The Bulletin of Tibetology seeks to serve the specialist as well as the general reader with an interest in this field of study. The motif portraying the Stress to the mountains suggests the dimensions of the field.

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FURTHER FRAGMENTS FROM TUN HUANG

—HUGH E. RICHARDSON

In vol. II no. 3 of this Bulletin I examined a fragment which has been omitted from the end of the Annals section of Documents de Touen Haueng relatifs à l'Histoire du Tibet, Bocot, Thomas and Toussaint, 1946 (THD). The passages to which I now draw attention come from the beginning of the short section on Ancient Principalities etc. (pp. 38–42) and from the end of the Chronicle (p. 112). These fragments provoke more questions than they answer; but the historical and semi-historical documents from Tun Huang are of such rare value that every available sentence deserves to be studied.

The editors of THD state that the five lines which they omit from the beginning of the Principalities section are much damaged and are separated from the main body of the text by a considerable interval. The late Mlle Lalou has transcribed three of the lines in no. 1186 of her Inventaire des manuscrits tibétains au Touen Haueng (LINV) and has quoted them at p. 146 of an article in Journal Asiatique 1959 (JA). As I have no photographic or other copy of the manuscript I can refer to present to those three lines only. The Tibetan text as given by Mlle Lalou is as follows; the attempted translation is mine.

(1) /spa gyen mtha' 'kha'i ras bda' /lda'i dangs bus na/ /le za'i gang rtag/ /ma/dki la mda' na/ /skyi zai'i d / ... (4) /... /dags kyi bhen slok na/ /dags za'i gyim bang ma'/ /mchims yel gyi dang po/ /mchims / ... (3). /sha/ /tagbang ma'/ /spa gyen ni mtha' 'kha'i / ... (sho) no

"As for the lineage of those who old were associates on the four borders: in the midst of the snows of the IDo, the IDe lady Gang tag ma; in the valley of sKyi, the sKyilady 'D ...; in 'bhen mchur of Dags, the Dags lady Gyim pang ma'; in d'Ngul mchur of the mChims country, the mChims lady Sha tagshang ma'. As for the associates on the four borders, their dominion. . . . ."

The several different versions of the list of principalities bordering on the territory of the Tibetan kings have been analysed by Mlle Lalou among her many memorable contributions to the study of the Tun Huang documents (JA 1962); I am concerned here only with some of the problems which this small fragment adds to an already complicated subject.
In some of the lists the princes, their capitis, consorts, and ministers are variously named. This fragment, which perhaps has no direct connection with the remainder of the text reproduced at pp. 86-87 of THD, mentions only the consorts and their residences. The form za'i, rather than za, may strictly mean "in the capacity of consort" but I have translated it simply as though it were za.

The lady of skyi, whose name is effaced here, appears in other lists simply as skyi blag gi btsun mo — the queen of the master of skyi. The mChims lady, sha-bsdug ma, is named in LIV 149 but a lord of Gagar lhang in Yarlung is named in LIV 185 which Mlle Lalou has edited in JA 1959.

Dag has been left for special mention. Bshon-miakili appears to be a place name; but in other lists the capital of Dag is calledShing-nag, Shing-nag, or Gru-bon'i. The name of the lady, here given as Gyim-pang, appears in other lists as Khung-phangle. The reading Gyim turns ones thoughts to two documents in An Ancient Folk Literature from N.E. Tibet by F.W. Thomas (AFL pp. 16-19, 40-41) in which there are lengthy but obscure stories about a Gyim-po family. Where they lived is not clear but since names in the documents are given both in "the language of skyi-reged Tibet" and in "the language of Nam-tso" the Gyim-po must have had close connection with those two regions. Nam, which Thomas placed to the S.E. of the Kokonor region, has also been identified with the Nan Chao kingdom (R.A. Stein, Deux Notes, JA 1961, note p. 145). That is a long way from Dagpo; but the ruler may well have been supposed to have taken his consort from some other country. Gyim-po is also mentioned in a fragmentary inscription on the remains of a stone pillar from a site near Zwa-tsi Lakhang which was the territory of the Mung clan (JRAAS April 1953, pp. 10-11). There it is associated with ancestral tribal names connected with Eastern Tibet — Cho phyi; mtha’; Tse ’i and Phyang-po (See AFL. 6, 50, 40; and R.A. Stein, Les Tribus Anciennes des Marchés Sino-Tibétains, Paris 1955, pp. 57, 116, 157).

Although the lists of principalties contain at least one name — yi. Lig sisa-bul — which it appears possible to place approximately in the early seventh century, other names go back to the legendary past and there is no way of fixing the lists in any particular period. That applies to the lady Gyim-pang in the fragment; but the syllable Gyim appears also in the names of persons who can be assigned to a historical setting.
For example, sPuG Gyim-tang mrong-bu was a vassal of Na-gseg of "Tibet-pjong, one of the nobles who combined to establish the grand-father and father of Srong-brtan sGam-po in power. sPuG Gyim-tang killed his wife for fear that she might betray the conspiracy in which he was engaged (THD pp. 114, 121 and 116). These events can be put c. 950 A.D. Later, one sPuG Gyim-brtan rna-chang was recorded in the Tanhung Annals as being sent in 844 to take charge of the administration of Zhang-zhung (THD pp. 114, 115). He is presumably the same as sPuG Gyim-tang mra-ming who went to help the sister of the Tibetas king who had been married to Li Kui, ruler of Zhang-zhung, and was kindly treated by him. The visit ended in the subjugation of Zhang-zhung (THD pp. 115-117 and 115-118). Although the rulers' names do not agree exactly, that event is probably to be placed c. 844 about which time as the Annals record "Li Kui-hua war destroyed and all Zhang-zhung subjected." (THD pp. 11 and 12). A later subjugation of Zhang-zhung in 873-878 (THD p. 11) will not in fact have the affairs taken place during the life time of Srong-brtan sGam-po. If that is so, sPuG Gyim-brtan's experience in the affray of the princes may have been rewarded later by the appointment as governor. The name sPuG, which has an un-Tibetan ring appears in the lists of princes as a title of a minister of Skyi (whose ruler's name was mra-gpo). The capital of Skyi is given as Ilang, a name associated with Na Gao (sNam). sPuG also appears in the name of a monk apparently of non-Tibetan origin in the time of Khri Dee-dge-brtan (LNV 496). The same may derive from some branch — perhaps an estranged one — of the widespread complex of peoples known as Zhang-zhung, whose western extension was in the kingdom of Li Kui shar in the neighborhood of Lake Manasarover. There would be nothing unusual in the use of such a person for dealing with others of similar racial origin. Another example can be seen in the activity of the evening minister Srong-sal Zu-tse who took part in the subjugation of some Zhang-zhung peoples to Srong-brtan sGam-po's father (TLDB II 55 and THD 150). The description of him as Khuang-po identifies him as belonging to a Zhang-zhung tribe; and the syllable sPuG appears in other Zhang-zhung names e.g. Ba-sang-rje spong-sher rye myong (THD 143) and cf. sNyig-shar sPa-mnga rgyu myong (THD 113). Spong-sal Zu-tse was responsible for the fall of the great great Minister Zhang-sang of Myang, whom he supplanted c. 862 A.D. Associated with him in that coup was a man named Pa-tshab Gyim-po who was a vassal of Myang. The reason for Pa-tshab's hostility to his overlord can be seen in the events leading to the establishment of the Ya-hong dynasty. The father of Myang Zhang-sang, a minister of a local prince probably in the upper valley of the Thaas river, found himself on the losing side in warfare with the prince of Nga-po and was subjected to the overlordship of one of the ministers of his conqueror. The minister, Nyak Jia-zang, was married to a lady of Pa-tshab who proceeded to humiliate the new vassal. Myang, therefore, organized a
conspiracy against his new masters and in favour of the ruler of Yar-lung. The venture was successful. The prince of Ngor-po was gallantly defeated; and Mynan and his henchmen were made subjects of their one-time vassal Myang. A Pa-tshab was, therefore, ready for revenge when an opportunity presented itself to help in the destruction of Myang Zhang-sung. (See Bulletins II. i and II. ii.)

Mention of a person with the possibly eastern name of Gyim-po, who was also a member of the Pa-tshab clan, brings us to the second segment which is printed at the end of the Tin Huang Chronicle (THD p 122), but has not been translated there owing to its damaged condition. It is a typical example of the Chronicle style, a historical incident being illustrated by songs which are packed with allusion and aphorisms in language very similar to much of AFL. The transcription which follows has been revised slightly on the basis of a photostat of the ms which is fairly clear for the first half; for the rest I have generally accepted the version in THD although some of its readings are dubious. I have inserted in it a few conjectural readings for which there seems adequate basis; and I have attempted a translation of those parts of the fragment which can be put into a historical setting or which are long enough to provide some meaning.

(1) ma’gyag pa tshang na sorig na kha’i dang po tshab tseg na gyug na la’u sogs pa’i tshes pa tshab tseg na gyug na la’u sogs pa’i tshes

...ma’gyag pa tshang na sorig na la’u sogs pa’i tshes pa tshab tseg na gyug na la’u sogs pa’i tshes

...ma’gyag pa tshang na sorig na la’u sogs pa’i tshes pa tshab tseg na gyug na la’u sogs pa’i tshes

...ma’gyag pa tshang na sorig na la’u sogs pa’i tshes pa tshab tseg na gyug na la’u sogs pa’i tshes

...ma’gyag pa tshang na sorig na la’u sogs pa’i tshes pa tshab tseg na gyug na la’u sogs pa’i tshes

"When MGar Mang-po-rje sTog-rtsun and Pa-tshab Gyos-to-rred to China Pa-tshab sang this song."

Even if medicine has been put on the shelf, leprosy remains ever after. When they are old, even if their mouthfolk are wise, mother and daughter are pursued by sorrow. In great Tsong-ka, the one whose lot it is to be ruler is Emperor of China. As for the man of Tibet, in his lot, China...is broken. The wife

* pa’myi=par-myi ? referring to sPu-gyal Bod.
of mgar Mang-po-rje stTag-rtsan, the lady of Cog-po, to China, spoke like this: 'From Nyen-kar stTag-rtsa, a dwelling of iron (or ‘in lCaps l), In China itself ... from the net. ............. sent smoke signals (or ‘sent signs of submission l2. From Meg-le glang- mar. (about one and half lines omitted). The lord stTag-rtsan and the Chinese Emperor bSam-lang, these two. Prayed. .............' (the remainder is too obscure to attempt)

In spite of the damaged nature of the passage it can be seen to refer to the fall of the mgar family in 468/469 after some 50 years as effective rulers of Tibet. The Chief Minister at the time was mgar Khris-bring bTsan-brod, son of stong-brtan mgam-po’s great minister, stong- rtsan yul-ming. In the Tibetan Annals Khris-bring alone is named as involved in the disaster to his family (THD l9) but from the Tang Annals it is learnt that when his troops would not fight against the Tibetan king Khris-bring committed suicide together with many of his entourage. Other members of the family fled to China, among them a brother of Khris-bring named Tsampo, and Mangpu-chich, the son of his elder brother. This can hardly be anyone but the mgar-po-rje stTag-rtsan of the fragment. In Dzu’i Nide, referred to above, Professor Stein in a note, which deserves to be developed into an essay, quotes the Ta’ang Annals as recording the great honours given to a son of Khris-bring, named Louen Kong-jen, who submitted to China in 469 bringing with him 7000 tents of the ‘A-za. This too must be the Mang-po rje of the fragment. The influence of Khris-bring in the ‘A-za country is seen in many entries in THD and there is mention of other members of the mgar in that region including one mgar Mang-nyen; but the family, or clan, was too extensive to attempt to identify him with Mang-po-rje.

The name of the Chinese Emperor bSam-lang appears also in line 26 of the East face of the Lhasa Treaty Inscription (rTga’i rje san lang ... l) where it certainly refers to the Emperor Hsiao Tsung (713-756) though how the name came to be applied to him is not clear. Nor is it clear why that name is mentioned in connection with the flight of mgar Mang-po-rje which took place 14 years before his accession, during the reign of the usurping Empress Wu. Although her activities are known to the author of the Blue Annals, they have made no impression on contemporary Tibetan records; or it may be that by the time the song came to be recorded, the memory of the Emperor who had sent the Chinese princess Mun-sheng as bride to Khris Dge-gling-brtan had effaced most others.

The association of the Pa-tshab clan with the mgar is seen in (THD p 37) which records joint operations in 696 by mgar ’Brigs-rtsaṅ rtsang-ston and Pa-tshab rGyul-ston thon-po. A common interest
may have existed for some time. Pa-tshab, as has been seen, was associated with a minister of Ngas-po who was hostile to Myang. The lists of principalities show that mGar were also ministers of Ngas-po and although there is no evidence that mGar took an active part in opposing Myang and his protege the ruler of Yar-lung, they were not among his supporters. Later, although there is nothing to suggest that mGar joined with Pa-tshab and Zu tse in the plot against Myang-sang, they were: waiting in the wings and as soon as the alien Zu-tse, who seems to have had no clair to support him, was removed from the scene, mGar sTag-rtsan was ready to take up a position similar to that formerly enjoyed by the Myang.

Returning to Mang-po-ri sTag-rtsan: it emerges from the fragment that his wife was from Cog-ro. That clan first appears in Tibetan history as sharing in the fall of Myang-Zhang-sang, and therefore on the other side from Pa-tshab. It is not named in the lists of principalities nor among the legendary ministers of early Tibet and may, therefore, have been of very remote or of humble origin. On the fall of the mixar a lady of Cog-ro became the wife or mistress of the Tibetan king 'Das-srong. Although allusions to that union in the Chronic are obscure, it appears to have been distasteful to one Khe-rag nho-sngag who, after the death of 'Das-srong, took part unsuccessfully in what must have been strife about the succession (THD 145, 146, and 40). Later histories state that a Cog-ro minister escorted the body of 'Das-srong back to central Tibet from the east. Thereafter, the clan appears as active in A'sha country and perhaps as being allied in marriage to the ruler of the 'A'sha (TJTD II 8-10). It continued to take a prominent part in Tibetian affairs down to the death of Ra-pa-can who married a lady of that clan and among whose murderers was one Cog-ro Lha-bodil. The original home of the clan is uncertain but their association with the 'A'sha and the description of the lady of Cog-ro as 'Ba', Cog-ro za suggests an eastern home, perhaps connected with the Tsawe-l'dam marshes. It is unfortunate that the fragment lacks any word which would have shown whether the lady of Cog-rG Cog-ro did (as one might expect) die not accompany her on his flight to China. As she and the lady associated with 'Das-srong at about the same time are both described simply as Cog-ro za it is possible that they are one and the same and that the wife of mGar sTag-rtsan was either captured by the king or joined him willingly. The tone of Khe-rag's song — calling her a "widow" and apparently abusive of her — suggests the latter. At all events, the fragment makes it appear that re-examination of the commerced songs in THD might be fruitful. The translators have missed the point that Khi-gla's (THD p 921) is the name of a noble of the 'Bro clan who was associated with the Cog-ro at the 'A'sha court about the year 716 to 716 in connection with the arrival of the Chinese princess as bride to the Tibetan king. One further speculation about the Cog-ro lady of the fragment — suggested

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by the name of the Chinese king who reigned from 713 to 716. The two songs may relate to two different occasions and it might be that the lady of Gog-za became the wife of mGar Mang-po-pe after the death of Dus-arong; but this seems to be an improbable strain on the construction.

The allusion to Nyen-kar raises another crop of speculations. A place of that name was almost continuously the residence of the Tibetan king Dus-arong from the first year of his life in 673 until his sixteenth year (693) during which time the power of the mGar was supreme. Nyen-kar had been the residence of an earlier king, Mang-arong, in several years of his minority when mGar Stong-rtsen yul-zung was in power. In the case of Dus-arong, hints of a movement against the authority of the mGar, which culminated in their overthrow in 684, can be seen almost as soon as the king ceased to reside at Nyen-kar. Although the home of the mGar appears from the Chronicle (THD 161-165) to have been Dza-pa and it was in this period of Stong-rtsen that Dus-arong took possession of the property of Khri-ston after his fall, the power of the family at its peak must have extended over much of Tibet, and Nyen-kar may have been a mGar strong hold in which the young King lived under their care. There were probably several places of that name but the Chronicle shows that Nyen-kar rin-ge-pa was in Ngas-po and it was of that principality that mGar were originally ministers.

Of other names mentioned in the song of Gog-za, if lung does not mean "iron" it could refer to the fortress of Cag-rtse on the Szechuan border. Meg-ile is mentioned several times in LINV in a context — the copying of religious books—which seems to place it on the eastern border.

The overlord of the mGar in 698-699 virtually eliminated him from Tibet. From Chinese records the slaughter of the clan and its associates seems to have been extensive. Others, as has been seen, took refuge in China where they became honored and valuable officials. Professor Stein in his note referred to above identifies members of the exiled mGar family in China of the borderlands in 793 and as late as 929; but in the records of the Tibetan kingdom the name does not figure again except for the appearance of a mGar-brTan kong as a minor official (dka'i 3i-ge-pa) in LINV np. 195. There were no more mGar ministers in the Annals, nor among the witnesses to the lha-sbysac of Khri-Ma-arong-brtan or to the Khasa treaty of 822. Later histories, it is true, sometimes mention mGar in connection with the connection of 929—but this is not convincing without any contemporary support. Sta-lphred does not mention the name at all, while the reference in rGyal-po bka'-chung (f. 36) is cursory; and no mGar figures in the description of the military organization of Tibet in the Mem-po bka'-chung.
From the 13th century onwards religious personages with the same mGar, or more usually 'Gar, are not infrequent. Noble families also claimed descent from that clan, in particular the Tshal-pa, the rLange-gsum from which the Phug-mo-gyu dynasty originated – and the princes of sDe-dge. These genealogies, which are full of obvious legend, do not refer to t'igs-po but assign to the mGar a divine or heroic origin usually of indeterminate location but in the case of the sDe-dge legend apparently in the region of Tshochu.

It is often assumed that mGar and 'Gar are simply alternative spellings. If so, the form 'Gar, which is more frequent in later works, may have been adopted to avoid confusion with the desired caste of blacksmiths (gar-ba); but might not mGar indicate that the clan did have a remote ancestral connection with that craft? Professor Stein tends to discount this because the claim is not made by Tibetan writers, who love that sort of etymology. Nevertheless, the possibility may be allowed to remain open. In the earliest documents the name is invariably written mGar. The occurrence of 'Gar' in the Annals of Khots, quoted by Professor Stein with reference to TLTD, is not from a Tun Huang at but from a later xylograph and the recent edition by Mr Ennorick shows that two out of four of the available xylograph versions read mGar. Although the early Tibetans certainly had the services of skilled metal workers, there is no suggestion that smiths were then regarded either with the aversion which became their lot later in Tibet or with the awe that in some other countries surrounded the worker in metal. Nor, for that matter, is there any hint of special treatment of those other occupations which later appear as outcaste in Tibet – butchers, potters, cutters-up of dead bodies. But the existence of a superior attitude towards smiths in Central Asia is seen in the special reputation of the Turks as blacksmiths and their subsection in that capacity to their Juan Juan overlords (Chassernek, Documents sur les Tchchen Occidentaux p. 127) And it may be noted, for what it is worth, that when the ruler of Ngapo who was the predecessor of the mGar, was defeated his son fled to the Turks.

Even though the mGar family ceased to count for anything in the affairs of the early kingdom the well merited fame of their former greatness and achievements has never been forgotten. mGar Stong Yul-zung is still the favourite hero of store dramas it is remarkable how much space and what favourable treatment are given to the mGar in the Tun Huang Chronicle which is principally a eulogy of the Tibetan kings whose authority the mGar overrode for a period. Two rather dubious members of the family are introduced into the lists of early ministers (TLTD 130), Stong-rnam yul-zung is suitably honoured (pp 159-160) but it is Khri-brin brtan-brod who gets the most praise. It is true that the chastisement of the churlish minister is mentioned (p 149) and 'Dong-stong' long song of triumph after he had overthrown
Khri-bring is given full value; but the voice of the critic Khe-ragd is also heard even if indirectly (pp. 161-162) and one long section (pp. 167-169) is devoted to the skill and courage of Khri-bring in debate and in war. The Tibetans of that day appear to have envied, without partisan feelings, the achievements of any great man. In later histories there is no mention of the fall of the mGar; only the good is remembered.

In comparison with the great men of mGar, Pa-tshab were of small stature; and in spite of the connection of one of them with the mGar, they survived in Tibet as junior ministers connected with the external administration and with military duties (Tombs of the Tibetan Kings: Tucci, Rome 1950. p. 55). The name Pa-tshab occurs also in later religious histories and in recent times it has been held that the clan was connected with Pa-warms between Gyantse and Shigatsé. That would not necessarily hold good for ancient times; and Professor Thomas identifies then with the Pang-tshab clan which he locates in East Tibet. Whatever their origin they do not figure as ministers in the early lists of principalities nor are they named in that later Almanac of the east--the Bka' thang de-lings. Whether the combination of the names Pa-tshab and Gyim-po, mentioned above, points to an eastern origin or not, the early legend and the Tun Huang Annals indicate clearly the extent to which the peoples and affairs of the eastern and north-eastern borders bailed in the story of the Tibetan kingdom. The persistence with which folk-memory preserved that tradition is shown by the determination with which any family that later attained to greatness traced its origin and ancestry to that direction.
PRAJNA or the famous Sanskrit-Tibetan Thesaurus-cum-Grammar was compiled by Tenzing Gyaltsen, a Khampa scholar educated in Nyingma and Sakya schools of Derge, in 1771 A.C. Though this book was preserved in xylograph few copies of the block-prints are found outside Tibet. The lexicon portions are now presented in modern format with Tibetan words in Tibetan script and Sanskrit words in Sanskrit script with an elaborate foreword by Professor Nalina Dutt.

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The entire xylograph (637 pp; 21 inches x 4 inches) containing both lexicon and grammar parts is now presented by offset (photo-mechanics); most clear reproduction of any Tibetan xylograph ever made anywhere. A table of typographical errors etc., found in the original (xylograph), compiled by late lamented Gegan Palden Gyaltsen (Mentsikhang: Lhasa and Enchay: Gangtok) makes the present publication an improvement upon the original.

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TIBETAN TECHNOLOGY AND THE WEST

—MICHAEL ARIS

It is now recognised among historians of science and technology that China was pre-eminent in influencing the course of medieval European technology and the Scientific Revolution of the seventeenth and eighteenth centuries. The Jesuit eulogy for Chinese science and technology (which formed the main vehicle for the transmission of Chinese scientific ideas) was blind, however to technological originality in Asian countries outside the scope of their missionary activities. It may be for this reason that till quite recently the history of technology in estimating Asia had emphasised the role played by China to the exclusion of nearly all other countries in the Far East. While one cannot overestimate the importance and magnitude of the Chinese influence, it may be of interest to readers of this bulletin to learn that instances of possible Tibetan influence on the course of European technology have come to the notice of modern scholarship.

According to Lynn White (1), Tibet with its “technology of prayers” (by which he means the various devices employed in the clockwise rotation of mani) was an important source for European technology. The method by which the simple yet fundamental mechanical techniques associated with the use of the Tibetan prayer wheel (tshe-gyur-rol-kyi) were transmitted to Europe, it is claimed, can be found in the slave trade which built up a population of thousands of so-called ‘Tartar’ slaves in every major Italian city and which reached its climax in the middle of the fifteenth century. The fact that there existed effective canonical prohibitions against dealing in Christian slaves and that Muslim slaves were both surly and prone to escape meant that slaves from the Shamanist and Buddhist areas of Central Asia were the chief supply for the Italian market. These the Genoese merchants secured in great numbers from slave traders wholesaling in the Black Sea ports. The majority of these slaves, we can be sure, came “... from the regions bordering Tibet and China on the north.” (2) Thus while they were not Tibetans themselves, they did come from an area within the sphere of Tibetan cultural influence and for that reason White holds that we need not be surprised to find basic Tibetan devices appearing in Italy at this time and being transformed to practical use in their new context. On the basis of his researches and those of Joseph Needhan we can now list five of these devices as follows:

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I THE VERTICAL AXLE WIND PRAYER WHEEL

Lorne White suggests that the invention of the vertical axle windmill in Europe was discovered as a result of one of the direct transmissions of the slaves and that its origin can be found in the Tibetan prayer cylinders rotating on a vertical axle and powered by an anemometer — like wind turbine. The earliest appearance of this in Tibet is unlikely to have preceded the introduction of the main formula itself as a formal ‘support’ for religious devotion and meditation by Jowo Atisha (Pandit Dipankara Srijana) who arrived in Tibet in 1042 A.D. It is not inconceivable, however, that the Central Asian peoples were using wind-driven gadgets of religious significance in pre-Buddhist times. In Europe the first appearance of the vertical axle windmill can be found in a sketch by the Italian engineer Mariano Jacopo Taccola, datable 1418-1450. White suggests that Taccola’s device was of direct Tibetan inspiration because of the slaves mentioned earlier, also because he claims that various Tibetan art motifs are detectable in European gothic art; (3) and finally also because of the two following technological borrowings from Tibet (II and III below). All these, he says, point towards some particular connection between Tibet and Italy at that time and which would make possible the Tibetan origin of Taccola’s device.

Needham inclines to put forward a different thesis of diffusion. He sees the proper origin of the European vertical axle windmill in the Arabic writings of the ninth and tenth centuries but he suggests that the Tibetan wind turbines could have influenced Persian windmills because, as he puts it “…by then the greeting to the jewel in the lotus might have had time to work its benevolent technological effects for suffering humanity.” He therefore recognises that a Mongol Tibetan Shamanist and Buddhist ancestry must be regarded at least as probable as the more conventional Graeco-Arabic one. (4)

II THE BALL-AND-CHAIN GOVERNOR

The essential mechanical innovation in the ordinary Tibetan hand prayer-wheel is the small ball-and-chain governor attached to its periphery to maintain rotation. White says that the development in Europe of the compound crank and connecting rod in the 1420’s made Western technicians much concerned with helping mechanical crank motion over the “dead spot”. (5) This led to the exploration of possible forms of governor and by 1487-1492 the ball-and-chain governor on exactly the Tibetan model is found in the sketch book of an Italian engineer.

III HOT-AIR TURBINES

Hot-air turbines were found in Tibet used for turning prayer cylinders in the draught of the fire in the tent of nomads. They are still found today in the Tibetan Buddhist areas of the Himalayan countries where they are used in temples and shrine rooms to turn paper cylinders
inscribed with smokes by the action of heated air rising from a butter lamp. By the late 13th century Italian technicians were setting such small turbines into chimney flues and gearing them to turn spits and, as White indicates, "...an elegant automation, since the hotter the fire, the faster the meat spins." (64) In 1186, Briano shows us a small rolling mill powered by the heat rising from a forge. Such experiments failed to produce a major source of power, but they had a significant by-product in accidental technology: the screw propeller of ships and thus eventually the aeolian propeller were apparently inspired by the metal hot-air turbines in chimneys rather than by the wooden, and often spoon-bladed water turbines.

The appearance in Italy almost simultaneously of three items so closely related to the methods of rotating the Tibetan prayer cylinders (the vertical axle windmill, the ball-and-claw governor and the hot-air turbine) does seem to make the case for independent Italian invention more improbable.

IV THE STEAM-JET FIRE-BLOWER

Related to the idea of the use of heat rising is that of using a jet of steam. It has long been recognized that the pre-natal form of the steam engine's boiler is the *suffletor* of the Middle Ages, a simple device consisting of a vessel containing water that when heated emits a jet of steam. (7) Briano's early experiments in the utilization of steam force were consciously derived from *suffletor* of this kind. Yet it is most remarkable that the Tibetan steam-jet fire-blower could well provide the derivation of the classical and medieval *suffletor*. The Tibetan model still takes the form of a bottle-shaped conical copper kettle surmounted by a bird's head, the neck of which sometimes quite elongated, points downwards and has a pinhole at the end. The steam emitted is thus directed onto the flue and the hot air carried with it blows the fire up, as I have observed in experiments with my own model. At a high altitude this is particularly useful. Nochlin suggests (8) that Alexander the Great's soldiers may have brought it back to Greece in time to influence the aeolipile of Heron which in turn developed into the medieval *suffletor*. Apart from this possible channel, there were the Tartar slaves in Italy whose steam jets may at least have modified the *suffletor*. This could be likely because the first European *suffletor* (9) to be made in the shape of birds are datable at 1379 which would have allowed sufficient time for the bird-shape of the Tibetan steam-jet fire-blower to have been copied.

V THE GIMBAL SUSPENSION OF THE TIBETAN GLOBE LAMP

The last device which might have come from Tibet to Europe is the system of gimbals inside the Tibetan globe lamp. This is a seemingly simple combination of rings whereby an oil lamp may be kept in hori-
zontal equilibrium no matter in what direction the globe is swung. Of the two models which I have seen, both have a suspension of four rings and five pivot-axes with an oil contains in the centre. They were intended for hanging in a relatively exposed temple hall or porch. In Europe this technique is associated with one of its most widespread Renaissance applications, the mounting of the mariner’s compass so that it is independent of the motion of the ship, and is known as the Cardan suspension. The gimbal suspension was in fact known in Europe by the ninth century applied to such things as portable hand-stores. Needham is in favour of the diffusion of the Sino-Tibetan system of gimbals through the Arabs to medieval Europe, but is unwilling to commit himself too strongly on the subject. (15)

If the credibility for the transmission of these Tibetan devices is not doubted, then its significance in the history of technology cannot be overestimated. As has been seen they carried with them important stimuli to the development of European technology. However, it is clear that for the moment due to the lack of further documentation and evidence, the researches of Needham and White cannot be considered as above the level of brilliant speculation, however we may be tempted otherwise. If nothing else they go to show that technologically medieval Tibet compares favourably with medieval Europe. In this connection we should remember that iron-chain suspension bridges were widely used throughout Tibet at an early date, long before Europe constructed hers, to give but a single example. The life of Tharnton Gyalpo, the great Tibetan mahasiddha and iron bridge builder is itself a demonstration of how in Tibet, as in ancient Greece and Egypt, technology (གཉོན་བཞི་) was inseparable from religion. (11)

Finally, it is worth mentioning that the study of certain aspects of Tibetan Buddhism, such as the texts and commentaries on the (པོ་ཆོས་) could reveal a lot concerning actual scientific theorizing in Tibet, notably in the fields of medicine (12) and astronomy. Needham, who is possibly the greatest living exponent of oriental science, has said that “...Tantrism represents one of the fields of research in which interesting discoveries concerning the early history of science in Asia are most likely to be made.”

NOTES


7. Lynn White, op.cit., p. 520.

8. op.cit., p. 519.


14. Apart from the following work and a few other German studies on Tibetan medicinal herbs practically no work has been done in this field, Die Tibetische Medizinphilosophie; der Mönch als mikrokomos, (Zurich, 1943) by F. Cyril von Kerswin—Krasinsky, O.S.B.
AN ART BOOK FROM NAMGYAL INSTITUTE OF TIBETOLOGY

RGYAN-DRUQ MCHO-GNYI (Six Ornaments and Two Excellent) reproduces ancient scrolls (1696 A.C.) depicting Buddha, Narogjuna, Aryade<a, Asanga, Vasubandhu, Dignaga, Dharmakirti, Guennaprabha, and Sakyaprabha; reproductions are as per originals today after 200 years of display and worship with no attempt at restoration or retouching. The exposition in English presents the iconographical niceties and the theme of the paintings, namely, the Mahayana philosophy; the treatment is designed to meet also the needs of the general reader with an interest in Trans-Himalayan art or Mahayana. A glossary in Sanskrit-Tibetan, a key to place names and a note on source material are appended. Illustrated with five colour plates and thirteen monochrome.

April 1967.

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OBITUARY: PRINCESS PEMA CHOKI

PRINCESS PEMA CHOKI passed away in Calcutta on the 12th of January 1969; the remains were brought to Gangtok on the 14th of January and cremated in the Royal Crematorium on the 17th of January according to Mahayana rites.

The second daughter of the late Chogyal Tashi Namgyal, the Princess was born on the 25th of December 1923, and educated at St. Joseph’s Convent, Kalimpong. She was married in April 1949 to Lhakhang Rinchen Tsering Namgyal Yaptshy Yuthok, of the dynasty in which the tenth Dalai Lama was born. Of this marriage two sons and a daughter were born. In 1969 the Princess was remarried to Mr. Priyabr Raj Iyer who comes of an eminent South Indian family.

In her studies at school the Princess attained highest grades in the convent she attended, and in Bengal she came seventh in the all state Cambridge Examinations.

The Princess, despite her inclination and talent for higher studies, decided after finishing school, to become a teacher in the Gangtok Girls’ School. Her students remember her with much affection and respect. Aside from her perceptive and sparkling teaching, the students remember their teacher-Princess for her kindness and thoughtfulness. One student remembers how the girls used to iritate the Princess trying to copy her elaborate and beautiful hairstyles until the Princess realizing their difficulties began to wear her hair very simply, relieving the girls of the hard work of imitating her!

Princess Pema Choki was exquisitely beautiful; her beauty reminding many of fragile jade and exotic brocade. Aside from being beautiful she was a woman of strong wit and intellect. While working in Sikkim, and later after her marriage into Yuthok house when she became a resident of Lhasa, the Princess pursued her scholarship in Tibetan secular and religious literature.

When in 1955-56 the Crown Prince of Sikkim (now the Chogyal) programmed a project for Tibetology, his sister was an enthusiastic collaborator. She was a founder member of the Namgyal Institute of Tibetology and was until her death an active member of its General Council. For several years she served also as a Member of its Executive
Board. Her services to the Institute were shown particularly in the procurement of icons, xylographs and rare manuscripts. The image of Jamsang (Manjushri) which dominates the ground floor of the Institute is a gift from the Princess and Yuthok Sey.

In the summer of 1959 the Princess made a tour of Buddhist shrines and centres of Mahayana study in Japan, and the institute's contacts with Japanese scholars date therefrom. In the autumn of 1969 she accompanied the president of the Institute to the Moscow session of the International Oriental Congress and made extensive contacts with scholarly groups in Moscow and Leningrad.

For the last two years the Princess was in poor health but her interest in the Institute and other scholarly institutions did not abate.

A week before her death the Princess sent to us a letter inquiring whether some scholars in Sikkim would be interested in joining the Historical Society in Calcutta. Enclosed were some forms that she requested to be distributed among people who might be responsive. This letter was written not only during a period of grave illness but also in a period of deep bereavement because of the recent death of Yaphu Yuthok Sey Kushoe. This is only one example of the enduring spirit and gallant intellectual concern of the late Princess. The Namgyl Institute of Tibetology and Sikkim mourn an irreparable loss.

Hope Namgyal
SYNOPSIS OF TARANATHA'S HISTORY

Synopsis of chapters I - XIII was published in Vol. V, No. 3.
Discritical marks are not used; a standard transcription is followed.

MRT

CHAPTER XIV

Events of the time of Brahmanabahula

King Chandrapala was the ruler of Aparantaka. He gave offerings to the Chaityas and the Sangha. A friend of the king, Indradhruva wrote the \textit{Andra-prakara}.

During the reign of Chandrapala, Ascharya Brahmanabahula came to Nalanda. He took ordination from Venerable Krishna and studied the Satakapitaka. Some state that he was ordained by Brahulaprabha and that Krishna was his teacher. He learnt the Sutras and the Tantras of Mahayana and preached the Madhyamika doctrines. There were at that time eight Madhyamika teachers, viz., Bhadestas, Brahulaguribha, Ghatura and others. The Tantras were divided into three sections: \textit{Kriya} (rites and rituals), \textit{Charya} (practices) and \textit{Yoga} (meditation). The Tantric texts were Guhyasamaja, Buddhamaayayoga and Mayajala.

Bhadanta Srilabha of Kahmir was a Hinayana and propagated the Sastrantika doctrines. At this time appeared in Sacetra Bhikshu Maha-virya and in Varamasi Vaiswanthika Mahabhadanta Buddhadeva. There were four other Bhandata Dharmatrata, Ghooshika, Vasumitra and Budhadeva. This Dharmistrata should not be confused with the author of \textit{Udanavarga}, Dharmatrata; similarly this Vasumitra with two other Vasumitra, one being the author of the \textit{Sampradaya} and the other of the \textit{Samayabhadraprachanasadha}. [Translated into English by J. Masuda in *Asia Major* I.] In the eastern countries Odisha and Bengal appeared Maturayana along with many Vidyadhara. One of them was Sri Saraha or Mahabrahmara Brahmacari. At that time were composed the Mahayana Sutras except the Sivasaaharika Prapajnaparamita.

CHAPTER XV

Events of the time of Nagarjuna

Nagarjuna was a disciple of Aabhulabhadra. He preached extensive-ly the Madhyamika school of \textit{Abhivyakti}. He rendered a great service to
the Sāvaka by turning out many Sāvaka bhikshus for transgressing the disciplinary rules. At that time appeared Bhūbatesa Nanda, Paratama, Sanyuktaśrī, who preached Āgama-śrīnūpā i.e., the Yogachara school of thought. Asanga and his brother Vātsyāndu were counted as later Yogachārins.

About this time King Mūja of Oddvīśa with a large following obtained Kāyaśiddhi. In the west, Malava, king Bhūvajñāva also obtained Kāyaśiddhi, and the Āryas acquired the Dharana. Tetracles were erected in Putavāsa (Pukara), Oddvīśa, Jengel, Raṭha, Magadha and Nalanda.

Nagarjuna in his later life went to the south. He composed the Pānchavīgasūtra-saṅgraha to establish that matter had no existence as held by the Sarvāstivādins.

In the south in the country of Dravida there were two Brāhmaṇas Madhu and Suprāmadhu who possessed incalculable wealth. They vied with Nagarjuna with the three Vedas and the eighteen sciences. The Brāhmaṇas questioned why Nagarjuna, who was so learned in the Vedas should become a Śākya śrāvacca. But when they heard the praise of Buddha, they became faithful to Mahāyāna Buddhism. Both of them maintained 150 monks. The first had the Sarvāstivāda copied and gave the copies to the monks while the second supplied them with all the requisites. According to another tradition, Nagarjuna resided in Sripavata and obtained the first Bodhisattva stage.

A friend of Nagarjuna was Vātsalāchārya, who was the teacher of King Udayana. A young wife of the king knew Sanskrit grammar and said to him while swimming in water ‘modakaśī ma vincha’ (do not splash me with water). The king gave her a cake boiled in sesame oil as he understood it in the language of the south. Realising his ignorance of Sanskrit grammar, he began to learn Sanskrit from Vātsalāchārya.

Vātsalāchārya was a devoted follower of Buddha. He became acquainted with Nagarjuna when he was the Puska of Nalanda. He bailed from the country of Raṭha, east of Magadha. He recited the Avalokiteśvara mantra for 12 years.

Kalidasa lived about this time. He came to the south to King UDyana, who wanted to learn Sanskrit from him. He invited Nagarjasana, who had mastered Panini. The king wanted to study Ṣūtrakārana from Suvikśhakumāra, who uttered “Śūloho vama-sambhava” (Kalapa !) and at once he comprehended the meaning of all words.
Kalidasa's biography is as follows:

Kalidasa was a cow-boy. He cut the branch of a tree at the root of which there was sitting Vasavadatta. In order to procure the daughter of the king Udodana the princess Vasavadatta, who rejected him, brought the cow-boy, dressed him as a Brahmin Pandit and asked him to utter "Om Sasti". Instead of uttering this, he uttered "Udbhuta". Vasavadatta explained it as a benediction thus:

"Unaya asiha Rudrah, Senkarshirito Visha
Tanaka Sulpanis cha raksabantu Siva sirvada."

Vasavadatta was pleased and was married to him. She then found out that Kalidasa was a cow-boy. Kalidasa prayed to the goddess Kali, and suddenly he became very intelligent and expert in dialectics, grammar and poetry and so he was named Kalidasa. Vasavadatta found that her husband had become very learned. Kalidasa wrote Meghaduta, Nagnarama, Kumaravimshata, and many other Kavyas.

At this time lived in the country of Li, Arka, Sanghabhude in Tukkara, the Yakshasvina teacher Vasavi in Kaminir and the Saurantika teacher Kumaralabha in the west.

At this time the Tulasaka faith appeared on the other side of Turfan. The Acharya was known as Mamihari and the Asarya doctrine was known as "Ariho" (Vartu/Vardu).

CHAPTER XVI
Appearance of the first adversary teacher

The Chandra dynasty was ruling in the Apaanta kingdom. The kings of this dynasty worshipped the Three Ratnas. Not long after Nalakshamira's reign, Pushyasista, the preahka of the king, revolted. When he obtained the sovereignty, an old relation of the usurper came to Nalasa when the government was sounding phataya and on his enquiry on the meaning of the sound, he was told that it meant splitting of the skull of the heretical teacher. On hearing this from his relative, Pushyasista asked his heretical ministers to burn the monasteries of Nalaka and to Jaladhar. He killed the bhakshus as well, many of whom fled to other countries. The usurper died after five years. Buddha also prophesied that his dharma would last 250 years and then it would decline for the next 250 years. The Teaching later developed at the instance of Arjuna Nagastra, who worked in the southern countries for the salvation of beings. He made his centre at Sripurvasa (i.e., Arjunastra - Nagatjanakorda).
CHAPTER XVII

Events of the time of Acharya Aryadeva and other Acharyas

At that time lived King Salakeshara’s son Chandragupta, who was a powerful king and performed both kula and dharmic deeds. He did not take refuge in the Three Refuges. At that time appeared Aryadeva, a disciple of Nagarjuna, the then head of the monastery of Nalanda. Aryadeva was well-known to the Tibetans. He was born in a miraculous way in the pleasure-garden of the king of Simhaladvipa. Chandrakirti, the commentator of Nagarjuna’s Madyamika-karika states that Aryadeva hailed from Simhaladvipa. He was ordained by Pavadeva. After studying the Tripitaka, he came to Jamshidadvipa to see the Buddhist temples and Chaityas. Aryadeva met Nagarjuna at Sravasti but this Nagarjuna propagated the Tantric doctrines. [There were two Nagarjunas: the earlier one was the propounder of the Madyamika school of philosophy and the later was an alchemist, a Tantric master.]

CHAPTER XVIII

The events of the time of Acharya Matricheta and others

Chandragupta’s son Bindusara was ruling at the time. He was born in Guada. Bahuymana Chanakya conjured up the angry Yamantaka, by which he could kill kings and ministers. At that time Matricheta was residing in a Vishara of Pataliputra. Bindusara’s nephew King Srichandra erected a temple of Avalokitesvara and venerated 2,000 bhikshus, who were all Mahayanaists. When Rahulabhadrata was in charge of the Nalanda monastery he erected three 14 Gomdhakara and 14 centres of learning the Dharma. Acharya Matricheta is identical with Durbarasudaka. He became a great logician and a disputant. He composed the Satipanchasarka, eulogizing Buddha. [It has been edited and published] King Kanishka invited him, but he being old could not go to meet him. Rahulabhadrata though of Sutra caste held an appearance like the lord of men. He became Aryadeva’s disciple.

CHAPTER XIX

Appearance of the enemies of the Dharma as also its reinstatement

In the east was ruling Dharmachandra, son of Srichandra. Both the father and son revered Buddhist doctrines. Their minister was also a Buddha-worshipper. He visualized Avavaktivesvara and obtained several medicines from the Naga. By these medicines all diseases disappeared from the Aparanta country. At that time lived in Kashmir a Turushka king. In Multan and Lahore ruled Khuminamampa (alias Bindhero), 26
who was both in concord and discord with King Dharmananda. The Persian king went to the ruler of Mathyeshus and praised and the latter reciprocated the same by presenting elephants and silk cloths. The Turushka army conquered Magadha and destroyed all vihara including Nalanda. Dharmananda sent monks to China and received gold and other valuables in return.

Later Buddhaksha reconstructed Nalanda monastery and other temples. Matricia became the spiritual successor of the king.

CHAPTER XX

Appearance of enemies for third time and reinstatement of Buddhism

In the south, in the country of Kshamara lived the bhikshu Mati. Kabuddhi and Meditahhara, who preached the Prajnaparamita doctrine of Sunyata or Anupatikakarma (i.e., non-origination and non-derivation of worldly objects and beings). The former set up an image of Prajnaparamitadevi and worshipped it for 20 years and the latter founded 75 vihara and 500 Chaitya. The former was killed by a Turushka bandit. Muniabahdura restored the Chaitya and surrounded them by small ones and converted Brahmana householder to Buddhism. He was taken by Bodhisatta Simantahdra to the country of Li. He worked there for many years up to the end of his life. A heretic teacher by incantations and magical formulas burnt Nalanda and many other vihara and temples. All the manuscripts were burnt. At this time a stream of water from Ratnokadi extinguished the fire, and the manuscripts, being flooded by water, did not burn. The books saved were Mahayana texts. Faithful householders restored the vihara and temples and the manuscripts saved were of Avatamsaka-sutra, Mahasamaya, Tatagavagshita, Vatsyayatana and Ratnokadya.

CHAPTER XXI

Event of the time of Karmachandra

At the time of Buddhaksha, a vihara called Ratnasiri was built on the top of a mountain near the sea in Odissa. In that vihara both Hinayana and Mahayana texts were deposited. The vihara was built by a minister of the king. The texts were presented by Brahmana Sanku and the other requisites by Brahmani Brihapatii while maintenance of the vihara and the monks was provided by the queen. In order to subdue the Nagas, Brahmana Brihapatii built many Buddhist temples in Katak Odvisa and provided food for the monks.

At the time of King Buddhaksha and after him King Dharmananda, lived Acharya Nandipiris, Avaghosa, younger Rahulamiri, 27
pupil of Rahulabhadracharya and his pupil Nagarmitra. All of them propagated Mahayana teachings. Nandiputra was the author of the etiology of 150 slokas of Buddha, available only in Tibet. He wrote also a commentary on the same. He lived, as it appears from the commentary, after Dignaga.

CHAPTER XXII

Events of the time of Arya Asanga and his brother

When Karmachandantra was in power, Gaumbhirapaksha, his son of Buddhagaksha ruled over Panchala for 40 years.

In Kashmir lived a Terunshka's son called Maharatna, who had visualised the face of Krodhanjita. He united Kashmir, Tukhara and Ghati. He worshipped the Triratna and erected a Chaitya, containing the Buddha's tooth relic, at Ghati. He invited several monks and nuns, male and female lay-devotees for worshipping the Chaitya. At that time Bhikkhu Jivakara and many others tried to comprehend the inner meaning of the Prajna-paramita.

After the death of king Gaumbhirapaksha, his son Vrikshachandra succeeded him, but he was not a powerful ruler and so Jaleraha, king of Odisha wielded power over all the eastern countries.

Arya Asanga

At this time lived Acharya Asanga, Yasobandhu, Buddhodasa, Sambhata, Nagarmitra and his disciple Sanghirakshita. Soon after them appeared many Mahayanists, followers of Ausratra-yogasacara, which spread widely, and many attained Vidyadharas stage. Ghyenasati and others preached the Mantrayana, maintaining secrecy. The secret mantras were handed down from teacher to disciple, i.e. from Sri Sarala to Tantric Nagarjun. They wrote commentaries on the Ausratra-yoga-sutra. During the reign of King Devapala and his son, kayaja and charya tantras became popular. At that time lived Acharya Paramasiva, Lui-pa and Charavipa in the region around Varanasi.

The biography of Asanga and his brother is as follows:-

At the time of King Buddhagaksha was born Prakasmita, whose son was Asanga, who became very proficient in the art of writing, calculation, grammar, didactics, etc. He mastered the Tripitaka and the Prajnaparamita sastras. At a later date Asanga composed the Mayalalalantha and Maitysana-sadhana. Bodhisattva Maitysa, being pleased with him, took him to Tushita heaven, where he imparted to him the Yogacharya-bhuma-sutra in five sections. He built a vihara within a forest in Magadha and composed there Abhidharmasamuchchaya, Mahayana-sangadhya, Abhisamayalamkara etc.
King Gambhirapaksha's son invited several monks to Ushnapura vihara and maintained them. Asanga taught here the Tripitaka of the Sarvakas and about 700 Mahayana sutras. Asanga, as Bodhisattva, cut off some flesh from the calf of his leg, to feed the worms, which were sucking the blood of a diseased dog in order that both the worms and the dog might not die. Maitreya appeared before him at that time, radiating light on all sides. Though Mahayana Buddhaom flourished, there were some persecutions. The King asked Asanga a few questions relating to the true meaning of Sunyata. In his later life, he lived in Nalanda. Finally his life ended in Rajagriha.

Vasubandhu

Vasubandhu, younger brother of Asanga, became a bhikhu and studied the Sarvakas including the Abhidharma. He became acquainted with the doctrines of the eighteen schools. He went to Kushinir and became a disciple of Sanghabhadra. He obtained vast erudition by studying the Vihana. He studied also the difference in the Sutra and Vinaya of the different schools. At the same time he studied the work of the heretical teachers and all kinds of dialectics. He came back to Magadh and recited the Sarvara-pitaka. After studying the Yogacharabhumi-suttra, he felt sad that Asanga, inspite of 11 years of practice of samadhi, could not attain perfection. Asanga felt that Vasubandhu's conversion to Mahayanaism was near, and so he asked a bhikhu to study the Abhayanu-sirehuta-sutra and another bhikhu to learn the Daeshabumika-sutra and advised them to recite the two Sutras before Vasubandhu. Listening to these texts, Vasubandhu realised the fundamentals of Mahayana. He regretted that he had committed a great sin by reviling Mahayanism and wanted to cut off his tongue. At that time, two bhikhus dissuaded him from doing so, saying that your brother Asanga had the power to give you atonement for the sin and therefore you should go to the Acharya and ask him for atonement. Asanga asked him to study the Mahayana texts and write commentaries on the same and thereby make amends for the sin and he recited to him the Ushnisha-vijaya-vijaya. When Vasubandhu understood all the texts and the Dharanis, he preached samadhi, according to the direction in the texts. Vasubandhu studied the Pitakas of the Sarvakas as well as the Ratnakuta-sutras, Atavamsaka-sutras, Astasahasrika and Sutasahasrika Prakapasada and other Mahayana treatises. He wrote commentaries on the Pachavinmata-saharika Praprapapita, Akshyanunisirehuta, Ratnaasaamata, Panchamahakaruna, Pratyayasamapada, two Vihanga and other Hinayana and Mahayana texts. He composed the eight Prakara sections. He established several centres of learning in the south. Vasubandhu at last went to Nepal, composed the Abhidharmakosa and sent it to Sanghabhadra for his opinion.

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CHAPTER XXIII

Events of the time of Acharya Dignaga and others

After the death of King Garbhbirapaksha in the west in Maru land Sri Harsh came into power and ruled over all the western countries. This happened during the life-time of Vasubandhu. In course of time the king developed faith in Buddhism and made Acharya Gunaprabra his spiritual preceptor. Acharya Gunaprabra came of a Brahmana family, mastered the Vedas and other Brahmanic scriptures. He learnt from Vasubandhu the Sraavaka-pitaka and gained knowledge of many Mahayana sutras. He became a master of the Vinaya Pitaka. While he was in Mathura he himself expiated for any monk failing to observe the disciplinary rules. At this time, the Chandras were ruling in the eastern countries. They believed both in Jainism and Buddhism. Shihramati and Dignaga were preaching the dharma for the salvation of the beings in the east. Shihramati was born in Dundikaranya, obtained the blessings of the goddess Tara. He studied both Hinayana and Mahayana Abhidharma and the Ratnakuta sutras, on which he wrote a commentary. He wrote also commentaries on Madhyamaka-mula and Abhidhammapadabhadhyya. He dedicated the heretical teachers in dialectics. Buddhadasa, a disciple of Asanga with Gunaprabra was preaching the religion in the west while Bhadanta Samghadasa assisted by Buddhadasa propagated the religion in Kashmir, and Buddhapalita in the south. Samghadasa came of a Brahmin family of the south. He became a disciple of Vasubandhu and a follower of the Sautvisada school. He established 24 centres of learning for Vinaya and Abhidharma studies in Bodh-Gaya. He was invited by Mahasammati, the Toranika king, to Kashmir. He built there the Ratnapatavahari and the Kumahakundavahari, and propagated the teaching of Buddha much more than Asanga and his brother. He wrote a commentary on the fogenhayabhusi.

At this time appeared Bhavya and Vinitasena. At the advice of Luipa, the king of Odivisa, Jalasimha, gave up the rulership. The Tantric Siddharcharya Datik became the king of Odivisa and Tengi his minister. A contemporary of Bhavya was Tiraratnadasa.

Acharya Tiraratnadasa learnt the Abhidharma from Vasubandhu and later from Dignaga.

Acharya Dignaga was born in a Brahmin family in the south at Simhabaktha near Kanchi. He joined the Vatsiputriya school. He mastered the Sraavaka-Pitaka as well as the Mahayana texts and Dharma. He resided at Bhorasila in Odivisa. In the Pramanasamuchayya of Dharmarikritti appear the words "Bowling before him, who is logic personified and who wishes welfare for all beings, fragments of his different works are
collected here". Digupa converted to Buddhism. Bhadrapalita, minister of the king of Odisha.

Acharya Buddhapalita was born in the south at Harshakrisha. He became very learned. He learnt the teachings of Nageshvara from Sangharakshita. He visualised Manjusri. In the south at Dantapura he wrote commentaries on many sstras of Nageshvara and Aryadeva.

Acharya Bhavya was born in a Kshatriya family of the south. He studied the Tripitaka but he preferred to study Mahayana texts and Naganjuna's commentary written on Bhadrapalita. Both of these Acharya considered Yagachara as a separate system. Buddhapalita was the earlier and Bhavya a later disciple of Nageshvara. Chandrakirti was a disciple of Aryadeva.

Acharya Vimuktasena was a nephew of Buddhapalita. He joined the Kusakulla school, but he turned later to Mahayana, came to Vasubandhu and studied with him the Prasangaparidrata. Then he became the disciple of Sangharakshita. He wrote a commentary and procured a copy of the Panchavasana Pitakas of Prasangaparidrata in eight sections, which was in harmony with Abhisambhasayakshara.

CHAPTER XXIV

Events of the time of King Sila (= Sri Harsha)

There lived Sri Harsha (also called Siladitya), who became a great and famous king, collected the monks of the four quarters and maintained them with excellent food. He had a palace in the Lata city. In the east, lived a very powerful king of the Licchavi race called Simha. At this time was born Acharya Chandragomin and also lived Bhavya and Vimuktasena in their old age with their disciples Varaṇasa and Raviṣṭha, Kamalabuddhi, disciple of Buddhapalita, and Chandrakirti, disciple of Acharya Gompradha. In the north, appeared Acharya Jayadeva and Chandrakirti. It was the beginning of the life of Acharya Dharmapala and Sāntideva, Tantric Siddhacharya Virupa and Arya Visakhadeva. In the translation of Puntapanda it is mentioned by the translator Prasangakirti that this work was composed by Arya Visakhadeva, disciple of Sanghabodhi. Jayadeva, a great master of sstras lived at Nalanda.

Venerable Chandrakirti was born in the south and obtained proficiency in all the Pitakas. He studied the works and teachings of Nageshvara with Kamalabuddhi, disciple of Bhavya and Buddhapalita. He wrote commentaries on the Madhyamakamōla and Madhyakavatara. He preferred

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the views of Buddhapalita and propagated the same. He refuted many heretical teachers in Kolkhon and converted several persons.

Acharya Chandragomin was born in the 14th century, Varendra. He proved the theory of rebirth. Then with some traders he went to Sindhavia. He came across Nagashepa’s commentary on Panini. With the help of the commentary, he composed the Chandrayakaran.

Chandragomin followed the school of Asanga and became an idealist. But Chandrakriti followed the commentary of Buddhapalita for the works of Nagarjuna. Chandragomin wrote many sūtras on architecture, grammar, dialectics, medicine, metrical, lexicography, art of poetry, astronomy etc. He studied the Darabhasikakatva, Chandrapadipa (i.e. Samadhiyadipika), Gaudahakakara, Jñanavatara and Prajnaparamita. He composed the abstract of contents of these books. He composed also Tripabdahakara teaching the directions of a Bodhisattva. His works Satvatavimsaka and Kayakavyavatara were taught to all Mahayana students. He went from Jambudvipa to Patala in a boat.

CHAPTER XXV

Events of the time of King Chala, Panchamanyika and others

After the death of King Bharsha and King Simshachandra, lived in the west at Matikara King Chala who was very powerful and was ir. alliance with King Sila. All of them included Sila died. In the east lived King Panchamanyika, son of King Bharsha. He ruled over the northern countries up to Tibet and in the south up to Triliga, in the west up to Yavnani and in the east up to the ocean. Simshachandra’s son Balachandra was ousted from Bengal, and so he went to Tibet. At that time lived in Magadha Acharya Vinitasena and Gunasati, specializing in Abhidharma, and Acharya Dharmapala, Vivasana, and in Kashmir Acharya Sarvajnananda.

In Magadha ruled King Prasana, son of King Bharsha, whose kingdom was small and was later expanded. In the south in the lands near Vindhyā mountain ruled King Pulapaka.

King Chala erected a monastery and provided all requisites to the monks. Panchamanyika honoured both the heretical as well as the orthodox teachers. King Prasana honoured Chandrakriti, Chandragomin and other teachers of Nalanda. Vinitasena set up an image of Ajitanatha and visualized his face.

Acharya Gunasati wrote a commentary on the Abhidharma-kosa. He followed Shicmaci in his commentary of the Madhyamika-sutra, refuting Bhavya.
Acharya Dharmarāja was born in the south, he became a Pandita of Nālanda.

Acharya Snātideva was born in Saравra. He visualised Maṇḍuṣri. He is the author of Śikṣāsamuccaya, Sarvāstivāda, and Kolkhāṣṭhāvasūtra.

CHAPTER XXVI

Events of the time of Acharya Dharmakīrti

After the death of King Chala, his brother Chādāhūra ruled over many western countries. His son Vishuvīra also reigned for many years. In the west in the district of Hala, lived Ācaśa Brahmīma as hermits. The king destroyed the huts of the hermits and for this sin he was swallowed up by a river. At that time Padārīya ruled over Madhyadās and over most of the countries in the east.

In the north in the town of Harīvāra King Mahākālymbhala ruled over all the countries in the north up to Kānsīrāt. He supported the religion of Buddha. King Pradīpa honored Acharya Dharmakīrti; King Mahākaḷyāmba honored the Āchārya and Buddhist scholars Vasumitra. King Vimala-chāndrānātha honored Padīta Anugraha and Rāṇākīrti, master of the Madhyamikā teaching. Though Buddhism was spreading but not as much as it spread during the time of Assaya and his brother and Digambara because the heretics were on the increase in the south.

At the time of Panchamāsīmha appeared two heretical acharyas, Dattaśraya and Sāṅkharakārya. They received śrāṇas from Mahādeva. In Bengal, the bhikhus felt difficult to defeat Sāṅkharakārya in disputations, so they invited other Dharmapāla or Chandragomin or Āchārya and that time appeared in the south Brahmānac Kumanīla and Kanada, Dharmapala’s disciple Devaśarma tried to refute Chandragomin and wrote a commentary called Śāntabhūdaya on the Madhyamikā doctrine. He was, however, defeated by Sāṅkharakārya.

King Sālōsāha was converted to Buddhism. He erected many viharas and Chaityas.

At the time of this king, lived the Tondīc acharya Goraksha, Rāṇākīrti is known through a commentary written by him on the Madhyamakāvatāra. Vasumitra also composed a commentary on the Āchārya-śāstra and is the expounder of many important sectarian doctrines summarised by him in the Āchārya-śāstra-paripācha. Before the time of Vanaśambhū, the eighteen schools continued to exist intact. Some disappeared on account of the erasible enemies of the religion. There were three sub-sects of the Mahāsāṃghikas, viz., the Purvaśūtras, Purvakāraṇas, and Saṅkhyāvikas.
Aparasatas and the Haimavats; two sub-sects of the Sarvastivadins, viz., Kasaplya and Vibhajjavadinis; of the Sthaviravas, Mahasiddhavas; of the Sarvastivada, the Avantakas; other schools also spread widely. Svavika doctrines disappeared after 500 years. There are, however, still many followers of the Svavika system. It is not a fact that the Svavika system disappeared after the appearance of Mahavara.

Venerable Dharmakirti was born in the south at Trinalaya, in a Brahmin family. In his childhood he was of very sharp intellect, he was skilful in the art of sculptures, in Vedas and Vedangas, in medical science, grammar and in all non-Buddhist doctrines. When about 16 or 18 years old, he became well-versed in the philological works of the non-Buddhists. At one time, when he had become famous, he came across the Buddhas. He then travelled from tribe to tribe and worked hard to convert the people to Buddhism. He went about the country among the different tribes and thereby gained the confidence of the people. He was very learned in all the sciences and arts and was a universal scholar. He was a master of Sanskrit and other languages. He was a great logician and had a deep knowledge of the Vedas and the Upanishads. He was a great writer and had a vast and varied knowledge of the sciences and arts.

He wanted to learn the secret doctrine of the non-Buddhist system, and so he put on the dress of a household-servant, came to the south and went to Kumara. As his service pleased Kumara and his wife and on their inquiry what he desired, he said that he would like to learn the system taught by him. His wish was fulfilled by Kumara and he was liberally rewarded by his master and his wife for his faithful and indefatigable service.

The followers of the system of Kanada met together and contested with Dharmakirti; the contest lasted for three months. They were all defeated by Dharmakirti and converted to Buddhism's teaching. On hearing this news, Kumara became very angry and told the king that if he won the contest, then Dharmakirti must be put to death but Dharmakirti said that he did not want that the defeated opponent should be killed but he should become a follower of Buddha's dharma. Dharmakirti won in the contest and defeated also the Nirgunda Rahavastrain, the Mimamsaka teacher Shringapragyha, Brahmana Kumarastrana, the Brahmanical champion Kanalaroru and the rest who lived near the Vindhy mountain. He then went to a forest and resided in the hermitage of Rari Matanga near Magadha. Dharmakirti went to the palace of King Pushpa and said:

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In wisdom a Dignaga, in purity of language a Chandragomin, in merit a Sura, in disputations who else could be except the humble self, the victor of all disputations? (Sura = Aryanira, author of the Jratahamsa).

The King Pusa asked "I wonder, are you the Dharmakirti?" He said that it is the name by which people call me. He erected many vibhāra for the residence of Dharmakirti. He composed also a Pramanastra in seven chapters and he wrote at the entrance hall of the palace the words "When Dharmakirti's sun of eloquence will go down, the faithful will go to sleep or die, the unbelievers will rise immediately." For a long time he spread the doctrine and there were about 50 vibhāra and 10,000 monks. When he visited Gujarat he converted many Buddhists and other sectarians to Buddhism and erected the temple of Gopūrī. In this land there were many non-Buddhists.

Dharmakirti's dialectics was propagated in Kashmir, Varanasi and also in the south. Towards the end of his life Dharmakirti built a vibhāra in Kalinga. This achārya was a contemporary of King Srong-btsan-sgam-po.

Dharmakirti's disciple Devendrabuddhi composed the commentaries of Dharmakirti's works. His disciple was also Prabhasabuddhi. Some say that Jamari was the direct disciple of Acharya Dharmakirti and that Jamari was the author of Pramana-vartika-Dharmakirti.

The number of teachers regarded as jewels of the Buddhist scholarship is six, of whom three were Nagarjuna, Asanga and Dignaga and three were commentators Aryadeva, Vasubandhu and Dharmakirti. Sakarananda appeared at a much later date, hence he could not be a direct disciple of Dharmakirti.

At that time there were five Śiddhacharyas, namely, Kamala, Indrabuddhi, Kururjiga, Padmāvatī and Lalita. Kururjija was an old Yogacharin, practiced Guanachakra and other mysteries in the cemetery and attained Mahāvipākābuddhi on the basis of the Chandra-prajñā-pāramitā-tantra. He taught to his disciples the Buddhist Tantras and yogātantras.

Acharya Lalita was a pre-achārya of Nalanda. He brought the Yamāntaka tantra from the dharmagāna of Iyana. He composed the Kena-yamān-tantra, Tīrītikā, Saṃsārapada and Kalpaśrama and propagated them in Jamudipī. The heretical prince Naravarman in the west became a believer in Buddhism, and built a temple of Manjūṣī. There are many stories about the contest of Kamala, Lalita and Indrabuddhi with others. Kamala produced the Haravatamāra and composed the Naśīsātanabhaṃa.

At this time lived in the south Kalacogomis, who had attained Avalokiteśvara-uddhi.

Nalanda Dāti

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