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Tibetan Woodblock Printing: An Ancient Art and Craft

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Introduction

From the time that the printing of Tibetan language first began in the early fifteenth century up to now [1997], some 578 years have passed. After the 'Peaceful Liberation' of Tibet, the nature of printing and publications in Tibetan language developed, using more mechanical and automated processes. Especially after the Third Forum meeting of the Eleventh Central Executive Committee of the Chinese Communist Party [CCCP], a new era of applying advanced electronic and computerised technology was ushered in for printing and publications in the Tibetan language.

If the publishing of ancient Tibetan printed texts and books succeeds, the task of promoting the culture and education of Tibet receives a boost; this would help to lay a foundation for exploring, importing, and incorporating new knowledge and culture from abroad by revisiting the history and experience of how the ten major and minor sciences were adapted and localised in the past. In particular, it would constitute a significant contribution to the defense of the unity of the Motherland in practical terms by refuting a small number of critics, both at home and abroad, who accuse the Communist Party of vandalising to extinction the cultural heritage of the Tibetan people.

Tséring Püntsok has done an historical analysis of the development of printing and publication in Tibet in his book *Discussion of Printing and Printing Houses in Old Tibet* (*Snga rabs bod kyi par skrun dang par khang gi skor gleng ba*).[2] I shall supplement that research with information on the pros and cons of the printing of ancient woodblock Tibetan texts; on the job experiences; duration of the printing process; work division and categories; crafts and skills required; wages, salaries, and rewards offered; printing costs; rules and regulations governing the printing and publishing houses; life of the wood-carved blocks; and the efficiency of the printers.

Advantages of Woodblock Printing of Ancient Texts and Books

Reduction of Spelling Errors

Prior to 1425,[3] at a time when the art of printing had not yet been introduced in Tibet, all ancient texts were handwritten manuscripts or copies thereof. As these were often copies of copies, many texts were not subjected to stringent proofreading, and errors abounded. Many of those ancient scriptures written in gold and silver are undoubtedly works of art in terms of calligraphy and artistic skills, and, therefore, merit analysis and research as items of cultural heritage. However, as most of them were not proofread carefully, there are numerous spelling errors caused by omissions or the extra insertion of letters. In addition, as many of these ancient texts were written in [the difficult to read] *ü-mé* script, with frequent use of abbreviated words, disparate in terms of spelling, handwriting, and limited scope of distribution, they lacked the inherent potential to standardize Tibetan language, orthography, and grammar.

Sparing the Tedious Work of Hand-copying Original Texts

Despite the relatively large number of people interested in reading and studying important scriptural texts, the work of copying and writing such texts by hand was an onerous and prolonged undertaking. It was also very hard to look for and find a reliable and balanced collection of ma -

ter texts from which to copy. Printing spared interested readers the tedium of having to copy texts. Likewise, given the high rate of wear and tear of the woodprint blocks in printing, it is convenient to have the first or second print copies of the new wooden blocks as master copies to carve out further woodprint blocks.

Satisfies the Needs of Wider Readership through Greater Distribution

It is true that no more than about 150 complete sets of the canon, the Kangyur (*Bka' 'gyur*) and Tengyur (*Bstan 'gyur*), and other voluminous religious texts could be completed in a year. As for other texts that comprised only a couple of volumes, about two hundred and fifty copies a year could be printed. These days, only about seventy complete sets of Kangyur and Tengyur can be printed in a year.

Easier to Search for and Protect Original Texts through Editorial Work

Given the rarity of original manuscripts, printing also helps to protect the originals and to provide for a wider distribution. Otherwise, rare texts, especially those that are the only extant version, are at risk of loss. The fact that many rare and precious manuscripts have gone missing from libraries may have a number of causes, but one of the most obvious is the fact that further copies were not printed. Therefore, the printing and publication of rare, single-copy manuscripts could only enhance the value and benefit of such items of cultural heritage and enlarge the readership.

Helps to Standardize Spelling, Grammar, Vocabulary, and Language

In the fifteenth century, in the Iron-Tiger year 1410 CE, sets of the Tibetan-language Kangyur were printed and published in Nanjing. The very first set was offered to the monastery at Wutai Mountain [in Shanxi Province]. Copies from the second print set were offered respectively to the Karmapa, Phakdru and Jé Tsongkhapa. Since then, knowledge and skills of printing spread throughout Tibet. Gradually the writings of many lama-scholars of various sects were printed, which indirectly helped the process of standardising and fostering a pan-Tibetan national language. It also helped greatly in consolidating and preserving the previously standardized and unified system of grammatical rules, and vocabulary, etc.

Broadly, we can identify four periods when the art of producing ancient texts flourished in Tibet: (a) the pre-seventh century, (b) the early diffusion of the Buddha dharma period [7th to 11th century], (c) the period of national disintegration followed by the revival of the Buddha dharma [11th – 14th century], and (d) the period when woodblock printing flourished in Tibet [post 14th century]

The ancient texts dating from these four periods are indispensable primary resources for undertaking research on the Tibetan language, the textual as well as the lingua franca of communication among Tibetans in Amdo, Kham and Ü-Tsang regions. Such ancient texts are valuable sources of information and research about the economic conditions and development, problems relating to travel and transportation, characteristics of a common language, the differences and contradictions between and among dialects and languages.

Timeframe for Getting Ancient Tibetan Texts and Books Printed

The printing of the Narthang[4] Kangyur began in the autumn of 1730 and was completed in the first month of Tibetan calendar year in 1732, taking only about a year and a half. In contrast, the printing work on the Dégé[5] Kangyur work had started a year before the printing of the Narthang Kangyur began, but it was completed a year after the Narthang.

The printing of the Narthang Tengyur began in the third Tibetan month of 1741 and was completed in the tenth Tibetan month of 1742, taking a total of a year and seven months to finish. The printing of Dégé Tengyur was started three years and eleven months prior to that of the Narthang Tengyur, and was completed a year and six months after the Narthang Tengyur. The Dégé Tengyur took five years and six months to complete.

In terms of sheer motivation and drive, both sets of sponsors who had commissioned the printings of the Narthang and Dégé Kangyur and Tengyur, respectively, were equally committed. However, in terms of resources, Polhané (Pho la ba Bsod nams stobs rgyas, 1689-1747), [the individual who sponsored the Narthang printing], was the King of the whole of Tibetan region whereas the King of Dégé was only a local power who ruled over an area that was part of the territory of the Regional Tibetan Government. Insights and understanding can be gained by considering their relative differences in terms of workforce strength, wage levels, total expenses etc. in printing the Narthang and Dégé versions of the Kangyur and Tengyur.

When the Sixth Dalai Lama, Tsangyang Gyatso, commissioned the woodblock carvings of the Kangyur, the undertaking remained incomplete after carving only twenty-eight volumes, principally the *Large* (*Śatasāhasrikā*), *Middle* (*Pañcaviṃśatisāhasrikā*), and *Short* (*Aṣṭasāhasrikā*) *Per-*

fection of Wisdom Sutras (*Prajñāpāramitā Sūtra*). However, by the time that the printing of the Kangyur volumes began at Narthang, the skilled craftsmen managed to carve sixteen to twenty-three woodblocks per month; the mediocre craftsmen finished fifteen to eighteen woodblocks, wit some managing eight to twelve; but, the majority could finish five to seven woodblocks a month. The poorly skille craftsmen could complete at least three woodblocks. Comparing the productivity of the craftsmen, it can be seen that the rate of carved woodblock output had increased by about three to five times during the Narthang printing as compared to that during the time of the Sixth Dalai Lama.

Various Aspects of Work Involved in Printing

When the printing project got underway, twelve categories of craftsmen worked on the project, excluding the sponsors and the supervisors: (a) proof-readers, (b) paper makers, (c) scribes, (d) wood workers, (e) woodblock engravers, (f) thangka artists, (g) metal craftsmen, (h) handicrafts teachers, (i) apprentices, (j) doctors, (k) tailors, and (l) assistants. All of these different workers had their own specific job descriptions in a hierarchical organization; at the same time, they liaised with others in a systematic way.

The work of printing the Kangyur and Tengyur involved skilled manpower on a large scale, complex organization and long-term commitment that quite often began with a shortage of required skilled craftsmen. This necessitated a program of apprenticeship of new recruits for on-the-job training, without which the project got delayed and costs spiralled. So, a system existed whereby once the printing project got underway, apprentices for the various skilled trades were recruited, and then they were provided with on-the-job training. Upon being certified as satisfying the qualification criteria, the recruit was allowed to join the work force as a full-fledged craftsman. During the first fe months of beginning a printing project, many new apprentices were trained and then graduated onto becoming full-fledged workers. This was a valuable opportunity for training and employing craftsmen including wood engravers and others, such as scribes, metal craftsmen, wood workers, and proofreaders.

Job descriptions and responsibilities:

(1) Proofreaders (Zhus dag pa) were required to have high educational qualifications in general and specialist knowledge in particular, with considerable experience in proofreading both the original copy on paper and the engraved woodblock texts. This job was further divided into four categories:

(a) First proofreader (Smar zhus pa) cross-checked the accuracy of the words, pagination, and chapter divisions between the original paper copy and the engraved woodblock print.

(b) Second proofreader (Bskyar zhus pa) checked the quality of handwriting and uniformity of letter-size in the woodblock prints that had been proofread and then cross-checked with the original copy.

(c) Third proofreader (Yang zhus pa) had the responsibility of re-checking the woodblock prints that had been checked by the previous two proofreaders and looking for errors, especially in the omission or extra insertion of letters, quality control, amendments, and corrections.

(d) Chief Editor (Zhus chen pa) made qualitative comparisons of all available original copies or prototypes of the texts to be copied and then had to decide on the most accurate one to copy and engrave on the woodblocks. He had to further cross-check the accuracy of the engraved woodblock with the original text on paper. He then provided a pass certificate for those that met the acceptable standards, or offered comments and made suggestions for editorial action.

(2) Papermakers (Shog bzo ba) were responsible for making quality paper for the woodblock engraving, preparing a hand-rest workboard (*lag gdan*) and trimming the paper edges.

(3) Scribes (Yig 'bri ba) were responsible for copying out the text on the copy paper for the woodblock engraving according to specified dimensions.

(4) Wood workers (Shing bzo ba) had the responsibility of making the woodblocks, as well as consecrating and purifying them. They also had to organize a separate enclosure to store and maintain woodblocks.

(5) Woodblock engravers (Par rko ba) were responsible for engraving the texts according to the copy paper provided, insert missing letters, and amend those that are wrong.

(6) Thangka artists (Lha bris pa) were responsible for drawing the master copy of the deities to be engraved at the front and back of the textual volumes.

(7) Metal craftsmen (Lcags bzo ba) were responsible for making and reprocessing tools and implements for woodblock engraving such as: razor blades; tools for making horse shoes; *migzong* and *bozong*—two types of chisels—one large and one small; five different shaped engraving tools called *dzugzong*, and hacksaws, all were made according to given specifications

(8) A handicrafts teacher (Lag rtsal dge rgan) was responsible for teaching the practical training and assessment of new apprentices by testing them in the specialist skills of copying and engraving texts, etc. He would then assign the apprentices to the appropriate unit of work upon successfully meeting the pass criteria.

(9) Apprentices (Slob phrug) underwent training upon enrolment at their workplace; they practiced and were tested in relevant skills according to the instructions of their master craftsperson and had to assist him in his professional work.

(10) Doctors (Sman pa) were responsible for health care, providing medicine to workers and to write sick leave exemptions when needed.

(11) Tailors ('Tshem bzo ba) sewed the cloth covers for woodblocks either from wool or felt. They also mended torn or worn out clothing of the workers, and had to sew new clothes and headgear, which was provided as awards.

(12) Assistants (Lag g.yog) were required to do odd jobs and errands at the bidding of the master craftsmen as well as to help in the kitchen.

Stages of Printing Work

The printing from woodblocks had to pass through three stages: preparation, actual printing, and completion. The preparatory stage included researching, locating, and obtaining original texts suitable for a master copy as well as cross-checking the authenticity and accuracy of the texts. It also included obtaining and storing paper and inks necessary for writing the copies for the woodblock engravers, as well as procuring, preparing, and storing the woodblocks, making shelves to stack the woodblocks, getting covers sewn for the woodblocks, making the required tools and implements for the engravers, and readying everything for printing. This stage also required making plans for financial outlay and running expenditures, and then determining and recruiting the required number of skilled craftsmen in the various trades.

The actual printing work involved writing the copies for the woodblock engravers as well as proofreading in order to check the accuracy of the copied texts, after which the actual engraving of the woodblocks began. Once a chapter or unit was completed, the master copy and the engraved woodblocks were subjected to thorough cross-checking from the first level proof-reader to the Chief Editor, who was at the fourth and top level of proofreading and counter-checking. The Chief Editor then recorded the approved woodblock engraving in the register and handed it over to the store manager of woodblocks. Once he took charge, each woodblock was encased in the sewn woollen or felt covers and systematically stacked in the shelving room according to the order of the list in the master register.

One of the most important components of the printing process was the proofreading stage. At the initial preparatory stage a thorough proofreading and checking of the master copy was necessary. Otherwise, if engraving were started without subjecting the master copy to thorough checking and proofreading, existing errors could be perpetuated and propagated unwittingly. The ancient Tibetan art of printing was indeed a systematic and organized process in which all the concerned skilled craftsmen at various levels of responsibility, conscientiously and diligently executed their duties to achieve a fairly high level of printing quality.

Skills and Crafts Rel vant to Printing

Not long after woodblock printing flourished in Tibet, Jé Tsongkhapa passed away. Seventeen years later, in 1426 (Fire-Horse year) Gyeltsap Rinpoché—the throne holder of the Geluk Sect, Tokden Jampel Gyatso, and others requested that Namkha Zangpo, the ruler of Néudong, and the King of Gongkar sponsor the printing of The Collected Works of Jé Tsongkhapa. The complete sets of these collected volumes used to be kept in the libraries of the Potala Palace and Öngyelsé Monastic Estate as well as Sera, Drepung, and Kündéling monasteries.

The woodblocks for this compendium are known as the Old Ganden print blocks. They used to be stored within the Ganden Zungchu College until the Cultural Revolution. The quality of the woodblock print is so exquisite that it was easily mistaken for some hand-written work of calligraphy. The pictures of deities carved on the front of these blocks had heads and bodies in fine proportion but the shoulders were rather large; their waists were slender and their faces were not very well defined. Woodblocks made subsequen - ly have never quite matched the quality of the calligraphic print of the Old Ganden blocks.

In regards to the printing skills relating to the figures of deities and great luminaries, *The Wish-fulfilling Tre* (*Dpag bsam 'khri shing*) by Ksemendra, which depicts one hunDred former lives of Buddha Shakyamuni, began to be carved on thirty-one woodblocks. The pictorial story of Jé Tsongkhapa, depicted in fifteen woodblocks, was carved after the successful completion of the Kangyur and Tengyur printing projects of Narthang and Dégé respectively. Although their original woodblocks no longer exist, complete sets of their printed copies on cloth, which were subsequently painted as *thangka* can be seen in the Colleges of Sera and Drepung, as well as most other major monasteries.

In 1731 (Iron-Pig year), i.e. one year after the printing of the Kangyur and Tengyur texts were already underway at the Dégé printing press, Katok Situ Rinpoché, who was then thirty-two years old, started working on the pictorial portrayal of the lives of the Buddha as told in the *Wish-fulfilling Tre* to serve as the prototype for the woodblocks. Situ Rinpoché displayed exceptional artistic talent from around the age of seven or eight, and later completed the template for the wall paintings of Dégé Printing Press and the wall paintings of the Great Assembly Hall of the Katok monastery.

The deities in these paintings are rooted in the traditional Tibetan style but certain innovations are evident such as depicting the background landscape in a Chinese painting style. Woodblock carvings of deities modelled on these deities used to be at Dégé Printing Press. A fairly large number of the paintings of cloth prints made from this woodblock can be found in many monasteries of Ü-tsang, Kham. and Amdo to this day as a testimonial to the apogee of Tibetan craftsmanship in printing.

Wages and Rewards for Workers

By the middle of the fifteenth century, many skilled craftsmen were employed in printing the hagiographies and teachings of some of the learned masters of the various religious sects through woodblock printing technology. Their exceptional professional skills have been recognised and rewarded by successive governments and private individuals. Such recognition and incentives enhanced their reputation and participation in the printing projects.

Primary sources for research and detailed information on the above subjects include Dési Sangyé Gyatso's *Catalog of the Golden Reliquary: the Sole Ornament of the World* (*Gser gdung 'dzam gling rgyan gcig*), Lélung Zhépé Dorjé's *Catalog of Narthang Kangyur* (*Snar thang bka' 'gyur gyi dkar chag*), Situ Rinpoché Chökyi Jungné's *Catalog of Dégé Kangyur* (*Sde dge'i bka"gyur gyi dkar chag*), and the Fifth Dalai Lama's autobiography: *Fine Silk Cloth* (*Du ku la'i gos bzang*). Moreover, several ancient Tibetan texts mention topics such as the fluctuating prices of items, such as food-grains, butter, meat, salt, quality tea (with flavour enhanced by sodium bicarbonate), as well as the prices of horses, and male and female species of livestock, in addition to precious objects such as porcelain, gold, silver, turquoise, and pearls. Since people from those time periods wrote these texts, they constitute very authentic and reliable primary resources for further research.

With regard to the salary of skilled professionals working with stone, metal, and wood, the succeeding governments doubled the rate offered by the previous governments. For example, during the reign of Sakya and Phagmodrupa rulers,[6] the daily wage was set at the rate of 0 *khel* (*khel*) 2 *dré* (*bre*) [which is the weight] of food-grains which, in today's terms would be about 2 *Rgyama* and 8 *Sang*.[7] Later when the Tsangpa Kings ruled Tibet, the daily wage of 0 *khel*, 3 *dré*, 2 *pül* (*phul*) was paid for the top quality skilled craftsmen working in stone, metal and wood. That in today's terms would be equivalent to about 4 *gyama* (*rgya ma*) and 5 *sang* (*sang*). The lowest paid workers were paid 0 *khel*, 2 *dré* of food-grain which in today's terms is about 2 *gyama* and 8 *sang*.

When Dési Sangyé Gyatso held power over the local Tibetan Government, the daily wages of the skilled craftsmen working with stone, metal, and wood were divided into six categories. The highest daily wage was 0 *khel*, 6 *dré*, 4 *pül* which in today's terms would be about 9 *gyama* and 3 *sang* 2 *Zho*. The lowest paid daily wage was equivalent to the highest rate paid during the time of the Tsangpa King's reign. During the time of the printing and publication of the Narthang Kangyur and Tengyur, the daily wage of the workers were raised twice the rate offered during Dési Sangyé Gyatso's time.

During his reign, the market rate of food-grain was as follows: 1 *khel* of food grain was 0 *sang*, 0 *Zho*, and 6.5 *kar* (*skar*) as recorded in the *Catalogue of the Golden Reliquary: the Sole Ornament of the World*. Eighty years later, in 1730 when the Narthang Kangyur printing work had just begun, the market price was such that one *khel* of food-grain cost 0 *sang*, 1 *zho* (*zho*), and 5 *kar*. By this time, the cost of food-grains had doubled.

Nearly seventy years after the completion of the printing of the Narthang Kangyur and Tengyur, the Eighth Dalai Lama commissioned repairs to the Tsuklakhang [i.e., the Jokhang Temple] in Lhasa. He ordered Tengyur prints with inks made from seven precious stones; the market price of food-grains in Ü-Tsang region doubled so that 1 *khel* of food-grains cost 0 *sang* and 3 *zho*.

Seventy years further on, when Taktsak Jé Drung Ngakwang Palden (Stag tshag rje drung ngag dbang dpal ldan, 1875-1886) was the Regent of the local government of Tibet, the market price for one *khel* of food-grains in the Ü and Tsang regions was 0 *sang* and 6 *zho*. The price had doubled compared to the previous period. Later when Reting Rinpoché was the Regent (1934-1941) after the death of the Thirteenth Dalai Lama (1876-1933), 1 *khel* of food-grains in the Tsang region cost 5 *sang* (equivalent to about RMB 0.25). In the Lhasa area, 1 *khel* of food-grains cost 10 *sang* (equivalent to about RMB 0.50). Since the onset of the Thirteenth Dalai Lama's reign, the highest price rise in food-grains was no more than about 1 *sang* and 5 *zho*, and so people enjoyed relatively a good livelihood.

Later when Takdra Rinpoché was Regent [1941-1950], the price of 1 *khel* of food-grains rose to 15 to 25 *sang*, which represents a rise of three to five times the previous market price. The rate of increase in the prices of food-grains for the different periods mentioned above represents the general price index of common commodities. This is because the basis of arriving at the relative price of food-grains and commodities at any given time and period was related to the supply, availability, and stockpiles of food-grains which generally remained stable unless skewed during times of famine, war, or natural disasters.

Normally, prices could remain stable for as long a period as eighty years or for about sixty years, at the least. As a result, governments, monasteries, and wealthy private estates resorted to hoarding food-grains as capital reserves as well as food reserves. During the time of the Thirteenth Dalai Lama, with the growth and expansion in trade between the local area of Tibet and foreigners, this practice of hoarding food-grains as capital reserve underwent a change and was eventually replaced by gold, silver, tea, and clothes as capital hoarding. There was also an increase in the number of people who started building these new forms of capital [See Table 1][i].

Commensurate with the price increase with regard to food grains in the local region of Tibet, there was a corresponding increase in the market price of commodities such as meat, butter, salt, sodium bicarbonate (*bul*), and locally produced goods. The wages for the workers and craftsmen, too, had to be raised accordingly.

In the past when the government, ecclesiastical organizations, or private agencies had hired skilled craftsmen working with stone, metal, or wood, it was custom to supplement their daily wages or work wages with allowances in kind, depending on their status and levels of expertise. Skilled professionals, such as editors, supervisors, crafts teachers, students, writers of templates for woodblock carving, wood-block engravers, and doctors were given a monthly allowance of 5 *khel* of food grains. The rest of the workers, such as paper makers, wood workers, metal workers, painters and artists, and tailors, were given a monthly allowance of 4 *khel* of food grains.

Workers who consumed local beer (*chang*) were given an allowance of 1 *khel* and 10 *dré* of grain for brewing the local beer, equivalent to 42 *gyama* in today's terms. Teetotallers were given 0 *gyama*, 5 *nyak* of tea which is equivalent to 1 *gyama*, 7 *sang*, 5 *zho*, and 0 *khel*, 15 *nyak* (*nyag*) of butter which is equivalent to 5 *gyama*, 2 *sang*, and 5 *zho* in today's terms. Foremen, editors, and doctors were given a monthly allowance of three whole lambs, per head; the rest of the workers at different levels were given an allowance of a quarter of a whole sheep.

In addition to the above, generally speaking, whenever any major project involving the construction of holy structures, buildings, or printing work was commissioned either by the government or private interests, it was customary to hold day-long ceremonies: the first at the beginning of the project, the second in the middle stage of the project, and finally one at the concluding stage of the project. During these ceremonies, it used to be customary to hold award-giving functions to outstanding supervisors and workers who were broadly divided into seven categories. Category One winners would receive a whole set of traditional cloak (*chupa*) complete with a sash and a hat, one item of jewellery, a high quality long ceremonial scarf called a *nangzo khatag*, a roll of brocade, and seven rolls of cloth. In contrast, the lowest or seventh category award winners would receive one white woollen jacket, a shorter ceremonial scarf called *ashey khatag*, three *sang* of gold to make jewellery, rifles of Tibetan or Mongolian origin, swords, bow and arrow, armour, two rolls of brocade, and seven rolls of cloth [See Table 2].

As for the pay and wage structure and rates during the time of the printing of the Dégé Kangyur and Tengyur, they followed a system different from that in the Ü and Tsang regions. They paid on the basis of work output rather than daily wages. The payment of wages in terms of *khel* of food-grains or '*dong*[9] measures of barley were determined according to one's entitlements based on work productivity.

The units of measurements were also unlike *dré* measure used in *Ü* and *Tsang*. They used barley *dong* ('*dong*).

Within the Dégé and Dakyab areas, three *Phul* of food grains equalled one *dong*. Ten *dong* of barley was equivalent to one *Zho*. Four *Zho* equalled one *khel*. So, the measure of *khel* is the same as that of *khel* used in Ü and Tsang regions. When bartering food grains and tea, 1 *khel* and 1 *zho* of food-grains would fetch a *bagchung* of dried tealeaves. Five *khel* of food grains would fetch one large *bagchen* of dried tea leaves.[10]

Tables 3, 4, and 5 [See Appendix] show the wage structure and rates at the time of printing the Narthang Kangyur and the Dégé Kangyur[11] and Tengyur.

i. All tables referenced in this article are listed in the Appendix.

Expenses for the Printing of the Narthang Sutras and Commentaries and the Dégé Kangyur and Tengyur[12] [18th century]

The costs and use of materials during the printing of the Narthang Kangyur and Tengyur were different due to certain factors. During the printing of the Kangyur texts, the materials and workers wages for two years were met by the Shelkar District, a principality under the rule of Pholhané [1728 - 1747]. As for the rest of the expenses, Pholhané himself contributed from personal resources when needed, and items required from other places were procured at the prevailing market prices. However, no tax of any kind was collected for the project.

When printing the Narthang Tengyur texts, the King of Bhutan donated the vast majority of the wood needed for making the woodblocks. Pholhané himself resourced the wood required to make up the shortfall. Most of the wood procured from within the Ü and Tsang regions of Tibet were characterised by cracks, twisted and blighted with knots, which were not suitable for making woodblocks. The ideal wood required was the birch tree wood that grew straight and tender, and therefore was pliable for carving. Furthermore, the process of treating the wood required two *pül* of oil for every woodblock. This oil treatment helped protect the woodblock from contorting and prevented decay over many years.

The source of procuring wood for printing woodblocks were mainly the two areas [Ü and Tsang] and the thirteen districts of Shekar, Zonga, Kyidong, Nyanang, Rongshar, Kharta, Tingkyé, Phari, Lhodak, Dowo, Sengey, Lhakhang, Dama, Tsona, Dagpo, and Kongpo.

The paper to write the template copies for the woodblock prints were sourced from Tshona, Dagpo, Kongpo, Nyemo, Nyanang, and Mön. There were two types of paper produced: arsenate paper and pure wood paper. As writing on the arsenate paper could cause eye inflammations, it was necessary to have soft, clear paper of appropriate thickness unblemished by any kind of arsenic substances so that the copyist wouldn't suffer from eye irritations, and facilitate smooth writing, prevent smudging and resist damage even when drenched.

The ink to write the template copies was made from the soot obtained from the smoke by burning fir. This soot was first of all soaked in resin gum mixed with a dash of sugar and then mixed thoroughly in an ink-ladle for a good length of time. If this was followed by further stirring and mixing with the warmth of one's own hand, then the quality of the ink produced was said to turn out even better than the gold-marked ink produced from mainland [China].

The main substance for making the ink dust of burnt fir came mainly from Dagpo, Kongpo, Tsona, Mön, and Jar. The other items required in connection with the printing work were: resin gum required for preparing ink as well as treating cracks; oil for treating the wood; filtered flou for pasting paper; iron-ore (*bal rdongs*) to make all kinds of engraving chisels; iron-wool; and a stone called *öl-khog* which came in two types—a soft and coarse surface—for sharpening knives and chisels, and was obtained from the Tö region and northern areas. Finally a magnifying glass was needed for the proof-readers when checking the accuracy of the engravings.

The relative quantity of these required materials can be seen in Table 6, as listed in the Appendix.

As for other expenses related to the printing of the Narthang Kangyur, in addition to the meat, oil, salt, and cheese paid to workers as daily wages, the following four main items were paid: barley for making chang, food-grains paid in lieu of meat, food-grains paid in kind for daily wages, and roasted barley flour *tsampa*) (calculated at three *khel* of food-grains as equivalent to two *khel* of *tsampa*). The total expenditures on these four items in terms of food-grains amounted to 564,273 *khel*, 11 *dré*, 4 *pül*, and 2 *khyorwa* (*khyor ba*).

Converted in terms of today's *gyama* measure, that would be equivalent to 1,579,966 *gyama*, 4 *sang*, and 6 *zho*. And calculating the cost in terms of today's market price of food-grain in Lhasa at fourteen RMB per *khel* of food grain; the total cost would amount to RMB 789,983.26 [US$ 120,608.13][14] Likewise, the 2,962 *Khel* of butter paid out, converted at the rate of 1 *khel* as equivalent to 7 *gyama*, then the total quantity of butter paid out was 20,734 *gyama*, which calculated at today's market rate of RMB 7 per *gyama* of butter in Lhasa would calculate the total cost to RMB 145,138.00 [US$ 22,158.47].

Thus, adding up the total cost of food-grains and butter paid out as above, the total monetary value in today's terms is RMB 8,044,968.26 [US$ 1,228,239.42]. Now dividing this total cost for the 103 volumes of Kangyur texts, each volume cost RMB 78,106.49 [US$ 11,924.65] in today's money!

Regarding the expenses of printing the Dégé Kangyur, the catalogue only makes partial references, so the details are not available. However, cash was paid to purchase paper,

ink, and wood for the blocks. There were considerable costs in feeding the workers throughout the course of the project. Costs involved the celebrations at the beginning, middle, and conclusion of the printing project as well as the costs for buying the range of awards for workers. Even if we exclude the above costs, a rough estimate of the total expenses in terms of daily wages for the workers and the costs of project requisitions alone amounted to 7,622 boxes of tea popularly known as *'jakhor druk'* (*ja 'khor druk*) [each box had either sixteen small bricks of tea or for larger bricks of tea].

If we convert the value of these boxes in terms of food-grain measures in Dégé known as *ne 'dong* (*nas 'dong*), the total would amount to 6,097,600 *ne 'dong*, which is equivalent to 152,440 *gyama*. If we convert the value of this into today's measure of *gyama*, this amounts to 4,268,320 *Gyama*. Now taking the current market rate of fourteen RMB per *khel* of food-grain in Lhasa area, the total monetary value of the expenses in today's terms would be RMB 213,416.00 [US$ 32582.59]. If we divide this cost by the 103 volumes of the Dégé Kangyur, each volume would have cost RMB 2,0720.00 [US$ 3163.35]. If we convert this into food-grain terms, that would amount to 1,480 *khel* per volume of Kangyur canon [See Table 7].

Other Expenses Related to Printing the Narthang Tengyur

Besides the above expenses for required materials, there were expenses in terms of daily wages, cost of organising the celebratory functions at the start, middle and conclusion of the printing project and the cost of buying the-various awards amounted to 72,862 *sang* and 5 *zho*. When converted in terms of food-grains, it amounts to 145,725 *khel*. This converted to today's measure of *gyama* amounts to 40.803,000 *gyama* which when calculated in terms of the prevailing market price of food-grain in Lhasa today at fourteen RMB per *khel*, it amounts to RMB 20,401,500 [US$ 3,114,732.82]. Dividing this amount by all 225 volumes of the Narthang Tengyur, the cost per volume comes to RMB 90,673.33 [US$ 13,843.25]; [See Table 8].

If we convert the value of the above food-grains paid out in terms of today's measure of *gyama* that would amount to 12,413,296 *gyama*. Now taking the current market rate of fourteen RMB per *khel* of food-grain in Lhasa, then the total monetary value of the expenses in today's terms would be RMB 6,206,648 [US$ 947,579.84]. If we divide this cost by the 213 volumes of the Dégé Tengyur, each volume would have cost RMB 2,9139.19 [US$ 4448.73].

Rules, Regulations, and Traditions Related to Printing

In the past, despite the high cost of publishing religious texts, in most cases the initial cost of preparing the type-sets were sponsored by wealthy private estates/families who considered the publication and dissemination of scriptures as a charitable act of religiosity and a way to earn unprecedented merit rather than any pecuniary motives or profit. In the Buddhist scriptures, too, earning money or material gifts received through trade in scriptures and using them for personal benefit or for the benefit of one' family, children, kith and kin in terms of food, clothing, and shelter, is said to result in severe moral demerit and consequences.

Therefore, after the printing and publication of scriptural texts, whatever income was generated by way of wages or sales, that money was invested to further the cause of printing sacred materials, and very rarely used as capital-investments for profit. Likewise, the rich families who had sponsored and commissioned the printing project would have the original woodblock plates donated to the relevant monastery and very rarely kept in one's private estate. That is the reason why Tibetan monasteries and temples have become the repositories of large numbers of wood-block plates.

With regards to the printing of sacred texts either by the monasteries or public bodies, apart from the costs incurred for paper, ink, replacing worn out wood-blocks, and the wages for the workers, which were paid and received based on the prevailing market rates for food-grain and commodities, the rest of the income from sales of printed texts was income for the monastery's printing press, excluding wages for those involved in the printing. Such income was reinvested, by making new woodblocks or renovating the printing press, rather than spending the money on personal use. This was not allowed according to monastic regulations. There was no tradition of distributing such income among the monks of the monastery.

Another feature was that the wages earned by craftsmen working on the printing project were pooled and distributed on an equitable basis rather than on the basis of their rank and seniority. The maximum annual output of sacred texts running into many volumes, such as the Kangyur and Tengyur, were no more than about one hunDred and fifty sets. These limited editions were sold out by the end of the year.

According to Situ Panchen Chökyi Jungné's work, *the Catalogue of Dégé Kangyur,* nine thousand three hunred sheets of large uncut paper, eight *khel* of wheat, seventy *sang*

of quality vermilion, and three *gyama* of dye made from *laccifer lacca kerr* were required to print a complete set of Kangyur.

The total cost of paper and ink alone in printing a whole set of Kangyur cost one hundred and fifty wicker baskets of *jakhor druk* (each containing sixteen small tealeaf bricks), nine bamboo baskets of *jakhor druk* and two large bricks of tea and three small bricks of tea for payment of wages to printers. Adding up the total costs of the papers and inks required amounts to a total of 159 wicker baskets of *jakhor druk*, two large bricks of tea and three small bricks of tea.

In terms of Dégé's *Nas 'dong* measurements, the cost amounts to 127,870 *né dong* which is equivalent to 3196 *khel* and 3 *Zho* which when further expressed in terms of present day *gyama* amounts to 89,509 *gyama*. Taking the current market rate of RMB 14 [US$ 2.14] per *khel* of food-grain in Lhasa, then the total monetary value of the costs in today's terms would be RMB 44,754.20 [US$ 6,832.70].

Formerly, it was required to use fine, smooth, printing paper that had no blotches on either side of the sheet. This was because use of ordinary Tibetan paper with numerous blotches resulted in higher rate of wear and tear of the woodblocks. Therefore, the fastidious ones even used double sheets of Tibetan paper glued together or ordered papers from Bhutan or Tö region in western Tibet or from India. These days, fine quality *koshok* paper from the Motherland is used.

The time frame of printing was restricted to the six-month period between the eighth day of the third Tibetan calendar month up to the eighth day of the ninth Tibetan calendar month. Printing was not allowed during other times. Moreover, drinking of *Chang*, smoking, and the eating of onions and garlic were strictly prohibited during this time.

Life and Frequency of Usage of Woodblocks Plates

The Narthang Kangyur woodblock engravings were completed in the first month of the Water Bird year, 1732, during the twelfth *Rabjung* calendar cycle. The plates were regularly used for printing until the beginning of the third month of the Wood-Dog year, 1934, during the fifteenth *Rabjung* calendar cycle when the last printing of the Zhol Kangyur canons were completed. Thus, the woodblocks were used for a total of 202 years.

As for the Dégé Kangyur woodblocks, since printing first began in the Water Ox year, 1733, of the twelfth *Rrabjung* calendar cycle, a total of 1,500 compete sets of Kagyur were printed in the next twelve years, according to the *Catalog of Dégé Kangyur*. From that time until 1955, a total of 222 years have elapsed. Assuming that a total of 125 sets of Kangyur were printed each year on average, then a total of 27,750 complete sets of Kangyur canons were printed.

These days given the excellent resources available for printing, the productivity and output is several times faster than that in the olden days. Therefore, thirty thousand copies, what would have taken almost two hundred years to produce through the traditional method of woodblock printing, can now be printed within a year.

Appendix

Table 1. Comparative rates of food-grains and commodity exchange values in Tibetan regions [1912-1933[8]].

Ü area				Tsang area			
Khel barley grain	4	butter in *Khel*	1	*Khel* grain	5	butter in *Khel*	1
Khel barley grain	1.5	dried yak meat	1	*Khel* barley grain	6	dried yak meat	1
Khel barley grain	1	whole lamb	1	*Khel* barley grain	1.1	whole lamb	1
Khel barley grain	1	salt in *Khel*	2	*Khel* barley grain	1	salt *Khel*	3
Khel barley grain	1.5	sodium bicarbonate *Khel*	5	*Khel* 'bru	1	sodium bicarbonate *Khel*	5.3
Khel barley grain	1	tea *Gyama*	1	*Khel* barley grain	1.5	tea *Gyama*	1

Table 2. Examples of workers' allowances [1913-1933].

Work category	No of people	Tsampa *Khel*	Chang grain *Khel*	Butter *Khel*	Tea Gyama	Rgyar whole sheep	Meat for thugpa	Oil *Khel*	Salt *Khel*	work wage and daily wage in food-grains *Khel*	
Copyist	3	5	1.1	0	0	1	2	0.5	0.5	3 per page	5
Master teacher	23	5	1.1	0	0	1	0	0.5	0.5	per wood-block	3.83
Engraver	139	5	1.1	0	0	1	0	0.5	0.5	per wood-block	2.83
Student	715	5	1.1	0	0	1	0	0.5	0.5	per wood-block	1.83
Supervisor	3	5	0	15	5	3	0	2	2	per day	0
Editor	12	5	0	15	5	3	0	8.5	2	0	0.1

Table 3. Wages paid at the time of printing Kangyur texts at Narthang [15th century].

Work Category	No of people	Wage and daily rates	Quantity of grain in *dong*
Senior editor	4	per head per day	22
Other editors	3	per head per day	13
Artists	1	per two head deities	25
Thangka engravers		per two deities	2
Copyists	15	per side of a page	22
Senior engraver	500	per side of a woodblock	130
Other engravers	6	per side of a woodblock	NA
Proof readers		per head per day	13
Paper workers		per head per day	10
Wood workers		for 140 woodblock plates	200

Table 4. Wage entitlements of workers at the time of printing Kangyur texts at Dégé [15th century].

Provisions	Quantity	Total paid	Provisions	Quantity	Total paid
fine quality *tsampa*	*Khel*	270	Meat & bone mixed	*Khel*	648.116
coarse *tsampa*	*Khel*	49,249.12	Quality grain in lieu of meat	*Khel*	332,885.102
barley for *chang*	*Khel*	13,5576.2	Daily wage in grains	*Khel*	99,460.45
dried tea leaves	*Khel*	693.92	*zanpa 'degs* parched barley [?]	*Khel*	17,450
butter	*Khel*	2962. 82	Cow dung	*Khel*	18,897.2
salt	*Khel*	405.192	Value converted in cash	*Sang*	13,783.7

Table 5. Wage entitlements of workers at the time of printing Tengyur texts at Dégé [15th century].

Work Category	No of people	Wage and daily rates	Quantity of grain in *dong*
Senior editor	4	per day	22
Other [editors]	NA	per day	13
Artists	1	per two deities	25
Thangka engravers	3	per two deities	120
Copyists	80	per side of a page	22
Engravers	507	per side of a woodblock	122
Proof readers	NA	per side of a woodblock	13
Lines markers	NA	per head per day	10
Paper makers	NA	per head per day	10
Wood workers	NA	for 140 woodblock plates	200

Table 6. Materials used to print the Narthang Kangyur [18th century].

Name of Material	Unit of measure	Total quantity
paper for template writing	*Dré*	591.8
filtered wheat to paste pape	*Khel*	165.15
oil to treat wood for print blocks	*Khel*	147.52
soot from burnt fir for making in	*Khel*	61.1
Iron to make engraving tools	*Khel*	58.2
lcags rdzongs 'degs 'jal[13]	*Khel*	18.2
Quality *öl-khog* stone knife sharpener	quantity	408
Coarse stone for knife sharpening from the North	*Khel*	97
Ink and resin to fix cracked woo	*Khel*	220.2
Quality charcoal 'degs	*Khel*	4899
Quality birch-wood plank	quantity	27,436
Monetary cost of sundry purchases	*Sang*	60,25.67

Table 7. Materials used in Printing the Narthang Tengyur [18th century].

Name of Material	Unit of measure	Total quantity
paper for template writing	*Dré*	188,454
filtered wheat to paste pape	*Khel*	747
oil to treat wood for print blocks	*Khel*	1910
soot of burnt fir for making in	*Khel*	110
iron to make sealing wax for engraving	*Khel*	20
lcags rdzogs 'degs 'jal[15]	*Khel*	69.6
quality *öl-khog* stone knife sharpener	quantity	1040
coarse stone for knife sharpening from the north	*Khel*	185
ink and resin to fix cracked woo	*Khel*	454.16
quality charcoal *'degs*	*Khel*	14,539.8
quality birch-wood plank	quantity	76,409
vermilion measuring scoop / ladle	*Khel*	4.1
white woollen flannel to make covers for woodblock	yard	25,470

Table 8. Cost of Printing the Dégé Tengyur and Related Items [18th century].

Category of work and materials used	Unit of measurement	Total quantity
total wages for level three editor and proof reader	*Khel* of barley	9560
total wages for artists on template	*Khel* of barley	135
total wages for engravers of deities on wood-block	*Khel* of barley	640
total wages for copyists working on paper templates	*Khel* of barley	34,241
total wages for engravers on woodblocks	*Khel* of barley	202,335
total wages for line drawers	*Khel* of barley	500
total wages for paper makers	*Khel* of barley	2720
total wages for wood workers	*Khel* of barley	2223
pay at five Khel of barley per 16 woodprint-block	*Khel* of barley	19,455
total cost of papers	*Khel* of barley	3123
total running cost on maintenance of workers	*Khel* of barley	168,400
grand total of above items of expenditure	*Khel* of barley	443,332

Dungkar Lobzang Trinlé (1927–1997) was an outstanding Buddhist scholar, a Marxist historian, an expert on traditional poetics and a campaigner for modern Tibetan education and cultural development, a rare polymath among Tibetan scholars of the 20th century. His contributions to and legacy within the fields of Tibetan studies and Tibetan education are recognized internationally despite having to work according to the vicissitudes of the political climate in China and the Communist Party's policies towards Tibet as a 'liberated' part of the Motherland.

Born in Kongpo Nyingtri in southern Tibet in 1927, he was recognised as a Tulku or incarnate lama at the age of four. At nine, he joined Sera monastery and went on to obtain the Geshe Lharampa degree, the highest academic qualification. Before 1959, he was deputed to teach at the nascent Nationalities Institute in Beijing where he studied Mandarin and absorbed the modern and specifically Mar ist approaches to study.

During the Cultural Revolution (1966-76), he was detailed to work on a labor farm in Toelung Dechen near Lhasa. However, after the Cultu al Revolution he went on to occupy all the leading positions available to Tibetan academics including: Vice-Principal and Professor of Tibet University, Honorary President of the Tibet Academy of Social Sciences, Professor at the Central Institute of Nationalities in Beijing, and Vice-President of the Chinese Institute of Tibetology in Beijing. His political rewards included membership in the Chinese People's Political Consultative Conference and the council of the Chinese Buddhist Association. His intellectual skills were recognised officially in 1987 when he as awarded the title of 'State-level Expert with Outstanding Contributions to Science.'

His major Tibetan-language publications include: *The Merging of Religious and Secular Rule in Tibet* (*Bod kyi chos srid zung 'bre lam lugs skor bshad pa*), *The Annotated Red Annals* (*Deb ther dmar po'i mchan 'grel*), *A List of Rare Tibetan Books* (*Bod kyi dkar chag rig pa*), *An Introduction to the History of the Potala and the Jokhang* (*Po ta la dang Jo khang gi lo rgyus*), *A Dictionary of Han-Tibetan History* (*Rgya bod lo rgyus dang 'Drel ba'i tshig mdzod*), and *The History of Struggles Among Various Religious Sects in Tibet* (*Grub mtha'i skor gyi rnam bshad*), *the Dungkar Encyclopaedia* (*Dung dkar tshig mdzod chen mo*), as well as important works on Tibetan poetics and on modern education.

After 1992, when Deng Xiaoping signalled an end to the 'special characteristics' privileges which allowed Tibetans to argue for a significant degree of cultu al and economic autonomy, his standing suffered. Dungkar saw the new policy as aiming at full assimilation of Tibet's economy and culture with China, and as jeopardising the successful cultural reconstruction achieved during the previous fifteen ears by Tibetan educationalists and moderate Chinese to repair the damage of the Cultural Revolution.

Though some Tibetans will remember Dungkar as a collaborator, for those who knew him better (colleagues, students, and readers) he was a realist who did his best to safeguard Tibetan identity and culture within the new socio-political framework of the People's Republic of China. He died in Los Angeles on 21 July 1997, with a clear conscience, having made a lasting contribution to the renaissance of Tibetan language, culture and Tibetan studies.

This translation contributes to the growing body of research available in English on the Tibetan art of printing[16] and textual dissemination of Buddhist canons and their commentaries as part of cultural, literary and religious history of Tibet.[17]

Translator's Biography

Tsering D. Gonkatsang teaches Tibetan at the Oriental Institute, University of Oxford, and is a translator and consultant for Tibet-related radio programs and films. He is a Trustee of Tibet Foundation, UK <www.tibet-foundation.org> and Tibet Watch, <www.tibet-watch.org> and can be contacted at tsering.gonkatsang@orinst.ox.ac.uk.

Endnotes

1. *The Collected Works of Dungkar Lobzang Trinlé*, Beijing: China's Tibetan Cultural Printing Press, 1977.

2. Van der Kuijp, Leonard WJ. 1993. Two Mongol Xylographs (Hor Par Ma) of the Tibetan Text of Sakya Paṇḍita's Work on Buddhist Logic and Epistemology. *Journal of the International Association of Buddhist Studies* 16 (2): 279-298.

3. However, Agnieszka observes: "The earliest datable work in Tibetan language currently known is a small prayer printed in Khasa Khotao, a Tangut city in western Inner Mongolia, in 1153 and preserved in the Institute of Oriental Manuscripts in St. Petersburg in Helman-Ważny, Agnieszka. 2014. The Archaeology of Tibetan Books. Leiden: Brill Publications. p 121.

4. Narthang monastery located 15 kilometers west of Shigatse in Tibet. Founded in 1153 by Tumton Losang Dragpa a disciple of Geshe Sharawa Yonten Drag (1070 -1141). Narthang was the fourth great monastery in Tsang with Zhalu Monastery, Sakya and Tashi lhunpo. After the fourteenth century it gained great eminence as the oldest of Tibet's three great printing centres (the other being the Potala and the Dégé). The Fifth Panchen Lama took control of the monastery and it continued printing the Buddhist scriptures the Kangyur and the Tengyur up until 1959.

5. The Dégé Parkhang in Ganze Tibet Autonomous Prefecture, is one of the most important cultural, social, religious and historical institutions in Tibet. Founded in 1729 by Tenpa Tsering, the fortieth King of Dégé (1678–1739) with the spiritual and literature assistance of the 8th Tai Situ Panchen Chokyi Jungne, the Derge Parkhang is an active center for publication of Tibetan Buddhist sutra, commentaries, and thangka as well as works of history, technology, biography, medicine and literature.

6. Gray Tuttle suggests the Sakya Hegemony over Tibet as (1249-1354) and the Neudong and Phakmodrupa Hegemony (1354-1478), the Rinpung and Zhamarpa Hegemony (1478-1565), the Zhigatse and Karmapa Hegemony (1565-1642), and finally the Lhasa and Ganden Hegemony (1642-1705), and 1705- present as "The Age of Foreign Interests and Occupation." In *The Tibetan History Reader* By Gray Tuttle and Kurtis R Schaeffer, Columbia University Press. NY. 2013, 56.

7. *Khel* is a standard measure of volume = 25 to 30 lb. 1 *dré* = 1 litre; 1 *pül* = 1/6 of *dré* ; 1 *gyama* = weight measure = 1.1023 lb; 1 *sang* = an ounce; 1 *zho* = 10 *kar*; 1 *kar* = 1/100 of *sang*). However, as currency, 1 *kar ma* =1/10 s*ang* = *zho* x 1/10 = *skar*.

8. The period 1913 – 1933 is the period of relative peace under the Thirteenth Dalai Lama's reign.

9. One *dong* of barley is equal to about half a *dré* or 3 *pül*.

10. Brick tea came as a thick rectangular block of tea, usually in 100g, 250g, 500g and 1000g sizes in China. *Zhuancha* bricks are the traditional shape used for ease of transport along the ancient tea route by horse caravans. In Tibet, 1 compressed rectangular tea brick known as 1 *bagchung* weighed 250g and the *bagchen* weighed approximately 1kg.

11. Schaeffer, Kurtis R. 2009. Appendix 3. The Cost of the Canon at Degé. In *The Culture of the Book in Tibet*. New York: Columbia University Press, 159.

12. Depending upon the edition, the Kangyur comprises 101-120 volumes, and the Tengyur 220-250 volumes Kangyur (words of the Buddha): 1,169 texts containing 70,000 pages* Tengyur (commentaries by Indian masters): 4,093 texts containing 161,800 pages.

13. The exact meaning is unclear. It seems to be a measurement of metal powder. Literally: *lcags* ('metal') *rdzogs* ('used up'), *'degs 'jal* is a weight measurement.

14. All conversions to US dollar is based on today's exchange rate of 1 US$ = 6.55 Chinese RMB.

15. See possible translation above.

16. Kragh, Ulrich Timme. 2013. The Significant Leap from Writing to Print: Editorial Modification in the First Printed Edition of Collected Works of Sgam po pa Bsod nams rin chen. *JIATS* 7: 265-425, August 2013. <http://www.thlib.org/collections/texts/jiats/#!jiats=/07/kragh/#ixzz3z9ISVcs9>; see also Kawa Sherab Sangpo. 2013. Analysis of Tibetan Language Prints Produced During the Yuan Period. *Inner Asia* 2: 201-224.

17. Agnieszka, op.cit., Pp 312. Also see: dBa'bzhed. The Royal Narrative Concerning the Bringing of the Buddha's Doctrine to Tibet: Translation and facsimile edition of the Tibetan text by Pasang Wangdu and Hildegard Diemberger. Wien: Verlag der Österreichischen Akademie der Wissenschaften, 2000. (Österreichische Akademie der Wissenschaften, Philosophisch-historische Klasse, Denkschriften, Band 291) 121pp., 32pl.