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Indo-European Vocabulary in Old Chinese *A New Thesis on the Emergence of Chinese Language and Civilization in the Late Neolithic Age*

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Contents

1. Recent developments in the field of historical linguistics	1
2. Monosyllabic structure of Chinese words and Indo-European stems	3
3. Tonal accents of Middle Chinese	3
4. Preliminaries on the comparison of consonants and vowels	4
5. Some IE stems corresponding to Chinese words of entering tone	5
6. Middle Chinese tones and final consonants of IE stems	8
7. Some IE stems corresponding to Chinese words of rising tone	9
8. Some IE stems corresponding to Chinese words of vanishing tone	12
9. Some IE stems corresponding to Chinese words of level tone	17
10. Reconstruction of Middle Chinese vocalism according to <i>Yün-ching</i>	26
11. Old Chinese vocalism	29
12. Vocalic correspondences between Chinese and IE	30
13. Initials of Old Chinese	31
14. Initial consonant clusters in Old Chinese as seen from IE-stems	31
15. Proximity of Chinese to Germanic	32
16. Relation of Old Chinese to neighboring languages	33
17. Emergence of Chinese Empire and language in the Middle of the third millennium B.C.	35

Appendix

Abbreviations	40
Bibliography	43
Rhyme Tables of Early Middle Chinese (600)	49
Rhyme Tables of Early Mandarin (1300)	50
Word Index, English	51
Pinyin	54

Indo-European Vocabulary in Old Chinese. A New Thesis on the
Emergence of Chinese Language and Civilization in the Late
Neolithic Age*

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In 1786, just over two hundred years ago, comparative historical linguistics was born, when Sir William Jones (1746-1794) discovered the relationship between Old-Indian Sanskrit, Greek, and Latin. Since then, the emerging Indo-European philology has thrown much light on the early history of mankind in Eurasia.

During the past two hundred years, many suggestions were also made in regard to relationships of Indo-European to other languages such as Semitic, Altaic, Austronesian, Korean etc., but Indo-Europeanists commonly rejected such attempts for want of convincing evidence. As to Chinese, Joseph Edkins was the first to advance the thesis of its proximity to Indo-European. In his work *China's Place in Philology. An Attempt to show that the Language of Europe and Asia have a Common Origin* (1871) he presented a number of Chinese words similar to those of Indo-European.

In his time, Edkins' thesis seemed bold and extravagant. But today, more than a hundred years later, we are in a much better position to carry out a comprehensive and well-founded comparative study. Since the end of the nineteenth century, many Sinologists have been engaged in reconstruction of the mediaeval and archaic readings of Chinese characters. Among them, Karlgren (1889-1978) was the most successful, and in 1940 he published a comprehensive phonological and etymological dictionary entitled *Grammata Serica*. In the meantime, the Indo-Europeanists Alois Walde (1869-1924) and Julius Pokorny (1887-1970) were devoting themselves to the compilation of a useful etymological dictionary. The result was the *Indogermanisches Etymologisches Wörterbuch* by Pokorny (1959) which provides a solid basis for our lexical comparisons.

* This study is a much expanded version of the paper I read at the XXXII International Congress for Asian and North African Studies on August 28, 1986 in Hamburg (Germany).

Soon thereafter, some Sinologists made use of the two dictionaries by Karlgren and Pokorny to compare Chinese and Indo-European words. In 1967, an unaffiliated German scholar, Jan Ulenbrook, published an article "Einige Übereinstimmungen zwischen dem Chinesischen und dem Indogermanischen", in which he claimed that 57 words are related. Shortly afterwards, Tor Ulving of the University of Göteborg, Sweden, wrote a review of this article framing the title as a question: "Indo-European elements in Chinese?" While working on his thesis on word families in Chinese, Ulving compiled for his own use two dictionaries: "Archaic Chinese - English" and "English - Archaic Chinese", and discovered thereby 238 Chinese words similar to Indo-European roots. In spite of this considerable number of word equivalents, however, Mr. Ulving became discouraged and, as he told me in his letter of April, 1986, has given up his researches in this field.

The skepticism, common among Indo-Europeanists in regard to comparative studies with other languages, is largely based on the dogmatic opinion that only morphology is relevant but not vocabulary. Since the typology of Chinese seems to preclude a cognate relation to Indo-European, they are inclined to discard any lexical correspondences as merely accidental or onomatopoetic. Besides, prehistorical contacts and mixtures between these languages seem not conceivable, as the Indo-Europeans are supposed to have originated in Northern Europe or at best in the Central Asian steppe, thousands of miles away from East Asia. Hence, any research into a relationship between Old Chinese and Indo-European languages would be but futile from the outset.

Yet there are also opposing views among Indo-Europeanists. Investigations into Germanic languages and the oldest Indo-European language, Hittite, led some of them to a critical revision of the prevailing conception about a Proto-Indo-European. Hermann Hirt (1934) for instance states: "Inflection of Indo-European languages is due to a relatively late development, and its correct comprehension can be achieved only by proceeding from the time of

non-inflexion." And Carl Karstien (1936) holds the opinion that "Chinese corresponds most ideally to the hypothetic prototype of Indo-European."

Regarding vocabulary, there are striking similarities in the monosyllabic structure of the basic words. In modern German and English, all the words of everyday speech are monosyllabic and their stereotypical structure is:

initial consonant(s) + vowel(s) + final consonant(s).

The same word structure is valid for Chinese as well. It is fundamentally different from the disyllabic structure of Altaic words and from the triconsonantal-disyllabic structure of Semitic words. Characteristic of the monosyllabic word structure is, besides, the complexity of the syllable nucleus, which consists of different vowels and vowel clusters in contrast to the monophthongal vocalism of polysyllabic words.

Another objection raised to comparisons between Chinese and Indo-European is the existence of tonal accents in Chinese. Since most modern Indo-European languages have only expiratory accents, Chinese is considered to be a highly exotic language. Yet, even in Chinese, the use of tonal accents as a means of lexical differentiation is a result of comparatively recent development in the long history of Chinese language, the earliest monuments of which date back to 1300 B.C. (cf. Chang 1970, p.21). Unknown to Old Chinese, the existence of tonal accents was for the first time mentioned in the 5th century by Shen Yüeh 沈約 (441-513).

In Middle Chinese (Mch.) there were four tone categories:

- A P'ing-sheng 平 , a level tone (which developed into Mandarin tone 1 or 2).
- B Shang-sheng 上 , a rising tone (Mandarin tone 3).
- C Ch'ü-sheng 去 , a vanishing, i.e. falling tone (Mandarin tone 4).
- D Ju-sheng 入 , an entering tone with a staccato effect, the word being abruptly stopped by a final consonant -p, -t, -k. (In Early Mandarin the words of this tone lost their final consonant and were distributed among the tones 2, 3 and 4, respectively according to the phonation of initials).

In Middle Chinese, words of the entering tone were the only group which still preserved the final stops and therefore a close syllabic structure. So they are most appropriate for convincing comparisons with monosyllabic Indo-European word stems.

The final stops -p, -t, -k of the entering tone are nowadays still extant in daily speech of several dialects in South China as well as in Chinese borrowings in Japanese, Vietnamese and Korean. As a speaker of a Taiwan dialect of Minnan origin, I could immediately identify some Indo-European stems with corresponding Chinese words. Besides, the command of Japanese and German was also a great help for this study.

In the following lists I have chosen a number of Indo-European stems which are phonetically and semantically equivalent to Chinese words. Correspondences in initial and final consonants refer to the points of articulation, thus we have equations:

- IE labials = Old Chinese labials, IE dentals = dentals,
- IE l, r = dentals (cf. p. 31); Ø, i (final and medial)
- IE velars = velars and laryngeals,
and occasionally (the so-called "satem"-forms)
- IE velars = dental sibilants and affricates.

Regarding the manner of articulation, there are no regular correspondences between Indo-European and Chinese consonants like Grimm's law which is valid among Indo-European dialects to a certain extent. But this is not astonishing, since in Old Chinese the alternation of initials in voicing was a conventional means of creating new words from one basic form.

The rules of vocalic correspondences among Indo-European dialects are quite complex. Vowels permanently change their qualities from one language to another, and from time to time^{also, as is well known from the history of English pronunciations.} Generally, the vocalism of Old Greek is taken as the standard for Proto-Indo-European. Old Chinese vowels corresponds nearly (cf. p. 30), but the details about the reconstruction of Middle and Old Chinese vocalism will be treated later (pp. 26-30). For the moment, it is necessary to notice in advance that the stem of ablauting Germanic verbs is the form of preterite or noun, rather than that of infinitive as assumed hitherto. Therefore, in some cases I must slightly modify the basic vowel of verbal stems given in Pokorný, in order to get better basis for comparison. As Old Chinese verbs were non-flexional, they might probably have preserved the original vowel the best.

Indo-European stems corresponding to Chinese words of entering tone:

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
100 bhug	belly, nhd. Bauch ags.būc, ahd.būh, mhd.būch, schwed.buk, dän.bug	puk 腹	pjuk 1 III*	fu: ³	fu: ⁴ fu ⁴
113 bhōg	to bask in the sun gr. φύω, ahd.bahhan, ags.bacan,bōc,aisl.baka	bok 曝	buk 1 I	phu: ³	phu: ⁴ pu ⁴
117 bheidh	to insist, to bid, to bide, gr. Πείω got.bidjan, ahd.mhd. bitten, ags.biddan, as.biddjan, engl.to bid	pəit 必	pəit 17 IV	pi: ³	pi: ⁴ bi ⁴
359 glābh	to clasp (nhd.klammern) ags.clyppan, afries. kleppa, engl.clasp	klap 夾	keap 39 II	kea ³	tçja: ¹ jia ¹
371 gnet	to knead, nhd.kneten, ahd.knetan, ags.cneden	gnet 捏	niet 23 IV	nie ⁴	nie ⁴ nie ⁴
382 ġep	cheek (nhd. Kiefer) ags.ceafe, mengl.chavel	kep 頰	kiep 39 IV	kie ³	tçja: ² jia ²
393 god 586 kot	cot, hole an.kot, ags.cot	khot 窟	khot 18 RI	khu: ³	khu: ¹ ku ¹
400 glag	milk (ch.curd) gr. γάγος, lat.lac	glāk 酪	låk 31 I	lau ⁴	lao ⁴ lao ⁴
408 ghobh	to give, donation got. giban, ahd. geban, got. giba, ahd. geba, mhd. gäbe, nhd.gabe	kop 給	kjup 38 III	ki: ³	tçi; ³ kei ³ gei ³
554 kalb	to help; to cooperate got. hilpa, as. ags. helpan ahd. helfan, engl. help	ha:p 協	hiep 39 IV	xie ²	çie ² xie ²
610 kob	hap, happen, suitable ags. gehoep "suitable" schwed.hapa sig "it happens"	hop 合	háp 39 I	xo: ²	xy: ² he ²
616 kost	bone, rib skr. kōst, lat. costa, frz. côte "rib" abg. kost , poln. kość "bone"	kot 骨	kot 18 RI	ku: ³	ku: ³ gu ³

* Arabic and Roman numbers indicate the Rhyme group and Grade respectively (cf. Rhyme Tables of Early Middle Chinese in Appendix, p. 49) A list of abbreviations may be found at the end of the paper (pp.40)

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
645 ^w ad	what? ai.kad, lat.quid, ahd.hwaz, an.hvat, as.hwat, ags.hwæt	huat 曷	håt 24 RI	xo: ²	xy: ² he ²
684 leud	little, miserable as.lüt, luttile, ahd.luzil, mhd.lützel, ags. lytel	leut 劣	luet 24RIII	lue ⁴	lje: ⁴ lie ⁴
690 lobh	leaf got.lauf, ahd.loub, ags.léaf, nhd.Laub	lop 葉	iap 40 IV	ie ⁴	ie ⁴ ye ⁴
694 mad	mast, to fatten ahd.mhd.mnd.mast, ags.moest	mat 秣	moat 24RI	muo ⁴	muo ⁴ mo ⁴
735 mort	to die, death ai.mrtá-, lat.mors, ahd.mord, mhd.mort, ags.aisl.mord	mot 歿	mot 18 RI	mu: ⁴	muo ⁴ mo ⁴
762 nak	to drown (ertrinken) ai.nasáti, av.nas-, lat. nex, "accidental death"	nak 溺	niek 35 IV	ni: ⁴	ni: ⁴ ni ⁴
843 pauk	few (dünn, wenig) lat.paucus, ahd.föh, fao, fo, as.fa, ags.fēa	båk 薄	båk 31 I	pau ² po: ²	pao ² po: ² bao ²
837 plod	float, nhd. Floß ahd.mhd.vlöz, ags.flēot	blot 筏	buat 22RIII	fa: ²	fa; ² fa ²
856 regt	right, nhd. richtig, ahd.mhd.as.rēht, ags.riht	zeək 是	zjək 42 III	ʃi: ²	ʂz: ² shi ²
859 rist	to tear, to slit	liət	liet	lie ⁴	lie ⁴
926 slid	ahd.rīzan, mhd.rizen, nhd.reißen, schleißen	裂	21 IV		lie ⁴
877 sāg	to seek, nhd.suchen got.sōkjan, aisl.søkja, ahd.suohh n, ags.søecan, as.sökian, mnd.söken	såk 索	såk 31 I	sau ³	suo ³ suo ³

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
880 sap	sap, nhd. Saft lat. sapa, aisl. safi, ahd. saf, sapf, ags. saep, mhd. saf, saft	tsop 汗	tʂjup	tʃi: ³	tsi: ¹
913 sup	soup, nhd. Suppe, ai. supa- ahd. sūf, souf, sopha, soffa	tsop	38 III		zhi ¹
921 skid	to shit, nhd. scheißen ahd. scizan, ags. scitan, aisl. skita	siɛt 池	siet	sie ³	gie ⁴ xie ⁴
922 skip	rudder, ship gr. 6κλίνω, lat. scīpiō, got. aisl. ags. skip, ahd. scif	tsiəp 桨	tsiap	tsje ³	tʃi: ² ji ²
935 skrek	inclined, nhd. schräg – mhd. schraege, nd. schrege	tseək 側	tseək	tʃaj ³	tshy: ⁴ ce ⁴
931 skop	to scoop, nhd. schöpfen ahd. scaf, scepfen	kop 汲	kjup	ki: ³	tʃi: ² ji ²
963 sleubh	to slip into got. sliupan, ahd. sliofan ags. slúpan; nhd. schlüpfen	zleup 裹	ziup	si: ²	ci: ² xi ²
1013 tog	roof, house, nhd. Dach gr. 6τέρος, τέρος, ahd. dah, aisl. þak, ags. ðoec, engl. thatch	dák 宅	ðeak	tʃai ²	tsai ² zhai ²
1017 stig	to go up, nhd. steigen, got. steigan, aisl. stīga, ahd. ags. stīgan	tiək 陟	tʃæk	tʃi: ³	tsi: ⁴ zhi ⁴
1024 sturd	to rush at, nhd. stürzen ahd. sturzen, mhd. stürzen, sturzen, mnd. mnl. storten, engl. start	dut 突	dot	tu: ²	thu: ¹ tu ¹
1032 stouk	arrowhead, nhd. Stück, bret. stuc'h, anord. stykki, as. stukki, ahd. stucki, mhd. stücke	tsok 鎮	tsuk	tsu: ²	tsu: ² zu ²
1058 tek	to take, nhd. bekommen, aisl. þiggia, dän. tigge, ags. dicqan, as. tiggian	tək 得	tək	təi ³	tʃ: ²
183 dēg	got. tēkan, engl. take		42 I		de ²

For further progress in interlingual comparison, it is essential to trace out the lost final consonants of Chinese words with level, rising and vanishing tones. Early at the beginning of his phonetical study of Old Chinese, Karlgren (1923, pp. 28) already came to the conclusion that the Middle Chinese words of rising and vanishing tones ending in -i or -u must originally have had a final consonant -g or -d (occasionally also -b), but he did not go so far as to ascribe -g to all words with rising tone. In *Grammata Serica* (1940) he introduced further -r (p. 25) and -g (p. 34 and 39) for the two groups of words with level tone. Tung T'ung-ho (1948) then reproached Karlgren with methodological inconsistancy and restored -g for all Middle Chinese words ending in -o and -u, leaving only one group of open syllables -a as permissible for Old Chinese. In doing so, Tung unfortunately ruled out a possible definite relation between Middle Chinese tones and Old Chinese final consonants and led the whole study into a deadend (cf. Chang 1986, pp. 53). Meanwhile Pulleyblank (1962 and 1983), among other learned scholars, had long been investigating systematically the early Chinese transcriptions of Indic Buddhist terms and Asiatic local names in order to obtain "independent evidence" for merely theoretically reconstructed old pronunciations. With numerous examples he succeeded in confirming that Middle Chinese words of vanishing tone had a dental final (1962, p. 215), and those of rising tone a velar final (p. 225) in the early centuries A.C. These correspondences which have been partially attested by the rhyming of Old Chinese poetry, can now also be proved by Indo-European synonymous stems. Thus the following equations may be posited:

- a. Mch. vanishing tone < Ach. -d, -s = IE -s or dentals
 " (occasionally) < Ach. -b = IE labials
 " (cf. p. 16) < Ach. -g = IE velars

- b. Mch. rising tone < Ach. -g = IE velars
 < Ach. -g = IE -u, -o (occasionally)

- c. Mch. level tone < Ach. -Ø = IE -Ø
 < Ach. -Ø, -i= IE -r, -l
 (cf. pp. 24) < Ach. -u = IE velars
 (cf. pp. 24) < Ach. -g = IE velars
 < Ach. -u = IE labials (occasionally)

In the following list a number of Indo-European stems are given which correspond to Chinese words of rising tone:

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
107 bhog	book, nhd. Buch; to book ahd. buoh, as. afries. ags. an. bōk	bo:g 簿	bou ^上 12 RI	pu: ^{4*}	pu: ⁴ bu ⁴
141 bhrg	castle, nhd. Burg gr. πύρος, lat. burgus "tower", got. baurgs "city, tower" engl. borough, burrow, local names -bury	po:g	pau ^上	pau ³	pao ³
188 deik	to point at/to, nhd. zeigen, gr. δείκνυμ lat. dicō, ahd. zeigōn, mhd. zeigen, ags. teon	tæig 指	tçjæi ^上 6 III	tʃz: ³	tsz: ³ zhi ³
188 doik	toe, nhd. Zehe lat. digitus "finger, toe", ahd. zēha, ags. tāhe, tā	tæig 趾	tçjæi ^上 8 III	tʃz: ³	tsz: ³ zhi ³
213 drk	glance (nhd. Blick) ai. dr̥s- "glance", gr. διέβλεπω "to see, to glance"	tog 看見	tou ^上 12 RI	tu: ³	tu: ³ du ³
227 dregh	idle, lazy, nhd. träge, ahd. trāgi, mhd. traegē, as. trāg, mnd. trāch, mnl. trāghe	dæg 怠	dai ^上 13 I	taj ^{4*}	tai ⁴ dai ⁴
257 dhrogh	way, trail norw. (dialect) drog "trail of animals, valley", russ. doroga, poln. droga "way", (hebr. d-r-g)	do:g 道	dau ^上 25 I	tau ^{4*}	tao ⁴ dao ⁴

* In Early Mandarin, Middle Chinese rising tone changed not into third, but into fourth tone, if the initial was voiced.

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
522 ^h kak	be capable of, can acceptable, ai.śaknōti "can", aisl.hagr "suitable", mhd.behagen"acceptable"	hag 可	khā: ² 27 I	kho: ³	khY: ³ ke ³
597 ^h keuk	bright, shining, ai.śōcati, śúcyati	kəug 果	kau ^上 25 I	kau ³	kao ³ gao ³
		həug 皓	hau ^上 25 I	xau ⁴	xao ⁴ hao ⁴
		keug 皎	kieu ^上 25IV	kjau ³	tçjaq ³ jiao ³
658 log	to gather gr. <i>λέγω</i> lat.legō	loag	luə ^上	luəi ³	lei ³
659 logh	camp, nhd. Lager ags.lagu, mnd.lach, engl.law, ahd.luog	累 ^上 壘	5RIII		lei ³
667 leig	body,corpse,(nhd.Leiche) got.leik, aisl.lik, ahd.lih, mhd.lih, engl."lych" in lych-gate	lhəig 體	thei ^上 13IV	thi: ³	thi: ³ ti ³
687 leugh	to tempt, nhd.locken, ahd.lochon, lucchen, lockon, aisl. lokka ags.loccian, mnl.locken, mhd.lücken	leug 誘	jiu ^上 37 IV	iu ³	jou ⁴ you ⁴
688 louk	lea, open field ahd.lōh,mnd.lōh, ags.leah, lit.laukas, nhd.lokal names: -loh	lo:g 野	ia ^上 29IV	ie ³	ie ³ ye ³
700 mork	horse ir.marc, ahd.marah, ags.mearh, aisl.marr	mog 馬	mea ^上 29 II	ma: ³	ma: ³ ma ³
	(mongl.morj, -rg > -rj as in Scandinavian languages)				
748 merg	sea/lake, nhd.Meer, ags.merece, aisl.merki, aksl.morje	mhəig 海	hai ^上 13 I	xai ³	xai ³ hai ³

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
799 polg	folk, nhd.Volk, ahd.ag.s.folc, aisl., dän., schwed.folk, poln.polk, (hebr.p-l-g)	bog 部	bou ^k 12 I	pu: ⁴	pu: ⁴ bu ⁴
845 preg	impudent, nhd.frech, got.(faihu-)friks, "greedy after money", aisl.frekr, ags.frecc, ahd.freh "greedy"	peəg 鄰	pjæi ^k 6 III	pi: ³	pi: ³ bi ³
898 sik ^w	to see, sight got.saihvan, aisl.sjā as.agd. sehan, nhd.sehen ahd.mhd.siht, nhd.Sicht	ziəg 視	zjæi ^k 6 III	ʃz: ⁴	szi: ⁴ shi ⁴
938 kreuk	backbone, nhd.Rückgrat, aisl.hryggr, ags.hrycg, ahd.(h)rukki, engl.ridge	liog 呂臂	ljo: ^k 11 III	leu ³	ly: ³ lü ³
965 slik	plum, sloe ahd.slēha, mhd.slehe, ags.slāh, nhd.Schlehe, poln.śliwka, russ.sliva	sliəg 李	ljæi ^k 8 III	li: ³	li: ³ li ³
1032 treg	dreg(s), gr.τεύξ, -γος,	tseəg	tseəi ^k	tsz: ³	tsz: ³
251 dhregh	mhd.mnd.drec, ags.дреах, schwed.träck, nhd.Dreck (=Bodensatz)	漳	8 II		zi ³

It is fascinating to see that the velar final stop lost over 1500 years ago in Chinese is in most cases still preserved and pronounced in German, English, etc. even today. Furthermore, we find that in Modern Chinese some European proper names such as Hamburg 漢堡 and Marx (=Markus) 馬克斯 are meaningfully well transcribed. The common word "plum" 李 among Chinese, German and Slavic languages is very instructive as positive evidence against the Western Theory prevailing among Indo-Europeanists who would have limited the original homeland of Indo-Europeans to a small zone of Middle Europe with beech and birch trees ("Buche und Birke", cf. Kilian pp.36).

The following list will show that the Indo-European stems which semantically and phonetically correspond to Chinese words with vanishing tone have in most cases a dental final and sometimes -b or -p. Several words like 契 (392/405) and 自 (884/891) refer to stems with a dental, as well as those with a labial final.

Pokorny page	stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
145	bhru-t	to boil, nhd.brodeln aisl.ag.s.brod, ahd.prot, bair.brod, engl.broth "Brühe"	pud 沸	pui ^去 10 RIII	fi: ⁴	fei ⁴ fei ⁴
155	bhld	to split, to burst gr. φλαστήν mhd.platzen, blatzen, nhd.platzen	pod	phoa ^去	phuo ⁴	phuo ⁴
169	bhorst	to burst, nhd.bersten (hebr. p-r-tz "to tear")	破	28 RI		po ⁴
171	bhrust	breast, nhd.Brust got.ahd.mhd.brust <u>an.brjost, ags.brēost</u>	pud	phui ^去	fi: ⁴	fei ⁴
837	plut	aksl.plušta, apr.plauti aruss.pljuča "lung"	肺	10 RIII		fei ⁴
207	drd	to defy, nhd.trotzen mhd.tratzen, tretzen mnd.trot, mhd.traz nhd.Trotz "defiance"	tod 鬥	təu ^去 37 I	təu ⁴	tou ⁴ dou ⁴
231	duisk	between, nhd.zwischen as.twisk, nl.tusschen engl.betwixt	tuəis 際	tsei ^去 15 IV	tsi: ⁴	či: ⁴ ji ⁴
392	gerbh	to carve, nhd.kerben gr. γέρψω <u>ahd. kerban, ags.ceorfan</u>	keb	khei ^去	khi: ⁴	čhi: ⁴
405	gred	to carve, nhd.kritzeln ahd.krizzōn, mhd.kritzen	ked 契	13 IV		qi ⁴
412	ghans	goose, nhd.Gans, ai.hamsá-h, gr. χῆν, χῆν lat.anser, ahd.gans, ags.gōs, aisl.gās	gans 雁	jean ^去 23 II	ean ⁴	jen ⁴ yan ⁴

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
431 ghland	glint, to glint, nhd.Glanz, glänzen ahd.mhd.glanz,glenzen	gland 爛	lan 去 23 I	lan ⁴ lan ⁴	lan ⁴ lan ⁴
	ditto (Satem-form, cf.p.4)	sland 燦	tshan 去 23 I	tshan ⁴ can ⁴	tshan ⁴
436 ghelt	price, to be worth aisl.gjald,ags.gield, ahd.mhd.gelt, nhd.Geld, gelten	kead 價	kea 去 29 II	kea ⁴ jia ⁴	čia ⁴ jia ⁴
445 ghorst	nasty, nhd.garstig mir.goirt, mhd.mnd.garst; lit.grasà "nasty person"	hoad	huai 去	xuaj ⁴	xuaj ⁴
516 kad	to fall, ai.sad-, lat.cadō				
627 kuat	to turn sour lat.cāseus "cheese"	壞	14RII		huai ⁴
453 ghost	stranger, outside lat.hostis got.gasts, ahd.as.gast ags.giest, engl.quest	hoad 外	hoaj 去 16RI	uaj ⁴ wai ⁴	uai ⁴
	The Chinese character has 月 = "moon" as phonetic and shows that a stranger must stay outside at night.				
488 g ^w hæid	air, weather lett.gäiss "air,weather" lit.gaisas "gleam of light in the sky"	kæid 氣	khji 去 9 III	khi: ⁴ qi ⁴	tchi: ⁴
526 kanth	ridge, shore mnd.kant[e], nhd.Kante, afrz.cant	gand 岸	jan 去 23 I	an ⁴	an ⁴ an ⁴
579 kerdh	herd, heritage, descent ai.śárdha-, apers.śárd got.hairda, ahd.herta ags.heord, nhd.Herde	hed 系	hei 去 13 IV	xi: ⁴	çi: ⁴ xi ⁴
666 lod	lazy, late, nhd.laß gr.λήστην, lat.lassus got.lats, as.lat, ags.loet, ahd.laz	låd . 賴	läj 去 15 I	laj ⁴	lai ⁴ lai ⁴
696 mogd	maid,(ach.jounger sister) got.magaps, ahd.magad, as.magath, nhd.Magd, Mädchen, ags.moeg	mod 妹	moi 去 14RI	muəi ⁴	mei ⁴ mei ⁴

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
819 purd	fart, to fart gr. πορδή, ahd.furz mhd.vurz, nhd.Furz, furzen, ags.feortan	pud	phui 去 續 10RIII	fi: ⁴ fei ⁴	fei ⁴
819 perd	fart, to fart, lat.pedo	pəd	phəi 去	phi: ⁴	phi: ⁴
829 pezd	gr. πέσω, πέπονται ahd.ferzan, aisl.freta ahd.firz, aisl.fretr	屁 6 IV			pi ⁴
820 porkt	fright, to be fearful of ahd.as.forhta, ags.fyrhtu, nhd.Furcht, got.faurhts, ahd.as. ags.forht, nhd.furchtsam	pogd 怕 29 II	phea 去	pha: ⁴	pha: ⁴
884 selbh	self, nhd.selbst, selb(er), got.silba, anord.sjálfur, ags.self, ahd.selb	zaib	dzaei 去	tsz: ⁴	tsz: ⁴
891 seit	since, nhd.seit ahd.síð, mhd.sít, ags.síð, aisl.síz	zəid 自 6 IV			zi ⁴
892 sidh	to reach one's aim ai.sádhati, sidhyati	tsiəd 至 6 III	tçjəi 去	tʃi: ⁴	tʂz: ⁴
886 sōd	seat, chair, nhd.Sitz ai.sádas-, gr. ἔδος aisl.saetr, lit.sóstas	zoad 座 28 RI	dzoa 去	tsuo ⁴	tsuo ⁴
908 sent	to send, to present got.sandjan, aisl.senda ahd.senten, ags.sendan nhd.senden, dän.send	seənd 進 17 IV	tsiən 去	tsin ⁴	tçin ⁴
926 slid	slit aisl.slit, ahd.sliz, mhd.sliz, nhd.Schlitz	dziəd 𠂊 4 IV	dziə 去	tsz: ⁴	tsz: ⁴
950 skoth	scathe, nhd.Schade(n) got.skapis, aisl.skadi ags.scada, ahd. scado	fiəd 害 15 I	haj 去	xaj ⁴	xaj ⁴
					hai ⁴

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
656 slab	sleep, nhd. Schlaf ahd.mhd.slāf, as.slāp ags.slāep, got.slēps	zuab	zjuə [‡]	ʃuej ⁴	ʂuej ⁴
1048 suap	ai.svápití, svápati lat.sōpiō, aisI.sofa ags.swefan	zuab 睡	5RIII		shui ⁴
1047 suendh	to dwindle, nhd.schwinden, Schwund ahd.swintan, mhd.swinden, ags.swindan	suənd 遙	son [‡] 18 RI	sun ⁴	çyn ⁴
1048 suent	quick aisl.svinnr, mhd.swinde, swint, geschwinde, nhd.geschwind	suənd 迅	suən [‡] 18 RIV	sin ⁴	çyn ⁴
1048 suent	strong, sound got.swinþs, aisI.svinnr, afries.sund, ahd.gisunt, as.gisund, ags.gesund, nhd.gesund	tsuənd 俊 駿	tsuən [‡] 18 RIV	tseun ⁴	tçyn ⁴
1049 suep	besom, broom, to sweep ai. svapū, aisI.sōfl isl.sópa, engl.sweep	zuəb 箒 塵	zuei [‡] 16 RIV	suəi ⁴	suei ⁴
1050 suerth	sword, (ach. axe of sovereign)* ahd.mhd.swért, as.afries.swérd, ags.sweord, nhd.Schwert	suəd 歲 *	suei [‡] 16 RIV	suəi ⁴	suei ⁴
1112 uald	reign, power aisl.vald, afries.wald, as.giwalt, ags.geweald, ahd.giwalt, nhd.Gewalt, aksl. vlast,	uəid 位	uəi [‡] 7 RIII	uəi ⁴	uei ⁴
1147 uensk	want, wish, nhd.Wunsch ahd.wunsc, mhd.mnd. wunsch, ags.wūsc	guəns 願	ɥuan [‡] 22RIII	uen ⁴	yan ⁴
					yüan ⁴

* Its archaic form 豐 in the oracle inscriptions (1300 B.c.) is a drawing of an axe for slaughtering victims (cf. Chang 1970, p.135).

A great number of words with vanishing tone, however, were derived from Old Chinese words with final -g, as evidenced by Indo-European stems in the following list. It is a well-known fact that in Early Mandarin the words of Mch. rising tone all changed into vanishing tone if their initials were voiced or a vowel (cf. p.9*). In many cases this tonal shift must have been on the way early before the sixth century, since words like 橋, 近 and 飯 are entered in the *Ch'ieh-yün* already with two readings in both rising and vanishing tone (cf. Chou Tsu-mo 1983, p. 67 and 71).

Pokorny page stem	meaning and words examples	Ach.	Mch.	Nch.	Ch.
74 aug	again, also; nhd. auch gr. αύ, got. auk, ahd. ouh, mhd. ouch, as. anl. ok, ags. eak, engl. eke	o:g 又	ju: 37III	iu ⁴	jou ⁴ you ⁴
220 dok	to con-duct, to lead lat. dūcō, (alat. doucō), lat. dux, ahd. herizogo, as. heritogo, nhd. Herzog "leader of army"	dō:g 導	dau ^去 25 I	tau ⁴	tao ^{4,3} dao ³
240 dhog ^w h	day, nhd. Tag got. dags, ais. dagr, ahd. tac, ags. doeg, Pl. dōgor, as. dag	dog 晝	tju: 37III	tʃiu ⁴	tsou ⁴ zhou ⁴
276 dhrogh	to deceive, deception ahd. triogan, gitrog as. bidriogan, gidrog engl. betray, trick	dzog 詐	tʃea ^去 29 II	tʃa: ⁴	tsa: ⁴ zha ⁴
657 leg	leak, to leak, nhd. leck anord. leka, ags. hlec, mnd. lak, mhd. lechen	ləg 漏	ləu ^去 37 I	ləu ⁴	lou ⁴ lou ⁴
669 leik ^w	to bestow, to grant got. leihvan, ahd. lihan, ags. lion, engl. loan	ləig 賚	lai ^去 13 I	laj ⁴	laj ⁴ lai ⁴
1076 trk ^o	th(o)rough, nhd. durch ahd. durch, ags. durh	dog 透	thəu ^去 37 I	thəu ⁴	thou ⁴ tou ⁴
1117 wog	awake, nhd. wachen lat. vegeo, got. wakan, ais. vaka, as. wakon, ahd. wahhon	gog 寤	you ^去 12RI	u: ⁴	u: ⁴ wu ⁴

As to the words of the Middle Chinese level tone the following Indo-European correspondences may be given:

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
39 an	preposition: on got.ana, as.an, ags.on, ahd.ana, an, nhd.an	oan 沿	uen ^平 21 RIV	ien ² yan ²	jen ² yan ²
121 bhol 804,4 pol	cup,bowl, nhd.Bolle aisl.bolli, ags.bolla, mhd.bolle; ai.pāla	poi 杯	poi ^平 14 RI	puəi ¹ bei ¹	pei ¹ bei ¹
136 bhera	bear, nhd. Bär ai.bhalla-h, ahd.bero, ags.bēra, mhd.bēr, mnd.bēre, bare	peia 熊	pjiə ^平 4 III	phi: ² pi ²	phi: ² pi ²
197 dlongh	long mpers.drang, npers. dirang, lat.longus, got.laggs, an.langr ahd.aggs.nhd.lang	dłāŋ 長	dʒāŋ ^平 31 III	tʃaŋ ² chang ²	tʂaŋ ² chang ²
214 drou	tree, wood av.dāuru, gr.δόρν, alb.dru, got.triu, ags.trēow, as.trio	tou 株	tʃou ^平 12 III	tʃeu ¹ zhu ¹	tsu: ¹ zhu ¹
263 dhūn	town (-ton in local names) air. dūn "castle" aisl.ag.s.tūn "town" nhd.Zaun	dun 屯	don ^平 18 RI	thun ² tun ²	thun ² tun ²
278 dor	door, (Ach. gate of city) got.daúr, ahd.tor, as.dor,dur, ags.dor gr.νέπος, lat.forum	to: 閨都	tou ^平 12 RI	tu: ¹	tu: ¹ du ¹
355 ger	to turn, gr.τελος "end"	kuei	kui ^平	kuəi ¹	kuei ¹
639 k ^w el	afries.kēra, as.kērian, kierian, ahd.kēran, mhd.keren, nhd.kehren	歸	10RIII		gui ¹
639 k ^w el	to turn, gr.Πέλω	hwei	hoi	xuəi ²	xuei ²
1140 wel	ai, valati, gr.ειλέω ahd. mhd. wellan, ags. wael "swirl"	回	14 RI		hui ²

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
355 gā	to sing, song ai.gāyati, gāti "sing" gāthā "song, verse"	ka:	kā: [†]	ko: ¹	kY: ¹
530 kar	to praise ai.carkati "to praise", kārū "singer"	歌	27 I		ge ¹
361 gleu	ball, clew ai.glāu-h, npers.gulūle ahd.kliuwa, kliwā, ags.clīewen, engl.clew	gleu 球	gju ^平 37 III	khiu ²	tçhjou ² qiu ²
367 glōu	sister of husband gr.γλώνεις, lat.glōs serb.sǎova, russ.zožovka	kou 姑	kou [†] 12 RI	ku: ¹	ku: ¹ gu ¹
413 ghau	to call, to cry ai.hávate, av.zavaiti, aksl.zouq, z̥vati, russ.zvatъ	hau	hau ^平	xau ²	xao ²
535 kau	to howl, nhd.heulen ai.kauti, gr.kw-kūw, mhd.hiulen, mnd.mengl. hülen	號	25 I		hao ²
413 ghau	to boast gr.κδυχόω, mhd.	hau 豪	hau [†] 25 I	xau ²	xao ² hao ²
447 ġheu	to pour gr.χέω	keu 澆	kieu [†] 25 IV	kjau ¹	tçjao ¹ jiao ¹
	deposit gr.χούς, older dialect xōu; xōw "to deposit"	ħeu 堯	ħjeu [†] 25 III	jau ²	jao ² yao ²
449 ghəu	watershed, nhd. Gau got.gawi, ahd.gawi, mhd.gou,gōu,geu, mnd.gō	kəu 皋	kau [†] 25 I	kau ¹	kao ¹ gao ¹
	watershed, district *"satem"-Form (cf.p.4)	tseu*	tçju [†] 37 III	tʃiu ¹	tsou ¹ zhou ¹
482 gwou	cow ai.gáuh, arm.kov, gr.βoύς, lat.bos, bovis, ahd.chuo, as.kō, ags.afries.cú, nhd.Kuh, (Taiwan gu:)	gou 牛	ju [†] 37 III	iu ²	njou ² niu ²

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
520 koil	hale, whole got.hails, ais1.heill, ahd.mhd.heil, ags.hāl, nhd.heil	hoi 恢	khoi 14 RI	khuəi ¹ hui ¹	xuei ¹
535 kau	to hew, nhd.hauen ahd.houwan, ags.hēawan, lit.kauti	hau 敲	kheau ^平 25 II	kheau ¹ qiao ¹	tçjao ¹
537 kol	hollow, nhd.hohl ahd.mhd.as.agc.hol	ho:	hjo:	xeu ¹ çy: ¹	çy: ¹
593 kou	lat.cavus from * couos	虚	11 III		xu ¹
544 kol	hill ags.hyll, lat. collis	hoi 丘	khju ^平 37 III	khiu ¹ qiu ¹	tçhjou ¹
544 kolm	rock, holm gr. <i>kolos</i> φύν, lat.column, culmen, as.mnd.engl.holm, nhd.Holm	hom 巖	neom ^平 40 II	eam ² yen ²	ien ²
555 kom	hame (part of a harness) mnl.häme, nnl.haam, westmd.Hamen, nhd.dialect Ham, Hamen	hom 銜	neom ^平 40 II	xeam ² xian ²	çien ²
556 kem	to hum mhd.nhd.mengl.hummen	hem 吟	ŋjəm ^平 38III	jəm ² yin ²	jin ²
564 kon	to strive, industrious lat.cōnor, -āri gr. ἐγκούέω	gon 勤	gjon ^平 19 III	khin ² qin ²	tçhin ²
565 knk	hunger, nhd.Hunger anord.hungr, ags.hungor, ahd.hungar; lit.kankà "pain"	hoāŋ 荒	hoāŋ ^平 32 RI	xuang ¹ huang ¹	xuaj ¹
582 kor	to mix, to blend av.sar-, gr. κεράω an.hrōra, ags.hrēran, ahd.(h)ruoren	hoa 和	hoa ^平 28 RI	xuo ² he ²	xy: ²
583 kor	hair, rough ahd.asaisl.hār, ags.haēr, nhd.Haar, an.skqr lett.sari	ho: 毫	hau ^平 25 I	hau ² hao ²	xao ²

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
644 <i>kʷa</i>	who? what? ai.káh, kā, av.kō, kā "who?", got.hva "what", apr.ka, mengl.aengl.hwā, engl.who	hua	hå: ^乎	xo: ²	xy: ²
644 <i>kʷei</i>	where? whither? why? gr.att.πῆ, ion.kῆ, <u>dor.πεῖ</u>	hei	hei ^乎	xi: ²	ci: ¹
	who? which? lat.quis "who?", qui "which?" ahd.(h)wer, as.huē, mhd.swer, ir.cia, nhd.wer	zuəi (Satem-form)	zjuəi ^乎	ʃuəi ²	suei ²
647 <i>kʷu</i>	where? whither? ai.kū, av.kū, lat.quō, ahd.(h)war, wā, mhd.wō, nhd.wō, ags.hwær	hu:	?ou ^乎	u: ¹	u: ¹
648 <i>kʷu</i>	how? why? ags.hū, afries.hū, mnd.wū, engl.how; lat.quō "why"	hu:	hou ^乎	xu: ²	xu: ²
716 mol	to grind, mill lat.molō, -ere, mola got.agd.malan, mhd.maln aisl.mala, nhd.mahlen	moa	moå ^乎	muo ²	muo ²
731 mang	fraud, vagabond lat.mangō, lit.manga; apr.manga	måŋ	meaŋ ^乎	muɔŋ ²	məŋ ² / maŋ ²
736 mōra	witch aisl.agd.mara, ags.mare, nhd.Mahr, skr.-ksl.mora	mo:	mbjou ^乎	wu: ²	u: ²
734 mor	to defame russ.maráju, lit.mùršinu	mo:	mbjou	wu: ²	wu ²
755 nāu	ship, (ach.also "rudder") ai.nāu-, arm.nav gr.νάυς, νέως, lat. navis, nau-, air.náu, aisl.nōr	ndau	nʒjeu ^乎	zjau ²	zao ²
772 ó	preposition: on, at, to, from ai.ā, av.aper.ā russ.o	o:	?jo ^乎	eu ¹	y: ²
		於	11 III		yu ²

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
788 pan-	flag, cloth, rag gr. πῆνος, lat. pannus, got. fana, ahd. as. fano, afries. fona, ags. fana, nhd. Fahne	pan	phuan ^平	fan ¹	fan ¹
			22RIII		fan ¹
801 pol	to fly	poi	pui ^平	fi: ¹	fei ¹
817 por	gr. πάλλω "to swing" russ.-ksl.perq, p̄rati, pariti "to fly"	飛	10RIII		fei ¹
803 pela	fell, skin gr. πέλας, lat. pellis, ahd. fel, ags. fell, mhd. vell, aisl. fjall	beia	bjiə ^平	phi: ²	phi: ²
		皮	4 III		pi ²
803 plo	membrane gr. ξπίλι-πλάστης lit. plévē, sloven. pléva aisl. fql, fqlva	plo	pjou ^平	fu: ¹	fu: ¹
		膚	12III		fu ¹
835 pleu	to float gr. πλέει (F)ω aksl. plujo	biəu	bju ^平	fu: ²	fu: ²
		浮	37III		fu ²
837 plou	boat, float ai. plava, russ. plov	biou	bjou ^平	fu:	fu: ²
		舟	12III		fu ²
844 prāi	to nurse, to cultivate ai. priyayatē aksl. préjQ	bai	boi ^平	phuəi ²	phei ²
		培	14 RI		pei ²
884 so	so, as, if lat. si from so got. swa, swē, ahd. as. mhd. sō, nl. zo, engl. norw. so	zo:	nʒjo ^平	zeu ²	zu: ²
		如	11III		ru ²
907 song ^w h	voice, nhd. Sang gr. ὄμψη (*song ^u ha) got. saggws, ahd. as. ags. dän. sang, anord. songr, engl. song	səŋ	cjan ^平	siəŋ ¹	ʂəŋ ¹
		聲	35III		sheng ¹

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
907 sen	old, (before, in front of), former ai.sana-, av.hana-, gr.ένος, lat.senex, air.sen "old"	seən 先	sien ^平 23 IV	sien ¹ tshien ² tchien ²	ɕien ¹ xian ¹
		zeən 前	dzien ^平 23 IV		qian ¹
913 sūn	son, (ach.grandson and heir) ai.sūnn, av.hunu-ś, nhd.Sohn, got.sunus, aisl.sunr, ahd.ag.sunn, mhd.su(o)n, sūn	suən 孫	son ^平 18 RI	sun ¹	sun ¹
915 siū [^]	to sew together, to repair, ai.sivyati, lat.suō.-ere, got.siujan, aisl.sýja, ahd.siuwan, ags.si(o)wian	siu 修	siu ^平 37 IV	siu ¹	sjou ¹ xiu ¹
927 skal	shall, nhd.sollen got.skulan, ahd.sculan, scolan, aengl.sceal	zga: 宜	ŋjia ^平 4 III	i: ²	i: ² yi ²
927 skol	guilt, nhd.Schuld ags.scyld, ahd.aisl. skuld, alit.skola	ko: 辜	kou ^平 12 RI	ku: ¹	ku: ¹ gu ¹
951 skō	shoe, nhd.Schuh got.skōhs, aisl.skōr mhd.schuoch, as.skōh, ags.scōh, dän.Schwed.sko	hoa 靴	huā ^平 28 RIII	xue ¹	ɕye: ¹ xue ¹
1003 sreu (330 erei)	to flow, river ai.srávati, gr.έέω ; έός, έύς, aksl.struja, lett.stráve, lat.rívus, afz.riu, span.rio	sleu 流	lju ^平 37 III	liu ²	ljou ² liu ²
1009 steu	to steer, nhd.steuern ahd.stiurren, aisl.stýra, as.stieran, ags.stýran	tsəu 操	tshau ^平 25 I	tshau ¹	tshao ¹ cao ¹
1036 strenk	string, nhd.Strang gr.στρεγγάλη, mir.sreng, ahd.mhd. stranc, ags.streng	zeəŋ 繩	ʐjaŋ ^平 42 III	ʃjaŋ ²	ʂəŋ ² sheng ²

Pokorny page	stem	meaning and word Examples	Ach.	Mch.	Nch.	Ch.
1037	stronk	strong and severe ahd.strengi,mhd.strenge, as.fries.strang, ags. strong, anord.strangr, nhd.streng	tsāŋ 壯	tʃeany 31 II	tʃuan ⁴	tʂuan ⁴
			tsāŋ 莊	tʃeany 31 II	tʃuan ¹	tʂuan ¹
1039	sour	salted, sour aisl.sūrr, ahd.mhd.mnd. ags.norw.dän.schwed. sur, lit.sūras, nhd.sauer	so: 菹	tseo 11 II	tseu ¹	tʂy: ¹ ju ¹
341	sun	to be, real, true ahd.mhd.sin, nhd.Sein, ai.san,got.sunja "truth"	sən 真	tʃjən 17 III	tʃin ¹	tʂən ¹ zhen ¹
1067	tongh	to bend a bow av.jang	tāŋ 張	tʃāŋ 31 III	tʃay ¹	tʂay ¹ zhang ¹
1067	tenk	court (of justice) nhd.Ding, also as local names, aisl.þing, ags.ding, as.thing, ahd. ding, dän.ting, aengl.thing "assembly"	teəŋ 廳	thieŋ 35 IV	thiaŋ ¹	thiaŋ ¹
			deəŋ 庭廷	dieŋ 35 IV	thiaŋ ²	ting ¹ ting ²
1072	treu	sorrow, dreary ahd.drōa, aisl.þrā ags.drea, drāwu	dzeu 愁	dʒeu 37 II	tʃhəu ²	tshou ² chou ²
1147	wan	contented with,to reside aisl.una, afries.wonia, as.wonōn, wunōn, ahd.wōnen, nhd.wohnen	uan 安	?ān 23 I	an ¹	an ¹ an ¹
1171	war/s	was, stem form of verb to be,dän.var "was", voere "is", got.wisan, ahd.wesan, nhd.war,währen	ua: 爲	uə 5 RIII	uəi ²	uei ² wei ²
— wanak (cf.Heubeck, p.26,65)		king gr.Linear B inscription wa-na-ka = wanaks, ϝανάκος, att.ϝανάκος "king"	uāŋ 王	uāŋ 32RIII	uaŋ ²	uaŋ ² wang ²

A group of words with Middle Chinese level tone was supposed originally to have had a velar final as suggested by the sound component 聲符 of the characters. The hitherto merely theoretical reconstruction of -g for these words by Karlgren (1940, 1957) and Tung T'ung-ho (1944) can now be confirmed by Indo-European stems given in the following list:

Pokorny page	stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
100	bok	pack, pouch, to pack an.poki, got.puggs, ags.pohha, mnd.packē, pak, engl.pack, nhd.Pack	poug	peau ^平	pau ¹	pao ¹
			包	25 II		baο ¹
113	bhōg	to bake, to roast, to fry, gr. φύγω, aisl.baka, fries.bāk, ags.bacan, bōc, ahd.bahhan, backan, mhd.nhd.backen	boug	beau ^平	phau ²	phao ²
			炮 包	25 II		pao ²
798	pok ^w	to cook, cook ai.pácati, av.paciti, gr. πέσσω, serb.pěći, lat.coquō (>ahd.kochōn, nhd.kochen)	boug	beau ^平	phau ²	phao ²
			庖	25 II		pao ²
523	kakha	flexed stick in the form of plow (nhd. Knie- stiel), bough ai.sākha, mir.gēc, nir.gēag, got.hōha, lit.šakā, slav.socha	ka:	kå: ^平	kho: ¹	khv: ¹
			柯	27 I		ke ¹
589	keug	to squat, nhd.hocken aisl.hūka, mhd.hüchen, serb.čučati	kio(g)	kjo ^平	keu ¹	tçy: ¹
			居 尾	11 III		ju ¹
589	kōk	high, nhd.hoch got.hauhs, aisл.hōr, hār, ags.hēah, ahd.as.hōh, schwed.hög, dān.høi, engl. high	ko:(g)	kau ^平	kau ¹	kao ¹
			高	25 I		gao ¹
589	keuk	hill ahd.houg, mhd.houc, anord.haugr, engl.(local names with -how)	hio(g)	khjo ^平	xeu ¹	çy: ¹
			虚 塹	11 III		xu ¹

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
537 kōg	hook, nhd. haken ahd.hako, haggo, mhd. hagge, hake, ags. hoc	koug	kəu ^平	kəu ¹	kou ¹ gou ¹
669 lik ^w	to remain gr. Αλιπτός, lat.reli- cuos "left over", lit.likti "to remain"	liu	lju ^平	liu ²	liou ² liu ²

It is obvious that the words cited above and some others had lost their velar final in any case before the general shift from Old Chinese to the Middle Chinese tone language during the fourth and fifth centuries. The exact dating of the loss, however, must be done for each word individually on the basis of its rhyming in the poetic literature of different times. Words like 柯 and 留 rhyme in the *Shih-ching* exclusively with those of Middle Chinese level tone. Hence they were without doubt open syllables already at the beginning of the first millennium B.C. Words like 居, 高 and 壠, rhyming in the *Shih-ching* and *Ch'u-tz'u* 楚辭 with the words of later rising as well as level tone, were just about to lose their velar final in the first millennium B.C., whereas 包, 炮, 庖, and 鈎, lost it surely as late as during the shift to Middle Chinese.

Adhering to the thesis of the closed syllabic system of Old Chinese, Pulleyblank (1962, pp. 211) proposed to restore generally a voiced laryngal [h] as the lost final consonant of the level tone which should also account for the relationship of some level tone words to velar final. But this is unnecessary in my opinion, since the most Indo-European stems and Germanic words corresponding to Chinese level tone words have either open syllable, or end in a resonant (-r, -l, -m, -n, -ng), as already shown in the list above (pp. 17-23).

It should be noted that the phonetic reconstructions in this paper differ from those of Karlgren and other scholars mainly in regard to vocalism (cf. Rhyme Tables in Appendix). As to Middle Chinese, my reconstructions are based upon the *Yün-ching 韵鏡*, in which rhymes and headwords of homophone groups 紐 are taken from the rhyme dictionary *Kuang-yün 廣韵* (1007) and arranged systematically in 43 tables. As the *Kuang-yün* is merely an enlarged version of the *ch'ieh-yün 切韵* (compiled in 601), the *Yün-ching* may be considered to be a phonetic framework which reflects the standard pronunciation of Early Middle Chinese (600), regardless of the uncertain date and unknown origin of this book (its oldest available copy is an edition of 1161).

Each rhyme table in the *Yün-ching* is divided into the four tone categories and, within each tone, the headwords of homophone groups are entered in four separate rows, obviously to show some differentiations within the same rhyme group. The Chinese term for these rows is 等, called "Division" by Karlgren and "Grade" by Pulleyblank (cf. 1986, p.73). In addition, each table is characterized as 開 "unrounded", 合 "rounded" or 開合 "a combination of rounded and unrounded".

Karlgren (1954, p.250) inferred the Grades correctly as a gradual rising of vowels and restored medium j- for Grade III, i- for Grade IV, ju- for Grade R III and iu- for Grade R IV. But he found no medials for Grade II, Grade R I and Grade R II. In order to adhere to the full pattern of distinctions in the system of four Grades, he resorted to the variation of the quality of principal vowels Grade by Grade and posited thus altogether 14 vowels for Middle Chinese. It is hardly credible that such slight vocalic nuances were practicable in daily communication, the less so since languages with more than nine basic vowels are quite uncommon in the world (cf. Crothers, p.119). No wonder that his vocal reconstructions scarcely fit the actual rhyme pattern of poetry in Middle and Old Chinese. In a monograph of 1982, I attempted to analyse the rhyming in the texts of philosopher Chuang-tzu 莊子 (about 300 B.C.) by using the dictionary of Chou Fa-kao (1974), in which the reconstructions of Karlgren, Tung T'ung-ho and Chou are collocated. The disappointing result thereby has given me reason for personal engagement in the field of historical phonology and phonetics.

Thus Karlgren's scheme of Middle Chinese rhymes, though followed by almost all scholars, needs to be substantially improved. I propose the following reconstructions:

- a. Grade II 開口二等 is composed of rhyme simplex (=Grade I) and medial e-, which gives rise to palatalization of initial dentals and sibilants, but not velars.
Medial e- was, as evidenced by transcriptions in hP'ags-pa script, still extant in Early Mandarin (cf. Appendix, p.50) and was used in distinction from i-, especially after velar initials;
 ea 牙(<29 II) ≠ je 耶 (>29 III, IV)
 eaj 崖(<13, 15III) ≠ i: 倪 (<13 III, IV; 15 IV)
 eau 敦(<25 II) ≠ jau 死 (<25 III, IV)
 ean 顏(<21, 23 II) ≠ ien 言 (<21, 23 III, IV)
 eam 嚴(40 II) ≠ iem 嚴 (<40 III, IV)
- b. After labials, medial e- was dropped in Early Mandarin, so that Grade II merged with Grade I. After dentals and sibilants Grade II merged with Grade I or Grade III. In Sino-Japanese Go'on readings Middle Chinese /ea/ is contracted to /e:/, whereas in colloquial Taiwanese dialects of Minnan origin, /ea/ became either /e:/ or /a:/.
- c. Grade III has a medial j-, as proposed by Karlgren, which gives rise to palatalization of initial dentals and sibilants, but not velars. The vowel or vowel clusters of Grade III remain mostly identical with those of Grade I and II. But in groups 13, 25, and 23, the main vowel /a/ is raised to /e/.
- d. Grade R(ounded) I 合口一等 is composed of medial o- plus rhyme simplex (= Grade I). Exceptions are Grade 14R I and 18R I where /o/ became the main vowel, as well as Grade 12R I and 2R I where the simplex /ou/ is placed because of o-. The reconstruction of the medial o- for Grade R I is, though hitherto never proposed by scholars, reasonable and coherent, since this grade must have

had a rounded medial vowel which is lower than u- of Grades R II, R III, and R IV. In Early Mandarin, or probably already at Late T'ang, the medial o- was raised and merged with u-. But in Sino-Vietnamese readings o- is amply preserved as Grade R I (and occasionally also as Grade II, but this is not in accordance with the rule). For example:

- 28 R I /oa/: 科 khoa (but 戈 qua), 詛 ngoa, 和 hòa, 荘 đóa
 14 R I /oi/: 灰 khôi, 恢 khôi, 回 hôi, 雷 lôi, 杯 bôi
 16 R I /oaj/: 外 ngoai, 最 tōi, 會 hôi
 18 R I /on/: 魂 hôn, 村 thôn
 /ot/: 没 mót, 卒 tốt, 骨 cốt
 24 R I /oan/: 檻 hoàn, 酸 toan (but 官 quan)
 /oat/: 奪 đoạt, 活 hoạt (but 末 mạt)
 32 R I /oåŋ/: 黃 höang, 荒 hoang (but 光 quang, 汪 uông)
 /oåk/: 廓 khoách (but 鄭 quách)
 43 R I /oæŋ/: 弘 hoăng (but 肱 quăng)
 /oæk/: 或 hoăc (but 國 quốc)

The Middle Chinese pronunciations on/ot of Grade 18R I are preserved also in Sino-Japanese readings.

- e. Grade R II is composed of medial u- plus rhyme simplex. After sibilants and dentals it has medial cluster eu- which gives rise to palatalization of initials.
- f. Grade R III also has medial u-, and only after sibilants and dentals the medial cluster ju- as proposed by Karlgren. In my opinion, the medial u- was a sufficient cause to give rise to dentilabialization of bilabials during the Late T'ang. The main vowels of Grade R III are identical with those of Grade III.
- g. Grade R IV has medial u-, but not iu- as proposed by Karlgren. It is composed of medial u- plus Grade IV. In groups 5R, 26R, 36R, 18R, 22R, and 24R, medial u- replaces medial i- of Grade IV. The non-palatalization of dentals and sibilants in Grade R IV can be accounted for with medial u-.

According to my reconstruction Early Middle Chinese has the following seven vowels:

i	u	
e	ə	o
a	å	

All vowels except å are not autonomous but must occur in combination with other vowels or finals, as is reflected in the absence of the simplex in the rhyme groups 29, 9, and 11, whereas simple u must be supported by ə in Grade 37 I.

Short i, used as medial or final, is written j in this paper. /å/ = [ɔ], is a hybrid phoneme between /a/ and /o/, as extant in Swedish, Norwegian, Danish etc.. The reconstruction of /å/ is necessary for rhyme group 27 (= 29), 3 and 31 (= 1, 2, 33, 35). As shown in the Appendix (p. 49), Middle Chinese has immense numbers of di- and triphthongs with medial e-, j-, i- and with finals -i, -j, -u which have emerged partially as compensation for lost final stops. Similar developments of vowel clusters are reflected in written monuments of Old Saxon, Old English, Danish, Old French etc. several centuries later, but may have occurred synchronically to Chinese during the period of great migration of northern tribes.

Old Chinese has the same seven basic vowels. /å/ is also indispensable for the rhyme group åŋ (= mch. 31) which in Old Chinese poetry mostly rhymes inside the group, but occasionally contacts the group aŋ (= mch. 33, 35) as well as the group oŋ (= mch. 1, 2). The corresponding vowel in Indo-European also vacillates, and is written /o/ in some dialects, but /a/ in others (cf. the word 長 "long", p. 17, Nr. 197). /ə/ is the neutral vowel which can interchange with all other vowels. The high vowels i, e, u occur frequently in company with ə. The autonomous /ə/ in Old Chinese became mostly /əi/, /iə/, /ei/ etc. in Middle Chinese, and later /i/, /ɪ/ in Early Mandarin. This affinity of /ə/ and /i/ has its parallel in Old Indic where the Proto-Indo-European /ə/ changed to /i/ (cf. Lehmann 1955, p. 97).

On the basis of the word examples given in this paper, we may posit the following vocalic correspondences between Indo-European and Old Chinese:

IE a = ə, a, á, oa, o	IE ai = ai, a:	IE au = au, əu, á, o:
IE e = e, ə, eə	IE ei = əi, ei	IE eu = eu, əu, io
IE o = o, oə, oa, á, ou	IE oi = oi, əi, ou	IE ou = ou, o:
IE i = iə, i		IE iu = iu, io
IE u = u, uə, ə, o, uo	IE ui = uə	
IE ə = a, ə	IE əi = əi	IE əu = əu, au

The initials of Early Middle Chinese are well documented by the 30 characters¹⁾ chosen by the late T'ang monk Shou-wen 守溫 (cf. Chou Tsu-mo p. 796, 957). They are:

labials:	不	p	芳	ph	並	b	明	m	4
dentals:	端	t	透	th	定	d	泥	n	來 l
palatals:	知	t̪	徹	t̪h	澄	ɖ	日	ɳɖ	4
velars:	見	k	溪	kh	群	g	疑	ŋ	4
postdentals:	精	ts	清	tsh	從	dz	心	s	邪 z
palatals:	照	t̪ç	穿	t̪çh			審	ç	禪 ʐ
laryngeals:	影	?	曉	h	匣	h	喻	ɸ	4 / total 30

It is noteworthy that the existence of phonemic laryngeals, which has been rejected for Proto-Indo-European for more than fifty years (cf. Lehmann 1955, p. 22, note 1; Szemerényi p. 116), is well evidenced for Middle Chinese with four initials. Beside the consonants given above, Karlgren (1940, p. 16), Li-Fang-kui (1982, p. 7) and Pulleyblank (1984, p. 191, 232) would restore series of supradental initials for Grade II and thus expand the number of Middle Chinese initials to 36, 37, and 42 respectively. But this is wrong and unnecessary, since the distinctive feature of Grade II is accounted for with medial e- (cf. p. 27 above). In my opinion, the retroflex initials have emerged not in Middle Chinese, nor in Early Mandarin, but as late as in Early Ch'ing, in consideration of the fact that all dialects except Modern Mandarin are at present still lacking retroflexes. In this respect the Szechwan dialect is most instructive, as it has typical Early Mandarin finals, but no retroflex initials. All initials of Middle Chinese are monophonematic. The absence of consonant clusters is since then typical of Chinese.

1) In Late T'ang and Early Sung (9th century to 1125) the inventory of initials was enlarged to 36 with labiodentals f 非, fh 敷, v 奉, labiofricative β 微, and palatals n 娘, ɳɖ 床, as tabulated in the foreword of Yün-ching.

For Old Chinese we may restore the following simple initial consonants:

p	(ph)	b	m	mh
t	(th)	d	n	lh
k	(kh)	g	(ŋ)	h
ts	(tsh)	dz		s z

Probably voiceless aspirates ph, th, kh, tsh were still absent in Old Chinese to be developed later from p, lh, h, ts. The final -ŋ was an allophone of n, followed by a velar consonant. Initial ŋ- may have emerged only in Middle Chinese from g or h in an environment of i, å, or nasal finals. Li Fang-kui (p. 21) suggests the restoration of initials /hm/, /hl/, /hng/, /hngw/ for Old Chinese as voiceless counterparts of /m/, /l/, /ng/, /ngw/. But in my opinion there were present only /mh/ and /lh/, which are evidenced by Indo-European stems corresponding to the Chinese words *hai*³ 海 and *ti*³ 體 (cf. p. 10, Nr. 748 and 667). Characteristic of Old Chinese consonantism is the absence of r- initial which changes mostly to l-, z-, d-, h-, whereas the laryngeals h- and h̄- suggest an inimate relationship to Germanic initial h-.

The existence of initial consonant clusters in Old Chinese is suggested by the fact that series of words whose sound is represented by the same graphic component occasionally have initials which differ from each other in points of articulation. In many cases, Indo-European words can throw light upon this enigma, since they preserved consonant clusters much better than Chinese. In this paper I confine myself to two examples:

The character for the word *liu*² 流 "river, to flow" has the sound grapheme 虍, as in the word *shu*¹ 疏 "comb, to comb". The purely theoretical reconstruction of consonant cluster /sl-/ for this grapheme can now be evidenced by the corresponding Indo-European stem *sreu* = "river, to flow" (cf. above p. 22, Pokorny 1003).

Secondly, the Indo-European stem *smīk*, Proto-German *smāh* (Pokorny p. 966, Kluge p. 66a "schmach") with the meaning "small, little" can account for the alternative initials of s- and m- for a series of Chinese words with the graphemes 小 and 少 which also have the same basic meaning "small, little":

s- : 小 *xiao*³, 少 *shao*^{3,4}
 m- : 秒 *miao*³, 妙 *miao*⁴, 眇 *miao*³, 柃 *miao*³

Furthermore, the bisyllabic Chinese word 小 miao³-xiao³ "tiny" can now be interpreted as a reduplication of the stem smāh, whereby the consonant cluster sm- is divided into simple initials m- and s- to be attached to each syllable. In this way many Chinese bisyllabic words can be etymologically explained by Indo-European stems with initial consonant clusters.

Our knowledge of regular phonetic correspondences between Old Chinese and Indo-European opens immense possibilities for lexical comparison. In the last four years I have traced out about 1500 cognate words which would constitute roughly two thirds of the basic vocabulary in Old Chinese. The common words are to be found in all spheres of life including kinship, animals, plants, hydrography, landscape, parts of the body, actions, emotional expressions, politics and religion, and even function words such as pronouns and prepositions, as partly shown in the lists of this paper.

Among Indo-European dialects, Germanic languages seems to have been mostly akin to Old Chinese in consideration of the following points:

- a. Among Indo-European dialects, Germanic preserved the largest number of cognate words also to be found in Chinese.
- b. Germanic and Chinese belong to the group of so-called *centum* languages, in which all Proto-Indo-European velars remain velars (with only a few exceptional variants in Chinese, cf. p. 18, 449; p. 18, 449; p. 20, 644).
- c. The initial /h/ in Germanic corresponds mostly to /h/ and /h/ in Old Chinese. Though Germanic /h/ has hitherto^{been} interpreted as a shift from Indo-European /k/, it must have existed already in Proto-Indo-European, since interrogatives both in Germanic and Chinese have laryngeal initials (cf. p. 6, 645; p. 20, 644, 647, 648).
- d. In comparison with Sanskrit, Greek and Latin, Chinese and northern Germanic languages are poor in grammatical categories such as case, gender, number, tense, mood etc. I would surmise generally that the daily speech of Germanic Peoples might have had a much simpler grammar than that suggested by the earliest Germanic literature which consists without exceptions of biblical translations from Greek or Latin. German proverbs and idioms are formulated without indications of case, gender and number, like

"mit Kind und Kegel", "schwarz auf weiß", "alt und jung". Moreover, when the Franks settled in France as conquerors, the complex declination system of Vulgar Latin collapsed and Old French emerged without case and number. This historical fact may suggest that the Germans originally spoke a language without declinations.

With Old Chinese as evidence, we may conclude that the *Germanic* group of Indo-European was conservative in its phonetical and grammatical developments because of its peripheral northern location, far from the early high civilizations in the Near East where Hamitic and Semitic were spoken. On the other hand, the complicated conjugation system in Greek, Latin and Southern Germanic might have emerged later under the influence of a rich modal and temporal system of Altaic tribes, with whom Indo-Europeans had coexisted for thousands of years in Central Asia and in whose company they emigrated into Europe.

Chinese is grammatically quite different from its neighbouring languages of agglutinative type, such as Mongolian, Manchu, Turkish, Korean and Japanese, and has almost no basic words in common with them, whereas numerous borrowings from Chinese in these languages are well identifiable. As to the relationship of Chinese to Tibetan, this is a dead-end branch of comparative linguistics where some "Sino-Tibetanists" have devoted their whole life in vain attempts to prove the prevailing hypothesis of a Sino-Tibetan language family. Recently, Coblin (1986) published a list in which he has collocated 489 Sino-Tibetan roots mainly suggested by Paul K. Benedict, Nicholas C. Bodman, Axel Schüssler and others (see Introduction p. 8). Unfortunately, "Sino-Tibetanists" allow themselves too great freedom when doing phonetic and semantic comparison. Moreover, a large number of words are claimed to be common Sino-Tibetan, though they are not to be found in Tibetan vocabulary at all (for instance the word cow, cf. Coblin p. 52, cattle/ox). Thus only about a third of the words listed by Coblin may be accepted as common Sino-Tibetan. It is unlikely that there had ever existed a "Sino-Tibetan" as a common mother language of Chinese and Tibetan, since:

- a. Tibetan is syntactically an agglutinative language like Mongolian and Japanese. It uses case suffixes and has neither prepositions nor conjunctions at the head of sentences as is the case in Chinese and in Indo-European.

- b. Though Tibetan word stems are mostly monosyllabic as in Chinese and Indo-European, they are rich in initial consonant clusters like Polish and poor in vowel clusters as opposite to those of Middle Chinese and Germanic. Among the words common for Chinese and Tibetan, there are many Indo-European stems. In comparison with Old Chinese, however, the Tibetan words are lacking final stops and therefore rather akin to those of Tocharian. As Tibet is located in the neighbourhood of Southern Sinkiang, it is rather possible that these words originated from there.
- c. It is not deniable that there is a small stock of Sino-Tibetan common vocabulary which is absent in Indo-European. But we must investigate whether such Tibetan words are borrowings from Burmese or from Old Chinese.
- d. In the T'ang period, when China and Tibet established the first diplomatic relations, nobody ever noticed any common vocabulary or grammar of the two languages.

In the final analysis, I would surmise that Tibetan may have emerged as a mixed language with an aboriginal and Proto-Indo-European substratum and an Altaic superstratum.

The adjacent languages in the south, such as Thai, Vietnamese, Miao and so on, have similar phonetical features and an equally simple grammar like Chinese. However, direct oral communication with these tribes seems to never have been possible from the very beginning of Chinese history, certainly because of great differences in daily vocabulary as existing at the present time. Ms. Manomaivibool (1975), by well-founded phonetic comparisons, identified 621 Thai words as related to Chinese. But this Sino-Thai common vocabulary, too, bristles with Indo-European stems. In my opinion these southern tribes were once the aborigines of Northern China, and immigrated to the south because they were not willing to become subjects of the Chinese Empire established by Indo-European conquerors. Nevertheless, they could not escape since then the influence of Chinese languages and civilization. Thus, in many cases it will be difficult to ascertain whether a Thai word is of Sino-Thai common origin, or a late borrowing from Chinese.

Considering all these linguistic facts, the thesis presents itself that Old Chinese emerged as a mixed language, though spoken with Proto-Chinese native tongue, using mainly the Proto-Indo-European idiom which seems to have stretched from Mongolia to Europe during the third millennium B.C. in the northern part of the temperate zone.

Historically the emergence of Old Chinese should be connected with the founding of the Chinese Empire by Huang-ti 黃帝, the Yellow Emperor, with whom the Chinese still identify themselves today. According to Chinese historiography, he was the founder of the first state of China as well as its high civilization. The *Shih-chi* (*Records of the Grand Historian*) informs us in its first chapter that towards the end of the rule of the clan of Shen-nung 神農 (Divine Farmer), Northern China was ravaged by war. Huang-ti defeated Yen-ti 炎帝 (God of Flame Clearing) and Ch'ih-yu 蛮尤 (Great Fool), thus becoming emperor of China. It is noteworthy that the decisive battle took place in Chuo-lu 驁鹿 (Deer Ford), on the thoroughfare between the present Peking and Inner Mongolia. Huang-ti's name was Hsüan-yüan 軒轅 which means "wagon shaft". After his enthronement, he ordered roads to be built, and was perpetually on the move with treks of carriages. At night he slept in a barricade of wagons. He had no interest in walled towns, so only one city was built at the bow of Chuo-lu. All of this indicates his origin from a stock-breeding tribe in Inner Mongolia. With introduction of horse- or oxen-pulled wagons, transport and traffic in Northern China was revolutionized. Only on this new technical basis did the founding of a state with central government become feasible and functional. This emperor must have had an appearance of northern white people, as the epithet "Huang-ti" can etymologically be interpreted as "blond heavenly god" (cf. Word list p. 37).

Huang-ti is mentioned also as the founder of Chinese language in the *Li-chi* 禮記 (*Book of Rites*). In the Chapter 23 *chi-fa* 祭法 (*Rules of Sacrifices*), which gives the reasons for worship of ancient sovereigns and heroes, we read: "Huang-ti gave hundreds of things their right names, in order to illumine the people about the common goods. And Chuan-hsü was able to carry on his work." 黃帝正名百物,以明民共財.顓頊能修之.

This points out the merit of Huang-ti for the standardization of Chinese language, which took a long time and was continued by his grandson and successor Chuan-hsü. The aboriginal people had thus to learn new foreign words from the emperors. Probably thereby the Proto-Indo-European vocabulary became dominant in Old Chinese.

The rule of Huang-ti is traditionally dated back to the 27th century B.C. Subtracting 200 or 300 years as hyperbolic predating, we may assume that the founding of the first Chinese empire took place at the latest at about 2400 B.C. This would coincide with the archaeological data of the beginning classical Lung-shan culture (2400-2000 B.C.) in the eastern valleys of Northern China, which is characterized by a great leap in stock-breeding. Not only pigs, poultry and dogs as in the preceding neolithic cultures, but also sheep, cattle and horses were domesticated. Above all, cattle and horses were important for their usage in transport service and warfare, and for improved protein supply for the warriors. The mixture of agriculture and stock-breeding thus laid a sound economic basis, on which a great empire could function and be maintained. The concentrated use of new economic resources through the state impelled in turn the further development of Chinese culture to become one of the leading civilizations in the ancient world.

My thesis takes for granted that the culture in the northern steppe was once superior to that of Northern China. It is conceivable that at the beginning of the third millennium B.C., Inner Mongolia ($40-42^{\circ}\text{N}$) was warmer and damper than in later times

and thus more fertile than Northern China ($34-40^{\circ}\text{N}$) because of more sunshine hours in summer. The favourable climatic conditions there must have resulted in a richer economy and higher civilization than in the contemporaneous Northern China. This differential may be attested by recent archaeological findings. For instance, the lower stratum culture of Hsia-chia-tien 夏家店下層文化 in Ch'ih-feng 赤峰, dated 2410 ± 140 B.C., already had a high chalcolithic culture with domesticated sheep and cattle, as well as small-size bronze castings. Besides, its pottery had forms and decor, which seem to be the prototypes of Shang pottery and bronze (cf. Liu Kuan-min pp. 339 and colour plate IX).

Word List: Huang-ti and Names of Animals

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
564 konək germ. huna(n)ga (Kluge 315 Honig)	golden (> honey, because of color) ai.kāñcana-, gr. <i>κυνκός</i> , aisl.hunang, ags.hünig, ahd.honag, hoang, engl. honey, nhd.Honig	hoāŋ 黃	hoāŋ [†] 32 R I	xuaŋ ²	xuan ² huang ²
185 de-uo [^]	god of Heaven ai.dēvā-h "god", dēvi "goddess", lat.deus, divus, ags.Tig "Mars", ahd.Zio	deāg 帝	tei ^去 13 IV	ti: ⁴	ti: ⁴ di ⁴
700 mork	horse ir.marc, cymr.etc.march ahd.marah, ags.mearh, aisl.marr, nhd.Mähre	mog 馬	mea ^上 29 II	ma: ³	ma: ³ ma ³
448 gheul	horse (ch.horse of 2 years) mhd.gul, nhd.Gaul ndl.guil	keu 駒	kjou [†] 12 III	keu ¹	tçy: ¹ ju ¹
- per(e)d (cf.Kluge p.543, Wadler p.363)	(Ch.horse for riding, perhaps a mule) nhd.Pferd "horse", lat.verēdus, ahd.pfärít, mhd.phärt, ags.perid hebr.pered "mule"	bæit 馬必	bæit 17 IV	pi: ²	pi: ⁴ bi ⁴
482 gʷou	cow, nhd.Kuh, cf.p.18 ai.gáuh, gr.att.βoūs, lat.bōs, ahd.chuo,	gou 牛	ŋju [†] 37 III	iu ²	njou ² niu ²
632 kuk	dog mpers.sak, npers.sag, toch. AB ku	kug 狗	kæu ^上 37 I	kæu ³	kou ³ gou ³
632 kun-k	dog, nhd.Hund, hound gr.κύων, κυνός, lat.canis, toch.A.Obl.kon	huən(g) 犬	khuen ^上 24 RIV	khuen ³	tçyan ³ quan ³
841 pork	pig, (pork) lat.porcus, ahd.far(a)h, ags.fearh	pog 豕	pea [†] 29 II	pa: ¹	pa: ¹ ba ¹
1038 su(o)	sow, nhd.Sau av.hū, gr.Ὄς, ώος, lat.sus, suis, ahd.ag.sū, aisl.syr, toch.B suwo	to(g)	tjo [†]	tʃeu ¹	tſu: ¹
1032 trog	lat.troia, air.torc, acorn.torch, bret.tourch				zhu ¹

Pokorny page stem	meaning and word examples	Ach.	Mch.	Nch.	Ch.
1038 suwin	swine, nhd. Schwein got.swein, ags. ahd. swīn	duən 豚	don ^平 18 RI	thun ²	thun ² tun ²
1038 suk	swine, sow , nhd. Sau ags.sugu, as.suga, nhd.schwäbisch: suge	səg 豕	çjia [±] 4III	ʃz: ³	zi: ³ shi ³
859 roik	roe ahd.rēh, ags.rāha,rāege nhd.Reh, Ricke	louk 鹿	luk 1 I	lu: ⁴	lu: ⁴ lu ⁴
409 ghaid	goat, nhd.Geiß got.gaits, ahd.geiz, ags.gāt, as.gēt	ka:t 羆	kjat 21 III	kie ³	tçie ² jie ²
517 kog	goat abg.koza "she-goat"; ags.hēcen, mnd.hōken, mndl.hoekijn "kid"	ko g 羖	kou ^上 12 RI	ku: ³	ku: ³ gu ³
384 grā	crow, nhd.Krähe ahd.krāja, krāwa,Krähe and.krā; ags.crāwa, crāwe, crā	ho: 鴟	?ea ^平 29 II	ea ¹	ja ¹ ya ¹
383 grənug	crane, nhd.Kranig ahd.kranuh, ags.cranoc, mnd.kranek	hauk 鶴	håk 31 I	xau ² / xo: ²	xau ² he ⁴
412 ghans	goose, cf.p.12	gans 雁	ŋean	ean ⁴	jen ⁴
991 sparg	sparrow, nhd.sperling ahd.sperk, sperch,sprich gr.personal name = $\Sigma\pi\alpha\rho\gamma\lambda\oslash$ "sperling"	såk 雀	tsiak 31 IV	tshjau ³	tçhjao ³ qiao ³ / que ⁴
416 ghdu ghiu	fish, to fish gr. $\hat{\chi}\rho\hat{\nu}\zeta$, lit.zuvis, lett. zuvs zivs	glo/gio 魚	ŋjo ^平 11 III	eu ²	y: ² yü ²
531 kark	crayfish, crab ai.karka-h, lat.cancer, norw.roeke,aksl.rak _b	hog 蟹	heåj ^上 15 II	xeaj ⁴	çje ⁴ xie ⁴
752 mun	gnat, mosquito, arm.mun	muon 蚊	muon ^平 20 RIII	wun ²	wun ² wen ²
608 sknid	louse (nhd.Laus) gr.Kovíč, mir. sned ags.hnitu, ahd.(h)niz, nhd.Nisse	sit 虱	seæt 17 II	ʃz: ³	sz: ¹ shi ¹
136 bhera	bear, nhd. Bär, cf.p.17	peia 熊	pjia ^平	phi: ²	phi: ²

The Shang Dynasty too bears strong characteristic features of stock-breeding nobility (cf. Chang 1970, pp.79 and p.266 footnote). Since the language reflected in its oracular inscriptions did not differ from that of classical literature of the first millennium B.C., we may state that the dominance of Indo-European vocabulary in Chinese was already consolidated in the second half of the second millennium B.C.

Probably since the middle of the third millennium B.C., unfavorable climatic changes took place in Northern Eurasia and caused perpetual waves of southward emigration of stock-farmers. Parallel to the emergence of the Chinese Empire and the Chinese language in East Asia, there were also invasions of Indo-European warriors to the Aegean and Adriatic area, to Syro-Palestina and even to Egypt around 2500-2200 B.C. (cf. Gimbutas 1970, pp. 191).

I am writing an extensive work in German on the history of Chinese language and its relationship to Proto-Indo-European, and am also compiling a Sino-Indo-European Etymological Dictionary with more than 1500 entries. But this will take two or three more years for completion. So I accepted with great pleasure the kind invitation of Professor Victor H. Mair to publish this paper in English as a preliminary report for Sinological and linguistic colleagues. I should like to thank him for all of his editorial efforts and also for stylistic revisions, which are indispensable, since I am not a native speaker of English. Needless to say, I alone am responsible for the errors that may yet remain.

A b b r e v i a t i o n s (1)

These are in common use among German Indo-Europeanists and taken from the *Indogermanisches Etymologisches Wörterbuch* by Pokorny and the *Etymologisches Wörterbuch der Deutschen Sprache* by Kluge. Abbreviations for Chinese languages are of my own creation.

<u>Abbr.</u>	<u>German</u>	<u>English</u>
a-	alt-	old
abg.	altdbulgarisch	Old Bulgarian (9-12th century)
ach.	altchinesisch	Old Chinese (1300 B.C.-316)
ae(ngl.).	altenglisch	Old English (700-1100)
afries.	altfriesisch	Old Friesian (till 1500)
afrz.	altfranzösisch	Old French (9-13th c.)
ags.	anglosächsisch	Anglo-Saxon (= Old English)
ahd.	althochdeutsch	Old High German (740-1100)
ai.	altindisch	Old Indic (Vedic and Sanskrit)
air.	altirisch	Old Irish
aisl.	altisländisch	Old Icelandic (9-16th c.)
aksl.	altkirchen Slavisch	Old Church Slavic (9-12th c.)
an./ anord.	altnordisch	Old Nordian (700-1530)
apr.	altpreußisch	Old Prussian (till 16th c.)
aruss.	altrussisch	Old Russian (11th c.)
as.	altsächsisch	Old Saxon (9-12th c.)
av.	avestisch	Avestan
bret.	bretonisch	Celtic of Basse Bretagne, France
ch.	chinesisch	Modern Mandarin (Peking 1913)
corn.	cornisch	Celtic of Cornwall
cymr.	kymrisch	Celtic of Wales
dän.	dänisch	Danish
engl.	englisch	English (since 1500)
frz.	französisch	French

A b b r e v i a t i o n s (2)

got.	gotisch	Gothic (4th c.)
gr.	griechisch	Greek
att.	attisch	Attic
ion.	ionisch	Ionic
hebr.	hebräisch	Hebrew
hitt.	hettitisch	Hittite (2nd Millennium B.C.)
idg., IE	indogermanisch	Indo-European
ir.	irisch	Irish
ksl.	kirchenslavisch	Church Slavic
lat.	lateinisch	Latin
lett.	lettisch	Latvian (since 16th c.)
lit.	litauisch	Lithuanian (since 16th c.)
m-	mittel-	middle
mch.	mittelchinesisch	Middle Chinese (589-1126)
mengl.	mittelenglisch	Middle English (1100-1500)
mhd.	mittelhochdeutsch	Middle High German (1100-1350)
mir.	mittelirisch	Middle Irish
mnd.	mittelniederdeutsch	Middle Low German (13-16th c.)
mongl.	mongolisch	Mongolian
mpers.	mittelpersisch	Middle Persian (3rd c.B.C.)
n-	neu-	new
nch.	neuchinesisch	Early Mandarin (13th c.)
nd.	niederdeutsch	Low German
nhd.	neuhochdeutsch	New High German (1350-)
nir.	neuirisch	New Irish
nl.	niederländisch	Dutch

A b b r e v i a t i o n s (3)

Pl.	Plural	plural
poln.	polnisch	Polish
Prät.	Präteritum	preterite (past tense)
russ.	russisch	Russian
schwed.	schwedisch	Swedish
sem.	semitisch	Semitic
serb.	serbisch	Serbian
skr.	sanskrit	Sanskrit (4th c. B.C.)
slav.	slavisch	Slavic
span.	spanisch	Spain

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Rhyme Tables of Early Middle Chinese (600) according to Yün-ching 韻鏡

Grade	等	開 I	II	III	IV	合 R I	R II	R III	R IV	Total
Table	Rhyme	Simplex	e-	j-	i-, -i	o-	(e) u-	(j) u-	u-	
27/28R	å 歌	å: 歌多	-	-	-	oå 戈果	-	jua 耶靴 ^{Taa}	-	3
29/30R	a 麻	-	ea 麻加	ja: 遮車	ia 邪耶	-	eua 刮髽	-	-	4
4/5 R	ia 支	-	eia 差紫	jia 支紙	io 移斯	-	-	jua 吹為	ua 隨規	5
6/7 R	ai 脂	-	eai 韋脂	jai 脂至	ai 私自	-	euai 衣衰	juai 誰水	uai 唯季	6
8	" 之	"	" 史事	" 之止"	子思	-	-	-	-	-
9/10R	i 微	-	-	ji 希衣	-	-	-	ui 微廢	-	2
13/14R	ai/ei	ai 咳代	eai 喀駭	jei 世例	ei 齊帝	oi 灰隊	euai 乖離	juei 稅徵	uei 圭慧	8
15/16R	åj/ei	åj 震害	eåj 佳卦	-	" 祭敵	oåj 外最	euåj 蛙派	-	" 咸銳	4
25/26R	au/eu	au 豪刀	eau 着效	jeu 步苗	ieu 蕭條	-	-	-	ueu 小笑	5
37	u 流	eu 侯頭	eu 惟搜	ju 尤富	iu 幽幼	-	-	-	-	4
11	o 魚	-	eo 初所	jo 魚書	io 徐與	-	-	-	-	3
12/R	ou 模	-	eou 窦數	jou 廢遇	iou 須裕	ou 模暮	-	-	-	4
Open finals		5	9	9	8	4	4	5	4	48
1	東	uŋ uk	ug 東送 uk 屋木	eug 崇縮	jug 弓風 juk 竹福	iug 嵩融 iuk 育肅	-	-	-	4
2/R	冬	ouŋ ouk	-	-	joun 鐘窮	iouŋ 松用	ouŋ 冬宋	-	-	3
3/R	江	åŋ åk	-	eåŋ 江邦 eåk 聰剝	-	-	euåŋ 雙濁	-	-	2
31/32R	岩	åŋ åk	åŋ 唐宕 åk 鐸各	" 莊麻 " 斷	jåŋ 長方 jak 補脚	iåŋ 陽相 iak 翡葉	oåŋ 光黃 oåk 郭廓	-	üan 王狂 uåk 犧	5
33/34R	梗	æŋ ak	-	ean 庚生 eak 陌客	jæŋ 英明 jak 邊隙	iæŋ 清盈 iak 昔益	-	uaŋ 兄永 uak 瓢羈	uiŋ 順役 uiak 徒	6
35/36R	" /eg	-	" 耕爭	" 成整	ieŋ 靑庭	-	" 宏韓	-	ueŋ 燭	2
	" /ek	-	" 麥責	" 石尺	iek 錫的	-	" 劍闕	-	uek 疢	2
42/43R	əŋ ək	əŋ 登朋 ək 德北	-	jan 氷蒸 eak 色	iəŋ 懶歌 jak 職逼	oəŋ 肱弘 oak 國或	-	-	-	4
17/18R	ən ət	ən 痞恩 ət 麥乞	eən 臨臻 eət 楠榔	jən 真人 jet 質實	iən 津辛 iat 吉七	on 魂村 ot 没骨	-	juən 詮率	uən 均遵 uət 聖恤	7
19/20R	on ot	-	-	jon 欣殷	-	-	-	uon 文君	-	2
	ot	-	-	jot 迄	-	-	-	uot 物佛	-	2
21/22R	an/en at/et	-	ean 山間 eat 銀剝	jan 言軒 jat 揭歛	ien 仙綿 iet 薜列	-	euān 桫頑 euat 刷剛	uan 元反 uat 月伐	uen 金沿 uet 雪悅	6
23/24R	an/en at/et	åŋ 寒安 åt 易達	" 刪顏 " 黑黠	jen 然連 jet 哲舌	" 先天 " 肩結	oan 官桓 oat 末括	" 邊踰 " 滑出	juen 專員 juet 拙劣	" 玄淵 " 血穴	4
38	深	um up	-	eum 森	jum 金深	ium 侵尋	-	-	-	3
	up	-	eup 濕	jup 及十	iup 緝習	-	-	-	-	3
39	咸	äm/em áp/ep	äm 草南 áp 合雜	eäm 咸畱	jam 兼炎	iem 添尖	-	-	-	4
40/41R	om/am op/ap	om 諺甘 op 盡臘	eom 銜監 eop 神甲	jom 嚴	iam 鹽葉	-	-	uom 凡欠 uop 乏乏	-	5
Close finals		14	18	24	22	10	7	15	8	118

Rhymes of Early Mandarin (Nch. 1300)

reconstructed according to the Chung-yüan-yin-yün (1324)

and the phonetical transcription in the Meng-ku-tzu-yün (1308)

Rhyme group		Simplex	with medial			to-tal	
Nr.	Name		e-	i-, j-	u-		
12	歌戈	o:	o: 歌合葛 147	-	jo 岳略 149	uo 戈脫 150	3
13	家麻	a:	a: 麻拔納 153	ea 家甲 156	-	ua 爪滑 159	3
14	車遮	e:	-	-	je 車遮葉 161	ue 軋月步 164	2
3	支思	z:	z: 兒脂之師 88	-	-	-	1
4	齊微	i:	i: 齊微力集 92	-	-	-	1
"	"	əi	əi 德黑 99	-	-	uəi 為國 100	2
6	皆來	aj	aj 來麥色 113	eaj 皆格 116	-	uaj 乖劃 118	3
11	蕭豪	au	au 蕭鐸 136	eau 有效覺 140	jau 蕭爵 143	uau 郭朔 137	4
16	尤侯	əu	əu 候勾愁 172	-	iu 尤燭 174	-	2
5	魚模	u:	u: 模屋沃 103	eu 魚虞入 108	-	-	3
open syllabic		9	4	4	6	23	
1	東鍾	uŋ	uŋ 東冬鍾中 77	euy 萬松永 80	-	-	2
2	江陽	aŋ	aŋ 容長方邦 82	ean 江陽 84	-	uan 莊黃王 86	3
15	庚青	əŋ	əŋ 曾生爭 166	-	iəŋ 庚青 167	uəŋ 橫宏旨 170	3
"	"	eŋ	-	-	ieŋ 兮 171	ueŋ 扇頃 171	2
7	真	ən	ən 痴臻 120	-	in 真欣 121	-	2
"	文	un	un 魏文 123	eun 謹君 124	-	-	2
8	寒山	an	an 寒山凡 126	ean 間顏 128	-	uan 頑闌 129	3
9	桓歡	on	on 官桓盤 130	-	-	-	1
10	先天	en	-	-	ien 先言 132	uen 元專 134	2
17	侵尋	əm	əm 森岑 178	-	im 侵金 179	-	2
18	監咸	am	am 章談 181	eam 咸銜 183	-	-	2
19	廉纖	em	-	-	iem 咸嚴 185	-	1
with nasal final		9	5	6	5	25	

Italic numerals refer to Yang Nai-szu 1981

I n d e x o f W o r d E x a m p l e s

The first number refers to the page in this paper, the second to that in Pokorny.

E n g l i s h I n d e x

air, <u>wether</u>	13,488	cot, hole	5,393
also, again, and	16,74		586
arrowhead	7,1117	court (of justice)	23,1067
awake	16,1117	cow	18,482
backbone, ridge	11,938	crane	38,383
to bake	24,113	crayfish, crab	38,531
to bask in the sun	5,113	crow	38,384
to be, real, true	23,341	day	16,240
bear	17,136	to defy	12,207
belly	5,100	to defame	20,734
to bend a bow	23,1067	deposit	18,447
betwixt, between	12,231	to die, death	6,735
to boast	18,413	dog, hound	37,632
body, corpse	10,667	door	17,278
to boil	12,145	dreary, sorrow	23,1072
bone, rib	5,616	dregs	11,251
book, to book	9,107		1032
bowl, cup	17,121 804	to drown	6,762
breast	12,171 837	to dwindle	15,1047
bright, shining	10,597	end	17,639 355
to burst	12,169	to fall	13,516
		fart	14,819 829
to call, cry	18,413 535	fell, skin	21,803
camp	10,659	few	6,843
can	10,522	fish	38,416
to carve	12,392 405	flag, cloth	21,788
castle	9,141	to float	21,835
cheek	5,382	float	6,837 21,837
to clasp	5,359	to flow, river	22,1003
clew, ball	18,361	to fly	21,801 817
to conduct, lead	16,200	folk	11,799
contented with	23,1147		
to cook	24,798		

fraud, vagabond	20,731	idle	9,227
fright	14,820	impudent	11,845
		inclined	7,935
to gather	10,658	industrious, to strive	19,564
to give, donation	5,408	to insist	5,117
glance, to glance	9,213		
glimt, to glimt	13,431	king	23, -
to go up	7,1017	to knead	5,371
goat	38,409		
	517	lazy, late	13,666
god of heaven	37,185	lea, open field	10,688
golden	37,564	leaf	6,690
		leak	16,657
gnat, mosquito	38,752	little	6,657
goose	12,412		31,966
guilt	22,927	to loan, bestow, grant	16,669
hair	19,583	long	17,197
hale, whole	19,520	louse	38,608
hames	19,555	maid	13,696
hap, happen	5,610	mast, to fatten	6,694
help, to help	5,554	membrane	21,803
herd, heritage	13,579	milk, curd	5,400
to hew	19,535	mill, to grind	20,716
high	24,589	to mix, to blend	19,582
hill	19,544		
	24,589	nasty	13,445
hollow	19,537	to hurne, cultivate	21,844
	593		
holm, rock	19,544	old, former	22,907
hook	25,537	on	17,39
horse	10,700	outside	13,453
	37,448		
	37, -	pack, to pack	24,100
to hum	19,556	pig, pork	37,841
hunger	19,565	plow, flexed stick	24,523
how? why?	20,648	plum, sloe	11,965
		to point	9,188
		to pour	18,447

to praise	18,530	son	22,913
preposition (at, to)	20,772	sorrow	23,1072
price, to be work	13,436	sour, salted	23,1039
quick	15,1048	sound	15,1048
to reach	14,892	sow	37,1038
reign	15,1112		1032
to remain	25,669	sparrow	38,991
to reside	23,1147	to split	12,155
ridge, shore	13,526	to squat	24,589
right	6,856	to stear	22,1009
roe	38,859	string	22,1036
to rush at, start	7,1024	strong	23,1037
		to sweep, broom	15,1049
sap, soup	7,880	swine	38,1038
	913	sword	15,1050
scathe	14,950		
to scoop	7,931	to take	7,183
sea, lake	10,748		1058
search, to seek	6,877	thatch, roof, house	7,1013
seat	14,886	to tempt	10,687
self	14,884	toe	9,188
to send	14,908	town (-ton)	17,263
severe	23,1037	trail, way	9,257
to sew, repair	22,915	tree, wood	17,214
shall	22,927	tricky, to betray	16,276
ship, rudder	7,922	through	16,1076
	20,755	to turn	17,355
shit, to shit	7,921		639
shoe	22,951	to turn sour	13,627
sight, to see	11,898	voice, song	21,907
since	14,891	want, wish	15,1147
to sing, song	18,355	watershed, district	18,449
sleep	15,656	what?	6,645
	1048		
slit	14,926		20,644
to slit	6,859	where?	20,644
	926		647
to slip into	7,963	who?	20,644
sister of husband	18,367	witch	20,736
so, as, if	21,884	was (having been)	23,1171

P i n y i n I n d e x

an ¹ 安	23,1147	fu ² 榆	21,837	ji ² 檢	7,922
an ⁴ 岸	13,526	fu ⁴ 腹	5,100	ji ⁴ 際	12,231
ba ¹ 犮	37,841	gao ¹ 高	24,589	jia ¹ 夾	5,359
bao ¹ 包	24,100	gao ¹ 皐	18,449	jia ² 頰	5,382
bao ² 薄	6,843	gao ³ 果	10,597	jia ⁴ 價	13,436
bao ³ 堡	9,141	ge ¹ 歌	18,355	jiao ¹ 烧	18,447
bei ¹ 杯	17,121 804	gei ³ 紿	530	jiao ³ 狷	10,597
bi ³ 鄙	11,845	gou ¹ 鈎	5,408	jie ² 獭	38,409
bi ⁴ 必	5,117	gou ³ 狗	25,537	jin ⁴ 進	14,908
bi ⁴ 驂	37, -	gu ¹ 娿	37,632	ju ¹ 隹	23,1039
bu ⁴ 簿	9,107	gu ¹ 姑	22,927	ju ¹ 居	24,589
bu ⁴ 部	11,799	gu ³ 骨	18,367	ju ¹ 駒	37,448
can ⁴ 燦	13,431	gu ³ 骨	5,616	jun ⁴ 俊駿	15,1048
cao ¹ 操	22,1009	gui ¹ 归	38,517	ke ¹ 柯	24,523
ce ⁴ 側	7,935	hai ³ 海	17,355	ke ³ 可	10,522
chang ² 長	17,197	hai ⁴ 害	639	ku ¹ 窟	5,393
chou ⁴ 愁	23,1072	hao ² 豪	10,748		586
cun ¹ 村	17,263	hao ² 豪	14,950		
dai ⁴ 惰	9,227	hao ² 哉	18,413	lai ⁴ 賴	13,666
dao ⁴ 道	9,257	hao ² 豪	535	lai ⁴ 賽	16,669
dao ⁴ 導	16,220	hao ⁴ 皓	19,583	lan ⁴ 爛	13,431
de ² 得	7,183 1058	hao ⁴ 皓	10,597	lao ⁴ 酪	5,400
di ⁴ 帝	37,185	he ² 合	5,610	lei ³ 累累	10,658
dou ⁴ 門	12,207	he ² 和	19,582	lei ³ 壘	10,659
du ¹ 閣都	17,278	he ² 何	20,644	li ³ 李	11,965
du ³ 觀	9,213	he ² 曷	6,645	lie ⁴ 劣	6,684
fa ² 筏	6,837	he ⁴ 鶴	38,383	lie ⁴ 裂	6,859
fan ¹ 疙	21,788	hu ² 胡	20,648		926
fei ¹ 飛	21,801 817	huai ⁴ 壞	13,445	liu ² 流	22,1003
fei ⁴ 沸	12,145		516	liu ² 留	25,669
fei ⁴ 肺	12,171 837		627	lou ⁴ 瘴	16,657
fei ⁴ 煥	14,819	huang ¹ 荒	19,565	lu ⁴ 鹿	38,859
fu ¹ 腹	21,803	huang ² 黃	37,564	lü ³ 脣	11,938
fu ² 腹	21,835	hui ¹ 恢	19,520	ma ³ 馬	10,700
		hui ² 回	17,639	mang ² 嫂	20,731
		hui ⁴ 豔	1140	mei ⁴ 妹	13,696
		ji ² 汲	15,1049	miao ³ 紗渺渺	31,966
			7,931	miao ⁴ 妙	31,966
				mo ² 磨	20,716

mo ⁴ 秩	6,694	shui ² 誰	20,644	ya ¹ 鴉	38,384
mo ⁴ 殤	6,735	shui ⁴ 眠	15,656	yan ² 沿	17,39
			1048	yan ² 巖	19,544
ni ⁴ 濡	6,762	sui ⁴ 歲	15,1050	yan ⁴ 雁	12,412
nie ⁴ 指	5,371	sun ¹ 孫	22,913	yao ² 姚	18,447
niu ² 牛	18,482	suo ³ 索	6,877	ye ³ 野	10,688
pa ⁴ 怕	14,820	ti ³ 體	10,667	ye ⁴ 葶	6,690
pao ² 炮	24,113	ting ¹ 廦	23,1067	yi ² 宜	22,927
pao ² 炮	24,798	ting ² 庭	23,1067	yin ² 吟	19,556
pei ² 培	21,844	tou ⁴ 透	16,1076	you ⁴ 誘	10,687
pi ² 熊	17,136	tu ¹ 突	7,1024	you ⁴ 又	16,74
pi ² 皮	21,803	tun ² 屯	17,263	yü ² 於	20,772
pi ⁴ 屁	14,819 829	tun ² 豚	38,1038	yü ² 魚	38,416
po ⁴ 破	12,155 169	wai ⁴ 外	13,453	yüan ⁴ 願	15,1147
pu ⁴ 曝	5,113	wang ² 王	23, -	zha ⁴ 詐	16,276
qi ⁴ 契	12,392 405	wei ² 爲	23,1171	zhai ² 宅	7,1013
qi ⁴ 氣	13,488	wei ⁴ 位	15,1112	zhang ¹ 張	23,1067
qian ² 前	22,907	wen ² 蚊	37,752	zhen ¹ 真	23,341
quiao ¹ 敲	19,535	wu ¹ 惡	20,647	zhi ¹ 汗	7,880
qiao ³ 雀	38,991	wu ² 巫	20,736	zhi ³ 指	9,188
qin ² 勤	19,564	wu ² 謳	20,734	zhi ³ 趾	9,188
qiu ¹ 丘	19,544	wu ⁴ 穎悟	16,1117	zhi ⁴ 至	14,892
qiu ² 球	18,361	xi ¹ 稸	20,644	zhi ⁴ 陟	7,1017
quan ³ 犬	37,632	xi ² 翳	7,963	zhou ¹ 洲	18,449
rao ² 橋	20,755	xi ⁴ 系	13,579	zhou ⁴ 署	16,240
ru ² 如	21,884	xian ¹ 先	22,907	zhu ¹ 猪	37,1038
		xian ² 衡	19,555		1032
shao ³ 少	31,966	xiao ³ 小	31,966	zhuang ¹ 莊	23,1037
sheng ¹ 聲	21,907	xie ² 協	5,554	zhuang ⁴ 壮	23,1037
sheng ² 繩	22,1036	xie ⁴ 蟹	38,531	zi ³ 淤	11,251
shi ¹ 蟲虱	38,608	xie ⁴ 泄	7,921		1032
shi ² 實	6,856	xiu ¹ 修	22,915	zi ⁴ 自	14,884
shi ³ 狸	38,1038	xu ¹ 虛	19,537		891
shi ⁴ 視	11,898	xu ¹ 墟	593	zi ⁴ 此	14,926
		xue ¹ 靴	24,589	zu ² 銮	7,1032
		xun ⁴ 遜	22,951	zhu ¹ 株	17,214
		xun ⁴ 迅	15,1047	zuo ⁴ 座	14,886
		xun ⁴ 迅	15,1048		

Editor's Note: Tsung-tung Chang holds doctorate degrees in economics and in Sinology. He is the author of Der Kult der Shang-Dynastie im Spiegel der Orakelinschriften: Eine paläographische Studie zur Religion im archaischen China (Wiesbaden: Otto Harrassowitz, 1970) and Metaphysik, Erkenntnis und Praktische Philosophie im Chuang-Tzu: Zur Neu-Interpretation und systematischen Darstellung der klassischen chinesischen Philosophie (Frankfurt am Main: Vittorio Klostermann, 1982).

Previous Issues

Number	Date	Author <i>University</i>	Title	Pages
1	Nov. 1986	Victor H. Mair <i>University of Pennsylvania</i>	<u>The Need for an Alphabetically Arranged General Usage Dictionary of Mandarin Chinese: A Review Article of Some Recent Dictionaries and Current Lexicographical Projects</u>	31
2	Dec. 1986	Andrew Jones <i>Hiroshima</i>	The Poetics of Uncertainty in Early Chinese Literature	45
3	March 1987	Victor H. Mair <i>University of Pennsylvania</i>	A Partial Bibliography for the Study of Indian Influence on Chinese Popular Literature	iv, 214
4	Nov. 1987	Robert M. Sanders <i>University of Hawaii</i>	<u>The Four Languages of "Mandarin"</u>	14
5	Dec. 1987	Eric A. Havelock <i>Vassar College</i>	<u>Chinese Characters and the Greek Alphabet</u>	4
6	Jan. 1988	J. Marshall Unger <i>University of Hawaii</i>	<u>Computers and Japanese Literacy: Nihonjin no Yomikaki Nôryoku to Konpyuta</u>	13
7	Jan. 1988	Chang Tsung-tung <i>Goethe-Universität</i>	Indo-European Vocabulary in Old Chinese	i, 56
8	Feb. 1988	various	<u>Reviews (I)</u>	ii, 39
9	Dec. 1988	Soho Machida <i>Daitoku-ji, Kyoto</i>	Life and Light, the Infinite: A Historical and Philological Analysis of the Amida Cult	46
10	June 1989	Pratoom Angurarohita <i>Chulalongkorn University</i> <i>Bangkok</i>	<u>Buddhist Influence on the Neo-Confucian Concept of the Sage</u>	31
11	July 1989	Edward Shaughnessy <i>University of Chicago</i>	<u>Western Cultural Innovations in China, 1200 BC</u>	8

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
12	Aug. 1989	Victor H. Mair <i>University of Pennsylvania</i>	The Contributions of T'ang and Five Dynasties Transformation Texts (<i>pien-wen</i>) to Later Chinese Popular Literature	71
13	Oct. 1989	Jiaosheng Wang <i>Shanghai</i>	<u>The Complete Ci-Poems of Li Qingzhao: A New English Translation</u>	xii, 122
14	Dec. 1989	various	<u>Reviews (II)</u>	69
15	Jan. 1990	George Cardona <i>University of Pennsylvania</i>	On Attitudes Toward Language in Ancient India	19
16	March 1990	Victor H. Mair <i>University of Pennsylvania</i>	Three Brief Essays Concerning Chinese Tocharistan	16
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19	June 1990	Bosat Man <i>Nalanda</i>	<u>Backhill/Peking/Beijing</u>	6
20	Oct. 1990	Victor H. Mair <i>University of Pennsylvania</i>	Introduction and Notes for a Translation of the Ma-wang-tui MSS of the <i>Lao Tzu</i>	68

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
21	Dec. 1990	Philippa Jane Benson <i>Carnegie Mellon University</i>	Two Cross-Cultural Studies on Reading Theory	9, 13
22	March 1991	David Moser <i>University of Michigan</i>	Slips of the Tongue and Pen in Chinese	45
23	April 1991	Victor H. Mair <i>University of Pennsylvania</i>	Tracks of the Tao, Semantics of Zen	10
24	Aug. 1991	David A. Utz <i>University of Pennsylvania</i>	Language, Writing, and Tradition in Iran	24
25	Aug. 1991	Jean DeBernardi <i>University of Alberta</i>	Linguistic Nationalism: The Case of Southern Min	22 + 3 figs.
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27	Aug. 1991	Victor H. Mair, ed. <i>University of Pennsylvania</i>	<u>Schriftfestschrift: Essays in Honor of John DeFrancis on His Eightieth Birthday</u>	ix, 245
28	Sept. 1991	ZHOU Youguang <i>State Language Commission, Peking</i>	<u>The Family of Chinese Character-Type Scripts (Twenty Members and Four Stages of Development)</u>	11
29	Sept. 1991	Victor H. Mair <i>University of Pennsylvania</i>	<u>What Is a Chinese “Dialect/Topolect”? Reflections on Some Key Sino-English Linguistic Terms</u>	31
30	Oct. 1991	M. V. Sofronov <i>Institute of Far Eastern Studies, Academy of Sciences, Moscow</i>	Chinese Philology and the Scripts of Central Asia	10

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
31	Oct. 1991	various	Reviews (III)	68
32	Aug. 1992	David McCraw <i>University of Hawaii</i>	How the Chinawoman Lost Her Voice	27
33	Sept. 1992	FENG Lide and Kevin Stuart <i>Chuankou No. 1 Middle School and Qinghai Education College</i>	Interethnic Contact on the Inner Asian Frontier: The Gangou People of Minhe County, Qinghai	34
34	Oct. 1992	Victor H. Mair <i>University of Pennsylvania</i>	Two Papers on Sinolinguistics 1. A Hypothesis Concerning the Origin of the Term <i>fanqie</i> (“Countertomy”) 2. East Asian Round-Trip Words	13
35	Nov. 1992	Victor H. Mair <i>University of Pennsylvania</i> with an added note by Edwin G. Pulleyblank	Reviews (IV)	37
36	Feb. 1993	XU Wenkan <i>Hanyu Da Cidian editorial offices, Shanghai</i>	Hanyu Wailaici de Yuyuan Kaozheng he Cidian Bianzuan (Philological Research on the Etymology of Loanwords in Sinitic and Dictionary Compilation)	13
37	March 1993	Tanya Storch <i>University of New Mexico</i>	Chinese Buddhist Historiography and Orality	16
38	April 1993	Victor H. Mair <i>University of Pennsylvania</i>	The Linguistic and Textual Antecedents of <i>The Sutra of the Wise and the Foolish</i>	95

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
39	Aug. 1993	Jordan Paper <i>York University</i>	A Material Case for a Late Bering Strait Crossing Coincident with Pre-Columbian Trans-Pacific Crossings	17
40	Sept. 1993	Michael Carr <i>Center for Language Studies, Otaru University of Commerce</i>	<i>Tiao</i> -Fish through Chinese Dictionaries	68
41	Oct. 1993	Paul Goldin <i>Harvard University</i>	Miching Mallecho: The <i>Zhanguo</i> ce and Classical Rhetoric	27
42	Nov. 1993	Renchin-Jashe Yulshul <i>Tibetan Autonomous Prefecture, Kokonor (Qinghai)</i> and Kevin Stuart <i>Institute of Foreign Languages, Ulaanbaatar, Mongolia</i>	Kham Tibetan Language Materials	39
43	Dec. 1993	MA Quanlin, MA Wanxiang, and MA Zhicheng <i>Xining</i> Edited by Kevin Stuart <i>Kokonor</i>	Salar Language Materials	72
44	Jan. 1994	Dolkun Kamberi <i>Columbia University</i>	The Three Thousand Year Old Charchan Man Preserved at Zaghunluq	15
45	May 1994	Mark Hansell <i>Carleton College</i>	The Sino-Alphabet: The Assimilation of Roman Letters into the Chinese Writing System	28
46	July 1994	various	Reviews (V)	2, 155

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
47	Aug. 1994	Robert S. Bauer <i>Mahidol University Salaya Nakornpathom, Thailand</i>	Sino-Tibetan *kolo “Wheel”	11
48	Sept. 1994	Victor H. Mair <i>University of Pennsylvania</i>	Introduction and Notes for a Complete Translation of the <i>Chuang Tzu</i>	xxxiv, 110
49	Oct. 1994	Ludo Rocher <i>University of Pennsylvania</i>	Orality and Textuality in the Indian Context	28
50	Nov. 1994	YIN Binyong <i>State Language Commission and Institute for Applied Linguistics (Chinese Academy of Social Sciences)</i>	Diyi ge Lading Zimu de Hanyu Pinyin Fang'an Shi Zenyang Chansheng de? [How Was the First Romanized Spelling System for Sinitic Produced?]	7
51	Nov. 1994	HAN Kangxin <i>Institute of Archeology Chinese Academy of Social Sciences</i>	The Study of Ancient Human Skeletons from Xinjiang, China	9 + 4 figs.
52	Nov. 1994	Warren A. Shibles <i>University of Wisconsin Whitewater</i>	<u>Chinese Romanization Systems: IPA Transliteration</u>	20
53	Nov. 1994	XU Wenkan <i>Editorial Offices of the Hanyu Da Cidian Shanghai</i>	Guanyu Tuhuoluoren de Qiyuan he Qianxi Wenti [On the Problem of the Origins and Migrations of the Tocharians]	11
54	Nov. 1994	Üjiyediin Chuluu (Chaolu Wu) <i>University of Toronto</i>	Introduction, Grammar, and Sample Sentences for Jegün Yogur	34
55	Nov. 1994	Üjiyediin Chuluu (Chaolu Wu) <i>University of Toronto</i>	Introduction, Grammar, and Sample Sentences for Dongxiang	34

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
56	Nov. 1994	Üjiyediin Chuluu (Chaolu Wu) <i>University of Toronto</i>	Introduction, Grammar, and Sample Sentences for Dagur	36
57	Nov. 1994	Üjiyediin Chuluu (Chaolu Wu) <i>University of Toronto</i>	Introduction, Grammar, and Sample Sentences for Monguor	31
58	Nov. 1994	Üjiyediin Chuluu (Chaolu Wu) <i>University of Toronto</i>	Introduction, Grammar, and Sample Sentences for Baoan	28
59	Dec. 1994	Kevin Stuart <i>Qinghai Junior Teachers College;</i> Limusishiden <i>Qinghai Medical College Attached Hospital, Xining, Kokonor (Qinghai)</i>	China's Monguor Minority: Ethnography and Folktales	i, I, 193
60	Dec. 1994	Kevin Stuart, Li Xuewei, and Shelear <i>Qinghai Junior Teachers College, Xining, Kokonor (Qinghai)</i>	China's Dagur Minority: Society, Shamanism, and Folklore	vii, 167
61	Dec. 1994	Kevin Stuart and Li Xuewei <i>Qinghai Junior Teachers College, Xining, Kokonor (Qinghai)</i>	Tales from China's Forest Hunters: Oroqen Folktales	iv, 59
62	Dec. 1994	William C. Hannas <i>Georgetown University</i>	Reflections on the "Unity" of Spoken and Written Chinese and Academic Learning in China	5
63	Dec. 1994	Sarah M. Nelson <i>University of Denver</i>	The Development of Complexity in Prehistoric North China	17

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
64	Jan. 1995	Arne Østmoen <i>Bangkok, Thailand, and Drøbak, Norway</i>	A Germanic-Tai Linguistic Puzzle	81, 6
65	Feb. 1995	Penglin Wang <i>Chinese University of Hong Kong</i>	Indo-European Loanwords in Altaic	28
66	March 1995	ZHU Qingzhi <i>Sichuan University and Peking University</i>	Some Linguistic Evidence for Early Cultural Exchange Between China and India	7
67	April 1995	David McCraw <i>University of Hawaii</i>	Pursuing Zhuangzi as a Rhymemaster: A Snark-Hunt in Eight Fits	38
68	May 1995	Ke Peng, Yanshi Zhu <i>University of Chicago and Tokyo, Japan</i>	New Research on the Origin of Cowries Used in Ancient China	i, 26
69	Jan. 1996	Dpal-l丹-bkra-shis, Keith Slater, <i>et al.</i> <i>Qinghai, Santa Barbara, etc.</i>	Language Materials of China's Monguor Minority: Huzhu Mongghul and Minhe Mangghuer	xi, 266
70	Feb. 1996	David Utz, Xinru Liu, <i>Taylor Carman, Bryan Van Norden, and the Editor</i> <i>Philadelphia, Vassar, etc.</i>	Reviews VI	93
71	March 1996	Erik Zürcher <i>Leiden University</i> Seishi Karashima <i>Soka University</i> Huanming Qin <i>Tang Studies Hotline</i>	Vernacularisms in Medieval Chinese Texts	31 + 11 + 8
72	May 1996	E. Bruce Brooks <i>University of Massachusetts</i>	The Life and Mentorship of Confucius	44

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
73	June 1996	ZHANG Juan, et al., and Kevin Stuart <i>Qinghai, Inner Mongolia, Shanxi, Henan, Liaoning</i>	Blue Cloth and Pearl Deer; Yogur Folklore	iii, 76
74	Jan. 1997	David Moser <i>University of Michigan & Beijing Foreign Studies University</i>	Covert Sexism in Mandarin Chinese	23
75	Feb. 1997	Haun Saussy <i>Stanford University</i>	The Prestige of Writing: Wen ² , Letter, Picture, Image, Ideography	40
76	Feb. 1997	Patricia Eichenbaum Karetzky <i>Bard College</i>	The Evolution of the Symbolism of the Paradise of the Buddha of Infinite Life and Its Western Origins	28
77	Jan. 1998	Daniel Hsieh <i>Purdue University</i>	The Origin and Nature of the “Nineteen Old Poems”	49
78	Feb. 1998	Narsu <i>Inner Mongolia College of Agriculture & Animal Husbandry</i> Kevin Stuart <i>Qinghai Junior Teachers' College</i>	Practical Mongolian Sentences (With English Translation)	iii + 49 + ii + 66
79	March 1998	Dennis Grafflin <i>Bates College</i>	A Southeast Asian Voice in the Daodejing?	8
80	July 1998	Taishan Yu <i>Chinese Academy of Social Sciences</i>	A Study of Saka History	ii + 225
81	Sept. 1998	Hera S. Walker <i>Ursinus College (Philadelphia)</i>	Indigenous or Foreign?: A Look at the Origins of the Monkey Hero Sun Wukong	iv + 110

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
82	Sept. 1998	I. S. Gurevich <i>Russian Academy of Sciences</i>	A Fragment of a pien-wen(?) Related to the Cycle “On Buddha’s Life”	15
83	Oct. 1998	Minglang Zhou <i>University of Colorado at Boulder</i>	Tense/Aspect markers in Mandarin and Xiang dialects, and their contact	20
84	Oct. 1998	Ulf Jäger <i>Gronau/Westfalen, Germany</i>	The New Old Mummies from Eastern Central Asia: Ancestors of the Tocharian Knights Depicted on the Buddhist Wallpaintings of Kucha and Turfan? Some Circumstantial Evidence	9
85	Oct. 1998	Mariko Namba Walter <i>University of New England</i>	Tokharian Buddhism in Kucha: Buddhism of Indo-European Centum Speakers in Chinese Turkestan before the 10th Century C.E.	30
86	Oct. 1998	Jidong Yang <i>University of Pennsylvania</i>	Siba: Bronze Age Culture of the Gansu Corridor	18
87	Nov. 1998	Victor H. Mair <i>University of Pennsylvania</i>	Canine Conundrums: Eurasian Dog Ancestor Myths in Historical and Ethnic Perspective	74
88	Dec. 1998	Saroj Kumar Chaudhuri <i>Aichi Gakusen University</i>	Siddham in China and Japan	9, 124
89	Jan. 1999	Alvin Lin <i>Yale University</i>	Writing Taiwanese: The Development of Modern Written Taiwanese	4 + 41 + 4
90	Jan. 1999	Victor H. Mair et al	Reviews VII [including review of The Original Analects]	2, 38
91	Jan. 1999	Victor H. Mair <i>University of Pennsylvania</i>	Phonosymbolism or Etymology: The Case of the Verb “Cop”	28

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
92	Jan. 1999	Christine Louise Lin <i>Dartmouth College</i>	The Presbyterian Church in Taiwan and the Advocacy of Local Autonomy	xiii + 136
93	Jan. 1999	David S. Nivison <i>Stanford University</i>	The Key to the Chronology of the Three Dynasties: The “Modern Text” Bamboo Annals	iv + 68
94	March 1999	Julie Lee Wei <i>Hoover Institute</i>	Correspondence Between the Chinese Calendar Signs and the Phoenician Alphabet	65 + 6
95	May 1999	Victor H. Mair <i>University of Pennsylvania</i>	A Medieval, Central Asian Buddhist Theme in a Late Ming Taoist Tale by Feng Meng-lung	27
96	June 1999	E. Bruce Brooks <i>University of Massachusetts</i>	Alexandrian Motifs in Chinese Texts	14
97	Dec. 1999	LI Shuicheng <i>Peking University</i>	Sino-Western Contact in the Second Millennium BC	iv, 29
98	Jan. 2000	Peter Daniels, Daniel Boucher, and other authors	Reviews VIII	108
99	Feb. 2000	Anthony Barbieri-Low <i>Princeton University</i>	Wheeled Vehicles in the Chinese Bronze Age (c. 2000-741 BC)	v, 98 + 5 color plates
100	Feb. 2000	Wayne Alt <i>Community College of Baltimore County (Essex)</i>	Zhuangzi, Mysticism, and the Rejection of Distinctions	29
101	March 2000	C. Michele Thompson <i>South Connecticut State University</i>	The Viêt Peoples and the Origins of Nom	71, 1

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
102	March 2000	Theresa Jen <i>Bryn Mawr College</i> Ping Xu <i>Baruch College</i>	Penless Chinese Character Reproduction	15
103	June 2000	Carrie E. Reid <i>Middlebury College</i>	Early Chinese Tattoo	52
104	July 2000	David W. Pankenier <i>Lehigh University</i>	Popular Astrology and Border Affairs in Early China	19 + 1 color plate
105	Aug. 2000	Anne Birrell <i>Cambridge University</i>	Postmodernist Theory in Recent Studies of Chinese Literature	31
106	Sept. 2000	Yu Taishan <i>Chinese Academy of Social Sciences</i>	A Hypothesis about the Sources of the Sai Tribes	i, 3, 200
107	Sept. 2000	Jacques deLisle, Adelheid E. Krohne, and the editor	Reviews IX	148 + map
108	Sept. 2000	Ruth H. Chang <i>University of Pennsylvania</i>	Understanding <i>Di</i> and <i>Tian</i> : Deity and Heaven From Shang to Tang	vii, 54
109	Oct. 2000	Conán Dean Carey <i>Stanford University</i>	In Hell the One without Sin is Lord	ii, 60
110	Oct. 2000	Toh Hoong Teik <i>Harvard University</i>	Shaykh 'Alam: The Emperor of Early Sixteenth-Century China	20
111	Nov. 2000	Victor H. Mair <i>University of Pennsylvania</i>	The Need for a New Era	10
112	July 2001	Victor H. Mair <i>University of Pennsylvania</i>	Notes on the Anau Inscription	xi, 93

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
113	Aug. 2001	Ray Collins <i>Chepachet, RI</i> David Kerr <i>Melbourne, FL</i>	Etymology of the Word “Macrobiotic:s” and Its Use in Modern Chinese Scholarship	18
114	March 2002	Ramnath Subbaraman <i>University of Chicago</i>	Beyond the Question of the Monkey Imposter: Indian Influence on the Chinese Novel, <i>The Journey to the West</i>	35
115	April 2002	ZHOU Jixu <i>Sichuan Normal University</i>	Correspondences of Basic Words Between Old Chinese and Proto-Indo-European	8
116	May 2002	LIU Yongquan <i>Institute of Linguistics, Chinese Academy of Social Sciences</i>	On the Problem of Chinese Lettered Words	13
117	May 2002	SHANG Wei <i>Columbia University</i>	<i>Baihua, Guanhua, Fangyan</i> and the May Fourth Reading of <i>Rulin Waishi</i>	10
118	June 2002	Justine T. Snow <i>Port Townsend, WA</i>	Evidence for the Indo-European Origin of Two Ancient Chinese Deities	ii, 75, 1 color, 1 b-w print
119	July 2002	WU Zhen <i>Xinjiang Museum, Ürümqi</i>	“Hu” Non-Chinese as They Appear in the Materials from the Astana Graveyard at Turfan	21, 5 figs.
120	July 2002	Anne Birrell <i>University of Cambridge, Clare Hall</i>	Female-Gendered Myth in the <i>Classic of Mountains and Seas</i>	47
121	July 2002	Mark Edward Lewis <i>Stanford University</i>	Dicing and Divination in Early China	22, 7 figs.

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
122	July 2002	Julie Wilensky <i>Yale University</i>	The Magical <i>Kunlun</i> and “Devil Slaves”: Chinese Perceptions of Dark-skinned People and Africa before 1500	51, 3 figs.
123	Aug. 2002	Paul R. Goldin and the editor	Reviews X	30
124	August 2002	Fredrik T. Hiebert <i>University of Pennsylvania</i> John Colarusso <i>McMaster University</i>	The Context of the Anau Seal Remarks on the Anau and Niyä Seals	1-34 35-47
125	July 2003	ZHOU Jixu <i>Sichuan Normal University</i> <i>Shanghai Normal University</i>	Correspondences of Cultural Words between Old Chinese and Proto-Indo-European	19
126	Aug. 2003	Tim Miller <i>University of Washington</i>	A Southern Min Word in the <i>Tsu-t'ang chi</i>	14
127	Oct. 2003	Sundeep S. Jhutti <i>Petaluma, California</i>	The Getes	125, 8 color plates
128	Nov. 2003	Yinpo Tschang <i>New York City</i>	On Proto-Shang	18
129	Dec. 2003	Michael Witzel <i>Harvard University</i>	Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia	70
130	Feb. 2004	Bede Fahey <i>Fort St. John, British Columbia</i>	Mayan: A Sino-Tibetan Language? A Comparative Study	61

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
131	March 2004	Taishan Yu <i>Chinese Academy of Social Sciences</i>	A History of the Relationship between the Western and Eastern Han, Wei, Jin, Northern and Southern Dynasties and the Western Regions	1, 3, 352
132	April 2004	Kim Hayes <i>Sydney</i>	On the Presence of Non-Chinese at Anyang	11
133	April 2004	John L. Sorenson <i>Brigham Young University</i> Carl L. Johannessen <i>University of Oregon</i>	<i>Scientific Evidence for Pre-Columbian Transoceanic Voyages</i> CD-ROM	48, 166, 19, 15 plates
134	May 2004	Xieyan Hincha <i>Neumädewitz, Germany</i>	Two Steps Toward Digraphia in China	i, 22
135	May 2004	John J. Emerson <i>Portland, Oregon</i>	<i>The Secret History of the Mongols</i> and Western Literature	21
136	May 2004	Serge Papillon <i>Mouvaux, France and Ulaanbaatar, Mongolia</i>	Influences tokhariennes sur la mythologie chinoise	47
137	June 2004	Hoong Teik Toh <i>Harvard University</i>	Some Classical Malay Materials for the Study of the Chinese Novel <i>Journey to the West</i>	64
138	June 2004	Julie Lee Wei <i>San Jose and London</i>	Dogs and Cats: Lessons from Learning Chinese	17
139	June 2004	Taishan Yu <i>Chinese Academy of Social Sciences</i>	A Hypothesis on the Origin of the Yu State	20
140	June 2004	Yinpo Tschang <i>New York City</i>	Shih and Zong: Social Organization in Bronze Age China	28
141	July 2004	Yinpo Tschang <i>New York City</i>	Chaos in Heaven: On the Calendars of Preclassical China	30

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
142	July 2004	Katheryn Linduff, ed. <i>University of Pittsburgh</i>	<i>Silk Road Exchange in China</i>	64
143	July 2004	Victor H. Mair <i>University of Pennsylvania</i>	Sleep in <i>Dream</i> : Soporific Responses to Depression in <i>Story of the Stone</i>	99
144	July 2004	RONG Xinjiang <i>Peking University</i>	Land Route or Sea Route? Commentary on the Study of the Paths of Transmission and Areas in which Buddhism Was Disseminated during the Han Period	32
145	Aug. 2004	the editor	Reviews XI	2, 41
146	Feb. 2005	Hoong Teik Toh <i>Academia Sinica</i>	The - <i>yu</i> Ending in Xiongnu, Xianbei, and Gaoju Onomastica	24
147	March 2005	Hoong Teik Toh <i>Academia Sinica</i>	Ch. <i>Qiong</i> ~ Tib. Khyung; Taoism ~ Bonpo -- Some Questions Related to Early Ethno-Religious History in Sichuan	18
148	April 2005	Lucas Christopoulos <i>Beijing Sports University</i>	Le gréco-bouddhisme et l'art du poing en Chine	52
149	May 2005	Kimberly S. Te Winkle <i>University College, London</i>	A Sacred Trinity: God, Mountain, and Bird: Cultic Practices of the Bronze Age Chengdu Plain	ii, 103 (41 in color)
150	May 2005	Dolkun Kamberi <i>Washington, DC</i>	Uyghurs and Uyghur Identity	44
151	June 2005	Jane Jia SI <i>University of Pennsylvania</i>	The Genealogy of Dictionaries: Producers, Literary Audience, and the Circulation of English Texts in the Treaty Port of Shanghai	44, 4 tables

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
152	June 2005	Denis Mair <i>Seattle</i>	The Dance of Qian and Kun in the <i>Zhouyi</i>	13, 2 figs.
153	July 2005	Alan Piper <i>London (UK)</i>	The Mysterious Origins of the Word “Marihuana”	17
154	July 2005	Serge Papillon <i>Belfort, France</i>	<i>Mythologie sino-européenne</i>	174, 1 plate
155	July 2005	Denis Mair <i>Seattle</i>	Janus-Like Concepts in the <i>Li</i> and <i>Kun</i> Trigrams	8
156	July 2005	Abolqasem Esmailpour <i>Shahid Beheshti University, Tehran</i>	<i>Manichean Gnosis and Creation</i>	157
157	Aug. 2005	Ralph D. Sawyer <i>Independent Scholar</i>	Paradoxical Coexistence of Prognostication and Warfare	13
158	Aug. 2005	Mark Edward Lewis <i>Stanford University</i>	Writings on Warfare Found in Ancient Chinese Tombs	15
159	Aug. 2005	Jens Østergaard Petersen <i>University of Copenhagen</i>	The <i>Zuo zhuan</i> Account of the Death of King Zhao of Chu and Its Sources	47
160	Sept. 2005	Matteo Comparetti <i>Venice</i>	Literary Evidence for the Identification of Some Common Scenes in Han Funerary Art	14
161	Sept. 2005	Julie Lee Wei <i>London</i>	The Names of the <i>Yi Jing</i> Trigrams: An Inquiry into Their Linguistic Origins	18
162	Sept. 2005	Julie Lee Wei <i>London</i>	Counting and Knotting: Correspondences between Old Chinese and Indo-European	71, map

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
163	Oct. 2005	Julie Lee Wei <i>London</i>	Huangdi and Huntun (the Yellow Emperor and Wonton): A New Hypothesis on Some Figures in Chinese Mythology	44
164	Oct. 2005	Julie Lee Wei <i>London</i>	Shang and Zhou: An Inquiry into the Linguistic Origins of Two Dynastic Names	62
165	Oct. 2005	Julie Lee Wei <i>London</i>	DAO and DE: An Inquiry into the Linguistic Origins of Some Terms in Chinese Philosophy and Morality	51
166	Nov. 2005	Julie Lee Wei <i>London</i> Hodong Kim <i>Seoul National University</i> and David Selvia and the Editor <i>both of the University of Pennsylvania</i>	Reviews XII	i, 63
167	Dec. 2005	ZHOU Jixu <i>Sichuan Normal University</i>	Old Chinese '帝'*tees' and Proto-Indo-European “*deus”: Similarity in Religious Ideas and a Common Source in Linguistics	17
168	Dec. 2005	Judith A. Lerner <i>New York City</i>	Aspects of Assimilation: the Funerary Practices and Furnishings of Central Asians in China	51, v, 9 plates
169	Jan. 2006	Victor H. Mair <i>University of Pennsylvania</i>	Conversion Tables for the Three-Volume Edition of the <i>Hanyu Da Cidian</i>	i, 284
170	Feb. 2006	Amber R. Woodward <i>University of Pennsylvania</i>	Learning English, Losing Face, and Taking Over: The Method (or Madness) of Li Yang and His Crazy English	18

Previous Issues, *cont.*

Number	Date	Author	Title	Pages
Beginning with issue no. 171, <i>Sino-Platonic Papers</i> will be published electronically on the Web. Issues from no. 1 to no. 170, however, will continue to be sold as paper copies until our stock runs out, after which they too will be made available on the Web. For prices of paper copies, see the catalog at www.sino-platonic.org				
171	June 2006	John DeFrancis <i>University of Hawaii</i>	The Prospects for Chinese Writing Reform	26, 3 figs.
172	Aug. 2006	Deborah Beaser	The Outlook for Taiwanese Language Preservation	18
173	Oct. 2006	Taishan Yu <i>Chinese Academy of Social Sciences</i>	A Study of the History of the Relationship Between the Western and Eastern Han, Wei, Jin, Northern and Southern Dynasties and the Western Regions	167
174	Nov. 2006	Mariko Namba Walter	Sogdians and Buddhism	65
175	Dec. 2006	Zhou Jixu <i>Center for East Asian Studies, University of Pennsylvania; Chinese Department, Sichuan Normal University</i>	The Rise of Agricultural Civilization in China: The Disparity between Archeological Discovery and the Documentary Record and Its Explanation	38
176	May 2007	Eric Henry <i>University of North Carolina</i>	The Submerged History of Yuè	36