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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 Tun Huang relatifs à l'Histoire du Tibet, Bescot, 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. 80-82) 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 These fragments provoke more questions than they answer; but the historical and semi-historical documents from Tun Huang are of such rare value that every available sentence deserves to be studied.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 5 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 transliterated 3 of the lines in no. 1184 of her Inventaire des manuscrits tibétains de Tun Huang (LINV) and has quoted them at p. 115 of an article in Journal Asiatique 1959 (JAJ). As I have no photographic or other copy of the ms I can refer at present to those 3 lines only. The Tibetan text as given by Mlle Lalou is as follows; the attempted translation is mine.

(1) [spa gyen mtha’ bshis rabs la][ldi gongs bar nas]dpe’ bs’si gang raq ma’kyi la mda’ nas skyi sa’i ’d . . . . (4). . . . .[dags kyi bhan mchur nas] dags sa’i gyim pang ma’[mchims yel gyi dngul mchur nas]mchims . . . . (3). . .sha tshang ma’ [spa gyen ni rnal’ bshis ’phyi mo]

"As for the lineage of those who of old were associates on the four borders: in the midst of the sources of the IDen, the IDen lady Gang rag ma; in the valley of sKyis, the sKyis lady ’D ...; in b’ihjen mchur of Dags, the Dags lady Gyim pang ma; in dNgul mchur of the mChims country, the mChims lady Sha tshang ma’.

The several different versions of the lists 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 (JAJ 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 capitals, consorts, and ministers are variously named. This fragment, which perhaps has no direct connection with the remainder of the as reproduced at pp. 86-88 of THD, mentions only the consorts and their residences. The form za's, rather than za, may strictly mean "in the capacity of consort" but I have translated it simply as though it were za.

Llo is one of the dynastic names of the kings of Tibet whose seat was in the Yar-lung valley. The lady Gang-nag-ma does not figure in any of Mlle Lalou's lists but a Dge-de-log-khur is named in LINV 1039 and a lord of Gag-yar lang-s in Yar-lung is named in LINV 1785 which Mlle Lalou has edited in JA 1959.

The lady of skyi, whose name is effaced here, appears in other lists simply as skyi btsag gi btsun mo — the queen of the master of skyi. The ma Chims lady, Shad-ling-ma is named in LINV 1039 but the place (Ngul khor (Loyal of Silver), which recalls dNgul-med-khar in Zhang-zhung, is not mentioned elsewhere.

Dage has been left for special mention. Bhon-mi-ka r appears to be a place name; but in other lists the capital of Dage is called Shing-nad, Shing-ngag, or Gross-hon. The name of the lady, here given as Gvim-pang, appears in other lists as Khung-phang. The reading Gvim turns one's 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 Gvim-po family. Where they lived is not clear but since names in the documents are given both in "the language of skyong-tibet" and in "the language of Nam-tibet" the Gvim-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 Chau kingdom (R.A. Stein, Deux Notes, JA 1941, note. p. 145). That is a long way from Dage-po but the ruler may well have been supposed to have taken his consort from some other country. Gvim-po is also mentioned in a fragmentary inscription on the remains of a stone pillar from a site near Zhao's Lin-khang which was the territory of the Muung clan (JRAS April 1953 pp. 10-11). There it is associated with ancestral tribal names connected with Eastern Tibet—Cho phyi; mla "; Tse ; and Phyang po (See AFL. 8, 10, 40, and R.A. Stein, Les Tribus Anciennes des Marches Sino-Tibétains, Paris 1955, pp. 517, 16, 57).

Although the lists of principalities contain at least one name—vi. Liq Kasa-dur—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 Gvim-pang in the fragment; but the syllable Gvim appears also in the names of persons who can be assigned to a historical setting.
For example, sPug Gyim-tang rtags-bu was a vassal of Ne-mog of "Tibet-pa, 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 114, 115 and 116). These events can be put c. 940 A.D. Later, one sPug Gyim-tsan rtags-chub is recorded in the Tun-huang Annals as being sent in 947 to take charge of the administration of Zhang-bzang (THD pp. 115, 116). He is presumably the same as sPug Gyim-tsan rtags-chub who went to help the sister of the Tibetan king who had been married to Llig mui rtha, ruler of Zhang-bzang, and was kindly treated by him. The visit ended in the subjugation of Zhang-bzang (THD pp. 115-117, and 135-138). Although the rulers' names do not agree exactly, that event is probably to be placed in 947 about which time as the Annals record "Llig mui rtha was destroyed and all Zhang-bzang subjugated." (THD pp. 115 and 116). A later subjugation of Zhang-bzang in 975-978 (THD p. 117) will not to become the affair took place during the life time of Srong-brtan sGam-po. If that is so, sPug Gyim-tsan's experiences in the affairs 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 principalities as that of a minister of sKyi (whose ruler's name was srongpo). The capital of sKyi is given as Llig, a name associated with Nao Chao (sNam). sPug also appears in the name of a monk apparently of non-Tibetan origin in the time of Khri De-gtags-brtan (LIV 996). The same may derive from some branch — perhaps an emigrant one — of the widespread complex of peoples known as Zhang-bzang, whose western extension was in the kingdom of Llig mui rtha in the neighborhood of Lake Mafra Kor. There would be nothing unusual in the use of such a person for dealing with peoples of similar racial origin. Another example can be seen in the activities of the coming minister sPung sogs Ze-nor who took part in the subjugation of some Zhang-bzang peoples by Srong-brtan sGam-po's father (THD II 56 and THD II 57). The description of him as Khung-po identifies him as belonging to a Zhang-bzang tribe; and the syllable sPung appears in other Zhang-bzang names e.g. Ba-sang-rje sPung-sgra ssta Sje (THD 116) and cf. sNga-sbar sPa-rag sna sde Drug (THD 11). sPung-sad Ze-nor was responsible for the fall of the great great minister Zhang-sang of Myang, whom he supplanted c. 962 A.D. Associated with him in that coup was a man named Pa-tshab sGam-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 Yar-lung dynasty. The father of Myang Zhang-sang, a minister of a local prince probably in the upper valley of the Lhasa river, found himself on the losing side in warfare with the prince of Nao-po and was subjected to the overlordship of one of the ministers of his conqueror. The minister, Noyas Ji-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 Sar-lung. The venture was successful. The prince of Nygo-po was signally defeated; and Mynan and his kins 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. (See Bulletins II. 1 and II. 3.)

 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 fragment which is printed at the end of the Tum Huang Chronicle (THD p. 122), but has not been translated there owing to its damaged condition. It is a typical example of the Chronicler's 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 its lies 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) mgar meng po rje stag rnam dang pa tshab rgyal tser nga la lobs pa'i tshes pa tshab rgyal to tshes klu blangs pa'i (1) snan sha ni la 'da' kyang shi bka' ni sde legs dang bzhed pa'i tong ha ni che s(1) gres bu ni sgyud brungs nas ma san ni sde gs byed pa'i 'jor ha ni che s(3) mgar meng po rje stag rnam bsmo brangs[long ro la khyo dang tshig chog rgyal la (6) mchod brink pa'i] fyes kun ni stag rnal tshangs ni kyi khyu. 'Dzhig rgyal ni ne la dra nas (1) mgar meng po rje gi bcas brink gnie le ni bzhin nas nas[gar gyi] ni sha la 'drong[1] ... eog ni (8) nas la 'da' sni i sng gi bo chen gi gong[ 'drag sri ni to go rshyab dbrangs sa ni] sgang dang sning (4) ... ming rgyal] je pho ni stag rnam dang tsha'i sje ni bsem lang gnyis brel[ ...] ... do rtu (10) ... sng la nas[ 'trent bu ni sng brag te] na rtsi ni lha ... (11) sgyal)]

"When MGar Mang-po-rje sTog-rtsan and Pa-tshab Gyal-to-re
fled to China Pa-tshab sang this song.

Even if medicine has been put on the flesh, leprosy remains ever after.
When they are old, even if their members are wise, mother and daughter are pursued by sorrow. In great Tsong-kha, 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'i myes-pur-myi ? referring to 'Phu-rgyal Bod.
of mGar Mang-po-rje stTag-thsan, the lady of Cig-po, to China, spoke like this: "From Nyen-ka stTag-thsan, a dwelling of iron (or iron) in Cig-po. In China itself, from the net. SENT smoke signals (or sent signals of submission). From Me-gle gling-mar. (about one and half lines omitted). The lord stTag-thsan and the Chinese Emperor bsam-lang, these two. Praised."

In spite of the damaged nature of the passage it can be seen to refer to the fall of the mGar family in 698/699 after some 50 years as effective rulers of Tibet. The Chief Minister at the time was mGar Khi-ris-bring bTsan-pod, son of srong-brtsan gSang-po’s great minister, sTong-brtsan yul-nang. In the Tibetan Annals Khi-ris-bring himself is named as involved in the disaster to his family (THD 99) but from the Tang Annals it is learnt that when his troops would not fight against the Tibetan king Khi-ris-bring committed suicide together with many of his entourage. Other members of the family fled to China, among them a brother of Khi-ris-bring named Tsonpo, and Mangpu-chich, the son of his elder brother. This can hardly be anyone but the mGar-po-rje stTag-thsan of the fragment. Inoux Nodar, referred to above, Professor Stein in a note, which deserves to be developed into an essay, quotes the Tang Annals as recording the great honours given to a son of Khi-ris-bring, named Lomen Kong-jen, who submitted to China in 698 bringing with him 7000 tents of the ‘A-sha. This too must be the Mang-po rje of the fragment. The influence of Khi-ris-bring in the ‘A-sha 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 (792 rje sman lang.) where it certainly refers to the Emperor Huai Mu 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 when the song came to be recorded, the memory of the Emperor who had sent the Chinese princess Mun-sheng as bride to Khi-ris-bring-brtstan had effaced most others.

The association of the Pa-shab clan with the mGar is seen in (THD p 177) which records joint operations in 696 by mGar "Brig-stsan rtsang-ston and Pa-shab rGyal-stan thom-po. A common interest
may have existed for some time. Pa-tshab, as has been seen, was associated with a minister of Nga-po who was hostile to Myang. The lists of principalities show that mGur were also ministers of Nga-po and although there is no evidence that mGur 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 then Zo-tse, who seemed to have had no clar to support him, was removed from the scene, mGar xTag-rtsan was ready to take up a position similar to that formerly enjoyed by the Myang.

Returning to Mang-po-ri xTag-rtsan: it emerges from the fragment that his wife was from Cog-roi. 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 mitar a lady of Cog-roi became the wife or mistress of the Tibetan king 'Dus-rtseg'. Although allusions to that union in the Chronicle are obscure, it appears to have been distasteful to one Khe-rag nido-smang who, after the death of 'Dus-rtseg', took part unsuccessfully in what must have been strife about the succession (THD 145, 163, and 40). Later histories state that a Cog-roi minister escorted the body of 'Dus-rtseg' back to central Tibet from the east. Thereafter, the clan appears as active in 'Asha country and perhaps as being allied in marriage to the ruler of the 'A sa (THD II 8: 10). It continued to take a prominent part in Tibetans affairs down to the death of Ra-la-can who married a lady of that clan and among whose murderers was one Cog-roi Lha-dhot. The original home of the clan is uncertain but their association with the 'A sa and the description of the lady of Cog-roi as 'Ba', Cog-roi za suggests an eastern home, perhaps connected with the Ts'iwa-ch'am marshes. It is unfortunate that the fragment lacks the one word which would have shown whether the lady of Cog-roi Cog-roi did (as one might expect) or did not accompany her on his flight to China. As she and the lady associated with 'Dus-rtseg' at about the same time are both described simply as Cog-roi za it is possible that they are one and the same and that the wife of mGar xTag-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 connected songs in THD might be fruitful. The translators have missed the point that Khri gbu's (THD p 921) is the name of a noble of the 'Bro clan who was associated with the Cog-roi at the 'A sa court about the years 716 to 716 in connection with the arrival of the Chinese princess as bride to the Tibetan king. One further speculation about the Cog-roi lady of the fragment suggested.
by the name of the Chinese king who reigned from 713 to 742. The two songs may relate to two different occasions and it might be that the lady of Log-ko became the wife of mGar Mang-po-pho after the death of ’Dus-arong; but this seems to be an improbable strain on the construction.

The allusion to Nyen-ka1 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 677 until his sixteenth year (692) during which time the power of the mGar was supreme. Nyen-ka1 had been the residence of an earlier king, Mang-arong, in several years of his minority when mGar Stong-rtse-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 648, can be seen almost as soon as the king ceased to reside at Nyen-ka1. Although the home of the mGar appears from the Chronicle (THD 161-163) to have been Ny-ka4 pa and it was in Bral-skal of Stong that ’Dus-arong took possession of the property of Khris-sog after his fall, the power of the family at its peak must have extended over much of Tibet, and Nyen-ka1 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-ka1 rgying-pa was in Ngas-po and it was of that principality that mGar were originally ministers.

Of other names mentioned in the song of Cog-po za, if Long does not mean “iron” it could refer to the fortress of Cog-rtshe on the Szechwan border. Meg-le is mentioned several times in LINV as a context — the copying of religious books—which seems to place it on the eastern border.

The overthrow of the mGar in 648/649 virtually eliminated them 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 honoured 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 979; 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 (bkra’i gzig-pa) in LINV ap. 1953. There are no more mGar ministers in the Annals, not among the witnesses to the bkra-si-dbang of Khris-Srong-brtan or to the lha-a treaty of 822. Later histories, it is true, sometimes mention mGar in connection with the confection of Dnam-gyi but this is not convincing without any contemporary support. stong-stod does not mention the name at all, while the reference in rGyud-po bkra’-lang (f. 56) is cursory; and no mGar figures in the description of the military organization of Tibet in the Men-po bkra’-lang.
From the 9th 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-po, the Lang-don from which the Phug-mo-gru dynasty originated - and the princes of Sde-dge. Those genealogies, which are full of obvious legend, do not refer to lGar-po but assign to the mGar a divine of heroic origin usually of indeterminate location but in the case of the Sde-dge legend apparently in the region of Tuchtenku.

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 despised 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 dismiss this because the claim is 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 Khotan, quoted by Professor Stein with reference to TLTD, is not from a Tun Huang text but from a late xylograph and the recent edition by Mr. Emmerick 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 smithies were then regarded either with the veneration 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 outcasts 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 subjection in that capacity to their Juan Juan overlords (Chasseens, Documents sur les Turcs Orientaux pp 7ff) And it may be noted, for what it is worth, that when the ruler of Ngarpo who was the heir apparent 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 merits fame of their former greatness and achievements has never been forgotten. mGar Tsong Yul-zung is still the favourite hero of store drams it is remarkable how much space and what favourable treatment are given so 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 (THD 159), Tson-gzan Yul-zung is suitably honoured (pp 159-160) but it is Khi-'bring tshang-brod who gets the most praise. It is true that the chaste Keep of the choral minister is mentioned (p. 149) and 'Gon-'trong' Gon-gong of triumph after he had overthrown
Khri-bring is given full value; but the voice of the critic Khe-rgal 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 enjoyed, 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 Shigatse. 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 de Gotha of Tibet, the K’hu’ 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 Ten Phung Annals indicate clearly the extent to which the peoples and affairs of the eastern and northeastern borders bulked in the story of the Tibetan kingdom. The persistence with which folk-memory preserved that traditions is shown by the determination with which any family that later attained to greatness traced its origin and ancestry to that direction.
SOME PUBLICATIONS
FROM
NAMGYAL INSTITUTE OF TIBETOLOGY

PRAJNA or the famous Sanskrit-Tibetan Thesaurus-cum-Grammar was compiled by Tenzing Gyaltse, 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 Nalinaksha 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-mechanic); 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 Gyaltse (Mentsikhang : Lhasa and Enchay : Gangtok) makes the present publication an improvement upon the original.

November 1962.
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 mantras) 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 (S. P. $\text{๊}^\text{杂志}$) 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 Needham we can now list five of these devices as follows:
I THE VERTICAL AXLE WIND PRAYER WHEEL

Lame 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 mani 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 inspection because of the slaves mentioned earlier, also because he claims that various Tibetan art motifs are detectable in European Gothic art; (1) 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 as at least as probable as the more conventional Graeco-Arabic one. (2)

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". (3) 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 over the fire in the tents 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.

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inscribed with staves by the action of heated air rising from a butter lamp. By the late fourteenth century Italian technicans were setting such small turbines into chimney flues and gearing them to turn spits and, as White indicates, "the faster the wind, the faster the roast spine." (66) In 1788, Borda showed 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 aeroplane 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

Relaxed to the idea of the use of heat rising's 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 suflator of the Middle Ages, a simple device consisting of a vessel containing water that when heated emits a jet of steam. (7) Borda's early experiments in the utilisation of steam force were consciously derived from suflators 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 suflator. The Tibetan model still takes the form of a bottle-shaped conical copper kettle surmounted by a bird's head, the back of which sometimes quite elongated, points downward and has a pinhole at the end. The steam emitted is thus directed onto the flame 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. Needham suggests (8) that Alexander the Great's soldiers may have brought it back to Greece in time to influence the astrolabe of Heron which in turn developed into the medieval suflator. Apart from this possible channel, there were the Tartar slaves in Italy whose steam jets may at least have modified the suflator. This could be likely because the first European suflator (9) to be made in the shape of birds are datable at 1479 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 over-estimated. 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 Tharthron Gyalpo, the great Tibetan mahasiddha and iron bridge builder is itself a demonstration of how in Tibet, as in ancient Greece and Egypt, technology (སྤྱི་ཁྲི་རྩོམ་) 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 ཕི་མ་པ་) could reveal a lot concerning actual scientific theorizing in Tibet, notably in the fields of medicine (11) 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


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5. Lynn White, op.cit., p. 529.

6. op.cit., p. 519.


12. 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 mchen als mikro-kosmos, (Zurich, 1943) by F.Cyril von Kersiv—Krasinsky, O.S.B.
ART BOOK
FROM
NAMGYAL INSTITUTE OF TIBETOLOGY

RGYAN-DRUG MCHOG-GNYIS (Six Ornaments and Two Excellent) reproduces ancient scrolls (1676 A.C.) depicting Buddha, Nagarjuna, Aryadeva, Asanga, Vastubandhu, Dharmakirti, Guhyapaabha, and Sakya-prabha; reproductions are as per originals today after 100 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 Mahasana. 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 monochromes.

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 1925, and educated at St. Joseph’s Convent, Kalimpong. She was married in April 1949 to Sir Kotho Rinchen Tseden Namgyal Yashri-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 Prithvi 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 irritate 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 Jamyang (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 1960 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 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 Yaphil Yuthok Sey Kushoe. This is only one example of the enduring spirit and gallant intellectual concern of the late Princess. The Namgyal 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.

CHAPTER XIV

Events of the time of Brahmana Rahula

King Chandrapala was the ruler of Aparantaka. He gave offerings to the Chaityas and the Sangha. A friend of the king, Indradyumna wrote the Andra-pakarana.

During the reign of Chandrapala, Acharya Brahmana Rahulakshatra came to Nalanda. He received ordination from Venerable Krishna and studied the Sravakapitaka. Some state that he was ordained by Rahulaprabha and that Krishna was his teacher. He learnt the Suttas and the Tantras of Mahayana and preached the Madhyamika doctrines. There were at that time eight Madhyamika teachers, viz., Bhadestas Rahulagarbha, Ghadata and others. The Tantras were divided into three sections: Kriya (rites and rituals), Chaya (practices) and Yoga (meditation). The Tantric texts were Guhyamajja, Buddhacarayayoga and Mayajala.

Bhadanta Srilabha of Kakhmir was a Hinayana and propagated the Sastrantika doctrines. At this time appeared in Sāceta Bhiṣkhu Mahaviśaya and in Varanasi Veibhadriha Mahabhadanta Buddhadeva. There were four other Bhandanta Dharmatras, Ghośhaka, Vasumitra and Buddhadeva. This Dharmatraya should not be confused with the author of Udanaavaga, Dharmatratya; similarly this Vasumitra with two other Vasumitras, one being the author of the Sātra-pakarana and the other of the Samayabhadraprachanachakrav. [Translated into English by J. Masuda in Asia Major.] In the eastern countries Oddiva and bengal appeared Āntrayanaa along with many Vidyadhara. One of them was Sri Saha or Mahabrahmana Rahul Bahmachari. At that time were composed the Mahayana Sutras except the Satasahasrika Prajnaparamita.

CHAPTER XV

Events of the time of Nagarjuna

Nagarjuna a disciple of Ahulakshata. He preached extensive-ly the Madhyamika school of thought. He rendered a great service to
the Sāvakas by turning out many Sāvaka bhikshus for transgressing the disciplinary rules. At that time appeared Bhābhottas Nanda, Parama-
tra, Sanyakatsa, who preached Aga-vijñāna, i.e., the Yogachara school of thought. Asanga and his brother Vasubandhu were counted as later Yogacharins.

About this time King Mvja of Odissia with a large following obtained Kayasiddhi. In the west, Malava, king Bhojadeva also obtained Kay-
asiddhi, and the Arhas acquired the Dharanas. Tetracles were erected in Pitavesa (Pakuri), Odissia, Bengal, Ratha, Magadha and Nalanda.

Nagarjuna in his later life went to the south. He composed the Panchavīda-sangraha to establish that matter had no existence as held by the Sarvastivadins.

In the south in the country of Dravida there were two Brahmans Madhu and Supramadhva, who possessed incalculable wealth. They 
vied with Nagarjuna with the three Vedas and the eighteen sciences. The Brahmans questioned why Nagarjuna, who was so learned in the Vedas 
should become a Sakya Samana. But when they heard the praise of Budhha, they became faithful to Mahayana Buddhism. Both of them 
maintained 150 monks. The first had the Saranakarika 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 Vrazuchhi, who was the private of 
King Udayana. A young wife of the king knew Sanskrit grammar and said 
so him while swimming in water ‘modaka ma sina’ (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 Vrazuchhi.

Vrazuchhi was a devoted follower of Budhha. He became acquainted with Nagarjuna when he was the Parska of Nalanda. He hailed from 
the country of Ratha, east of Magadha. He recited the Avalokitesvara 
mantres for 12 years.

Kalidasa lived about this time. He came to the south to King 
Udayana, who wanted to learn Sanskrit from him. He invited Nagar-
ajasena, who had mastered Panini. The king wanted to study hula-
karanas from Svaraksharamana, who uttered ‘Shilbo vasa-samarnaya’ 
(Kalapa I) and at once he comprehended the meaning of all words.

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Kalidasa's biography is as follows:-

Kalidasa was a cow-boy. He cut the branch of a tree at the evil of which he was sitting. Vasuki, in order to deceive the daughter of King Udrasena the princess Yasanti, who rejected him, brought the cow-boy, dressed him as a Brahmin Pandit and asked him to utter "Oṃ Sūtrasīti". Instead of uttering this, he uttered "Uṣṇaṣa". Vasuki explained it as a benediction thus:

"Uṣṇaṣa sīthā Rudrah, Sankarashīto Viṣnau
tankasa Sulpani cha rākṣantar Sivā śravāda".

Vasuki 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. Vasuki found that her husband had become very learned. Kalidasa wrote Meghaduta, Ragharatna, Kuṭṭamalaṁbha, birth, and many other Kavyas.

At this time lived in the country of Li, Arka Sanghabheda in Tukha-rā, the Vaishnava teacher Yasana in Kusumir and the Saurantika teacher Kumazalabha in the west.

At this time the Turiṣkā faith appeared on the other side of Turfan. The Achara was known as Maṃthar and the Aṣṭāya doctrine was known as "Ariśko" (Vartu/Vardu).

CHAPTER XVI

Appearance of the first adversary teacher

The Chandra dynasty was ruling in the Apaṭaṇa kingdom. The kings of this dynasty worshipped the Three Ratnas. Not long after Nārakaśhēna's reign, Pusyaśattra, the purohita of the king, revolted. When he obtained the sovereignty, an old relation of the usurper came to Vishaka when the king of the monastery was sounding phatayana 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, Pusyasattra asked his heretical ministers to burn the monastery of Nājīhyadbha up to Jalidhara. He killed the bhūkṣus as well, many of whom fled to other countries. The usurper died after five years. Buddha also prophesied that his dharma would last two years and then it would decline for the next two hundred years. The teaching later developed at the instance of Aryan Nagarjuna, who worked in the southern countries for the salvation of beings. He made his centre at Śrīparvata (i.e., Anurādhā - Nagarjukonda).

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CHAPTER XVII

Events of the time of Acharya Aryadeva and other Acharyas

At that time lived King Sahasrabahu's son Chandragupta, who was a powerful king and performed both kula and ahuna deeds. He did not take refuge in the Three Rattles. 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 Madhyamika-karika states that Aryadeva hailed from Simhaladvipa. He was ordained by Vimaladeva. After studying the Tripitaka, he came to Janinadvipa to see the Buddhist temples and Chaitus. Aryadeva met Nagarjuna at Srivastava but this Nagarjuna propagated the Tantric doctrines. There were two Nagarjunas: the earlier one was the propounder of the Madhyamika 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. Bhujongma 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 Sri-chandra erected a temple of Avalokiteshvara and willed 2,000 bhisnus, who were all Mahayanists. When Rahulabhadra was in charge of the Nalanda monastery he erected there 14 Gomukhakuta and 14 centres of learning the Dharma. Acharya Matricheta is identical with Du-rhsarshaka. He became a great logician and a disputant. He composed the Sampanchanakara, eulogizing Buddha. [It has been edited and published] King Kanishka invited him, but he being old could not go to meet him. Rahulabhadra 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 Bharnachandra, son of Srichandra. Both the father and son revered Buddha's doctrines. Their minister was also a Buddha-worshipper. He visualized Avavakitesvara and obtained several medicines from the Nagas. By these medicines all diseases disappeared from the Aparantaka country. At that time lived in Kashmir a Turushka king. In Multan and Lahore ruled Khuminamampta (alias Bindhero),
who was both in concord and discord with King Dharmachandra. The Persian king went to the ruler of Mathuradwipa and the latter reciprocated the same by presenting elephants and silk-cloths. The Turushka army conquered Magadha and destroyed all viharas including Nalanda. Dharmachandra sent monks to China and received gold and other valuable in return.

Later Buddhakapalka reconstructed Nalanda monastery and other temples. Matriketa became the spiritual preceptor 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 Matīkākabala and Mādhavabhisaga, who preached the Prajñāparamita doctrine of Sūryaśastra or Sāravyākhyānirūpānī (i.e., non-origination and non-decay of worldly objects and beings). The former set up an image of Samgharosanatiloktis and worshipped it for 20 years and the latter founded 75 viharas and 2000 Chaityas. The former was killed by a Turushka bandit. Mānirādhara removed the Chaitya and surrounded them by small ones and converted Brahman houses into pustacalas to Buddhism. He was taken by Bodhisattra Sāntarahavīra to the country of Li. He worked there for many years up to the end of his life. A heretical teacher by incantations and magical formulas burnt Nalanda and many other viharas and temples. All the manuscripts were burnt. At this time a stream of water from Ratnokāśī extinguished the fire, and the manuscripts, being flooded by water, did not burn. The books saved were Mahāyāna texts. Faithful householders restored the viharas and temples and the manuscripts saved were of Avataṃsaka-sūtra, Mahāyāna Tathāgatagarbha, Lankadārśana and Ratnakīrti.

CHAPTER XXI

Events of the time of Karmachandra

At the time of Buddhakapalka, a vihara called Rāmagiri was built on the top of a mountain near the sea in Odisha. In that vihara both Mahayana and Mahayana texts were deposited. The vihara was built by a minister of the king. The texts were presented by Brahman Sanku and the other requisites by Brahman Brihatpati while maintenance of the vihara and the monks was provided by the queen. In order to subdue the Nagas, Brahman Brihatpati built many Buddhist temples in Katak Odisha and provided food for the monks.

At the time of King Buddhakapalka and after him King Dharmachandra, lived Achārya Nandipriya, Avaghosa, younger Rahulamitra, 27
pupil of Rahulabhadrata and his pupil Nagamitra. All of them propagated Mahayana teachings. Nandiprapya was the author of the esody of 156 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 Kathachandra was in power, Gamphirasaka, the son of Buddhaapaksha ruled over Panchala for 48 years.

In Kashmir lived a Tarunka's son called Mahayamnata, who had visualized the face of Krodhanidita. He united Kathar, Tukham and Ghanra. He worshipped the Tritratra and erected a Chaitya, containing the Buddha's tooth-relic, at Ghanra. 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 Gamphirasaka, his son Vrikshachandra succeeded him, but he was not a powerful ruler and 10 Jaloreya, king of Odivisa wielded power over all the eastern countries.

Arya Asanga

At this time lived Acharya Asanga, Vavandhu, Buddhadasa, Sangadasa, Nagamitra and his disciple Sanghakrahita. Soon after them appeared many Mahayana followers, practising Anuttara-yogasutra, which spread widely, and many attained Vidyadhasi stage. Goharstati and other preached the Mantramitra, maintaining secrecy. The secret mantras were handed down from teacher to disciple, i.e. from Sri Sarala to Tantric Nagarjuna. They wrote commentaries on the Anuttara-yogasutra. During the reign of King Devapala and his son, keja and charya tantras became popular. At that time lived Acharya Paramasa, Lui-pa and Charavipa in the region around Varanasi.

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

At the time of King Buddhupaksha was born Prakassila, whose son was Asanga, who became very proficient in the art of writing, calculation, grammar, dialectics, etc. He mastered the Tripraksa and the Prajnaparamita sastras. At a later date Asanga composed the Mayalalatantra and Matreyasadhana. Bodhisattva Matreyas, being pleased with him, took him to Tushita heaven, where he imparted to him the Yogacharyabodhisattva in five sections. He built a vihara within a forest in Magadha and composed there Abhidharma-samuchchaya, Mahayana-sangoha, Abhishamagalamkara etc.

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King Gambhirapaksha's son invited several monks to Ushnapura vihara and maintained them. Asanga taught here the Tripitaka of the Suvakas 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 Buddhism flourished, there were some persecutions. The King asked Asanga a few questions relating to the true meaning of Surya. In his later life, he lived in Nalanda. Finally his life ended in Rajagriha.

Vasubandhu

Vasubandhu, younger brother of Asanga, became a bhikshu and studied the Suvakas including the Abhidharma. He became acquainted with the doctrines of the eighteen schools. He went to Kashimir and became a disciple of Sanghabhadra. He obtained vast erudition by studying the Vibhaṅgas. 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 Magadha and recited the Sraṇa-pitaka. After studying the Yogachārabhūmi-sūtra, he felt sad that Asanga, inspite of of 11 years of practice of samadhi, could not attain perfection. Asanga felt that Vasubandhu's conversion to Mahayana was near, and so he asked a bhikshu to study the Abhaṣyanati-nirdesa-sutra and another bhikshu to learn the Dasebhśika-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 Mahayanaism and wanted to cut off his tongue. At that time, the two bhikshus 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 Udiṣṭha-vijaya-nidīga. When Vasubandhu understood all the texts and the Dharanis, he practiced samadhi, according to the direction in the texts. Vasubandhu studied the Pitakas of the Suvakas as well as the Ratnākara-sutras, Avatamsaka-sutras, Astasahasrika and Satasahasrika Pratīyamapada, two Vibhangas, and other Hinayana and Mahayana treatises. He wrote commentaries on the Pachavimānasaharikā Praptaparamita, Abhayasamudgāda, Ratnauṇuṣṇi, Pancāramahākṣara, Pratīyamapada, two Vibhangas and other Hinayana and Mahayana texts. He composed the eight Prakarana 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.
CHAPTER XXIII

Events of the time of Acharya Dignaga and others

After the death of King Gumbhirapaksha 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 Gunaprabha his spiritual preceptor. Acharya Gunaprabha came of a Brahman family, mastered the Vedas and other Brahmanic sastras. He learnt from Vasubandhu the Sāvaka-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 Dandakaranya, 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 Abhidharmakoshabharsha. He dedicated the heretical teachers in dialectics. Buddhadasa, a disciple of Asanga with Gunaprabha 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 Saivastiva school. He established 14 centres of learning for Vinaya and Abhidharma studies in Both-Gaya. He was invited by Mahasammata, the Torunda king, to Kashmir. He built there the Ratnaguptavihara and the Kumbhakundavihara, and propagated the teaching of Buddha much more than Asanga and his brother. He wrote a commentary on the Togarchyaphani.

At this time appeared Bhavya and Vinitasa. At the advice of Lui-pa, the king of Odvisva, Jala simha, gave up the rulership. The Tantric Siddhacharya Dantka became the king of Odvisva and Tengi his minister. A contemporary of Bhavya was Triratnadasa.

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

Acharya Dignaga was born in a Brahmin family in the south at Simhabhuvana near Kanchi. He joined the Visisputriya school. He mastered the Sāvaka-Pitaka as well as the Mahayana texts and Dharmis. He resided at Bhorasala in Odvisva. In the Prahmanasancchaya of Dharmakirtti appear the words ‘‘Bowling before him, who is logic personified and who wishes welfare for all beings, fragments of his different works are

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collected here". Dipuaga converted to Buddhism, Bhadrapalita, minister of the king of Odvias.

Acharya Buddhapatita born in the south at Harakshita. He became very learned. He learnt the teachings of Nagarjuna from Sangharaksita. He visualized Manjushri. In the south at Dantapura he wrote commentaries of many sastras of Nagarjuna 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 Nagajjvapadesa with Acharya Sangharaksita. He, however, criticised the commentary written on Nagajjvapadesa. Both of these Acharya considered Yasaguru as a separate system. Buddhapatita was the earlier and Bhavya a later disciple of Nagarjuna. Chandrakirti was a disciple of Aryadeva.

Acharya Vimuktaesana was a nephew of Buddhapatita. He joined the Kurukulla school, but he turned later to Mahayana, came to Vasubandhu and studied with him the Prasna Paramita. Then he became the disciple of Sangharaksita. He wrote to Vasunandi and procured a copy of the Prasna vesinamisharika Prasna Paramita in eight sections, which was in harmony with Abisamayalankara Shri.

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. It was the seat of a powerful king of the Licchavi race called Simha. At this time was born Acharya Chandragomin and also lived Bhavya and Vimuktaesana in their old age with their disciples Varasena and Ravigopa, Kamalabuddhi, disciple of Buddhapatita, and Chandramani, disciple of Acharya Gunastrha. In the south, appeared Acharya Jayadeva and Chandrakirti. It was the beginning of the life of Acharya Dharmapala and Santideva, Tantric Slijdbharya Virupa and Arya Visakhadeva. In the translation of Pushpadanta is mentioned by the translator Prakritakirti that this work was composed by Buddhaekdeva, disciple of Sanghadasa. Jayadeva, a great master of sastras lived at Nalanda.

Venerable Chandrakirti was born in the south and obtained proficiency in all the Pitakas. He studied the works and teachings of Nagarjuna with Kamalabuddhi, disciple of Bhavya and Buddhapatita. He wrote commentaries on the Madhyamakamala and Madhyakavacara. He preferred
the views of Buddhapalita and propagated the same. He refuted many heretical teachers in Kosalan and converted several persons.

Acharya Chandragoni was born in the 1st century B.C. He proved the theory of rebirth. With some traders he went to Sinhalese. He came across Nageshha's commentary on Panini. With the help of the commentary, he composed the Chandrayakara.

Chandragoni followed the school of Asanga and became a idealist. But Chandrakirti followed the commentary of Buddhapalita for the works of Nagarjuna. Chandragoni wrote many sastras on architecture, grammar, dialectics, medicine, metre, lexicography, art of poetry, astronomy etc. He studied the Darabhanukastra, Chandrapadipa (i.e. Samadhisutra), Guadalakrama, Lankavatara and Prayapa-pamitama. He composed the abstract of contents of these books. He composed also Tripitakamalastra teaching the instructions of a Bodhisattva. His works Sanvatarasimha and Kayataravatara were taught to all Mahayana students. He went from Jambudipa to Patala in a boat.

CHAPTER XXV

Events of the time of King Chala, Panchanamintha and others

After the death of King Bharsha and King Sinhachandra, lived in the west at Matikos. King Chala who was very powerful and was in alliance with King Sila. All of them including Sila died. In the east lived King Panchanamintha, son of King Bharsha. He ruled over the northern countries up to Tibet and the south up to Triloga, in the west up to Vaman and in the east up to the ocean. Sinhachandra's son Balachandra was exiled from Bengal, and so he went to Tibet. At that time lived in Magadh Charyas Vaimita and Gunamati, specializing in Abhidharma, and Charyas Dharmapala, Vaimita, and in Kashmir Charyas Sarva-vijnanins.

In Magadh ruled King Prasana, son of King Bharsha, whose kingdom was small and was later expanded. In the south in the lands near Vindhy mountains ruled King Padha.

King Chala erected a monastery and provided all requisites to the monks. Panchanamintha honoured both the heretical as well as the orthodox teachers. King Prasana honoured Chandrakirti, Chandragargh and other teachers of Nalanda. Vaimita set up an image of Ajitasrtha and visualized his face.

Acharya Gunamati wrote a commentary on the Abhidharma-kosa. He followed Shriharati in his commentary of the Madhyamaka-sutra, refuting Bhavya.
 Acharya Dharanapala was born in the south, he became a Pandita of Nantua.

Acharya Smīldeva was born in Sarantra. He visualised Manjusri. He is the author of Śikṣāśātrācchāgno, Saranmatācchāgno, and Rādhikāvarttā.

CHAPTER XXVI

Events of the time of Acharya Dharanakirti

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

In the north in the town of Haridvāra King Mahākṣyabhata ruled over all the countries in the north up to Kashmir. He supported the religion of Buddha. King Praditya honoured Acharya Dharanakirti; King Mahākṣyabhata honoured the Ābhuddhāma scholar Vasūmitra. King Vimalachandra honoured Praditya Amaranimha and Ratakirti, master of the Mahyamikā teaching. Though Buddhism was spreading but not as much as it spread during the time of Assaga and his brother and Digunja because the heretics were on the increase in the south.

At the time of Panchamārīma appeared two heretical acharyas, Dattatṛṣya and Sankaracārya. They received saranās from Mahadeva, in Bengal the bhikshus felt difficult to defeat Sankaracharya in disputation, so they invited other Dharanapala or Chandragomī or Chandakirti. At that time appeared in the south Brahmana Kumanīla and Kanada Dharanapala’s disciple Devarṣaṇa tried to refute Chandrakirti and wrote a commentary called śīnabhyudaya on the Mahyamikā doctrine. He was, however, defeated by Sankaracharya.

King Salvaḥṣana was converted to Buddhism. He erected many viharas and chaityas.

At the time of this king, lived the Tānaja acharya Goraksha. Ratakirti is known through a commentary written by him on the Mahyamahavya. Vasūmitra also composed a commentary on the Adbhudhāmamahavya and is the expounder of many important sectarian doctrines summarised by him in the Samaja-bhedaparachiyu-sūtra. Before the time of Vamandhū, the eighteen schools continued to exist intact. Some disappeared on account of the erstwhile enemies of the religion. There were three sub-sects of the Mahasangākās, viz., the Purvaśāṇa,
Aparasitas and the Haimavatas; two sub-sects of the Sarvastivadin, viz., Kasapiya and Vihalaya; the Sthaviras Mahavakarasivas; of the Samvycyas the Avantakas; other schools also spread widely. Sarvaka doctrines disappeared after 300 years. There were, however, still many followers of the Sarvaka system. It is not a fact that the Sarvaka system disappeared after the appearance of Mahayana.

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 Vedanga, in medical science, grammar and in all non-Buddhist doctrines. When about 16 or 18 years old, he became well-versed in the philosophical works of the non-Buddhists. At one time, when he had become famous, he came across the Buddha- pratiharanas. He then realised that these were much superior to their own sana, and so he became an Upasaka. He came to Madhyadisa and was ordained as a bhikku by Atcharya Dharmagala and acquired knowledge of the Pitakas and studied many dialectical treatises but his mind was not satisfied. He then studied Pramanamokshaya with Usvarasa, disciple of Dignaga. He then received consecration from a Vajrayarya and devoted himself to the mantras and invoked Adishiva. Henrik himself appeared before him and enquired about his intention. He said that he might attain victory in all directions. Henrik replied "Hu Ha Hurri" and disappeared then and there. He then composed the Sarma-bhakta (in Taipur Srinivasa-baka-nata-bhakta, also in Abhidhanatara).

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 enquiry what he desired, he said that he would like to learn the system taught by him to his fullest. 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 the 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 Nirmuntha Rahavatara, the Famous teacher Abhirupiyaka, Brahmana Kurnaradha, the Brahminical champion Kamalavan and the rest who lived near the Vidyavasa mountain. He then went to a forest and resided in the hermitage of Rishi Matanga near Magadha. Dharmakirti went to the palace of King Puspha and said:
In wisdom a Dignaga, in purity of language a Chandragomin, in merit a Sūtra, in disputation who else could he except the humble self, the victor of all disputants?" (Sura: Aryasura, author of the Sūtra-sūtra).

The King Pūsaka asked "I wonder, are you the Dharmakirti?" He said that it is the name by which people call me. He erected many viharas for the residence of Dharmakirti. He composed also a Pramanottara 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 viharas and 10,000 monks. When he visited Gujrat he converted many Brahmins and other sectarians to Buddhism and erected the temple of Gopapuri. 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 vihara in Kekaya. This acharya was a contemporary of King Śrīgut, āyam-po.

Dharmakirti's disciple Devendrabūdi composed the commentaries of Dharmakirti's works. His disciple was also Prabhavasubhuti. Some say that Jamari was the direct disciple of Ācharya Dharmakirti and that Jamari was the author of Pramanottara-vārtabhāsikā.

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, Vaibhavabhadra and Dharmakirti. Sākarananda appeared at a much later date, hence he could not be a direct disciple of Dharmakirti.

At that time there were five Śidhchakaras, namely, Kanbala, Indrabhuti, Kururja, Padmapāja and Lalitavāja. Kururja was an old Yogacharin, practiced Čakrachakra and other mysteries in the cemetery and attained Mahānabamūlā. He taught to his disciples the Buddhist Tantras and Yogatantras.

Ācharya Lalitavāja was a paśīd of Nala. He brought the Yamarajottara from the dharmajātī of Ibyana. He composed the Kuramottara, Tīrīcanuvāka, Saptabhakṣajā and Kālekarman and propagated them in Jambudvīpa. The heretical prince Naravarman in the west became a believer in Buddhism, and built a temple of Manjusri. There are many stories about the contest of Kanbala, Lalitvāja and Indrabhuti with others. Kanbala produced the Haracarmottara and composed the Nārāyaṇasūtra.

At this time lived in the south Kanalagomin, who had attained Avalokiteśvara-ākāra.

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