

# MYANMAR 2018 - CAVE TOGETHER!



The joint expedition team returning from Red River Cave, Kayah (J. Dreybrodt)

3.2. –  
2.3.18

## Myanmar Cave Documentation Project 2018



EuroSpeleo  
Project

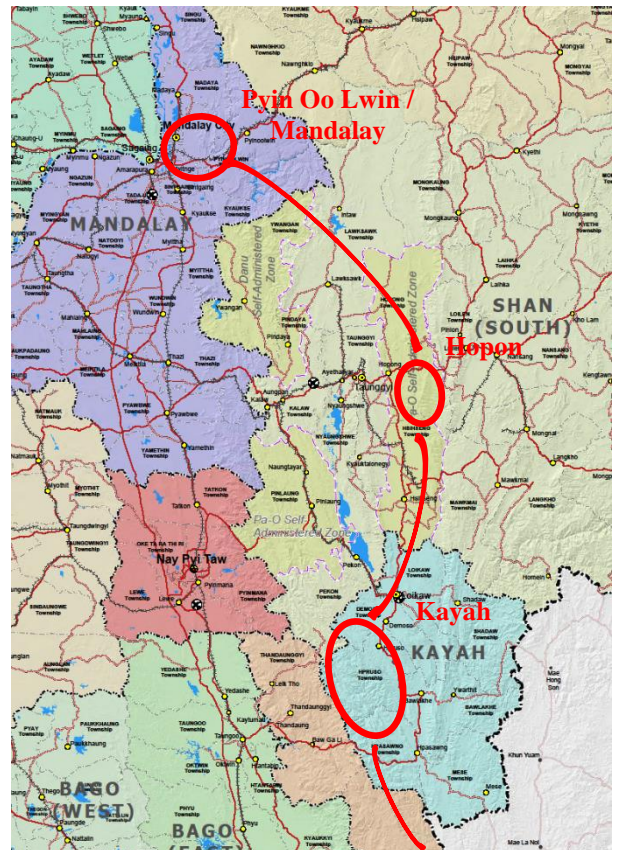
The 2018 expedition included for the first time cavers from Myanmar. These were educated in speleology during a 1st Myanmar Cave Training in June 2017. The concept proved very successful with 19 local participants joining during the four weeks of expedition. As result several new areas could be visited by combining cave expertise and local know how. Caves near Pyin Oo Lwin were documented together with the nature conservation group Sein Lan. The Sam Phu village near Hopon hosted the expedition afterwards. Then the expedition moved to Kayah and later Hpa-An. The surprise of the expedition were active bottomless shafts with sinking streams in Hrpuso and Hopon. About 8 km passage in 63 caves was documented with many promising open leads. The joint approach fosters a local caving community in a country with one of the least explored karst in Southeast-Asia.

## 1. Overview

The 2018 expedition marks a new approach in exploring caves in Myanmar. The former trainees of the 1<sup>st</sup> Myanmar Cave Training from June 2017 were integrated into the expedition and caves explored together with the international members. The local cavers help with logistic and scouting while experienced participants share their knowledge and improve the local caver's skills. This hands-on approach fosters independent cave research with the objective of the formation of a Myanmar Caving Society. This is important for further extended systematic documentation of Myanmar's hardly known karst and the base for subsequent biodiversity research, conservation and ecotourism projects. A balance of 50% international participants to 50% local cavers was intended with women participating from both sides.

Focus areas for 2018 were

- Mandalay and nearby Pyin Oo Lwin with steep cliffs and resurging streams together with the Mandalay cave group
- Sam Phu village new Hopon, where an active exploration club reported several caves
- Kayah:
  - Hpruso karst following the expeditions in 2016 and 2017, integration of local cave enthusiast who reported entrances at the Projects Facebook page
  - Tananlot village near Hwapasng who reported a large cave suitable for eco-tourism
- Hpa-An, reconnaissance of a small team to Kachin State in the South of Myanmar (not on the map)



## 2. Areas

The expedition started in Mandalay for the first week, continued the 2<sup>nd</sup> week in Hopon and moved afterwards to Kayah and ended in Hpa-An with exiting Myanmar in Myeik. Expedition members could join or leave each week in order to allow a larger number of participants. This approach proved very beneficial with 6 international and 19 local participants joining the expedition over the four weeks.

### Mandalay

The Mandalay Cave Trainees reported a scenic landscape of canyons and waterfalls along the cliff line from the Shan plateau with partially sinking rivers. In addition the nature NGO San Lan from Pyin Oo Lwin informed the public in a featured article in the Myanmar Times about newly found caves important to preserve. The contact was made by the Mandalay cavers and San Lan invited the project for surveying the caves. Over one week several caves were explored by descending canyons or doing long motorcycle rides on dirt roads. The caves are oriented on the cliff or at lower valley parallel the north-south fault line. They are

about 100 m to 700 m long and beautifully decorated. Stone Dragon Cave has many “discs”. These are sinter formations of disc shape sticking in the wall, defying gravity. In addition the cave fauna is rich with several cave geckos observed, likely being new species to science. A systematic cave fauna survey should therefore be performed. The last two days were spent surveying caves in canyons and on the plain at the lower part of the cliff line near Mandalay.

### **Sam Phu village at Hopon**

The Sam Phu village near Hopon heard about the cave training and contacted GiZ. They invited the project for exploring the caves in the surrounding area. A local exploration club is scouting these caves, but lacked vertical equipment and survey technique. On the reception evening, a list of known cave entrances with distance to the village, description and estimated potential was created. During the week 12 of these caves were visited and mapped together. The highlight is the multilevel system of Ho Hwe cave with a resurging river and large passages of 20 m width and 10 m height. The villagers claim that Blood Stone Shaft at the 600 m higher ridge connects to Ho Hwe. The shaft was visited on the last day and descended to –110 m until the rope run out. The air was fresh with a blowing stream.

### **Kayah – Hpruso and Hwapasng**

The project returned for the 4<sup>th</sup> time to Kayah State. Local cavers from Yangon and Mandalay joined for this core week of the expedition. After having the last year difficulties with access to the provinces Hwapasng and Hpruso, special permission of the state governor in combination with local support enabled a systematic exploration. Kayah state is geographically isolated, but very diverse in nature and tribes. It therefore supports projects related to ecotourism. In 2019 an international border point to Thailand is scheduled to open which could bring an influx of tourists from nearby Chiang Mai. The team stayed for the first days in the district town of Hwapasng exploring caves near Mawchi. A TV clip showed here a large cave chamber filled with 20 m high stalagmites. The cave was surveyed to 180 m length and documented with professional camera equipment. A nearby sink and resurgence were visited, but a connection could not be made.

The 2<sup>nd</sup> part focused on Hoyar in Hpruso district. Here the local minority tribe followed the project on Facebook and when learning the expedition is back, invited the team to survey nearby caves. Two valleys in about 15 km distance were systematically investigated. One valley has sinking streams on two locations that might be connected. The streams descent a series of shafts, partially climbable, to a depth of -162 m respectively – 80 m. This was the return point running out of rope and time. The shafts of these two caves, Otter- and Kyar Yin Cave, continue wide open with a strong draft. They have currently the highest depth potential in Kayah. The 2<sup>nd</sup> valley had three entrances leading to caves with horizontal passages of about 300 m length. They are particularly rich with cave fauna.

### **Hpa-An / Myeik**

A smaller team of four cavers continued down South to the area of Hpa-An. It was visited during the first reconnaissance trip to Myanmar in 2009. The Buddhist caves are well known and the objective was on finding new caves in the isolated limestone hills. The area around Mt Zeyabin surprised with big springs at its base and vertical caves on the mountain tops. As side trip two days were spent in a small karst area near the border point of Myawaddy. Further systematic exploration of the area is required. The team traveled afterwards south to Myeik. Here small caves on land were mapped before exiting Myanmar via Kawthaung to Thailand.

### 3. Cave Fauna

Cave Fauna is an important part of the ecosystem karst with endemic species still unknown to science. The best example are 15 new species of cave geckos in Myanmar. They were recently found in a small area near Hopon as part of a collaboration from Fauna & Flora International (FFI) with Sierra University (USA). The publications and cave maps of the project were an important contribution in identifying such areas of high potential. Therefore cave fauna is systematically recorded and mentioned in descriptions for later investigation by experts.



Cave Fish (Photo J. Dreybrodt)

The following fauna was recorded. Please see also the column in the cave list:

- Several cave geckos in Pyin-Oo-Lwin
- A underground stream with plenty of fish near Mandalay
- Large bat colonies in Pyin-Oo-Lwin and Hopon



Bat in Ho Hwe (Photo D. Sanz)



Cave Gecko (Photo U. Etter)



Bat colony in Ho Hwe (Photo D. Sanz)

## 4. Results

The project visited 63 caves with a total length of 8 km. The table below shows name, location to next village and length. The observed cave fauna is mentioned in the last column.

### Mandalay

No.	Date	Name	Altitude	Village / Ban / Island	Township	State	Length (m)	Depth (m)	Fauna
1	4.2.18	Stone Hollow Cave 1	892	Stone hollow monastery	Pyin Oo Lwin	Mandalay	50		
2	4.2.18	Stone Hollow Cave 2	890	Stone hollow monastery	Pyin Oo Lwin	Mandalay			
3	4.2.18	Eaint Gyi Waterfall	650	Stone hollow monastery	Pyin Oo Lwin	Mandalay			
4	5.2.18	Log Valley Cave	780	Taung Gaung Village	Pyin Oo Lwin	Mandalay	486		bats
5	6.2.18	Stone Dragon Cave	707	Taung Gaung Village	Pyin Oo Lwin	Mandalay	667	-16	cave geckos, bats
6	6.2.18	Mang Htam	729	Taung Gaung Village	Pyin Oo Lwin	Mandalay	265		
7	7.2.18	Brother Dragon Cave	699	Taung Gaung Village	Pyin Oo Lwin	Mandalay	107		snails
8	7.2.18	Lae Daw Cave	742		Pyin Oo Lwin	Mandalay	132		cave geckos, bats
9	7.2.18	Mahoyar Cave	776		Pyin Oo Lwin	Mandalay	429		bats, fish in stream
10	8.2.18	Deedote Gu	290		Mandalay	Mandalay	153		spiders
11	8.2.18	Kho Nan Shin Cave (Pigeon)	150		Mandalay	Mandalay	97		
12	9.2.18	Aung Baw Di Cave	125	Nat Yay Kan	Mandalay	Mandalay	37		
13	9.2.18	Mya Lae Cave	95		Mandalay	Mandalay	95		

### Shan

No.	Date	Name	Altitude	Village / Ban / Island	Township	State	Length (m)	Depth (m)	Fauna
14	17.2.18	San Oun River Cave	1300	San Oun	Hopong	Shan South	315		very few bats top levels
15	11.2.18	River Cave Top Entrance	1329	San Oun	Hopong	Shan South			
16	11.2.18	Fossil Cave	1337	San Oun	Hopong	Shan South			
17	11.2.18	Monastery Cave	1360	Hti Lin	Hopong	Shan South			
18	11.2.18	Htam Yam Phu	1360	Hti Lin	Hopong	Shan South			
19	12.2.18	Pan Tan Pay Cave	1497		Hopong	Shan South	25	-18	
20	12.2.18	Tham Ae 1	1410	Ae	Hopong	Shan South			
21	12.2.18	Tham Ae 2 (Ghost Cave)	1497	Ae	Hopong	Shan South	202		
22	12.2.18	Tham Ae 3	1502	Ae	Hopong	Shan South	40		
23	12.2.18	Tham Ae 4	1502	Ae	Hopong	Shan South	30		
24	13.2.18	Ho Hwe Cave	1204	Ho Hwe	Hopong	Shan South	1,387		bats, white worms, snail shells
25	14.2.18	Hti Zoung	1534		Hopong	Shan South	10		
26	14.2.18	Hti Owou Loung	1591		Hopong	Shan South	35		many crickets
27	14.2.18	Nam Hu Upper	1436	Nam Hu	Hopong	Shan South	133		few bats
28	14.2.18	Nam Hu Middle	1436	Nam Hu	Hopong	Shan South	15		
29	14.2.18	Nam Hu Low	1436	Nam Hu	Hopong	Shan South	20		
28	14.2.18	Nam Hu Base	1385	Nam Hu	Hopong	Shan South	50		
29	16.2.18	Sake Village Cave	1445	Hti Lin	Hopong	Shan South	30	-12	few bats
30	16.2.18	Blood Stone Mountain Cave	1867	Sam Phu	Hopong	Shan South	100	-110	

### Kayah

No.	Date	Name	Altitude	Village / Ban / Island	Township	State	Length (m)	Depth (m)	Fauna
31	19.2.18	Tanan Pagoda Cave	555	Tananlog	Hwapasng	Kayah	222		bats, spiders
32	19.2.18	Tanan River Cave	392	Tananlog	Hwapasng	Kayah	144		many bats
33	19.2.18	Tanan Shaft	475	Tananlog	Hwapasng	Kayah			
34	19.2.18	Tanan Resurgence			Hwapasng	Kayah			spiders, one fish with legs
35	21.2.18	Bra Bu Cave	1040	Yar Khee Buu	Hpruso	Kayah	90		
36	21.2.18	Kakhi Bu	1189	Yar Khee Buu	Hpruso	Kayah	80		spider curtains
37	21.2.18	Phyan Cave (Otter Cave)	1151	Yar Khee Buu	Hpruso	Kayah	282	-161	big frogs, spider curtains
38	21.2.18	Kyar Yin	1041	Yar Khee Buu	Hpruso	Kayah	132	-82	spider curtains
39	22.2.18	Modar Cave	1249	Hoyar	Hpruso	Kayah	302		
40	22.2.18	Plat Ei	1159	Hoyar	Hpruso	Kayah	30		bats
41	22.2.18	Pudda Cave	1254	Hoyar	Hpruso	Kayah	292		gecko, bats
42	23.2.18	Buu Pha Cave	1225	KhunKhu	Hpruso	Kayah			white fish, spider, froggegs

## Hpa-An / Myeik

No.	Date	Name	Altitude	Village / Ban / Island	Township	State	Length (m)	Depth (m)	Fauna
43	26.02.18	kawkathaung 2	20	Kawkathaung		Kayin			Fish, Spider, Lopster, bats.
44	26.02.18	Kayaung Kayai	20	Lunnya Village	Hpa an	Kayin			
45	27.02.18	Ein du cave	!	Ein Du Village	Hpa an	Kayin			bats, spiders
46	28.02.18	lunnya cave		Lunnya Village					
47	04.03.18	Waterfall Cave	20	Ein Du Village	Hpa an	Kayin	60		Fish, Spider
48	02.03.18	Tiger Cave	457	Miuttarinmyaing	Myawaddy	Kayin	30		
49	02.03.18	Tiger Cave 2	404	Miuttarinmyaing	Myawaddy	Kayin	33		
50	02.03.18	Winkabar Cave	437	Miuttarinmyaing	Myawaddy	Kayin	100		
51	03.02.18	Cave with 1000 Holes		Miuttarinmyaing	Myawaddy	Kayin			
52	01.03.18	Kyauk Tanng 1	15	Kyauk Tanng	Hpa an	Kayin	220		
53	01.03.18	Kyauk Tanng 2	17	Kyauk Tanng	Hpa an	Kayin	70		
54	01.03.18	Kyauk Tanng 3	18	Kyauk Tanng	Hpa an	Kayin	30		
55	01.03.18	Kyauk Tanng 4	15	Kyauk Tanng	Hpa an	Kayin	150		
56	01.03.18	Kyauk Tanng 5	15	Kyauk Tanng	Hpa an	Kayin	60		
57	06.03.18	Elephant Cave	23	Tagu Village	Myeik	Myeik	64		
58	06.03.18	Budda Cave	35	Tagu Village	Myeik	Myeik	30		
59	06.03.18	Dagon Cave	25	Tagu Village	Myeik	Myeik	160		small Bats, snake,
60	06.03.18	No Name 1	20	Tagu Village	Myeik	Myeik	20		
61	06.03.18	No Name 2	20	Tagu Village	Myeik	Myeik	40		
62	08.03.18	Bad cave	0		Myeik	Myeik	40		Bats.
63	08.03.18	Chicken feed Cave	0		Myeik	Myeik	130		Big and small bats

## 5. Summary and Outlook

The overall understanding of the Karst of Myanmar could be further increased. The cave training with integrating the trainees in the expedition proved a successful concept. This enables faster research and increases awareness for preserving the caves and the sensitivity of karst. The next steps are:

1. further systematic exploration of the newly visited areas
2. hydrogeology studies in key areas for modelling water flows to understand the risk on water contamination from urbanization and mining
3. Karsts education and raising awareness of the sensitivity of karst
4. Supporting the local caving community by expertise and funding

## 6. Acknowledgement

The Sein Lan Nature Conservation NGO in Pyin-Oo-Lwin guiding us to newly found caves.

Ye Htut and Thet Paingthun and families for the unforgettable expedition start with their hospitality.

Siegfried Moser and Myat Myat Moe from German GiZ for reliable supporting or project in Taunggyi with arranging meetings, logistics and joining in the field.

Aung Thein and his family for inviting and hosting us in his house at Sam Phu village.

Mr. Dahklo Too, KNSO Communication Manager for arranging our stay in Hwapsang

Mr. Michael and his family for hosting us in Hpruso, arranging local guides and showing us his amazing karst.

Ko Htay Aung (Theo) our guide in Kayah for his excellent arrangements and always being attentive.

Mr. Myoe with his yellow minibus who drives us always safely and explores with us.

## 7. Sponsors

The European Union of Speleology (FSE) for granting EuroSpeleo Project Status.

Aventure Vertical (AV) from France for providing speleo equipment of harnesses and bags.



## 8. Expedition Members 2018

### **International** **(CH, F, UK, D)**

Joerg Dreybrodt (main co-ordinator), Urs Etter (co-expedition leader), Florian Hof, Diego Sanz, Martin Foakes & Amandine Laborde

### **Yangon Cavers**

Nyi Nyi Aung (main co-ordinator), Aung Khaing Myint, Sandar Nyunt Mai, Zay Yar Min

### **Mandalay Cavers**

Ye Htut (co-ordinator), Kyaw Ye, Thet Painghtun

### **Pyin-Oo-Lwin**

Toe Toe Nyein (co-ordinator) & San Tint (both San Lan)

### **Sam Phu (Hopon)**

Aung Toe (leader), Maung Tan, Maung, Dwi, Aung Kyi, Aung Sein, Kyee Bote

### **Kayah**

Htay Aung (main guide), Win Naing, Wai Yan Htet Kyaw (Ministry of Hotels & Tourism), Thein Zaw (Ministry of Culture)

### **Hpa-An Cavers**

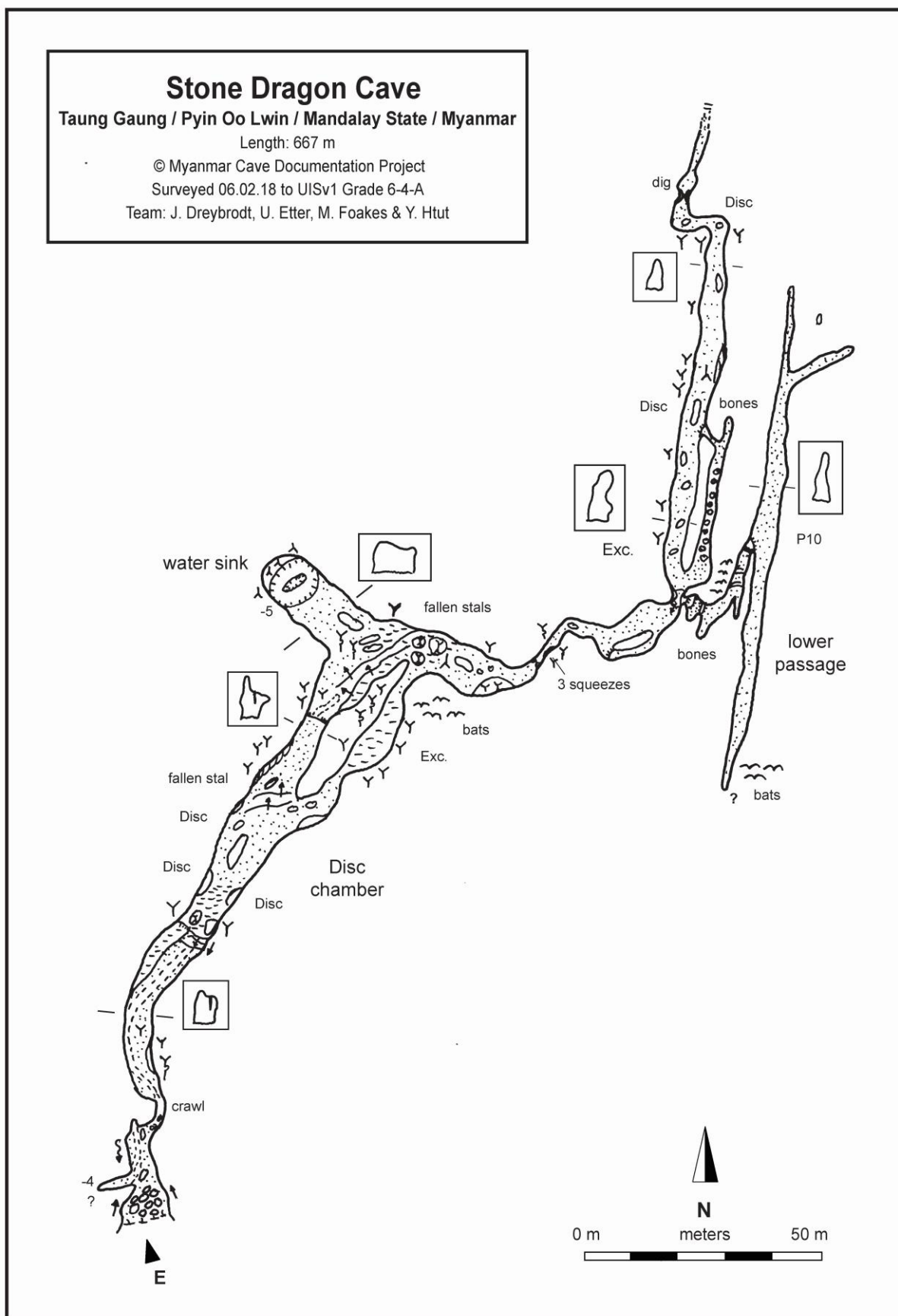
Tamk Aungkohtwe

The joint Kayah expedition team with our hosts in Hoyar village.



## 9. Mayor Cave Maps

Maps of Stone Dragon Cave near Pyin Oo Lwin (© Myanmar Cave Documentation Project)





## Phyan Cave (Otter Cave)

Yar Khee Buu / Hpruso / Kayah State / Myanmar

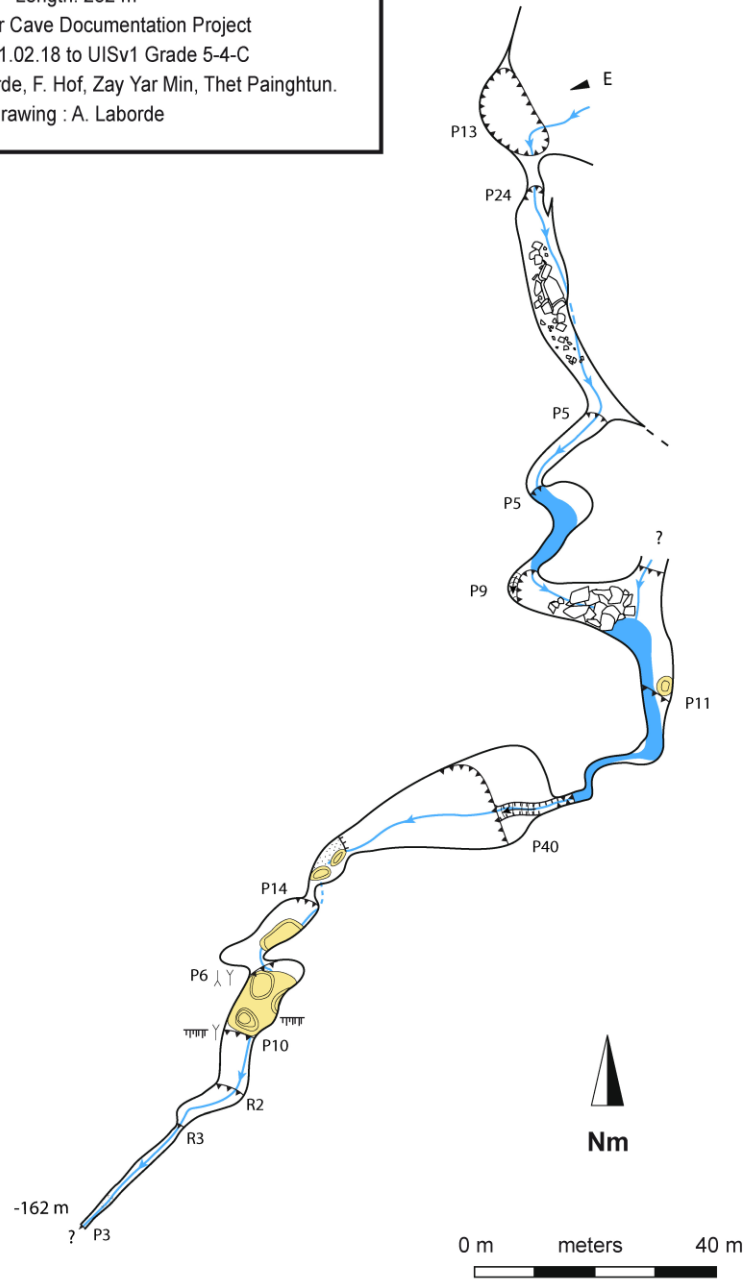
Length: 282 m

© Myanmar Cave Documentation Project

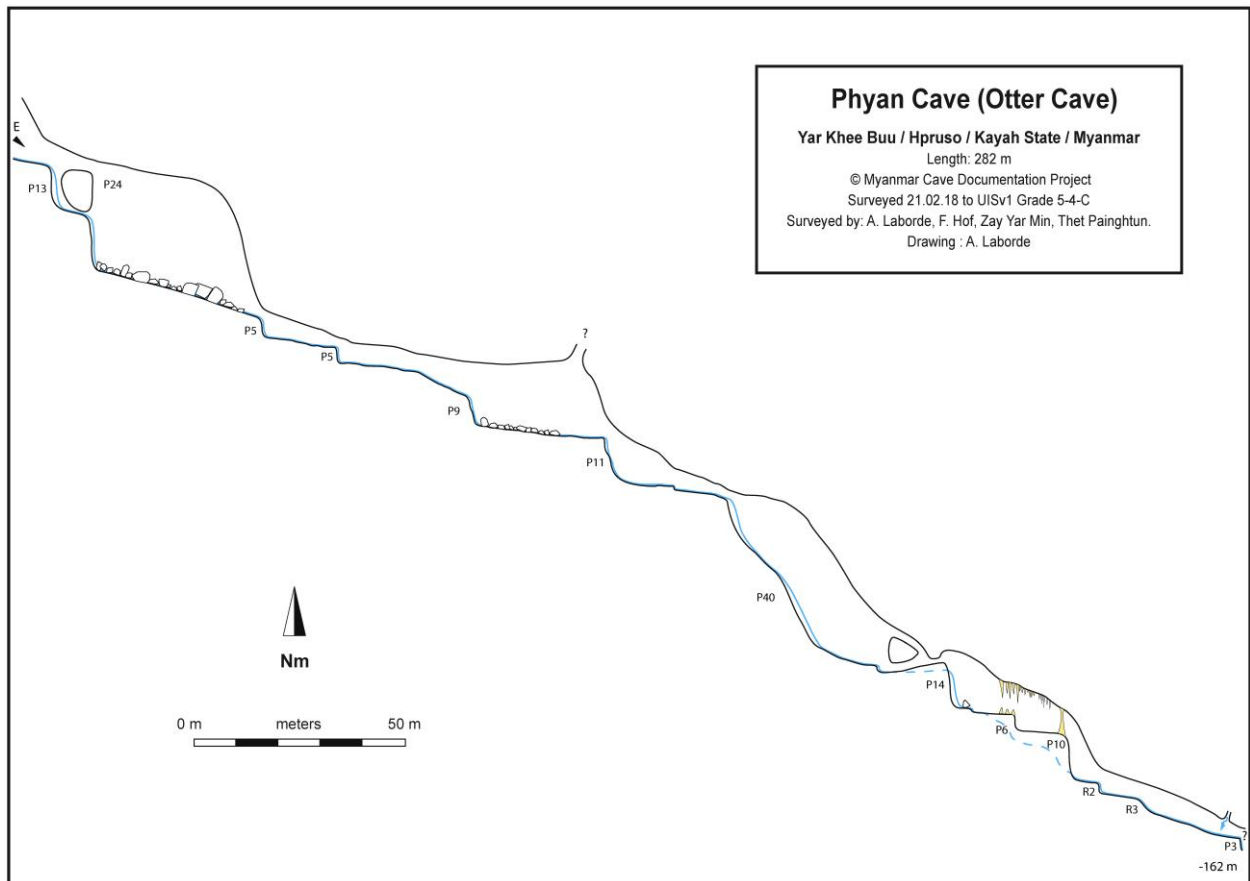
Surveyed 21.02.18 to UISv1 Grade 5-4-C

Surveyed by: A. Laborde, F. Hof, Zay Yar Min, Thet Painghtun.

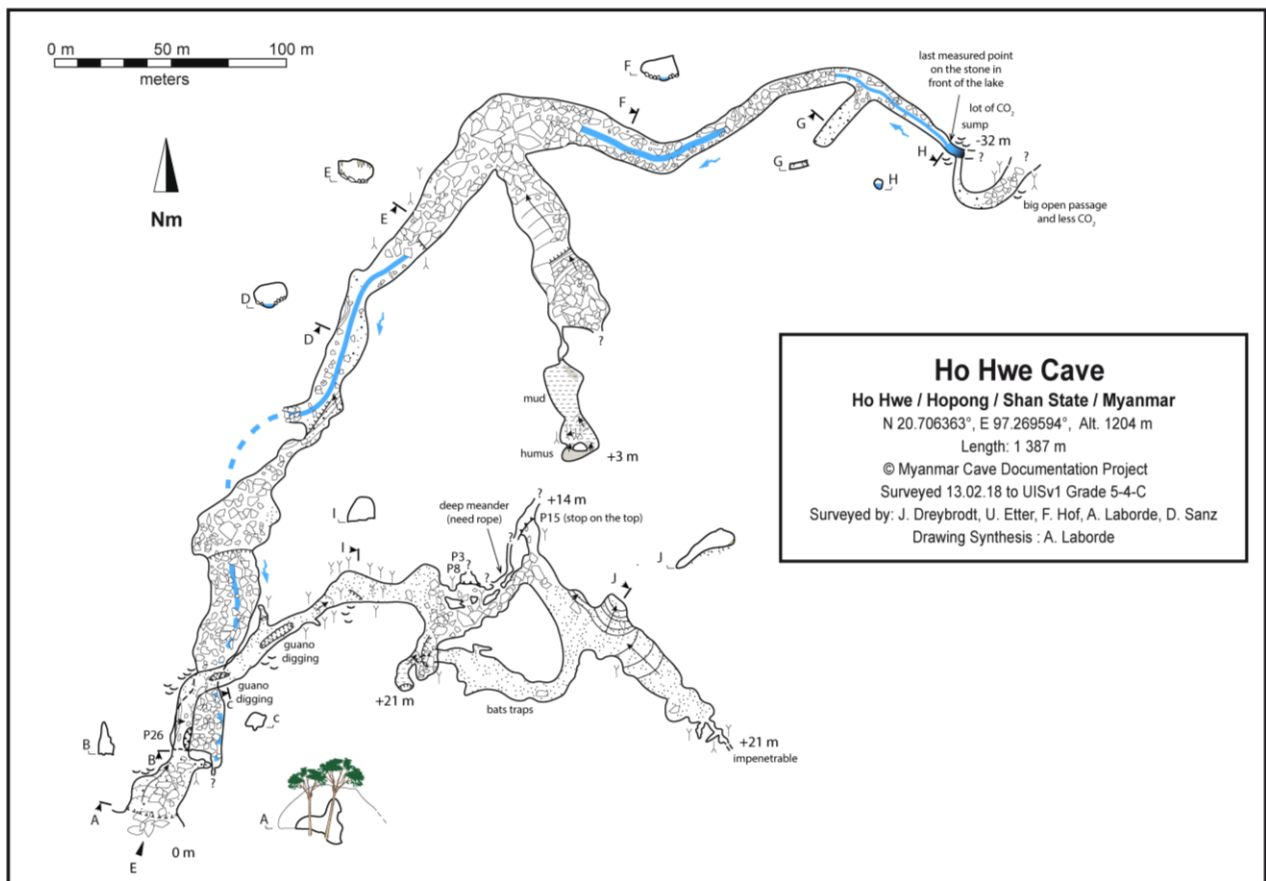
Drawing : A. Laborde



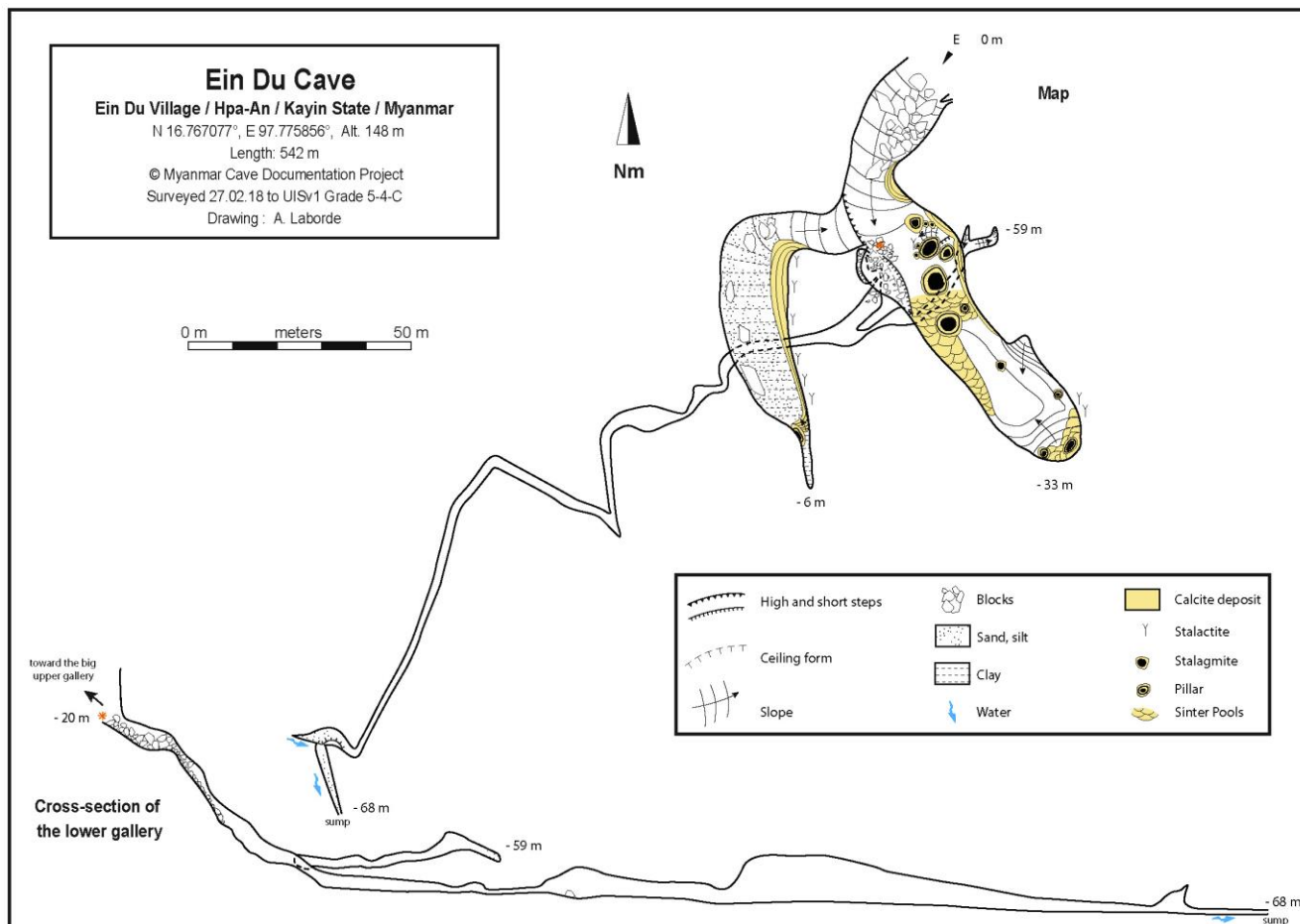
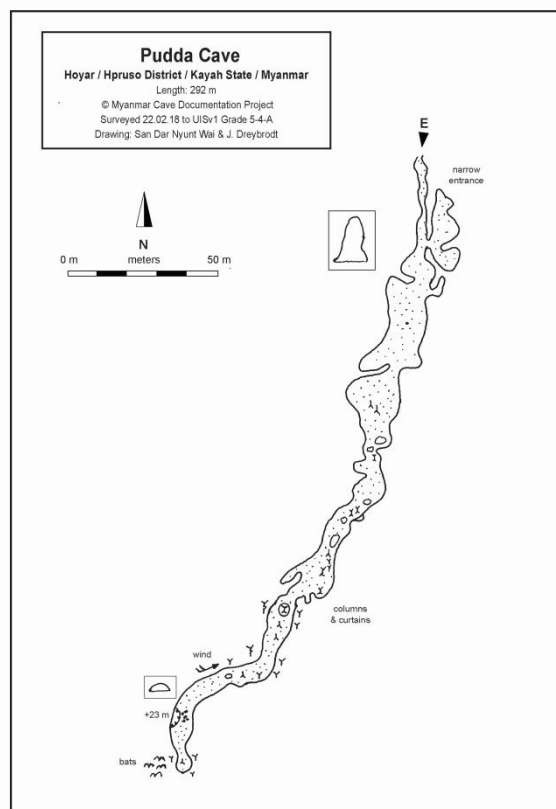
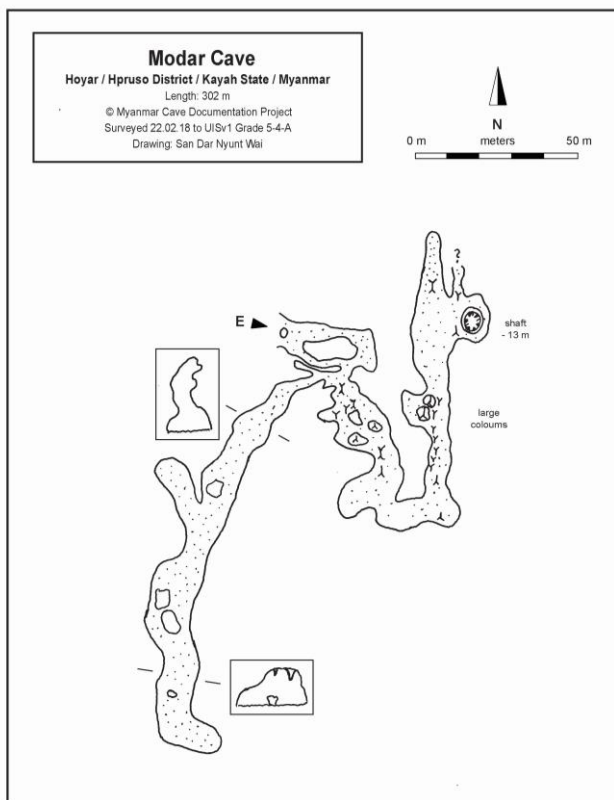
Map of Phyan Cave in Hpruso (Kayah), side view of the series of shafts



Map of Ho Hwe Cave in Hopon



Map of Modar Cave and Pudda Cave in Hoyar (top) and Ein Du Cave in Hpa-An (bottom)



## 10. Pictures Shan States

Tower karst near Sam Phu (Hopon) (D. Sanz) ▼



Lower large passage in Ho Wee Cave (D. Sanz) ▼





## 11. Pictures Kayah

Surveying Tananlog Pagoda Cave (D. Sanz)



Tananlog Pagoda Cave (D. Sanz)



Descending Otter Cave (top, D. Sanz )

Beautiful passage in Modar Cave (bottom, U. Etter)





# Expedition Teams 2018

**Mandalay**



**Pyin Oo Lwin**



**Sam Phu (Hopon)**



**Hpa-An**



**Kayah (vertical)**



**Kayah (horizontal)**



Pictures by D. Sanz, U. Etter, San Tint, J. Dreybrodt

The International Team 2018 says “Thank you” to all Myanmar cavers, dear friends and supporters. We are looking forward further exploring and documenting with you Myanmar’s beautiful karst.

Thank you.

ကျေးဇူးတင်ပါတယ်။



The international team with Siegfried Moser (GiZ) and Aung Thein in Sam Phu Village (Photo D. Sanz)

### We are

Experienced cavers organized in national caving societies with a large speleological expertise.

We partner with authorities, NGO and research institutions.

### Our Mission

We bring value to Myanmar and contribute to the Sustainable Development Goals (SDGs) by a systematic documentation of caves and karst for biodiversity research, conservation and ecotourism. 33 cavers of 12 nations contributed in 15 expeditions since the foundation in 2009.

### Acknowledgement

We acknowledge the cooperation with GiZ.

Receiving EuroSpeleo Project Status from the European Speleological Federation (FSE) is highly appreciated.



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