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The Reconstruction of Archaic Chinese^{1, 2}

By WALTER SIMON

SINCE 1923 we have witnessed an attempt to reconstruct the Chinese of the Sui Dynasty, or more accurately to reconstruct the Chinese dialect spoken about A.D. 600 in the capital of that time, Ch'ang An (Hsi An), namely Professor Bernhard Karlgren's *Analytic Dictionary of Chinese and Sino-Japanese*, which constitutes a brief summary of the results of the first three parts of his *Études sur la phonologie chinoise* (*Archives d'Études Orientales* XV (1915-1919)) and their practical application to about 6,000 characters which can now be verified in their reconstructed form (v. *Deutsche Literaturzeitung*, 1924, col. 1905, etc.). The method adopted by Karlgren for his reconstruction has been described both clearly and fascinatingly by the author himself in his book *Philology and Ancient China* (Oslo, 1926, p. 63, etc.) The main problem was the reconstruction of the approximately 200 final syllables of the rhyme dictionary *Ch'ieh Yün* (A.D. 601)—it was comparatively easier to reconstruct the initials—which number appeared to the author to be virtually that of the dialect spoken, because the *fan ch'ieh*'s ("spellings") transmitted showed the same number of different finals. As further clues for his reconstruction, K. availed himself, on the one hand, of the modern dialectal forms of about 3,000 words in thirty dialects, and, on the other hand, of ancient rhyme tables which grouped together syllables similar in sound and showed also whether a syllable contained a

¹ B. Karlgren, *Shi-King Researches*, Stockholm, 1932 (repr. from *Bulletin of the Museum of Far Eastern Antiquities*, No. 4, pp. 117-185).

² B. Karlgren, *Word Families in Chinese*, Stockholm, 1934 (repr. from No. 5 of that *Bulletin*, pp. 9-120).

diphthong formed with *i* or *u*. Besides the modern dialectal forms, those of Sino-Korean, Sino-Japanese (Goon and Kanon), and Sino-Annamite were of special importance, because they were nearest in time to the Sui Period. Final by final K. weighs with acute insight the possibilities of reconstruction. The decision is made along what I should like to call the line of the least phonetic resistance. The sound values reconstructed by K. can, on the one hand, be conceived as ancient forms of the modern dialect words; on the other, they fit into the ancient rhyme tables and correspond in number to the differentiations in the old rhyme dictionary *Ch'ieh Yün* and to the *fan ch'ieh*'s of that time. Each sound value is therefore mathematically speaking the resultant of all these components; they are all of them connected with one another. The reconstruction is complete in itself; hardly any sound value may be replaced by another without upsetting the whole system. No matter whether one believes, as does the originator probably himself, in the reality of the reconstruction, or whether one considers its sound values rather as values of probability or in part merely as convenient symbols, one has made general use of these reconstructions and cannot be too grateful for the extraordinary trouble which Professor Karlgren has taken in them.

K.'s Dictionary, however, is not limited to the presentation of the forms of A.D. 600. Arranging the Chinese characters according to their phonetics, i.e. the constituents indicating their sounds, it points on many occasions to an older language phase which K. denotes as "archaic Chinese". K.'s conclusions refer to initials or finals which had vanished or were vocalized at A.D. 600. If in a phonetic series a number of words started with or ended in a consonant, whereas other members of that series did not, K. inferred that these other words originally also had a consonantal initial or final. It follows from these conclusions that final dentals were vocalized in *i* and that final gutturals were partly vocalized in *i*, partly in *u*, and had partly vanished without a trace. K.'s reconstructions of archaic Chinese in his Dictionary were, however, exclusively restricted to those cases where the phonetic series itself partly started or ended with a consonant.

Taking K.'s Dictionary as a basis I ventured to go further into the reconstructions of the archaic finals (*Zur Rekonstruktion der altchinesischen Endkonsonanten*, pt. i, ii, Berlin, 1928-9). Interpreting the alternation of $-ɹu$, $-uâi$, and $-wi$ in a number of phonetic series not, as K. did, by an epenthetic original $-i$ after $-ɹu$, but by the assumption of a simultaneous vocalization of original gutturals in either *i* or *u*,

I succeeded in inferring original final consonants also in series where no character had preserved a final consonant. The type of series in which K. had inferred a vanished or vocalized final because of the alternation with preserved finals—there were in all 75 guttural and 45 dental series including phonetic subseries (v. *Rekonstruktion*, pt. i, pp. 3-4)—proved to be therefore an exceptional type compared with the extremely numerous “normal” series, where a final consonant was either preserved or had vanished or was vocalized *throughout*. I reconstructed the finals themselves, not as voiced plosives, but as voiced fricatives (- γ , - \bar{d} , - β , instead of - g , - \bar{d} , - b). It was easy to increase the number of series by bringing in rhymes from the “Book of Odes”. Further, I considered myself justified, after having gained by the alternation of - i and - $\dot{z}u$ an insight into the structure of the series and into the origin of the diphthong - $\dot{z}u$ (- $\dot{i}\dot{z}u$), in referring the final - u of - $\dot{z}u$ in all series to an original guttural, and, further, also the u of the endings - au , - $\acute{a}u$, - ieu , - $\ddot{a}u$ of the *Ch'ieh Yün*, which alternate both in rhymes (in the “Book of Odes”) and in phonetic series. Investigating the rhymes of the “Book of Odes” I inferred, moreover, an original final guttural in a great number of words which end in - $\dot{i}u$, - a , or - uo in the *Ch'ieh Yün*. The same combination of rhyme analyses in the “Book of Odes” with the observation of alternations in the phonetic series has led in *Rekonstruktion*, pt. ii, to the reconstruction of the archaic dentals in very numerous series. From this it could be inferred that some endings contained only vocalized dentals (no gutturals), namely - $\bar{a}i$, - $\dot{a}i$, - $\dot{i}vi$, and - $\bar{e}i$, that the two final i 's, still kept apart in the *Ch'ieh Yün* but not differentiated in K.'s Dictionary because K. was not sure of what actually constituted the difference, went back to an original guttural and dental respectively, and finally that not only gutturals but also dentals must have vanished without a trace.

Whereas I limited myself to the reconstruction of a system of final consonants which was used for and was to some extent also corroborated by my Tibetan Chinese word equations (*Tibetisch-Chinesische Wortgleichungen*,¹ Berlin, 1930). Professor Karlgren, who had at first at least in part strongly objected to my reconstructions (v. “Problems in Archaic Chinese,” *JRAS.*, 1928, p. 759, etc.; “The Authenticity of Ancient Chinese Texts,” *Bull. of the Mus. of Far*

¹ When reconstructing archaic Chinese words in my “Word equations” I printed the vowels in italics in order to indicate that I did not wish to suggest anything about their archaic sounds.

Eastern Antiquities, i, 1929, p. 183 and n. 1; "Tibetan and Chinese," *T'oung Pao*, 28, 1931, pp. 25-70) now presents us in the two papers quoted above with a complete reconstruction of the Chinese of about 900 B.C., using also the recent contributions to the problem by some other scholars (A. Dragunov, "Contribution to the Reconstruction of Ancient Chinese," *T'oung Pao*, 26, 1929, pp. 1-16; Li Fang-kuei 李方桂, "Ch'ieh-Yün â ti lai-yüan 切韻的來源" (*Academia Sinica, Bull. of the National Research Institute of History and Philology*, vol. 3, part 1, pp. 1-38); Li Fang-kuei, "Ancient Chinese -ung, -uk, -uong, -uok, etc., in Archaic Chinese" (ibid., vol. 3, pt. 3, pp. 375-414); Lin Yü-t'ang 林語堂, "支脂之 san pu ku tu k'ao 支脂之三部古讀考" (ibid., vol. 2, pt. 2, pp. 137-152)). The *Shi King Researches* (*Sh.K.R.*) discuss first of all the archaic gutturals and archaic vocalism. The *Word Families in Chinese*¹ (*W.F.*) supplement these reconstructions by archaic dentals and improve the system of archaic vocalism. The second half of the *W.F.* contains a very important division of the ancient Chinese vocabulary into large groups arranged according to finals. These large groups are in their turn subdivided into numerous word families within which K. considers etymological relationship as either certain, or probable, or at least worth discussion. K.'s new system of archaic reconstructions has been used as a basis, words which in his opinion ended in a vowel have been excluded. A discussion of this latter part which is obviously the result of a prolonged laborious collection on his part, must be reserved for another paper. Here I propose to discuss K.'s system of archaic reconstruction. The problem of finals will be treated in greater detail than that of the vocalism and the initials.

I. THE PROBLEM OF THE FINALS

GENERAL OBSERVATIONS

If we do not consider the *manner* of articulation (fricatives as opposed to plosives, or in the case of the dentals also -r), the present stage of the problem of finals can be briefly described as follows: K. accepts all the dentals² as reconstructed by me, and rejects of the gutturals only those reconstructed after the endings -a, -uo, -i_u, and -ɤu (these last only in part, -ɤu₂, see below, p. 276).

¹ In the page references given by K. in his *W.F.* there is a typographical error. The figure 8 must be added in order to make them correct.

² At an earlier occasion Li Fang-kuei had already assented to my reconstruction of dentals (*Ch'ieh Yün â ti lai-yüan*, p. 18). As for some dentals newly reconstructed by me after -â and -i_ɤ see below, p. 280, etc.

Just as K. himself had inferred archaic finals only in the phonetic series where a final plosive was preserved in some of their words, he then made the existence or non-existence of a connection with such *ju-shêng* words an absolute test for the finals reconstructed by me. In doing so he started from the idea that on the one hand his assumption of an epenthetic *-i* was quite as good an explanation as the supposition of a simultaneous vocalization in *-i* and *-u*, and that on the other hand we had to deal in the "Book of Odes" quite frequently with loose rhymes,¹ which provided a far inferior argument than connections with *ju-shêng*'s. He looked therefore for confirmation from phonetic series or *Shih Ching* rhymes, where a vocalized consonant or a final consonant vanished without a trace alternates with a preserved one, whereas just these cases had been put aside by myself as being exceptional series or exceptional rhymes. If a connection with a *ju-shêng* could not be ascertained, K. did not only doubt very much whether there was an original final at all, but even considered this frequently as proof that the respective syllables ended in a vowel. This predominance of the *ju-shêng* argument was maintained by K. also in his *Sh.K.R.*,² although these have led him to a quite different judgment of the *Shih Ching* rhymes. Relying on the Chinese works by Tuan Yü-ts'ai and Wang Nien-sun, he now sees in them rhymes of an extraordinary strictness which provide for him an adequate basis for the reconstruction of his archaic vocalism. The rejection of an archaic final because it lacks connection with ancient *ju-shêng*'s has logically speaking always been inconclusive as it is built on a negative premise. K.'s argument becomes weaker the stricter the structure of the rhymes and of the phonetic series turns out to be. The reconstruction of archaic vocalism should have suggested to K. the alternative idea that if certain finals did not show any connection with *ju-shêng*'s it might not be at all the question of consonants but of vowels. One would have expected that the argument of the *ju-shêng*'s would have definitely lost its predominance in the *W.F.*, where K. recognizes my dentals also in numerous series where there is no connection with *ju-shêng*'s. These dentals had therefore on a previous occasion (*Authenticity of Ancient Chinese Texts*,

¹ To this supposition of a considerable number of "hedge rhymes" in the *Shi Ching* Li Fang-kuei had objected (*Ch'ieh Yün à ti lai-yüan*, p. 26), pointing to the strictness of the *Shih Ching* rhymes.

² Cf. for instance, loc. cit., p. 132, n. 1, where he says of the words 加, 麻, 沙, 差 below referred back to an original final dental by me: "None of these finals have any connection, in script or rhymes, with 'ju sheng' words, see *JRAS.*, 1928, p. 783. It is clear beyond doubt that they have never had any final consonant."

p. 183, n. 1) been flatly rejected by K. Especially when reading the *Sh.K.R.* one cannot help thinking that K. even tries to eliminate any connection with *ju-shêng's* in the script for those series which in his opinion ended in a vowel (cf. for example, p. 132, n. 2 ; p. 134, n. 1 ; and p. 137, n. 1 ; cf. also below, p. 274).

The problem of the *manner* of articulation of the vanished or vocalized consonants—which can probably never be definitely settled—can only be touched on here. That the plosives preserved in A.D. 600 should have been voiceless already in 900 B.C., as K. thinks, is an assumption which needs to be proved as much as the opposite theory. If one supposes the plosives preserved to be voiced plosives (*-g, -d, -b*) and those which were vocalized or had vanished later on to be voiced fricatives (*-γ, -đ, -β*), in 900 B.C. one has *first* an obvious explanation for the mass vocalizations into *-u* and *-i* ; *secondly* a bridge to Tibetan, where, on the one hand, all plosives preserved are written as voiced and where, on the other hand, words ending in a vowel show in ancient Tibetan orthography not infrequently a final 'a-chung ᳵ which obviously denoted originally there a pressed voiced off-glide,¹ in the same way as it is still to-day pronounced as a pressed voiced onglide when initial ; *thirdly* a connection back to a polysyllabic Chinese, which we can suppose to be original, where an intervocalic *-g-, -γ-, -d-, -đ-, -b-, -β-* can be referred quite simply back to an older *-k-, -g-, -t-, -đ-, -p-, -b-,* ; and *fourthly* a better possibility of accounting for what may have corresponded in Chinese to the Tibetan *-r*, and *-l*, and perhaps also to the Tibetan *-s*, and of imagining that sounds of this kind may have even themselves alternated in Chinese phonetic series with dentals and gutturals.²

On this point the introduction by K. of a Chinese final dental *-r* which he assumes to be usually vocalized into *-i*, but in some cases also to have vanished without a trace, must be considered one of the most interesting new ideas of the *W.F.* By this *-r* K. believes that he can account both for the alternation of vocalized dentals or those which have vanished without a trace with final *-n* (which I discussed in *Rekonstr.*, pt. ii, p. 8, etc.) and for the appearance of a rhyme category G (No. 13 with Wang Nien-sun, cf. below, p. 285), which seems to Karlgren identical in vocalism with his category F. Finally he believes

¹ I cannot discuss here the similar conditions of finals in Burmese. For the phonetic side cf. *Lautzeichen und ihre Anwendung in verschiedenen Sprachgebieten* (Berlin, 1928), p. 108, and n. 3.

² Cf. below, p. 275.

he has found also a reasonable corresponding sound for Tibetan *-r*, *-l*, and *-s*. For the latter reason he gives *-r* the preference over *-l*, because he assumes as an additional hypothesis the transition of the original *-s* to *-r* in Chinese. The idea that corresponding sounds to the Tibetan *-r* should be looked for also among Chinese dentals—I had seen in Chinese dentals only equivalents to the Tibetan *-l* (v. *Wortgleichungen*, pp. 27–8)—is very important. As, however, the correspondence of the Tibetan *-r* to Chinese gutturals can hardly be denied (v. *Wortgleichungen*, pp. 28–9¹), it is not easy to explain these equivalents. I hope at a later date to discuss this question in connection with a new treatment of the problem of word equations. As for Chinese itself, the introduction of an *-r*, a sound which is lacking throughout the whole Chinese linguistic territory,² does not seem to me very happy, and hardly necessary besides the dental fricative so similar in sound, which, however, was rejected by K. I see another difficulty in the assumption of a frequent vocalization of this *-r* into *i*, and in the fact that the completely parallel though less frequent alternation of vocalized gutturals and guttural nasals in phonetic series (*Rekonstr.*, pt. ii, p. 10) is deprived of its dental counterpart. The Tibetan language, quoted by K. in support of this supposed alternation, has as a rule in the case of the dentals quite a different type of alternation: *dro-ba* “to be hot”, *dron-mo* “hot”, *drod* “heat”, *rku-ba* “to steal”, *rkun-ma* “thief”, *rkud* “theft”, *si-ba* “to die”, *gšin-po* “dead man”, *šid* and *gšid* “funeral” in *gšid-zan* “funeral repast”, *šid-sa* “burying ground”, etc.³ Tibetan therefore can hardly be quoted in confirmation of the assumed Chinese *-r*. The series *si-ba*, *gšin-po*, *šid* (quoted already in *Wortgleichungen*, p. 19), when compared to Chinese 死, which K. now reconstructs as *siər*, shows, moreover, that the

¹ My assumption of an uvular pronunciation of ancient Tibetan final *r* (v. *Wortgleichungen*, p. 28, and n. 1) has been assented to by A. Dragunov (*Or. Litstg.*, 1931, col. 1087 and n. 3), who adduced in confirmation his own observation in modern Tibetan dialects. Cf. also *ibid.* Dragunov's very interesting remarks on a final *d* resembling an *l*, observed by him in Chinese and Tibetan dialects.

² The appearance of *-r* for *-t* in certain documents of T'ang time, transcribing Chinese words—for instance, to quote the most recent publication, in the fragment of the *Vajracchedika*, edited by Professor F. W. Thomas (“A Buddhist Chinese Text in Brāhmī Script,” *Zeitschr. d. Deutsch. Morgenl. Ges.*, vol. 91, pp. 1–48)—points to a dental fricative in the Chinese dialect transcribed, but not necessarily to an *-r*. (Cf. the transcription *ḍ* chosen by Professor P. Pelliot, but also his remarks in *T'oung Pao*, vol. 16 (1915), p. 3, n. 2.) It is very interesting to note that the *Vajracchedika* Text shows also a final guttural fricative (transcribed as *h*) for *-k*.

³ Cf. a number of similar examples in Jäschke, *Tibetan Grammar* (Berlin, 1929), “Addenda,” pp. 120–1.

word for “to die” may not be counted one of the “typical vowel-ending Sinitic roots” (*W.F.*, p. 37).¹

I must mention that K., who had originally in his Dictionary considered the appearance of a falling tone in most of the words in which he inferred vocalized or vanished finals as a proof of the voicedness of these consonants, but had later formed the hypothesis that the falling tone was the cause of an original voiceless consonant becoming voiced (*JRAS.*, 1928, p. 773), now in connection with the assumption of a final *-r* has given up this latter theory and has promised us a new one (*W.F.*, pp. 15 and 31 seq.). As for the words ending in *-a* or *-uo*, for which an original guttural can be inferred from the script, K., as these words did not rhyme with words ending in a preserved guttural, had originally assumed an implosive *-k* and formed the additional hypothesis of a second archaic dialect (*Sh.K.R.*, p. 134, etc.). In the *W.F.* he has now, following a suggestion of Li Fang-kuei (*Ancient Chinese -ung, -uk, etc.*, p. 408, n. 1), assumed a glottal stop as a final (cf. below, pp. 275 and 279).

Finally I should like to point out that K.'s scepticism of final consonants not confirmed by *ju-shêng's* has even led him so far as to consider for example the guttural of *kjəu* “nine” as an individual Chinese development, because it cannot be traced 2,800 years later in the modern languages and dialects recorded in the *Linguistic Survey of India (Tibetan and Chinese, p. 61)*. Nor is his opinion shaken by the fact that the Māru dialect, which seems to have kept an extraordinarily ancient state of sounds, has in the word for “nine”, as in a number of other words,² really preserved an ancient final (“nine” = Māru *kuk*). He proceeds, in order to support his supposition, on the hypothesis of a “velar Nachschlag” (*Tibetan and Chinese, p. 61; Sh.K.R., p. 131, n. 1*), for which he quotes parallels from Scandinavian and other languages, and in the note just quoted he even tries to weaken the evidence of rhymes on *ju-shêng's* saying that “no reconstruction of an original final guttural can be based on such cases”.

To my mind the connection with *ju-shêng's* ought not to have a predominant position in proving final consonants in Archaic Chinese. The ancient finals can be inferred in phonetic series partly from connections with *ju-shêng's*, partly from a simultaneous vocalization

¹ Cf. also Māru *šit* (*Ling. Survey of India, vol. i, part 2, p. 247, No. 263*).

² Cf. above, n. 1, and for example Māru *pyit* “to give”, belonging to Chin. 界 (*W.F.*, p. 37, reconstructed as *piəd*). I hope to come back to this point at another occasion.

in *i* and in *u*, partly from an alternation with nasals, further from the combination of these clues with each other, and with *Shih Ching* rhymes. Finally—as I shall attempt below—they can be confirmed, if not discovered, by means of etymological relationships.

The difference in standpoint indicated above provides for those points where K. and I agree such a degree of certainty that we need not dwell on these any longer. I should, however, like to exclude from these points the equality in principle, quietly assumed, of vocalized consonants and those vanished without a trace which to my mind very much deserves further consideration. Especially it must remain undecided whether vanishing without a trace is a sign of an earlier loss of sound or of another manner of articulation¹ or of both, and how much even conclusions reached hitherto concerning the place of articulation may have to be modified. I should think that the majority of the final consonants vanished without a trace may be with certainty identified as either dentals or gutturals, and the noticeable lack of labials may primarily be explained by dissimilation (cf. below, p. 283). Apart from that we have to reckon not only with transitions from *-b* to *-m* (v. K.'s *Dictionary*, p. 30) and with vanishing without a trace (*Dict.*, pp. 29 and seq.), but perhaps also with the vocalization of a labial into *u*, and both in this case and in the case of a vanishing without a trace with an incidental creeping in into guttural or dental series or rhyme chains. That it is just the assumption of fricatives for the reconstructed finals which provides the possibility of thinking of an alternation of even an original Chinese *-s* and *-l* with *-ǰ* in phonetic series and rhymes has been pointed out above (p. 272). Likewise I have intimated that the fate of the Indo-Sinitic original final *-r* may have varied on Chinese soil. Moreover, if we reckon with a possibly necessary differentiation in principle between vocalized final consonants and those vanished without a trace, we obtain for the reconstruction of the archaic Chinese final consonants a far greater scope. Obviously K.'s assumption of a final *-r* and a glottal stop point in the same direction, and here it is particularly interesting that the connection with *ju-shêng*'s which K. fails to find in the case of the endings *-a* and *-uo* and the missing connection with *ju-shêng*'s in the case of the

¹ In his *Dictionary* (p. 29) K. assumed a difference between an ordinary *g* vanished without a trace in opposition to a palatal *g* vocalized into *i* and a velar *g* vocalized into *u*. He has, however, never come back to this differentiation. If a consonant vanishes after *i* and *u*, this may mostly not be the case of a vanishing without a trace, but of a contraction after a previous vocalization.

endings *-á* and *-ie*, which along with other data led K. to his assumptions, all concern words where any consonant which may have existed must have vanished without a trace.

DETAILS

A. Gutturals

1. *-ɣu* and *-iu*.

K. distinguishes two types of each : *-ɣu₁* rhyming or alternating in phonetic series with *-i* and *-uái*, and referred back to an original guttural both by K. and myself (*-ǔg*), and *-ɣu₂* rhyming with *iu₁*, and explained by K. as “ Brechung ” (fracture) of original *-u*. Besides the *-iu₁* rhyming with *-ɣu₂* and containing an original *u*, there is, according to K., an *iu₂* which he refers back to an original *-io* and which, according to him, *does not occur after dental or palatal initials* (see below under 2). The differentiation of the two types in vocalism is new and important. I do not think, however, and not only on account of the preceding general considerations, that K. was justified in combining this differentiation with the conclusion, based on the supposed lack of sufficiently numerous connections with *ju-shêng*'s, that *-iu₁* must have ended in a vowel and that *-ɣu₂*, which rhymes with it, cannot have ended in a guttural, but sprang from *-u* through “ Brechung ”. I had assumed an original guttural (*Rekonstr.*, pt. i, p. 14, etc.), precisely because of the alternation of these two endings in phonetic series and in rhymes ; apart from the rhyme connections with gutturals adduced by K. himself (*Sh.K.R.*, p. 131, n. 1 ; *W.F.*, p. 49), I find new evidence in the fact that for a considerable number of the characters arranged by K. in his rhyme table xv (*Sh.K.R.*, p. 170) there can be adduced in the respective phonetic series either connections with *ju-shêng* or alternations with the final *-iɣu*,¹ which is also by K. always referred back to a guttural, or obvious etymological relationship with words ending in a guttural. The characters arranged in table xv belong to the following phonetic series (Nos. in K.'s *Dictionary*) : 44 付, 78 后, 79 侯, 80 厚, 81 戶, 418 菁, 419 口, 484 句, 488 具, 494 區, 571 扇, 572 婁, 607 每, 840 需, 902 爻, 913 討, 919 數, 1014 斗, 1015 豆, 1103 奏, 1123 取, 1245 主, 1247 朱, 1257 芻, 1325 禺, 1327 愈, 1329 輿.

¹ Alternations between *-iɣu* and the endings *-ɣu* or *-iu* occur besides in the following series which are not connected with the rhyme words contained in Table XV : 48 孚 49 甫 (cf. below, p. 278), 603 予, 819 叟.

There are in the following of these series indications of an original guttural:

- 78 后: 姤 etymologically identical with 媯 (see below, No. 418).
 詬 etym. related to 誨 (see below, No. 484).
- 418 菁: This series has been referred back by K. himself to an original guttural on account of connections with *ju-shêng*'s in the script.
- 419 口: See Series 484 derived from it.
- 484 句: 句 etym. related to 斗 *k'iu*.
 夠 etym. identical with 殼 of the *ju-shêng* Series 506
 殼 *k'ák*.
- 571 扇: 漏 etym. related to 露 (Series 577, *luo* < -*g*) and 霽 *liu*.
- 572 婁: Cf. below the probably related Series 919.
 鏤 perhaps etym. related to 衆 *luk* and 錄 *liwok*.
- 607 每: For this series also K. assumes an original guttural.
- 913 封: 樹 etym. related to 植 *ziak* and etym. identical with 豎 (see below, No. 1015); belongs to the word family recorded *W.F.*, p. 66, B. 20; cf. also *Tibet.-Chin. Wortgl.*, No. 55.
- 919 數: 數 shows the *ju-shêng* reading *ts'iwok*, not given in K.'s Dictionary, with the meaning "suddenly" which is to be added to *W.F.*, p. 70, B. No. 361, etc.¹
- 1015 豆: 豎 etym. identical with 樹 (see above, No. 913).
- 1103 奏: 湊 probably belonging to *W.F.*, p. 73, B. 542.
- 1122 聚: 驟 shows the ending *-iəu*. Cf. also No. 1123.
- 1123 取: 齧 *ts'ák* is a variant of 齧.
 趣 etym. related to 趨 of Series 1257 (see below).
 聚 see above, No. 1122.
- 1245 主: 注 probably etym. = 鑄 in Series 899, which contains words ending in *iəu*.
- 1247 朱: 味 shows *-iəu* (*t'iəu*).
- 1257 芻: 鄒, 騶, 皺, 縐 have *-iəu* (*ts'iəu*); cf. also 趨 which is etym. related to 趣 (see above, No. 1123).
- 1325 禺: 頤, 馮, 魚, 喙 the *Kuang Yün* indicates the reading *ngiwong*.²

¹ On account of the guttural ending also 藪 "to wash" may now perhaps be added to *W.F.*, p. 69, B. 235, etc.

² I am indebted to Professor W. Percival Yetts for having incidentally drawn my attention to these words. Cf. his paper, "A Datable Pair of Chinese Bronzes," *Burlington Magazine*, 1937, p. 8 and n. 3.

1327 俞: 偷 etym. related to 盜 *d'âu* < -*g*.

逾 perhaps etym. related to 度, 渡 -*uo* < -*g*.

窳 etym. related to 通 and 透, of which the latter belongs to the Series 805 partly ending in *-iəu*; perhaps to be added to *W.F.*, p. 66, B 34.

2. *-a*, *-ia*, *-uo*, *-iwo*, and *-iu*₂.

In *Rekonstr.*, pt. i, p. 17, I tried to add a number of series to those where K. infers an original guttural after the five endings quoted above by explaining the alternation of *-uo* and *-iu* by an original *-uoy* and *-iuy*. As K. referred *iu*₂ back to *-io*, this explanation is now inconclusive. However, this lack of evidence concerns only series 1284 吳 and 1317 于, but not Series 49 甫—according to K. a subseries of Series 42 父—with their subseries, because there *-uo* does not only alternate with *-iu*, but also with *-iəu* (in 牖). As K. (*Sh.K.R.*, p. 134, n. 1) explains the *ju-shêng* 博 *pāk* in the Subseries 50, as does the Shuo Wên, as *hui i* and 縛 *b'iwak* as “contracted phonetic”, I should like to point out that evidence for a guttural also comes from 匍,¹ which has the same meaning as, and is etymologically undoubtedly related with, 匍 *b'uək*. It should therefore be added to *W.F.*, p. 79, No. 133, etc.

Of the three *ju-shêng* connections 涸, 劇, and 著, quoted in *Rekonstr.*, pt. i, p. 19, for the Series 432, 489, and 1187, K. wishes to explain 涸 likewise as *hui-i*. Against this explanation I should like to adduce the reading 涸 *kək*, although it is recorded in the *K'ang Hsi Tzŭ Tien* only as a quotation from the *Tzŭ Hui Pu*,² and the etymological relationship of 枯 with the words given in *W.F.*, p. 61, No. 118, etc. For Series 489 K., too, recognizes an original guttural on account of the adduced 劇 (*Sh.K.R.*, p. 133). Then, however, the guttural is to be inferred also for Series 87 虎,³ of which Series 489 is, also according to K., a subseries. That Series 1187 者 contains *ju-shêng* connections has meanwhile been stressed also by Li Fang-kuei (*Ancient Chinese -ung*, etc., p. 408, n. 2). Further, I should like to point to the etymological relationship of 猪 and 豕 *t'iwok*.

¹ The *Kuang Yün* even indicates the reading *b'uək* besides *b'uo* for 匍.

² The exact title is: *Hsü Tzŭ Hui Pu 續字彙補*. The work (in 14 chüan) was compiled by Wu Jên-ch'ên 吳任臣 (No. 2326 in Giles's *Biogr. Dict.*).

³ Professor G. Haloun kindly indicated to me some *ju-shêng*'s of this series: 號, 捩.

K. tries to invalidate the conclusion that Series 675 女 and its Subseries 944 如 have had an original guttural because both 汝 and 若 and 如 and 若 are written alternately, by adducing from the *Kuang Yün* for 若 a reading *n̄ziä* with the meaning "dried leaves", and by saying (*Sh.K.R.*, p. 137, n. 1): "Arch. 若 *n̄iak* and *n̄iä* "like, such as" (the latter a word cognate with 如) are probably two independent words which, being synonymous, are brought under the same character." This hypothesis is to my mind not only improbable in itself, but it is also difficult to reconcile with the obvious etymological relationship of 拏 and 擲 (*njak*) and of 恕 and 赦 (*šiä < -g*).

As an additional connection with a guttural in the script we have for Series 1070 且¹ the reading 𠄎 *ts'jak* given in the *Yü P'ien* and the double reading *tsäng*, *ts'uo* for 駟. Etymologically 渣 (Series 1155, subseries of 1070 查) belongs to 滓 and 糟 (*W.F.*, p. 74, Nos. 644-5) and 詛 to 說 *ts'iu*, for which words also K. assumes an original guttural.

The examples for the rhymes in *-iu* (rhyme i in *Rekonstr.*, pt. i, p. 17, etc.) and *-ɹu* (rhyme ii), which I have adduced are contained in K.'s table xiii. Whereas rhyme i is no longer conclusive, as *-iu* has been referred back to *-io* (see above), we must add for rhyme ii the Nos. 400 and 588 from K.'s table.² K. has arranged the rhymes in *-a*, *-iä*, *-uo*, and *-iwo* with gutturals ascertained by the script (my rhyme iii) in the special table xiv. Here he raises the new objection to my reconstruction that not only are there generally no connections with *ju-shêng*'s in the case of these endings, but that particularly the words with gutturals ascertained by the script (type 路) with one exception³ (table xiv, 366) only rhyme with *-uo* or *-iwo*, but not with *-a* and *-iä* (type 家). To my mind neither the lack of connections with *ju-shêng*'s nor the absence of the latter kind of rhyme can be adduced as proof for a vocalic ending, because, in K.'s own words, "contrary to every expectation" (*Sh.K.R.*, p. 134) those words do not rhyme with *ju-shêng* words as 木, 玉, 毒 either (see also above, pp. 274 and 275).

¹ A. Dragunov (*Or. Litztg.*, 1931, col. 1086, n. 1) points to the dialectal nasalized form *ts'iä* occurring in Swatow.

² The rhyme 主:厚 (Series 1244), adduced by me, is, however, to be eliminated as it belongs to the group *iü₁ : ɹu₂* dealt with above. In the case of 雨 K. reconstructs in table xiii (No. 58) an original *-io*, although it had an original dental initial. 庾 occurs in table xiii (No. 59) with the ending *-io* in spite of a reconstructed dental initial (for which K fails to give evidence), but 楨 appears in table xv (No. 16) with the ending *-iu* and without any initial.

³ To this, I think, the rhyme 614 of table xiii should be added.

Probably we have to do here with special features of vocalism which still remain to be elucidated.

I am not able myself to adduce more connections with *ju-shêng's* for the type 家¹ than those given by K. himself in his *Dictionary*, but as the series concerned are few and not rich in words, and the respective finals must have vanished without a trace, the material is, I think, not more meagre than could be expected. If we examine the rhymes arranged by K. in table xiii, the very first rhyme group (矧, 瘡, 痛, 呀) shows in its first three characters the phonetic series 且, 者, 甫 mentioned above, for which it was possible to adduce connections with *ju-shêng's*. If we add to these the characters belonging to the other series quoted above, as for instance 女, 如, 若, 虎, and take also into account the rhymes in *-ɹu*, it seems to me that the reconstruction of an original guttural is still justified, so that those words in *-uo* (*-iwo*) which rhyme both in table xiii and table xiv may be adduced in further support. K.'s conclusion that this group had a vocalic ending seems ultimately to result from the predominant position which he attributes to the connection with *ju-shêng's*.

B. Dentals

1. *-á* and *-ie*.

Following Tuan Yü-ts'ai, K. points to two groups of words ending in *-á* and *-ie*, viz. Tuan's Categories 16 and 17. While K.'s assumption of an original guttural for Category 16 coincides with my reconstructions, K. attributes to Category 17 a vocalic ending also in archaic Chinese.² In *Rekonstr.*, pt. ii, p. 25, I had myself referred a number of characters of this category back to guttural origin, misled by an irregular rhyme chain in the "Book of Odes" (*Hsiao Ya*, iv, 5, Str. 9) I should now suggest that Tuan's Category 17 is the dental corre-

¹ In the case of the endings *-uo* (*-iwo*) some evidence for an original guttural may further be found in the following etymological connections: 衢 *ɣuo* "street" related to 街 "id." (*W.F.*, p. 60, M. 24: *kěg*); 呼 *ɣuo* "to call" related to 号 and 號 *ɣáu* < *-g* "id."; 紓 *śiwo* "let go" related to 縱 *tsiwong* "id."; 歔 *ɣiwo* "to snore" related to 駒 *ɣəu* "id." The latter word had in my opinion an original final guttural (see above, p. 277, series 484, and *Tib.-Chin. Wortgl.*, No. 325).

² The assumption of an original vocalic final of these endings is also contradicted by modern dialect forms in *-ai* (*-uai*), esp. in the Min Dialects, as Fuchow *muai* 麻, 蔴, *nguai* 我, *tuai* 舵, etc. (cf. Karlgren, *Phonol. Chin.*, pp. 714 seq.). I must thank A. Dragunov for having drawn my attention to this dialectal vocalization of finals generally vanished without a trace (*Or. Litztg.*, 1931, col. 1086, n. 1).

spondent to the guttural Category 16.¹ Evidence for this dental final may—apart from the *ju-shêng* connections adduced, but misinterpreted by me in *Rekonstr.*, pt. ii, p. 27, n. 1—be derived from the following etymological connections with words ending in a dental:

- 204 義: 義 (Series 132 of K.'s *Dict.*) $\chi j i \dot{\epsilon}$ "breath", belonging to 氣 $k'j \dot{\epsilon} i$ "id." and 喟 $k'j w i$ "to breathe heavily", each with an original dental.
- 337 奇: 崎 $k'j i \dot{\epsilon}$ shows the reading $g'j \dot{\epsilon} i$ with an original dental.
倚 "to lean against" belongs to 依 $\cdot \dot{\epsilon} i$ "id." with an original dental; cf. *W.F.*, p. 83, No. 217.
- 342 加: See below, No. 343.
- 343 𨾏: 癘 $g'j w a$ "lame" belongs to 蹇 $k \dot{\imath} \ddot{a} n$ "id."
- 410 戈: 戈 $k u \dot{a}$ "lance", belongs to the word family *W.F.*, p. 84, No. 300, etc., ending in a dental.
- 414 可: 何 $\chi \dot{a}$ "how" belongs to 曷 $\chi \dot{a} t$ "id.", cf. *W.F.*, p. 81, No. 93, etc.
奇 see above, No. 337.
- 435 𨾏: 𨾏 see below, No. 437, cf. also 骨 $k u \dot{a} t$ which can be explained as a phonetic compound, not as *hui i* if this Series has a dental final.
- 437 𨾏: 窩 $\cdot u \dot{a}$ "nest", belongs to the word family *W.F.*, p. 12, No. 114 seq., to which also 窠 (with archaic dental, for K. $k' u \dot{a} r$) should be added.
過 $k u \dot{a}$ "to transgress" belongs to 概 "threshold" (*W.F.*, p. 82, No. 184 $k \dot{\imath} w \dot{a} t$) and to 外 $n g u \dot{a} i$ "outside", with original dental final which could be added to the word family just quoted. Perhaps also the word family *W.F.*, p. 81, No. 90 seq. 遠 $g \dot{\imath} w \dot{a} n$ "distant", etc., belongs here.
- 593 麻: 摩, 磨 $m u \dot{a}$ "to rub", belongs to 抹 $m u \dot{a} t$ "id."
𨾏 $m u \dot{a}$ "steamed bread", belongs to 饅 $m u \dot{a} n$ "id."

¹ In accordance with this suggestion and with the inclusion of some other corrections a G or a D? is to be replaced by a D, or a D is to be added in the case of the following Series (Nos. of K.'s *Dictionary*) in the table annexed to *Rekonstr.*, pt. ii (p. 28): 1 阿, 70 禾, 72 何, 93 化, 117 火, 132 義, 196 宜, 204 義, 223 也, 337 奇, 342 加, 343 𨾏, 410 戈, 413 哥, 414 可, 417 科, 437 高, 533 嵩, 534 離, 569 羅, 593 麻, 647 那, 679 我, 684 罷, 721 皮, 753 波, 776 西, 846 沙, 1006 多, 1008 隆, 1009 隋, 1011 它, 1099 左, 1157 差, 1313 爲. At the same time the D appended to Series 704 備 is to be corrected in G, and a D? is to be added to Series 1096 此 and 1110 𨾏.

靡 *mjwiɛ* “not” belongs to 未 *mjwei* (archaic, accord. to K., *m̄wəd*), 末 *muát* “id.” and to the word family, *W.F.*, p. 93, No. 83 seq.

麾 *χjwiɛ* “pennant” belongs to 旂 *g'jei* “id.” with original dental.

糜 *mjwiɛ* “rice-gruel” belongs to 米 “rice” with an original dental and probably also to 飯 *b'ɣwɔn* “cooked rice”.

679 我: See above, No. 204.

721 皮: 簸 *puá* “winnowing fan”, etymologically identical with 播 in a Series ending in *-n*. Cp. also K. *W.F.*, p. 33, the characters 33 播 and 34 礮 with the sounds *b'wán*, *pwár*, and *pwá*, where K., as he reconstructs an archaic vocalic ending for the *-á*, explains the *pwá*, side by side with *pwár*, by an early vanishing of the final *-r* reconstructed by him.

跛 *pjiɛ* “lean over”, 跛 *puá* “walk lame”, belongs to 偏 *p'ian* “inclined to one side”.

坡 *p'uá* “slope” belongs to 阪 *p'wɔn* “id.” Cf. also *W.F.*, p. 94, No. 152 seq.

被 *b'jie* “to cover” belongs to 蔽 *p'iai* “to shade, conceal” with an original dental, and to the word family, *W.F.*, p. 94, No. 111 seq.

披 *p'jie* “to open, divide”, belongs to 別 *b'iat* “to cleave, divide”, and to the word family *W.F.*, p. 92, No. 26 seq.

1008 墜: 墜 *d'uá* “to fall down”, probably belongs to 墜 and 墮 (*W.F.*, p. 91, No. 342-3, *d'iwəd* and *d'wər*). Cp. also the double reading *t'uá*, *t'uái*, the latter with original final dental, for 甍.

1009 隋: Subseries of No. 1008.

1157 差: 搓 *ts'á* “to roll between the hands, to rub” belongs to 擦 *ts'at* “to rub, to wipe”.

1313 爲: 爲 shows (*Kuang Yün*, iv, 14) besides *χjwiɛ* also the reading *χái*, the ending *-ái* of which points to an original dental final (see *Rekonstr.*, pt. ii, pp. 4-5).

2. Series 703 卑.

As is evident from *W.F.*, p. 78, No. 88, K. refers the character 卑 *b'jie* back to archaic *b'ǝg*.¹ Evidently K. follows here Tuan Yü-ts'ai,

¹ On account of its dental final 卑 should be added to *W.F.*, p. 94, Nos. 111 seq.

who had placed the phonetic in Category 16. I had reconstructed a dental final for Series 703 (*Rekonstr.*, pt. ii, p. 26). This dental can be confirmed by the *Song from Lu*, transmitted in the *Lü Shih Ch'ün Ch'iu*, xvi, 5, where 鞞 rhymes with 辰 (K.'s *Dictionary*, Series 530) with the double reading *liei*, *liet*.

C. Labials

In his *Dictionary* (p. 30) K. briefly indicated the possibility that syllables with a labial initial or a *u*-diphthong ending in a dental or a guttural may have developed through dissimilation from a labial final. In his paper in the *JRAS.*, 1928 (pp. 770 seq.), he has explained this more fully. In my *Word Equations* (p. 23 seq.) I had indicated some more cases of dissimilation (cf. also above, p. 275). If we accept the final *-m* suggested for Series 449 藿 in the word equations 275 and 277-9, we can add to the word family *W.F.*, p. 95, No. 21 seq., 藿 *g'iwän* < *-m* (according to word equation 277 = Tibetan *hgram*). In the same way an original labial for Series 845 旬, to be inferred from equation 283, puts 旬 *ziuën* < *-m* "decade" by the side of 十 *ziap* "ten". In equation No. 266 a labial has been inferred for 歲 *siwäi* < *-d*, *siwät*. This would suggest a labial for the word family *W.F.*, p. 89, No. 265 seq. (words with *w* only), where also 徇 (No. 276) of the phonetic Series 845 just mentioned occurs, and where words such as 團 (No. 265: *d'wän*) "round" and 轉 (No. 267: *t'iwän*) "to turn" may belong to Tibetan *zlum* and *ldum* "round" (cf. also *Wortgleich.*, p. 44, § 96). No. 272 颯 *dz'iwän* "whirlwind", placed by K. as well as the other words of Series 843 of his *Dictionary* which are etymologically identical with it in this word family, suggests *ts'ub* as Tibetan equivalent. From Tibetan *ljibs* "to lick" I should infer an original final *-m* for 吮 *dz'iwän* "id." ¹ and with this for Series 293 允. A confirmation of this *-m* could be found in the words 浚 *siuën*, *tsiuën* "deep" and 駿 *tsiuën* ² "swift horse" which belong to a subseries (No. 1127) of Series 293, and go well together with 深 *s'iam* "deep" (cf. *W.F.*, p. 97, No. 36 seq.) and 駮 *ts'iam* ² "to gallop". Finally one might consider 楦 "shoelast" with an original *-m* an equivalent to the Tibetan *hlam* "shoe". As we have now reconstructed a final dental for Series 93 化 (see above, p. 281, n. 1), Chinese 靴 *xiwa* "shoe", combined in word equation No. 289 with Tibetan *hlam*,

¹ Cf. also 舌添 *t'iem* "to lick" for which the double reading *t'im*, *lim* in Cantonese suggests an original initial *t'l*.

² Cf. also Tibetan *c'ibs* "horse".

should be compared rather to Tibetan *krad* "id." An original labial final for Series 1141 退 can be inferred from the old variant 衤 for 退 formed with the phonetic 內 *nudi* with original labial final (see p. 287, n. 1, where this variant is adduced by Professor G. Haloun ¹).

II. VOCALISM

K.'s system of archaic vocalism, based on the rhyme theories of Tuan Yü-ts'ai and Wang Nien-sun, was reconstructed in its main lines already in the *Sh.K.R.* In the *W.F.* it has been enlarged by bringing in the vowels before a dental, and has been modified after a discussion of the suggestions of Li Fang-kuei. However, even this second form cannot yet be called fully satisfactory. It is, for instance, difficult to believe that archaic Chinese could have had before dental finals no other stressed vowels than *a* (*a*, *á*, *ǎ*), *e* (*e*, *é*), and *ə*, and neither *i* nor *o* nor *u*. Stressed *i* would not occur in K.'s system before gutturals either, because every *-i* of the *Ch'ieh Yün* is explained as developed by monophthongization from *-əi* or *-ei*, which on their part are supposed to go back to *-əg*, *-əd*, *-ed*, or *-ər*. Further, the accumulation of so many *ə* and *o* before guttural finals makes one hesitate.

To discuss the system in detail I think it difficult to accept archaic Chinese diphthongs as corresponding to the diphthong *ie* of the *Ch'ieh Yün*. As could be expected from the comparison with Tibetan the type of the archaic Chinese word is: Simple or double initial consonant, plus simple vowel, perhaps with an "i- or u-Vorschlag" (*ǐ* or *ǔ*), plus final consonant. After K. has cleverly eliminated the diphthong *uo* of the *Ch'ieh Yün*, referring it back partly to archaic *o* through "Brechung" and partly to archaic *wo*, the diphthong *ie* which K. differentiates into archaic *ie*, *ia*, *iǒ*, and *io* seems now entirely alien to that type. There is another difficulty: Unstressed consonantal *ǐ* can easily be referred back to initial groups of the type "Consonant plus *l* or *r* or *y*". It is, however, difficult to accept a similar treatment of a vocalic *i* ² and I myself suggested this only tentatively (see *Tib.-Chin. Wortgl.*, p. 54). Further, if we look at the differentiations which K. assumes on account of the rhymes, they seem, at least in part, not

¹ Professor Haloun suggests an original labial final also for Series 97 襄 *ɣwai*, as he considers this a phonetic subseries of 罕 *d'áp*, which is not contained in K.'s Dictionary. He hopes soon to deal himself with the difficulty in principle arising from the assumed alternation of initials differing so much in the place of articulation.

² Also the development *iǐg* > *ia* > *iǐ*, assumed in *W.F.*, p. 55, makes one hesitate and rather think that the assumption of an archaic *ie* is the "principal error".

sufficiently justified. There is, for instance, in K.'s Category D only one word with *-iei* (蟬) which, by the way, never occurs in rhyme in the *Shih Ching*; there are in Category E two words (隳, 疇), in Category F three words (戾, 棗, 滯), and in Category G all the rest (in all 25 words). K. now differentiates the *iei* of the groups containing no more than one to three words in *iad* (Category D), *ied* (Category E), and *iəd* (Category F), and reconstructs the bulk of the *iei* (Category G), as *iər*, because he believes that the words of Category G, which following Wang Nien-sun, he separates from the Category F, must have had the same vocalism but different finals. As Category F contains apart from *ju-shêng*'s only *ch'ü-shêng*'s, one wonders whether this reconstruction of a final *iər* was not influenced by K.'s tone theory mentioned above, although the theory itself has already been abandoned by him. To my mind the differentiation of these categories must be looked for, as far as necessary, in vocalism, as, to mention only this fact, the majority of the dental *-i*'s (42 plus 4, *-wi* not counted) also occur in Category G. For the diphthong *ie* it seems to me simplest to suppose the later "Brechung" of a simple vowel (\bar{e} ?).

Generally speaking, one cannot help thinking that K., when reconstructing archaic Chinese vocalism, followed too closely the rhyme differentiations, so subtle sometimes, of the Chinese scholars. There can be hardly any doubt that the vocalism of related languages will be of great help in correcting these reconstructions once Indo-Sinitic word comparison, for which K.'s *W.F.* will prove invaluable, has made further progress.

III. INITIALS

When reconstructing archaic double initials, K. is right in showing great discretion, for which reasons are given for instance in *W.F.*, pp. 56 seq. New, but to my mind entirely justified, is the reconstruction of ancient double initials not only from the script but also from etymological relationship, as the referring back of 昏 *χwən* to *χmwən* (*W.F.*, p. 93, Nos. 99 seq.).¹

As a new archaic initial group I should like to reconstruct an archaic *sn-* (*sn̄-*). K. refers the initial *śn-* of the *Ch'ieh Yün* time back to an archaic *ñ-* without giving special reasons for this reconstruction. Evidently he made this assumption because *śn-* alternates in phonetic

¹ This indirectly confirms my reconstruction of an archaic *χmuāđ* for 火 in *Tib.-Chin. Wortgl.*, § 97, where the development *χuāđ* < *χmuāđ* is assumed in order to account for the initial *m* found in most of the Indo-Sinitic words for "fire" (cf. Tibetan *me*, Arakanese *mēn.*, etc.). K. now reconstructs 火 as *χwār* (*W.F.*, p. 80).

series with *n-* (*n̄-*) and because there is the possibility—discussed in K.'s *Études sur la Phonologie*, p. 462—of a spontaneous development of *ńzi* from *ńi* at the transition from nasal to oral articulation. I should like to replace K.'s reconstruction by an archaic group *sn-* or *sn̄-* because the initial *ń-* does not alternate with *n-* or *n̄-* only, but also with *s-* or *ś-*: Series 788 襄 (*s̄iang*) shows besides *s̄iang*, *ńiang*, and *n̄ang* the reading *ńziang* and for 孃 the double reading *ńziang* and *ńiang*. In Series 13 爾 we have *ńziē* side by side with *n̄ai* and 璽 *s̄iē* which should be explained as a phonetic compound,¹ and side by side with 獮 *s̄iān*, which should be added. In Series 840 需 *s̄iu* alternates with *ńziu*; Series 944 如 *ńziwo*—itself a subseries of 女 *n̄iwo*—shows *s̄iwo* and *śiwo*; to Series 949 戎 *ńziung* quite a number of characters with the reading *s̄iung* (𠄎戎, 𠄎, 𠄎, 𠄎) can be added; in Series 198 the characters 勢 *s̄iai* < *-d* and 𠄎 *s̄iāt* at the side of 熱 *ńziāt* can be explained phonetically which was already contemplated by K.

For the interpretation of the archaic value of *ńz-* and for the reconstruction of those characters which in phonetic series with *ńz-* show the initials *n-* or *n̄-*, it is of special importance that apart from an alternation of *ńz-* with *s-* or *ś-* there occurs also at times an alternation with *t-* or *t̄-*. If we add to Series 1242 丑 *t̄'izu* the double reading *n̄iuk*, *ńziuk* for 𠄎 from the *Kuang Yün*, we have then in this series side by side the initials *t̄-* (*t̄'izu*), *n̄-* (*n̄iuk* and *n̄izu*²), *s̄-* (*s̄izu*), and *ńz* (*ńziuk*). The same condition shows the Series 1012 consisting of the characters 妥 *t'ua*, 𠄎 *n̄uai*, and 綏 *swi*, if we provide from the *Kuang Yün* the double reading *ńzwi*, *s̄wi* for 𠄎. Alternation of *t*, *t̄*, *ś*, *n*, and *n̄* is shown by Series 1162 占; alternation of *t* and *n*³ occurs in the triple reading *nong*, *n̄ai*, and *t'ái* for 能 (Series 656); for the reading *n̄ai* we have the significant fact that the character 耐 belonging to Series 10 而 occurs as an alternative graph.

I should like therefore to explain the character 恥 *t'i* "shame" in Series 11 耳 *ńzi* as a phonetic compound, not as a *hui i*. This is confirmed by the fact that 恥 (according to K. archaic *t'iz̄g*, cf. *W.F.*,

¹ K. in his Dictionary leaves the question undecided whether we have to deal here with a *hui i* or a phonetic compound.

² For reasons unknown to me K. reconstructs in his *Dictionary* and in his *Études* (p. 834, No. 72) instead of *n̄izu* the forms *ńizu* or *ɳizu*.

³ Evidence for an alternation between *t-* and *n-* may also be derived from the modern reading *niao* for ancient *tieu* in 鳥 (Series 662). Cf. further 捻 *n̄iep* and 錘 *n̄iāp* "to pinch", of which the former occurs in the same series as 稔 *ńziəm* (Series 670), the latter in the same series as 攝 *n̄iep*, *śiāp*, and 𠄎 *t̄siāp* (Series 667). Therefore also 聶 *n̄iāp* (*tniāp*?) and 𠄎 *ts'iz̄p* "id." (Series 1057) may be etymologically related.

p. 75, No. 656) is not only etymologically related to 羞 (archaic *šjōg*, see *ibid.*, No. 657), which belongs to the phonetic Series 1242 just mentioned, but also to the words of identical meaning not recorded in K.'s *W.F.* 惡 *n̄xuk* (of the phonetic Series 10, just mentioned), 辱 *ńziwok*, and 懼 *n̄jək*. Of these, 懼 *n̄jək* belongs together with 愚 *t'ək* to the Series 匿 *n̄jək*, which is itself a subseries of 若 (Series 938: *ńziak*); 若, as we have seen above (p. 279), is related with 如 *ńziwo* (Series 944, showing alternation of *n̄j-*, *s̄j-*, *šj-*).

The relations just quoted ¹ between the initials *ńz-*, *n̄j-*, *n-* on the one hand and *s-*, *š-*, *t-*, *t'* on the other can, I think, be accounted for only

¹ Professor Gustav Haloun has very kindly provided me with the following supplementary remarks, for which I should like to extend to him my heartfelt thanks:

„Serie 13 爾: 獮 wird aber alt, noch im *Suo-uən*, 獮 geschrieben (mit Nebenform 祿; 豕 *šjē* phonetisch). 獮 *šjē* und 獮 *šjē*, *šjē* gehören zur gleichen Unterserie, die Lesung *šjē* hat aber auch 蟪 'Kröte', die Nebenlesung *šjān* 爾, sonst *niei*.

„Serie 651 難 mit den Lesungen *nān*, *tān*: 難 ist alte Nebenform zu 然 *ńziān*, 難 zu 腴, Serie 946 (mehrere Lesungen).

„Serie 654 內 mit den Lesungen *nui*, *ńziwāi* usw.: 內 ist alte Nebenform zu 退 *t'uāi*, Serie 1141.

„Serie 668: 展 *n̄iān*, s. u. Serie 928 u. 1193 (wechselt übrigens auch mit 展 *t'iān*, Serie 1164).

„Serie 788 襄: selbst Unterserie von 襄 *nān*.

„Serie 832 隼 mit den Lesungen *šjuēn*, *t'juēn*: enthält 隼 *ńziuēn*, *ńziwoēn*, alte Nebenform zu 隼.

„Serie 928 冉 *ńziām*: enthält neben 冉, 冉 *t'ām* die Doppellesungen 冉 *t'ām*, *nām*, *ńziām*, 冉 *t'ām*, *tām*, *nām*, 冉 *t'ām*, *t'ām*, *t'iem*, *n̄iām*, 冉 *ńziām*, *n̄iām*, *ts'iam*, 冉 *t'iem*, *niēm*; beachte auch 冉 *tš'iam*, *ńziām* mit alter Nebenform 冉, Serie 668.

„Serie 930: 人 *ńziēn* ist phonetisch in 千 *ts'ien*, Serie 1076, dieses in 年 *nien*, Serie 669, und 仁, einer alten Form für 仁, 仁 *ńziēn*, das wiederum eine alte Schreibung für 夷 *i* < **d̄iər*, Serie 186, ist und mit 遲 eine Nebenform zu 遲 *d'i* < **d'jər*, Serie 784, bildet; cf. auch 先 *sien*, Serie 797 (Determinativ 之 'gehen')

„Serie 936: 羊 *ńziəm* ist phonetisch in 羴 *d'iam*, *d'ām* (< **dn-*, phonet. in 羴 *l'iam* < **dl-*) und vielleicht in 羴 *n̄iāp*, Serie 664, dieses in 執 *t'šjēp*, Serie 1222.

„Serie 941: 肉 *ńziuk*, nicht bloss phonetisch in 肉 *ńziuk* und 脂 *ńziūu* (= 柔), sondern auch in 育 *juk* < **d̄jok* (Serie 1130), 畜 *jūu* < **d̄jag*, Serie 221, und 畜 *jūu* < **d̄jag* samt Ableitungen (nicht im *Analytic Dictionary*).

„Serie 1193 朕 *d'iem*, *d'ēn* usw.: enthält 朕, 朕 *ńziwoēn*, *ńziwān* 'Lederhose', cf. 菱 *tsjuēn* 'dass.', und die Doppellesung *ńziwān*, *tsjuēn* für das Determinativ 菱 'weiches Leder' (*Suo-uən* Nr. 91, Phonetikum ist tatsächlich 展 *n̄iān*, Serie 668, das auch etymologisch zugehört, alte Form wohl 朕 mit Phonetikum 人?), 菱 'dass'.

„Es bleibt anzuführen dass das *Suo-uən*, dem fast die meisten Verknüpfungen ohnedies entnommen sind, auch 二 *ńzi* in 次 *ts'i* phonetisch erklärt.“

by the assumption of initial groups consisting of a combination of a nasal with dental plosives or fricatives. The initial group $sn\dot{\zeta}$ as archaic equivalent of K.'s $\acute{n}\acute{\zeta}$ - of the *Ch'ieh Yün* time seems to be the simplest hypothesis. As modern Pekingese, for instance, shows throughout a dental¹ fricative for the $\acute{n}\acute{\zeta}$ - of the *Ch'ieh Yün*, one might feel inclined to see here the preservation of the archaic dental fricative and might perhaps therefore not restrict the assumption of the group $sn\dot{\zeta}$ - to such series where we can in fact record an alternation of $\acute{n}\acute{\zeta}$ - with a dental fricative or plosive. By the assumption of $sn\dot{\zeta}$ - it would not seem necessary to introduce a new archaic sound \acute{n} - and to assume for this \acute{n} - a spontaneous change to $\acute{n}\acute{\zeta}$ - and with that a development entirely different from that of the very similar sound $n\dot{\zeta}$ -. Archaic $sn\dot{\zeta}$ might have easily developed to a *Ch'ieh Yün* \acute{zh} -² ($< zn\dot{\zeta} < sn\dot{\zeta}$), which to my mind would be sufficient to account for all its modern developments; but here K. himself must remain the authority. As for those characters with nasal initials which have not developed into K.'s $\acute{n}\acute{\zeta}$ -, we cannot as a rule know which of them had an initial tn -—which would form a parallel to initial tl -³—which had sn -, and which had only n - or $n\dot{\zeta}$ - already in archaic Chinese. Only *Ch'ieh Yün* $n\dot{\zeta}$ - cannot have been archaic $sn\dot{\zeta}$ -. As for $t\dot{\zeta}$ and $t'\dot{\zeta}$, they can perhaps be referred back to $tn\dot{\zeta}$ or $t'n\dot{\zeta}$.

In conclusion I should like to say that an initial m -, which sometimes occurs in series with $\acute{n}\acute{\zeta}$ -, seems to go back to an archaic $sm\dot{\zeta}$ (e.g. in 彌, Series 13).

A critical review must necessarily stress differences in opinion rather than agreements between author and reviewer. It is only natural that the reconstruction of archaic Chinese, having only just begun, must still undergo great modification and strong criticism. This will not in any way detract from the merit of Professor Karlgren's contribution. His new system of reconstruction is another instance of his acute insight and his extraordinary energy in research.

¹ More exactly a "supradental" fricative.

² Cf. the reconstruction \acute{zh} - suggested by E. Chavannes and P. Pelliot in *Journ. As.*, xviii (1911), p. 538, and K.'s remarks in his *Études*, pp. 461-2.

³ Cf. above, p. 283, n. 1. See some more examples in *Wortgl.*, p. 43 and n. 2.