

Development of the Prevocalic *m̥ in Latin

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Abstract: For some superlative suffixes and ordinal numbers in Latin, the prevocalic *m̥ has traditionally been reconstructed. Previous research has posited two hypotheses in terms of *em* and *am* as an intermediate stage in its later development. This paper points out some problems of these hypotheses and demonstrates that the development of prevocalic *m̥ was independent of vowel weakening in Latin and that the vowel which occurred before *m* (*m̥ > *Vm* / *_V*) was originally obscure. This sound quality may relate to the fact that the prevocalic *m̥ is unaccented in the superlative suffixes and ordinal numbers.

0. Introduction

For the prehistory of Latin language, the segment **m* has traditionally been reconstructed in some superlative suffixes and ordinal numbers. As examples of the former, *-*m̥mo*- (*īnfim̥us* 'lowest'), *-*t̥m̥mo*- (*intim̥us* 'inmost', *extim̥us* 'outermost', etc.), and *-*is̥m̥mo*- (*maxim̥us* 'biggest', *proxim̥us* 'nearest', etc.) may be cited;¹ examples of the latter include **sept̥m̥mo*- (*septim̥us* 'seventh'), **dek̥m̥mo*- (*decim̥us* 'tenth'), and some decad ordinal numbers (**uī-k̥mt̥m̥mo*- > *vīcēnsim̥us* 'twentieth', etc.). We must presume, first of all, that the **m̥* in question is located before a vowel, that is to say, it is in the so-called "prevocalic" position.² The **m̥* in these reconstructed forms appears as *um* or,

¹ As for other suffixes in Latin, *-issim̥us*, *-errim̥us*, and *-illim̥us*, see my forthcoming article "Latin *-issim̥us*," which discusses the complex history of their development.

² In the reconstructed forms, a consonantal **m* can be seen after **m̥*. This is simply a homorganic glide which was inserted in the original hiatus **-m̥-o-*, in parallel with that of Gk. δύω 'two' (cf. Ved. *dváu* and Lat. *duō*). See Cowgill (1970, 147 n. 17) and Sihler (1995, 91-92).

later, *im* in actually attested materials.³ No agreement as to how the prevocalic **m̥* developed in earlier periods has yet been reached among scholars. In this paper, we will focus on the historical development of this prevocalic **m̥* and discuss how this segment led to *um* (> *im*).

1. Does the prevocalic **m̥* develop into *em* or *am*?

In previous research, *em* and *am* have traditionally been proposed as an intermediate stage between the proto-sound **m̥* and the reflex *um* in the historical period.⁴ In the following sections, we will reconsider two hypotheses, *em* (1.1) and *am* (1.2), and point out some of their inherent problems.

1.1. The first possibility **m̥* > *em*/___*V* is deduced from the development of **m̥* in context such as **-C̣m̥C̣-* and **-C̣m̥#*.⁵

³ The fluctuation of *u/i* often occurs before labials, but according to some archaic inscriptions, it is *u* that is the earlier of the two and many words retain this *u* until later periods. From the classical period onwards, *u* converged on *i* under the influence of *i* when it appears before consonants other than labials. Clearly, therefore, **m̥* underwent the change *um* > *im* after the oldest inscriptions had already been engraved.

⁴ Cowgill (1970, 148 n. 24), judging it difficult to prove whether the prevocalic **m̥* developed into *em* or *am*, prefers the change **N̥* > *eN* supposed in *tenuis* 'thin' to **N̥* > *aN* in *manēre* 'to stay', but seemingly this is not based on crucial evidence. Schrijver (1991, 10) also follows Cowgill's view, but avoids making any definitive statement about the development of the prevocalic syllabic resonant in other part of the same work (1991, 204).

⁵ The reflex *em* which developed from **m̥* in the environment **#m̥C̣-* usually underwent a secondary change, for example, **m̥b^hris* > **embris* > *imber* 'rain'. See Leumann (1977, 45). This can be compared with the fact that the segment *e*, if before a velar nasal, changes into *i*, for example, **tengō* > *tingō* 'bathe' (cf. Gk. τέγγω) and **k^henk^he* > *quinque* 'five'. Also in the case of **en-* from the privative **n̥-*, if followed by *k* or *g*, the initial *e* is located before a velar nasal, and as a result, **en-* develops into *in-*. Afterward, this *in-* was used independently of the kind of following consonants and became a general form of the privative particle. See Szemerényi (1996, 41, 50).

Examples stemming from these two conditions are as follows: *g^mm̥to- > *vento-* (Ved. *gatá-*, Gk. βατός) 'gone', *d̥k̥mtom > *centum* (Ved. *śatá*, Gk. ἑκατόν) 'hundred', *de̥k̥m̥ > *decem* (Ved. *dása*, Gk. δέκα), *septm̥ > *septem* (Ved. *saptá*, Gk. ἑπτά) 'seven', *pedm̥ > *pedem* (Ved. *pádam*, Gk. πόδα) 'foot', and so forth. However, the hypothesis that the prevocalic *m̥ also took *em* as an intermediate stage does not seem to be confirmed. Although the change *m̥ > *em* in the prevocalic position might be deduced from *n̥ > *en* in the same environment, the often cited example *tenuis* 'thin' is not necessarily reliable evidence of *n̥ > *en*/ *V* itself. The form *tenuis* originates from the *u*-stem adjective (Ved. *tanú-*), which was reformed as an *i*-stem adjective in Latin. Due to the Indo-European rule which determines, scanning from the end of words, whether a resonant is vocalic or consonantal, a syllabification such as *t̥n̥u- is expected, and in this case, *-n̥- is not located before a vowel.⁶ In addition, some scholars propose the reconstruction *t̥n̥H-*u-* with a laryngeal.⁷ This idea is mainly based on Greek ταναός, Old Irish *tanae* (< *tn̥h₂-e_u-) and Vedic *uttāná-* 'expanded' (< *-tn̥h₂-no-). It is necessary to reconstruct *-h₂- in order to explain the morphology of these examples. If the same recon-

⁶ See Szemerényi (1976, 412 n. 67). If the change *n̥ > *en* was prior to the reformation to the *i*-stem, this criticism would not be valid. It is unfortunately difficult to fix the chronology of these changes.

Bader (1990, 18) presupposes not the zero grade but the full grade for *tenuis*. Other than this form, there are some examples which would represent the full grade like *brevis* 'short' and *levis* 'light' (*mre̥g^hu-i-, *h₁le(n)g^hu-i-; cf. Gk. βραχύς, ἐλαχύς < *mr̥g^hu-, *h₁l̥ng^hu-). Schrijver (1991, 219) points out that the full grade is found in Lithuanian *tėvas* and Latvian *tiēns*. Although he insists that the Latin form derives from the zero grade, it cannot be denied that the full grade would be secondarily assumed also in Latin (for example, by analogy with the comparative forms which are based on the *e*-grade root).

⁷ See Beekes (1974, 11; 1982/83, 206, 228), Schrijver (1991, 219), and Vine (1993, 248 n. 24).

struction of the root is applicable to *tenuis*, this form has nothing to do with the development of the prevocalic syllabic nasal.⁸

Sihler (1995, 96) gives *hemō* 'man' in Old Latin as an example which might show the change $*m > em/ __ V$ and he explains that this originates from $*(d^h)\hat{g}^hmm-on-$ and that *hemō* changes into *homō*, the usual form in the classical period, through the inexplicable change $e > o$ (1995, 41-42). However, it is not always clear whether *-e-* in *hemō* can be traced to the zero grade or not.⁹ According to Nussbaum (1986, 187-89), it may be that $*d^h\hat{g}^h-m-\hat{o}n-$, which was derived without suffix from the locative form $*d^h\hat{g}^h-m-\acute{e}n$ of $*d^h\hat{g}^h-\bar{o}m$ 'earth', involves the secondary introduction of a full grade. At this moment, the new *e*-grade was inserted in the *m*-suffix rather than the root itself, with the consequence that $*d^h\hat{g}^h-em-\bar{o}n$ ($> hemō$) came into being. Nussbaum also notes the different possibility that *hemō* takes as its starting point a locative with double full-grade, and gives $*\hat{g}^h\acute{e}imen$ 'in winter', $*\hat{g}^{(w)}\acute{e}mb^hen$ 'in the depths', and so forth, as supporting evidence. Alternatively, Livingston (1997, 43-44) suggests that *hemō* could have been backformed from *nēmō* 'nobody', which is in turn based on *ne* + *homō*, and thus suggests that the vowel *-e-* in *hemō* must be long. If either Nussbaum's or Livingston's idea is right, *-e-* in *hemō* will not be

⁸ Apart from the discussion about the root structure with or without the laryngeal, we need to consider *teneō* 'hold' in Latin, which is presented by Meiser (1998, 65) to demonstrate the development of the prevocalic $*\eta$. In his analysis, the root is $*ten-$ without the laryngeal (see also Pokorny 1994, 1066) and undergoes a type of Lindeman's Law ($*t\eta-ch_1-$). Although he ascribes *-en-* to the prevocalic $*-\eta-$, it is likely that this *e*-sound is provided by means of an analogy with the past participle *tentus* ($< *t\eta-to-$) and other relevant forms such as *tenuis*, which has gone through linguistic phases with the laryngeal and the syllabic nasal retained. Rix (2001, 627 n. 13a) also supposes the secondary implantation of the *e*-grade, though his assumption, which attributes *teneō* to "Essive", is not necessarily assured.

⁹ See Schrijver (1991, 66-69), Vine (1993, 244), and Livingston (1997, 41).

relevant to the zero-grade,¹⁰ and this example does not speak for **m* > *em*/ *_V*.¹¹

Sihler (1995, 91) takes up another example, *semel* 'one time, at the same time', and supposes a diachronic process such as **sm̥-meh₁-lom* > **semēl* > *semel*. The *-*meh₁-lo-* '(point in) time'¹² in the reconstructed form, however, begins with -*m-*, so -*m̥-* is located not before a vowel but between consonants. Vine (1993, 248) doubts whether *sem-* in *semel* reflects the zero grade and suggests that it could represent the *e*-grade¹³ as in the case of *semper* 'often', *simul* 'at the same time', *similis* 'similar', *singulī* 'one at a time',¹⁴ and so forth, and that as another

¹⁰ Leumann (1977, 364) also indicates the *e*-grade. As for *homō*, he insists on the change -*e-* > -*o-* as Sihler does, and assigns its reason to the regressive assimilation (1977, 101).

¹¹ It is not easy to establish the origin of -*o-* in *homō*. Bammesberger (1976, 54) deals with *gamban* 'tribute' in Old English and, segmenting this like *gam-ban*, acknowledges the *o*-grade root, that is to say, **ḡ^hom-* in the first segment. On the basis of the idea that this **ḡ^hom-* was taken over in some forms also in Latin, we may suppose that *homō* was derived from it or that *hemō* led to *homō* by analogy with other forms which have **ḡ^hom-* as their base. Schrijver (1991, 486) also suggests the *o*-grade in this example. Vine (1993, 249) follows another line of reasoning, as mentioned in section 2.3, namely, **ḡ^hm̥-* in zero grade may have developed into *hom-* in prevocalic position.

¹² Cf. Goth. *mel* 'time', OE *mæ̃l*, ON *mál*, and OHG *māl* 'occasion, (meal)time'. See Sihler (1995, 437). We should also note the Hittite form *me-hur* 'time', and it is also possible that these Germanic examples refer to *h₂* rather than *h₁*.

¹³ Sihler (1995, 437) insists that *semel* cannot be based on the *e*-grade root because it is a compound form, but it can be disputed whether it is actually a compound or not. Rasmussen (1999) also interprets this form as a compound **sm̥-h₃al-ó-*, but his reconstruction of -*h₃-* is problematic from the phonological point of view, and his alignment with Latin *alō* 'nourish' is semantically still dubious. Leumann (1977, 494) reconstructs the ending -*el* as *-*alis* (this, however, does not seem to be a general suffix in Latin) and Palmer (1988, 261) views -*el* as inexplicable.

¹⁴ These forms with -*i-* in the initial syllable involve a change such as *e* > *i*/ *_l*, *m*, *n* {*i*, *u*}. See Szemerényi (1976, 411 n. 62), Leumann (1977, 101).

possibility, it could be traced to the zero grade of the root **smh₂-*.¹⁵ Sihler also proposes a reconstruction with a laryngeal within the framework of the same root and suggests the possibility of the *e*-grade in *semel*, *simul*, and other relevant forms in his previous work (1973, 112-13).¹⁶ Since Sihler (1973, 112) presumes that the laryngeal here is a marker of the dual number, he actually chooses *h₁* in the reconstruction of the root in his recent work (1995, 406). Although the question of the root structure remains somewhat unclear,¹⁷ it is highly unlikely that *semel* reflects the development **m̥ > em/___V*.

1.2. The change **m̥ > am/___V* is also difficult to confirm. Although Meillet (1937, 117-18) says that if the vowel which follows **N̥* is *i*, **N̥* changes into *iN* and, otherwise, into *aN*, he introduces only *sine* 'without' (< **s^oni*) as an example.¹⁸ Beekes

and Sihler (1995, 40). In the case of *singulī*, the sequence *-ng-* may be interpreted as [ŋ], which may fulfill the condition of this change.

¹⁵ As far as the stem of *similis* is concerned, Beekes (1982/83, 228) gives three possibilities, **semh₂l-*, **semh₂el-*, and **smh₂el-*. Then, on the basis of the fact that Old Irish *samail* 'likeness' goes back to **smh₂el-*, he tries to give the same reconstruction. Moreover, he assumes that **smh₂el-* can be seen in Greek *ὅμαλός* 'equal' and supposes that the vowel in the intermediate stage **hamalos* would have changed under the influence of *ὅμός* 'one and the same'.

As for the development of **CNHV-*, two possibilities, **CeNV-* and **CaNV-*, have been suggested. According to Schrijver (1991, 218-22), **CeNV-* is preferable to **CaNV-*.

¹⁶ The absence of laryngeal in Sihler's reconstruction of *semel* as a compound like **sm̥-meh₁-lom* can be referred to the explanation given by Beekes (1982/83, 226) that **sem-* 'one' in compounds could appear in the form of **sm̥-* without a laryngeal.

¹⁷ See also Beekes (1982/83, 203 n. 1) and footnote 15.

¹⁸ Ernout and Meillet (1967) cite *similis* as an example which would undergo the same phonetic change and reconstruct it as **s^om^olis*, but this reconstruction is not acceptable, because it includes an implausible syllabicity *-^om^o-*.

Still more, forms like *cinis* 'ashes' (cf. Gk. *κόνις*), *cilium* 'eyelid' (cf. Gk. *καλιᾶ* 'hut'), and *milium* 'millet' (cf. Gk. *μελίνη*, Lith. *málnos*) are given by Ernout and Meillet (1967) and they are reconstructed as **k^onis*, **k^oliyom*, and

(1995, 200) also assumes the development in the superlative suffix from **-ismo-* to **-isamo-*, but he does not comment on the prevocalic resonant. Szemerényi (1976, 412 n. 67) says that "everything points to *an*, *am* being the true result of these nasals" concerning the prevocalic **n̥* and **m̥*, but he does not present any evidence.

There are in fact some sporadic examples which seem to show the change **N̥ > aN/_V*. Leumann (1977, 59) introduces three forms, *manēre* 'to stay', *canis* 'dog', and *ianitrīcēs* 'porters (f.)'. However, we cannot be sure that the nasals

**m̥liyom* respectively, but such reconstructions are not necessarily assured. In fact, Sommer (1914, 113-14) and Leumann (1977, 51, 101) reconstruct *cinis* and *miliūm* as **kenis-es* and **meliom* and suggest the *e*-grade root. As for the example *ciliūm*, it is to be noted that the consonant cluster *cl-* is preserved in *clam* 'secretly', which is a derivative of the same root. The initial part *cil-* in *ciliūm*, therefore, could be traced back to the *e*-grade. Concerning the change *e > i*, see footnote 14. Alternatively, the form *ciliūm* may have been abstracted from the compound **(super-)keliom* after *-e-* was weakened to *-i-* following the accent. See Walde and Hofmann (1965, 1: 214-15), Ernout and Meillet (1967, 120), and Beekes (1982/83, 228).

I should also briefly comment on *sine* in Latin and relevant forms in other Indo-European languages. Even though one could reconstruct Old Irish *sain* 'different', Greek *ἄνευ* 'without', and Gothic *inu* 'id' as **sṇH-i*, **(s)ṇH-eu*, and **(s)enH-u* respectively, the reconstruction **sṇH-i* for Common Tocharian **snai* (Toch. A *sne*, B *snai*) 'without' could not be acceptable because of implausible syllabification. Beekes also advances the same kind of reconstruction and comments on the irregular syllabification. Given Beekes' argument, we are still not convinced of such a reconstruction. Pinault (1989, 42), on the other hand, explains Old Irish *sain* and Greek *ἄνευ* by means of Lindeman's Law and reconstructs them as **sṇni* and **sṇneu*. Namely, he follows Meillet's view (Pinault regards explanation which resorts to the laryngeal as "inutile"). In contrast to Meillet's idea, however, he acknowledges the *e*-grade in Latin *sine* (< **sen-i*). Gothic *inu* also represents the *e*-grade (< **(s)en-u*). Although Pinault does not mention Old High German *ānu*, it could be reconstructed as **(s)ēn-u* with lengthened grade. As for the reconstruction which is based on the lengthened grade, see Hamp (1982). (But Hamp considers Latin *sine* as irrelevant to Greek and Germanic forms. Judging from their semantic and morphological correspondence, his idea is not acceptable.)

following a vowel in these examples were really syllabic resonants in origin, because in Latin the vowel *a* was frequently inserted in a position where a consonant cluster resulting from the zero grade was expected. This phenomenon has traditionally been called “schwa secundum”.¹⁹ Forms like *magnus* ‘big, great’ (< **mg-no-s*) and *patēre* ‘to be open’ (< **pth₂-eh₁-je-*) are given as its examples and they are traced back to the roots **meg-* and **peth₂-*²⁰ respectively. Although it has generally been supposed that a vowel would be inserted between obstruents, Vine (1999, 11) indicates that this condition is “excessively restrictive,” analyzing Greek ῥίζα ‘root’. In Vine’s view, -i- in ῥίζα was inserted in the syllable boundary on the basis of the syllabification like /ʁʰʂdʲäʂ/ (gen.sg.).²¹ In this case, -i- occurs between a resonant and an obstruent. This is also the case with *magnus*. Vine adds some further examples from this point of view. The forms *labia* and *labra* in Latin contain the vowel *a* which originates from the schwa secundum, while English *lip* and Hittite *lilip-/lip-* reflect the *e*-grade. The vowel seen in Latin *nassa* and Old Irish *nascid* is different from English *net* (< **nati-*) and Latin *nōdus* ‘knot’, which show the *o*-grade and *ō*-grade respectively (1999, 13). Latin *lacertus*

¹⁹ The existence of the schwa secundum is often called into question. Sihler (1995, 128-29) discusses the reduced grade which triggered the schwa secundum and regards such an intermediate grade as not reasonable because the vowel in the system of gradation should be in “PRESENCE” or “ABSENCE.” Vine (1999, 17), on the other hand, supports the idea of schwa secundum, on the basis of the assumption that the reduced grade would be derived from the zero grade regularly and would not be such an intermediate state as Sihler insists on. Hoenigswald (1992, 81) also considers the existence of the schwa secundum as “unausrottbar.” For the definition, see Mayrhofer (1986, 175-76): he remarks that “die Einzelsprachen an Stellen, wo wir im Anlaut die Nullstufe erwarten, ein vokalisches Element fortsetzen, das als ‘Allophon des Ø der Schwundstufe (in der Stellung zwischen zwei Konsonaten, vor allem Okklusiven)’ definiert worden ist.”

²⁰ Cf. Gk. πίνυμι < **pt-ne-h₂-*/πετάννυμι < **peth₂-(n)neμ-* ‘spread out’.

²¹ Cf. Peters (2002, 104).

'upper arm' may also belong here (1999, 24 n. 43). Moreover, Vine points out the possibility that the schwa secundum occurred in κίρνῃμι 'mix' and πῖλναμαι 'approach' by analogy even though the sequence of an obstruent and a resonant would be expected (1999, 20). If so, the restriction on conditions in which the schwa secundum appears would be rather attenuated.

Kuryłowicz (1956, 177-79) acknowledges the analogy with the *se!* roots of zero grade in these phenomena.²² While the change **CHC-* > *CaC-* in Latin is originally characterized by a laryngeal between consonants, the occurrence of *-a-* would also have been applied to roots without a laryngeal, that is to say, the secondary innovation **CC-* > *CaC-* would be expected. This has something to do with the fact that the schwa secundum assumed the vowel *a* as an actual reflex in Latin. On the basis of Kuryłowicz's explanation, some zero-grade roots which had the consonant cluster **CR-* in its initial would have changed into *CaR-* particularly before a vowel, with the result that **CR̥H-* and **CR̥C-* developed into *CaR-* and *CaRC-*, respectively, by analogy. The following forms could be given as examples:²³ *candēō* 'shine' (**(s)kend-*), *careō* 'be without' (**kes-*), *carpō* 'pick' (**(s)kerp-*), *farciō* 'stuff' (**b^herk^w-*), *saliō* 'leap' (**sel-*), *sarciō* 'patch' (**serk-*), *sarpiō/sarpō* 'cut off' (**serp-*), *scandō* 'rise' (**skend-*).²⁴ If it is also possible to account for the vowels

²² See also Lindeman (1965, 89).

²³ See Kuryłowicz (1956, 178-79), Pokorny (1994), and Rix (2001). Whether or not *canō* (**can-*) 'sing' belongs here remains uncertain.

²⁴ Schrijver (1991, 425-35) suggests that **e* or **o* changed into *a* under various conditions in view of his hypothesis that the phoneme **a* still did not exist in PIE and he gives some forms cited just above as its examples. Within this framework, however, in which we might interpret the sound *a* which occurred secondarily as an allophone of **e* or **o*, it is difficult to explain how the allophone *a* underwent a process of phonologization. Since the formulae of sound changes which Schrijver introduces are scarcely relevant to one another, it seems that he is urged to cover as many examples as possible by compiling explanatory means. Although Schrijver (1991, 477-85) advances the formula *RD > RaD/___C* (i.d., /___\$; *D* = a voiced stop), this development

in Leumann's *manēre*, *canis*, and *ianitrīcēs* in the same way,²⁵ we do not have to resort to the explanation that the resonant becomes syllabic before a vowel.

As Vine lessened the phonetic limitations against the schwa secundum and Kuryłowicz introduced the spread of the insertion of *-a-* beyond a specific phonological context, the appearance of the schwa secundum seems to be triggered not only by a phonological factor, but also by a morphological factor, namely, reduced grade.²⁶

Furthermore, judging from the above examples, the insertion of *a* is limited to the initial syllable, thus, one can regard it as one of the conditions which control the insertion of *a*. In the case of the superlative suffixes and the ordinal numbers, since the prevocalic **m̥* is located in the medial syllable, there is no further evidence which could prove its development into *am*.

1.3. The possibility that the prevocalic **m̥* changes into *em* or *am* should also be excluded in view of vowel weakening in Latin, which came to have an effect later than the development of **m̥* into *Vm*. Vowels to be weakened must be located in medial syllables, because this phonetic change is conditioned by the accent. If the prevocalic **m̥* had developed into *em* or *am*, the results would satisfy this condition due to the fact that these vowels before *m* are in the medial syllables. However, we have an example which shows that the vowel stemming from **m̥* is not in the medial syllable. Vine (1993, 243-51) makes a detailed

of *R* differs from the usual one, and thus a certain morphological factor must have taken part in it. As Schrijver (1991, 483) regards the zero grade of verbal roots as a condition of this change, we need to take the reduced grade and the schwa secundum into consideration.

²⁵ Mayrhofer (1987, 101) assumes *ianitrīcēs* to be traced to the full grade and to include a laryngeal. His description of the diachronic process is as follows: **(H)ienh₂ter-* > **ienater* > *ianitrīc-*. With respect to the vowel change, see Lamberterie (2000, 266).

²⁶ Kuryłowicz (1956, 181) also says that "Il nous reste à mettre en relief les conséquences de l'extension morphologique de *a* en dehors de son domaine phonétique propre."

analysis of *homō*, which I mentioned in section 1.1 in connection with *hemō*, and the athematic locative *humī* 'on the ground' producing *humus* 'ground' by means of backformation and refers them to the zero-grade root **dʰǵʰm̥(m)-ei*. The segment **m̥* in this example cannot have resulted in *em* or *am*, because the vowel before *-m-* is situated in the first syllable, not in a context such that *em* or *am* could have undergone the weakening and led to *um*.

1.4. As mentioned in sections 1.1 and 1.2, the alternatives, *em* and *am*, are not supported by solid evidence, but rather are faced with the counterexample in terms of the phonology, as shown in section 1.3. This forces us to leave them out of consideration with respect to the development of the prevocalic **m̥*.

2. Nature of the vowel in *Vm* derived from the prevocalic **m̥*

In this section, I will introduce a new idea about the type of vowel that occurred in the development of the prevocalic **m̥* to *Vm*. We have recognized that hypotheses based on vowel weakening were hardly acceptable. Thus, the quality of the vowel in question should be reconsidered on the basis of actual materials. I will deal with proper names in a Latin inscription which are closely related to an ordinal number (2.1) and some superlatives and an ordinal number in some neighboring Sabellian languages (2.2) and I will state that the vowel before *-m-* is not so open that it could undergo the vowel weakening. Finally, I will propose a plausible effect of the accent on the development of the prevocalic **m̥* (2.3).

2.1. The vowel derived from the prevocalic **m̥* fulfills a condition such that it is regularly weakened, because of its position in a medial syllable. Therefore, if we can identify any superlatives or ordinal numbers in inscriptions which belong to an older period of time before the weakening was completed, we might be able to figure out what its original sound was.

According to Wachter (1987, 487), the vowel weakening can be widely seen around 300 B.C. Unfortunately, no inscription with superlatives and ordinal numbers in a remarkably earlier period than the vowel weakening has been identified.

However, in an inscription which dates to approximately 300 B.C., we have forms which supply hints as to the development of the prevocalic **m̥*. Based on these forms, it may be conjectured that the vowel before *-m-* in superlatives and ordinal numbers would not have undergone the weakening.

The forms DECIMIO and DECEMIA are attested in CIL I² 2848. The former exemplar is erased on its surface and not perfectly legible, but there is some agreement as to its orthographic interpretation.²⁷ Both words are proper names based on the ordinal number **dekm̥mo-* 'tenth'. One might suppose that the prevocalic **m̥* developed into *em* and that this is reflected in DECEMIA. And we might also assume vowel weakening such as *-E- > -I-* in DECIMIO. This form, however, is presumably earlier than DECEMIA on the evidence of its erasure. If this is correct, we would be forced to acknowledge a sort of anachronism. Moreover, if we take into account both the old age of this inscription itself (late fourth/early third century B.C.) and the vowel weakening which spread sometime around the latter half of the fourth century B.C., it is unlikely that the ordinal number 'tenth' including a recent result of this sound change would have affected fairly conservative proper nouns. Finally, there is yet another reason why the vowel in question in DECIMIO can hardly be regarded as a result of the vowel weakening; if an ancestral form of this proper name had undergone the weakening, it should have ended up with a nearly identical form such as the normal Republican DECVMIVS with *-v-* before *-m-*. Hence, it seems unreasonable that a strict sound law such as **m̥V > emV* can be established.

Some arbitrariness may be recognized in the orthography of vowels in DECIMIO and DECEMIA. If this randomness originates

²⁷ See Solin (1972, 184-85; 1974, 167).

from the nature of the vowel before *-m-* in the ordinal number underlying these two proper names, we can properly suppose that this numerical adjective originally contained a reduced vowel and that it maintained a close relationship to the relevant proper name for a long time at some period far before that of the vowel weakening. Namely, the vowel before *-m-* would not have naturally been so open that the rule of weakening could be applied to it. The **m̥* which appeared in **Cm̥V-*, a context in which resonants did not need to be syllabic,²⁸ was retained between the preceding *C* and a homorganic glide which came into existence before *V*, and **Cm̥mV-*, in other words, the slot **CVmV-* was consequently formed. It is thought that the vowel before *-m-* was at first an anaptyctic schwa sound or something similar. In the case of DECIMIO and DECEMIA, the arbitrariness may have been involved in its orthography, so the vowel was presumably engraved as *-i-* or *-e-* by influence of the following or preceding vowel. Later, this obscure vowel generally came to assume the form *-u-* under the influence of the feature [LABIAL] in *-m-*.²⁹

2.2. The possibility that the vowel in *Vm* originating from the prevocalic **m̥* was originally an obscure vowel may also be supported by some materials in other Italic languages. Superlatives and ordinal numbers with the prevocalic **m̥* in their reconstruction are attested there as well as in Latin, and its development in these languages is rather suggestive.

As seen in forms like Oscan **últiumam** 'ultimam, furthest' (< **h₂ol-tm̥mo-*), Umbrian *hondomu* 'infimo, lowest' (< **ḡ^hom-tm̥mo-*), Oscan **nessimas**/Umbrian *nesimeī* 'nearest'

²⁸ Resonants are basically syllabic between consonants and between a consonant and a word boundary. As for the apparently peculiar maintenance of syllabic resonant in superlative suffixes and ordinal numbers, see Nishimura (2001, 38-41).

²⁹ This is basically similar to the explanation of the schwa secundum by Mayrhofer (1986) and "a schwa-like vowel" in the process of epenthesis proposed by Joseph and Wallace (1987, 688).

(< **ned-ṡmmo-*),³⁰ and Palaeo-Umbrian **setuns** (proper name), the orthography of the vowel arising from the prevocalic **ṡ* is not consistent.³¹ It is to be noted here that since the vowel weakening in the medial syllable as in Latin is not observed in Oscan and Umbrian, we can neither attribute the vowel in question to *em* nor *am*; the change **ṡ > em/am* does not allow us to proceed to later developments of the vowel. Here the assumption which was provided for the case in Latin may be appropriate. Namely, the vowel, an anaptyctic schwa-like sound, in *Vm* from **ṡ* would have been a reduced vowel in the first place. So it was easily influenced by the quality of neighboring sounds; it assumed the feature [LABIAL] in the following *-m-* or was affected by the quality of the vowel in the preceding syllable. This resulted in its perplexing orthographic variation as in DECIMIO and DECEMIA.³²

³⁰ As for the choice of suffix, see my forthcoming article "Superlative suffixes **-ismo-* and **-isṡmmo-* in Sabellian languages," especially section 2.1.

³¹ According to Buck (1904, 55-56), whether the vowel before *-m-* is a front one or a back one is determined by the quality of the vowel in the preceding syllable. Because of Palaeo-Umbrian **setuns**, however, his explanation can only be seen as a tendency.

³² The inscription found in Tolfa (cf. Colonna and de Simone 1985, Rix 1992; 2002, and Wallace 1998) is suggestive of the quality of the vowel deriving from the prevocalic **ṡ*. Rix's interpretation reversed the direction of reading proposed by Colonna and de Simone, and supplied important grammatical words, a proper noun based on the ordinal number (**setuns**) and a personal pronoun (**míom**). The form **setuns** is derived from the stem **septṡmmo-*, and the vowel originating from the prevocalic **ṡ* is written as *-u-*. On the other hand, the letter *-o-* is used in **míom**. This is in contrast to the fact that the orthographic distinction between /o/ and /u/ was not made in the older stratum in Tabulae Iguvinae. Taking into consideration the fact that this inscription in Tolfa belongs to a period as early as the third quarter of the sixth century B.C. (see Rix 2002, 62), the appearance of *-u-* in **setuns** instead of *-o-* implies that the vowel derived from the prevocalic **ṡ* was remarkably close in origin (In Umbrian *hodomu*, the letter *-o-* is employed; this may be because another *-o-* in the preceding syllable influenced the writing of the scribe.).

2.3. So far, we have discussed the development of the prevocalic **m̥* reconstructed in some superlative suffixes and ordinal numbers and have proposed that the vowel in its reflex *Vm* would be an obscure vowel. In this section, we will deal with the reason why the vowel could be ambiguous and try to consider its conditioning.

We have noted the example *homō* and *humī* in section 1.3. Vine (1993, 247-49) provides a history of their formal development as follows: **dʰġʰm̥(m)-* > **ġʰm̥(m)-* > *hom-*. That is to say, he asserts that *-*m̥-* changed into *-om-*.³³ The innovation from *-om-* to *-um-* in *humus* is called the “*umerus* rule”, which is applied to the context such as **##(C)om(C)e/i-*, and Vine gives some examples subject to this rule. The form *homō*, on the other hand, is excluded from its application, because this form does not meet its phonological condition.

An Oscan form which may correspond to the Latin *humī*, attested in the inscription in Rossano di Vaglio, is seen in a series of letters such as [...]*υξκιομοι*; Lejeune (1990, 21, 55) places the word boundary between *κ* and *h* and interprets *ιομοι* as dative form. If this interpretation is acceptable, the *o*-sound seen in the Oscan form would be reconstructed for Latin *humī* as well. Del Tutto Palma (1989a, 1991), on the other hand, objects to this reading,³⁴ and insists that the word boundary should be located between *ξ* and *κ*. However, her idea that *κιομοι* corresponds to Greek *χωμ-* is not particularly reasonable, because the Greek noun in question is a feminine and *ā*-stem noun. Rather, the initial sequence *kh-* is reminiscent of Greek *χθών* ‘earth’ and *χαμαί* ‘on the ground’,³⁵ so the scribe may have modeled the Oscan form after the Greek orthography.

Rix (1992, 247) presents *um* as a reflex of prevocalic **m̥* in its earlier stage, rather than *em* or *am*. He must also have recognized the necessity of some special treatment for prevocalic **m̥*. But the *i*-sound seen in Oscan *nessimas* and Umbrian *nesimeī* should be considered as well.

³³ See also Livingston (1997, 42-43) and Vine (2001, 120).

³⁴ See also Del Tutto Palma (1989b).

³⁵ See Untermann (2000, 395-96).

Therefore, even though this example is still not necessarily a positive proof,³⁶ its correspondence to *humī* may be possible, and it may reflect the original *o*-sound in the root.³⁷

Umbrian **sumel** 'simul' may also belong here. It is true that the letter **-u-** in Umbrian is always ambiguous with respect to its sound quality and that the reconstruction of the root may include a laryngeal, as mentioned in section 1.1. But it is likely that its vowel – demonstrably different from that in Latin *simul* and *semel* – expresses the *o*-sound³⁸ and that this goes back to **sm-el-*.³⁹

The development of prevocalic **m* into *om*, although it needs further analysis, would be a possible sound change. This change differs from that seen in superlative suffixes and ordinal numbers. What background condition lies behind such a difference? Here we must refer to the position of the prevocalic **m*. While it is found in the medial syllable in the case of superlative suffixes and ordinal numbers, the examples, *homō*, *humī*, and **sumel**, comprise it in the initial one. Thus, we can suppose that the position of the accent would contribute to the development of prevocalic **m*. Namely, since **m* in the superlative suffixes and the ordinal numbers was not accented, the vowel arising from it would have appeared as an obscure vowel like schwa. On the other hand, **m* in the reconstructed forms like *humī* was accented, so a vowel of clear quality would have occurred. These two types of changes may be charted as follows:

$$\begin{aligned} *m̃V &> omV \\ *m̃V &> amV \end{aligned}$$

³⁶ We have to point out the fact that the *o*-grade rather than the *e*-grade appears in the locative ending, in contrast to other locative forms (e.g., **terei** 'in (the) territory', *comenei* 'in (the) comitia', etc.); this problem is in need of further discussion.

³⁷ See also Vine (1993, 247-78).

³⁸ See Meiser (1986, 59).

³⁹ Cf. Meiser (1986, 59 n. 2), Livingston (1997, 43), and footnote 15.

3. Conclusion

In this paper, I have discussed the question of how prevocalic **m̥* in Latin superlative suffixes and ordinal numbers developed. The two hypotheses proposed in previous research are both problematic. The first hypothesis which advances the development into *em* in parallel with the case of **Cm̥C* and **Cm̥#* lacks solid evidence. In the case of the *am*-hypothesis, its supposed evidence is only found in the first syllable and is difficult to distinguish from that of the schwa secundum.⁴⁰ Moreover, in the discussion in the second section, I have asserted that the development of prevocalic **m̥* was independent of vowel weakening in Latin and that the vowel which occurred before *m* was originally obscure. This idea enables us to reasonably explain the orthographic fluctuation of the vowel before *m* in Latin, Oscan, and Umbrian. Finally, I have demonstrated that the vowel which occurs prior to *-m-* can take one of two forms, either *-o-* or *-ə-*, depending on the position of the accent. In the superlative suffixes and the ordinal numbers, prevocalic **m̥* is located in the medial syllable, so it would have not been accented in such a position.

Prevocalic **m̥* is only reconstructed in a small number of forms, so we cannot but recognize the difficulty in formulating its development. However, I hope that the proposal given in this paper will contribute to further research on this problem.

⁴⁰ Juret (1918, 94 n. 1) suggests that when *e* and *a* are weakened before *m*, they would regularly change into *i*. If correct, in the case of superlative forms and ordinal numbers which show *u* before *m*, the prevocalic **m̥* would never have led to *em* or *am*.

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