

About the digital edition of Dwarikadas Shastri's indices to the *Mādhavīyā Dhātuvṛitti*

I. Sources

The present publication constitutes a digital edition of Dwarikadas Shastri's indices to the *Mādhavīyā Dhātuvṛitti* with links to scanned images of pages of the *Mādhavīyā Dhātuvṛitti*. The indices are based on Shastri's 1983 edition; images are of pages scanned from the 1964 edition. The text, indices, and pagination of the 1983 edition are exactly identical to those of the 1964 edition. The only differences between the two editions are that the preface and introduction have been re-typeset and continuously paginated in the 1983 edition, the second part of the fifth appendix has been re-typeset, an additional appendix consisting of an index of particular words *viśiṣṭaśabda-sūcī* has been added (pp. 677-732), and a one-page preface has been added by the publisher. The index of particular words is an alphabetical index of selected derivatives that Sāyaṇa mentions in the commentary with approval. Despite the fact that the indices and scanned pages derive from different editions, all references remain in tact because the substance of the shared five appendices and the pages to which they refer are exactly identical in both editions.

A. Bibliography

Shastri, Dwarikadas, ed. 1964. The *Mādhavīyā Dhātuvṛitti* [A treatise on Sanskrit roots based on the *Dhātupāṭha* of Pāṇini] by Sāyaṇācārya: With a foreword by Raghunath Sharma. Prachya Bharati Series 1. 1st. ed. Kamachha, Varanasi: Prachya Bharati Prakashan.

स्वामी द्वारिकादासशास्त्री सम्पादकः । १९६४ । श्रीसायणाचार्यविरचिता
माधवीया धातुवृत्तिः [पाणिनीयधातुपाठव्याख्यानात्मिका ।]

प्राच्यभारतीग्रन्थमालायाः प्रथमं पुष्पं । वाराणसी--प्राच्यभारतीप्रकाशनम् ।
Shastri, Dwarikadas, ed. 1983. The *Mādhavīyā Dhātuvṛitti* [A treatise on Sanskrit roots based on the *Dhātupāṭha* of Pāṇini] by Sāyaṇācārya. 2nd. ed. Kamachha, Varanasi: Tara Book Agency.

स्वामी द्वारिकादासशास्त्री सम्पादकः । १९८३ । श्रीसायणाचार्यविरचिता
माधवीया धातुवृत्तिः [पाणिनीयधातुपाठव्याख्यानात्मिका] . वाराणसी--तारा
बुक एजेंसी ।

B. The text and indices

Dwarikadas Shastri's edition includes Sāyaṇa's commentary on the *Pāṇinīya Dhātupāṭha* (pp. 1-576), and in addition Sāyaṇa's *Mādhavīyā Nāmadhātuvṛitti* (pp. 577-628). The latter is divided into four sections. The first section comments on roots listed in *kaṇḍvādī* mentioned in A. 3.1.27 *kaṇḍvādibhyo yak* (pp. 577-580). The second section comments on roots mentioned in sūtras of Pāṇini's *Āṣṭādhyāyī (sautra-dhātu)* (pp. 581-583). The third section comments on roots formed from lists of nominal stems (*prātipadika*) and words (*pada*). Roots formed from nominals (*nāma-pratyayāḥ dhātavaḥ*) include those formed by sūtras A. 3.1.8-20 *supa ātmanaḥ kyac*, etc. (pp. 583-599). Finally, the fourth section comments in particular on roots formed by the addition of

the affix *ṇic* to nominal bases mentioned in A. 3.1.21 *muṇḍa-miśra-ślakṣṇa-lavaṇa-vrata-vastrahala-kala-kṛta-tūstebhyo ṇic* and A. 3.1.25 *satyāpa-pāśa-rūpa-vīṇā-tūla-śloka-senā-loma-tvacavarma-varṇa-cūrṇa-curādibhyo ṇic*, as well as on roots formed by the addition of *ṇic* variously to other nominal bases (599-628). Nominal bases are included in the list *curādi* by being referred to implicitly in sūtras read in the *Dhātupāṭha* rather than by being listed explicitly. *dhātusūtra* 10.296 *prātipadikāddhātvarthe bahulamīṣṭhavacca* states that the affix *ṇic* occurs variously (*bahulam*) after a nominal stem (*prātipadikāt*) in the meaning of a root (*dhātvarthe*) and that subsequent morphophonemic modifications occur as they do before the superlative affix *-iṣṭhan*. 10.297 *tatkaroti tadācaṣṭe* provides a couple of the meanings that condition the affix after a nominal stem meaning x: so and so does x, and so and so describes x. For example, the affix *ṇic* occurs after the stem *paṭu* 'smart' to form a verb root meaning to describe as smart. Thus the 3sa pre *paṭayati* occurs alternately with the phrase *paṭumācaṣṭe* "He describes him as smart." The nominal base *paṭu* is not explicitly read in the list *curādi*; it is included implicitly by the statement of *dhātusūtras* 10.296-297.

Appendices 2-5, pp. 634-675 in Shastri's editions, provide indices to roots discussed in the *Mādhavīyā dhātuvṛtti* and *Mādhavīyā nāmadhātuvṛtti*. Appendix 2 (pp. 634-668) is an alphabetical index of roots in the *Dhātupāṭha*. The appendix includes the sense terms provided in the *Dhātupāṭha* (sometimes with ellipsis), the class (*gaṇa*), and the *Dhātupāṭha* sūtra number within the class, and also indicates variant forms of roots reported in the *Mādhavīyā dhātuvṛtti* by the addition of *pā* in square brackets to the index entry. Appendix 3 (p. 668) is an index of the *sautradhātus* in alphabetic order with sense terms and the number of the *sūtra* in the *sautradhātu* section of the *Mādhavīyā nāmadhātuvṛtti*. Appendix 4 (p. 669) is an index of the roots in the *gaṇa kaṇḍvādi* in alphabetic order with an indication of alternate readings (by the addition of *pā* in square brackets) and with reference to the number of the *sūtra* discussing the root in the *kaṇḍvādi* section of the *Mādhavīyā nāmadhātuvṛtti*. Finally, appendix 5 lists stems and the stems of words that serve as bases for the root-forming affixes in two parts: part 1 (pp. 670-672) lists stems mentioned in A. 3.1.8-20 discussed in section 3 of the *Mādhavīyā nāmadhātuvṛtti*, and part 2 (pp. 673-675) lists stems that take the affix *ṇic* discussed in section 4 of the *Mādhavīyā nāmadhātuvṛtti*. Appendix 5 lists stems in order of occurrence (not alphabetic order) with the number of the page on which the root is discussed.

C. Conventions of the printed indices

The orthography and sandhi in the text and indices is not entirely consistent, either internally within each or with each other, nor are their conventions for representing roots entirely consistent. The indices and text generally employ certain close sandhi options within words (including compounds of preverb with a following compound element). For example, for the nasal final in preverbs, they employ a nasal homorganic with the following stop rather than an anusvāra, writing *saṅghāte* rather than *saṁghāte*, in accordance with A. 8.4.59 *vā padāntasya (anusvārasya yayi parasavarṇaḥ 58)*. Yet they maintain the use of the dot (*bindu*), representing an anusvāra, before semivowels rather than using a nasalized semivowel provided by the same rule. Hence the text and indices write *saṁvaraṇa* rather than *saṅvaraṇa*. The dot appears throughout at other word boundaries, e.g. *kuṭīlāyām gatau*. Yet even close sandhi within words is not held to consistently between the text and indices. Where the text writes *aṅka* and *aṅga* for the roots in 10.313-314 using close sandhi, for instance, the root index writes *aṁka* and *aṁga*.

The root index adopts the canonical form of a root more often than the text does, but neither does so throughout. The canonical form of the root is the form in which Pāṇini's *Āṣṭādhyāyī* expects to receive the root for the application of its rules as opposed to the normalized form of the root as it would appear with all replacements and sandhi applied ready for delivery to ordinary usage. The *dhātupāṭha* is ostensibly the source of the root in initial instruction (*upadeśe*) as opposed to in ordinary usage (*loke*). The canonical form of the root often incorporates phonetics that are impossible or unusual in ordinary Sanskrit. Pāṇini requires that the canonical form of roots with penultimate nasal have dental *n* as opposed to a nasal homorganic with a following stop or an anusvāra before a spirant in the normalized form, e.g. canonical *añc* and *ans* as opposed to normalized *añc* and *aṃs*. Pāṇini requires that the canonical form have penultimate dental sibilant *s* in *lasj* and *vrasc* as opposed to a palatal stop *lajj* in the normalized form or spirant in the semi-normalized *vraśc*. Similarly, in roots subject to retroflexion, he expects the canonical form with an initial retroflex *ṇ* or *ṣ* (*ṇam*, *ṣic*) but with a subsequent dental stop after retroflex *ṣ* (*ṣthā*) as opposed to normalized dentals (*nam*, *sic*) or seminormalized retroflex clusters (*ṣthā*). Finally, several roots are expected canonically with penultimate dental *d* (*aḍḍ*, *udjh*) as opposed to normally with homorganic stop (*aḍḍ*, *ujjh*), and canonically without the augment *t* (*tugāgama*) before *ch* (*prach*) as opposed to normally with the augment palatalized (*pracch*).

The text of the *Mādhavīya dhātuvṛtti* usually does not adopt the canonical form of the root. It does do so, however, in several types of cases. The text lists roots whose initial *n* or *s* is subject to retroflexion with the retroflex *ṇ* or *ṣ* (with the notable exception of the reference 1.515 *naṭ* in the list *ghaṭādi* to the root 1.207 *naṭ*). Yet the text does not preserve the subsequent dental (*ṣthā*). Likewise, while the text lists roots with penultimate sibilant (*lasj*), it palatalizes the sibilant in *vrasc*. The text is inconsistent about inserting the augment before *ch*, sometimes including it (*praccha*) and sometimes omitting it (*uchi*).

The index is similarly inconsistent but adopts the canonical form of the root more often than the text does. The index usually adopts the canonical form with dental *n* where there is a penultimate nasal. For example, where the text has normalized *śamsu*, the index has canonical *śansu*. Yet the index is not entirely consistent in adopting the canonical form; it still has normalized *aṃsa* like the text. Where the canonical form has a penultimate dental and the text gives the root with homorganic stop (*aḍḍa*, *ujjha*, *kaḍḍa*, *cudḍa*), the index usually puts the canonical form in parenthesis after the normal form (*aḍḍa*, *kadḍa*, *cudḍa*), but it lists the canonical form and puts the normalized form in parenthesis in one case (*ujjha*).

II. Differences of digital index from the Shastri's index

The digital edition of Dwarikadas Shastri's indices to the *Mādhavīyā Dhātuvṛtti* reproduces the attributes of the printed index intended by its editor in the "full root" field. In this field, the digital index does not enforce close sandhi nor does it enforce representation of the canonical form of the root. It represents canonical versus normal features of roots as found in the printed index, preferring the form of the root as in the text where differences are noticed between the text and the index. Hence, since the index exhibits an overwhelming preference for close sandhi, the index enforces close sandhi also in the "full root" field for the roots *añka* and *añga* since they also appear this way in the text. Where the printed index exhibits a certain preference regarding sandhi and the same preference is followed in the text, the digital index regularizes the sandhi throughout.

In the "root" field, however, the digital index regularizes the canonical form of the root to the extent the canonical feature is found restored anywhere in the index. Hence *prach* is given in the "root" field without the augment before *ch*, even while reproducing the "full root" with the palatalized augment as in the printed index and text, because the index usually lists roots in final *ch* without the augment in their canonical form. The canonical form of the root with dental nasal is also supplied in the root field where derivation would be affected, i.e. in most cases, but is left as in the index where it agrees with the text in having the normalized form of the root where derivation would not be affected. Hence *nāmadhātus* and class 10 roots in final *a* are left as they appear in the printed text in their normalized form even in the root field. For a thorough rectification of the canonical forms of all roots, as well as a regularization of the normalized forms of roots, please see the Canonical Index.

The digital index corrects a number of errors of interpretation of the form of the root in alternate readings. It also corrects errors of alphabetic ordering made in the printed index and eliminates consequent duplicate listings. Minor spelling errors are corrected.

III. Features of the digital index

The Sanskrit Library's digital edition of the indices to Dwarikadas Shastri's *Mādhavīyā Dhātuvṛtti* shows several fields in addition to those shown in Shastri's indices. As in the printed addition, the digital edition shows the full root combining the root with its markers. Alternate (canonical or normalized) forms of the root appear after the full root in the full root field in curved braces. Initial markers precede the full root in curved braces; preverbs in square brackets. In addition to the full root, the digital indices show in separate fields first the root without markers and then the final marker. In the sense field, variant readings are shown in curved braces; sense terms inherited by anuvṛtti in square brackets. To the right of the sense the digital index shows the class number as well as the class name, and the page number in addition to the number of the sūtra within the class. Finally, like the printed edition, the digital edition indicates that the root is an alternate reading found in the commentary by putting *pā-* in the rightmost field. The most important addition to the digital index is, of course, the link to the PDF file of the page on which the entry begins. This link is the entry in the page field. Clicking it opens an image file of the page.

IV. Responsibility and acknowledgements

The current project to create a digital index with links to digital images of Shastri's edition of the *Mādhavīyā Dhātuvṛtti* began in June 2007 when Gregory Crane, Winnick Family Chair in Technology and Entrepreneurship and director of the Perseus Project at Tufts University, invited me to submit a list of core Sanskrit reference works to be included in the works scanned by the Open Content Alliance (<http://www.opencontentalliance.org/>) from the holdings of the University of Toronto libraries under a joint project of University of Toronto and the Perseus Project. The Open Content Alliance (OCA) is building a permanent archive of multilingual digitized text and multimedia material, which it makes available on the Internet Archive website (<http://www.archive.org/>). I am grateful to the OCA for providing the scanned images of the *Mādhavīyā dhātuvṛtti* linked to the present digital edition of the *Mādhavīyā dhātuvṛtti* indices. R. Chandrashekar, a Post-doctoral Research Associate at Brown University, entered the data in the indices in August 2008 under the International Digital Sanskrit Library Integration project

funded by the U.S. National Science Foundation, Division of Information and Intelligent Systems, under grant number 0535207. [Any opinions, findings, and conclusions or recommendations expressed are those of the authors and do not necessarily reflect the views of the National Science Foundation.] Jim Funderburk and I collaborated closely since then to create the current indices. Funderburk converted Chandrashekar's Excel database of the indices into an XML file, developed software to create HTML pages from the XML file, and created the webpages with links to the image files. I edited and revised the content of the indices and collaborated with Funderburk in designing the structure of the XML files and the web-display. Susan Rosenfield proof-read a file generated from the XML to model the printed index.

Peter Scharf, Fairfield, 22 March 2009

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