

Earthquakes in Old Lan Na : A Part of Natural Catastrophes

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ABSTRACT

Old Lan Na had its share of natural catastrophes like other subtropical regions. Missing rains, inundations that ruined crops, floods that covered cities with river sand, even whole settlements that sank in flood water, etc., had been experienced.

In this contribution, earthquakes shall be the topic. Since modern times, we know that Lan Na is in a part of the globe where underneath, tectonic plate movements produce shocks and tremblings on the ground surface but the ancient people of this region did not have that knowledge. They ascribed such events to supernatural forces. After writing became available, some of these events were noted down. Here shall be mentioned a few examples, without trying to interpret them in scientific or engineering terms.

It seems that in Old Lan Na, earthquakes were (and still are) probably rather frequent but mostly moderate, seldom violent; at least their overall damage seemed to have been relatively minor, presumably due to local architecture and building materials.

Key words: Earthquakes, Lan Na history, Natural catastrophes

INTRODUCTION

During the past few years, many natural disasters occurred and were publicized, in various parts of the world, also in Thailand's northern part, in Lan Na. Drought, inundations, tsunamis, earthquakes, too much heat, too much cold, no wind, too much wind, no cloud, sky too much clouded are a few examples. Added to that were environmental, personal, financial or general economic calamities. Some people have become quite inclined to believe that we are now approaching a *kaliyuga*, an era of general misfortune, or that we are already living in it, possibly caused by our own misdeeds, personal *karmic* sins, or by man-made changes in global weather conditions. That view is countered by others who claim that (1) global changes in weather and geological conditions have always occurred; (2) natural disasters occurred in the past just as well, possibly even more than at present because in the meantime man has tried to prevent them, for instance, with dams and irrigation; and (3) present-day disasters get to be known quicker and in more detail than in the past because of modern rapid news communication, while journalists additionally try their best to make bad news more grisly than necessary.

In the following pages, I shall deal with one type of these catastrophes. I shall concentrate geographically on Old Lan Na, and subject-wise on earthquakes. Earthquakes in Lan Na are a fairly well-known matter because some of them, in the past, were quite "famous",

and tremors still occur at present. A list of earthquakes in the past has, as far as I know, not yet been set up. I am certain that the list below is not complete.

METHODOLOGY

Written Lan Na text sources will be used to extract passages about earthquakes. These passages will be translated and explained in the following order: The place, time and date of the earthquake, the kind or description of the earthquake, and the damage done. Then are mentioned the historical sources, and finally additional comments if useful to elucidate details. That will be followed, at the end of the paper, by a more general discussion of the overall results.

BACKGROUND AND ANALYSIS

Examples of Lan Na Earthquakes

The legendary Chiang Sän Earthquakes of c. BC 600

The earliest earthquakes reported for Lan Na occurred about 2,600 years ago in the area of Chiang Sän. Then, within a period of 35 years, occurred 4 major earthquakes.

1. At sunrise, on 15 / 10.2 (Ch.Mai) / Añjanasakkaraja (AS) 67 = 23 June BC 624.
There was an earthquake, thunder and mountains groaned.
No damage is mentioned.
2. At sunrise, on 15 / 08 (Ch.Mai) / AS 68 = 14 April BC 623.
There was an earthquake, thunder and mountains groaned, together with strong rain and an inundation.
No damage is mentioned.
3. Before sunrise, on 15 / 10 (Ch.Mai) / AS 97 = 23 May BC 594.
There was an earthquake and thunder.
No damage is mentioned.
4. On 14 / 08 (Ch.Mai) / AS 102 = 26 May BC 589.
There was an earthquake, loud and long thundering, and mountains groaned, all very intensely.
No damage is mentioned.
(SHN.N: 147, °U: 4, °P: 5)

Comment:

That is what the legend of King Sinhanati, or Sinhanawati, tells us at first. However, a few pages later the legend mentions that these dates correspond to the conception of the Buddha Gotama in the womb of his mother, to his birth, to the birth of his son Rahula, and to the day before his Enlightenment, when Lady Sujata gave him a golden bowl of milk-rice.

Therefore, those earthquakes are purely literary, to inform the reader that these great

events in India also were of great importance for Lan Na. Disregarding their religious aspect, it is evident from these episodes that earthquakes in Lan Na obviously did not surprise the former readers of the legend, surely because earthquakes were nothing unusual here.

The legendary Wiang Yonok Nakhòn Earthquake of AD 454, 460 or 554

After the evening meal, when the sun had settled behind the hills, on -07 / 07 (Ch.Mai) / MS 376, MS 476 or NS 1003, plus a few more accompanying dates, all amounting to one of 3 different dates: AD 454 or 455, AD 460 or 461, and AD 554 or 555.

One heard noises as if coming up from the earth, and the earth shook and trembled as if the city Yonok Nakhòn would crumble and collapse. Thereafter it was quiet. The same phenomenon occurred two more times in the same night, the third time being the most intense.

During the third time, the city sank down and became a lake. Everybody inside, royals and commoners, died.

(SHN.N: 142-147, 151-152, 198; °U: 2-5, 7, 40; °P: 1-4, 8-9, 57; °PP: 56-61; 94)

Comments:

1. The background to this story is that, in 673 BC, Prince Singhanati, coming from Thai stock in Yünnan, had founded a walled city, called Phanthu Singhanati Nakhòn, alias Wiang Yonok Nakhòn Chang (*sic*) Sän. Its location is indicated in SHN as not far from the Mä Kok, and 7,000 wa (c. 12 km) west of the Mä Khong. Also, it was about 1,000 wa (c. 1.7 km) southeast of the hill Dòi Ku Kăo, which had two peaks with a brook in between and shady *yang phrai* trees (not mentioned in SHN.PP). Its size was 3,000 x 3,000 wa (c. 5x5 km). The Naga king Phanthu dug the city moat; so presumably there was an earthen city wall.

All that shows that the city was located southwest of present Chiang Sän town, in the southwestern part of the swampy lake, Wiang Nòng, or Nòng Wiang, more or less southeast of Dòi Ku Kăo with its characteristic double peak and an intermediate little brook, and about 8-9 km northwest from the Mä Kok river. See map 1:50,000, L7017, Sheet 4949.2 (or L708 Sheet 4971.1), around GS 030.330.

It is indeed a holy area for the Singhanati legend. That hill was the first site that the Buddha, coming straight from India, visited in Singhanati's kingdom, in BC 574 when he was 49 years old. On it the Buddha met with Mahathera Kassapa and 500 monks, who had also arrived from India through the air. He gave a head hair which was enshrined in a newly-made crypt; and he said that, after his death, Maha Kaccayana should bring a bone relic from his foot and enshrine it here, after which the site would then be called Dòi Ku Kăo (now Wat Phra That Dòi Ku Kăo).

This hill is also the place where an inscribed stone slab was found. Written in 1559, it says that, in that year, 15 monks under the leadership of Mahathera Luang of Wat Pa who had 44 *vassa* (years in the Buddhist Order) and Phra Mahasami of Wat Pa Däng (Chiang Sän ?) with 30 *vassa*, delimited the *khandasima* and the *mahasima* of Wat Pa Ku Kăo. (Inscr. 1.4.1.1 Wat Pa Ku Kăo 1559.)

2. In AD 454, or in 460, or 554 (most sources have, or allow for, all 3 different dates), people caught a giant white (albino) eel, *pla yian* (or: *yüan*) *phüak*, thick as a palm tree and 7 wa long (12 m), in the Mä Kok, and brought it to the king. He ordered it to be cut up and the pieces distributed among the population. After all had eaten of it during the evening meal,

the city was submerged on the same night.

3. The text does not directly say that catching and eating this eel was the reason for the destruction of the city, but the context clearly points to it.

4. SHN has many dates. They are coherently interconnected (with one unexplained jump of 100 years towards the end!), and it is not overly difficult to calculate them into the modern calendar. But the dates of SHN as calculated in SHN.M and °M'1973, are probably not what the author of the legend had in mind; for instance, in the comments to these texts, the city's destruction is dated to BS 1558, i.e., AD 1015. Unfortunately, these two text editions are well-known in Thailand which sometimes leads to unnecessary discussions. It seems obvious that these calculations were based on the equally well-known SHN.PP text edition which, however, omits the first part of the legend. In that crucial part, the origin and details of the initial *sakkaraja*, or era, are explained, from which then follow the identities of the other eras used later on in the legend. Without this first part, all later dates can become seriously wrong. Of course, the "correct" dates of AD 454, 460 or 554 are equally questionable; after all, it is a legend.

5. That there was indeed some kind of land subsidence and/or water intrusion, is hardly doubtful because it used to be known, and I saw myself in the dry seasons in the late 1960s when the water was low, that there were at least 2 spots beneath the surface in the shallow water where one could see small mounds of bricks. I then held one in my hand, and with hindsight I would say, judging by its reduced size, that it did not belong to the larger bricks used in Lan Na's golden age, say up to 1550, but was younger. These bricks certainly belonged to monastic buildings, not to private architecture, because in the old times the house of commoners, also the palace of princes, was made of wood.

The Lamphun Earthquake of c. 1218

In early 1218 or early 1219.

The (large, square) jedi (with 60 Buddha images in Wat Jam Thewi) was ruined (*lin*) by a violent earthquake.

The kind of damage is not mentioned.

(Inscription 1.3.1.1 Wat Ku Kut 1218)

Comment:

The text permits 3 interpretations of the date:

1. The stupa was damaged on that date.
2. The stupa was damaged before, and King Savvadhissiddhi of Lamphun (Hariphunchai) repaired it on that date.
3. The king finished the repairs with a celebration on that date.

The Chiang Mai Earthquake of c. 1498

Not long after his consecration as king in 1495, Phaya Kāo built Wat Buppharam and then donated the monastery to the Buddhist Order (i.e., during an appropriate ceremony).

There was a very miraculous earthquake at the time of the donation.

No damage is mentioned.

(CMA.HPms: 5.11R.5; °W'1998: 108; °N: 145; °U: 84. – JKM.C: 57, 117; °J: 148. – JKM Index: 204-205)

Comments:

1. Phaya Kāo was consecrated in 1495.
2. Wat Buppharam is on present Tha Phā Road, Chiang Mai.
3. CMA adds that because of this miracle, the king later had a silver Buddha image cast which he then placed in Wat Buppharam.
4. CMA does not have a date. JKM also mentions the founding of the monastery and has a date, but it does not mention the earthquake nor the silver image.
5. The date mentioned in JKM is Tuesday, 07 / Citra / CS 858 Mahoraga = Friday 10 March 1497. The discrepancy of 3 days (Tuesday – Friday) is explained by Eade 1969: 171 as the result of JKM's being out of the correct calendar dating system by up to 3 days during this entire period (late intercalation of *adhikamasa*, etc.).
6. JKM says that the king “built”, *karesi*, the monastery on that day. I suppose that this was the auspicious moment when construction was begun. Presumably the monastery was finished and the official donation was made some time in the following year, in 1498, which is when the earthquake occurred.

The Chiang Mai Earthquake of 1522

On Wednesday, 01 / Magasira / CS 884 = Wednesday, 19 November 1522.

There was a strong earthquake.

No damage is mentioned.

(JKM.C: 137; °J: 181. – JKM Index: 59)

The Chiang Mai Earthquake of 1545

During the hour Tharā Kham, on -04 / 11 (Ch.Mai) / (CS) 907 Dap Sai = between 16.30 – 18.00 h on Tuesday, 28 July 1545.

The earth trembled and shook, groaned and moaned, very intensely (meaning it was a powerful and loud earthquake.)

The finials, (top parts) *yòt*, of the Jedi Luang and of the jedi in Wat Phra Sing broke off and fell down, and also the finials of many other jedis.

(CMA.HPms: 5.16R.3, °W'1998: 116, °N: 155, °U: 88)

Comment:

The damage to the Jedi Luang, as seen and photographed in the 20th century (and still visible though it was somewhat restored in the 1990s), is much more than only the destroyed finial of the stupa. We do not know how high the jedi was. CMA says that in 1438, after a reconstruction, it was 27 wa wide (c. 45 m) and 41 wa high (c. 70 m). But 40 years later, in 1478, was finished another major reconstruction about which we know nothing. Nor do we know what its upper part looked like. Anyhow, it is evident that not just the topmost part has disappeared but also much of its upper section; and besides, much of the whole southern side was / is missing. It seems therefore that the stupa suffered additional damage after the quake of 1545 when only the *yòt* fell down.

So probably the force of the earthquake of 1545 should not be measured by the damage one sees now.

The Chiang Mai (Nan ?) Earthquake of 1603

On -09 / 09 (Ch.Mai) / (CS) 965 Ka Mao = Tuesday, 03 June 1603.

There was an earthquake.

No damage is mentioned.

(NAN.W'1994: 67-68; °RS'1964: 430-431)

Comment:

The Burmese seized Nan in 1603, arrested its ruler, Jao Chetabut, and brought him to Chiang Mai where they murdered him. On that day, 03 June 1603, there was an earthquake.

I suppose that the earthquake occurred in Chiang Mai, but, since our source is the Nan chronicle, written in Nan, the author might have intended to say that the earthquake was in Nan.

The Chiang Sän Earthquakes of 1715

There were earthquakes throughout June and in August of that year.

1. Shortly before sunrise, on 06 / 07 (Sukh.) / CS 1077 Dap Met = Friday 07 June 1715.

There was an earthquake.

The finials of 4 jedis broke off and fell down.

(The quakes lasted for many days.) At that time (the earth) groaned and rumbled strongly, 3 times per day. It lasted until the end of that 7th month (Monday, 01 July 1715).

2. On -04 / 09 (Sukh.) / CS 1077 = Monday 19 August 1715.

There was another earthquake.

No damage is mentioned.

(CSÄ.PP: 205; PY'1907: 324)

The Chiang Mai Earthquake of 1765

On 09 / 05 (Ch.Mai) / CS 1126 Kap San = Wednesday 30 Jan 1765.

There was a strong earthquake.

People standing were falling over.

(CMA.HPms: 6.6R.5, °W'1998: 139; °N: 185; °U: 104.)

The Chiang Mai Earthquake of 1771

At the hour Tut Chao on -10 / 07 (Ch.Mai) / CS 1133 Ruang Mao = between 06.00 – 07.30 h, on Thursday 09 May 1771.

There was (the sound and tremor of) a fearsome earthquake coming from the north.

No damage is mentioned.

(CMA.HPms: 6.8V.2; °W'1998: 141; °N: 188; °U: 105)

The two Lan Na Earthquakes of 1801

1. In the early evening on 10 / 02 (Ch.Mai) / CS 1163 Luang Rao = Sunday 15 November 1801.

The earth groaned and rumbled a long time, and shook and trembled heavily.

The crystal ball atop the finial, *yòt*, of the jedi Phra That Phu Phiang Chä Häng (Nan) became detached and fell down.

Also came loose and fell down, at the same time, the finials

- of the (Dòi) Suthep jedi at Chiang Mai,
- of the (main) jedi in Lamphun (i.e., the Phra Maha That),
- of the jedi in Lampang Nakhòn,
- and of the Chò Hä jedi in Phrä.

Further, cross-beams of the large wihan in Phayao, which shelters the Buddha image Phra Jao Ton Luang, were shaken loose and fell down (viz. parts of the roof collapsed?).

2. On -14 of the same month = Friday 04 December 1801.

There occurred another earthquake.

No damage is mentioned.

(NAN.RS'1964: 471; °W'1994: 98)

The Nan Earthquake of 1821

On Saturday, -06 / 06 (CMA) / CS 1182 Kot Si = Saturday, 24 March 1821.

There was an earthquake.

The earthquake caused the finial, *yòt*, of the jedi at Phu Phiang Chä Häng (Nan) to break so that it was hanging down.

(NAN.RS'1964: 485; °W'1994: 108)

The Nan Earthquake of 1879

On 08 / 02 (CMA) / CS 1241 Kat Mao = Thursday, 23 October 1879.

There was an earthquake. The earthquake began first in the north (and then came here).

No damage is mentioned.

Comment:

Between 08 – 16 / 02 of that year (23 - 28 October 1879), the king of Nan, Jao Ananta Wòrarütthidet, held a ceremony for the consecration of (a) Buddha image(s), which included listening to the Dhamma, and making merit. It was the king's 5th great merit-making festival. The earthquake occurred on the first day.

(NAN.RS'1964: 519; °W'1994: 124)

RESULTS AND DISCUSSION

Even though the number of recorded earthquakes over the last 700 - 800 years does not seem to be very high, it is certain that Lan Na must have experienced earthquakes rather frequently, many more than have come to our attention. Surely not all earthquakes were recorded, only a few major ones, and less-serious tremors not at all. Also, because of gaps in our texts, it is certain that not all records of quakes, even of major ones, have reached us.

The damage done by the earthquakes, in general, seems to have been seldom very grave. Probably Thai architecture with its somewhat elastic wooden buildings on posts, and with bamboo or wooden walls, helped absorb shocks. River dams were made, not of cement but chiefly of bamboo, and were likewise flexible. Thus, the damage reported in our sources is only to masonry, such as finials of stupas, or to large halls, such as the wihan roof in Phayao. In other words, mostly religious structures suffered rather easily-repairable damage, and

secular architecture hardly any.

The great damage to the Jedi Luang in Chiang Mai does not fall into this pattern and presumably should be explained otherwise. Perhaps it was rainwater that caused the masonry slide on the south side.

The spiritual importance of earthquakes and their frightening sounds were ascribed to the supernatural because their geological reasons were then unknown. Therefore, earthquakes were thought to accent, or at least to accompany, human actions, in order to emphasize the goodness or the vileness of an action.

A good example for approval by the supernatural via the demonstration of earthquakes is found in Old Sukhothai, which also shows that similar beliefs were shared by the Thais of Lan Na and in central Thailand.

Two earthquakes in Old Sukhothai were explicitly explained as being an approval by the universe for a highly-pious intention. At least 5 contemporary stone inscriptions recorded the event, none of them complete, but together they allow us a good view at what the people then thought about the happenings. One inscription is in Khmer, one in Pali and three in Thai. They tell us the following.

In the late afternoon of Wednesday, 22 September 1361, the pious and learned King Lü Thai was about to become a monk for a certain period of time. First, in his palace, in front of a large Buddha image, a set of the *Tipitaka*, and a high-ranking *mahasami* (very senior monk), he made the “great resolve”, viz., to become a Buddha at some time during a future incarnation. After taking his resolve, there was an earthquake. It was described by one inscription as “at that moment the earth quaked in every direction”, and there were some more, but undefined, miracles. Here the author of one inscription adds this own comment: “Such events happen normally in the life of Bodhisattas”, i.e., when a future Buddha makes his resolve to become a Buddha.

Then, still in his palace, the king was ordained as a novice, *samanera*. After that, he proceeded to the monastery Wat Pa Mamuang (Mango Grove), in order to be ordained there as a full monk, *bhikkhu*. When he entered the monastery, there was another earthquake. This earthquake was again described by one inscription as “the earth quaked again in every direction”, and by another, “the dense earth moved, rumbled and swayed uncertainly”. No damage was reported.

(Inscriptions # 4: 2.40-55; # 5: 3.22-42; # 6: 1.14; # 7: 2.35-36; # 106: 1.15-16)

Contrariwise, the universe was thought to disapprove of improper actions by producing an earthquake. The legendary destruction of Wiang Yonok was caused by killing and eating a huge white (albino) eel, which quite obviously should not have been done; unfortunately though, the legend, in the form that has reached us, does not explain clearly why not, i.e., what was so particular about that eel. Usually, albino animals were thought to be of some specific supernatural importance.

Inversely, earthquakes, or rather their accompanying features, could be used for self-protection.

Once, in legendary times, the Ngio (Shans) attacked Chiang Mai. Phaya In (god Indra, or Sakka) had given an Indra Pillar, or *Indrakhila*, to protect the city of Chiang Mai, and it was standing in an iron vessel. To get rid of the attacking Ngio enemy, Phaya In ordered two *kumphan* (celestial helpers) to shake the pillar so that it banged against the vessel and produced the rumbling, reverberating sounds similar to those when the earth moans or complains

during an earthquake. This advice was followed with good results, the Ngio withdrew (MFB: N: 53).

ACKNOWLEDGEMENTS

For the present article, I am indebted to colleagues and friends who helped at one time or another, in various ways: Khun Somjit Rüangkhan, who in the 1960s was Head of the Fine Arts Dept. Unit No. 4 which was then located at Chiang Sän; Ajan Pitya Bunnag and Assoc. Prof. M.L. Surasawasdi Sooksawasdi, both of the Faculty of Fine Arts, Chiang Mai University; Khun Silao Ketphrom and Khun Sawanya Watthanasirisereekun, Social Research Institute, also of Chiang Mai University.

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