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Gr̥tsamada and Kūrma Gārtsamada—A Statistical Study¹

by

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1. Introductory and Scope :

The authorship of the major part of the second Maṇḍala of the R̥gveda, which incidentally is the smallest in size of all the family-maṇḍalas, is traditionally ascribed to the sage Gr̥tsamada Āṅgīrasa Śaunahotra, or in short Gr̥tsamada, also called as Gr̥tsamada Bhārgava Śaunaka after adoption, who has composed as many as 36 out of the total of 43 *sūktas* in the Maṇḍala.² The remaining seven *sūktas* are attributed to the other seers of the Gr̥tsamada-family. They are two : One is Somāhuti Bhārgava who is the author of the four *sūktas* Nos. 4, 5, 6 and 7 and the other is Kūrma Gārtsamada to whom goes the authorship of the three *sūktas* Nos. 27, 28 and 29 of the second Maṇḍala³. Out of these two sages, the claim of Somāhuti Bhārgava to the authorship of the four *sūktas* viz. 2, 4, 5, 6, 7 is unquestionable because no other authorship, either optional or joint, for these hymns is stated or suggested anywhere. But the authorship of the three hymns viz. 2, 27, 28, 29 seems to be a controversial point, because along with the sage Kūrma Gārtsamada, the sage Gr̥tsamada Śaunahotra Āṅgīrasa is also optionally mentioned as the author of the hymns.⁴ Sāyaṇācārya actually states the relation between him and Kūrma Gārtsamada as that the latter is the son of the former (cf. his words : *gr̥tsamadaputrasya kūrmasya*).

This fact raises many questions : Are these sages viz. Gr̥tsamada and Kūrma Gārtsamada different personalities or are these mere two different names of one and the same person ? That they cannot be mere different names but refer to two distinct persons is clear from the name of Kūrma Gārtsamada in which the word Gārtsamada, a *taddhita* derivative in *-an* from the

[1. The present paper is a kind of sample of a larger paper on "The Sages of the R̥gvedic Family-Maṇḍalas—A Statistical Study in Interrelation" by the present author. The paper seeks to determine the interrelation of the traditions of the different seers of the family-maṇḍalas by applying a purely statistical method and attempts to set up a proto-tradition for all of them.

2. Cf. Kātyāyana's *Sarvānukramaṇī*, edited by A. A. Macdonell, Oxford, 1886, p. 13 : *yaḥ āṅgīrasaḥ śaunahotro bhūtvā bhārgavaḥ śaunako bhavati sa gr̥tsamado dvitīyaṁ maṇḍalam apaśyat*.

3. Cf. *Sarvānukramaṇī*, p. 13 : *imās tryūnā kūrmo gārtsamado hi vādityebhyaḥ*.

4. Cf. Sāyaṇācārya's *bhāṣya* introducing the hymns 2, 27, 28, 29 : *imā gira iti sapṭadaśarcam pañcamāṁ sūktāṁ gr̥tsamadaputrasya kūrmasya āṇṣaṁ gr̥tsamadasyaiva vā traiṣṭubhaṁ ūdityadevatākam*; cf. also *Vedārthadeepikā*, a commentary on *Sarvānukramaṇī* by Śaḍguruśiṣya : *gr̥tsamadaḥ kūrmo nāmnadamādiṣu triṣu vāśabdena gr̥tsamadena saha vikalpyate. ayaṁ tu vāviśiṣṭatvād uttaratrānuvartitum neṣṭaḥ*.

base Gr̥tsamada in the sense of 'his/her progeny/child' (*gotrāpatya*; cf. the Pāṇinian *sūtra*, *tasyāpatyam*, 4.1.92) signifies 'the son of Gr̥tsamada' in particular, as Śāyaṇācārya wants to maintain, or 'a person born in the family of Gr̥tsamada or Gr̥tsamadas' in general as the Pāṇinian *sūtra* would explain. Kūrma Gār̥tsamada, therefore, cannot be identical with the original Gr̥tsamada; Moreover, the word Kūrma, which provides us with the proper name of the person born in the family of Gr̥tsamada or Gr̥tsamadas who composed the hymns 2.27, 28, 29 is nowhere found to have been used with reference to Gr̥tsamada Āṅgīrasa Śaunahotra whose any other optional name, if it had existed at all, would not have been left unmentioned along with Gr̥tsamada Bhārgava Śaunaka.

If Gr̥tsamada and Kūrma Gār̥tsamada are two different persons, what is the reason behind the optional authorship? Does it mean that since there is complete identity of family and religious traditions of these two seers, both have agreed to compose hymns under joint authorship, incorporated them in their own composition and passed them on on the names of both of them?

Such a reasoning would raise other problems. This assumes that since both of them belong to the same family and tradition, both belonged to the same place and time also. But this is also a highly disputable point, since, obviously, no evidence, either for or against, is available either from the R̥gveda itself or from any other literature.

Even if one does not enter into controversies of the above type, viz. the possible causes for the optional authorship, the problem of time and place of the seers etc., the fact of optional authorship in itself is sufficient to provoke one's curiosity as regards the genuine authorship of the three hymns from the second Maṇḍala.

And this exactly is the problem the present paper seeks to investigate into, viz. to determine the genuine authorship of the three hymns, viz. 27, 28 and 29 from the second Maṇḍala of the R̥gveda. Since no criterion such as style, mythology, historical information etc. is capable of determining the genuine authorship, the solution of the problem is attempted by employing purely statistical methods. The only material available for solving the problem is obviously the texts of the two seers. There too, the peculiarities of the seers are very well displayed in the use of the optional nominative plural and dual and instrumental plural forms of the masculine, and nominative plural of the neuter, of the *a*-ending nominal bases or of what are termed as *prātipadika*⁵ in Pāṇinian terminology. A statistical examination of all such forms, as will be clear from the following discussion, certainly throws some light on the problem. Dialectally speaking, the option of application of this or that termination in the nominative and instrumental of the *a*-ending *prātipadikas* can be viewed as due to dialectal differences;

5. For the Pāṇinian definition of *prātipadika*, cf. the *sūtras*, *arthavad adhātur apratyayaḥ prātipadikam*, 1.2.45 and *kṛtaddhitasamāsāś ca*, 1.2.46.

and this fact is utilised to decide whether the hymns 2. 27, 28, 29 belong to Gr̥tsamada or to KŪrma Gārtsamada.

2. Two ways of Declensions :

Let us first examine the declension in masc. nom. and instr. plural.

As is well-known, the Vedio Sanskrit betrays two, equally optional, ways of declining the masculine, *a*-ending *prātipadikas* in their nominative and instrumental plural forms.

2.1 Nominative plural :

The nominative plural is denoted by two terminations which are equally optional in the Vedic literature. They are : (i) *-as*, which on its technical plane is reconstructed by Pāṇini as *Jas*, with the capital, initial sound *J* as it and hence zero⁶; cf. the Pāṇinian *sūtra*, 4. 1. 2. Pāṇini even admits of its reconstruction as *JasI* with initial *J* and final *I* as it and hence zero, which is its reconstruction in pre-Pāṇinian grammars⁷; the admission of the technical reconstruction of Pāṇinian *Jas* as *JasI* is available in the Pāṇinian *sūtra*, *āj jaser asuk*, 7.1.50; (ii) *-asas*, which is represented as a sort of double inflection in Pāṇinian description as is clear from his splitting of it as *as + as*; the second *-as* is termed by Pāṇini as an *āgama*, to be applied to the first *as* which is treated as a regular, inflecting termination. The Pāṇinian *sūtra* which accounts for the Vedic, optional nominative plural termination *-asas* is *āj jaser asuk*, 7.1.50.

Thus, if we take an *a*-ending, masculine *prātipadika*, like *deva*, we get the two optional forms in its nominative plural as (i) with the termination *-as*, (*deva + as = devās =*) *devāḥ* and (ii) with the termination *-asas*, (*deva + asas = devāsas =*) *devāsaḥ*.

2.2. Instrumental plural :

In the case of the Vedic instrumental plural also two types of formations for the masculine *a*-ending *prātipadikas* are available. One with the termination *-ais* which according to the Pāṇinian technique of linguistic description replaces the termination *-bhis* assumed originally by him (cf. the *sūtra*, 4.1.2); the substitution of *-bhis* by *-ais* is brought about according to the *sūtra*, *ato bhis ais*, 7.1.9; this substitution again is optional for Vedic language according to the *sūtra*, *bahulam chandasi*, 7.1.10. The other form therefore, is available with the termination *-bhis* (cf. the *sūtra*, 4.1.2) which brings about the morphophonemic change of the final *a* of the *prātipadika* into *e* according to the *sūtra*, *bahuvacane jhaly et*, 7.3.103. Thus, the

6. For the Pāṇinian *it-samjñā*, cf. M. D. PANDIT, "Pāṇinian *It-Samjñā*—A Symbolic Zero", *BDCRI*, Vol. 25, pp. 77-94.

7. Cf. *Tattvabodhinī*, a commentary on Bhaṭṭoji Dīkṣita's *Siddhānta Kaumudī* which in turn is a commentary on Aṣṭādhyāyī, on the *sūtra*, 7.1.50 : *jaser iti pūrvācāryā-nurodhena nirdeśaḥ*.

two optional forms of the Vedic instrumental plural of an *a*-ending masculine *prātipadika*, say *deva*, are : one, with the termination *-ais*, as (*deva* + *bhis* = *deva* + *ais* = *devais* =) *devāiḥ* and the other, with the termination *-bhis*, as (*deva* + *bhis* = *deve* + *bhis* = *devebhis* =) *devebhiḥ*.

Since in Sanskrit the declined forms of both the masculine and neuter *prātipadikas* are identical in cases beginning with instrumental singular onwards upto locative plural, a neuter *a*-ending *prātipadika* will also give out two optional forms in instrumental plural with the two respective terminations.

3. The Data :

As has already been said, the data on which the statistical method is worked out consist of the above-explained optional formations in the nominative plural and dual and instrumental plural of the *a*-ending *prātipadikas*, used by the two seers viz. Ṛṣisamada and Kūrma Ṛṣisamada. Almost all the formations are collected from the respective hymns of the two seers and their ratios or co-efficients are calculated and compared with each other. The data in this sense are almost perfect. No random-sample method is adopted. In all 120 forms in the nom. and instr. plural are collected from the hymns of the seers, which are formed from 96 different, basic, *a*-ending *prātipadikas*. The following Table No. 1 gives the authorwise and termination-wise occurrences of the forms:—

authors \ termination					Total
	-asas	-as	-ebhis	-ais	
Ṛṣisamada ..	22	23	16	27	88
Ṛṣisamada/Kūrma Ṛṣisamada ..	3	27	1	1	32
Total ..	25	50	17	28	120

TABLE NO. 1

All the basic 96 *prātipadikas* are arranged alphabetically under four sub-headings of the four terminations *-asas*, *-as*, *-ebhis* and *-ais*, with two main headings of the two authors at the top. The plus-sign (+) against the nominal bases and in the columns of the terminations indicates that the particular bases take the particular terminations concerned. The vacant columns or rows, on the other hand, mean that the bases concerned do not take the terminations concerned. The following Table No. 2 gives a complete list of all the basic, *a*-ending *prātipadikas* arranged alphabetically. The alphabetical order follows the Indian way.

S. No.	a-ending bases	Gṛtsamada				Kūrma Gārtsamada (i. e. hymns 27, 28, 29)			
		-asas	-as	-ebhis	-ais	-asas	-as	-ebhis	-ais
1	2	3	4	5	6	7	8	9	10
1	<i>aṅga</i>	..			+				
2	<i>ajara</i>	..			+				
3	<i>atka</i>	..			+				
4	<i>adabdha</i>	..				+	+		
5	<i>anavadya</i>	..					+		
6	<i>animiṣa</i>	..					+		
7	<i>anudhūpita</i>	..	+						
8	<i>anna</i>	..			+				
9	<i>anya</i>	..		+					
10	<i>amatra</i>	..		+					
11	<i>amitra</i>	..	+						
12	<i>amṛta</i>	..	+						
13	<i>ariṣṭa</i>	..					+		
14	<i>aruṇa</i>	..		+	+				
15	<i>arka</i>	..			+				
16	<i>avṛjina</i>	..					+		
17	<i>aśva</i>	..	+		+				
18	<i>asmāka</i>	..		+					
19	<i>ādiṣṭa</i>	..	+	+	+	+	+		
20	<i>āyudha</i>	..			+				
21	<i>indraṣṭha</i>	..	+						
22	<i>iṣira</i>	..					+		
23	<i>uktha</i>	..		+	+				
24	<i>ubhaya</i>	..	+	+					

S. No.	a-ending bases	Gr̥tsamada				Kūrma Gār̥tsamada (i. e. hymns 27, 28, 29)			
		-asas	-as	-ebhis	-ais	-asas	-as	-ebhis	-ais
1	2	3	4	5	6	7	8	9	10
25	uruśamsa	..					+		
26	ṛjīpya	..	+						
27	karna	..			+				
28	gabhīra	..					+		
29	gr̥tsamada	..	+	+					
30	gopā	..					+		
31	grāma	..		+					
32	cukāna	..		+					
33	cayamāna	..					+		
34	jana	..	+	+					
35	jaramāṇa	..					+		
36	tamisra	..					+		
37	tvādatta	..			+				
38	tvādūta	..	+						
39	tvota	..		+					
40	daṁṣṭra	..			+				
41	dīrgha	..					+		
42	dīrghayātha	..			+				
43	deva	..	+	+	+		+		
44	dhārapūta	..					+		
45	dhārāvāra	..		+					
46	dhṛtavrata	..					+		
47	nitya	..					+		
48	parvata	..		+	+				

S. No.	a-ending bases	Cṛtsamada				Kūrma Gārtsamada (i. e. hymns 27, 28, 29)			
		-asas	-as	-ebhis	-ais	-asas	-as	-ebhis	-ais
1	2	3	4	5	6	7	8	9	10
49	putra	..			+		+		
50	puruvīra	..					+		
51	prṣadaśva	..	+						
52	priya	..	+	+					
53	bilma	..			+				
54	bhūryakṣa	..					+		
55	bheṣaja	..		+					
56	mandasāna	..		+					
57	marudgaṇa	..		+					
58	marta	..	+				+		
59	māna	..			+				
60	yajatra	..		+			+		
61	yajamāna	..	+						
62	yajña	..			+				
63	yajñīya	..	+	+					
64	yudhyamāna	..		+					
65	rakṣamāna	..					+		
66	ratha	..	+	+					
67	rudra	..			+				
68	vadha	..							+
69	vastra	..			+				
70	vāta	..			+				
71	viśva	..		+					
72	vīra	..		+					

S. No.	a-ending bases	Gr̥tsamada				K̥rma G̥rtsamada (i. e. hymns 27, 28, 29)			
		-asas	-as	-ebhis	-ais	-asas	-as	-ebhis	-ais
1	2	3	4	5	6	7	8	9	10
73	vīrya	..			+				
74	vṛṣabha	..	+						
75	śantama	..		+					
76	śukra	..		+	..				
77	śubhra	..	+		..				
78	śuśucāna	..	+		..				
79	śūra	..			+				
80	samudra	..			+				
81	sam-miśla	..	+						
82	suga	..							
83	sujāta	..	+						
84	suta	..	+		..				
85	subhaga	..				+			
86	suvīra	..	+	+			+		
87	suhava	..	+		..				
88	soma	..		+	+				
89	str̥ṇāna	..	+						
90	stoma	..		+	+				
91	sthira	..		+					
92	hamsa	..	+						
93	havya	..			+				
94	hiranya	..			+				
95	hiranyaya	..					+		
96	hiranyaśipra	..	+						

TABLE NO. 2

4. The Method :

The statistical method adopted here is very simple and basically consists in finding out the ratios of the words declined in this or that or both ways in the nominative and instrumental plural with the total of all the words used by them. The ratios are calculated independently for each seer and then compared with each other; similarly they are calculated separately for each of the two cases viz. nominative and instrumental plural. As is clear, we get three types of bases on the basis of the type of inflection they display in each of the two cases : (i) those inflected with *-asas* as well as with *-as* in the nom.; and with *-ebhis* and *-ais* in the instr. (ii) those inflected with only *-asas* in the nom. and with only *-ebhis* in the instr. and (iii) those inflected with *-as* in the nom. and with *-ais* in the instr. The symbols *a*, *b*, *c* may be used to represent the number of the *prātipadikas* in each category respectively. Thus the symbol *a* in the following formulas represents those *prātipadikas* which are declined in both the optional ways by the seers in the case of the nominative as well as instrumental plural; *b* stands for those which are declined with *-asas* in the nominative and with *-ebhis* in the instrumental plural; and *c* indicates those that are declined with *-as* in the nominative and *-ais* in the instrumental plural. The total number of basic *prātipadikas* in the case of each sage will, therefore, be denoted by $a+b+c$.

The *a*, *b*, *c* features in the nominative and instrumental plural for the two seers are given in the following tables :—

4.1. *a*, *b*, *c* features for
Gr̥tsamada in the nom. plu. :—

<i>a</i>	=	8
<i>b</i>	=	14
<i>c</i>	=	16
$a + b + c$	=	38

TABLE NO. 3.

4.3. *a*, *b*, *c* features for
Gr̥tsamada in instr. plu. :—

<i>a</i>	=	4
<i>b</i>	=	13
<i>c</i>	=	24
$a + b + c$	=	41

TABLE NO. 5.

4.2. *a*, *b*, *c* features for
Kūrma Gārtsamada in nom. plu. :

<i>a</i>	=	2
<i>b</i>	=	1
<i>c</i>	=	24
$a + b + c$	=	27

TABLE NO. 4.

4.4. *a*, *b*, *c* features for
Kūrma Gārtsamada in instr. plu. :

<i>a</i>	=	0
<i>b</i>	=	1
<i>c</i>	=	1
$a + b + c$	=	2

TABLE NO. 6.

4.5. We then go to find out the proportion for each seer of each type of words viz. a , b and c with the general total viz. $a + b + c$ separately for each case. Thus, $\frac{a}{a + b + c}$ will represent the ratio of words declined in both ways in the nominative as well as in instrumental plural; let this ratio be called as R_1 . The ratio found out by the formula $\frac{b}{a + b + c}$, called R_2 , will represent the proportion of words declined only in one way, that is, with *-asas* in the nominative plural and with *-ebhis* in the instrumental plural. And the ratio R_3 , arrived at by the formula $\frac{c}{a + b + c}$ will give us the proportion of words declined in the other way, that is, with *-as* in the nominative plural and with *-ais* in the instrumental plural. We represent the ratios R_1 , R_2 and R_3 for the nominative plural as R'_1 , R'_2 and R'_3 respectively and those for the instrumental plural as R''_1 , R''_2 and R''_3 respectively.

It will be obvious that if R'_1 , R'_2 , R'_3 , R''_1 , R''_2 and R''_3 in the case of one author are identical, with, or very close to, the corresponding ratios in the case of the other author, the authors of the two groups of hymns speak the same dialect and, perhaps, flourish in the same time and place; if the ratios of the one are totally different from the corresponding ratios of the other, it would mean that these are two different personalities, speaking two different dialects, and flourishing in different times and places.

The following Tables Nos. 7 and 8 give us the picture of the different ratios for the two seers :—

4.6. R'_1 , R'_2 , R'_3 (nom. plu.) for the two seers :—

	Gṛtsamada	Gṛtsamada/Kūrma Gārtsamada (hymns 27, 28, 29)
R'_1	.210	.074
R'_2	.369	.037
R'_3	.421	.889

TABLE No. 7

4.7. R''_1 , R''_2 , R''_3 (instr. plu.) for the two seers :—

	Gṛtsamada	Gṛtsamada/Kūrma Gārtsamada
R''_1	.098	0
R''_2	.317	.500
R''_3	.585	.500

TABLE No. 8

We may even discard the decimal sign and read the figures as representing the proportion of words per thousand; thus, for example, R'_1 for Gṛtsamada, viz. .210 can be read as 210 words per thousand, declined in both ways in the nominative plural in Gṛtsamada's dialect.

5. Reading of Tables Nos. 7 and 8 :

It is obvious from Tables Nos 7 and 8 above that the different ratios for both the nominative and instrumental plural in the case of Gṛtsamada are not identical with, or even very close to, the corresponding ratios in the case of the joint authors Gṛtsamada/Kūrma Gārtsamada; from the point of view of dialectal study, this shows that the respective hymns of the two groups are composed in different dialects; this means that the author of hymns 2.27, 28 and 29 (the proportion of the words in whose case is represented in the third column of Tables Nos. 7 and 8) is not the same as Gṛtsamada; the hymns 2.27, 28, 29 can, therefore, be safely said to have been composed by Kūrma Gārtsamada and not by Gṛtsamada Āṅgirāsa Śaunahotra alias Gṛtsamada Bhārgava Śaunaka.

That they are two persons and that they speak different dialects is, therefore, quite clear. Let us try to get a combined picture of the declension of the *a*-ending, masculine *prātipadikas* in the dialects of the two seers, for both the cases—nominative and instrumental plural. For a combined picture of declension of nominative and instrumental plural, however, we need a combined table; we prepare that in the following way:—

We group the four terminations viz. *-asas*, *-as*, *-ebhis* and *-ais* under two categories:—

(i) *-asas* and *-ebhis* together will form the category of non-classical terminations since they are nowhere used in the classical Sanskrit and (ii) *-as* and *-ais* together will form the category of classical terminations since obviously only they are exclusively used in classical Sanskrit. We then sort out all the *prātipadikas* as belonging to this or that or both the categories. The symbol *a* represents the number of all the *prātipadikas* which are declined in both the non-classical and classical way either in the nom. or in the instr. or in both; symbol *b*, the number of those declined only in non-classical way; and symbol *c*, the number of those declined only in the classical way. $a + b + c$ will, as before, stand for the total number of basic *a*-ending *prātipadikas*, declined in the different ways by the two seers. The calculations are made independently for each seer.

The ratios, $\frac{a}{a+b+c}$, $\frac{b}{a+b+c}$ and $\frac{c}{a+b+c}$, as based on the above *a*, *b*, *c* features of each seer will be represented by R_1 , R_2 and R_3 respectively.

The *a*, *b*, *c* features of the two seers for the above types of classical and non-classical declension are as follows:—

	Gṛtsamada	Kūrma Gārtsamada
<i>a</i>	12	2
<i>b</i>	24	2
<i>c</i>	36	26
<i>a+b+c</i>	72	30

TABLE NO. 9

The consequent R_1 , R_2 , and R_3 ratios are given in the following Table No. 10:—

	Gṛtsamada	Kūrma Gārtsamada
R_1	.167	.067
R_2	.333	.067
R_3	.500	.867

TABLE NO. 10

5.1 *The ratios R_1 , R_1' and R_1''* : As is already explained, these ratios represent the proportion of *prātipadikas* declined in both ways with the general total of *prātipadikas* used by the two seers separately. It can be seen that all the three Tables Nos. 7, 8 and 10 reveal the proportion of *prātipadikas* declined in both ways in the case of Gṛtsamada as higher than that in the case of Kūrma Gārtsamada. This means that the mixture of the two dialects—one with the non-classical declension and the other with classical declension—is in more fluctuating or liquid stage in Gṛtsamada's language than in Kūrma Gārtsamada's language. The less co-efficients of Kūrma Gārtsamada show that the choice of declension of *a*-ending, masculine *prātipadikas* was more restricted to one type of declension in his dialect than in that of Gṛtsamada.

5.2 *The ratios R_2 , R_2' and R_2''* : The co-efficients R_2 and R_2' in Tables Nos. 10 and 7 respectively in the case of Gṛtsamada are higher than those of Kūrma Gārtsamada. This means that Gṛtsamada's dialect was more in favour of the non-classical declension than of the classical declension. Table No. 8, however, notes the co-efficient of Kūrma Gārtsamada as higher than that of Gṛtsamada. This implies that though Kūrma Gārtsamada in general is more in favour of classical declension than Gṛtsamada, the use of *-ebhis*

for the instrumental plural in particular in his dialect is greater than in the dialect of Gr̥tsamada. But since the data for instrumental plural forms furnished by Kūrma Gārṭsamada are very meagre, viz. only 2, they may be construed as not reflecting a faithful picture of his dialect so far as the instrumental plural forms are concerned. The data furnished by Gr̥tsamada, being greater in size, however, reflects a more faithful picture. The conclusions arrived at on the basis of R_2 and R_2' can, therefore, be taken as more faithful than those arrived at by R_2'' in the case of Kūrma Gārṭsamada.

5.3 *The ratios R_3 , R_3' and R_3''* : As in the case of the ratios R_2 , R_2' and R_2'' , so also in the case of R_3 , R_3' and R_3'' , Tables Nos. 10 and 7 agree. The ratios R_3 , R_3' and R_3'' however, support the findings of the ratios R_2 , R_2' and R_2'' and are negatively supplementary to them. The Tables Nos. 7 and 10 show the co-efficients of Gr̥tsamada less than those of Kūrma Gārṭsamada as opposed to the higher co-efficients of R_2 and R_2' . This means that in general the proportion of words declined in the classical way in the case of Gr̥tsamada is less than that in the case of Kūrma Gārṭsamada. The ratio R_3'' in the case of the former is, however, higher than that in the case of the latter, which only shows that the instrumental plural declension in particular in Gr̥tsamada's dialect is following the classical pattern greater than the non-classical one.

5.4 *General Picture*:—Table No. 10 gives us that in spite of differences between ratios in the case of the two seers, both of them show a marked general tendency towards classical type of declension as R_3 is higher than R_2 in the case of both the seers. Therein too the difference between the proportion of classical and non-classical declension in the case of Kūrma Gārṭsamada (cf. $.867 - .067 = .800$) is greater—as much as 5 times greater—than that in the case of Gr̥tsamada (cf. $.500 - .333 = .167$). This clearly shows that the classical Sanskrit is nearer to the language of Kūrma Gārṭsamada than to that of Gr̥tsamada, which places Gr̥tsamada's compositions in higher antiquity.

As regards the language of Gr̥tsamada, we can say that though he is greater removed from classical Sanskrit, he is not very close to the non-classical stage also, as the co-efficient $R_2 = .333$ (cf. Table No. 10) shows, which is less than even half the unity. In this sense, he is nearer to classical Sanskrit than to the non-classical stage, since his R_3 which is round about half the unity (here it is exactly .500, which may fluctuate a little more or less if greater data could be added) is greater than R_2 .

5.5 Let us now examine two other kinds of data from the respective compositions of the seers. One kind consists of the nominative/accusative dual forms in *-au* and optionally in *-ā* of the masculine/feminine *prātipadikas*. This type of declension is found in the case of all the *prātipadikas* in Sanskrit except those which end in *i* and *u* in the masculine and in *ā*, *i* and *u* in the feminine. The second type of data contains the Vedic neuter plural forms in *-āni* and optionally in *-ā* in the nominative/accusative cases. This type of declension is available in the case of all the neuter *a*-ending *prātipadikas*

and some others like *tri* etc. also which do not end in *-a*. All such forms representing the above two types are collected from the hymns of Gṛtsamada and Kūrma Gārtsamada. As in the previous case of the optional declension of the *a*-ending masculine *prātipadikas* in the nominative and instrumental plural, in the case of the present data also, the optional declensions are taken as a measure of dialectal differences, with the regular declension in the classical Sanskrit showing later phase. The formula followed in the present case to find out the ratio is the same as the one employed in the previous case.

5.6. The Pāṇinian *sūtra* which lays down the optional Vedic declension in *-ā* (besides the classical Sanskrit form in *-au*) of the masc./fem. nom./acc, dual and in *-ā* (besides the classical *-āni*) of the neuter nom./acc. plural is 7.1.39 : *supām suluk pūrvasavarṇāccheyāḍāḍyāyājālaḥ*.

The following Table No. 10A gives the authorwise and termination-wise statistical count of all the forms in nom./acc. dual in *-au* and *-ā* and neuter nom./acc. plural in *-āni* and *ā*.

termination authors	<i>au</i>	<i>ā</i>	<i>āni</i>	<i>ā</i>	Total
Gṛtsamada ..	15	66	28	27	136
Gṛtsamada/Kūrma Gārtsamada ..	3	2	11	9	25
Total ..	18	68	39	36	161

TABLE NO. 10A

The following Tables Nos. 11, 12 and 12A present the list of all such forms described above, which are found in the hymns of the two sages:—

Gṛtsamada

(Table showing the masc/fem. nom./acc. dual forms in *-au*!-*ā*)

S. No.	<i>prātipadika</i>	<i>-au</i>	<i>-ā</i>
1	<i>aja</i>	..	+
2	<i>ajurya</i>	..	+
3	<i>ajuṣṭa</i>	..	+
4	<i>adruḥ</i>	..	+

S. No.	<i>prātipadika</i>	<i>-au</i>	<i>-ā</i>
5	<i>anabhidruh</i>	..	+
6	<i>apijuv</i>	..	+
7	<i>ariṣanya</i>	..	+
8	<i>aruṣa</i>	..	+
9	<i>arvāñc</i>	..	+
10	<i>aśvin</i>	+	+
11	<i>āditya</i>	..	+
12	<i>indrā-soma</i>	..	+
13	<i>idam</i>	+	
14	<i>ukthaśas</i>	..	+
15	<i>uṣāsānakta</i>	..	+
16	<i>usra</i>	..	+
17	<i>ṛtavṛdh</i>	..	+
18	<i>oṣṭha</i>	+	
19	<i>karna</i>	+	
20	<i>kṛatuvid</i>	..	+
21	<i>khr̥gala</i>	..	+
22	<i>gr̥dhra</i>	..	+
23	<i>grāvan</i>	..	+
24	<i>cakravāka</i>	..	+
25	<i>coda</i>	+	
26	<i>janana</i>	..	+
27	<i>janya</i>	..	+
28	<i>jarbhurāṇa</i>	..	+
29	<i>jāyamāna</i>	+	

S. No.	<i>prātipadika</i>	-au	-ā
30	<i>jujuṣāna</i>	..	+
31	<i>deva</i>	+	
32	<i>dūta</i>	..	+
33	<i>tat</i>	+	+
34	<i>daivya</i>	..	+
35	<i>nadī</i>	..	+
36	<i>nabhya</i>	..	+
37	<i>nṛ</i>	..	+
38	<i>nāsatya</i>	..	+
39	<i>nās</i>	..	+
40	<i>pāda</i>	..	+
41	<i>prathama</i>	..	+
42	<i>prātar-yāvan</i>	..	+
43	<i>brahman</i>	..	+
44	<i>maghavat</i>	..	+
45	<i>mitrāvaruṇa</i>	..	+
46	<i>mithudṛś</i>	..	+
47	<i>yajan</i>	+	
48	<i>yama</i>	..	+
49	<i>yuga</i>	..	+
50	<i>yuj</i>	..	+
51	<i>rakṣitr</i>	..	+
52	<i>rathya</i>	..	+
53	<i>rājan</i>	+	
54	<i>rohita</i>	..	+

S. No.	<i>prātipadika</i>	<i>-au</i>	<i>-ā</i>
55	<i>vadan</i>	..	+
56	<i>vapuṣṭara</i>	..	+
57	<i>vāc</i>	+	..
58	<i>vājayan</i>	..	+
59	<i>vōjin</i>	..	+
60	<i>vāta</i>	..	+
61	<i>viduṣṭara</i>	..	+
62	<i>viśva</i>	..	+
63	<i>vīra</i>	..	+
64	<i>vṛṣan</i>	..	+
65	<i>śakra</i>	..	+
66	<i>śapha</i>	+	..
67	<i>śrīga</i>	..	+
68	<i>śyāva</i>	..	+
69	<i>śvan</i>	..	+
70	<i>sacā-bhū</i>	..	+
71	<i>samrāj</i>	..	+
72	<i>suśrut</i>	..	+
73	<i>somāpūṣan</i>	+	+
74	<i>stana</i>	+	..
75	<i>havya</i>	..	+
76	<i>hasta</i>	+	+
77	<i>hoṭṛ</i>	..	+

TABLE NO. 11

Grtsamada

(Table showing the nom./acc. neut. plu. forms in -āni/ -ā)

S. No.	prātipadika	-āni	-ā
1	acchidra	..	+
2	atasa	..	+
3	anṛta	..	+
4	anya	..	+
5	āyudha	..	+
6	uktha	..	+
7	ucatha	..	+
8	udyata	..	+
9	etat	..	+
10	karana	..	+
11	kartva	..	+
12	kṛta	..	+
13	kṛtrima	..	+
14	kha	..	+
15	gotra	..	+
16	cyavana	..	+
17	tat	..	+
18	dr̥mhita	..	+
19	draviṇa	..	+
20	dhana	..	+
21	nantva	..	+
22	nūtana	..	+
23	pūrvya	..	+
24	parivṛta	..	+

S. No.	<i>prātipadika</i>	<i>-āni</i>	<i>-ā</i>
25	<i>bhuvana</i>	.. +	+
26	<i>maha</i>	.. +	
27	<i>yat</i>	.. +	+
28	<i>yojana</i>	..	+
29	<i>rādhya</i>	..	+
30	<i>rūpa</i>	..	+
31	<i>vana</i>	.. +	
32	<i>vayuna</i>	.. +	
33	<i>vardhana</i>	.. +	
34	<i>viśva</i>	.. +	+
35	<i>vīrya</i>	..	+
36	<i>vṛṣabha</i>	.. +	
37	<i>śata</i>	..	+
38	<i>śantama</i>	..	+
39	<i>śambara</i>	.. +	
40	<i>śrita</i>	..	+
41	<i>śreṣṭha</i>	.. +	
42	<i>satya</i>	..	+
43	<i>sana</i>	..	+
44	<i>saṁbhṛta</i>	..	+
45	<i>sahasra</i>	.. +	
46	<i>sāta</i>	.. +	
47	<i>suvidatra</i>	.. +	
48	<i>svasara</i>	.. +	

TABLE NO. 12

Kūrma Gārtśamada

Sr. No.	Prātīpadika	neu. nom./acc. plural		masc./fem. nom/acc. dual	
		-āni	-ā	-au	-ā
1	2	3	4	5	6
1	<i>agha</i>	..	+		
2	<i>apracyuta</i>	..	+		
3	<i>ardha</i>	..		+	
4	<i>ubha</i>	..		+	+
5	<i>ṛṇa</i>	..	+		+
6	<i>kṣaya</i>	..		+	
7	<i>tri</i>	..	+		
8	<i>divya</i>	..		+	
9	<i>durita</i>	..	+		
10	<i>parama</i>	..		+	
11	<i>pūrva</i>	..		+	
12	<i>pravasatha</i>	..	+		
13	<i>matkṛta</i>	..	+		
14	<i>mitrāvaruṇa</i>	..			+
15	<i>rocana</i>	..		+	
16	<i>viśva</i>	..	+		
17	<i>vrjina</i>	..		+	
18	<i>vrata</i>	..	+	+	
19	<i>śrita</i>	..	+		
20	<i>śvabhra</i>	..		+	
21	<i>sudhita</i>	..	+		

TABLE NO. 12A

The symbol a represents the number of those *prūtipadikas* which are declined in both, the classical as well as non-classical, ways in both the kinds of data here; b stands for those declined in the non-classical way only and c represents those that are declined in the classical way alone. $a + b + c$ naturally represents the total of all such forms.

The a , b , c features, as are available from the data furnished by the two seers, are accordingly as follows:—

5.6.1 masc./fem. nom./acc.
dual in Gṛtsamada:—

$a = 4$
$b = 62$
$c = 11$
$a + b + c = 77$

TABLE No. 13

5.6.2. neuter nom./acc. plural
in Gṛtsamada:—

$a = 6$
$b = 20$
$c = 22$
$a + b + c = 48$

TABLE No. 14

5.6.3. masc./fem. nom./acc.
dual in Kūrma Gärtsamada:—

$a = 1$
$b = 1$
$c = 2$
$a + b + c = 4$

TABLE No. 15

5.6.4. neut. nom./acc. plu-
in Kūrma Gärtsamada

$a = 3$
$b = 6$
$c = 8$
$a + b + c = 17$

Table No. 16

5.6.5. The respective ratios are given in the following Tables Nos. 17 and 18. R' represents the ratio of the masc./fem. nom./acc. dual forms and R'' that of the neut. nom./acc. plural forms. R'_1 , therefore, represents the ratio $a/a+b+c$; R'_2 , the ratio $b/a+b+c$ and R'_3 , the ratio $c/a+b+c$ in the case of the nom./acc. dual forms. Similarly, R''_1 shows the ratio $a/a+b+c$ in the neut. nom./acc. plural; R''_2 , the ratio $b/a+b+c$ and R''_3 , the ratio $c/a+b+c$,

5.6.5.1. R' (masc./fem. nom./acc. dual) for the seers:

	Gṛtsamada	Kūrma Gārtsamada/ Gṛtsamada
R'_1	.052	.250
R'_2	.805	.250
R'_3	.143	.500

Table No. 17

5.6.5.2. R'' (neut. nom./acc. plural) for the seers

	Gṛtsamada	Kūrma Gārtsamada/ Gṛtsamada
R''_1	.125	.177
R''_2	.417	.353
R''_3	.458	.470

Table No. 18

5.6.6. Reading of R' and R'' :—

R'_2 (cf. Table No. 17) which represents the ratio of those declined in the non-classical way with the general total in the case of the respective seers, shows that Gṛtsamada's language uses forms in $\bar{a}$ for the masc./fem. nom./acc. dual in greater number than that of Kūrma Gārtsamada. This is supported by the R'_3 for both of the seers, which shows that Kūrma Gārtsamada's dialect abounds more in forms with $-au$ than in forms with $-\bar{a}$.

Almost the same picture is available from R'' of Table No. 18. R''_2 shows the use of neut. plu. forms in $-\bar{a}$ in Gṛtsamada's dialect more than that in Kūrma Gārtsamada's dialect. Also, Kūrma Gārtsamada uses neuter plu. forms in $\bar{a}ni$ in greater number than that of Gṛtsamada, though, it should be marked, the difference is negligible, that is, only 2%.

The general picture about the two dialects that emerges out of these ratios is that Gṛtsamada shows a greater tendency towards non-classical declension in the case of the masc./fem. nom./acc. dual forms in $-\bar{a}$. (cf. R'_2 viz .805 in the case of Gṛtsamada as against that of Kūrma Gārtsamada which is .250). And as R'_1 (i. e. .052) in the case of Gṛtsamada shows, the non-classical declension in the above cases is more stable. The same picture is however not available from Table No. 18. in the case of Gṛtsamada, though it is the same in the case of Kūrma Gārtsamada. As R''_2 and R''_3 show, the choice between the terminations $-\bar{a}ni$ and $-\bar{a}$ for neut. plu. for

Gr̥tsamada is greater towards the former than towards the latter, whereas Kūrma Gārṭsamada, on the other hand, is still consistently greater inclined towards *-āni* which shows a stage nearer to classical Sanskrit. Thus the dialect in Gr̥tsamada's times shows a stage fluctuating towards classical declension in the case of the nom./acc. neuter plural forms.

Thus the picture of the dialectal difference that we gather from the present data is in general the same as the one from the previous data of nominative and instrumental plural forms. These facts together with the facts of the previous data show that since the ratios in the case of the two seers are neither identical nor very close to one another, they speak two different dialects; yet both of them use the classical declension in greater number of cases, though Kūrma Gārṭsamada's ratio in majority of the cases in favour of the classical declension is sufficiently higher than that of Gr̥tsamada to presuppose a certain lapse of time, though small, between them. This means that they are two different personalities with Gr̥tsamada and his dialect representing a slightly older period and linguistic stage. The data, furnished by Kūrma Gārṭsamada, however, are very small, especially in the case of the instrumental plural and masc./fem. nom./acc. dual forms. But addition of greater data will not, it is hoped, affect the general ratio of these forms with his own total vocabulary.

5.6.7. At this stage it is possible now to conjecture about the possible reasons for optional authorship. As is concluded from the statistical results above and from the name Gārṭsamada, meaning 'a person born in the family of Gr̥tsamada', Kūrma Gārṭsamada comes later and is a descendent of Gr̥tsamada. Gr̥tsamada, as his authorship of the major portion of the second Maṇḍala shows seems, on the other hand, the original Ṛṣi of the Maṇḍala as well as of what has come later on to be known as the Gr̥tsamada-tradition. It is, therefore, not impossible that Kūrma Gārṭsamada, proud of the tradition of his family, might have mentioned, along with his name, the name of his revered predecessor Gr̥tsamada also, merely out of devotion for him, as the author of the hymns he himself composed.

Another reason, which sounds more logical or appropriate, may also be stated. If we examine the deities on which Gr̥tsamada Bhārgava Śaunaka composed the hymns, we find that the *sūktas* on the deities Ādityas and Varuṇa are absent in his compositions. There are, no doubt, some stray verses here and there about them; but those are scattered and only seem secondary; the deities are not praised in independent *sūktas*.

If, on the other hand, we examine the deities on which Kūrma Gārṭsamada has composed his hymns, we find exactly the deities Ādityas and Varuṇa which are absent in Gr̥tsamada's compositions. Hymn 2.27 praises Ādityas while hymn 2.28 eulogises Varuṇa (Hymn 2.29 is addressed to Viśve Devas). It would, therefore, not be unreasonable to conclude that it is this lack or deficiency in Gr̥tsamada's literature and consequently tradition also, that Kūrma Gārṭsamada tried to make up for by composing hymns on them; he might have passed them on on the name of Gr̥tsamada also in order to

create an impression that the Gr̥tsamada-tradition, to which he belongs, is complete in every respect and whatever he has composed is not originally his own composition but has come down to him from Gr̥tsamada himself, the original Ṛṣi of the tradition. By doing this, he could not only cover up the entire group of deities that were known in his times and on which his contemporaries might have composed songs, but also could complete the task left incomplete by the ancient seers of his family.⁸

6. Metrical considerations :

The above statistical study is presented only from the point of view of dialects, that is to say, with a view to examine the dialectal differences and no metrical considerations affecting the choice of this or that form for completing the required number of letters in the metres are brought into the picture. Actually, strictly from statistical, dialectal and linguistic points of view, metrical considerations in such studies may be treated as only secondary. Secondly, passages like 2.12.7c (*yāḥ sūryam yā uśāsam jajāna*) which do not satisfy the letter-criterion of the metre show that the metrical rules are not so strictly followed by the Ṛgvedic poets. Yet, since all the Ṛgvedic hymns in general and the hymns of Gr̥tsamada and Kūrma Gārtsamada, taken here for statistical study, in particular, are without any exception in metres, metrical considerations cannot be totally avoided. The following discussion is, therefore, meant to show how the dialectal usages, peculiarities and differences are quite visible even through the rigid rules of Vedic metres.

6.1. The Nom. / Instr. plural forms :

6.1.1. Hymns of Gr̥tsamada : The hymns composed by Gr̥tsamada provide the following instances where, on the basis of the metrical letter-requirements themselves, an exchange of shorter and longer forms of the nominative and instrumental plural could have been possible.

6.1.1.1. The *pāda*, *tve devā havir adantya āhutam*, 2.1.13d, which is in Jagatī metre should normally according to the letter-criterion contain 12 letters. But it actually falls short of two letters. The form *devāḥ* could have been extended to *devāsah* which would have given one more syllable, the other syllable

8. Such an explanation, however, would raise many other problems. Does the absence of hymns on Ādityas and Varuṇa in Gr̥tsamada's literature, as is found here, indicate that Gr̥tsamada flourished before the rise of the worship or cult of Ādityas and Varuṇa? Or did he come after the cults of Ādityas and Varuṇa receded into oblivion, or at least in the background? In the latter case, even Kūrma Gārtsamada, a descendent in the family of Gr̥tsamada, had no reason to compose hymns specially on Ādityas and Varuṇa. Does it mean that the cults of Ādityas and Varuṇa were again revived in the times of Kūrma Gārtsamada and after Gr̥tsamada? Some more investigation is necessary before answering all these questions. Until that is done the present explanation of the optional authorship and the existence of the hymns on Ādityas and Varuṇa in Kūrma Gārtsamada's work, supported by exactly their absence in Gr̥tsamada's literature, can only remain as mere conjecture.

being compensated by the splitting of the *saṁdhi*, *adantyāhutam* into *adanti āhutam*. But Grṭsamada does not extend the form and uses only the shorter *devāḥ*, which clearly shows his preference for the *as*-declension.

One can even argue that the splitting of *tvé* into *tu-e* will make up for one syllable, and hence extension of *devāḥ* into *devāsaḥ* is not the only way for it. But, as can be seen from the very next passage, viz. 2.1.14a (*tve agne viśve amṛtāso adruhaḥ*) which contains exactly 12 syllable, there being no necessity to split *tvé* into *tu-e*, the splitting of such forms like *tve* does not seem to be un-exceptional, regular feature of the Vedic metrical scanning though it is many times resorted to⁹; the word *tvé* in 2.1.14a seems to be treated as one, containing one single syllable. The splitting of *tvé* into *tu-e*, therefore, is not the regular way to add one syllable in 2.1.13d. Completion of letters should be achieved without splitting the word as far as possible. If such word-splitting were regular, the poet would not have used the form *amṛtāsaḥ*; he could have fulfilled the metrical requirements by using *amṛtāḥ* in the place of *amṛtāsaḥ*, the shortage of one syllable being automatically covered up by the splitting of the word *tve* into *tu-e*; for the *pāda* 2.1.14a would have contained only 11 syllables if, in the place of *amṛtāsaḥ* the form *amṛtāḥ* would have been used. That Grṭsamada has not done it shows that even for the Vedic poets the metrical requirements were to be met by the number of independent syllables actually and not by such splitting. It is on this ground that one can say that in the case of 2.1.14a also the form *amṛtāsaḥ* is used for metrical reasons and also shows the characteristic of Grṭsamada's dialect.

6.1.1.2. The *pāda* *pare'vara ubhayā amitrāḥ*, 2.12.8b, in *Triṣṭubh*, falls short of one syllable. It could easily have been added if either *ubhayāḥ* or *amitrāḥ* would have been extended to *ubhayāsaḥ* or *amitrāsaḥ*. This speaks for Grṭsamada's use of *as*-declension.

6.1.1.3 The *pāda*, *yasmān na ṛte yijayante janāsaḥ*, 2.12.9a, in *Triṣṭubh*, contains 12 syllables, that is, one syllable more than the number required for *Triṣṭubh* viz. 11. The form *janāsaḥ*, therefore, could have been shortened to *janāḥ*. This indicates the use of the word *jana* with *asas*-declension as the typical characteristic of the dialect of Grṭsamada. This conclusion is supported by the fact that out of the 16 total occurrences of the word *jana* in nominative plural in the hymns by Grṭsamada, as many as 15 are with *asas*-declension, the solitary occurrence with *as*-declension as *janāḥ* being only in 2.24.10.

6.1.1.4. The *pāda*, *devam devā ajanan sāsyukthyaḥ*, 2.13.5d, in *Jagati* metre, contains only 10 in the place of 12 letters as required by the metre. Even after making allowance for the splitting of the *saṁdhi*, *sāsyukthyaḥ* into *sāsi ukthyaḥ*, which would give one syllable more, the problem of one more

9. Cf. A. A. MACDONELL, *A Vedic Grammar for Students*, Appendix II on 'Vedic Metre', pp. 436-447; cf. also E. V. ARNOLD, *Vedic Metre*, Cambridge, 1905.

syllable still remains... This could be easily added if the form *devāḥ* with *as*-declension is extended to *devāsaḥ* with *asas*-declension. This supports the above conclusions regarding the declension of the word *deva*, viz. that Gṛtsamada's dialect is more prone to use the word *deva* with *as*-declension in the nominative plural than to use it with *asas*-declension (cf. also the following 6.1.1.5).

This conclusion is also substantiated by the fact that out of the 14 total occurrences of the base *deva* in the nominative plural in Gṛtsamada's hymns, as many as 11 are with *as*-declension and only 3 are with *asas*-declension.

6.1.1.5. The *pāda*, *devāś cit te asurya pracetasah*, 2.23.2a, in Jagatī metre, falls short off by one syllable. The word *deva* could easily have been inflected with the termination *-asas* to make up for one letter. But that Gṛtsamada has not done it shows the peculiarity of the *as*-declension for the word *deva* in nominative plural in his dialect.

6.1.1.6. The *pāda*, *sākaṁ vṛddho vīryaiḥ sāsahir mṛdho vicarṣaṇiḥ*, 2.22.3b, in Atiśakvarī metre, contains only 15 letters in the place of 16. The possibility of increasing the letter-strength of the *pāda* from 15 to 16 is offered by the form *vīryaiḥ*, which could be declined with *-ebhis* as *vīryebhiḥ* and could give one letter more. But Gṛtsamada has not done it, which speaks for the peculiarity of his dialect.

It should be incidentally noted that the word *vīrya* in the instrumental plural occurs only twice in the R̥gveda, here and at 3.54.15 (by Prajāpati Vaiśvāmītra or Prajāpati Vācya); and in both the places it is inflected with *-ais* and nowhere with *-ebhis*. This *ais*-declension of the word *vīrya*, therefore, seems to be the peculiarity of the language of the R̥gveda as a whole.

6.1.2. Hymns of Kūrma Gārtsamada: The hymns composed by Kūrma Gārtsamada also provide us with examples in which the dialectal peculiarities evade the rigid rules of metres. The following examples may be noted:—

6.1.2.1. The *pāda*, *tenādityā adhi vocatā nah*, 2.27.6c, in Triṣṭubh, contains only 10 letters in the place of 11; the letter-strength can be increased only by extending the form *ādityāḥ* to *ādityāsaḥ*. This fact, supported by the fact that out of the 9 occurrences of the word *āditya* in the nominative plural in Kūrma Gārtsamada's hymns, 6 are with *as*-declension and 3 with *asas*-declension, throws good light on the peculiarity of Kūrma Gārtsamada's dialect as regards the declension of *āditya*, which is declined more in the classical way than in the non-classical way.

6.1.2.2. The *pāda*, *uruśamsā rjave martyāya*, 2.27.9d, in Triṣṭubh, containing 10 syllables, will be quite regular with 11 syllables if the form *uruśamsāḥ* could be extended as *uruśamsāsaḥ*. But that Kūrma Gārtsamada has not done it speaks in favour of his tendency to use nominative plural with *-as* and not with *-asas*.

6.1.2.3. The *pāda*, *abhi kṣamadhvaṁ yujyāya devāḥ*, 2.28.3d, in Triṣṭubh, will be quite regular with 11 letters if *devāsaḥ* is substituted for *devāḥ*.

6.1.2.4. The *pāda*, *dhṛtavratā ādityā iṣirā*, 2.29.1a, in Triṣṭubh, with only 10 syllables will be quite regular if any one of the three nominative plural forms are extended with *-asas*. But Kūrma Gārtsamada has used the *as*-declension in spite of the metrical defect; this indicates the peculiarity of his dialect.

6.2. The masc./fem. nom./acc. dual forms :—

In the case of the optional declension in *-au/ -ā* in the nom./acc. dual the problem of satisfying the metrical requirements of syllables never arises since, obviously, the total number of syllables in a metre is not affected whether the form is in *-au* or in *-ā*. Yet it is very interesting to note that even in this type of declension, the predilection of the author for this or that form is apparent. The following examples will suffice :—

6.2.1. In the case of Gr̥tsamada :—

The *pāda* 2.10.2d is a good example. It reads : *utāruṣāha cakre vibhṛtraḥ*, which contains in all 10 syllables only, though the metre, which is Triṣṭubh, demands 11 syllables. If, therefore, the dual *aruṣā* (declined in *-ā* from the base *aruṣa*) were *aruṣau* (declined in *-au*), it could have been joined with the following vowel *a* of *aha*, as *aruṣāv aha*, and could have made up for one more syllable required for the metre. That the author still keeps up the form *arūṣā*, instead of *aruṣau*, shows clearly his preference for the declension in *-ā*.

Many other examples could be found out.

6.2.2. In the case of Kūrma Gārtsamada :—

Unfortunately the data furnished by Kūrma Gārtsamada are very small; whatever data are available, they do not give us any indication to the preference for this or that type of declension in the present case. Yet, the *pāda*, 2.27.15d : *ubhāv ardḥau bhavataḥ sādḥū asme*, may be cited. The form *ardḥau* could have been well replaced by *ardhā* without hampering the metre, if the author had an inclination towards declension in *-ā*. But that he does not use *ardhā* but uses specifically *ardḥau* shows, though faintly, that his dialect voted more for forms in *-au* than for those in *-ā*.

7. All these examples will show that the dialectal peculiarities are visible even through the rules of metre. Many more examples in support of the above findings could be found out if we closely study the hymns of the two authors from this point of view. Such instances, collected together, will certainly give us some picture, rough or clear, of the dialectal peculiarities of the seers. The peculiarities collected together, in turn, will help one in fixing the chronology—perhaps relative—, geographical differences, dialectal characteristics and variations etc. of the seers. All this finally may pave

way for a better understanding and interpretation of the traditions represented by different seers in particular and of the R̥gveda in general.¹⁰

Supplementary Note :

In trying to determine the authorship of the 'Junius Letters', a series of political pamphlets written between 1769 and 1772, supposedly by one Sir Philip Francis, Ellegård¹¹ has attempted to evolve a statistical technique to decide genuine authorship. There he works with only a selected group of words and expressions which he regards as typical of the author of the pamphlets. His working hypothesis in short means that different texts by the same author will show the same tendency with regard to the use of his typical words and that in terms of statistical methods, the use of typical words in the works of a given writer should vary significantly from that of the other writers. Working on this hypothesis he goes on to find out the ratio of such typical words of the given writer with those found in the control sample from contemporary writings. He calls this ratio as the 'distinctiveness ratio' of the type.

He then groups together typical words with identical distinctiveness ratio, or with distinctiveness ratios within narrow limits and compares the group-frequencies. He thus determines the distinctiveness ratio of the typical words from the letters of Sir Francis and by comparing it comes to a certain conclusion.¹²

Though the method Ellegård employs to determine the authorship may be good in itself and may be applicable to his data, it is inapplicable in the case of the Vedic language in general and to the present data of nominative and instrumental forms etc. in the compositions of Gṛtsamada and Kūrma Gṛtsamada in particular. The reasons are as follows :

10. For the statistical studies in Vedic vocabulary from inflection point of view, cf. E. V. ARNOLD, *Historical Vedic Grammar*, The American Oriental Society, New Haven, Connecticut, U. S. A., 1897. (Reprint from *JAOS*, Vol. 18, 1897, pp. 203-354); also, C. R. LANMANN, 'Noun-Inflection in the Veda', *JAOS*, Vol. 10; also, J. AVERY, 'Verb-Inflection in Sanskrit', *JAOS*, Vol. 10.

For the application of the statistical methods to linguistic studies for determining authorship, cf. A. ELLEGÅRD, 'A Statistical Method for Determining Authorship', *Göteborg, Högsk. Årskr.* No. 13, 1962, referred to by G. HERDAN, *Quantitative Linguistics*, Butterworths, London, 1964, pp. 149-159; cf. also G. HERDAN, *The Calculus of Linguistic Observations*, Mouton & Co.'s—Gravenhage, 1962.

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11. A. ELLEGÅRD, "A statistical Method of Determining Authorship", *Göteborg Högsk. Årskr.* No. 13, 1962 (referred to by G. HERDAN, *Quantitative Linguistics* Ch. 16 "Vocabulary Discrimination", pp. 149-160, London, 1964).

12. For a detailed description and criticism of ELLEGÅRD's method, cf. G. HERDAN, *ibid.*, pp. 149-150.

(1) The Vedic language is not a general language in the sense that it was used by the masses in those times for everyday communication. If there is any communication of thoughts at all in it, it is between man and god and not between man and man¹³. In this sense it is a special language, set out in special metres, for special purposes and occasions by special class of priests. Moreover, much of Vedic material is repeated, sometimes *ad verbatim*, throughout the different texts of the different authors¹⁴. Under these circumstances, it is very difficult to pin down the style of a Vedic writer only in terms of typical words.

(2) Ellegård's method, for comparison, requires a literature which must be contemporary to that one is working on. In the present case, we do have another literature from the R̥gveda itself; but its contemporariness or otherwise is a matter of very hot controversy.

In these circumstances it is very difficult to follow *in toto* Ellegård's statistical method in the present case. Some adjustments are, however, made.

What is done here is that instead of picking up certain typical words as the criterion of style, what is picked up as the criterion of style are the grammatical peculiarities of the authors as are visible in the declension of masc. dual and masc., neut plural in the nominative and masc., neuter plural in the instrumental.

Secondly, the final ratio or co-efficient on which the conclusions are based is found out not by a comparison with contemporary writers but by comparing the number of items with a certain kind of declension in a given case of a given author with the total number of items with all kinds of declension in that case of the same author. Then these two ratios of the two authors are compared with each other and conclusions are drawn.

The present method has an advantage. Besides giving scope to find out an alternative criterion of style, viz. grammatical peculiarities, it gives us a better picture of the tendency of an author towards a certain kind of declension in a given case, a clear idea of the dialectal variations between the two authors and may perhaps pave way for determining their geographical or chronological distance. In a highly inflected language like Vedic Sanskrit, it is the grammatical peculiarities that get an upper hand and reduce the words to a subordinate level. It should be noted in this connection that it is these grammatical peculiarities, and not the words, that distinguish the Vedic language from the classical Sanskrit.

13. Though this is a controversial point, it is true in the sense that the words or language used in the Veda is of special character and not of the type used in everyday life, since obviously it is not the everyday atmosphere and life that the Veda depicts.

14. For Vedic repetitions, cf. M. BLOOMFIELD, *Vedic Concordance*. Harvard Oriental Series No. 10, 1906 and *Rig-Veda Repetitions*, Harvard Oriental Series Nos. 20, 24.

