Rope Lava on the floor of the main passage of C7 Cave (photo: Takeshi Murase).
1. Extended summary of the 2018 expedition

The most significant lava tube caves of Southeast Asia are currently known from southern Vietnam. Beside some important lava tubes in Dong Nai Province near the town of Tan Phu, including 437 m long Hang Doi 1 Km 122 (Laumanns 2014), the most striking investigations so far were conducted between December 2013 and January 2015 by the Geological Museum of Vietnam in co-operation with the NPO Volcano-Speleological Society of Japan in Dak Nong Province, Krong No District, Buon Choah Commune, in an area around Chu B’luk Volcano. Altogether 18 lava tube caves were visited and 9 of them were mapped with a total of passages of 4,834 m. The most significant findings were the caves C7 (1,067 m long), C3+C4 (968 m), C8 (791 m), C0 (476 m) and A1 (438 m) (Honda et al. 2015). A Japanese follow-up expedition in 2017 yielded 6 new caves with a total of 1,941 m of passage. The description of these caves created much attention in the Vietnamese and international media. La The Phuc et al. (2017) conducted archaeological investigations in the Krong No lava tubes.

Most recently, the Krong No Volcanic Geopark was established by the Dak Nong authorities and an application for acknowledgement in the network of UNESCO Geoparks is foreseen to be made in November 2018. Not all the known lava tube caves were documented by the Japanese-Vietnamese investigations. The Krong No Volcanic Geopark registered about 50 lava tube caves, including the afore-mentioned sites. The Geopark strived to obtain a complete documentation of all the lava caves fore the UNESCO application. They consulted the Vietnam Institute of Geosciences and Mineral Resources (VIGMR) who tasked M. Laumanns to assemble a team of cave experts to finish off the surveying work in the Geopark. The previous Japanese explorers were invited to join the project.

This work was successfully conducted between 21th March and 9th April 2018 with participants from the Netherlands (René Haeeners), Japan (Takeshi Murase) and Germany (Torsten Kohn and Michael Laumanns). Beside that the expedition had an 11headed support team, consisting of staff from the Geopark, the provincial authorities, VIGMR and the Vietnamese army.

Altogether 32 caves and supposed cave sites were visited during the fieldwork and almost 2.8 km (preliminary value) of lava cave passages were mapped. Seven new caves were found and surveyed. Four collapse dolines which were supposed by our Vietnamese partners to be potential cave entrances turned out to have no or only insignificant passage. This brings to total of caves, surveyed according to international standards, to 48 and the accumulated length of all known underground galleries of the “Krong No Lava Cave System” to almost 10 km. Although the Krong No lava field only measures ca. 15x15 km, it is by far the most extensive ensemble of lava tube caves in whole SE Asia, including SE Asia’s longest lava cave (C7 Cave at 1,067 m). The area has a high density of pyroducts. Together with the small Chu B’luk volcano (inactive), supposedly being the main emitting source of the Pahoehoe lava in the area, this warrants a UNESCO application as well as use of the area for eco-tourism.

The fieldwork was divided into two phases:

First phase took place in the NW area of the lava field around the Dray Sap tourist resort close to a number of scenic waterfalls which are already now a well-known touristic destination but are mainly frequented by Vietnamese visitors. The previously known large lava caves, explored by the Japanese teams between 2013-2015, were made accessible by a narrow concrete trail that is still in construction but effective facilitates reaching the cave entrances as the area is generally overgrown by a dense thicket of thorny shrub. This made finding of the still unmapped lava caves (the so-called “B Caves”) a serious issue and only with the help of the Vietnamese army (who cut trails into the thicket) the 2018 expedition was able to locate all the known entrances and survey the lava tubes below. Also 4 new caves were discovered. Most of the “B Caves” caves in the Dray Sap area are relatively small and narrow and only exceptionally the lava tubes have walking size.

For the second phase of the investigations the team moved to the town of Dak Mom in the S of the lava field. From here, daytrips with motorbikes were conducted to the extensive lava field around Chu B’luk volcano. The area differs significantly from the north-eastern part of the lava field as it is intensively used for agricultural purposes (corn, coffee, pepper). At the time of our visit all the fields were harvested already and the lava field featured an open landscape with many small trails where potential roof collapses of lava caves could easily be spotted from far due to their green trees and bushed. However, the dark rock and the daily heat around 35 degrees Celsius at the turn from the dry to the wet season in April added some extra challenge to the expedition team. The new caves explored in this area were generally of larger size compared to the new caves mapped in the NW. There are also some areas in the southern part of the lava field that were so far not systematically checked for caves.

During the 2018 speleological investigation extensive biospeleological collections were made in the visited caves. These were the first investigations of its kind in the Geopark, which in our view urgently needs a general biodiversity study to underpin the UNESCO application.
Left: location of the Krong No Volcanic Geopark in Vietnam (according to La The Phuc et al. 2017).

Below: detail of the Krong No Volcanic Geopark and its caves (according to La The Phuc et al. 2017).

View of the southern part of the Krong No lava field (photo: M. Laumanns).
2. Team members

Fifteen men and two Scurions: The support team and the international 2018 participants. René Haemers (fourth from left, standing), Takeshi Murase (fifth from left, standing), Torsten Kohn (right, kneeling), Michael Laumanns (fourth from right, standing) (photo: Torsten Kohn).

3. Photographs:

The main entrance of C7 cave (photo: Takeshi Murase).
C7 Cave, side passage (photo: Takeshi Murase).

C9 Cave, main passage (photo Takeshi Murase).
P8 Cave, main passage (photo: Takeshi Murase).

T1 Cave, main gallery (photo: Takeshi Murase).
Double passage in one of the “B Caves” (photo: Takeshi Murase).

Geopark display showing the Chu B’Luk volcano (photo: Michael Laumanns).

Participants: 4 foreign cavers, Vietnamese support team: 11 persons = 15 people
Duration: 19 days      All currency in Euro

Travel:
- Passport visa         65 EUR x 4 persons        260 EUR
- International: flights to Saigon  890 € x 3 persons (DE/NL)    2,670 EUR
- International: flights to Saigon  380 € x 1 person (JAP)       380 EUR
- Minibus Saigon-Krong No-Saigon  110 € x 2 days         220 EUR
- Taxi/Motorbike hire for field trips 30 € x 15 days         450 EUR

Inland expenses:
- Accommodation in Nia Ghia 15 € x 4 persons x 2 days      120 EUR
- Accommodation in Dray Sap 10 € x 15 persons x 8 days     1,200 EUR
- Accommodation in Dak Mom  5 € x 15 persons x 9 days      675 EUR
- Food                    13 € x 15 persons x 15 days    2,925 EUR
- Local Guides + Army soldiers 10 € x 3 teams x 15 days  450 EUR

Communication, Outreach and Reporting:
- Production of BHB reports 8 EUR x 50 copies       400 EUR
- Mailing, telephone             100 EUR

Total cost            9,850 EUR

In comparison: preliminary budget in the ESP application    9,900 EUR

Other grants than the support from FSE/Scurion were not received.

5. Outreach

The expedition results will be published in international magazines. Presentations will be made on international conferences, such as the EuroSpeleo Forum 2018 in Ebensee, Austria. A comprehensive report, including the biospeleological findings, is envisaged in the international expedition series “Berliner Höhlenkundliche Berichte” (BHB), which at the same time is foreseen to accompany the UNESCO application of the Krong No Volcanic Geopark. Scientific publications on the biospeleological findings are also expected.

7. References


