

"EAT", "ECLIPSE" and "ADORN": Cognates in Chinese

Stanley Goertzen
Fargo, North Dakota

This essay addresses the need for a radical departure in the making of Chinese-English dictionaries. What is notably missing from current dictionaries, as well as from serious western works in Chinese linguistics, such as Karlgren's *Grammata Serica*, is the ability to cross reference the key words and synonyms used in the Chinese lexicographic sources. This essay particularly attempts to demonstrate the importance of tracing the semantics of a word family by examining the trail of synonyms and reformulating the underlying semantics accordingly. Additionally, this essay stresses the importance of understanding and using traditional Chinese lexicographic sources. Computer databases offer a convenient means for entering Chinese synonyms and definitions in a romanized ASCII format, along with easy and quick access to them. The Old and Middle Chinese forms used here are a proposed "logical" and ASCII substitution for Karlgren's ad hoc and diacritical-laden "reconstruction".

Bernhard Karlgren's *Grammata Serica Recensa* (GSR) lists a series (GSR 921) of Chinese characters in which 食 *shih*² [**dhjyək* "to eat"] is the "phonetic element." One of these (GSR 921e), 飤 *ssu*⁴ [**dzyəg* "to feed"] is apparently the causative form of the verb: "feed", "cause to eat". The modern variant of the character for "to feed" 飼 (Fig. 1, line 3) should appear at GSR 972, but is apparently omitted because it lacks historical interest. The terse variant of "to feed" is identical to the character for "to eat." The double reading (**dhjyək* vs. **dzyəg*) for this character indicates that the pronunciation was grammatically, though not necessarily graphically, distinguished. Chu Chünsheng says that the terse variant serves as a "loan." He cites the title phrase, "The rites of the coenarch feeding [i.e. feasting] the grandees", from the *Yili* ("Community Rites") as an example of the loan (Fig. 1, lines 1-3).

儀禮：公食大夫禮。
朱駿聲，說文通訓定聲：
食假借爲飤。字亦作飼。
經典釋文：食本作飤。
飤聲字：飾飾飤。
說文解字：飾，廌也。廌，
飾也。段玉裁注：飾拭
古今字。許有飾無拭。
刷，刮也从刀，廌省聲。
刮字，段注：今字作刮。
說文飾字，段注：凡物去
其塵垢即所以增其光采，
故廌者飾之本義。釋名：
飾拭也。物穢者拭其上使
明；由他物而後明猶加文
於質上也。說文廌字，段
注：去塵而得光明，故引
伸爲文飾之義。古者拂拭
字只用飾，以巾去其塵故
二字皆從巾。

Figure 1

Since the causative form in this text is not graphically distinguished, and since no one assumes that the coenarchs were cannibals, the *Chingtien Shihwen* comment (Fig. 1, lines 4) noted by Karlgren and cited by Chu (that is, that the character was originally written in full form in the *Yü* is of dubious significance. In fact the full-form character for "feed" hardly merits serious consideration, except for the fact that it is ostensibly the "phonetic element" in the following characters (Fig. 1, line 5):

飾	shih ⁴	"to adorn, ornament"	[< *sjyək] (GSR 921h)
蝕	shih ²	"to eclipse"	[< *dhjyək] (GSR 921d)
飭	ch'ih ⁴	"to strengthen"	[< *thyək] (GSR 921g).

According to Karlgren, shih² "to eclipse" is the semantic extension of the basic meaning, "to eat up gradually", when the object of the verb is the sun or moon: "(eating' of sun or moon:) eclipse". In *Analytic Dictionary of Chinese* (ADC 891) Karlgren notes that shih² "eclipse", is "etymologically the same word as shih² "eat", [graphically] enlarged by [dictionary classifier radical 142, 'entomoid, insect']". As for the rest, however, Karlgren (ADC 815) says that ssu⁴ "to feed", is simply "phonetic in" shih⁴ "to adorn", and ch'ih⁴ "to strengthen". There is no attempt in ADC or GSR to interpret or extend the semantics in order to derive or justify the translations of these words. Why, in any case, should we even suspect a semantic affinity between such diverse words as 'EAT' and 'ADORN'?

While I am not proposing that all characters having identical "phonetic elements" are etymologically related, we need to examine each case carefully and research the lexicographic data for any clues which suggest a subtle semantic thread or a broader basic meaning capable of underlying and including the several senses which have already been adduced. It is especially gratifying, in the course of such investigations, to find an Indo-European word family (or two), hitherto overlooked, which happily expresses much the same "root and branch" meanings as that of the Chinese. In the case of shih⁴ "to adorn", the etymological connection is rather obvious once we extend our search from the world of words in translation to the universe of SIE (Sino-Indo-European) comparative etymology.

The *Shuowen* (SW) dictionary (121 A.D.) defines shih⁴ "adorn", by shua "scrape clear, brush" (cf. 刷 GSR 298), and vice versa. Shua "brush" is itself the "abbreviated phonetic" in shua "to scrape", and the latter is defined by SW as 刮 kua "scrape, polish" (GSR 302n). The post-classical variant of shih⁴ "adorn", according to the SW commentator Tuan Yü-ts'ai, is 拭 shih⁴ "to wipe" (GSR 918k). The purpose of wiping, brushing or polishing, notes Tuan, is to remove dirt and bring out the luster of something. In fact, "to wipe" is also the

basic meaning of *shih*⁴ "adorn", according to Tuan! Thus Tuan objects to substituting *shih*⁴ "to wipe" (GSR 918k), for *shih*⁴ "wipe, adorn" (GSR 921h), in the classics. He argues that the latter should be understood in its more basic meaning, "to wipe"; and, after all, he notes, the character still has the wash-wipe "cloth" as its semantic classifier (radical 50)!

The *Shihming* (SM: "Explanation of Names") defines *shih*⁴ ["adorn"] by *shih*⁴ "to wipe", and explains that "things which are dirty are wiped on the surface to make them bright." By extension, "things which are illuminated by other things is like adding ornate patterns to unadorned substance" (Fig. 1, lines 13-16). Commenting on *shua*, "brush", Tuan says that "to be wiped clean and bright" is extended to mean "ornately embellished" or "adorned" (Fig. 1, lines 16-20).

Closely parallel to the semantics of *shih*⁴ "wipe, adorn", is English *terse*: "wiped, brushed, smoothed" [OED sense 1], which has been extended to mean "polite, polished, cultured" [OED sense 2, obsolete]. *Terse*, according to Webster's Third (W3), originally meant "freed of debris or roughness", and derives from Latin (L) *tersus* "clean, neat"; ultimately from *tergere* "to rub off, wipe". Latin *tergere*, according to W3, is also akin to Latin *terere* "to rub," and Greek *trogein* "to gnaw." *Tersion*, according to a 1704 lexicon cited by the Oxford English Dictionary (OED), means "wiping or cleaning the outside of any body". Also related to *terse*, via L *tergere*, is *detergent*, a cleansing agent. However, while *shih*⁴ "wipe, adorn," is sometimes extended to mean surface show, disguise or deception (to "whitewash" or conceal rather than reveal!), the semantics of *terse* reverts back to pithy unadorned substance, and refers to a style of language shorn of superfluity and verbal redundancy. Even so, *shih*⁴ "adorn," like *terse*, has become a term of art, as opposed to the more basic meaning, "to wipe." The analogy is somewhat parallel to *terse*, "polished, brief," as opposed to *deterge*, "to cleanse".

Under the entry for *terse*, Webster's Third New International Dictionary (W3) says L *tergere* "to rub off, wipe," is "akin to" L *terere* "to rub." The American Heritage Dictionary (AHD), on the other hand, says L *tergere*, "to wipe," is of obscure origin. AHD traces L *terere* to the IE root **ter-*, "to rub, turn." If W3 is correct, we might propose a suffixed form **ter-g-* (by analogy to **dher-* "muddy, dark", with suffixed form **dher-g-*, whence Germanic **derk-* and English *dark*).

W3, as well as Partridge's *Origins*, also brings *termite*, "wood-eating worm," into this word family. According to Chu, *shih*² [<*dhjyək "to eat up gradually"] has the "insect" classifier (radical 142) precisely because it takes its basic meaning from the eating habits of termites. Its usage with respect to solar and lunar eclipses, according to Chu, is an extension (or trope) of this basic meaning (Fig. 2, lines 1-3). The 蠹 *tu*⁴ [<*tāg "grubs in wood" GSR 795r] noted by Chu is in fact defined by SW and Tuan (Fig. 2, lines 4-6) as precisely the "wood-eating

朱按蝨字从虫，
蠹蟲食物爲本義，
日月虧毀爲轉注。
經傳皆以食爲之。
說文：蠹，木中蟲。
段注：在木中食木者也。
說文：蝨，敗創也。
从虫入食，食亦聲。
段按可云蝨省聲。
易經：豐：月盈則食。
日中則昃。

Figure 2

worm": the termite! It is quite possible that *tāg, "wood-eating worm, termite", is also etymologically affiliated with this word family, as an a-grade variant; but so far we lack systematic information on vowel-grade variants in Chinese etymology.

Latin *terere* "to rub, grind," is ultimately akin to the following English words: *attrition*, *trite*, *contrite*, *detritment*, and *triturate*. *Triturate* is the obvious choice for the word we customarily translate as "(to) eat". OED says *triturate* means "to reduce to fine particles or powder by rubbing, bruising, pounding, crushing or grinding; to comminute, pulverize; also, to mix (solids, or a solid and liquid) in this way." As a noun, *triturate* is simply a triturated substance. Perhaps no other word expresses so well Tuan's explanation of the character as a collection (or mixture) of grains to form foods; in other words, a triturate of cereal grains. *Meal* [< IE *mel-, "to crush, grind"] is also an ideal translation for the noun.

With these basic meanings in mind, the SW explanation of the character for "eclipse" is quite clear. *Dhjyək "triturate", is both semantically significant and "also phonetic". It is, in other words, etymonic. Tuan takes the etymological argument one step further by noting that we could say that 蝨 *sjyək "terse, polished", is the "abbreviated phonetic" in "eclipse"; thereby asserting the kinship of all three words (Fig. 2, line 9). The semantics involved in the case of an eclipse of the heavenly bodies, as with the action of termites on wood, is apparently quite close to that of *attrition*. Note, however, that the SW definition (Fig. 2, line 7) is "to suffer injury, to be wounded"! The semantic transition is not difficult. Once we examine the synonyms and cognates of *triturate* it is readily apparent. *Bruise* is a synonym of *triturate*, according to

W3; and *trauma* is a cognate from Greek, originally meaning "wound"! Also akin to these words, according to Partridge, is Sanskrit *turas*, "wounded, injured". Karlgren ignores the SW definition because, no doubt, he could not find a text to support it. It is apparent that his semantic investigation was inadequate. Textual support, it seems, is not a sufficient basis for dismissing important lexicographic information.

Rather than being "eaten" or "eclipsed" by another heavenly body, the moon regularly waxes and wanes (undergoes attrition). The *I-Ching* says "the moon fills, then tritirates; the sun centers, then declines". "As it is with the heavenly bodies, so it is with man". There is no suggestion here that the moon is "eaten" by some invisible sky dragon; nor is there any indication that it is "eclipsed" by another heavenly body. Attrition is simply part of the natural cycle of things.

A case could probably be made for including 飭 *ch'ih*⁴, "to strengthen" [***thyək**] in this word family with a more basic meaning like "refurbish," hence "restore," "fortify" or "strengthen". For the present, however, I defer to Tuan who does not see a semantic congruity here. In Tuan's view, 食 ***dhjyək** ("triturate, eat") is merely phonetic in this character and has no etymological significance.

The semantic analysis and word affiliations discussed above are already provided in traditional Chinese sources. These sources, especially when the analysis is graphically oriented, were often content to limit the field of investigation to words within a single "phonetic series" (characters with graphically similar "phonetic elements"). Phonologically oriented works, such as the etymological studies of Chang Pinglin (T'aiyen) in *Wenshih* ("Literary Primitives"), break away from these graphic barriers by following a semantic trail within a phonological framework. Our semantic trail now departs from the present series (GSR 921). As far as I know, the traditional interpretations of this word family have never been adequately presented in western literature, and the proposals below have yet to be advanced anywhere.

The *Kuangyūn* rhyme dictionary, Rhyme A7 (KYA7) presents a word with a close semantic and phonetic affinity to 食 *shih*² [**dhjyok* "to eat"]. *Kuangyūn* Rhyme A7 lists the same character twice: 齧 *sjī* [**sjyog* >Beijing **shih*], "to chew [cud]", is also pronounced *thjī* [**thyog* >Beijing **ch'ih*], "to chew regurgitated food", said of oxen. Although 台 **dyog* (GSR 976p) is the recognized phonetic, it seems quite probable that 齒 **thjyog* [>Beijing *ch'ih*³], "teeth" (GSR 961L), belongs to this word family and denotes the tritons, that is, the "grinding" surfaces of the teeth! Karlgren's visual interpretation of the character leads him to the translation, "front teeth"; but clearly the molars, rather than the incisors, are indicated. Note that *molar* and *meal* are cognates, from IE **mel-* "to crush, grind", a root with much the same meaning as the common root for *triturate* and *tritons*. The SW definition for **thjyog*, "the bones in the gums of the mouth," suggests there was no front-back, incisor-molar distinction by Han times. "Teeth" or "dental" is probably the preferred translation in most contexts; but the basic meaning is closer to "tritons" or "grinders." For those who may find the etymological kinship between "eat" and "teeth" somewhat far fetched, Pokorny, Partridge and Webster all suggest that teeth [*IE *dent-*] and eat [*IE *ed-*] are also related in Indo-European! Partridge says the IE root may be **eden(t)-* or **edon(t)-*, noting that teeth are therefore "eaters."

廣韻平聲之韻：
齧，牛吐食而復嚼也
[齧音答，又音詩：]
說文曰吐而嚙之
齧字从齒，台聲
齒字象形，止聲
荀子，正論，注：答，
杖擊也。漢書刑法志：
答者所以教之也
欲改行爲善
唐書刑法志：
答之爲言耻也
凡過之小者，
捶撻以耻之

Figure 3

The next two words which I propose as candidates for this word family might otherwise be virtually inconceivable cognates except for the widened semantic threshold sketched above. Karlgren's translation for 答 *ch'ih* [**thyog*] is "beat, fustigate" (GSR 976b). Karlgren cites the writings of *Hsūn Tzu* (*Chenglun*, 240 B.C.) as the locus classicus for his translation; but, as is frequently the case, he translates the gloss in the commentary rather than the word itself! To fustigate is to beat with a *fustis* (L "club, staff"); but the Japanese translation, *muchi* 鞭, and Katsumata's English translation, "give a thrashing", is well suited to the text of *Hsūn Tzu*, as well as the ancient and medieval statutes which prescribe thrashing as a form of corporal punishment. In the statutes of the Tang dynasty, the stated purpose of "thrashing" is to make the transgressor "contrite." Karlgren translates 耻 *ch'ih*³ ("contrite") as "shame" (GSR 959), but except for tone, both "thrash" and "contrite" are phonologically identical [**thyog*]. It seems quite probable that the Chinese

words are cognates, just as *thrash* and *contrite* are cognates in English. Akiyasu Todo's *Etymological Dictionary of Chinese Characters* translates 𪔐 *ch'ih*³ as *kujikeru* which means (according to Katsumata) "to be broken, crushed, broken in spirit, disheartened". These are precisely the definitions for "contrition". Besides "contrition" we might also consider "remorse" (< IE **mer-* "to rub away, harm").

In summary, the following words are proposed as cognates in Chinese:

食	<i>shih</i> ² [< <i>*dhjyək</i> "to eat"]	triturate
飮	<i>ssu</i> ⁴ [< <i>*dzyөг</i> "to feed"]	[causative form]
飾	<i>shih</i> ⁴ [< <i>*sjyək</i> "to adorn"]	terse, polished
拭	<i>shih</i> ⁴ [< <i>*sjyək</i> "to wipe"]	[graphic variant]
蝕	<i>shih</i> ² [< <i>*dhjyək</i> "to eclipse"] SW: "to suffer injury, to be wounded"	attrition, worn out trauma, bruised
齧	<i>shih</i> [< <i>*sjyөг</i>] "to chew [cud]"	retriturate
齧	<i>ch'ih</i> [< <i>*thyөг</i>] "to chew regurgitated food", said of oxen.	[dialect variant]
齒	<i>ch'ih</i> ³ [< <i>*thjyөг</i>] "teeth"]	tritons, grinders
笞	<i>ch'ih</i> [< <i>*thyөг</i> "fustigate"]	thrash
恥	<i>ch'ih</i> ³ [< <i>*thyөг</i> "shame"]	contrite, remorse
蠹	<i>tu</i> ⁴ [< <i>*tāg</i> "grubs in wood"]	termite

Peking *ch'ih*, "to eat," appears to be a modern variant of the same word family; however the character (radical 30/09) and MC *khieek* (KYE23) suggest a possibly alternative origin.

Until such time as we have enough data to demonstrate a pattern of vowel-grade variants within word families, *tu*⁴ [< **tāg*] "termite" must be considered a tentative member of this family. Note that the ultimate phonetic in "termite" is 石 **djyək* [radical 112 "stone"]. It is also the phonetic in 鼯 **djyək* [GSR 795h "some kind of rodent"]. Akin to *rodent* is *erosion*, a synonym of *attrition*! Could it be that **djyək* ("stone") is the semantic equivalent of

detritus, occurring at the base of cliffs (according to SW), as the natural result of erosion? These and other questions must be explored before we can give a full account of this word family.

* * *

The purpose of this essay has been to demonstrate the importance of following the chain of definitions and synonyms in Chinese lexicographic sources in the pursuit of a descriptively accurate semantics. Current Chinese-English dictionaries are entirely inadequate for this purpose, largely because they do not cross reference the Chinese words which they purport to translate. In a computer dictionary database, the Chinese definitions and synonyms may be cited in an romanized (ASCII) format so that they can be searched in turn until the semantic terrain has been sufficiently described.

Phonological studies, such as Karlgren has given us, are important because they attempt to identify the phonetic shape of words in early Chinese literature. This makes the search for phonetic affinities in word families much easier than it would be if we were to rely solely on modern dialect forms. Though Karlgren's phonetic interpretations are sometimes novel, his phonological framework is based largely on traditional Chinese sources. The phonological categories of the *Shuowen* commentators, Tuan Yü-ts'ai (1735-1815) and Chu Chünsheng (1788-1858), are also noted in the database for comparative purposes.

One of the problems in using *Grammata Serica* and other western works is that they tend to regard phonetics, a kind of articulatory acoustics, as the real object of linguistic studies, minimizing the role of semantics. Karlgren believed that the sounds of speech follow historical "laws" which operate independently, and which therefore can be discovered and described independently of semantics. In *Grammata Serica* (page 12), for example, he says, "Since the present book is a study on script and phonetics, I could give the list of characters with their Archaic and Ancient pronunciation without any translation at all." He also reminds us that his work is "not meant to be a dictionary and that [his] translations of the characters are very incomplete, being only summary indications of the most important meanings." In fairness to Karlgren's goals, we should keep this in mind; but a dictionary is also more than simply a record of the "various meanings" of "every character" in the literature. Indeed such a work would be a mere listing of translations, a bare concordance for various English versions of Chinese literature! Unfortunately, this is a fair approximation of our present Chinese-English dictionaries. When we do run across translations such as "eat" and "adorn" in such dictionaries, we would have no reason to suspect an etymological relationship or to look

further for a semantic affinity. Beyond this, we also need to look at the Chinese dictionaries and lexicographic traditions; and there is none better to start with than the *Shuowen* and its commentaries, most notably those of Tuan Yü-ts'ai.

SIE comparative semantics can be very instructive, occasionally providing insights which might not otherwise be available. For example, SW defines 東 ***tuung** [GSR 1175a "east"] by 動 ***dhuung** [GSR1188m "move"]. Explanations from traditional sources seem to regard the east as the quarter where the "movement" of life begins, hence it is the quarter where the sun rises, where Spring begins, etc. All of this sounds like an attempt to rationalize some archaic system of cosmology. In fact we have a perfectly parallel analogy with Orient [< L *oriens* "rising, rising sun, east"] and L *oriri*, "to rise" [< IE ***er-** "to set in motion"]. It is apparent from the semantics involved that ***tuung** and ***dhuung** are cognates and that the SW definition is not a folk etymology based on some ancient myth! We should not look to a graphic interpretation of the character to explain the semantics of the underlying word (e.g., the sun behind the tree(s) signifies "east"). On the contrary, we need to understand the underlying semantics, in many cases, before we can successfully interpret the character! Orient, land (or isle) of the *rising* sun, is depicted by the sun *rising* amidst a tree (some say the legendary Fusang tree, but note also that the tree is the agent of the east and of Spring, the season when plants revive)! Finally, for the graphically oriented, note that ***tuung** "Orient", is the ultimate phonetic (and, hence etymonic) element in ***dhuung** "to move, arise".

The study of Chinese semantics is a far more interesting challenge than many current dictionaries and phonetic studies would seem to indicate. Semantics has too often taken a back seat to these studies. Phonetic studies have generally presumed that the phonological categories are already given and merely need to be phonetically interpreted. Consequently scant attention is given to developing semantic theories which might otherwise be necessary to assist in the development of a phonological reconstruction (as for example the -k/-g, 'eat/feed', "active/causative" distinction noted above). In the future I will outline some of the reasons why the medieval rhyme book traditions should not be interpreted as providing the phonetic basis for a common parent dialect from which we can derive most of the modern Chinese dialects. The *Ch'iehyün* is in fact a compilation of several medieval rhyme books (mentioned in Lu Fayen's preface), reflecting several literary and dialect traditions. A commutative analysis of the *fanch'ieh* spelling characters, such as inaugurated by Ch'en Li in his *Investigation of the Ch'iehyün*, may seem to support distinctions of a very fine nature, but it does not follow that these were discrete phonetic distinctions in some single synchronic context. Ch'en Li himself boasted that he performed his analysis "without relying on oral or auditory"

evidence. Rather than using the modern dialects as eclectic data for the "reconstruction" of a single *Ch'iehyün* dialect, we need to systematically explore the modern dialects with the goal of discovering the dialect and diachronic nature of the *fanch'ieh* markers. On the other hand, until such time as there is a general consensus on the nature of the early rhyme books, I will be advancing an ASCII interpretation of Karlgren's phonetic arguments which is actually more consistent and logical than his ad hoc notation, and which I believe will facilitate the important task of sorting and searching Chinese linguistic data in programs for the personal computer. It is a pragmatic compromise made in the hope of facilitating the important and much neglected task of semantic investigations.

REFERENCES

- Ch'iehyün*. A.D. 601. (Rhyming Dictionary). Precursor of *Kuangyün*. Preface by Lu Fayen.
- Kuangyün*. ca. A.D. 1008. ("Expanded Rhymes" Rhyming Dictionary). Revised Sung Dynasty ed., follows *Ch'iehyün* tradition. Taipei: Kuangwen Book Co.
- Kuangyün Shenghsi*. 1969. ("Sound System of the Kuangyün Rhyming Dictionary"). Shen Chianshih, ed. Taipei: Chung Hwa Book Co.
- Kuoyü Ts'etien*. 1943. ("Dictionary of the National Language"). Wang Yi et al., eds. Shanghai. Reprinted (1964) by Commercial Press, Taipei.
- Shuowen Chiehtzu*. 1966. ("The Shuowen Dictionary: Explanation of holograms and analysis of compound characters") by Hsü Shen (ca. A.D. 121)
- Shuowen Chiehtzu Chu* ("The Annotated Shuowen Dictionary") by Tuan Yü-ts'ai (A.D. 1735-1815), editor and commentator. Published (1966) by Iwen Publishing Co., Taipei.
- Shuowen Chiehtzu Kulin*. 1930. (SWKL: "The Collected Commentaries on the Shuowen Dictionary"), 12 Vols. Ting Fupao, ed. Photo-reprint (1970) by Commercial Press, Taipei.
- Shuowen Pushou Tungshih*. 1967. ("Explanation of the Shuowen Radicals"), by Min-Shwu Pao. Taipei: Commercial Press.
- Shuowen Tunghsün Tingsheng*. 1966. ("The Shuowen Dictionary with etymologies and classical citations, arranged by eighteen archaic categories of the phonetic elements"). Chu Chünsheng, ed. (1st ed. 1833), 8 Vols. Reprinted (1966) by Iwen Ed., Taipei.

Wen Shih. 1970. ("Literary Primitives," etymologies of the Shuowen using 23 archaic rime classes), by Chang T'aiyen. Taipei: Kuangwen Book Co.

Karlgren, Bernhard. 1923. *Analytic Dictionary of Chinese and Sino-Japanese*. Paris: Librairie Orientaliste Paul Geuthner.

_____. 1940. *Grammata Serica*. Bulletin of the Museum of Far Eastern Antiquities (BMFEA) 12:1-471.

_____. 1954. *Compendium of Phonetics in Ancient and Archaic Chinese*. BMFEA 26:211-367.

_____. 1957. *Grammata Serica Recensa*. BMFEA 29:1-332.

Katsumata, Senkichiro, ed. 1954. *Kenkyusha's New Japanese-English Dictionary*. Tokyo: Kenkyusha Limited.

Mathews, R. H. 1960 *Chinese-English Dictionary*. Harvard: Harvard University Press.

Morohashi, Tetsuji. 1960. *Dai Kanwa Jiten*, 13 Vols. Tokyo: Taishukan Shoten.

Morris, William, ed. 1969. "Indo-European Roots", Appendix to the *American Heritage Dictionary of the English Language*, pp. 1505-1550.

Oxford English Dictionary. 1971. Compact Edition. Oxford University Press.

Partridge, Eric. 1959. *Origins: A Short Etymological Dictionary of Modern English*, 2nd edition. New York: The Macmillian Company.

Todo, Akiyasu. 1965. *Kanji Gogen Jiten* ("Etymological Dictionary of Chinese Characters"). Tokyo: Kakutosha.