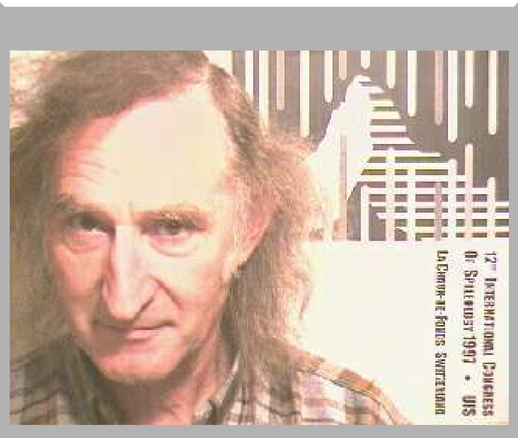
CLAUDE CHABERT AND THE MAPPING OF AYVAINI CAVE - TURKEY

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INTRODUCTION

In this poster presentation a detailed explanation is made about the long years' caving activities and explorations of Claude Chabert in Turkey, in addition to his famous Ayvaini Cave map, which he began measuring at 1988 and finalized by 1993. Measurement and drawing stages of this huge map will be explained in details. Upon an invitation of Dr. Temuçin Aygen, Claude Chabert visited Turkey at 1966 for the first time and explored, documented and mapped more than 200 caves till 2001, mostly around Taurus Mountains. Some caves that he explored are among the longest in Turkey, namely Pýnargozu and Tilkiler. In this poster presentation, a short summary of all his works including his articles will be given. Meanwhile, in the same poster, in addition to his other works, Claude Chabert's efforts about drawing a 1/500 scale map of Ayvaini Cave will be explained. This map, which was never published due to its error, is the longest cave map of Turkey with a total length of 10 meters and covers incredible details of that 4.866 m cave. As a part of that poster presentation, this map will be distributed as an atlas.



Claude Chabert's ID card of 12. UIS Symposium, Switzerland 1997

CLAUDE CHABERT & TURKISH CAVING

Claude Chabert began his caving career in 1960, as a member of Speleo Club de Paris. His first arrival to Turkey was during 1966 with the invitation of Dr. Temucin Aygen. That year, SCP first began to study the northern basin of Manavgat River at southern Turkey. Next year, studies spread to the proximities of Dedegol Massive and Egridir area. By the end of 1968, more than 65 caves, including Dudensuyu, Tinaztepe Ponor and Cave, Zindan Cave, Dudencik, which would be the depth record of Turkey with its depth of -330 meters, were explored, surveyed and mapped. In 1970, 4 siphons were passed in Pinargozu and the cave had already been reached to +190 meters. SCP cavers were searching for dolines that would make a connection to this cave over Mount Dedegol.

In 1972; the sixth year of Claude Chabert's first arrival to Turkey, Pinargozu had already reached a length of 4,685 meters and a height of +244 meters. That year's annual report suggests that the enumeration of the caves that were found and explored in six years were more than 100.

In a derivation tunnel that is dug during the construction of Oymapinar Dam in 1976, Tilkiler Cave found. Though the idea of closing the mouth of the cave with concrete is considered at first, cavers were decided to be called. SCP began their studies about the cave that year. The next year the 4,845 meters and in 1979, the whole cave were scaled.

In 1976, Claude Chabert and four other cavers from SCP make their first trip to North Anatolia; Zonguldak. In this trip Kizilelma and Gokgol caves were studied and Cumayani Cave was mapped.

Besides his constant work and studies, Chabert was also a caver that publishes his works: He had 54 published articles about the caves of Turkey. In 1988, he published his "Bibliography of Speleology of Turkey" which had been a first until a recent time.

For those who think that he is only interested in caves of Turkey, it should be emphasized that he joined explorations from Lebanon to Indonesia in 16 different countries and has 66 other articles about the caves of those countries. He is the author of "Atlas des Grandes Gouffres du Monde" which is the first work that includes the most important caves of the world, and he is one of the two authors of the extended second edition of it; "Great Caves of the World".

Chabert visited Turkey in 2001 for the last time, for the re-survey of Kocain. After that, he mapped Gruta do Janelao in Brazil for several years. Subsequent to a long period of sickness, he deceased in 2009.

AYVAINI CAVE

Location

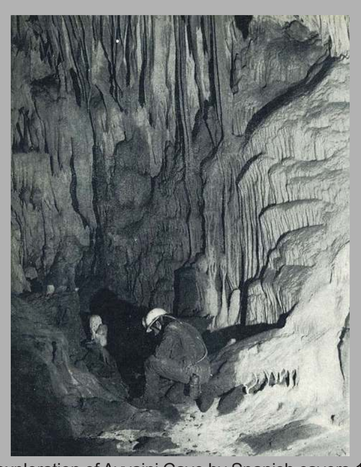
Ayvaini Cave is at Ayvakoy, near to Bursa, northwest Turkey. In order to reach the entrance of the cave which is also called Cankuyu, one should follow the Ayvakoy-Doganalan road. The left turn that will be seen after approximately 3 kilometers is headed to the mouth of the ponor. There is roughly 4 kilometers of distance between the ponor and the spring.



Geology

Ayvaini Cave is located in Sogutalan Plateau which surrounds Lake Uluabat from south. The cave is formed within Upper Jurassic-Lower Cretaceous aged limestones. With a thickness of 100-150 meters, these limestones are the main factor of the karstification of the region. That beige and light grey crystalized formation is often massive and there are stratifications in patches. There are also calcite veins formed in different directions. According to the Pleuromya alduini, Bryozoa, Quinqueloculina, Spiroloculina, Trocholina sp. fossils that are found, this transgressive structure that begins with conglomerate and marl at the bottom and ends with crystalized limestones at top is dated as Upper Jurassic-Lower Cretaceous.

The impermeable denominations just below this limestone reef, which is relatively thinner, form a floor for the caves of the region and most of the caves that are located in Sogutalan Plateau are formed within the contact zone between those two units. Sogutalan Plateau, with all its different abrasion surfaces, fragmented foljes, karstic valleys, caves and ponors, has a surface that largely eroded and took its shape in Pliocene Period. The surface waters flow north, to Lake



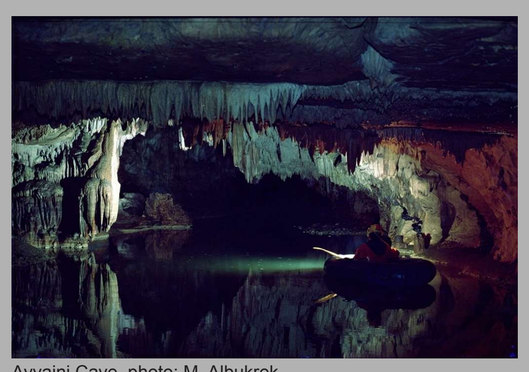
First exploration of Ayvaini Cave by Spanish cavers,1970.



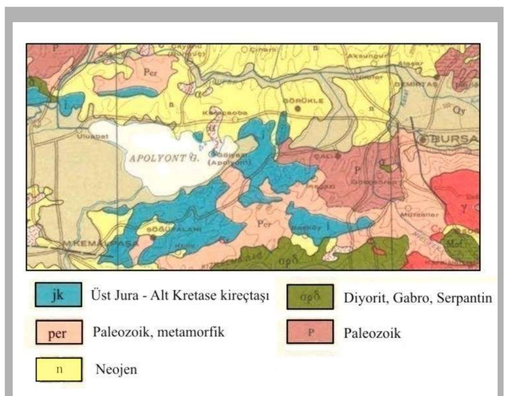
Ayvaini Cave, photo: A. E. Keskin



Ayvaini Cave, photo: M. Albukrek



Ayvaini Cave, photo: M. Albukrek



Uluabat or south, to Kocasu Brook valley, and some of the surface water is, because of the massive limestone on the ground, drained to underground.

One of North Anatolian Fault's two branches that strides through the south side of the Sea of Marmara strolls along the north side of Lake Uluabat and the other fault passes by the north side of Sogutalan Plateau, almost over Ayvaini Cave. With the effects of these two faultlines that has a great importance in the tectonics of the region, the depression surface around the lake that was begun to be formed in Early Pliocene have been covered with alluvion since Quaternary, and the faultline that is located in farther south caused the Sogutalan Plateau to raise.

Ayvaini Cave, located in this plateau's north edge, is a huge cave system covering the undergound and surface waters of a large area. Being formed at the edge of a sizable polje, the cave is headed to north east and opens to a surface again in the left slope of Yesildere, near Ayvakoy.

Except for few small branches, Ayvaini has only one main gallery in northwest-southeast direction and is shaped completely horizontally after the ponor entrance. The main gallery has a width of 3-15 meters and a height of 2-8 meters. There are many lakes with a changing number depending on the amount of water that flows in, with lengths of 10-200 meters. Formed within limestones that are extremely suitable to karstification, Ayvaini Cave also hosts stalactites, wall dripstones and travertine pools in patches. As a cave that gathers both underground and surface waters of a huge region, it is also active hydrologically. Even in dry seasons, the cave has a water flowing in from the ponor mouth. Besides, there are several different springs inside the cave. Within the limestone that formed the cave there is a dense karst consisting of doline and ponors. Waters that are drained by many nearby ponors are also gathered at Ayvaini and certain parts of these springs can be seen within the cave by their chimney forms.

Both from underground and surface, all these waters are drained from a rift near to the spring mouth, not from the spring mouth itself. The waters rise to the surface once more from the side of Ayva Brook, which is located below. However, in rainy seasons this rift fails to drain all the water and most of this water is spewed out. This phenomenon is called "The eruption of the cave" by Ayvaini locals.

History of the Explorations

Ayvaini's first study was made by Swedish biospeleologist Knut Lindberg in 1952. After the Spanish cavers' exploration during 1970, Ayvaini Cave identified as one of the longest caves of Turkey. BUMAK (Bogazici Univ. Caving Club) began surveying the cave in 1986 and 1987, but only 1,947 meters of cave, starting from Doganalan entrance were mapped.

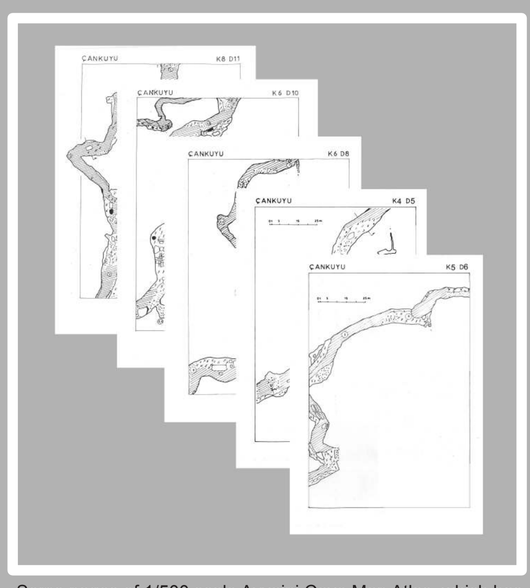
Mapping of Ayvaini Cave by Claude Chabert

Claude Chabert, began to prepare his 1/500 scaled map of Ayvaini in 27 August 1988. He visited the cave many times during 1992 and 1993. In his surveys, many Turkish cavers accompanied him. During those surveys his longest topo station was 20 meters. Hundreds of measurements were made and all of them were double checked. Still because of the differences between the measurements that are made from surface and the cave map, Claude Chabert did not publish this map and did not state how much difference there were.

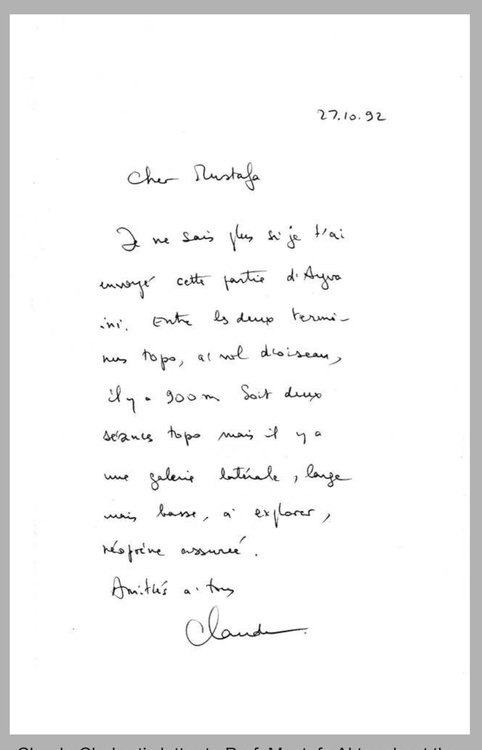
When we bring all these 40 unpublished map sections of his survey together in an atlas today, we can calculate that the difference between his survey and the GPS references of the both entrances of Ayvaini Cave is only 105 meters. Considering that the cave is 4,866 meters, the error rate was just 2%, which is inevitable in a cave with more than 260 topo stations.

Even computer softwares that are made for cave mapping have a "fix". You may push and shove the map. Yet, Claude Chabert was a man that saw caving beyond being a lifestyle; he dedicated all his energy, time and labour to caving, doing his best and never giving up being scientific. Consequently, the word "To fix" was not a part of his dictionary.

He and his dedicated, scientific caving will always be missed by Turkish cavers.



Some pages of 1/500 scale Ayvaini Cave Map Atlas, which has a total lenght of 11 meters.



27.10.92

Cher Mustafa

Je ne sais plus si je t'ai envoyé cette partie d'Ayva ini. Entre les deux terminus topo, at vol d'oiseau, il y a 900 m. Soit deux séances topo mais il y a une galerie latérale, longue mais basse, à explorer, néoprène assuré.

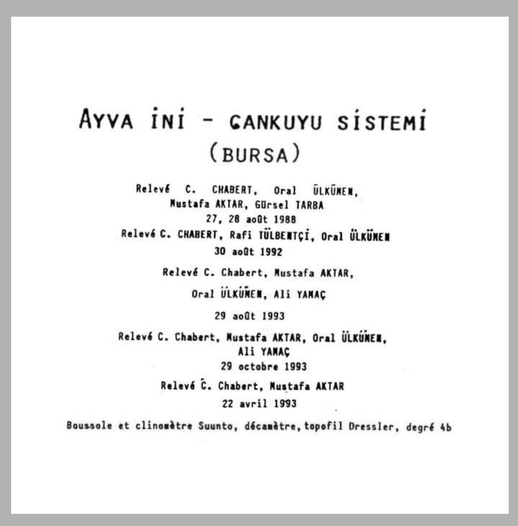
Amitiés à tous

Claude

Claude Chabert's letter to Prof. Mustafa Aktar about the survey of Ayvaini Cave, 1992



Ayvaini Cave, Aug 29, 1993. From left to right O. Ülkümen, A.Yamaç, C. Chabert



AYVA İNİ - ÇANKUYU SİSTEMİ

(BURSA)

Relevé C. CHABERT, Oral ÜLKÜMEN,
Mustafa AKTAR, GÜrsel TARBA
27, 28 aoÛt 1988

Relevé C. CHABERT, Rafi TÜLBENTÇİ, Oral ÜLKÜMEN
30 aoÛt 1992

Relevé C. Chabert, Mustafa AKTAR,
Oral ÜLKÜMEN, Ali YAMAÇ
29 aoÛt 1993

Relevé C. Chabert, Mustafa AKTAR, Oral ÜLKÜMEN,
Ali YAMAÇ
29 octobre 1993

Relevé C. Chabert, Mustafa AKTAR
22 avril 1993

Boussole et clinomètre Suunto, décamètre, topofil Dressler, degré 4b

First page of Ayvaini Map, written by Claude Chabert

IN MEMORIAM
Claude Chabert (1939-2009)





The 4th of May 2009, my brother Claude succumbed to the ultimate attacks of a disease which had gradually deprived him of his intellectual abilities. A few years ago, he told me that he had enough plans - nearly all of them concerned caving - to live until the age of 140. The destiny did not allow him to live half of the time necessary to finish his work.

In his rich caving career, he explored and mapped many caves in Europe, Asia and the Americas. During his caving trips, - he did not like the word «expedition» for its colonialist connotations - often with Nicky, his companion, then his wife, he befriended many cavers all over the world.

His imaginative mind, his taste for intellectual ideas, for great philosophers, but also for surrealist poets, gave a piquant charm, a seductive and stimulating appeal to his brilliant conversation. Another aspect of his personality led him to make collections and inventories, to give great importance to details neglected by others. The results were the publication of books marking milestones in the history of speleology, but a few memorable and fruitful quarrels. With his intelligence, his liveliness, his cheerfulness, his conviviality, his determination, he was an original and friendly character who will be missed by the caving community.

Jacques Chabert

Jacques Chabert's "Ad Memoriam" article about his brother, published in UIS Bulletin

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