## CONCLUSIONS AND SUMIMARY

Originally there was only one school of Sämaveda, J, the pristine aspects of which have been preserved by the Nampūtiris. Directly or indirectly, all sāmavedic notations are $J$ notations. Even the numeral notation employed today by $\mathrm{K}-\mathrm{R}$ chanters is an altered version of an old J notation. This is made clear by Sabhāpati, in his Dhāanalaksana (see Burnell's JĀrsB xiv-xv), and by Bhavatrāta (JŚSV 258), both of whom prescribe a series of J mudrās strikingly similar to those used by K-R sāmavedis of the present day. The commentary of Bhavatrāta has been described as "very old" by Parpola, who has had the opportunity "to visit the places in Kerala where Bhavatrāta and his relatives lived, and to record many legends and traditions concerning them, still well remembered by the Nambudiris." (ISJS 15) Although the J syllable notation is today the exclusive property of the Tamil chanters (practically all J manuscripts with the notation are of Tamil origin), it reflects the structure of $N J$ more closely than that of the Tamil J. The inventor(s) of the notations must have had familiarity either with $N J$ or with a type of $J$ chant structurally very close to NJ. Possibly, the Tamil chant was very similar to NJ at one time; but, if this is the case, this old way of singing has been irrevocably lost. On the other
hand, NJ appears to have changed little, or perhaps not at all, over the centuries. Indeed, the melodies or melody fragments which constitute the $N J$ may date back to pre-vedic India.

As demonstrated in Part II, the J syllable notation can be related directly to the figure notation. As a matter of fact, there is good reason to suspect that notation by numerals may actually have preceded the syllabic method of representation. The number system is by far the more cumbersome of the two, since a particular figure may have more than one signification: augmented 2 , for instance, has $k, t$, or $k-t h$ as syllabic parallels; augmented 5 after $l_{234}$ or $3_{234}$ has either $\underset{\underset{\sim}{n}}{\underline{\delta}}$ or as its counterpart; $l_{\hat{2}}$ may be represented by either $\underset{-}{t}$ or $t=\underline{-}$; and so on. If one accepts the reasonable assertion that, in the course of time, samavedic notation evolved in the direction of greater precision, then the syllabic method must be judged the most recent. It is appropriate to summarize here the correspondences. Unless otherwise stated, each sign may encompass preliminary short or long syllables. All sequences are found on augmented syllables.

K: Augmented 2
Exceptions: (1) augmented 2 after $l_{23}$ or $3_{234}$ is equivalent to $t$, (2) augmented 2 in a 2-notated vacana, except one entirely on stobhas, is equivalent to $t$, (3) augmented 2 preceded by $I_{\overline{2}}$ and followed by $I_{\overline{2}}, l_{\hat{2}}$, or $l_{23}$
is equivalent to $k-t h$ ( $\underline{\underline{h}}$ ).
KH:
C: Augmented 1
$\underset{-}{T} \quad$ a. $I_{\overline{2}}$
Exception: $l_{\overline{2}}$ is also equivalent to bh.
b. $\quad 1 \hat{2}$

Exception: $l_{\hat{2}}$ is also equivalent to $\underset{\underline{t}}{\mathbf{t}}$-. c. $l_{23}$

Exception: $l_{23}$ is also equivalent to bh.

T:
a. Augmented 3

Exceptions: (1) augmented 3 after $l_{234}$ is
equivalent to $\underline{s}$, (2) augmented 3 after $3_{234}$
and before augmented 2 or 4 is equivalent
to $\underline{\text { s. }}$
b. Augmented 5

Exceptions: (1) augmented 5 in a 5-notated vacana is equivalent to $\underline{t}$ or $\underline{\xi}$, (2) augmented 5 after $l_{234}$ or $3_{234}$ may be equivalent to $\underline{\underline{s}}$ rather than $\underset{\sim}{n}$, (3) augmented 5 after augmented 4, when the latter corresponds to ph , is equivalent to $t$, (4) medial augmented 5 before augmented $4,2 \hat{3}$, or $3_{234}$ is equivalent to s-pl, (5) medial augmented 5 before 5656 is equivalent to $\underline{s}$.
a. Augmented 2 after $l_{23}$ or $3_{234}$
b. Augmented 2 in 2-notated vacanas (except those entirely on stobhas)
c. Augmented 5 in 5-notated vacanas (except those entirely on stobhas)
d. Augmented 5 after augmented 4 , when the latter corresponds to ph
e. $2 \hat{3}$

TH:
Final $2 r$ or $2 r$ immediately before a change of numeral Exception: $2 r$ after $l_{\overline{2}}$ is equivalent to $\underline{s}$.
P: $\quad l_{234}$
PH: a. Augmented 4
Exception: augmented 4 following augmented 5 is equivalent to $\frac{n}{n}$.
b. Short 4 with preliminary long or augmented syllables
c. Short 5 with preliminary long syllable(s) notated $3 r$
d. $3_{5}$

BH: a. $l_{\overline{2}}$
Exception: $l_{\overline{2}}$ is also equivalent to $\underset{-}{t}$.
b. $l_{23}$

Exception: $l_{23}$ is also equivalent to $\underset{\text { t. }}{ }$
Y: $\quad 2_{1}$
PL:
a. $4_{5}$
b. $5_{6}$
c. $3 r$ immediately before a change of numeral (unless this numeral is 5)
d. Short 5 with preliminary augmented syllable notated $4_{5}$
$\dot{N}:$
Augmented 4 preceded by augmented 5
TR :
5656
S: a. Final short 1-6 Exceptions: (1) final short 5 with a preliminary augmented syllable notated $4_{5}$ is equivalent to pl, (2) final short 4 with preliminary long or augmented 4 is equivalent to ph.
b. Medial short 1 -6 immediately prior to a change of numeral

Exception: medial short 4 with preliminary long or augmented 4 is equivalent to ph.
c. Final lr or $\operatorname{lr}$ immediately before a change of numeral
d. $2 r$ after $l_{\overline{2}}$
e. Final $5 r$ after $3_{5}$
f. Augmented 3 after $l_{234}$
g. Augmented 3 after 3234 and before augmented 2 or 4
h. Augmented 5 in a 5-notated vacana entirely on stobhas
i. Final augmented 5 after $l_{234}, 3_{234}$, or $4_{5}$ Exception: augmented 5 after $l_{234}$ or $3_{234}$ may be equivalent to $\underset{\sim}{n}$ rather than $\underline{s}$.
j. Augmented 5 before 5656

K-C: $\quad I_{2}$ (?)
K-TH: Augmented 2 preceded by $l_{\overline{2}}$ and followed by $l_{\overline{2}}, l_{\hat{2}}$, or $l_{23}$

KH-N: $\quad 2343$
T-KH: $\quad 123115$
T.C-: $\quad l r_{2}$
$\stackrel{T}{?}=\underline{T}: \quad l_{\hat{2}}$
Exception: $l_{\hat{2}}$ is also equivalent to $\underset{\underline{t}}{\underline{-}}$
$\stackrel{\mathrm{N}-\mathrm{PH}:}{ }$
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T-C:
$2_{3}$
T-T:
${ }^{2} 32$
TH-C:
$2 r_{3}$
P-Y: $\quad l_{231}$
S-PL: Augmented 5 before augmented $4,3_{234}$, or $2 \hat{3}$
Minor adjustments in this list may be required when all sāmans of the J repertory have been scrutinized. Also, the musical interpretations and numerical parallels of relatively unimportant symbols such as kru and t-tt--this compound known to occur in the JŪG and JŪhyG (see SC 161-62)--will be known when the entire corpus of NJ recordings has been inspected. Needless to say, a complete edition of the $J$ gānas is impossible without the collaboration of a qualified musicologist.

In the meantime, the overwhelming majority of the symbols, in their various contexts, can be connected to the following groups of related pitch patterns (ădisvaras underlined).
(1) lat+
lalb
la2a+
lalc2a+
la3alat
$1 a++++4 a 3 b+$

1. short ph
2. final short pl
3. pl before k , t , or $\mathrm{kh}-\mathrm{n}$

4. final long preliminary syllable of the following: kh, with a single long syllable, before $\underset{-}{n}$ or pl ; c before $\underline{k}$; $\underline{c}$ before $\underline{c}$ prior to $\underline{k}$; $\underline{c}$ before final th; th before c prior to $k$; th before $\underset{\underline{t}-t \text {; final }}{\underline{-}}$ augmented pl on any vowel other than of pl before final pl; $\underline{n}$ after $p l$ or $\underline{s-p l}$ and before final $\underline{s}$; $\underline{k-t h}$ before $\underset{\underset{-}{t}}{ }$ prior to $\underline{t}$; th-c before $\underline{k}$ or $\underline{c}$
5. penultimate long preliminary syllable of the following: kh before augmented $\underline{\underline{s}}$, without preliminary long syllables, prior to pl; kh before augmented $\underline{s}$, without preliminary long syllables, prior to tr; $\underline{t}$, preceded by $t$, which is final or followed by final $\underline{\xi}$; $p$ before $\underset{\underset{-}{n}}{ }$ prior to ph ; th-c before $k$
(2) 1 c

1d
le

1. final long preliminary syllable of the following: pl before final pl; $n=p h$ before $k h$; th-c before final s (also final th-c?)
(3) lela lcla lda lc2a
2. pl before $\underline{n}$
3. final long preliminary syllable of the following: kh before kh with ädisvara; kh, with only a single long syllable, before pl ; kh , with only a single long syllable, before augmented s, without preliminary long syllables, which is final or occurs prior to $k h$; $k h$ before final augmented $\underline{\underline{s}}$ with one or more preliminary long syllables; $\underline{c}$ before $\underline{k}$ or
 short $\underline{s}$ prior to $t$
4. penultimate long preliminary syllable of the following: kh before tr; final c; $c$ before $p$
(4) $1 a++2 b$
5. final short $\underline{s}$ after $\mathrm{kh}, \mathrm{p}$, ph , or pl
6. final short $\underline{s}$ on the stobha hāyi
(5) $1 \mathrm{a}++++5 \mathrm{~b}$
$1 a+++1 b$
$1 a++3 e(1-2)$
$1 \mathrm{a}+++8 \mathrm{~b}(1-2)$
$1 a+5 c(1-4)$
la9b(1-2)
$1 a+11 a(1-4)$
la2e4a4a
7. final long preliminary syllable of the following: final $k$; final $\underline{t}$; $\underline{t}$ before $t$ or final $\underline{s} ; \underline{k}-c$ before k
8. penultimate long preliminary syllable of the following: $\underline{k}$ before $\underline{k h} ; \underline{k h}$ before $\underset{-}{n} ; \underset{-}{t}$ before $\underline{k h}$ not on the stobha $a u$ ho bā or represented by 32345 ; $\underset{-}{\mathrm{t}}$ before $\underline{k-t h}$; $\underline{t}$ before $\underline{t}$
(6) la4c+ la2e+
la3b+
la3d+
lalb3b+
la2a3b
la4a3b+
la5b3b+
9. $\underline{k}$ before $\underset{-}{t}$ prior to $\mathrm{kh}, \underset{-}{t}$ not on a stobha
10. c , not on the first textual syllable of a vacana, before k
11. $\subseteq$ before final th or before $\underline{s}$
12. medial short $\underline{\underline{s}}$, or final short $\underline{\underline{s}}$ after $\underline{c}$ or $\underline{\underline{n}}$
13. augmented $\underline{s}$, without preliminary long syllables, between kh and tr
14. final long preliminary syllable of the following: kh, with a single long syllable, before $\underset{-}{n}$; final
 single long syllable, before $\underset{-}{t} \underline{c}$ before $t$, final
th, $p, \underline{y}$, or $\underline{s} ; \underset{\underline{t}}{t}$ before $\underline{k h}$ corresponding to 32345 ; p before $\underset{\underline{n}}{n}$ prior to ph ; $\underline{\mathrm{ll}}$, on the stobha ehiyā, before final $\underline{s}$
15. penultimate long preliminary syllable of the following: $\underline{k}$ before $\underline{c}$; $\underline{k}$ before $\underset{\underline{t}}{\underline{t}}$ prior to $\underline{k h}$ or $\underline{\mathrm{kh}} \underline{\underline{n}}$; $\underline{\mathrm{kh}}$ before $\underset{\underline{n}}{ }$ or $\underline{\mathrm{pl}}$; $\underline{\mathrm{kh}}$ before augmented $\underline{\underline{s}}$, without preliminary long syllables, which is final or occurs prior to $\underline{k h}$; final $\underset{\underline{t}}{t}$ or $\underset{-}{t}$ before final $\underline{s}$; $\underset{\underline{t}}{t}$ before $\underline{c}$ or $\underset{\underline{t}}{\mathrm{t}} \mathrm{p}$ before $\underline{k h} ; \mathrm{p}$ before $\underline{s}$ with one or more preliminary long syllables; $\underset{\underline{t}-\mathrm{C}}{ }$ before $\underline{k}$, on two or more textual syllables, prior to $t \underset{\underline{t}}{ }$ t-c before k-c
(7) la2e3d+
$6 \mathrm{~b}(4-6) 2 \mathrm{e} 3 \mathrm{~d}$
$2 \mathrm{e}++3 \mathrm{~d}+$
16. $\underset{\underset{-}{t}}{ }$ before medial $\underline{s}$
17. final long preliminary syllable of the following: final $\underline{c}$; before $\underline{p}$
18. penultimate long preliminary syllable of $c$ before y
(8) $1 a 4 c++1 b$

1a4c++2e(1)
$1 a 4 c++3 d(1-2)$
la3d++lb
$2 \mathrm{e} 4 \mathrm{a} 3 \mathrm{~b}+1 \mathrm{~b}$
$2 e 4 a 3 b++8 b(1-2)$
$1 \mathrm{a} 2 \mathrm{e} 4 \mathrm{a} 3 \mathrm{~b}+8 \mathrm{~b}(1-2)$
$3 b(3)++4 c l b$
$3 b(3)+++1 b 3 b+3 e(1-2)$
$2 e++2 a++4 c+3 e(1-2)$
$1 a+++4 c++3 b 5 b(1-2)$
$1 a+3 e 3 b++5 b 3 a(1-2)$

1. $k$ before medial $\underline{s}$
2. $\subseteq$ before final $\subseteq$ or before $\subseteq$ prior to $\underline{k}$, $\underset{\underline{t}}{ }$, or th
3. c, not on the first textual syllable of a vacana, before $\underset{-}{t}$
4. final long preliminary syllable of $\underline{t}$-c before $\underline{k}$, c, or $k-c$
(9) $1 a+4 c 3 d$
la++4c
1a+5b3b3d
$7 \mathrm{a}(7) 5 \mathrm{c} 3 \mathrm{~d}$
la++++2a++3ela
5. c , on the first textual syllable of a vacana, before k or $\mathbf{s}$
6. $\subseteq$ before $t$
7. $\underset{\underline{-}}{n}$, with long preliminary syllable, following $p$
8. th before $\underset{\underline{t}}{\text { t prior to }} \mathrm{kh}$
9. th before short $\underline{s}$ prior to $\underset{-}{t}$
10. ph , not preceded by k , before final $\underline{s}$
11. $\underline{\underline{n}}$ before final $\underline{\mathbf{s}}$ and preceded by $\underline{\mathrm{pl}}$ or $\underline{\hat{s}-\mathrm{pl}}$
12. medial short $\underline{\text { s }}$
13. final short $\underline{\underline{s}}$ after $\underline{c}$ or $\underline{n}$
14. final long preliminary syllable of the following: $\underline{k}$, except final $\underline{k}$; $\underline{k h}$ before $\underline{k h}$ with $\underline{\text { ādisvara; }}$
kh, with two or more preliminary long syllables, before $\underset{\underline{n}}{ }$; $\underline{\text { kh }}$ before $t$; $\underline{k h}$ before augmented $\underline{s}$, without preliminary long syllables, prior to $\underline{k}$ or ph ; kh before final short $\underline{\xi}$; kh , with two or more preliminary long syllables, before pl or before augmented $\underline{\text { s }}$, without long syllables, which is final or occurs before kh ; final c ; c before c prior to th; $\underline{c}$, with two or more preliminary long syllables, before $\underset{\underline{f}}{ }$; $\underline{c}$ before medial th, $y$, or $\underline{p-y}$; $\underset{\underline{t}}{ }$ before $\underline{k}, \underline{k h}, \underline{c}, \underset{\underline{t}}{t} \underline{t}, \underline{p}$, medial $\underline{s}, \underline{k-t h}$, kh-n, $\underline{\underline{t}-\mathrm{c}}$, or $\mathrm{t}-\mathrm{c}$; final short ph ; bh before t ; $y$ before $\underset{\underset{-}{t}}{\operatorname{pr}}$ prior to $\underline{t}$; $\underset{-}{t-c}$ before y ; $\underline{p-y}$ before $\underline{p}$ 11. penultimate long preliminary syllable of the following: $\underline{k}$ before $\underline{k}$; $\underline{k}$ before $\underset{\underline{t}}{ }$, on a stobha, prior to $t$; $\underline{k}$ before $y$ or th-c final $\underset{-}{t}$ or $\underset{-}{t}$ before final $\underline{\underline{s}}$; $\underset{\underline{t}}{ }$ before $\underline{c}, \underline{p}$, or $t-c$; $\underline{p}$ before medial pl
(10) $1 a+5 b 3 b(1)$

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1 a+8 b(1-7)
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1a4a2a(1)

1. final long preliminary syllable of final $\underline{k}$
2. penultimate long preliminary syllable of the following: $\underline{k}$ before $\underline{k h}$; $\mathfrak{c}$ before $\underset{-}{t}$ or $\underline{s}$; $\underset{\underline{t}}{ }$ before kh not on the stobha au ho ba or represented by $3 \frac{1111}{2345}$; $\underset{\sim}{t}$ before $t$; $p$ before medial pl; p-y before p
(11) $1 \mathrm{a}++++4 \mathrm{a} 3 \mathrm{~b}+$
l. penultimate long preliminary syllable of the following: kh before pl ; kh before augmented $\underline{\underline{s}}$, without preliminary long syllables, prior to $\underline{k}$ or $p h$; final $t$ or $t$ before final $\underline{s}$, if $t$ does not precede; $t$ before $t$
(12) $1 a++4 c+4 c$
$1 b 4 a 3 b++4 c$
lalc2a++4c4c
1b3f4a3b+4c
$1 \mathrm{dla}+++++6 \mathrm{~d}+5 \mathrm{~b} 3 \mathrm{~b}+4 \mathrm{c}$
$1 a+++2 a+1 b 3 f 4 a 3 b+4 c(1-3)$
3. $\underline{k}$ before final $\underset{-}{t}$
4. $\underline{k}$ before $\underset{-}{t}$ prior to $\underset{-}{t}, \underset{\underset{-}{t}}{ }$ not on a stobha
5. th before $\underset{-}{t}$ prior to $\mathrm{kh}-\mathrm{n}$
6. final long preliminary syllable of the following: p before kh , medial pl , tr, or $\underline{s}$
(13) $1 a++4 c+4 d$
$1 a++3 e 3 b++4 d$
$1 a++4 c+3 d 1 b 3 a$
$1 a+++2 a 2 a 3 b++4 c+4 d(1-3)$
$1 \mathrm{a}+++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a}+4 \mathrm{c}++3 \mathrm{~d} 1 \mathrm{~b} 3 \mathrm{a}(1-2)$
7. $\underline{k}$ before th
(14) 1a6a3a
la2b2b2b3a
8. pl, on the stobhas au ho bā and ehiyā, before final s
(15) $1 \mathrm{a}++++2 \mathrm{a}++3 \mathrm{~d} \mathrm{lb}$
9. th before final $c$
10. th before $\underset{-}{t}$ prior to $\underset{-}{t}$ (with ädisvara?)
11. th before short $\underline{\underline{s}}$ prior to $\underline{k}$ (with ādisvara?)
(16) $1 \mathrm{a}++2 \mathrm{a}++4 \mathrm{c} 7 \mathrm{c}$
12. final preliminary long syllable of $y$ before final $\underset{-}{t}$ on two or more textual syllables
(17) $1 a 4 c+4 c 3 d$
$1 a++4 c 4$ c3d
$1 a 4 c 7 c$
$1 a++1 b 3 b+3 b 3 d$
$1 a++2 a+4 c 7 c$
$1 a++4 c 7 c$
$1 a 4 c 3 b 3 d$
$2 e 4 a 3 b+3 b 3 d$
$1 a+++2 a++4 c+3 b 3 d+$
$1 a++++6 d+3 e 3 b++4$ c3b3d
$1 \mathrm{a}++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 3 \mathrm{~b}++4 \mathrm{c}+6 \mathrm{c}$
$2 a+++2 a+4 c++4 c+3 b 2 e$
$1 \mathrm{a}++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a}+4 \mathrm{c}+4 \mathrm{c}+3 \mathrm{~b} 2 \mathrm{e}$
la5b3b7c
$2 \mathrm{a}++++++2 \mathrm{a}+5 \mathrm{~b} 3 \mathrm{~b} 7 \mathrm{c}$
la5b3b3b3d
$1 e 1 a+++6 d+5 b 3 b+3 b 3 d$
$1 a 4 c 4 a 3 b$
$1 a++++2 a 2 a 2 a+4 c++4 c 4 a 3 b$
$1 a++4 c+4$ c3b3d
$1 a++4 c+4 c 4 a 3 b$
13. $\underline{k}$ before $\underline{k}$, $\underline{p h}, \underline{y}, \underset{\underset{\sim}{t}=t}{t}$, or $t h-c$
14. $\underline{k}$ before $c$ prior to $\underset{\underline{t}}{ }$ th, $\mathbb{y}$, or $\underline{s}$

15. $\underline{k}$ before $\underset{-}{t}$ prior to $\underset{t}{t}$ when $\underset{-}{t}$ has the $\underline{\text { ādisvara }}$
16. $k$ before $p$, except $p$ prior to pl pl
17. final c
18. c before kh , medial $\mathrm{th}, \mathrm{y}, \mathrm{k}-\mathrm{c}$, $\mathrm{t}-\mathrm{c}$, $\mathrm{th}-\mathrm{c}$, or $\mathrm{p}-\mathrm{y}$
19. $\underline{c}$ before $\underline{c}$ prior to $\mathbb{y}$ or $\underline{s}$
20. c , on the first textual syllable of a vacana, before $t$

21. final th
22. th before c prior to $\underline{k}$
23. th before $\underset{-}{t}$ prior to $p$
24. th before p
25. th before t=t
26. $y$ before $\underset{\underset{\sim}{t}}{\underset{\sim}{x}}$ prior to $t, \underset{\underset{\sim}{n}}{\mathrm{kh}-\mathrm{n}}$, or $\underline{t-c}$
27. $y$ before final $\underset{\underset{\sim}{t}}{\underset{\sim}{c}}$ on two or more textual syllables
28. final long $\underline{s}$ after $\mathbb{c}$
29. medial long ś after $t$
30. k-th before $\underset{\underset{-}{t} \text { prior to } t}{t}$
31. final long preliminary syllable of the following:
p before $\underset{\underset{-}{n}}{\sim}$ prior to $\underline{\underline{s}}$; $\underset{\underset{-}{t}=t}{t}$ before $k h$
(18) $\quad 1 a 4 c 3 d+3 d++$
$1 a 4 c 3 d+4 c++$
$1 a 2 e 4 a 3 b 3 d++5 b 3 b+$
$1 a 2 e+6 a+3 b++3 d++5 b+3 b+$
32. non-final ph preliminary augmented syllable
33. medial long $\underline{s}$ after $\mathbb{C}$
(19) $1 \mathrm{a}++2 \mathrm{a}$ * $2 \mathrm{e}++5 \mathrm{~b}(1-2)$
34. $k-t h$ followed by $\underset{\underset{\sim}{t}}{ }$ prior to $k h-\mathrm{n}$
(20) $2 e++4 c 5 a 5 c$
35. $\underline{k}$ before final $\underline{c}$
(21) $1 a+++3 b++4 c++4 c$
$1 a++3 b++4 c+1 b$
36. th before $\underset{-}{t}$ prior to $t$
(22) $1 a 2 \mathrm{e} 4 \mathrm{a} 3 \mathrm{~b}++8 \mathrm{~b}(1-2)$

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1 a 2 e 4 a 3 b+3 e(1-2)
$$

1. final long preliminary syllable of final $\underset{-}{t}$ or of $\underset{\underline{t}}{t}$ before final $\underline{s}$
(23) $\quad 1 a 2 e 4 a 3 b++4 c$ lalc2a+4c+4c
2. $\underset{-}{\mathrm{t}}$ before final kh represented by $3 \frac{1111}{2345}$
(24) $\quad 1 a+4 c 3 d+4 c+4 c$
$1 a+2 e 2 e 3 d+1 b 4 a 3 b+1 b 3 b$
3. $y$ before $p$
(25) $1 a++2 a++4 c 3 d+4 c$ $1 a+++3 b++4 c 3 d+4 c$
4. $t$ before kh on the stobha au ho bā
(26) $1 a+++2 a 2 a 3 b+4 c++$ $1 a+++4 e 3 b+4 c++$ $1 a+++2 a 2 a 3 b+1 b 3 b++$ $2 d 2 a++2 a 2 a 2 a 3 b 3 e 3 b+$
5. $\underset{\underline{n}}{n}$ after $\underline{k h}$ and before final $\underline{s}$
6. final $\underset{\underline{n}}{ }$ after $k h$
7. n, without a long preliminary syllable, after p and either final or before final s
8. tr (all appearances)
(27) la+++++++++2b2b2b2a(1)
lat+++++2b2b2bld
9. $\underset{\underline{n}}{ }$ before $\underline{p h}$ or $\underline{\underline{n}-p h}$
10. preliminary augmented syllable of s, when notated on the stobha hāyi
(28) la++++++++2c2a2a2b
$2 \mathrm{e}++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{~b}$
11. final augmented pl
12. augmented $\underline{\text { s }}$ after pl
13. augmented $\underline{\text { s }}$, when it is the only symbol in a vacana
14. final augmented $\underline{\underline{s}}$, with one or more preliminary long syllables, after kh or p
(29) la++++++++2b2b2b3b
15. augmented s, without preliminary long syllables, after kh ( $\underline{\text { s before }} \underline{k}$, $\underline{\mathrm{h}}$, and tr excepted)
16. $\underline{s-p l}$ before $k h$ or $t$
(30) la+++4c+3b2elb
la+++4c3blb
17. ph before ph
(31) $1 a+++5 b 3 b 3 d++4 c$
18. final preliminary long syllable of kh before tr
(32) 1cla+++++2a2a2a3b+
$1 a+2 a 2 a 3 b+$
l. th before c prior to th
19. preliminary augmented syllable of final short pl
(33) $1 a++++6 b 1 b 3 b+3 b 3 d$
20. $\quad \underline{-}-c$ before $k$ prior to $p$
(34) $1 a++++5 b 3 b 3 d+3 b 3 d+$
21. ph before kh prior to $\underset{-}{n}$
22. ph before final $\underline{\underline{s}}$, when $\underline{k}$ precedes
(35) la2b2b2a3a++la2a++
23. $\underline{\text { st-pl before } \underline{n}}$
(36) $1 a+4 c 4 a 3 b 4 a 3 b 3 d$ la3e3b4a3b4a3b3d
24. $y$ before $k$ prior to $\underline{k}$

(37) $1 a 4 a 3 b++1 b 3 b 3 b 3 d+$
25. $y$ followed by final $\underset{-}{t}$ on two or more textual syllables
(38) $1 \mathrm{bla3d}++5 \mathrm{~b} 3 \mathrm{~b} 3 \mathrm{~d}+4 \mathrm{c}++$ $3 b(2-3) 3 d++5 b 3 b 3 d+4 c+++$
l. final $k$
(39) $1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}+5 \mathrm{~b} 3 \mathrm{~b} 3 \mathrm{~d}+4 \mathrm{c}++$
26. final t
27. $t$ before final $\underline{\underline{s}}$ or before $t=t$
28. final bh
(40) $1 a 2 \mathrm{e} 4 \mathrm{a} 3 \mathrm{~b}+4 \mathrm{c} 3 \mathrm{~d}+4 \mathrm{c}$ $2 e 4 c+4 c 3 d+4 c$

$$
2 e 3 d+5 b 3 b 3 d+4 c
$$

$1 a+6 a 3 b+++3 e 3 b+3 d+3 e+3 b+$
$1 a+++2 a++4 c++4 c 3 d+1 b 3 b$
$1 a++++2 a++3 e 3 b++3 e 3 b+3 d+3 e 3 b+$

1. $\underline{k}$ before $k h$, $t$, or $t-t$
2. $\underline{k}$ before $\underline{c}$ prior to $\underline{c}$ or $\underline{k-c}$
3. $\underline{k}$ before $p$ prior to pl pl
4. $t$ before kh , excluding $t$ on $a \underline{u}$ ho $b \bar{a}$ and $t$ before $\overline{\mathrm{kh}}$ represented by 323111
5. $\underset{-}{t}$ before $t, \underline{k-t h}, \underset{\underset{-}{n}}{\underline{\sim}}$, or $t-c$
6. bh before $t$
(41) $1 a+4 c 3 d+5 b 3 b+4 c 3 d+$
7. c before p
(42) $1 a+4 c 3 d+3 d++++++6 d 3 b+4 c++$ $1 a+4 c 3 d 3 d+++4 e 3 b+1 b 3 b+$ $1 a+4 c 3 d+3 d++++++2 a 2 a 2 a 3 b+1 b 3 b++$
8. final augmented ph
9. preliminary augmented syllable of final ph
(43) $2 e 3 d+3 d 3 d+2 h 4 a 3 b++$ $2 e 3 d+3 d 3 d+2 h 4 a 3 b+2 e(1)$
10. $\mathrm{k}-\mathrm{c}$ before p
11. th-c before $\underset{-}{t}$
(44) $1 a+++4 c 3 d+4 c 4 a 3 b+1 b$
$1 a+++3 d+4 c 4 a 3 b+1 b$
12. $\underline{y}$ before $k$ prior to $t-t$
(45) $\quad l a 2 e 3 d+4 c+4 c+4 c+4 d(1-3)$

$$
1 a 2 e 3 d++3 d+3 d+3 b++4 c+3 b 2 e
$$

1. $\underline{k-c}$ before $\underset{-}{t}$ or $t$
(46) $1 a++++2 b 2 b 3 b+5 b 3 b 3 d+4 c+$ $1 a+++4 a 3 b+5 b 3 b 3 d+4 c$
2. final preliminary long syllable of kh before augmented $\underline{s}$, without preliminary long syllables, prior to pl or tr
(47) $1 \mathrm{a}+++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 3 \mathrm{~b}+++++3 \mathrm{a}+++3 \mathrm{~d}++$ $1 c 2 \mathrm{a}+++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 4 \mathrm{~b}++++3 \mathrm{a}++3 \mathrm{~d}+++$
3. ph before kh prior to $\underline{\underline{s}}$
4. ph before $\underset{-}{n}, \underline{t}$, or medial pl
5. pl before medial pl
(48) $1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}+3 \mathrm{~d} 3 \mathrm{~d} 3 \mathrm{~b}+4 \mathrm{c} 4 \mathrm{a}$
6. $t$ before $\underline{c}$
(49) $1 a 4 c 3 d 3 d++2 a 2 a 3 b+4 c+$ $1 a 4 c 3 d+2 a 2 a 3 b+3 e 3 b$
7. augmented $\underline{\underline{s}}$, without preliminary long syllables, between kh and $\underline{k}$ or between $\underline{\mathrm{kh}}$ and ph
8. augmented $\underline{\underline{s}}$, without preliminary long syllables, after p
(50) $\quad 1 a+4 c 3 d++3 d+5 b 3 b 3 b 3 d$
$1 a+4 c 3 d++3 d 3 b++4 c 5 a$
$1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}++3 \mathrm{~d}+4 \mathrm{c}+4 \mathrm{c} 3 \mathrm{~b} 2 \mathrm{elb}$

(51) $1 a+4 c+4 c 3 d++4 c+4 c 3 d+4 c$
9. $\underset{\underset{\sim}{t}=\mathbf{-}}{ }$ before kh
(52) $1 a 2 e 3 d+4 c 4 a 3 b 3 d+4 c+1 c$
$1 a+++4 a 2 a++4 c 4 a 3 b 3 d+4 c 1 c$
$1 e 1 a+++2 b 2 b 3 b+4 c 4 a 3 b 3 d++4 c 3 c$
10. kh before augmented $\underline{\underline{s}}$ without preliminary long syllables (except for $\underline{s}$ prior to $\underline{k}$, $\underline{p h}$, or $\underline{t r}$ )
11. $k h$ before $\underline{s}-\mathrm{pl}$
(53) $1 a 2 e 3 d+4 c 4 a 3 b 3 d+4 c 4 c$
12. $k h$ before augmented $\underline{s}$, without preliminary long syllables, prior to $k$ or $p h$
13. p before final ph
14. $p$ before $\underline{s}$ without preliminary long syllables
(54) $1 b 5 a 3 d+4 c 4 a 3 b 4 a 3 b 3 d$
$6 b 3 d+4 c 4 a 3 b 4 a 3 b 3 d$
15. $\underset{\underline{t-c}}{ }$ before $\underline{k}$, on one textual syllable, prior to $\underline{k}$
16. $\underset{-}{t-c}$ before $\underline{k}$, on one textual syllable, prior to $\underset{-}{t}$
(55) $\quad 1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}++3 \mathrm{~d}+3 \mathrm{~d}+3 \mathrm{~b}++4 \mathrm{c}++3 \mathrm{~b} 2 \mathrm{e}$
17. $\underset{-}{\mathrm{t}-\mathrm{c}}$ before k , on two or more textual syllables, prior to $k$
(56) $2 e 4 a 3 b+3 d 3 d+3 d 4 a 3 b+1 b$
$2 e 4 a 3 b+3 d 3 d+2 e 4 a 3 b+3 e(1-2)$
18. $y$ before final $\underset{-}{t}$ on one textual syllable
19. $y$ before final $b$ on one textual syllable
(57) $1 a+4 c 3 d++4 c 3 d++5 b 3 b 3 d+4 c$
$1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}++4 \mathrm{c} 3 \mathrm{~d}++5 \mathrm{~b} 3 \mathrm{~b} 3 \mathrm{~d}++1 \mathrm{~b} 3 \mathrm{~b}$
$8 b(3-8) 3 d++4 c 3 d++5 b 3 b 3 d+4 c$
$1 a++++4 e 4 a 3 b 3 d++4 c 3 d+5 b 3 b 3 d+4 c$
20. final t
21. $t$ before $k h, t$, or final $\underline{s}$
(58) $1 a+++4 c 2 e 3 d+3 e 4 a 3 b 3 b 3 d+$
22. $\mathrm{k}-\mathrm{c}$ before c
(59) $1 a++++2 a++6 b 3 d+1 b 3 f 4 a 3 b+1 b$
23. $\underset{-}{t}$ before bh
(60) $1 c 1 a+++4 e 4 a 3 b 3 d++3 d+3 e 3 b 3 d+$
24. $t$ before medial $\underline{s}$
(61) $1 a 2 e 4 a 3 b 3 d++6 b 2 e 3 d++4 a 3 a$
$1 a 2 e 4 a 3 b 3 d++8 b 3 d++2 b 2 b 3 a$
$1 a+3 e 3 b+4 c 3 d+8 b 3 d+++2 b 2 b 2 a 3 a$
$1 a+3 e 3 b+4 c 3 d+8 b 3 d+2 a 2 a 3 b+3 a l a+$
25. kh before $\underset{-}{\mathrm{n}}$
26. p before $\underset{\underset{\sim}{n}}{\underset{\sim}{0}}$ or final pl
27. $\mathfrak{p}$ before $\underline{s}$ with one or more preliminary long syllables
(62) $1 \mathrm{a}++4 \mathrm{c} 3 \mathrm{~d}+6 \mathrm{~b} 2 \mathrm{e} 3 \mathrm{~d}++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{~b}$
$1 a 3 d++4 c 3 d+8 b 3 d++++2 a 2 a 2 a 2 b$
$1 \mathrm{a} 3 \mathrm{~d}++4 \mathrm{c} 3 \mathrm{~d}+8 \mathrm{~b} 3 \mathrm{~d}++++2 \mathrm{c} 2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{~b}$
$1 \mathrm{cla+++++6a2a+++lb3b3d++6b2e3d+++++++6d2b}$
28. kh before final short or augmented $\underline{s}$ with one or more preliminary long syllables
29. final kh
(63) $\quad 1 a++4 c 3 d+6 b 2 e 3 d++++2 b 2 b 2 b 3 b$
$1 a 3 d++4 c 3 d+8 b 3 d++++6 a 3 b$
$1 a 3 d++4 c 3 d+8 b 3 d++++2 b 2 b 2 b 3 a$
$1 \mathrm{a} 3 \mathrm{~d}++4 \mathrm{c} 3 \mathrm{~d}+8 \mathrm{~b} 3 \mathrm{~d}++++2 \mathrm{~b} 2 \mathrm{~b} 2 \mathrm{~b} 2 \mathrm{a}$
$1 a 3 \mathrm{~d}++4 \mathrm{c} 3 \mathrm{~d}+6 \mathrm{~b} 2 \mathrm{e} 3 \mathrm{~d}++4 \mathrm{e} 3 \mathrm{~b}$
$1 e 1 a+++2 b 2 b 3 b+4 c 3 d+6 b 3 d++++2 b 2 b 3 b$
$1 a+3 e 3 b+4 c 3 d+8 b 3 d+++2 b 2 b 2 a 3 a$
$1 e l a+++7 b 3 b+++5 b 3 b+3 d+++6 b 3 d 3 d++++2 b 2 b 2 b 3 b$
30. kh before kh without ādisvara
31. kh before $\underline{t}, \mathrm{pl}$, $\underline{\mathrm{tr}}$, or $\underline{\xi-p l}$
32. kh before augmented $\underline{\underline{s}}$, without preliminary long syllables, prior to tr
33. kh before final short $\underline{s}$ without preliminary long syllables
34. p before $\mathrm{kh}, \mathrm{c}, \underline{t}$, medial ph , medial pl , tr , or s-pl
(64) $8 b(3-8) 3 d+4 c 3 d++4 c 2 e 3 d+++5 b 3 b+4 c$
35. $p-y$ before $p$
(65) $\quad 1 b 5 a 3 d+4 c+3 d 3 d 3 b++4 c 4 a 3 b(1-2)$
$8 b(3-8) 3 d+4 c+3 d 3 d+2 e++4 c 4 a 2 a(1)$
36. $\quad \underline{t-c}$ before y or $\mathrm{k}-\mathrm{c}$
(66) $2 e+3 d++3 d 3 d+2 h 4 a 3 b+4 c+3 b 3 d+$
$1 b l a+3 d++3 d 3 d+2 h 4 a 3 b+4 c+3 b 3 d+$
37. $k-c$ before $k$
(67) $1 a+3 d+3 d 3 d+2 e 4 a 3 b+4 c 3 b 3 d+$ $1 a+3 d++3 d+3 d+2 h 4 a 3 b++2 e l b 4 a(1)$
38. $t h-c$ before $k$ or $\underline{c}$
(68) $1 a++2 a 2 a 3 b++2 a++2 a 2 a 2 a 3 b+3 c$
39. pl before final pl
40. pl before final $\underline{s}$ (excluding pl on the stobhas au ho bā and ehiyā)
(69) $1 a+++++++2 c 2 a 2 a+4 a 5 a 1 b+3 b+++6 b 3 d$
41. $\underset{\underline{-}}{ }$ after $\underline{k h}$ and before $\underset{-}{t}$
(70) $2 e 4 a 3 b 3 d+8 b 3 d++2 a 2 a 3 b 3 e 3 b++$
$2 e 4 a 3 b 3 d+6 b 2 e 3 d++4 e 3 b 4 c++$
$1 e l a+++4 a 3 b+3 e 3 b 3 d++8 b 3 d++4 e 3 b+3 e 3 b++$
$1 \mathrm{dla}+++++6 \mathrm{a}^{2} \mathrm{a}+1 \mathrm{~b} 3 \mathrm{~b} 3 \mathrm{~d}++6 \mathrm{~b} 2 \mathrm{e} 3 \mathrm{~d}+++++2 \mathrm{a} 2 \mathrm{a} 3 \mathrm{~b}+1 \mathrm{~b} 3 \mathrm{~b}++$
42. $\mathrm{kh}-\mathrm{n}$ (all appearances)
(71) $2 b 5 a 3 d+3 d+3 d+2 h 4 a 3 b+++4 c 2 e l b$ $8 b(3-8) 3 d+3 d 3 d+2 e 4 a 3 b++3 d 5 c(1-2)$ $8 b(3-8) 3 d+3 d 3 d+2 h 4 a 3 b+5 b(1-2)$ $6 b 3 d++3 d+3 d+1 b 4 a 3 b+4 c 3 d++$ $1 \mathrm{~b} 5 \mathrm{a} 3 \mathrm{~d}++3 \mathrm{~d}+3 \mathrm{~d}+3 \mathrm{~b}++4 \mathrm{c}++3 \mathrm{~b} 2 \mathrm{e}$ $1 b 4 a 3 d+3 d 3 d+2 e 4 a 3 b++2 e 2 e$
43. $\underset{\underline{-}-c}{ }$ before $\underline{k}$, on two or more textual syllables, prior to $\underset{-}{t}$ or X
44. $\underset{\underline{t}-\mathrm{c}}{ }$ before c or p
45. $\underset{-}{t-c}$ before $t$ prior to $\mathrm{kh}-\mathrm{n}$
(72) $1 a 2 \mathrm{e} 4 \mathrm{a} 3 \mathrm{~b} 3 \mathrm{~d}+6 \mathrm{~b} 3 \mathrm{~d} 3 \mathrm{~d}++++2 \mathrm{a} 2 \mathrm{a} 3 \mathrm{~b}++4 \mathrm{c}+++$
46. kh before kh with ädisvara
(73) Idla++++2a2a3b++2a+++++2a2a2a3b+++4c4c+ $1 a++2 a+2 a 3 b+2 a+4 e 3 b+2 b 3 b$
47. $\underset{\underline{n}-\mathrm{ph}}{-}$ (all appearances)
(74) $1 a+++2 a 2 a 4 a 3 b 3 d+3 d 3 d+2 h 4 a 3 b+4 c 7 c$
$1 a++3 e 3 b+3 d+4 c 3 d++3 d++1 f 1 b 4 a+3 b+++4 c++$
$1 e l a++2 a 2 a 4 a 3 b 3 d+3 d 2 h 4 a 3 b+5 b(1-3)$
48. $t-c$ before $k, c$, or $\underset{-}{t}$
(75) $\quad 1 a+4 c 3 d++4 c 3 d+++7 b 5 a 3 e 3 b 3 d++5 b 3 b 3 d++4 c++++$
49. final t-t
(76) $1 a+++4 e 4 a 3 b 3 d+4 c 3 d+++4 c 2 e 2 e 3 d+5 b 3 b 3 d$
50. th-c before final $\underline{s}$ (and also final th-c?)
(77) $1 a+++4 e 4 a 3 b 3 d++4 c 3 d++10 b 3 d+1 b 4 a 3 b+3 b 3 d++$
51. final t-c
(78) $\quad 1 a+4 c 3 d++4 c 3 d+++7 b 5 a l b 3 b 3 d+3 d 3 d+2 e 4 a 3 b++4 c$
52. t-t before c
(79) $1 \mathrm{e} 1 \mathrm{a}++++++2 \mathrm{~b} 2 \mathrm{~b} 2 \mathrm{~b} 3 \mathrm{~b}++3 \mathrm{~d} 3 \mathrm{~d} 3 \mathrm{~d} 7 \mathrm{~b} 6 \mathrm{a} 3 \mathrm{~b} 3 \mathrm{~d}+8 \mathrm{~b} 3 \mathrm{~d}++++++++2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{a} 2 \mathrm{~b}$
53. final $\underset{\underline{t}-\mathrm{kh}}{ }$

Listed here, as a postscript, are the musical phrases associated with three symbols occurring in, and possibly unique to, the two forms of the gāyatra-sāman (the prājāpatyam gāyatram and the bodiless gāyatram).
A. s before t-c: $2 a++2 b 2 b 2 a++15 a$
B. $s-c$ final in the vacana: $1 a++3 e 5 a 3 e 3 b++++4 c 2 e 3 d++++$
C. s-t before t: 1 diat++6a2at+4c2e5b3b5b3b2e2e3d+4c4c++4c6a2a(1)

