Using Phonetics in a New Musical Notation:
Henry Sweet's manuscript notes of 1904 and 1908[1]

Michael K. C. MacMahon
Dept of English Language
University of Glasgow
Scotland/UK

1. Sweet's interest in music

According to Charles Onions (1873–1965), 'late in life… [Sweet] took to music, and was at one time busy with a new system of musical notation' (Onions, 1927: 520). Sweet himself, in his *Who's Who* entry for 1905, lists music as one of his interests in 'old age' (Sweet, 1905: 1565). The only extant evidence for these remarks is the manuscript material to be described below (and published here for the first time).

There are some earlier, passing references to musical matters in Sweet's published work, which perhaps indicate more than a superficial knowledge of the subject. For example, in a paper read to the Philological Society in June 1876, and later published under the title 'Words, Logic and Grammar', Sweet noted that:

> In the ordinary musical notation the bars are divided by vertical lines or bars… [M]y own practice has been for some time to discard the lines, &c., entirely, and write each bar simply as a word with nothing but a space between each group, thus (aa aa aa) (aaa aaa). With the help of a few simple signs for pauses and for holding or continuing a note, and a few diacritics to indicate fractions of notes (which often need not be expressed at all), music can thus be written almost as quickly as ordinary writing' (Sweet, 1875-1876: 481).

This clearly indicates that Sweet had experimented with an alternative (or alternatives) to Western staff notation, including Tonic Sol-fa. He might have composed music as distinct from 'translated' it from staff notation into his own personal system. Music could have been one of his childhood past-times. He was, after all, from a middle-class Victorian family where learning to play a musical instrument or to sing would have been regarded as a predictable social accomplishment.[2] Alternatively, an interest in

---

[2] Manuel Garcia (1805-1906), the famous singing-teacher and the inventor of the laryngoscope, lived for many years a few hundred yards from the Sweet family home in Kilburn in north London (Mackinlay, 1908: opp. 278), but there is no evidence from the registers of the Royal Academy of Music (where Garcia mainly worked) that any of the Sweet family had singing or any other sort of music lessons there. (I am grateful to Bridget Palmer for this information.) There is always the possibility, of course, that Sweet may have had private lessons with Garcia. He mentions Garcia's invention of the laryngoscope in the *Handbook of Phonetics* (Sweet, 1877: vi).

musical notation may have been triggered by the views of one of his mentors, Alexander John Ellis (1814-1890). Ellis had chaired one of the early meetings of the newly-formed Musical Association (later the Royal Musical Association) in April 1875 in London. At this meeting, John Stainer (1840-1901) (later professor of music at Oxford, and the composer of the *Crucifixion*, etc.) read a paper on the 'Principles of Musical Notation' (Stainer, 1874-1875), in which he drew specific attention to, for example, the connections between music and the analysis of intonation, as well as to at least some of the issues connected with staff notation:

> The problem, how to write down graduated musical sounds, is not half so difficult as that of writing down spoken language…[T]he intonation of the speaking voice, or its elevation and depression in pitch, is one of the most subtle characteristics of different languages. If you give the subject consideration—and it is a subject worthy [sic] the study of musicians—you will find that not only are words altered as to their meaning and force by the relative pitch of their component syllables, but the whole gist of sentences often depends upon it. Yet we have no signs of intonation in our language (Stainer, 1874-1875: 88-89).

Stainer considers various alternatives to Western staff notation, including alphabetic systems such as Tonic Sol-fa and numerical systems. He offers various suggestions, such as a system for indicating the duration of a musical note: a large D could be a semibreve, a smaller D a minim, and an italic *d* a crotchet.[3] (The difficulty with this proposal, of course, is that there are eight different durational values between the breve and the hemi-demi-semiquaver;[4] something Stainer did not address.) Stainer queries whether a letter notation would not be better for singers — confronted, for example, with musical items written in seven sharps — whilst instrumentalists would preferably continue to read from staff notation (and seven sharps). He even suggests notating pitch so that round notes would be used for 'naturals or normal sounds', diamonds for sharpened sounds, square notes for flattened sounds (*ibid.*: 104).

Sweet may well have heard about Stainer's ideas from Ellis, or from Stainer himself.[5] Yet another possibility is that his young Irish phonetician friend, James Lecky (1855-1890), who was also a keen musician (cf. MacMahon, 1979), discussed it with him. Some of Stainer's ideas resonate with Sweet's own work on musical notation, albeit some 30 years after the 1875 paper.

In print there are two further references to musical notation. Both occur in a paper that Sweet read to the Philological Society in May 1884, on 'The Practical Study of Language':

> Experience has certainly shown that a class of children taught reading foneticaly wil master both fonetic and ordinary reading quicker than a class

---

[3] The North-American equivalents of these three durational values are 'whole note', 'half note' and 'quarter note'.

[4] 'Double whole note' and 'sixty-fourth note'.

[5] From 1888 to 1901, Stainer and his wife lived a short distance from the Sweets in Oxford. Stainer died in 1901, and Sweet's first extant foray into musical notation was not until 1904. But this does not preclude the possibility of discussions between the two men sometime up to 1901.

taught unfoneticaly wil master the latter only. Similar rezults ar obtaind in muzic by the use of the Tonic Sol-fa method' (Sweet, 1882-1884:582-583).[6]

[The muzician's] scales and exercizes correspond to the linguist's sound-exercizes and first sentences (*ibid*: 588).

If a serious interest in music developed only late in Sweet's life, then a specific circumstance in the early 1900s which persuaded him to devise a new form of musical notation is likely to have been the publication in 1903 of Charles Abdy Williams' *The Story of Notation* (Williams, 1903). Williams (1855-1923) provides a long and detailed survey of the many musical notations that have been used since the time of the ancient Greeks. He uses the expression 'phonetic' notation to refer to sounds 'represented by alphabetical letters, arithmetical figures, or by words' (1903: 11). Williams also contributed the entry for musical notation to the second edition of *Grove's Dictionary of Music and Musicians* (Williams, 1907). Like his 1903 work, it contains much information about alternatives to staff notation, both past and contemporary.[7]

2. The Tokyo Manuscript

After Sweet's death in 1912, his widow handed over a bundle of manuscript material to Otto Jespersen (1860-1943) for his views on what it contained. Almost all of it was written in Sweet's 'Current' shorthand (cf. MacMahon, 1981), which Mrs Sweet had apparently never mastered. Jespersen was conversant with the system, and added a few annotations to the papers. The bundle then came into the possession of Thomas Satchell (1867-1956), a newspaper editor and teacher in Japan and an admirer of Sweet's work, especially his shorthand system.[8]

In 1942, at the age of nearly 75, Satchell intended to donate the material to the Bodleian Library in Oxford, but wartime conditions made this impossible. Instead, he asked the Library in Tokyo Imperial University (as it then was) to care for it. Its recent

---

[6] Sweet uses the reformed spelling 'aproovd' by the Philological Society. Tonic Sol-fa was devised by John Curwen (1816-1880), but was based on the ideas of Sarah Anna Glover (1786-1876). It was first published in 1842. An indication of its wide popularity is that by 1890 more than 39,000 copies of the Tonic Sol-fa edition of Handel's *Messiah* had been sold (Rainbow, 1980:65). Certain resemblances are noticeable between Sol-fa and Sweet's musical notations.

[7] On Williams, see Maitland & Warrack (1980), and *The Times* 1 March 1923, p. 10. Further information about the extensive variety of alternatives to Western staff notation can be found in Wolf (1919).

[8] Satchell was born in London, the son of a civil servant. In 1899 he was appointed to the staff of an English-language newspaper in Kobe, Japan. Three years later, he became editor of the *Yokohama Japan Herald*. For the next 40 years he pursued his newspaper career alongside EFL teaching and translation work in Japan. During World War II he was interned in Japan. In 1953 he proposed the formation of a Current Shorthand Society — to no avail. He died in Kobe in 1956. His translations include the famous Japanese 'comic novel of travel & ribaldry' by Ikku Jippensha (Jippensha,1929/1960), and a biographical study of the Christian Socialist, Tokohiko Kagawa (Kagawa, 1924). See also MacMahon (1981:277) for details of Satchell's experiences of teaching Current shorthand in Japan.

whereabouts have been unclear.[9] It will be referred to in this paper as the 'Tokyo Manuscript' (TM).[10]

More than half of the bundle of 175 pages consists of the draft of Sweet's book on his 'Current' Shorthand (Sweet, 1892). In addition, a long section of more than 30 pages illustrates the adaptation of the shorthand system to French; it includes lengthy transcriptions of passages in French.[11]

Some of the other 175 pages deal with experimental shorthand characters: it is known that Sweet had been considering making some changes to the system after 1892 (cf. MacMahon, 1981: 272, 274). The material on musical notation is just seven of the 175. I have paginated it so that these seven pages form pages 48 to 54 of the Tokyo Manuscript. An initial glance at the material shows that Sweet was not trying to adapt his shorthand to the writing of music: instead, he was devising a different notational system using phonetic and other characters. However, the basic shorthand principle of 'shortening' of words, etc, is used extensively so that the resulting notation is terse, yet meaningful. All his comments are written in Current; some of them are cryptic and not immediately interpretable.

The material falls into two time-frames: February 1904, and February and June 1908. There is no mention of this work on musical notation in any of Sweet's publications, even those after 1908, and nothing about it is mentioned in his extant correspondence.

3. Deciphering the notation(s)

Page 48 is a page in Jespersen's handwriting, with a further note at the bottom by Thomas Satchell. Jespersen, despite his familiarity with Current Shorthand and hence in a good position to decipher Sweet's material, nevertheless noted that the entire section on musical notation was 'utterly unintelligible'.

Page 49 contains only the shorthand forms for the words 'musical notation' (in Phonetic Current).

Page 50 (reproduced here as Figure 1) is dated February 1904, and, from the way the material is laid out on the page, it is clearly a summary of Sweet's ideas thus far. (Portions of the later material, from 1908, are in the form of jottings.) No evidence can be found that Sweet intended to publish any of this material, and so one must assume that it represents ideas solely for his own personal use.

---

[9] The entry in the University of Tokyo Library catalogue reads: 'Shorthand Manuscript/Henry Sweet'. I am grateful to colleagues in the University of Tokyo Library and in the Dept of English for their assistance in accessing the MS.

[10] Satchell's request to Prof Sanki Ichikawa (1886-1970) that Tokyo should be responsible for it constitutes page 3 of the Tokyo Manuscript.

[11] See MacMahon, 1981:273-274 for details of the adaptations to Old English, Norwegian and German. Navarre (1909) provides an extensive survey of the hundreds of shorthand systems that have been published, particularly during the 19th century.

Figure 1: TM page 50, February 1904

In the top half of the page, to the *right*-hand side of the vertical line, after the words 'octaves' and 'treble' in Current, the note C is set out in octaves on traditional bass and treble staves.[12] The loop added to the glyph[13] for C signals the appropriate octave for C

---

[12] The glyph for C is unconnected with the same shape in Current, where it represents /ts/ (in Phonetic Current) and <ts> (in Orthographic Current), the contracted form of *twice*.

[13] I am deliberately using the term 'glyph' restrictively for the special *additional* characters that Sweet employs in his notation – hyphens, loops, circles, for example — and which are separate from his phonetic symbols (many of whose values will be familiar to today's users of IPA).

by means of height and position. On the third line down in this section, there are glyphs for the treble and bass clefs — both simpler and faster to write than the traditional ones. In addition, there are symbols for lengths, rests, grace notes, stress and syncopation.

The bottom four lines of page 50 contain explanations in Current alongside the glyphs. Many of them have to do with tempi ('speed', 'very slow', 'moderate', 'quick', etc), and with what Sweet calls 'force': for example, 'very weak' and 'weak'. There are glyphs for loudness, and others for notes that are detached, staccato, played with wrist staccato, and notes that are repeated, including a very simple one to show that an entire chord is repeated: namely, the | glyph on the right-hand side of the last line.

On the top left of page 50, to the left of the vertical line, are three blocks of horizontal lines; each consists of four lines. The top block, like the other two, consists of a series of glyphs and phonetic symbols: e.g. the second row reads <k t s f n l r>, with glyphs above them. The first item on lines 1 and 2 represents the note C, and the line reads from left to right as an ascending scale: C D E F G A B. Thus, there are two ways of notating the scale: either glyphs which have only a marginal connection with phonetic symbols, or else IPA symbols. There is logic in the shapes of the glyphs: those for C, D and E have a backwards-facing loop; F faces both backwards and forwards; and G, A and B face forwards.

One question is why Sweet should have chosen to use the symbols <k, t, s>, etc, instead of <c, d, e>, i.e. the conventional musical symbols. The symbols may be completely arbitrary, in the sense that he wished to break away consciously from the conventional 'A to G' lettering system in order to see how symbols which are not used in staff notation might be employed, or else their choice is motivated. If the latter, then a mnemonic factor could lie behind the choice of characters. The note C would be written as <k> because phonetically there is a degree of connection (velar plosives) between the <c> of, say, CAT (phonetically [kat]) and the IPA's use of [k]. Similarly, <t> can be interpreted as a 'voiceless' version of D. The symbol <s> for E may have been motivated, since, in Current, the symbol for /s/ (as in CITY or SIT) is the lower-case <e>. The symbol for G, Sweet's <n>, is also probably a mnemonic: in the shorthand, the symbol for /n/ is precisely the glyph he uses on the top line. The <l> for A could be from Tonic Sol-fa, where <la> is the equivalent to A.[14]

The traditional symbols for a sharp (#) and a flat (*b*) guide the interpretation of sets 2 and 3. Set 2 reads C# D# F# G# A#. The 'missing' items E# and B# are handled as F and C respectively. Sweet's choice of phonetic symbols is not easy to explain, however. Perhaps <j> for C# because it is like his glyph for C, but with a dot on top? The 'thorn' symbol <þ> for D# could be associated with a front consonant in the same way that his <t> for D is alveolar: the next place of articulation further forward from alveolar is dental, i.e. where 'thorn' would be articulated. His <p> for F#, <m> for G#, and <ʃ> for A# may be purely arbitrary choices.

In the third set (the symbols for flats), the use of <g> for C*b*, alongside <k> for C, may be phonetically-driven (voiced instead of voiceless); similarly, the <d> for D*b*

---

[14] In Tonic Sol-fa, the notes I am writing for the scale of C major (C, D, E, F, G, A, B, C) are written as <d r m f s l t d>. To avoid confusion, I shall consistently refer to the first note of this scale in Tonic Sol-fa as 'Doh'.

paralleling the use of <t> for D. <z> for E*b* may link to <s> for E. Alternatively, Sweet may have been thinking of the use of E*s* for E*b* in the German musical notational system. The <ŋ> for G*b* is probably because of <m> for G#: both are nasals. This would then explain <ʒ> for A*b* alongside <ʃ> for A#. <b> for B*b* may again to have to do with the German use of B for B*b*.

Much less problematic is the pattern of glyphs for the naturals. In the line above the vowel symbols, the first of the series is based on the hyphen, the next is a convex shape, then a concave shape. F is a hyphen at 45 degrees to the left, B the same at 45 degrees to the right, and the two intermediate notes, G and A, are the curved versions, as for D and E. On the line of sharps, a small straight tick is placed at the beginning of each glyph. On the line of flats, the tick is placed at the end of all the glyphs, except for B*b* (at the end of the line).

The phonetic symbols associated with all three lines are, perhaps, less easy to explain. Firstly, a note which is a natural is shown by a single vowel. If it is a sharp, a <i> is added to it; if a flat, a <u> is added. The explanation may be phonaesthetic: an [i] sound is a bright sound; [u] is a duller, darker sound. In Tonic Sol-fa, the sharps are written as <de> (C#), <re> (D#) etc, where the <e> is pronounced as /iː/ — a certain parallel to Sweet's <i>. But such an explanation will not hold for <u> for flat sounds. In Tonic Sol-fa, the symbol is <a>, pronounced /ɔː/ — unless, of course, Sweet was thinking of his <u> and the Tonic Sol-fa /ɔː/ as back vowels.

Sweet'schoice of particular phonetic vowel symbols, instead of the letters C to B, is not entirely obvious. Five of the symbols, <i>, <e>, <æ>, <o> and <u>, are non-problematic: the first three are front vowels, the other two back vowels. But less obvious is the reasoning behind the choice of italic <*a*> and the <œ> digraph. For one thing, the symbol <*a*> was used with different articulatory implications at different points in Sweet's career: in 1877 and the *Handbook of Phonetics*, it was used for the vowel of HEART; 30 or so years later, in 1908, and the *Sounds of English,* for the vowel of HUT. The <œ> digraph was not used at all by Sweet for a phoneme in English: instead he reserved it for a French, German or Scandinavian phoneme. Its articulatory value is shown by Bell's Visible Speech symbol next to it on the page, namely a front open-mid rounded vowel (such as the stressed vowel in the German word GÖTTER). The reason for using these two symbols may again be purely mnemonic: the italic <*a*> is the first letter in the alphabet, and C is the first note in the scale of C major. [œ] is a rounded vowel; its unrounded equivalent is [æ], which can be equated with the note A.

In each of these three blocks (naturals, sharps and flats) there are consonant and vowel symbols, as well as glyphs. Sweet is experimenting with two optional forms of notation: the glyphs are quicker to write than the phonetic symbols, and can be considered equivalents of shorthand strokes. The consonants and vowels are slower to write, and not always as logically structured as the glyphs. But an explanation has still to be found for this dual notational system: i.e. each note is represented twice, either as two glyphs or as a consonant and a vowel.

Why have two symbols or two glyphs for each note? Sweet understood Tonic Sol-fa, of course, and he will have known about the controversy over whether the note Doh should be 'fixed' as the C in a scale, regardless of the key of the piece of music, or whether Doh should be the tonic note in all the scales. So the C in a C major scale

would be Doh, and in an F major scale, where C is the dominant, not the tonic, C would still be Doh. The controversy was dubbed 'the moveable Doh controversy' (cf. Rainbow, 1980). There was endless argument amongst musicians and singing-teachers about fixing Doh as middle C on the piano, or letting it vary according to the scale in which it occurred.

Figure 2: TM page 51, June 1908

It is clear from his dual-symbol notation that Doh is moveable. In the middle section of this page there are six scales ascending in fifths: the first is C major, even though he omits to put a C at the beginning of it. (And the bottom line C#/D*b* should be in the right-hand side section — ascending in fourths.) The significant item is the hyphen-derived glyphs on the top. The straight hyphen is on C in C major, and on D in D major, and so on. In other words, Doh is moveable. In Sweet's notation, then, there is

no need for a key signature: the hyphen shape (or the equivalent vowel) provides the information, and so either device can be used. The consonant glyph and the symbol equally reveal the note's position in relation to the 12-semitone scale.

Sweet's choice of roman letters may have been motivated simply by the patterns of phoneme symbols in English. For the consonant letters corresponding to the notes C and D, he uses two plosives; for E and F two fricatives; for G and B three 'liquids': <n, l, r>. With the other notes, he is using all six plosive symbols, all three nasals, and seven out of the eight fricatives. The 'extra' sound and symbol is <j>.

Page 51 (Figure 2) is dated June 1908, and is very different from the 1904 material.[15] It consists of jottings with totally new glyphs. Sweet has seven 'wine glass' shapes in the first section, followed by another seven using stems and circles. In both cases, one sees a logical progression from one glyph to the next in the sequence. Some of the glyphs resemble the symbols Joshua Steele (1700-1791) employed in his analysis of rhythm and intonation in the 1770s (e.g. Steele, 1775: 40, 47, 87), although the resemblances may be accidental.

In the remainder of the page, Sweet appears to be experimenting with alternative modes of writing the glyphs, including using some which bear a certain resemblance (though not in phonetic interpretation) to some of Bell's Visible Speech symbols. There are also some runic characters near the bottom right-hand edge of the page.

Page 52 (Figure 3) could be Sweet's last, perhaps definitive, version, again from February 1908 — despite his later (June 1908) jottings. It is based on the 1904 version, but this time using only roman characters, not the glyphs as well. There are two columns: in the left-hand column, the scale ascends through an octave; and in the right, it descends through an octave. Within each column, Sweet writes out chromatic scales starting on each of the 12-semitones in the scale. (The second line down on the page, with the wavy line beneath the Current forms, reads /krmæ sklz/ in Current.)

But there are inconsistences. The first line in the left-hand column beginning with <ka> then <jæ> starts on C in the scale of C — hence <ka>. The next two symbols ought to be <jai>, not <jæ>: in other words, they represent simultaneously C# and D. The following two are for D and D#. But the next pair, <þ> and <æi>, are both the expected forms for D#. And so on. One possible view is that Sweet is indicating microtonal intervals. If so, he omits to produce a special symbolization for notes slightly divergent from E, F, F#, G, A# and B. A more likely explanation is that he has altered the value of some of the phonetic symbols between the 1904 version and this one (1908). One notes, too, that he introduces the symbol <y> instead of <ui> in his symbolization of F#.

---

[15] This page, dated 'VI 08', is undoubtedly out of sequence and should follow page 52, dated (in Current) 'fri '08' (i.e. February 1908).

Figure 3: TM page 52, February 1908

The order of the lines is also initially puzzling. Behind it, though, a strict logical progression can be inferred, though Sweet does not spell this out. One starts on C on the top line left; on the next line down, one goes up a 5th to G; and then back down again to C — but this is not specifically indicated. From the starting-point of C, one then goes down a 5th to F (on the 3rd line); then back up again to C. Then up a second to D (4th line); back to C; then down a second to B*b* (5th line). And so on.

There is an oddity near the end involving the last four lines of this left-hand column. Firstly, there is a mistake in the first letter: it should be the velar nasal <ŋ>, not a <g>; in other words, C*b*, not G*b*. The second bracket is D*b,* i.e. a minor second up from C; this compares with B, a minor second down from C. It then finishes with C*b,* i.e. the same as B.

The right-hand column shows descending chromatic scales, beginning with <ka> then <ri-> (i.e. C B) on the first line.

Figure 4: TM page 53, June 1908

Page 53 (Figure 4), from June 1908, is noticeably less organised. It appears to be jottings and half-formed ideas. Thus the first line in the shorthand reads:

> s- beginning of the bar. If the bar begins with a vowel, you are as well to begin with two [?]: the last notes of the preceding bar, (h) is prefixed.

The remainder of the page consists of similarly opaque comments. The transliteration from Current reads:

- 'the quantity of an unquantified note is that of the first [?] note that precedes. But the first note of a piece and a bar is assumed to be full length if not other[wise] marked'
- 'quantity marks whole half'
- 'held notes indicated by repetition of the preceding vowel'

- 'if that vowel is long followed by a time mark except ŋ -x, w is put before the repeated vowel'
- 'rests: hə whispered'
- 'bar beginning with a rest: swə'
- '(kɑɑtɑi) = vocals with alt [=?alto] and relative pitch'
- '(kəətə) vocals with alt[] pitch only'
- '(wɑwɑi) vocals with key relationship only   wɑɑwɑi. sw- = beginning of bar' '(skɑɑtɑi) vocals with alt[] and relative pitch and with ring [?an error in the shorthand for 'rhythm'] and metre'

The final page, page 54 (Figure 5), again from June 1908, seems to be a collection of jottings on yet another possible notation. The first line reads 'hɑ, hɑi, he… = purely a rise of pitch [= do, re, mi…]. Directly beneath [do re mi…] it says 'Please see'. The next two lines in IPA notation may be connected with the acoustic structure of the vowel, although the precise connections remain uncertain.

There then follow some words at the end which are not fully interpretable, with the expression 'kəə = alt. Pitch' — which could be alto (but not alter) pitch.

Figure 5: TM page 54, June 1908

4. *The purpose of the notations*

A question still remains as to why Sweet should have spent time devising a new musical notation or notations. We cannot be certain if he was reacting directly to the comments in Williams (1903) or to some other publication, possibly connected with Tonic Sol-fa, or if he had been influenced by Stainer's paper to the Musical Association in 1875.

A quite different explanation which I would like to propose is that Sweet saw his ideas not as a contribution to musicological theory or to the further practical development of Tonic Sol-fa, but instead as a relatively straightforward intellectual challenge: to assemble the evidence for using phonetic symbols and shorthand-like glyphs for notating music. In other words, given his life-long interest in notational systems, especially alphabets, he wished to see if yet another species of notation could be added to the long series of systems with which he was very familiar — and some of which he had created himself. That list includes Broad and Narrow Romic, Bell's Visible Speech alphabets, Sweet's own reworking of parts of Visible Speech to form the Organic Alphabet, two versions of Current Shorthand (the phonetic and the orthographic), adaptations of Current Shorthand to German, Norwegian, Old English and French, as well as the writing systems of several non-Latin-based alphabets, for example Russian, Sanskrit, Arabic and Mandarin Chinese.

References

Jippensha, Ikku. 1929 (repr.1960). *Shank's Mare. Being a translation of the Tokaido volumes of Hizakurige, Japan's great comic novel of travel & ribaldry by Ikku Jippensha (1765-1831). Faithfully rendered into English by Thomas Satchell.* Rutland, Vermont & Tokyo, Japan: Charles E. Tuttle Company.

Kagawa, Toyohiko. 1924. *Before the Dawn. Translated from the Japanese by I. Fukumoto and T. Satchell.* New York: George H. Doran Company.

Mackinlay, M. Sterling. 1908. *Garcia the Centenarian and His Times: Being a memoir of Manuel Garcia's life and labours for the advancement of music and science.* Edinburgh and London: William Blackwood and Sons.MacMahon, Michael K.C. 1979. 'British phonetics in the 1880s: the work of James Lecky.' *Historiographia Linguistica.* 6 (i): 47-56.

MacMahon, Michael K.C. 1979. 'British phonetics in the 1880s: the work of James Lecky.' *Historiographia Linguistica.* 6 (i): 47-56.

MacMahon, Michael K.C. 1981. 'Henry Sweet's system of shorthand.' In: *Towards a History of Phonetics.* Ed. by R.E. Asher and Eugénie J.A. Henderson. Edinburgh: Edinburgh University Press. 265-281.

Maitland, J.A.Fuller & John Warrack. 1980. 'Williams, Charles Francis Abdy.' In: *The New Grove Dictionary of Music and Musicians.* Ed. by Stanley Sadie. London, etc.: Macmillan Publishers Limited. 20: 433. Also online at http://www.grovemusic.com/shared/components/.

Navarre, Albert. 1909. *Histoire générale de la sténographie et de l'écriture à travers les âges.* Paris: Librairie Ch. Delagrave.

Onions, Charles T.O. 1927. 'Sweet, Henry.' In: *The Dictionary of National Biography, 1912-1921*. Ed. by H.W.C. Davis & J.R.H. Weaver. London: Oxford University Press. 519-520.

Rainbow, Bernarr. 1980. 'Tonic Sol-fa.' In: *The New Grove Dictionary of Music and Musicians*. Ed. by Stanley Sadie. London, etc.: Macmillan Publishers Limited. 19: 61-65. Also online at http://www.grovemusic.com/shared/components/.

Stainer, John. 1874-1875. 'On the principles of musical notation.' *Proceedings of the Musical Association, 1st Session*. 88-111.

Steele, Joshua. 1775. *An Essay towards Establishing the Melody and Measure of Speech to be Expressed and Perpetuated by Peculiar Symbols*. London: J. Almon.

Sweet, Henry. 1875-1876. 'Words, logic and grammar.' *Transactions of the Philological Society*. 470-503.

Sweet, Henry. 1877 *A Handbook of Phonetics, Including a Popular Exposition of the Principles of Spelling Reform*. Oxford: Clarendon Press.

Sweet, Henry. 1882-1884. 'The practical study of language.' *Transactions of the Philological Society*. 577-599.

Sweet, Henry. 1892. *A Manual of Current Shorthand, Orthographic and Phonetic*. Oxford: Clarendon Press.

Sweet, Henry. 1905. 'Sweet, Henry'. In: *Who's Who, 1905*. London: A.C. Black. 1565.

Sweet, Henry. 1908. *The Sounds of English: An introduction to phonetics*, Oxford: Clarendon Press.

Williams, [Charles Francis] Abdy. 1903. *The Story of Notation*. London: The Walter Scott Publishing Co.

Williams, [Charles Francis] Abdy. 1907. 'Notation'. In: *Grove's Dictionary of Music and Musicians*. Ed. by J.A. Fuller Maitland. London: Macmillan and Co., Limited. III: 392-407.

Wolf, Johannes. 1919. *Handbuch der Notationskunde. II Teil; Tonschriften der Neuzeit*. Leipzig: Breitkopf & Härtel.

Contact Details   Prof M.K.C. MacMahon
                        Dept of English Language
                        University of Glasgow
                        Glasgow
                        Scotland/UK
                        G12 8QQ
                        m.macmahon@englang.arts.gla.ac.uk