

METALS IN NAKHI SCRIPTS

By Erwin Pink, Erich-Schmid-Institute of Solid-State Physics, Austrian Academy of Sciences, Leoben, Austria, and Xuan Ke (K. Xuan), Lijiang, Yunnan, China

Zusammenfassung: METALLE IN MANUSKRIPTEIN DER NAKHI

Die Naxhi, ein den Tibetern verwandtes Volk in den himalajanahen Bezirken der chinesischen Provinz Yunnan, haben vor ca. 800 Jahren eine Zeichenschrift zur Aufzeichnung zeremonieller Texte entwickelt. Diese „piktographische“ Schrift einer vortechischen Gesellschaft kennt natürlich auch Zeichen für die Gebrauchsmetalle Gold, Silber, Eisen, Kupfer u.a. In gewissen Fällen ist die Herleitung der Piktogramme leicht nachzuvollziehen. Der Versuch wurde unternommen, für andere komplexe Zeichen Erklärungen zu finden.

Ein Beispiel aus einem alten Text illustriert die mythologischen Wurzeln der Naxhi zum Verständnis der Metalle. Ein kurzer Text über die Herkunft der Metalle, der von einem der letzten des Schreibens Kundigen vor zwei Jahren aufgezeichnet wurde, zeigt, daß sich alte Überlieferungen bis in die heutige Zeit erhalten haben.

Abstract: The Nakhi minority of southwest China has possessed since ancient times a pictographic script which includes, of course, also signs of metallurgical relevance. These are presented. An old and a recently recorded mythos about the origin of metals are documented.

The Nakhi dwell in the mountainous northwest of China's southwest province of Yunnan, in and around the town of Lijiang (1,2). Their language belongs to the Tibetan-Burmese group, and is closely related to Tibetan. The Nakhi trace their origins back to places far west: the areas around the Mapham-yum-tso (Lake Manasarovar) and the Kang-rin-poche (Mt. Kailash) in Tibet appear in their mythology as places of descent (3). Thousands of volumes of Nakhi manuscripts have been preserved over the centuries, and they are kept in libraries in China and abroad. They are full of information on religion, philosophy, history, medicine, and very probably, one can imagine, on technical achievements of the Nakhi ignored by scholars of the humanities who pay no attention to trivialities such as metallurgy. Neither do reports on metallurgical archeology quote Nakhi contributions (4,5). But what has generally been said about the metallurgical skills of the "tribesmen" on the fringes of the Han- and Tibetan-cultures and their noteworthy accomplishments (4) may be valid for the Nakhi, too. The construction of iron-chain bridges in these areas, for instance, built already before the end of the first millenium, of which at least one is still in use (6), testifies to the achievements of the local iron smiths.

Nakhi texts are written in a pictographic script (7) which according to tradition was invented by the local

potentate Mou-Pao A-Tsung (who lived about 1200-1253 A.D. at the end of the Chinese Southern Song Dynasty), but which is no doubt much older. It was used by the ²*dto-¹mba* (*dongba* in present Chinese transcription), the spiritual leaders of the Nakhi people, to hand down and perpetuate their culture. These scripts are not exact documentations of the spoken word, although some signs are used phonetically. They have only mnemonic character which allows the reader (and there are few of them left among the Nakhi) to recall the


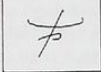
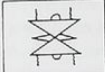
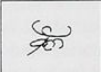


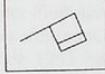
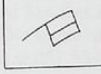
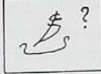


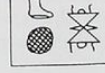
Rock	He	Metal and its Pronunciation
		copper ² <i>ern</i>
		gold (yellow) ¹ <i>ha</i>
		silver ¹ <i>nv</i>
		iron ¹ <i>shu</i>
		tin ¹ <i>shu?</i>
		lead ¹ <i>ssü</i>
		mercury ¹ <i>la-²bpa-¹zaw</i>
		brass ² <i>boa-¹mun-¹shi</i>

Table 1. Pictographs of metals according to Rock (7) and from He's text in Fig. 2. The numbers 1, 2 or 3 at the beginning of the Nakhi words indicate that they are spoken in a falling, a mid-level or a short high tone.

contents. What is read from the pictographs is not a strictly fixed text, but one that varies each time it is interpreted. Aside from this script, characters of a syllabic phonetic nature were also developed in ancient times.

Joseph Francis Rock (1884-1962), an American who was born in Austria, was a researcher of the Nakhi culture; he published a dictionary of pictographs (7). It lists only a few metals – the most basic used in a pre-technical society – which are shown in Table 1. Some simple as well as complex expressions of metallurgical relevance can also be found in the dictionary (Table 2).

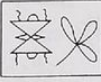

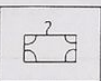
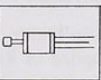


Pictograph	Pronunciation and meaning
	² ha ¹ szū "gold wash" = to wash gold
	² dū to beat, hammer iron
	¹ gyu mold for casting ingots
	¹ gv- ¹ dāv blacksmith's bellow
	² ēr- ¹ p'ēr- ¹ ngyu- ¹ shu ¹ shu- ² ggo ¹ ā- ¹ ssi the father of (metal) iron was a copper and iron mountain
	¹ nv ² gkyi ¹ gyi, ¹ ha ² gkyi ¹ gyi silver put house, gold put house = treasury

Table 2. Expressions concerning metals according to Rock (7).

Some of the pictographs can be explained without difficulty (see Table 3). The sign for "copper" pictures a pot with three triangles inside, standing for both ²mi = "fire" and ¹hō = "red". "Silver" combines the signs ²hā = "moon" and ¹ddo = "foam, saliva", echoing the worldwide association of silver with the light of the moon (for the Inkas, for instance, silver was the „tears of the moon" (8)). An axe for "iron" indicates that iron had been in common use when this script originated. Lead may be pictured as a molten blotch. The pictograph for gold is obscure, perhaps derived from some artifact. The two-sign word ¹la-²bpa in the expression for "mercury" designates a root of a plant growing in the land of the Nakhi and in Tibet, but it may be more promising to look for the meaning of the individual signs. ¹la is "hand" as










	² mi fire ¹ hō red
	² hā moon
	¹ ddo foam, saliva
	¹ la (a) hand (b) thick, dense
	² bpa (a) frog (b) enumerator for iron utensils
	¹ la- ² bpa a root resembling a hand
	¹ zaw planet
	² boa- ² mun within the house
	² mun gray, drab, fawn coloured

Table 3. Derivation of the pictographs of Table 1.

well as "thick, dense"; and ²bpa is not only a "frog" but also an enumerator word for iron utensiles, thus pointing to the metallic nature of mercury. The correlation of the planet mercury with this metal has its equivalence in the understanding of the alchemists of the near-east and western hemisphere. According to Nakhi mythology, this planet is the "malevolent demon that devours the sun and the moon, i.e. causes eclipses" (7). Noting that "sun" and "moon", since times immeasurable, stand for "gold" and "silver", the analogy to the metal mercury is obvious. The pictograph for brass consists of the two signs "foot (sole)" and "tray", meaning "within the house", and of the sign "gold": brass is the gold of the poor man's household. An alternative interpretation may be based on a second meaning of the round sign, ²mun = "gray, drab or fawn coloured", thus considering brass as a kind of dull-coloured gold. The pictograph "gold" is used here, but not pronounced. Instead, ¹shi is substituted for the ¹ha: both words can also mean "yellow". The same discrepancy between written and spoken forms can be found in other terms which express something yellow (e.g. jaundice).

³shui is, according to Table 1, the pronunciation for "tin". It has been shown that *shui xi* was a term used in China during the mid-Ming Dynasty for "tin" rather than for "zinc" (9), and this word may have diffused into the Nakhi language. This fact may thus serve as a further proof in a controversy concerning the true meaning of *shui xi*.

One of the old ceremonial texts of the ²dto-¹mba contains the following passage: *The fire met and copulated with the iron and there was born the father of the iron; he came forth from a copper mountain and the mother of the iron from white soil and fine sand. The iron and the rock had intercourse and there was born the fire, and so heaven bestowed the fire* (10). We might speculate whether the first of these thoughts describes the formation of ores and the smelting from "soil" and "sand". The second sentence appears to relate to how fire emerges from sparks when metal and stone "have intercourse".



Figure 1. He Shi-Cheng.

On September 25, 1994, He Shi-Cheng, the "last shaman" of the Lijiang district, a man of about 85 years of age (Fig. 1), wrote down a text in the pictographic script on how metals came into being (Fig. 2). From this, He "read" the text and recorded it on tape in the language of the Nakhi from which the following translation was prepared. When one compares or knows how to compare the written and the spoken versions, it becomes obvious that they are not identical:

This is a tale of iron and metals. If you do not know from where and when and how the iron came then you cannot tell this story. The nine brothers from heaven threw a huge rock from heaven down to the land. No one [first] hit the rock. Then in came a smith. He said he would hammer the rock and use his powerful hand. After the rock had fallen from heaven to the land, where then did it arrive? On the side of the mountain where the sun goes down, it was said. When it fell to the foot of

the mountain, it was thrown between two black rocks. Then it made a huge fire of itself. Then the burning rock turned itself into iron. Then the first iron and copper appeared. Then again this iron [?] turned into silver and gold. Then again from iron and gold and silver it turned into tin. After that the iron and silver and gold and the copper and the tin turned into a huge fire of many colours. Under the sky and above the land there is something called water and fire, and it turned in the sunshine into a real rainbow.

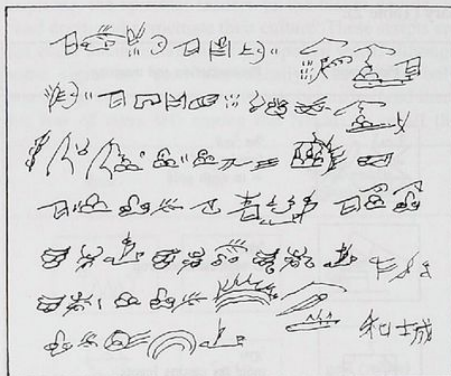


Figure 2. He Shi-Cheng's pictographic script with his signature in Chinese characters in the lower right corner.

Pictographs of metals as they appear in Figure 2 are variants of the forms which are compiled in Rock's dictionary (see Table 1).

He's account – although incompatible with our understanding and inconsistent in the things it tells – is refreshing for a metallurgist's heart when it expresses, by the metaphor of the rainbow, the advent of metals as one of the wonders which brought colours to this world (as interpreted by He in a second reading of his manuscript). It is a folk tale about metals – one of many which probably still exist, worth being collected and preserved. More rewarding, from the point of view of a metallurgist, might be a search through the vast Nakhi literature, apart from the ceremonial. It might provide an insight into the skills of this people similar to that derived from a recently found text on Tibetan metal-working (11).

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