can be put to the voters – if you can use such an expression when talking about billions. If something goes wrong at the implementation stage, "geological factors" are always blamed. But such factors would have been uncovered by serious preparatory study. Careful preliminary work is indeed costly, but it can help to save huge amounts of money later.

**Fredi M. Murer's film, "The Green Mountain", shows your struggle against the end-storage of radioactive material at Mount Wellenberg near Wolfenschiessen. But the National Cooperative for the Storage of Radio-Active Wastes (Nagra) has finally won the battle after spending a lot of money. Are you a good loser?**

Nagra has not won. In order to carry out their projects properly they would have needed a lot more money. There are still many geological question marks at Mount Wellenberg. I think that more research ought to be done before the general authorisation for end-storage should be given. The trend here is the same as with tunnels. It could happen that nature will one day take revenge for over-hasty decisions. It may sound macabre – but if a tunnel falls in only a limited number of people are likely to be affected, whereas if radio-active substances are released the whole population could suffer.

**Interview: Alice Baumann** ■



**Only those who truly understand the insides of the mountains can undertake a huge project like the tunnel. (Photo: Keystone)**

resulting in a spate of discussions and reports.

**What are the advantages and disadvantages of digging, boring and mining in Switzerland's underground?**

Apart from summer and winter tourism,

which is an aspect that Swiss training has largely neglected.

**To what extent does Switzerland's underground mark its people? I think of quartz and the Ticino miners, the people of the Jura and their lime, etc.**

We Swiss are quite obviously a mountain people. We are fascinated by nature, but we are also threatened by it. The Alps give us a relatively narrow horizon. The fact that we cannot see beyond them makes our integration into a Europe which is mostly flat so diffi-