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MUSICAL NOTATION IN UGARIT

by Hans G. GÜTERBOCK

*To Professor Claude Schaeffer on the occasion of
the thirtieth season of excavation at Ras Shamra.*

This paper has nothing to do with the “musical notation” once believed to be found on a tablet from Assur (KAR No. 4)¹. Already in 1933 B. Landsberger showed that the syllables in the left column of that tablet were of quite different nature². Furthermore, he correctly stressed (p. 170) that the assumption underlying the system of Sachs, the reduction of the cuneiform signs to single sounds, was irreconcilable with the syllabic character of the script. All this did not keep F. W. Galpin from following in Sachs’ footsteps by simply brushing aside Landsberger’s objections, and from even rendering the text with its “music” in modern notation³. That the syllables found on the Assur tablet and on numerous other tablets in a fixed sequence, called “Silbenalphabet” by Landsberger, have nothing whatsoever to do with music should now be obvious to all after Landsberger’s second publication on the subject⁴ and the contributions of E. Sollberger, J. Nougayrol, and M. Çiğ-H. Kızılyay to his *Festschrift*⁵. Miss H. Hartmann was quite right, therefore, to leave this hypothesis out of consideration in her dissertation on the music of the Sumerians⁶.

1. Curt SACHS, Die Entzifferung einer babylonischen Notenschrift, *Sitzb. Preuss. Akad. d. Wiss.*, 1924, pp. 120-123 ; the same, Ein babylonischer Hymnus, *Archiv für Musikwissenschaft* 7 (1925), pp. 1-22, more detailed.

2. Die angebliche babylonische Notenschrift, *Festschrift Max von Oppenheim (AfO Beiheft 1, 1933)*, pp. 170-178.

3. F. W. GALPIN, *The Music of the Sumerians* (Cambridge Univ. Press, 1937), pp. 43-48 and 99-104 ; unchanged in the reprint (Strasbourg Univ. Press, 1955).

4. Zum Silbenalphabet B, in : M. ÇİĞ (and) H. KIZILYAY, *Zwei altbabylonische Schulbücher aus Nippur* (Türk Tarih Kurumu Yay. VII. Seri No. 35, Ankara, 1959), pp. 97-116 ; cf. the text of the similar Silbenalphabet, *ibid.*, pp. 59-76.

5. *Studies in Honor of B. Landsberger on His Seventy-fifth Birthday (AS 16, Chicago, 1965)* : E. SOLLBERGER, A Three-Column Silbenvokabular A, pp. 21-28 ; J. NOUGAYROL, “Vocalises” et “Syllabes en liberté” à Ugarit, pp. 29-39 ; M. ÇİĞ and H. KIZILYAY, Additions to Series B and C of Personal Names from Old Babylonian Nippur, pp. 41-56.

6. Henrike HARTMANN, *Die Musik der sumerischen Kultur* (Frankfurt a. M., 1960).

Here we are dealing with something entirely different. In 1960 Anne Draffkorn Kilmer published a tablet, datable to the Kassite period, in the University Museum of the University of Pennsylvania¹ which contains a section dealing with entities characterized by the sign *sa* which, among other things, means "string" of a musical instrument. The understanding of this section was made possible by an unpublished tablet from Ur, a copy of which Landsberger had received from O. R. Gurney and in which he recognized a list of the names of the nine strings of a musical instrument; these same names were found to occur also in the Pennsylvania list.

In the autumn of 1962 Marcelle Duchesne-Guillemin, who was in Chicago with her husband, learned about the article of Mrs. Kilmer and gave a musicological interpretation of the text². While she was here, S. N. Kramer kindly put the original tablet temporarily at our disposal, and collations by Mrs. Kilmer, Landsberger, and myself led to a number of improved readings which Mrs. Duchesne could use in her article. Her published article and the collations then led to more intensive occupation with the text, as the result of which Mrs. Kilmer and Mrs. Duchesne-Guillemin published a revised text and interpretation in the Landsberger Festschrift³. In addition to the Pennsylvania tablet this article contains the relevant part of the Ur tablet and adds the observation that some of the technical terms recur in the listing of songs known as the "Liederkatalog" from Assur (KAR 158, col. VIII). Mrs. Duchesne-Guillemin expanded the study of these three texts in another article published the following year⁴.

Other musicologists soon took up the discussion of this new material. Professor W. Stauder published an article in 1967⁵ which, however, was based on the first publications of Kilmer and Duchesne-Guillemin only (here, n. 1 and n. 2) without benefit of the later ones. He proposed that the Pennsylvania text referred not to strings but rather to the length of strings as produced with the help of frets on a lute, an idea which was very unlikely because it stretches the meaning of Sumerian *sa* too far.

Gurney, who had initiated this whole chain of investigations by making the Ur tablet available, maintained his interest in it and secured the cooperation of the Oxford musicologist D. Wulstan. In 1968 the two scholars published a set of articles

1. *Orientalia*, N.S. 29 (1960), pp. 273 ff., esp. pp. 278, 281, and the section "Strings of Musical Instruments", pp. 298-300.

2. Découverte d'une gamme babylonienne, *Revue de Musicologie* 49 (1963), pp. 3-17.

3. The Strings of Musical Instruments : Their Names, Numbers, and Significance (A. D. KILMER), *AS* 16 (cf. p. 45, n. 5), pp. 261-268, with Appendix, "Note complémentaire sur la découverte de la gamme babylonienne" (M. D.-G.), pp. 268-272.

4. A l'aube de la théorie musicale : Concordance de trois tablettes babyloniennes, *Revue de Musicologie* 52 (1966), pp. 147-162. See also her article in *Syria* 44 (1967), pp. 233-246.

5. Ein Musiktraktat aus dem zweiten vorchristlichen Jahrtausend, *Festschrift für Walter Wiora zum 30. Dezember 1966*, hrsg. von L. FINSCHER und C.-H. MAHLING (Kassel, etc., Bärenreiter, 1967), pp. 157-163.

in which Gurney edited a fragment of a tablet in the British Museum which Sollberger had brought to his attention, and Wulstan developed his own interpretation of the evidence, which differs from Mrs. Duchesne's in various points, and included the data provided by the London fragment in it¹. The latter seems to be an instruction for the tuning of an instrument by "changing" one string at a time; being of the Old Babylonian period it is so far the earliest attestation of the terminology in question.

Without going into musicological detail for which I am not competent, I would sum up the essential results of these studies as follows :

1. The two numerals contained in each line of the Pennsylvania tablet designate strings.

2. In the longer lines each string is also referred to by its name; some of these names are identical with the numbers, others show that strings No. 6-9 were numbered from the rear : "4th, 3rd, 2nd from rear" and "rear string"².

3. The system is heptatonic since, in the progression of intervals, the 8th string is replaced by the first, and the 9th by the 2nd.

4. At the end of each line there is another term, also preceded by the word-sign *sa*, which seems to be the name of the interval formed by the two strings listed in that line.

5. Since some of these "interval" names (but only those of fifths and fourths, not those of thirds!) are used to characterize certain songs in the catalogue, they may refer to the mode represented by the tones contained in such interval : assuming a fixed position of the halftones in the octave, the half-tone would fall into a different place within the intervals, e. g., 1-5, 2-6, or 3-7. (The position of the halftones in the scale as a whole is still debated among musicologists, and no opinion is offered here.)

But there is more about these "intervals", and this brings us to the subject matter of this paper. The rich volume *Ugaritica V* reached Chicago late in 1968, and when I looked at the Hurrian texts contained in it the articles in *Iraq 30* were fresh in my mind. I therefore was struck by seeing the "interval" names here again, although in a slightly "Hurrianized" form. I take the opportunity here to offer these lines to Professor Claude Schaeffer, to whom we are all indebted for the discovery and masterful publication of ancient Ugarit, as a small contribution to the interpretation of this particular group of his finds.

The clue to the matter is the text *h(ourrite) 6*, composed of *rs 15.30 + 49 + 17.387* and published by E. Laroche in transliteration on p. 463 and in cuneiform

1. D. WULSTAN, *The Tuning of the Babylonian Harp*, *Iraq 30* (1968), pp. 215-228; O. R. GURNEY, *An Old Babylonian Treatise on the Tuning of the Harp*, *ibid.*, pp. 229-233.

2. Other names of strings do not interest us here. Those of the first and 2nd string, "fore (string)" and "next", are quasi-numerical. Much debated is the adjective "thin" added to the numeric name "third (string)", and of importance is the only truly non-numeric name, "(The god) Ea created (it)" of the fourth.

on p. 487 of *Ugaritica* V. It is the only well preserved among the Hurrian fragments ; but, as Laroche already pointed out, the others once had the same pattern ; and now, with the help of the new publication of h. 6, we see that the musical terms occur also in the fragments h. 2-5 which were published (together with one half of h. 6) in *PRU* III as early as 1955 !

The tablets in question, h. 2-5 in *PRU* III and h. 6-30 in *Ugaritica* V, show the same arrangement : There is a Hurrian text written on the upper part of a tablet and running from the obverse around the right edge to the reverse, which is contrary to normal usage. As Laroche has observed (pp. 462 f., 484) these sections form coherent texts, though often with repetitions resembling refrains, and seem to be of religious nature. Below this text, usually separated from it by a double rule and limited in width to one side of the tablet, there is the section which contains, together with a few other words, the musical terms here under discussion, each of the latter followed by a numeral.

Since Laroche has published an alphabetic list of these terms (pp. 484 f.) it is easy to find them. It soon becomes evident that only those terms have a counterpart in Kilmer's text that are followed in Ras Shamra by numerals ; those listed by Laroche as having "pas de chiffre" do not occur in the music text and must therefore have a meaning different from the "intervals" (which, however, does not preclude their having something to do with music !). The best way to show the correspondences may be to reproduce the table contained in the Philadelphia tablet in an abridged form but with a few improved readings¹ and to put the Ras Shamra terms next to it².

Strings No.	Name of interval	Ugarit
(1) ³ 1 and 5	SA <i>nīš gabarī</i>	[... G]ABA.RI ⁴
(2) 7 and 5	SA <i>še-e-ru</i> ⁵	<i>šahri</i> ⁶

1. The Oriental Institute has a cast of the tablet. I am indebted to my colleagues M. Civil and A. L. Oppenheim for bringing this to my attention and helping me with the reading. The responsibility for new readings is, of course, mine.

2. In a first draft of this paper I had identified nine of the fourteen terms (items 2, 4, 6, 7, 9, 10, 11, 12, 14 of the following list). After I had shown my manuscript to some colleagues at the XVII^e Rencontre assyriologique in Brussels, in June-July, 1969, H. M. KÜMMEL kindly sent me a copy of the manuscript of his article Zur Stimmung der babylonischen Harfe, *Orientalia* 39 (1970), pp. 252-263, and also communicated to me some more identifications (items 1, 3, and 5, see below). Item 8 then fell into place by itself.

3. For the sake of convenience I numbered the items ; these are *not* the line numbers of Kilmer's edition !

4. Preserved in the fragments rs 19.164 (*Ugaritica* V, pp. 477 ff., hereafter quoted by letter only) n 3 ; o 6 ; [...]RI only in y 1 ; bb 1 ; text h. 22, 6 (Kümmel). — This seems to be the only logographic writing among the Ras Shamra terms. Or should it be taken as phonetic *gaba-ri* ? Is the value *gaba* (von SODEN, *Das akk. Syllabar*², No. 117, in *gabarū*, etc.) applicable to the Hurrian of Ugarit ?

5. This reading, tentatively proposed by Kilmer, *AS* 16, 266, n. 44, has been confirmed by a collation of the original kindly carried out by Erle Leichty. The recognition of the *ru* there helped in the readings of items (7) and (8).

6. Both items (2) and (6) with sub-species called "upper" and "lower", see below.

Strings No.	Name of interval	Ugarit
(3) 2 and 6	SA <i>išartu</i>	<i>išarte</i> ¹
(4) 1 (= 8 ?) and 6	SA <i>šalšatu</i>	<i>ša(š)šate</i>
(5) 3 and 7	SA <i>embūbu</i>	<i>umbube</i> ²
(6) 2 (= 9 ?) and 7	SA <i>rebūtu</i>	<i>irbute</i> ³
(7) 4 and 1	SA <i>nīd qabli</i> ⁴	<i>ni/atka/ibli</i>
(8) 1 and 3	SA <i>isqu</i> ⁵	<i>ešgi</i>
(9) 5 and 2	SA <i>qablītu</i>	<i>kablite</i>
(10) 2 and 4	SA <i>titur qablītu</i>	<i>tita/irkabli</i>
(11) 6 and 3	SA <i>kitmu</i>	<i>kitme</i>
(12) 3 and 5	SA <i>titur išartu</i>	<i>titi(m)išarte</i>
(13) 7 and 4	SA <i>pītu</i> ⁶	
(14) 4 and 6	SA <i>z/šir-du</i> ⁷	<i>zirle</i>

This covers thirteen of the fourteen terms of the Pennsylvania tablet. Only for item (13) did we not find a counterpart either to the form *pi-i-te* of the Lieder-katalog or to the *kat-tum* of the Pennsylvania tablet⁸. It is safe to assume that this gap is due to the accident of preservation. On the other hand, the only term listed by Laroche with a numeral and not covered by our comparison is *ḥapšema*. But in two of its occurrences the alleged numeral “2” is damaged and the traces may be

1. At the broken passages h. 16, 14; 21, 4; 26, 13; w 2; bb 2, it is possible to restore *išarte* without preceding *titi(m)* (Kümmel). — In 21, 4 the hand copy seems to indicate a space before *i-*, making *i-šar-te* the whole word.

2. Kümmel quotes [...] *-bu-be* from h. 28, 8 and [...] *-bu-bi* from x 2 (as well as [...] *-be* h. 12 rev. 3, [...] *-bi* h. 8, 20 and nn 2). Of these, 28, 8 was listed by Laroche under *tuppunu*, but the hand copy (p. 496) shows a clear *be*. The same is true of other occurrences of *tup-pu-nu* (19, 8 and 21, 7) while 6, 7 and g 3 are ambiguous but may have *be*. Since the signs *tup* and *um* look alike and *pu* can be read *bu*, it is clear now that we should read *um-bu-be* throughout.

3. Both (2) and (6) with sub-species called “upper” and “lower”, see below. — *ir-bu-te* indicates vowel *u* also for the Akkadian reading of *4-tu*; cf. KILMER’s note 53.

4. KAR 158 viii 49 (AS 16, 268) *ni-id* MURUB₄; the sign in the Pennsylvania tablet, line 17 (*ibid.*, p. 266 with n. 49) is the same as the *ru* in *še-e-ru* (item 2), hence šUB = *nīdu*. The same reading was independently also found by KÜMMELE (*Orientalia*) and von SODEN (*AHW* s. v. *nīdu(m)*, 9). The RSh. form decides for *qabli*, not *qablīti*.

5. Written GIŠ.ŠUB.BA (collated; RU = ŠUB as before; BA by comparison with signs in col. ii). The same reading again in Kümmel’s article. Of the two readings given for GIŠ.ŠUB.BA, *isqu* “lot” and *tilpānu* “throwstick”, the RSh. form *ešgi* decides for the former.

6. KAR 158 viii 48 *pi-i-te*; the *kat-tum* of the Pennsylvania tablet has therefore been emended to *pi(!)-tum*, see Kilmer’s note 41.

7. Of the two values of the sign, *muš* and *z/šir*, the edition in AS 16 preferred *muš*; the RSh. equivalent now shows that it should be the other. None of the words listed in CAD, volumes Š and Z, and resembling this *z/šir-du* yields a satisfactory meaning.

8. KAR 158 viii 48 *pi-i-te*; the *kat-tum* of the Pennsylvania tablet has therefore been emended to *pi(!)-tum*, see Kilmer’s note 41.

another sign¹, while at the third place it is completely lost. Thus, *hapšema* may rather belong to the Hurrian words which are used without numerals.

Of special interest is the fact that two of our terms, *šaḥri* and *irbute*, occur with the adjectives *ašḫu* "upper" and *turi* "lower"²; in other words, a distinction was made between the "upper *šaḥri*" and "lower *šaḥri*", the "upper *irbute*" and "lower *irbute*". It is obvious that these distinctions must have some musical meaning, but any further comment must be left to the specialists.

The main questions arising out of the identification of the terms in the lower part of the Hurrian tablets with the Babylonian musical terms are these : What purpose do these entries on the Hurrian tablets serve ? And what is the function of the accompanying numerals ?

The obvious answer to the first question seems to be : musical notation for the song, or litany, contained in the upper part of the same tablets. The frequent repetitions in those texts and the divine names contained in them would suit the idea that these were hymns or litanies. Proof for musical notation would come if it were possible to correlate the terms in the second part of each tablet, together with the numerals, with the "hymn" in its first. Since all others are too fragmentary, No. h. 6 is the only tablet in which at least an approximate count of the words or syllables of the text and of the numerals in the second part is possible. The count can only be approximate because some words and numerals are lost even in this relatively well preserved tablet.

If the technical terms designate intervals, does each of them represent two notes, and does the numeral behind it indicate that these two notes should be repeated *n* times ? If for practical purposes we use do-re-mi for the seven tones of the scale (*only* for their relative position, of course !) does then, e. g., *kablite 3* mean sol-re, sol-re, sol-re ? Or does each "interval" include the intervening tones (upward or downward) ? In other words, is *kablite*, the step "5 – 2", sol-fa-mi-re or sol-la-si-do-re ? And should such a partial scale be repeated *n* times ?

I tried both kinds of count for text h. 6, attempting to match the "notes" with the syllables of the text. The result was negative in both cases : too few notes in the first, too many in the second. Also, the resulting "melodies" were not acceptable. So these explanations do not seem to work.

If, on the other hand, the terms designate modes, keys, or full scales based on the type of tuning connected with the respective term³, what do the numerals after their names then mean ? Against an interpretation according to which, e. g.,

1. As pointed out to me by Kümmel.

2. Cf. LAROCHE's *Lexique hourrite*, in *Ugaritica* V, pp. 533 ff., s. vv. *ašḫ* and *tr*.

3. This last possibility is considered by Wulstan, *Iraq*, l. c., and by KÜMMELE, *Orientalia*, l. c.

kablite 3 would designate the third tone either within the “5 – 2” interval or in a scale named after it, there are these objections : *a*) why should individual tones in a melody be designated in such a complicated way ? *b*) what can the number 10 (text 6, line 5, with *titimišarte*) be in such a system ? *c*) all fourteen terms occur in our texts whereas only the fifths and fourths were names of “modes” or “scales” (as observed by Wulstan and Kümmel and confirmed by the Liederkatalog).

The assumption, finally, that the whole hymn should be repeated *n* times in each of the “modes” enumerated, can be dismissed off hand because of the impossibly high number of repetitions that would result. Besides, the “mode” or “scale” in which the whole song was sung seems to be mentioned in the colophon.

All remnants of colophons were collected by Laroche on p. 486 of *Ugaritica* V. Taking the analysis offered there as basis but reading instead of *za-am-ma-aš-ša* rather *za-am-ma-rù ša*¹ one arrives at the following interpretation :

“This (is) a song (in the mode) *nītkibli*, a *zaluzi* of the gods, (composed) by PN₁, written down by PN₂.” *zaluzi* would be a term for “hymn” or the like.

Is it mere coincidence that *nī/atkibli* is the only term preserved in these colophons ? It is true that the five colophons where it occurs represent only a fraction of the texts (30 numbered texts plus 43 small fragments) and that other terms may have stood in other colophons where they are now lost. Still it would be a strange coincidence if all others were lost and only this one preserved five times. However that may be, it seems that if there was a designation of the “mode” of the hymn as a whole, comparable to those listed in the Liederkatalog from Assur, it should be the term occurring in the colophon. Happily, *nīd qabli* does occur in the Assur catalogue. But what, then, is the difference between *nātkabli 1* in line 8 and *nītkibli* in the colophon of text h. 6 ?

Not being a musicologist I must let the matter rest here and leave it to the professionals to interpret the material. If I may sum up the points that seem important to me, they are these :

1. The similarity of the terms attested in Ugarit with those listed in the Pennsylvania tablet is such that it cannot be accidental. If the latter are musical terms then the former must be too.

2. The literal meaning of these terms, while certainly of prime importance, must be handled with extreme caution and, if possible, in constant consultation between the philologist and the musicologist².

1. Reading proposed by A. Kilmer in a letter. The double *m* which results in the wrong word (*zammāru* “singer” instead of *zamāru* “song” which is required by the context) can easily be blamed on the Hurrian scribes.

2. Attention is drawn here to the new readings offered in this paper. For *šēru* (2), the meaning “morning” is not the only possibility ; *rebūtu* (6) (*irbute*) would decide in favor of the ordinal “fourth”, but for *šalšatu* (4)

3. A new attempt at defining the true nature of these terms must take into consideration all the different applications in which they are found. On what common ground can one explain their occurrence, so far :

- a) on the Pennsylvania tablet ;
- b) in the Assur catalogue of songs ;
- c) in the tuning instruction of the British Museum ;
- d) with numerals in the Ugarit texts ;
- e) without numeral in the colophons of the same tablets ;
- f) the distinction of an upper and lower variety of items (2) and (6) ?

It is hoped that a solution will be found by the experts. In this paper we could only bring to their attention this new material which shows at least one thing quite clearly : that the Hurrians were conversant with Babylonian music. Were they a link in its spread to the West as they were in that of certain myths ?

the difficulty discussed by Kilmer in her n. 52 remains ; “Elam” has been replaced by a “lot” (8), and item (7) became “throw(ing) of the center”. Finally the “comb” (14) is out, but its replacement, *zširdu*, is not clear ; the word for “olive” has samekh and is not written with the *muš* sign.