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SLAVIC ACCENTUATION

A STUDY IN RELATIVE CHRONOLOGY

LISSE / NETHERLANDS
THE PETER DE RIDDER PRESS
1975

Printed in Belgium by Orientaliste, Louvain

To Carl Ebeling
on the occasion of his 50th birthday

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INTRODUCTION

"[...] la fixation d'une chronologie devra être la préoccupation dominante des comparatistes" (Benveniste 1935:2). "La chronologie des faits d'intonation [slaves] ne se laisse pas préciser" (Meillet 1934b:179). The motivation for writing this book lies in the conviction that the former statement is correct whereas the latter can no longer be maintained. The reason why the chronology of the Slavic accentual developments could not be established during the first half of our century must be sought in the fact that the classical doctrine (Belić 1914, Lehr-Splawiński 1917, 1918, Van Wijk 1923), which remained virtually unchallenged until 1957, was based on two untenable principles. One is the assumption that de Saussure's law operated in Slavic. As I have pointed out elsewhere, the law is comparatively recent in Lithuanian and did not even operate in the other Baltic languages. The other principle is the assumption of metatony. In the following chapters I intend to show that there never was any real metatony, in the sense of a substitution of one intonation for another, in Slavic.

The publication of Stang's monograph on Slavic accentuation (1957) marked an era in the study of the subject. The importance of this book can hardly be overestimated. Stang proved that (1) de Saussure's law did not operate in Slavic, (2) the neo-acute is due to a retraction of the ictus from a stressed *jer* or from a non-initial vowel with falling intonation, and (3) the neo-circumflex was not the result of a Common Slavic development. Moreover, he demonstrated that

(a) the acute is restricted to paradigms with fixed stress,

(b) the neo-acute is characteristic of paradigms where the next syllable is stressed in other forms, and

(c) the circumflex occurs on the first syllable of paradigms with final stress in other forms. Thus, the classical doctrine, which aimed at deriving the stress pattern of a paradigm from the intonations of the root vowel and the ending, was replaced by a doctrine which derives the intonation of the root vowel, when accented, from the stress pattern of the paradigm.

Looking back after Stang's discoveries, one cannot but wonder why most scholars stuck to de Saussure's law during such a long period. It is remarkable that Van Wijk, who came closest to the truth in most respects, did not reject the law when chronological discrepancies led him to the assumption that it operated first in the Balto-Slavic period, then in Proto-Slavic, and finally again in the separate Slavic languages.

After Stang's reconstruction of the last stage of Proto-Slavic accentuation, Dybo and Illič-Svityč complemented his findings by reconstructing some of the earlier stages. Their main result is the establishment of a progressive accent shift, which is called Dybo's law in the following chapters. On the basis of this law, the paradigms mentioned under (a) and (b) above can be reduced to a single barytone paradigm. As Dybo pointed out correctly (1962:8), the law requires the existence of three different intonations in the stem at a stage which is by far anterior to the rise of the neo-acute and the neo-circumflex. The latter conclusion was not drawn by Illič-Svityč, who demonstrated on the basis of comparative IE evidence that the law explains the existence of end-stressed nouns in Slavic (1963:160f.). In the same publication Illič-Svityč proved that Kuryłowicz's hypothesis, according to which the Balto-Slavic opposition between fixed stress and accentual mobility is independent of the IE opposition between barytona and oxytona, must be rejected in favour of the classical conception of their historical identity, which was first put forward by de Saussure for Lithuanian. The main deviations from this distribution are explained by Hirt's law, which was reformulated by Illič-Svityč in terms of laryngeals, and by the law which I have called Illič-Svityč's law (cf. below).

Combining Illič-Svityč's connection between Balto-Slavic and IE accentuation, Dybo's progressive accent shift with its implications for Slavic intonation, and Stang's retraction of the stress which gave rise to the neo-acute, Ebeling devised a chronology for the development of Slavic accentuation from IE times up to the end of the Common Slavic period (1967). The present book originated from a critique of Ebeling's article. Retaining the general chronological line, I propose different solutions for a number of details. Moreover, I think that I have found a common motive force for various developments, which become more understandable if they are viewed in connection with the loss of the IE laryngeals. In Chapters 1 and 2 I discuss the main developments before and after the rise of the new timbre distinctions, respectively. Chapter 3 is devoted to the loss of the IE laryngeals

and its significance for the explanation of Slavic accentuation. Some additional problems are discussed in Chapters 4 and 5.

The historical connection between the Balto-Slavic acute and the IE laryngeals, which is one of the main tenets of this book, was first suggested by Vaillant in 1936. In support of his view Vaillant adduced a number of comparisons between Hittite and Balto-Slavic. Though I subscribe to his idea, I consider the evidence insufficient, not only because I think that the best evidence for laryngeals is not from Hittite, but especially because Vaillant does not discuss the intonation of the lengthened grade in Balto-Slavic. The case for a laryngealist explanation of the Balto-Slavic acute is in fact much stronger, as I try to demonstrate in the following chapters.

This book is not intended as an introduction to the study of Slavic accentuation. Though I think that it can be read without any previous knowledge of the matter, a basic familiarity with the subject is most recommendable in view of the unusual complexity of the problems involved. Besides, I do not discuss the points where I think that Stang, Dybo, Illič-Svityč, or Ebeling have found the correct solution and where I simply adopt their views. The best introduction to Slavic accentuation is still Stang 1957, especially if one starts reading on p. 56 (noun declension). The best exposition of the classical theory is presented in Nonnenmacher-Pribić 1961. A beautiful book of recent date which should not be omitted in this review is Kolesov 1972.

I have to add a few words about the formulation of the laws in the following chapters. In order to facilitate the discussion I have retained the names which are generally connected with certain accentual developments, even if the formulation of the law has considerably changed. This has in some cases led to a possible discrepancy between my statement of the law and its author's original intentions. Following Ebeling (1967:582), I have adopted Illič-Svityč's laryngealist formulation of Hirt's law. Van Wijk's law is stated in terms of quantity rather than intonation. I accept Ebeling's modification of Stang's law in order to account for such cases as Russ. *sádit*, *kúrit*, but *saditsja*, *kurítsja* (cf. also the Middle Bulgarian and Old Russian material in Dybo 1969).

The large amount of details in the following chapters may diminish the transparency of the overall picture. For the sake of convenience I list the main laws of Slavic accentuation here in their chronological order. The bracketed numbers refer to the relevant sections of the book.

1. Loss of IE accentual mobility and establishment of an opposition between barytona and oxytona.
2. Pedersen's law (1.6).
3. Barytonesis (1.6).
4. Oxytonesis (1.2).
5. Hirt's law (1.3).
6. Ebeling's law (1.4).
7. Loss of the IE laryngeals in pretonic and post-posttonic syllables (1.7).
8. Meillet's law (1.7).
9. Illič-Svityč's law (3.4).
10. Pedersen's law and rise of distinctive tone (3.4).
11. Dolobko's law (4.2).
12. Metathesis of liquids in South Slavic and Czecho-Slovak (3.5).
13. Rise of the new timbre distinctions (3.5).
14. Van Wijk's law (3.5).
15. Contractions in posttonic syllables (4.2).
16. Retraction of the ictus from final *jers* (2.3).
17. Dybo's law (1.2, 2.2, 3.6).
18. Lengthening of short falling vowels in monosyllables (2.3).
19. Loss of the laryngeal feature (3.6).
20. Pleophony in East Slavic (3.6).
21. Shortening of long falling vowels (3.6).
22. Stang's law (1.2, 2.4, 3.6).
23. Lengthening of short rising vowels in Czech (2.5).
24. Progressive accent shift in Slovene (3.6).
25. Rise of the neo-circumflex in Slovene.

Finally, I want to thank my colleagues R. S. P. Beekes, C. L. Ebeling, F. B. J. Kuiper, A. H. Kuipers, C. J. Ruijgh, W. R. Vermeer, and F. M. J. Waanders for their criticism of (parts of) the manuscript. Since most of these persons disagree with my views on one point or another, it goes without saying that they cannot in any way be held responsible for the following text. I thank Miss A. Pols and Mrs. I. Bekker-Timofeeva for their help in proof reading and compiling the index. Once again I am indebted to Mr. P. de Ridder for the quick publication of my work.

F.H.H.K.
August 13th, 1974

NOTE ADDED IN PROOF

On several places in this book reference is made to my article "On the history of Baltic accentuation" I have just received the offprints of this article, proofs of which — contrary to established usage — had not been submitted for correction It turns out that the abundance of misprints in the text makes the article largely unintelligible Most subscript diacritics have been omitted Nasal vowels are never indicated A few lines are missing in various places Consequently, the article should be consulted either with the greatest care or not at all The most important statement in the article, the relative chronology of the Baltic sound laws, has not been affected by this regrettable course of events

CHAPTER 1

THE *l*-PARTICIPLE

1.1 INTRODUCTION

The subject of this chapter is the origin and the persistence of accentual mobility in the Slavic *l*-participle. According to Ebeling (1967:579), there is no trace of IE mobility in the Slavic verb. Starting from this supposition one can distinguish four verb classes in pre-Slavic IE on the basis of the place of the stress and the intonation of the root:

(1) The stressed root syllable is acute e.g. Ru. *lézut*, *lézli*, *lázjat*, *lázili*.

(2) The stressed root syllable is circumflexed, e.g. Ru. *mógut*, *moglí*, *nósjat*, *nosíli*.

(3) The unstressed root syllable is acute, e.g. Ru. *gryzút*, *grýzli*, *edjáť*, *éli*.

(4) The unstressed root syllable is circumflexed, e.g. Ru. *nesút*, *neslí*, *rodjáť*, *rodíli*.

Now I shall first give a short account of Ebeling's theory of Slavic accentuation as far as it has an immediate bearing upon the place of the ictus in the *l*-participle, and then go on to discuss the difficulties.

1.2 EBELING'S THEORY

(a) IE inheritance: I give the infinitive, the 1st and 2nd singular of the present, the 3rd singular of the aorist, and the feminine forms of the *l*-participle and the passive participle. The symbol *N* stands for a nasal of unknown quality, *S* for a spirant of unknown quality.

**nósiteį*, **nósįōN*, **nóseįSi*, **nósīt*, **nósīlā*, **nósįenā*,

**rodíteį*, **rodįṓN*, **rodéįSi*, **rodít*, **rodílā*, **rodįénā*,

**nestéį*, **nesṓN*, **neséSi*, **nesét*, **neslā́*, **nesénā*.

(b) Law of marginal oxytones: if in one paradigm *xx́* and *xx́x*, then *xx́x* > *xxx́*, where *x* symbolizes a syllable. Examples: **rodįṓN*, **rodeįSí*, **rodīlā́*, but **rodíteį*, **rodįénā* because the infinitive and the passive participle constitute separate nominal paradigms, **nesṓN*, **neseSí*, **nesénā*.

(c) Law of maximal contrasts: if in one paradigm *xx́* and *xxx́* (but no *x́x* or *x*), then *xx́* > *x́x*. Examples: **nésōN*, **neseSí*, **néset*, **néslā*, but **piHlā́* because of the aorist **piHt*, where *H* symbolizes a laryngeal.

(d) Hirt's law: a vowel which is immediately followed by a laryngeal attracts the ictus from the following syllable, cf. Ru. *gríva*, *dym* (gen. sg. *dýma*) versus Skt. *grīvā́*, *dhūmáḥ*. Thus: **grűzenā*, but **grūzeSí*, **nesénā*.

(e) Reshuffling of mobile paradigms: if in one paradigm *x́*(*x*) and *xx́*, then *xx́* > *x́x* unless the final accent is motivated because it helps avoiding homonymy. As a result, most disyllabic forms in mobile paradigms received root-stress, cf. Ru. *pil*, *pilá*, *pílo*, *píli*, **pílu*, **pīlā́*.

(f) Dybo's law: a stressed short or circumflexed vowel in a paradigm with fixed stress loses the ictus to the following syllable (if there is one). Examples: **nosìti*, **nošǫ̀*, **nosîšь*, **nestì*, neuter **nošêno*, **nesenò*, **nosìlo*, **neslò*, but **pîlo*.

(g) Stang's law: a final syllable with a long vowel which has received the stress as a result of Dybo's law loses the ictus to the preceding syllable. Example: **nósiš*/**nòsīš* (dialectally conditioned).

1.3 HIRT'S LAW

As was pointed out ten years ago by Illič-Svityč (1963:80f.), the retraction established by Hirt for Baltic and Slavic took place only if the vowel which received the stress was immediately followed by a laryngeal, not if the laryngeal followed a diphthong with a resonant as its second component, e.g. **káHu̯los*, Latv. *kaũls*, Gr. *kaulós*, versus **tenHu̯ós*, Latv. *tiêvs*, Gr. *tanaós*. In this period the laryngeal was still a segmental phoneme, characterized by its position in the word.

The feminine form of the Slavic *l*-participle seems to contradict Hirt's law. Though **piHlā́* has escaped Ebeling's "law of maximal contrasts" because of the old root-aorist **piHt*, it cannot escape Hirt's law in the above formulation. Moreover, the final accent in Ru. *pilá* cannot be due to restoration because the other *l*-participles had received root-stress by the law of maximal contrasts, e.g. **néslā*, **grűzlā*, and the restoration should have taken place before the "reshuffling of mobile paradigms", where the mobility in the *l*-participle originated. Besides, it is not clear why the final accent was not restored in **grűzlā* if it was in **pīlā́* because these types had coalesced after Hirt's law. The inevitable conclusion is that the ictus was never retracted in **pīlā́*

and that, consequently, the reconstruction **piHlā́* is incorrect. This conclusion is supported by the Sanskrit and Greek material, which points to a stem **poH/*poHi/*pHi*, e.g. Skt. *pāyáyati*, *pītíḥ*. On the basis of this connection I assume that Ru. *pilá* goes back to **pHiláH* and that the ictus was not retracted because the laryngeal preceded the vowel. Thus, the place of the stress in Ru. *pilá* is another indication that the laryngeal was still a segmental phoneme characterized by a position in this period.

The same accentuation is found in Ru. *lilá*, where I assume **lHiláH*, cf. OChSl. *lějǫ* from **léHi̯āN*, and in Ru. *vilá*, *gnilá*, *žilá*, *plylá*, *slylá*, *bylá*. The accentuation must be old in view of Latv. *liêt*, *bût*, which point to final stress. It is possible (though not likely) that some of these verbs have obtained their accentuation by analogy. It is equally possible, however, that Slavic reflects an older stage than Greek and Sanskrit in this case. On the basis of the latter languages one cannot distinguish *CHiC/CHuC* from *CiHC/CuHC* (cf. Beekes 1969:173ff; the counter-example Skt. *śúṣkaḥ* < **sHuskos* does not hold because both Lith. *saũsas* and Čak. *sûh* < **so̯usós* point to the absence of a laryngeal, in spite of Gr. *aũos*). I think that the laryngeal was not in all positions strictly ordered with respect to a neighbouring resonant in these languages and that later levellings have led to the remarkable absence of IE *CVHR*-roots and the high frequency of *CVRH*-roots, while the former type occurs almost always with a concurrent *CVH*-root. This may simply be due to the over-emphasis on Greek and Sanskrit in IE reconstructions. Cf. in this connection the short *u* in Gr. *phúsis* and Lat. *futūrus* with the short *i* underlying Irish *del* from the stem **dheH/*dheHi/*dhHi*. [See also Appendix C.]

The situation is slightly different in the case of Ru. *dalá* and *rodilá*, which cannot go back to **doHláH*, **rodiHláH* for the same reason as *pilá* cannot go back to **piHláH*: Hirt's law would have prevented the rise of accentual mobility. I am inclined to assume an original **dHláH*, with zero-grade before the *l*-suffix. It is plausible that the stem vowel was introduced after other forms of the verb when the laryngeal disappeared without a trace in interconsonantal position, cf. Lith. *duktẽ*, Gr. *thugátēr*. Incidentally, there is no evidence for the vocalization of an interconsonantal laryngeal in Baltic or Slavic. The form Ru. *rodilá* presents greater difficulties, especially because of the long *ī* in Čak. (Novi) *ròdīl*, *rodīlà*, *ròdīlo*, as opposed to short *i* under the stress, e.g. *pālìla*, *ženìla*. Here short *i* under the stress may have been generalized on the basis of the infinitive and

long *ī* in the case of mobility on the basis of the (mobile) passive participle, so that neither may be old, cf. *kovàt*, *kovàla* but *skòvān*, *skovānà*, *skòvāno*, where Slovene *kovâl*, *kovála*, *kovâlo* points to earlier **kòvalъ*, **kovalà*, **kòvalo*. The same relationship between short vowel under the stress and long vowel in the case of mobility is found in the aorist, cf. SCr. *písa* versus *kòvā*. On the basis of these considerations I regard the final stress in Ru. *rodilá*, Čak. *rodīlà* as sufficient evidence for the absence of a laryngeal in the *l*-participle and tentatively reconstruct **rodiláH*, cf. also Pedersen's law below. The laryngeal must have belonged to the infinitive formative.

1.4 EBELING'S LAW

Ebeling's most important contribution to Slavic accentology is the establishment of a general retraction of the ictus in disyllabic forms of mobile paradigms as formulated in his "law of maximal contrasts" and "reshuffling of mobile paradigms" quoted above. In this section I shall discuss the conditions and the chronology of the retraction.

According to the law of maximal contrasts, the accent is retracted in **néslā* because the *l*-participle forms a single paradigm with the personal forms, whereas the infinitive and the passive participle constitute separate nominal paradigms. I find it hard to assume that the *l*-participle belonged more closely with the personal forms than the passive participle in a period which must have been Balto-Slavic because it preceded Hirt's law, especially in view of the elaborate verb system which still existed at that time and in view of the numerous inflected *l*-participles in the contemporary Slavic dialects, e.g. Ru. *gnilój*, *požilój*, *ustályj*, which are extremely rare in Baltic. Moreover, the modern languages show final stress, cf. Ru. *neslá*, *nesló*. If the accent is retracted, final stress can only be restored as a result of Dybo's law or on the analogy of the infinitive. Both possibilities are unlikely. The application of Dybo's law presupposes that the *l*-participle does not belong with the personal forms any longer in a later period, which is contrary to the whole development of Slavic verb morphology. Ebeling's problem is that the *l*-participle of these verbs should have become mobile according to his reshuffling of mobile paradigms if the ictus was not retracted according to his law of maximal contrasts.

Thus, the law of maximal contrasts does not prevent the retraction in **piHlā* by Hirt's law and yields a doubtful retraction in **néslā*

which must be restored later under unclear conditions. As to **nésōN*, **néset*, this retraction need not be separated chronologically from the reshuffling of mobile paradigms. The reconstruction **maHterés* is probably incorrect: on the basis of Lith. *mótė* vs. *duktẽ* I assume gen.sg. **maHtrés* for the oldest period of Balto-Slavic, with regular retraction according to Hirt's law and subsequent insertion of **e* after the acc.sg. and the nom.pl. Thus, the chronological difference between the two laws established by Ebeling disappears. Moreover, the conditions of the two laws are complementary, apart from the homonymy condition. But the latter condition does not work, as I shall try to show presently.

According to Ebeling (1967:584), the ictus is retracted in disyllabic forms of mobile paradigms unless the accent helps avoiding homonymy. However, in some of his examples the ictus is retracted in one of two previously homonymous forms, thus removing the homonymy: dat.sg.fem. **básē* but loc.sg.fem. **basé̋*, and gen.sg.masc.neut. **básā* but nom.acc.pl.neut. **basá̋*, cf. Ru. *bosój*. Ebeling does not explain why the retraction occurs precisely in the forms where the long vowel goes back to an early contraction (dat.sg.fem., gen.dat.sg.masc.neut.) and not in the forms where the long vowel goes back to an IE laryngeal (nom.loc.sg.fem., nom.acc.pl.neut.). In the nom.sg.fem. there is no retraction though there is no fem. form with the same ending. The existence of a gen.sg.masc.neut. with the same ending in the adjective can hardly serve as an argument because the retraction in the loc.sg. masc.neut. and the absence of retraction in the loc.sg.fem., which supposedly had the same ending, indicate that the masc. and fem. paradigms were strictly separated. And if the fem. and neut. paradigms were not strictly separated one would even expect retraction in the nom.sg.fem. because the ictus was not retracted in the nom.acc.pl.neut. Thus, I am inclined to assume that the presence of a laryngeal in the ending prevented the retraction of the ictus. Moreover, homonymy cannot have played a part in the inst.pl.masc.neut. **basú̋* because the ending was not homonymous with the ending of the acc.pl.masc. **básū* at this stage, cf. OChSl. acc.pl. *konję*, inst.pl. *konji*, ORu. acc.pl. *koně*, inst.pl. *koni*, Slovene acc.pl. *kónje*, inst.pl. *kọ́nji*.

Finally, a similar retraction law operated in Baltic, cf. Lith. gen.sg. *vĩlko*, dat.sg. *vĩlkui*, but inst.pl. *vilkaĩs*, and nom.sg. *galvà*, gen.sg. *galvõs*, but dat.sg. *gálvai*. This can hardly be accidental. Mainly on the basis of the Baltic evidence I formulate the following law: in disyllabic word forms the stress is retracted from a final short or

circumflexed vowel or diphthong unless the preceding syllable is closed by an obstruent. The latter condition is added to cover Ru. *nesló*, *vezló*, *pekló* versus *pílo*, *žílo*, *býlo*. If we assume that **H* was an ordinary consonant in this period, we can simply say that the stress is retracted from final open syllables, e.g. **vílkā*, **vílkōi̯*, **vilkǒi̯S*, **golHváH*, **golHvâs*, **gólHvāi̯*, **pHiláH*, **pHílo*, aorist **nés̨e* because final **t* has been lost, cf. the gen.sg.masc., but **neslâH*, **neslό*, **neseSí*.

For the 1st sg. of the present tense and for the inst.sg.fem. I assume concurrent forms **neśóH/*nés̨ą̄*, **golHváH/*gólHvą̄*, with **-ą̄* from **-ām* like **-ō* from **-ōN* in Lith. *akmuõ*, OChSl. *kamy* and **-ē* from **-ēr* in Lith. *mótė*, OChSl. *mati*. Apparently a laryngeal was lost before word-final nasal at an early stage in the development of Balto-Slavic, and a word-final resonant could not be maintained after a long vowel. The early loss of a laryngeal in this position is indicated by the fact that the ending of the acc.sg. does not attract the ictus according to de Saussure's law, cf. Lith. *rañką*. Lith. *nešù* goes back to the first and OChSl. *nesǫ* to the second variant, cf. ORu. *žívu* etc. (Stang 1957:109). In the inst.sg.fem. the first variant was homonymous with the nom.sg. and the second with the acc.sg. The homonymy was removed by a contamination of the two variants, cf. Lith. *gálva*, which goes back to **gólHvaH*, and *šaltąja*, which points to **s̨olHtą̄-jaH* (i.e. the definite form of the adjective *šáltas*). Slavic had probably **golHvą̄*.

The retraction in Ru. *grýzla* (vs. *gryzëš'*) is not accounted for by the law formulated in the preceding paragraph. This retraction must be due to Hirt's law: **grúHz̨laH*, **gruHz̨eSí*. The same holds true for Ru. *éla* (cf. Polish *jadła*): the place of the ictus points unambiguously to the presence of a laryngeal in the root because Hirt's law is the only law which produces a retraction of the stress in verbs with a stem ending in an obstruent. An interesting case is Ru. *péla*, where the present stem *poëš'* /pɑjóš/ indicates that the laryngeal cannot have preceded the **i*, so we have to reconstruct **poi̯HeSí*. But the *l*-participle cannot have been **poi̯HláH* because in that case Hirt's law would not have operated, cf. above. The solution is that we must assume zero-grade before the *l*-suffix, like in the cases discussed above. The original form **píHlaH*, **píHlo* was replaced by **pói̯HlaH*, **pói̯Hlo*, just as **dHláH*, **dHló* was replaced by **daHláH*, **dáHlo*. This substitution was certainly favoured by the existence of **pHiláH*, **pHílo*, Ru. *pilá*, *pílo*. If this analysis is correct, Ebeling's law cannot have preceded Hirt's law.

Finally, Hirt's law has apparently not operated in Ru *brala*, *zvala*, Čak *zvāla*, *prāla* These verbs belong to the mobile type, cf Čak *oprāl*, *pobrālo* The same holds true for Slovene *kovâl*, *kovala*, *kovâlo* < **kovalъ*, **kovala*, **kovalo* If we assume that the *a* is secondary before the *l*-suffix, the latter forms must have replaced earlier **koy̯Hlu*, **koy̯HlaH*, **koy̯Hlo*, where the mobility had regularly originated according to Ebeling's law, cf Lith *kauti* The other verbs are less clear because of the vowel alternation However, whether we assume **beilaH*, **zoy̯laH* or **birlaH*, **zulaH*, mobility is regular in both cases

1 5 THE PASSIVE PARTICIPLE

The accentual parallelism between the *l*-participle and the passive participle makes it probable that these forms have influenced each other as far as they do not have a similar origin Whenever the forms are different, this is an indication of the old distribution of stress patterns in the participles I do not agree with Stang (1957 150) that there was originally complete agreement between the place of the ictus in the *l*-participle and the *n*-participle As we have seen above, Ru *nesla*, *neslo*, *nesena*, *neseno* go back to **neslaH*, **neslo*, **nesenaH*, **neseno*, with final stress in the passive participle due to Dybo's law I have suggested above that there was originally a perfect correspondence with these forms in **rodilaH*, **rodi̯enaH*, which is supported by Čak (Novi) *rodila*, *rodilo*, with mobility, versus *rojeni*, with final stress due to Dybo's law Indeed, Russian also shows end-stressed participles in verbs of this type SCr *lomljen* from *lomiti* < **lomiHtei* (with final stress) must be analogical after *prelomljen* < **pei-lomi̯enu* from **per-lomiHtei̯* (with fixed stress, so that Dybo's law applies), cf *lomim* vs *prelomim*

Verbs with original root-stress have root-stress in the *n*-participle, e g SCr *nošen* from **nošên* because of Stang's law, from **nosenъ* because of Dybo's law, from **nosi̯enu* because of Van Wijk's law (cf Ebeling 1967 587) The long *a* in SCr *pîsān* presents a problem Stang states that the "causes are not known to us" (1957 147), and Ebeling explains the length by analogy after *nošen*, where the long vowel was later shortened in Serbo-Croat (1967 589,592) However, I fail to see why the vowel was not shortened in *pîsan* if it was in *nošen* In view of the analogy with **neslaH*, **nesenaH* and **rodilaH*,

**rodi̯énaH* I am inclined to assume **písaHlaH*, **písaHenaH*, with regular fall of **H* and contraction yielding **písānaH*. The latter solution also explains the final accent in Ru. *danó*, as opposed to *dálo*, which must be old in view of Slovene *dán(o)* vs. *dâl(o)*. The final stress must be due to Dybo's law because an original final accent would have been retracted according to Ebeling's law. Moreover, the final stress points to the absence of a laryngeal in the root because otherwise Dybo's law would not apply: **dā̂no*. A similar case is presented by Slovene *končán* vs. *končàl* and *brán(o)* vs. *brâl(o)*, cf. Čak. (Novi) *nabrānò* vs. *pòbrālo*. These forms reflect an older stage than Ru. *sóbran(o)* etc. The long rising vowel in Slovene *končán* cannot be due to levelling, as Stang suggests (1957:147), because there was no model. The final accent in Slovene *počesán* (*-a*, *-o*), as opposed to the retracted stress in *zastǫ̑pan* (*-a*, *-o*), supports Ebeling's hypothesis that Stang's law operated in final syllables only. The accentuation of the latter word must be due to the later, specifically Slovenian retraction from a short vowel to a preceding long vowel, e.g. in *dúša*. A long vowel which had received the stress as a result of Dybo's law and did not lose the ictus according to Stang's law, was shortened in Slovene like everywhere else (cf. Ebeling 1967:592, the circumflex in the imperative *hvalîte* is secondary, cf. *nesî ga*).

I conclude that there is no indication of original accentual mobility in the *n*-participle and that, consequently, any occurring mobility must have been introduced on the analogy of the *l*-participle. The retraction in SCr. *kȕpovao*, *kȕpovān* is due to analogy after the aorist *kȕpovā*, cf. Slovene *kupovàl*, *kupován* (Stang 1957:144).

1 6 PEDERSEN'S LAW

Ebeling's law as stated above yields mobility in disyllabic words, e.g. Ru. *pilá*, *pílo*, but the retraction does not operate in polysyllabic words, cf. Lith. *sūnumì*. Nevertheless, mobility has spread to polysyllabic *l*-participles, as is shown by Čak. *rodīlà*, *ròdīlo*. It is not quite clear how this mobility came about. I would suggest that **rodiló* was replaced by **rodílo* after the model **pHílo* and that subsequently the ictus was retracted from an inner syllable in mobile paradigms. The relative chronology of the latter law presents a difficulty, however.

The retraction of the ictus from medial syllables was first proposed for Baltic by de Saussure as an explanation of Lith. *dùkterį*, *dùkteres*,

cf. Gr. *thugatéra, thugatéres*. This retraction cannot have been phonetic, however. The solution was found by Pedersen, who suggested a "recul d'un accent qui contrastait avec un autre accent (final) dans le même paradigme, et qui à cause de ce contraste était exagéré et anticipé" (1933:25). The importance of this idea can hardly be overestimated. In fact, several accent shifts in the history of Slavic are subject to conditions of this type.

Pedersen assumes that mobility spread from the consonant stems to the *aH*- and *o*-stems in Balto-Slavic. I think that this is probable. It is an indication that the retraction in Lith. *dùkterį, dùkteres* is very old indeed. If Ebeling's explanation of the oxytonesis in the oblique case forms of the *i*- and *u*-stems is correct, the retraction must be older than his law of marginal oxytones and, consequently, older than any other law of Slavic accentuation. However, the retraction cannot be so old in other cases. In Slavic the ictus is regularly retracted to a preposition from a barytone form of a mobile paradigm, e.g. Ru. *ná vodu*. Since this phenomenon is unknown in Baltic, it can hardly have arisen before the dissolution of the Balto-Slavic unity. Besides, the retraction to a prefix in such forms as Ru. *né byl, pródal* cannot have occurred before Ebeling's law, when the mobility arose.

On the other hand, the Baltic evidence seems to point unambiguously to two temporally distinct retractions. In Lithuanian there is one type of verbs where the ictus is retracted to a prefix and which has mobile stress in the active participle, e.g. *vedù, vẽda, nèveda, prìveda, vedą̃s, vẽdantį*, preterit *vẽdė*. Other verbs have fixed stress on the root-syllable except in the forms where de Saussure's law operated, e.g. *sakaũ, sãko, nesãko, sãkąs*, preterit *sãkė*. On the basis of the form *vedą̃s* I am inclined to assume that this verb was originally end-stressed and that it became mobile as a result of Ebeling's law: **u̯edóH, *u̯édo* from earlier **u̯edóH, *u̯edó*. The same retraction must be assumed in the preterit **u̯édē*, which goes back to pre-Baltic **u̯edéHet*, with loss of word-final **t* prior to Ebeling's law, cf. above. Then the retraction of the ictus from medial syllables in mobile paradigms yielded *nèveda, prìveda, nèvedė* in a period after Ebeling's law. The ictus was not retracted in *nesãko, nesãkė* because the latter paradigm had fixed stress until de Saussure's law operated. The retraction in *nèveda, prìveda* cannot be identical with the retraction in *kãtinus, vãlandas* (acc.pl.) because of the different quantity of the stressed vowel: the latter retraction must have preceded the lengthening of stressed *e,a* whereas the former must have been later. The lengthening

of stressed *e,a* was certainly later than the rise of distinctive intonation, which followed the end of the Balto-Slavic linguistic unity. Thus, we arrive at the following chronology of sound laws for Lithuanian : (1) Pedersen's law, (2) oxytonesis, (3) Hirt's law, (4) Ebeling's law, (5) rise of distinctive intonation, (6) lengthening of stressed *e,a*, (7) Pedersen's law again, (8) de Saussure's law, (9) Nieminen's law (retraction of the ictus from a short *a* in final syllables to a preceding long vowel or diphthong, e.g. *kíekas*, *meñkas*), (10) Leskien's law, cf. Kortlandt 1974.

In Slavic, like in Baltic, we have to assume that Pedersen's law operated once again after the dissolution of the Balto-Slavic unity and then yielded the accentuation of Ru. *ná vodu*, *né byl*, *pródal*. The lateral mobility in Slavic noun inflection must be older and go back to the earliest Balto-Slavic period.

1.7 MEILLET'S LAW

A final point to be discussed here is the metatony in Slovene *hódil* (from **hodȉl*), *hodíla*, *hodílo*, which is matched by the converse metatony in *gostíl*, *gostíla*, *gostílo*. The latter forms are the regular reflexes of **gòstilъ*, **gostilà*, **gòstilo*, cf. Čak. (Novi) *zvònīl*, *zvonīlà*, *zvònīlo*. A falling accent shifts to the next syllable in early Slovene, and a short final accent is retracted to a preceding long vowel, cf. *okọ̑*, *dúša* vs. Ru. *óko*, *dušá*. The former metatony is less clear, however. I cannot accept Jaksche's suggestion that it is a morphological rebuilding (1965:25), especially because it is absent in *ě*-verbs, e.g. *žélel*, *želę́la*, *želę́lo*. This is all the more remarkable because Dybo's law never applied to *ě*-verbs, whereas it did operate in such verbs as *hodíti*, *nosíti*. Moreover, we find the same neo-circumflex in other trisyllabic word forms where Dybo's law applied, e.g. *ženâmi*. I conclude that the metatony is phonetic.

According to Meillet's law, an acute root vowel in a mobile paradigm becomes circumflexed, e.g. SCr. *glâvu*, *sîn*. This law is definitely Slavic, cf. Lith. *gálvą*, *sū́nų*. As far as I know, it has never received a satisfactory explanation, however. Yet I think that an explanation of this as well as other laws of Slavic accentuation can be found if we connect them with the loss of the IE laryngeals. More precisely, I assume that the IE laryngeals have been lost in different periods depending on their position in relation to the place

of the ictus and thereby produced a number of successive sound laws. The dependence of the development of the laryngeals on the place of the ictus is attested in other branches of the IE language family as well, e.g. Skt. *vánitā*, *vantáraḥ*, *jánitoḥ*, *jantúḥ* (Kuiper 1947:206). [See also Appendix C.] In this section I shall confine myself to a discussion of the earliest loss of laryngeals in Slavic, which must have occurred shortly after the dissolution of the Balto-Slavic unity. At that time, the laryngeals had been lost already in interconsonantal position (Lith. *duktẽ* < **dukHtēr*), between two full vowels (Lith. gen.sg. *galvõs* < **golHvaHes*), and before word-final nasal (Lith. acc.sg. *rañką* < **ronkaHm*).

I assume that in Slavic, in contradistinction to Baltic, the IE laryngeals were lost first of all in pretonic position, and that an immediately preceding or following vowel received compensatory lengthening: **golváH* < **golHváH*, **sūnumí* < **suHnumí*, **pīláH* < **pHiláH*. The alternation between the presence of a laryngeal in **gólHvą̄*, **súHnuN*, **pHílo* and its absence in the end-stressed forms was eliminated by the removal of the laryngeal from the barytone forms as well: **gólvą̄*, **sūnuN*, **pīlo*. This is Meillet's law. The laryngeal was retained in words with fixed stress, cf. SCr. *dȉm*, *grȉva* < **dúHmuN*, **gríHvaH*.

At the same time, as far as we can see, the laryngeals were lost in posttonic syllables, except in the first posttonic syllable. I think that this is the explanation of the neo-circumflex in Slovene *osnôva*, *nosîla*, *ženâmi*. The non-initial accent in these words must be due to Dybo's law, cf. the final accent in Ru. *ženú* and the recessive stress in *nošú*, *nósiš'* with retraction in accordance with Stang's law. I reconstruct **ósnovā*, **nósi(H)lā*, **žénaHmīS* from earlier **-aH*, **-miHS*, cf. Lith. *galvomìs*. After Stang's law, the posttonic quantity in **osnòvā*, **nosìlā*, **ženàmī* was lost in Slovene with compensatory lengthening of the preceding vowel, which yielded the standard forms (cf. Stang 1957:28f.). Indeed, I think that compensatory lengthening is the only source of the Slovenian neo-circumflex. It is not strange that lengthening yielded a falling vowel because at the time there was no intonation on short vowels.

After the period of Meillet's law, the laryngeals were retained in the stressed syllable and in the first posttonic syllable until the general loss of final consonants and concomitant changes led to the characteristic absence of closed syllables in Slavic. Then the posttonic laryngeals, like other final consonants, were lost without compensatory lengthening, e.g. **žèna* < **žènaH*, Ru. *žená* after Dybo's law, like

**sŷnъ* < **sûnuN* and **slòvo* < **slȍvos*, cf. Gr. *kléos*. The loss of laryngeals in the first posttonic syllable entailed the rise of new timbre oppositions /a∼o, ě∼e, i∼ь, y∼ъ/. Henceforth I shall write **ę* instead of **ě* for typographical reasons. In stressed syllables a laryngeal lost its phonemic status and became a feature of the preceding vowel, as did a nasal resonant: **dŷmъ* < **dùHmuN* like **zǫ̂bъ* < **zȍNbuN*, Ru. *zub*. The symbol ' denotes the laryngeal feature (and simultaneously the place of the ictus). I assume that **ŷ*, like **ǫ̂*, was neutral with respect to quantity in the period immediately following this sound change. Finally, the laryngeal feature was lost in a period after Dybo's law but before Stang's law, cf. below.

CHAPTER 2

SLOVENE *konj*

2.1 INTRODUCTION

In the paradigm of the Slovenian word *konj* there is a most interesting alternation between different *o*-sounds. The stem-vowel is short in the nom.sg. *kònj* and long in all other cases. We find one of the two closed *o*-sounds which go back to early Slovenian long vowels in the loc.sg. *kộ̑nju* and the other in the gen.pl. *kọ́nj*, in the inst.pl. *kọ́nji* (*kộ̑nji*), and in the loc.pl. *kọ́njih* (*kộ̑njih*). All other cases (except the nom.sg.) show an open *ó*, which goes back to the late retraction of the ictus from a following short vowel. The pitch is falling in the loc.sg. and optionally in the inst.pl. and loc.pl., while other long vowels are rising. Since there was only a single *o* in Slavic at the time when the new timbre distinctions had just arisen, the whole complicated pattern of alternations must be relatively recent. In this chapter I shall discuss how it came about.

2.2 ICTUS

Since the open stem-vowel which we find in most case forms is due to the recent retraction of the stress from a short vowel, we must assume that these forms were end-stressed in early Slovene, whereas the closed vowel in the loc.sg., gen.pl., inst.pl. and loc.pl. was stressed. This situation is confirmed by the Čakavian dialect of Omišalj (Krk), where we find nom.sg. *stô*, gen.sg. *stolà*, dat.sg. *stolù*, nom.pl. *stolî*, gen.pl. *stòli*, dat.pl. *stolòm*, inst.pl. *stòli*, loc.pl. *stòlih* (Milčetić 1895:16). The final stress in the gen.sg. and dat.sg. cannot go back to the Balto-Slavic period because it would have been retracted in accordance with Ebeling's law. Thus, it must have arisen as a result of Dybo's law.

I assume that in Slavic, in contradistinction to Baltic, the rise of distinctive pitch is independent of the loss of the IE laryngeals. Somewhere between Meillet's law and the rise of the new timbre distinctions the stressed vowels in barytone forms of mobile paradigms

received a falling intonation and thereby became different from all other stressed vowels, e.g. **vȍdą̄*, **nâ vodą̄*, **rȍNką̄*, **lȏmją̄*, cf. Ebeling 1967:585f. I assume that the other stressed vowels became rising, e.g. **žènā̄*, **trávą̄*, **nòsją̄*, **xváljā̄*, **nesèno*, **lomīšì*, Ru. *ženú*, *travú*, *nošú*, *xvaljú*, *nesenó*, SCr. *lòmīš*. In a later period, after the rise of the new timbre distinctions, rising vowels lost the ictus, if possible, to the following syllable, e.g. **zenȍ*, **nošȍ*, **nosīšъ*, **nesenò*, cf. Ebeling 1967:590. This is Dybo's law. Thus, the final stress in Čak. (Omišalj) *stolà*, *stolù* points to an earlier **stòla*, **stòlu*, with fixed stress on the stem. The same accentuation must be assumed for Slovene *konj*.

After Dybo's law, the ictus was retracted from a long circumflexed vowel in a final syllable, cf. Ru. *nósiš'*, SCr. *nȍsīš*. This is Stang's law. I do not assume that final jers had already been lost in this period, but they must have been very weak and did not count as syllables any longer, cf. the status of French word-final *ə* during the past centuries. In the paradigm under discussion the stress was regularly retracted in the inst.pl. and the loc.pl.: Čak. (Omišalj) *stòli*, *stòlih* goes back to **stolỹ*, **stolę̂xъ*, which is the reflex of Balto-Slavic **stólōi̯S*, **stóloi̯Su*. The same must be assumed for the loc.sg.: Slovene *kǫ̑nju* < **koi̯nû* < **kònjū*.

2 3 QUANTITY

The most complicated characteristic of the paradigm is the quantitative difference between the nom.sg. *kònj* and the gen.pl. *kǫ́nj*. If the length is due to the retraction of the ictus from the final jer, it remains unclear why the vowel has been shortened in the nom.sg. Indeed, if the nom.sg. and the gen.pl. were homonymous at the time when Dybo's law operated, it is hard to see how the difference developed unless we assume that one of the two forms borrowed its quantity from another type. This cannot have been the nom.sg. because there was no model, cf. Slovene *bǫ̑g*, SCr. *bôg*, with a long vowel in the nom.sg. of mobile paradigms.

However, it is questionable whether the endings of the nom.sg. and the gen.pl. were in fact homonymous. Some scholars (e.g., Van Wijk, Pedersen) maintain that the long vowel in the gen.pl. is due to the reduction of the IE ending **-ōm* to **-ъ*. I would rather agree with Meillet that the ending must be derived from IE **-om*. First of all there is a chronological difficulty. If there has ever been an

ending *-*ōm* on Slavic territory, it must have been shortened in the Balto-Slavic period, whereas the lengthening in the gen.pl. can hardly have been prior to the rise of the new timbre distinctions in Slavic. But there is no evidence for *-*ōm* in Baltic either, since this ending would regularly have developed into *-*ō*, cf. Lith. *akmuõ*, Gr. *ákmōn*. Thus, I assume that both Lith. *-ų* and OChSl. *-ъ* regularly continue IE *-*om* and that Slavic length is secondary.

Ebeling assumes (1967:588) that stressed *-*ъ* in the gen.pl. was lengthened after the rise of the new timbre distinctions and that the new length was subsequently extended to barytone gen.pl. forms. I fail to see the motivation for this change. Moreover, I find it hard to accept that lengthened *-ъ* was lost in the same way as short *-ъ*. The modern SCr. ending *-ā* cannot go back to a long *-ъ* which dates from this period because of the rising accent in *kosácā*, *ovácā*, where Stang's law would have caused retraction of the ictus. The SCr. ending *-ā* must have arisen shortly after Stang's law, cf. *sestárā*.

I conclude that there is no reason to assume a difference between the endings of the nom.sg. and the gen.pl. in the original form **kònjь* and that, consequently, the length in Slovene *kọ́nj* was introduced analogically after the originally mobile paradigm, cf. Slovene *gọ́r* < *gorъ̀. It should be noted that length cannot have been analogical in the latter paradigm because there was no model. The retraction of the ictus from a final jer must have preceded Dybo's law because otherwise we would expect a long vowel in the nom.sg. *kònj*, SCr. *kòn*j. Thus, I assume that final jers lost their stressability in a period between the rise of the new timbre distinctions and Dybo's law, and that the ictus was retracted to the preceding stressable vowel, which became long and rising, e.g. gen.pl. Ru. *golóv*, *volós*, Čak. (Novi) *brád*, *nebés*, Slovene *mọ̑ž*, dial. *dán*, Posavian *dãn* (Ivšić 1913:214) < *dьnъ̀, loc.pl. Czech *mužích*, Slovene *možẹ́h*, dat.pl. Czech *mužům*, cf. also Čak. *dá*, *želí*, *želé*, *sú*. Apparently, the ictus could not be retracted to a preceding jer in non-initial syllable, so that we have Ru. *détjam*, *détjax*, *ljúdjam*, *ljúdjax* < *dętьmъ̀ etc. This accentuation must be old because it is also found in Slovincian and Ukrainian. Moreover, old *i*-stems often show barytone dat.pl. and loc.pl. forms in Old Russian, e.g. *góstem*, *góstex*, cf. Stang 1957:89. These forms probably received falling pitch after the other barytone forms of the paradigm, cf. Slovene *kostẹ̑m*, which points to an earlier *kòstьmъ. Indeed, I think that the source of the accentuation in Slovene *možẹ̑m* must be sought in the *u*-stems, cf. *goràm*, where there was no such

influence. The rising pitch in *možẹ́h*, *kostẹ́h* pertained originally to the *o*-stems, as did the ending itself. I suppose that in the period of the retraction pretonic jers were weak in non-initial syllables. Stressed jers in medial syllables can only have lost their stressability after Dybo's law, e.g. Ru. *golóvka*, *rúčka*, Czech *hlávka*, *roučka*, Polish *główka*, *rączka* < **rǫ́čьka* < **rǫčь̀ka*. Besides, pretonic jers in medial syllables did not lose their stressability before **i̯*, where the oppositions /ь∼i/, /ъ∼y/ were neutralized, e.g. Ru. *detéj* < **dẹtIi̯ь̀*.

The length in the gen.pl. of mobile paradigms was analogically extended to the paradigms to which Dybo's law applied, e.g. Slovene gen.pl. *kọ́nj*, *pás* (Posavian *pãs*, cf. Ivšić 1913:213) versus nom.sg. *kònj*, *pàs*. This generalization of quantity must have taken place partly before and partly after the operation of Stang's law. Thus, we find Čak. (Novi) *svétāc*, *kòsāc*, *òtāc*, with retraction from a long vowel in accordance with Stang's law, next to *kosác*, *otác*, *ovác*, where the vowel was lengthened later. The Slovenian gen.pl. *óvəc*, *lọ́nəc* must be due to analogy after the inst.pl. *lọ́nci* and the loc.pl. *lọ́ncih*. The SCr. gen.pl. *lòpātā*, *kòljēnā* from *lòpata*, *kòljeno* present a problem. These words belong either with *pròzor*, gen.pl. *pròzōrā* to the type where Dybo's law applied, or with *jèzik*, gen.pl. *jẽzīkā* to the type with an original stressed medial syllable. The latter word can hardly have had initial stress before Dybo's law in view of the short vowel in Polish *język*, Czech *jazyk*. I assume that when the loss of the laryngeal feature yielded **jęzỳkъ* < **jęzỳkъ̀*, the paradigm conformed to **prozòrъ*, **prozôrъ*, which had arisen from **pròzorъ̀*, **pròzōrъ̀* in accordance with Dybo's law. Shortly after Stang's law the gen.pl. ending -*ъ̀* was dialectally lengthened in mobile paradigms when it received the stress analogically after the other plural cases, e.g. Štokavian *žénā*, *póljā*, *gradóvā*, Slovene *gorá* next to *gọ́r*, cf. Čak. *žén*, etc. This analogical development preceded the loss of word-final jers and the neo-Štokavian retraction of the ictus.

Before Dybo's law there existed a pitch opposition on short and long vowels in stressed initial syllables, apart from the laryngealized vowels, which were neutral with respect to quantity and intonation. The shift of the ictus from rising vowels to the following syllable caused the pitch opposition on short vowels to disappear in polysyllabic words. It is only natural that the pitch opposition was subsequently eliminated in monosyllables as well. It is recalled that word-final jers did not count as syllables any longer at this stage. As far as we can see, short falling vowels in monosyllabic words were lengthened

and merged with long falling vowels, e.g. SCr. *bôg*, *kôst*, *dân*, Slovene *bǫ̑g*, *kǫ̑st*, *dân*. This lengthening was probably Common Slavic in view of Ru.dial. *bog*, as opposed to *kôn'*. The distinction between these two *o*-sounds continues the old pitch opposition, not the original quantitative differences, as Vaillant suggests (1950:276). The pitch opposition on short vowels in polysyllabic words was later restored by the loss of the laryngeal feature, e.g. gen.sg. **ràka*, **bòga*, SCr. *ràka*, *bòga*, Slovene *ráka*, *bogâ*.

2.4 TIMBRE

As we have seen above, there is an alternation between three different long *o*-sounds in the paradigm of the word *konj*. The open *ó* goes back to the late retraction of the ictus from a short vowel, which is not carried through in all dialects. The difference between the two closed vowels is reflected in a part of the dialects only. I assume that they originated in different periods.

The timbre of the stem-vowel in the loc.sg. *kǫ̑nju* is the regular reflex of the retraction according to Stang's law, cf. *mǫ́reš*, *nǫ́siš*, *vǫ́lja*, *kǫ́ža* < **možêšь*, **nosīšь*, **voļâ*, **kožâ* < **mòžešь*, **nòsīšь*, **vòlja*, **kòzja*. There are two remarkable things about this vowel. Firstly, it is reflected as a diphthong [uo] in Ru.dial. *môžeš'*, *nôsiš'*, *vôlja*, *kôža*, Czech *můžeš*, *vůle*, *kůže*, Slovak *môžeš*, *vôl'a*, and in the Slovenian dialects which show distinct reflexes of the two closed vowels. Secondly, it is reflected as a short vowel in SCr. *mòžēš*, *nòsīš*, *vòlja*, *kòža*, Czech *nosíš*, Slovak *nosíš*, *koža*, Polish *możesz*, *nosisz*, *wola* (but *stróża* for Ru. *storóža*, Čak. *stráža*). On the basis of this comparison I assume that Stang's law yielded a Common Slavic quantitatively neutral rising diphthong **^{u}ò* and write **môžešь*, **nôsišь*, **vôļa*, **kôža* for the last prehistoric stage of Slavic. The diphthong was regularly shortened by the loss of its first element in Serbo-Croat and partly in Czecho-Slovak. On the other hand, the prothetic element developed into a labial fricative in Ru. *vósem'*, *vóstryj*, dial. *vôkna*. I do not think that the quantitative differences were dialectally conditioned because not only Czech and Slovak, but also Polish, Slovincian, and Kajkavian show both long and short reflexes of **ô*.

The long vowel in Slovene *kǫ́nj*, *gǫ́r* must go back to an earlier period because it is characteristic of the gen.pl., where the ictus was retracted in mobile paradigms before Dybo's law, cf. above.

The timbre of the stem-vowel in the inst.pl. *kọ́nji* and the loc.pl. *kọ́njih* must have been borrowed from the gen.pl. because the retraction of the ictus in these cases is due to Stang's law. Indeed, we find the expected *ô in dial. (Borovnica) *ku̯ội̯nəx*, i.e. *kộnjih* (Ramovš 1921:229). Thus, we have an alternation between *ò in *kònj*, which goes back to the rise of distinctive pitch, *ó in *kọ́nj*, which was lengthened analogically after the retraction of the stress from a final jer in *gọ́r*, *ô in *kộnju*, which arose as a result of Stang's law, and open *ó* in the cases where the ictus has recently been retracted. The early Slovenian lengthening of stressed vowels in non-final syllables yielded the same *o* as the reflex of *ô, e.g. *gotộviti*, *osnộva*.

2.5 INTONATION

As will be clear from the preceding sections, we should expect a rising stem-vowel in all case forms of Slovene *konj*. Yet we find falling pitch in the loc.sg., and optionally in the inst.pl. and the loc.pl. Phonetically, a Slovenian circumflex in polysyllabic words can only have arisen as a result of either the progressive accent shift from an initial falling vowel, which must have occurred shortly after Stang's law, or compensatory lengthening, as I intend to show in detail on another occasion. In the loc.sg. *kộnju* we have to assume that the falling pitch is due to shortening of the word-final vowel.

However, it is not obvious that the final vowel should be long. The form *nộsiš* < **nôsišь* < **nosîšь* indicates that a long circumflexed vowel was shortened when it lost the ictus in accordance with Stang's law. The final length in **kônʼū* must have been restored on the analogy of paradigms where Stang's law did not apply, e.g. (*o*) *brȃtu*, (*u*) *grádu* (Valjavec 1897:158) < **bràtū*, **gradú*. Length was introduced even in the dat.sg. after a preposition, e.g. *k brȃtu*, *h kộnju*. A similar restoration of length must have occurred optionally (or dialectally) in the inst.pl. and loc.pl. This analogical development must have preceded the shortening of posttonic vowels, which caused the lengthening of the stem-vowel in these words. The latter development preceded the general lengthening of stressed vowels in non-final syllables, which did not reach the dialects of Prekmurje and Prlekija, e.g. (Prekmurje) *dȩ̏lo*, *dȩ̏i̯la* (Ramovš 1935:184), i.e. *dȅlo*, *dȇla* < **dȩ̀lo*, **dȩ̀lā*.

The solution proposed here may also explain the twofold reflex of *ô in Czech and Slovak. I assume that the laryngealized vowels

had fallen together with the short rising vowels shortly before Stang's law, so that we have **kràva*, **rẹ̀zati* in the last Common Slavic period. A short rising vowel in an open first syllable of disyllabic words was lengthened in early Czech unless the following syllable contained a long vowel, e.g. *kráva*, but gen.pl. *krav*, and *řezati*, *řeží*. Similarly, we can assume that **ô* fell together with **ó* in *můžeš* < **môžešь*, but with **ò* in *nosíš* < **nôsišь* after the restoration of long *i* in the second syllable, cf. *bavíš*, *budíš* < **bàvīšь*, **budíšь*. This restoration could take place more easily in *i*-verbs, where all the verbs to which Stang's law did not apply had long *i*, than in *e*-verbs, where both long *e* and short *e* were found, cf. Slovak *môžeš* versus *nesieš* < **nesẹ́šь*. In Serbo-Croat there was no lengthening of short rising vowels, and length was restored in all unstressed short vowels that alternated with long vowels, so that we would expect what we find.

CHAPTER 3

THE LOSS OF THE IE LARYNGEALS

3.1 INTRODUCTION

It is generally assumed that the laryngeals of the IE proto-language were lost in Baltic and Slavic shortly after the dissolution of the IE linguistic unity. According to the traditional view, the resulting long vowels merged with older long vowels, so that the presence or absence of a laryngeal cannot be established on the basis of the Baltic or Slavic evidence. I think that this is incorrect. Indeed, the hypothesis that the laryngeals were lost at an early stage in the development of Slavic forces Ebeling (1967:583-589) to assume a whole series of "broken vowels", which must have persisted during a considerable period. Moreover, a large number of Slavic accentual phenomena become understandable if they are connected with the loss of the IE laryngeals. I think that the loss of the IE laryngeals took place in Baltic and Slavic after the dissolution of the Balto-Slavic linguistic unity, or even that it conditioned the dissolution. The final loss of the laryngeal feature in Slavic must have occurred around 800 A.D.

3.2 IE LENGTHENED GRADE

Long vowels in IE languages have three different origins. Firstly, they may go back to a sequence of full vowel and laryngeal, e.g. Gr. *alphḗ*, Lith. *algà* (with late shortening). The resulting vowels have acute intonation in both Greek and Lithuanian. Secondly, long vowels may go back to early, possibly late IE contractions, e.g. Gr. *alphē̃s*, Lith. *algõs*. In this case, the resulting vowels have circumflex intonation in both Greek and Lithuanian. Thirdly, there is a group of long vowels which seem to fit neither explanation but alternate with short vowels. These long vowels have acute intonation in Greek, but may have either acute or circumflex intonation in Lithuanian, e.g. Lith. *piemuõ*, *ėdu*, Gr. *poiménn*, *édō*. As far as I know, the conditions under which the latter vowels are acute or circumflexed in Lithuanian have not been cleared up so far. While Greek circumflex seems to be a reliable indi-

cation of a contraction, the intonation in Lithuanian does not point unambiguously to a definite origin of the long vowel. Here I intend to make a contribution to the solution of this problem.

The most remarkable characteristic of IE lengthened grade is that it is rare and that it occurs mainly in a small, morphologically definable group of word forms (cf. Kuryłowicz 1956:142). The rare occurrence of the lengthened grade is an indication that IE long vowels are fairly recent. The occurrence in certain categories is an invitation to look for an explanation in terms of secondary developments. I think that a satisfactory explanation of most instances can be found if we assume that the long vowels are partly the result of phonetic lengthening in certain positions, and partly due to an alternation involving laryngeals.

First of all, I assume that late IE **e*, **o* were phonetically longer before word-final resonant than in other positions. When length became phonemic, the half-long vowel before word-final resonant was interpreted either as a long vowel, thus coinciding with the new long vowels from contractions, or as a short vowel. The result was partly determined by paradigmatic relationships. In the gen.pl. ending the long vowel was generalized in Skt. *-ām*, Gr. *-ōn*, whereas the short vowel was generalized in Baltic and Slavic. Incidentally, Lith. *vilkų̃* cannot go back to **vilkṓN*, which would yield ***vilkuõ*, cf. *akmuõ* < **ákmōN*. The long vowel was generalized in the nom.sg. of stems ending in a resonant, e.g. Gr. *mḗtēr*, *ákmōn*, *ēkhṓ*, Skt. *mātā́*, *áśmā*, *sákhā*, Lith. *mótė*, *akmuõ*. The lengthened grade in Gr. *eumenḗs*, Skt. *sumánāḥ* was introduced after the resonant stems, cf. Gr. *ménos*, Skt. *mánaḥ* with short vocalism, but Gr. *húdōr* with lengthened grade. In Skt. *bháran* < **bhéronts* we find the expected short vowel. The latter form is indeed an indication that the lengthened grade in the nom.sg. goes back to an original phonetically long variant in certain environments, not to a morphological characteristic.

Secondly, I assume that late IE **e*, **o* were phonetically long in monosyllabic word forms. The relationship is still maintained in nom.sg. Skt. *pā́t*, Gr. (Dor.) *pṓs*, Lat. *pēs*, versus gen.sg. Skt. *padáḥ*, Gr. *podós*, Lat. *pedis*. The long stem-vowel is generalized in the flexion of Skt. *vā́k*, *rā́ṭ*, Lat. *vōx*, *rēx*, and then found its way into athematic denominative verbs such as Skt. *tā́ṣṭi*, *rā́ṣṭi*, Avestan *tāšti* (cf. Watkins 1969:30). The short stem vowel was generalized in Gr. *óps*, Skt. *spáṭ*. In Slavic we find lengthened grade in Ru. *reč'*, *tvar'*, *gar'*, *žar*, *mel*, which probably go back to monosyllables. I think that

the phonetic lengthening in monosyllabic word forms is also the origin of the vrddhi in Skt. *stáuti*, *mā́rṣṭi*, cf. the injunctive *staut*, impf. *astaut*, as opposed to full grade in the archaic medial form *stáve* and in Avestan *staoiti*, *staota*, with short diphthong (Watkins 1969:115). Moreover, I think that this is also the origin of the lengthened grade in the *s*-aorist. Indeed, the only monosyllabic verb forms in late Indo-European are found precisely in the injunctive and in the *s*-aorist, while nominal forms can only be monosyllabic in the nom.sg. Thus, I assume that the long stem vowel in Lat. *vēxī*, OChSl. *vĕsъ* stems from the 3rd sg. **u̯ēĝhs*, **u̯ēds*, which later disappeared, cf. OChSl. *iz-ĕ*, Hittite *dāš*, Skt. *aprās* (Watkins 1969:217).

There is a third origin of IE long vowels alternating with short **e*, **o*. In the cases discussed above the long vowel is circumflexed in Balto-Slavic, e.g. Lith. *akmuõ*, *duktẽ*, *rẽkti*, SCr. *rȉječ*, *tvâr*, *gâr*, *žâr*, aor. 1st sg. *klêh*, Posavian *zaklẽ* (Ivšić 1913:91) with neo-acute indicating earlier circumflex, cf. also Lith. *ẽjo*, *ẽmė*, where the circumflexed long vowel cannot be the result of an analogical development. On the other hand, we find an acute root vowel in Lith. *bėgti*, *ėsti*, *sėsti*, SCr. *jȅsti*, *sjȅsti*, *sjȅći*. I think that the stem of these verbs goes back to **beHg-*, **eHd-*, **seHd-*, **seHk-*. It should be noted that positing an alternation between **e* and **eH* in the stem is no more extraordinary than the traditional postulation of an independent phonemic unit **ē* in order to cover precisely the same type of alternation. There is no explanation for the rise of a Balto-Slavic acute vowel from IE lengthening in these words. Thus, I assume that the only source of an old acute in Balto-Slavic is an IE laryngeal. Moreover, the alternation between **e* and **eH* is unmistakable in SCr. *gòveda*, cf. Gr. *boũs* < **g^{u}óHus*. The origin of Greek and Sanskrit long vowels can only be determined on the basis of the alternations which they display, not on the inherent properties of the vowels themselves. Consequently, if one admits that an alternation between **e* and **eH* in the stem is theoretically possible, the choice between this possibility and IE lengthened grade cannot be made on the basis of the Greek or Sanskrit evidence. It can only be made on the basis of material where the presence of a laryngeal in a word form can be established without reference to genetically related word forms, i.e. where the laryngeal produces an effect which is absent when the laryngeal is absent. Such an effect is produced by Hirt's law in Baltic and Slavic.

According to Hirt's law, the ictus is retracted to a preceding

syllable containing a vowel which is immediately followed by a laryngeal, e.g. SCr. *grîva*, Skt. *grīvā́* < **griHu̯áH*. Illič-Svityč has shown (1963:78ff.) that the ictus was not retracted if the laryngeal followed the second component of a diphthong, e.g. Lith. *galvà* < **golHu̯áH*. As I have pointed out before, the ictus was not retracted either if the laryngeal preceded the vowel, e.g. Ru. *pilá* < **pHiláH*. Consequently, the laryngeal was in this period a full-fledged phonemic unit, characterized by a position (cf. Kortlandt 1972:141ff.). Later the relevant ordering of the laryngeal was lost, so that the segmental phoneme turned into a vocalic feature. In stressed syllables, the laryngeal feature never merged with vocalic length in Slavic, cf. below. Thus, the retraction of the ictus in accordance with Hirt's law points unambiguously to the presence of a laryngeal in the stem. This seems to be the only reliable criterion to separate an original sequence **eH* from the lengthened grade **ē* without reference to genetically related forms.

Indeed, we find retraction in Ru. *éla*, *séla*, *sékla*, as opposed to *velá*, *leglá*, *teklá*, and in the infinitive SCr. *jȅsti*, *sjȅsti*, *sjȅći*, as opposed to *dovèsti*, *lèći*, *tèći*. These verbs belong together with Ru. *grýzla*, *strígla*, *prjála*, *ušíbla*, SCr. *grîsti*, *strîći*, *prȅsti*, *šîbati*, cf. the final accentuation in the present forms Ru. (3rd pl.) *edját*, *sekút*, *gryzút*, *strigút*, *prjadút*, *ušibút*, SCr. (1st sg.) *sijèčēm*, *grízēm*, *strížēm*, *prédēm*. Similarly, we have Ru. *pribégla*, *bégat'*, but final stress in *begút*. The Baltic forms do not point unambiguously to a retraction of the ictus, cf. Lith. *ėdą̃s*, but also *duodą̃s* (Stang 1966:451). I think that there was an original alternation which has been obscured by the generalization of the long vowel. The same generalization must have taken place in Lith. *sėdė́ti*, SCr. *sjèditi*, cf. Lat. *sedēre* and OCz. *sedě̂ti* with a short stem vowel. The original stem **seHd-* is found in SCr. *sjȅdati*, Lat. *sēdāre*, and in Old Irish *síd* < **séHdos*, as opposed to Gr. *hédos*. Lengthening is found in SCr. *sáditi*, Lith. *sodìnti*. Other examples where I suspect an IE alternation between **e* and **eH* are Lith. *úosti*, *úolektis*, cf. Gr. *ózō*, *ōlénē*.

As to the origin of the laryngeal in the stem, I can think of three different possibilities. Firstly, there may have been a laryngeal infix in certain stems which yielded an alternation **sed-/*seHd-*. Secondly, there may have existed a *Schwebeablaut* alternation **sHed-/*seHd-*. Thirdly, an original lengthened grade **ē* may have been replaced by **eH* in Balto-Slavic. The latter solution is the most attractive from the traditional IE comparativist point of view because it has

no repercussions outside Balto-Slavic, but it is definitely the least attractive when the motivation of the sound change is taken into account. It should be borne in mind that the change must have occurred before the operation of Hirt's law, i.e. at a stage when the laryngeal was still a segmental phoneme. On the other hand, the last hypothesis does not necessarily conflict with the circumflex intonation before word-final resonant and in the *s*-aorist. Indeed, a laryngeal before word-final nasal must have been lost at an early stage of development in Balto-Slavic, cf. Lith. *rañką*, where the ending does not attract the ictus. Moreover, it is probable that a laryngeal was also lost in monosyllabic words after a full vowel, e.g. Latv. *gùovs*, which is identical with Skt. *gáuḥ*, and 3rd sg. Lith. *duõs*, SCr. *dâ* < **dõHs*, where the circumflex cannot have been introduced after other forms of the paradigm, cf. 1st sg. SCr. *dȁh*. [Cf. Appendix E.]

Finally, I have to mention the alleged vrddhi in Ru. *voróna*, *voróčat'* as opposed to *vóron*, *vorotít'*, cf. SCr. *vrȁna*, *vrȁćati* vs. *vrân*, *vrátiti*. In these stems I suspect original IE doublets, cf. Hittite *u̯ar-* and (*u̯*)*arḫ-* (Shevelov 1964:47), and SCr. *závrat* next to *vrât*, *pövrāt*, Ru. *povorót* next to *vórot*, *závorot*, Upper Sorabian *wrót*, *zawrót*. In view of the dialectal discrepancies I find it hard to assume that the short vowel in SCr. *závrat*, *golòvrat* is due to Common Slavic *métatonie rude*, as Stang suggests (1957:167). On the contrary, I intend to show that in Slavic, in contradistinction to Baltic, there has never been any kind of real metatony.

3.3 BALTIC

As I have pointed out above, the laryngeal was still a segmental phoneme in Balto-Slavic at the stage when Hirt's law operated. The same probably holds true for the period of Ebeling's law, when a word-final laryngeal prevented the retraction of the ictus just as any other consonant did. After the dissolution of the Balto-Slavic linguistic unity, the laryngeal phoneme lost its segmental status and became a feature of the neighbouring vowel. This development proceeded along different lines in the two languages. In Slavic, the loss of laryngeals in pretonic syllables gave rise to the apparent metatony formulated in Meillet's law. In Baltic, however, the loss of the laryngeals yielded the rise of phonemic pitch.

It is difficult to see exactly at what stage the transformation of

the laryngeal into a vocalic feature occurred. I think that it must be connected with the simplification of diphthongs in both languages. In Slavic, the loss of the laryngeal as a segmental phoneme is part of the general elimination of closed syllables. In Baltic, the simplification of diphthongs was restricted to the monophthongization of stressed *ei*, *ai* (Endzelin's law, cf. Stang 1966:59) and the shortening of long diphthongs. I see no sufficient evidence for a chronological differentiation between the rise of phonemic pitch in Baltic and these developments. Thus, I assume that $*e \sim *\bar{e} \sim *eH$ developed into $*e \sim *\bar{e} \sim *\hat{e}$ in the same period when the vowel system changed from $*e,*\bar{e} \sim *\bar{a} \sim *o,*\bar{o}$ into $*\bar{e} \sim *e,*\bar{e} \sim *a,*\bar{a} \sim *\bar{o}$. The rise of the nasal vowels in Lith. *kąsti*, *kę̃sti* probably also belongs to this period. The respective transitions of $*eH$, $*ei$, $*en$ into $*\hat{e}$, $*\bar{e}$, $*\tilde{e}$ have in common that a segmental phoneme changed into a vocalic feature.

The rise of phonemic pitch does not imply the rise of a tonal opposition. I propose to use the term "pitch" for any vowel feature which is neither timbre nor quantity, and to reserve the term "tone" for rising and falling tone movements. Though the rise of phonemic pitch goes back to the Common Baltic period, I assume that its development into tone took place independently in Latvian and Lithuanian. The original laryngeal pitch must have been similar to the so-called broken intonation in Latvian, the *stød* in Danish, or the pitch in Vietnamese *mạ*. Indeed, this intonation has been preserved under the stress in Žemaitian and outside the stressed syllable in Latvian. I think that the Žemaitian facts throw an interesting light upon the origin of tonal oppositions in both Lithuanian and Latvian as well as upon the whole problem of Baltic metatony. In this connection I refer to my article on Baltic accentuation (1974). I assume that retraction of the ictus from a short prevocalic *i* onto a laryngealized vowel yielded rising tone and loss of the laryngeal feature in Lithuanian, e.g. *aũkštis* (2), cf. *áukštas* (3). The old pitch opposition was maintained when the ictus was not retracted. Then the laryngeal pitch feature changed into falling tone and the circumflex coincided with the new rising tone. Retraction of the ictus onto a non-laryngealized long vowel or diphthong yielded a "middle tone", as in Žemaitian, which later coincided with the new falling tone, e.g. *vìlkė* (1), cf. Ru. *volčíca*, *volčíxa*. In Latvian, on the other hand, the retraction yielded rising tone on both laryngealized and plain vowels, e.g. *sniẽdze*. The other stressed vowels became falling *per oppositionem*, e.g. *snìegs*, cf. Lith. *sniẽgas*. The loss of the laryngeal feature under falling

tone yielded a stretched intonation, which later fell together with the new rising tone, e.g. *sẽt*, cf. Lith. *sẽti*. Finally, the remaining laryngealized stressed vowels, which had lost their tone when the laryngeal feature was lost under falling tone, became falling, as in Lithuanian. I think that this interpretation of the facts explains why the laryngeal feature was apparently lost earlier in stressed syllables than in unstressed syllables.

After the metatony described in the preceding paragraph, Latvian and Lithuanian went different ways. Latvian **en*, **an* became **ę̄*, **ō*, which were later diphthongized into *ie*, *uo*, e.g. *luôgs*, *pìeci*, i.e. Lith. *lángas*, *penkì*. In Lithuanian, however, old **ę̄*, **ō* were diphthongized into *ie*, *uo* at an early stage, so that **ē*, **ā* could become *ė*, *o* when **e*, **a* were lengthened under stress, e.g. *vẽda*, *sãko*. This lengthening preceded the retraction of the ictus from medial syllables in mobile paradigms (Pedersen's law), as I have pointed out earlier, cf. *nèveda*. Here again, the retraction of the ictus onto a laryngealized vowel yielded rising tone and loss of the laryngeal feature, e.g. *ẽdesis*, *ẽdalas*, *ẽsena*, *taũkinas*, *añtinas* (Hjelmslev's law, cf. Hjelmslev 1932:10ff., 62ff., Pedersen 1933:10, Stang 1966:154). The retraction preceded de Saussure's law, as I have pointed out earlier.

According to de Saussure's law, the ictus is transferred from a non-falling vowel to a following acute (i.e. laryngealized) vowel in Lithuanian. There is no indication that de Saussure's law ever operated in Latvian. Indeed, there are two weighty arguments that its application was limited to Lithuanian. Firstly, the law was preceded by Pedersen's law, which was in turn preceded by the exclusively Lithuanian lengthening of stressed **e*, **a*. Thus, the law should have operated independently in the two languages. Secondly, the operation of the law was certainly favoured by the rising tone of the Lithuanian circumflex. In Latvian, however, the falling circumflex rather favoured a retraction of the stress. I think that the stabilization of the ictus on the first syllable of the word was the Latvian counterpart of de Saussure's law in Lithuanian.

Two more accent laws operated in Lithuanian: the retraction of the ictus from a short *a* in final syllables to a preceding long vowel or diphthong, e.g. *kiekas*, *meñkas* (Nieminen's law, cf. Stang 1957:158), and the shortening of acute vowels in final syllables (Leskien's law). The latter law cannot have preceded the former because of *rankà*, *rankàs*. The chronology of Nieminen's law presents a problem, however. I have two arguments for the thesis that this law is relatively late.

Firstly, I find it hard to assume that the final stress in *anàs*, *katràs* has been maintained over a long period while the ictus was analogically retracted in all other nom.sg. forms, e.g. *gẽras*. Secondly, I think that there was a causal relationship between Nieminen's law and Leskien's law. When the ictus was retracted from a short *a* in final syllables, length became redundant in **rankó*, **rankós*. Shortening of the acute vowel entailed the neutralization of intonation in final syllables, except in Žemaitian. Similarly, long vowels and diphthongs in final syllables of polysyllabic words were shortened in Latvian when most short vowels were syncopated.

3.4 MEILLET'S LAW

In Slavic, IE laryngeals in pretonic syllables were lost with compensatory lengthening of a neighbouring vowel shortly after the dissolution of the Balto-Slavic unity, e.g. **golváH*, **sūnumí*, **pīláH* < **golHváH*, **suHnumí*, **pHiláH*. The laryngeal was analogically eliminated in the barytone forms of mobile paradigms, e.g. **gólvą̄*, **sűnuN*, **pílo*, which led to the apparent metatony known as Meillet's law. At the same time, the laryngeals were lost in posttonic syllables except for the first posttonic syllable, as I have pointed out earlier, e.g. **ósnovā*, **nósi(H)lā*, **žénaHmīS* from earlier **-aH*, **-miHS*. After Dybo's law, when the ictus shifted to the following syllable, the posttonic quantity was lost in Slovene with compensatory lengthening of the preceding vowel, which yielded the neo-circumflex in *osnôva*, *nosîla*, *ženâmi*. The laryngeals were still retained in the stressed syllable and in the first posttonic syllable.

As a consequence of Meillet's law, mobile paradigms with an acute root vowel are lacking in Slavic. On the other hand, mobility was generalized in the masculine *o*-stems which did not have an acute root vowel (Illič-Svityč's law). At this stage, masc. *o*-stems belonged to four different accentual paradigms. Firstly, there were nouns with a laryngeal in the root and fixed stress on the stem, e.g. **dúHmuN*, SCr. *dȉm*. Secondly, there were nouns with fixed stress on the stem but without a laryngeal in the root, e.g. **zóNbuN*, cf. Gr. *gómphos*. Thirdly, there were originally neuter nouns with fixed stress on the stem in the singular which had a suppletive end-stressed plural, e.g. **dvóruN*, **dvoráH*, Ru. *dvor*. Fourthly, there were mobile paradigms without a laryngeal in the root, e.g. **gólsuN*, SCr. *glâs*. The last type

continued the old IE oxytona. Originally end-stressed nouns with a laryngeal in the root joined either the first type as a result of Hirt's law, or the last type as a result of Meillet's law. However, the accentual difference between the four types mentioned here existed in the plural only. As a consequence of Ebeling's law, the ictus had been retracted to the stem in all singular case forms of the mobile paradigm with the exception of the nominative and the instrumental. These two case forms were lost: the nominative was replaced by the accusative, and the instrumental received a borrowed ending, cf. Lith. *vilkù*, Ru. *vólkom*. Now the second accent type joined the mobile paradigm, from which it differed in the oblique cases of the plural only, e.g. SCr. *zûb*. This development was established by Illič-Svityč (1963:119). The old accentuation was retained in the Čak. dialects of Susak and Istria, where we find e.g. gen.sg. *zūbà*, with final stress as a result of Dybo's law. I assume that Illič-Svityč's law is posterior to Meillet's law because the first accent type did not take part in the change.

At this stage, nominal prefix formations were stressed either on the stem or on the prefix, e.g. **povóduN*, **národuN*. Formations of the former type received final stress in the oblique cases of the plural as a result of Illič-Svityč's law. Then the ictus was retracted to the prefix in the other case forms as a result of Pedersen's law. According to Pedersen's law, the ictus is retracted from medial syllables in mobile paradigms. As I have pointed out earlier, this law operated twice in Slavic, first in the earliest Balto-Slavic period, and later again after the dissolution of the Balto-Slavic unity. The latter retraction yielded the accentuation of Ru. *ná vodu*, *né byl*, *pródal*, *póvod*, ORu. *privedu*, *góvorju*, as opposed to Ru. *na vodé*, *ne bylá*, *prodalá*, *na povodú*, *privedët*, *govorít*. The lateral mobility in nominal prefix formations shows that Pedersen's law was posterior to Illič-Svityč's law. Indeed, lateral mobility did not arise here when the latter law did not operate, cf. Čak. (Istria) *razdél*, gen.sg. *razdēlà*, with final stress due to Dybo's law.

At the same stage, as far as we can see, the stressed vowels in the barytone forms of mobile paradigms received a falling intonation, whereas all other stressed vowels became rising, e.g. **vȍdą̄*, **nâ vodą̄*, **žènā̄*, **trávą̄*, **lòmjā̄*, **nòsjā̄*, **xváljā̄*, **nesèno*, Ru. *vódu*, *ná vodu*, *ženú*, *travú*, *lomljú*, *nošú*, *xvaljú*, *nesenó*. I think that the rise of distinctive intonation can hardly be separated from Pedersen's law in Slavic because these developments are, in a sense, variants of the same phenomenon. The rise of distinctive intonation is certainly later

than Illič-Svityč's law because of the falling pitch throughout the singular in SCr. *zûb*.

From the other developments which took place during this period I want to mention the narrowing of word-final **ē*, **ō* into **ī*, **ū*, e.g. OChSl. *mati*, *kamy*, cf. Lith. *mótė*, *akmuõ*, the merger of **ā*, **aH* with **ō*, **oH*, e.g. OChSl. *dati*, acc.pl. *ženy*, cf. Lith. *dúoti*, *jűras*, and the Slavic *Umlaut* of back vowels after **j*, e.g. OChSl. *igo*, *konję* < **jŭgo*, **kònjons*, but *zemljǫ*, *znajǫ* < **zèmją̄*, **znòHją̄* because the nasal vowel in the latter words was indifferent with respect to the distinction between front and back vowels. The relative chronology of these sound changes is clear: the merger of **ā* and **ō* cannot have preceded the narrowing of **ō* into **ū* because word-final **ā* was preserved in the gen.sg. ending of the *o*-stems, e.g. Ru. *vólka*, cf. Lith. *vil̃ko*, but the merger of **aH* and **oH* must have preceded the *Umlaut* because the latter operated in the acc.pl. ending of the *aH*-stems, e.g. OChSl. *zemlję* < **zèmjaHns*. I intend to treat the history of the nasal vowels separately on another occasion.

3.5 THE RISE OF THE NEW TIMBRE DISTINCTIONS

The most radical change in the Slavic sound system was brought about by the so-called law of open syllables, or law of rising sonority. As a result of this law, which actually comprises a series of successive sound laws, closed syllables were eliminated from the language. In this section I shall confine myself to those parts of the law which are relevant in connection with the loss of the IE laryngeals and the development of vocalic quantity.

After Meillet's law the laryngeals were retained in the stressed syllable and in the first posttonic syllable. Now a posttonic laryngeal was lost without compensatory lengthening, whereas in stressed syllables a laryngeal became a vocalic feature. The development is analogous to that of the nasals: we have **dỳmъ* < **dùHmuN* just as we have **zǫ̑bъ* < **zòNbuN*. As a result of the loss of the laryngeals, the timbre oppositions /a∼o, ě∼e, i∼ь, y∼ъ/ became phonemic. For typographical reasons I shall again use **ę* instead of **ě* in the sequel. The loss of final **N* in **sûnuN* probably preceded the loss of final **s* in **slòvos*, and the latter probably preceded the loss of final **H* in **žènaH* (cf. Ebeling 1963:34ff.). This chronological difference is irrelevant for the present exposition, however.

The loss of the laryngeals in posttonic syllables yielded short **a*, e.g. in **žèna*. On the other hand, long **e* arose in the same position as a result of Van Wijk's law, according to which simplification of a consonant cluster entailed lengthening of the following vowel, e.g. **gỳnēšь* < **gùHbneSi* (cf. Ebeling 1967:587). Van Wijk's law must have been posterior to or simultaneous with the loss of the laryngeals because of the long vowel in **vòļā* from earlier **vòljaH*, so that we may have to postulate an intermediate stage **gỳbneSь*, **vòlja*. It should be noted that long vowels in posttonic syllables were not shortened, cf. SCr. *nòsīš*, *bȁvīš* < **nòsīšь*, **bàvīšь* and Slovene *osnǫ̑va* < **òsnovā*, where the neo-circumflex points to the retention of length in the final syllable.

As a result of the rise of the new timbre distinctions in posttonic syllables, the quantitative oppositions in pretonic syllables were re-interpreted as timbre distinctions. When Dybo's law restored the quantitative oppositions in pretonic syllables, the old long vowels became distinctively short, e.g. Polish *ręka*, SCr. *màlina* < **rǫkà*, **malîna*, cf. Polish *wątroba*, SCr. *národ* < **ǫ̑trobā*, **národъ*. The length in SCr. *rúka* was introduced later after the accusative *rûku*, cf. the oblique plural form *rùkama*. The shortening of pretonic long vowels yielded an alternation between pretonic short and posttonic long vowels in mobile paradigms. Here too, Serbo-Croat generalized the long vowel, e.g. *gòlūb*, *žȅlūd*, *lȁbūd*, *òblāst*, whereas Czech and Polish generalized the short vowel, cf. Czech *holub*, *žalud*, *labuť*, *oblast*. The long vowel was retained everywhere if it did not alternate with a short vowel, i.e. in paradigms with fixed stress such as SCr. *mjȅsēc*, *pȅnēzi*, *jàstrēb*, *pȁūk*, Czech *měsíc*, *peníz*, *jestřáb*, *pavouk*. The latter words had a laryngealized vowel in the first syllable. Cf. in this connection the difference between SCr. *pȅkār*, *čȅljād*, Cz. *pekař*, *čeleď*, and SCr. *rȉbār*, *rȉbnjāk*, Cz. *rybář*, *rybník*. The former type has original mobility, the latter type fixed stress. The old mobility is still evident in SCr. *sjȅčīvo*, plur. *sječíva*, Cz. *palivo*. The absence of end-stressed words with the same suffix as SCr. *ròđāj*, *čȅljād*, where the intonation points to old mobility, is due to Pedersen's law (cf. Stang 1957:47). Both Czech and Serbo-Croat show short vocalism if the suffix contained a laryngeal, e.g. SCr. *bògat*, *sȓdit*.

In stressed syllables I assume that the laryngealized vowels, like the nasal vowels, were indifferent with respect to quantity in the period under discussion. When the laryngeal feature was finally lost in the period between Dybo's law and Stang's law, the resulting vowels

were short. The quantitative opposition in the nasal vowels was restored as a consequence of Dybo's law. Polish *noszę* shows that the nasal vowels were neutral with respect to quantity at the time of Van Wijk's law. The retraction of the ictus from word-final jers added new long vowels to the inventory, e.g. Slovene *gọ́r*, and analogically *kọ́nj*. This retraction yielded long rising nasal vowels in Polish *rąk*, *niosą* < **rǫ̂kъ*, **nesǫ̂tъ* < **rǫkъ̀*, **nesǫtъ̀*. Other long vowels arose after Dybo's law as a result of the lengthening in monosyllables, e.g. Slovene *bộ̂g*, *kộ̂st*, *dân*, and dialectally under various conditions.

It is interesting to compare the rise of the new timbre distinctions chronologically with the metathesis of liquids. The metathesis was often accompanied by lengthening. If **or* yielded **rā*, the metathesis must have preceded the rise of the new timbre distinctions. On the other hand, the latter must have preceded the former if **or* yielded **rō*. Finally, no conclusions about the chronology can be drawn in the cases where **or* yielded **ro* without lengthening. It turns out that the relative chronology of these developments was different in different dialectal areas. In Czecho-Slovak and South Slavic the metathesis preceded the rise of the new timbre distinctions, e.g. Cz.Slk. *brázda*, *brada*, SCr.Sln. *brázda*, *bráda* < **bòrzdaH*, **bordàH*. In Polish and Sorabian, however, the order was reversed, cf. Po.US. *brózda*, *broda*. Here the long *o* in the former word indicates that at least under rising accent the metathesis was posterior to the rise of the new timbre distinctions. These results are corroborated by the development of **kòlHdaH*, which yielded **klàda* in Czecho-Slovak and South Slavic, and **klòda* in Lekhite. Here the lengthening of the vowel is not indicated because laryngealized vowels were indifferent with respect to vocalic length. When the laryngeal feature was lost after the operation of Dybo's law, these forms developed into **klàda*, **klòda*. The short rising vowel was regularly lengthened in Cz.Sln. *kláda*, US. *kłóda*, but not in SCr. *klàda*, Slk. *klada*, Po. *kłoda*. The difference between US. *kłóda* and *broda* on the one hand, and between Po. *kłoda* and *brózda* on the other hand clearly shows that the laryngeal feature was still preserved after the rise of the new timbre distinctions.

The development of word-initial **or* is slightly different: SCr. *lâkat* and Slk. *laket'* point to metathesis and lengthening under falling accent before the rise of the new timbre distinctions, whereas SCr. *ròbiti* and Slk. *robit'*, as well as Cz. *robiti*, point to metathesis without lengthening under rising accent. Here Cz. *loket* is ambiguous: either the vowel was not lengthened, or the metathesis was posterior to the rise of

the new timbre distinctions. The latter possibility is excluded by Cz. *rádlo* < **òrHdlo*, so that we have to assume that the metathesis was in all positions anterior to the rise of the new timbre distinctions in the whole Czecho-Slovak and South Slavic area. In Czech the metathesized vowel was not lengthened in unstressed syllables, e.g. *jabloň*, cf. SCr. *jàblān*, Po. *jabloń*. Thus, the *o* in Cz. *loket* may be due to analogical levelling after the end-stressed forms of the paradigm, cf. also *role* from **orlьjaH*. In OChSl. *kamy* there must have been an interchange of a word-initial laryngeal with the *k* in the period between the end of the Balto-Slavic unity and the rise of the new timbre distinctions, cf. Lith. *akmuõ* < **(H)ákmō(N)*. The laryngeal is posited on the basis of Gr. *ákmōn* and SCr. *kàmēn*.

After the loss of the laryngeals in posttonic syllables and the rise of new long vowels as a result of Van Wijk's law, case endings could have three different quantities. The ending of the nom.sg. of the *a*-stems was short in **žèna*, **tráva*, long in **vòl̨ā*, **òsnovā*, and indifferent with respect to length in **gorà*, **dušà*. Similarly, the neuter nom.pl. ending was short in **lę̀ta*, **vína*, long in **sę̀menā*, **tèlętā*, and indifferent in **pol̨à*, **imenà*. Other case endings were always long, e.g. the inst.pl. ending, where length has been preserved in Slovene *stəbrí*, *râki*, with neo-circumflex indicating earlier **ràkȳ*, *možmí*, *nogâmi*. At this stage several levellings took place. Endings which did not occur under the stress were shortened in the whole Slavic territory, e.g. gen.sg. **kòn̨a*, **nìti*, dat.sg. **kòn̨u*, **nìti*. Length was generalized in the unstressed nom.pl. ending in Slovene *lę̂ta*, but not under the stress, cf. *drvà*. Conversely, the distinction between a short unstressed nasal vowel and a long nasal vowel under the stress was preserved in Slovene gen.sg. *lípe*, *gorę́*, and in SCr. acc.pl. *glâve*, gen.sg. *glávē*. This difference became phonemic as a result of Dybo's law, which re-introduced long unstressed nasal vowels and short nasal vowels under the stress, cf. Polish *trąba*, *noszę* from **trǫ̂ba*, **nòšǫ*, later **trǭbà*, **nošǫ̀*.

3 6 THE LOSS OF THE LARYNGEAL FEATURE

The opposition between long and short vowels in pretonic syllables was restored as a result of Dybo's law (cf. Ebeling 1967:590). According to this law, rising vowels in non-final syllables lost the ictus to the following syllable, e.g. **nosìti*, **nošǫ̀*, **nosīšь*, **nosìlo*, **nošēno*, **pȳtàti*, **pȳtâšь*, **ženà*, **trāvà*, **vol̨â*, **osnòvā*, **nāròdъ*, **kon̨à*, **gotòvo*.

Dybo's law introduced phonemic pitch on long vowels in non-initial syllables. On the other hand, the pitch opposition on short vowels was lost, except in monosyllables. Here the opposition was eliminated by the lengthening of short falling vowels, e.g. Slovene *bǫ̑g*, *kǫ̑st*, *dân*, SCr. *bôg*, *kôst*, *dân*, Ru.dial. *bog* as opposed to Sln. *kònj*, *pàs*, SCr. *kònj*, *pàs*, Ru.dial. *kôn'*. Consequently, short vowels were falling in the initial syllable of polysyllabic words and rising elsewhere. The tonal opposition on short vowels was not lost, but re-phonemicized by the loss of the laryngeal feature. The old laryngealized vowels fell together with the short rising vowels, e.g. **dỳmъ*, **gorà*.

The tonal opposition on long vowels in initial syllables of polysyllabic words was restored by Stang's law, according to which the ictus was retracted from falling vowels in final syllables (cf. Ebeling 1967:591 f.), e.g. **nôsišь*, **nôšenъ*, **pýtašь*, **vôļa*. The latter development may have been evoked by the general shortening of falling vowels, cf. Polish *rękę*, Czech *ruku*, *mladost*, SCr. *mlädōst*, gen.sg. *prȁseta*, the second syllable in *nȍšen*, *nȍšeno*, Ru.dial. *bog*. The shortening did not affect monosyllables in Slovene and Serbo-Croat and the first syllable of disyllabic words in the latter language, e.g. SCr. *bôg*, *rûku*, *prâse*. It probably reached the South Slavic area later than the North. The progressive accent shift in Slovene may also have been evoked by the shortening of falling vowels, e.g. *rokǫ̑*, *mladǫ̑st*. I assume that in the period before the shift length was neutralized under falling tone, as it was in *bǫ̑g*. It is clear that the Slovenian accent shift cannot have preceded Stang's law but must have preceded the loss of the nasal vowels, cf. also *imę̑*, *mesǫ̑*. The shortening of falling vowels was preceded by the South Slavic generalization of length in pretonic vowels which alternated with long vowels under the stress, e.g. SCr.Sln. *dúša*. This development, which was a logical consequence of the phonemicization of pretonic quantity as a result of Dybo's law, did not affect trisyllabic word forms such as SCr. *rùkama*. Short rising vowels were lengthened in different languages under different conditions, e.g. Cz. *kráva*, Sln. *lę́to*, Ru.dial. *kôn'*.

As to chronology, it is clear that the loss of the laryngeal feature cannot have preceded Dybo's law. It is probable that the lengthening of falling vowels in monosyllables also preceded the loss of the laryngeal feature because the latter development restored the tonal opposition on short vowels in the initial syllable of polysyllabic words and thereby eliminated the motivation for the lengthening. On the other hand, the loss of the laryngeal feature cannot have been much

later because the phonetic distinction between falling short vowels in initial syllables of polysyllabic words and rising short vowels elsewhere had not yet been lost. The loss of the laryngeal feature was certainly anterior to Stang's law because of the gen.pl. SCr. *jèzīkā*, as I pointed out earlier. The short vowel in the gen.pl. Cz. *krav*, *děl* is an indication that the loss of the laryngeal feature was posterior to the generalization of length in the gen.pl., which must have taken place in the period around Dybo's law.

The absolute chronology is indicated by the final accentuation in Ru. *koról'*, SCr. *krâlj*. The accentuation of this word does not imply that the borrowing preceded Dybo's law because the word may have been adapted to the existing accent pattern, cf. Lith. *kultūrà*, *literatūrà*. Other loans may be older than Dybo's law, e.g. Ru. *kostër*. Since the name of Charlemagne cannot have been borrowed before 800 A.D., Stang's law must be dated in the ninth century and the final loss of the laryngeal feature must have occurred toward the end of the eighth century. I assume that the period between Dybo's law and Stang's law was relatively short. The East Slavic *polnoglasie* must be dated shortly before Stang's law.

3.7 SLOVINCIAŃ

In the preceding chapters I have not taken the Slovincian material into account. This is not because I think that Slovincian is of no value for the reconstruction of Slavic accentuation, but simply because I think that its value is seriously impaired by a number of secondary developments which have not as yet been properly investigated. One cannot reach any definite conclusions without previously undertaking an exhaustive synchronic analysis of the language. A superficial comparison of the Slovincian material with what is known about Slavic accentuation from other sources can easily lead to wrong conclusions. Thus, Garde recently (1973) put forward the hypothesis that Dybo's law, which he calls Illič-Svityč's law, did not operate in the West Slavic dialects. In fact, there are valuable indications both in Slovincian and in Czecho-Slovak and Polish that the shift operated in the whole Slavic area. The original state of affairs in Slovincian has been obscured mainly by three phonetic retractions of the ictus, the generalization of certain case endings, and two layers of morphological barytonesis. In the following discussion I shall use a simplified variant of Lorentz's orthography.

Garde claims that historically mobile paradigms are mobile in Slovincian, while all other paradigms have, as a rule, fixed stress on the stem. This is simply incorrect. As Van Wijk pointed out more than half a century ago, Slavic oxytona with a long stem vowel have fixed stress on the stem, whereas the majority of Slavic oxytona with a short stem vowel have become mobile (1922:24). Moreover, Slavic barytona with secondary rising intonation, i.e. where Dybo's law operated but did not yield oxytonesis, have fixed stress on the stem. Van Wijk draws attention to the fact that composita like *fxóud* and *zbjég* have fixed stress, whereas a few simplicia like *bjég* are mobile (1922:13). This is indeed an important indication that Dybo's law did operate in Slovincian. The difference between fixed stress in *fxóud* and analogically *xóud* on the one hand and mobility in *bóub*, *dvór*, *nóuž*, *vóul* etc. on the other can only be explained by assuming that the latter paradigms were stressed on the ending at an earlier stage and joined the mobile pattern after a retraction of the ictus.

Garde's second piece of evidence is the accentuation of *golùoloud*, *darùovac*, *darùovoul*, as opposed to Ru. *gololëd*, *darovát'*, *darovál*. This is no indication at all because in Slovincian the accent never falls on the final syllable of polysyllabic word forms except for a few cases where it is secondary. The regular stress pattern has been preserved in *kolùodzei*, loc.sg. *kolodzìejū*. In the verb the old accentuation has been preserved in the fem.sg. form of the *l*-participle *darovà*, with subsequent loss of the ending.

As far as I can see, we have to assume three phonetic retractions of the ictus in Slovincian. The stress was first retracted from any final syllable to a preceding long vowel (cf. Kuryłowicz 1952:16). This can be viewed as an expansion of Stang's law. The stress was not retracted from medial syllables, cf. *zābàva*, *voụtrùoba*, which again proves that Dybo's law did operate in Slovincian. Then the ictus was retracted from short vowels in final open syllables. As a consequence of this development, the three accentual paradigms were reduced to two. In the verb the retraction in the 1st sg. *pjíšą* and the imp.sg. *pjìšə* led to a paradigm with fixed stress. The retraction is clearly phonetic because it did not take place before an enclitic particle, cf. imp. *zàčnji*, *začnjìcə*, *pomožə-mjə*. Finally, the ictus was regularly retracted from final syllables of polysyllabic word forms. Final stress was restored in the inst.pl. forms of mobile paradigms, e.g. *rąkamí*, *břegamí*. The latter forms cannot be old because of two reasons. First, the stress was retracted in the *aH*-stems according to Hirt's law, cf.

Slovene *goràm*, *goràh*, Čak. (Novi) *goràmi*. Second, the final vowel of the ending must be identified with **-ȳ*, like in *xlùopī*, not with **-ī*, which would regularly palatalize the preceding consonant, cf. *mjílī*. The long vowel in the gen.dat.sg. *bȓ̀egū* cannot be old either, cf. the short ending in nom.pl. *xlùopji*. The long vowel is analogical after the loc.sg. ending.

There have been two more retractions of the stress in Slovincian. As a rule, the ictus was retracted in those forms of polysyllabic words with fixed stress on the syllable preceding the ending, where the mobile type stressed the initial syllable, e.g. *ləsə̀ca*, *doplàta*, *casnùota*, acc.sg. *lə̀səcą*, *dùoplatą*, *càsnotą*, and *dùoxoud*, gen.pl. *doxùodou*, neuter *kùolano*, *kùopəto*, nom-acc.pl. *kolàna*, *kopə̀ta* like *jìezoro*, *jezùora*. The same development took place in the verb, e.g. *nàpjišą*, *napjíšeš*, imp. *nàpjišə*, like *dùonjosą*, *donjìeseš*, imp. *přə̀njesə*. This retraction must have preceded the retraction from short vowels in final open syllables, which eliminated the motivation for a deviating accentuation in the acc.sg. of the *aH*-stems. On the other hand, it must have been posterior to the general retraction of the ictus from final syllables of polysyllabic word forms because the Slavic oxytone type and the type with fixed stress on a medial syllable had apparently coalesced, e.g. *bùogōč*, *kàrčmōř*, *kùovōl*, loc.sg. *bogáučū*, *karčmàřū*, *kováulū*. After the retraction from short vowels in final open syllables the ictus was analogically retracted in the nom.gen.dat.loc.sg. of polysyllabic *aH*-stems when these cases differed from the acc.sg. and nom-acc.pl. as to their accentuation, e.g. *mùotəka*, inst.sg. *motə̀kou*, gen.pl. *motə̀k*. This process was under way at the beginning of our century (cf. Kuryłowicz 1952:13f.). It had affected such words as *bùogōčka*, *kàrčmōrka*, *kùovōlka*, where the new accentuation was supported by the corresponding masculines. The new development reached derivations later than the words from which they were derived, cf. *komùora*, *komórka*, *kùobəla*, *kobílka*, *nùogəica*, *nogə̀ička*, *sə̀rota*, *sə̀rotka*. For the details I refer to Kuryłowicz's article about Slovincian accentuation.

The question remains how the tendency to retract the ictus, which is so clearly perceivable in Slovincian and which led to the stabilization of the stress on the initial syllable in the other West Slavic languages, came about. I think that the origin must be sought in the shortening of falling vowels, which affected the North earlier than the South. The latter development reached the South Slavic area after the generalization of length in pretonic vowels which alternated with

long stressed vowels, e.g. SCr.Sln. *dúša*. This generalization could take place only after Dybo's law, which re-introduced phonemic length in pretonic syllables. In West Slavic the old circumflex was shortened before length could be restored in the end-stressed forms of the paradigm. As a result, tone and quantity lost their mutual independence. After Stang's law and the retraction to a preceding long vowel, non-initial stress was associated with accentual mobility, which again led to barytonesis. The details may have been different in various dialects, but the general trend was the same.

Apart from the evidence mentioned above, like fixed stress in *fxóud*, *zbjég* and medial accentuation in *zābàva*, *voųtrùoba*, there are other indications that Dybo's law operated in Slovincian like everywhere else. First, there is the isolated word *vjigùo*, where the final accentuation cannot otherwise be explained. Second, there is a class of feminine nouns with final stress, e.g. *cenjáu*, pointing to earlier **tenьja*, cf. Ru. *sud'já*. If Dybo's law had not operated, one would expect retraction of the ictus. Finally, such forms as Czech *můžeš*, *vůle*, Slovak *môžeš*, *vôl'a*, Polish *stróża* (cf. Čak. *stráža*) can only be explained by assuming final accentuation at an earlier stage.

CHAPTER 4

THE ADJECTIVE

4.1 INTRODUCTION

In the simple adjective we find the same accentuation types as in the substantive, e.g. **ràdъ*, **stàrъ*, **čîstъ*, **sỳtъ* with a laryngealized root vowel, **bę́lъ*, **gòlъ*, **òstrъ*, **nòvъ* with later oxytonesis according to Dybo's law, and **bòsъ*, **sûxъ*, **jûnъ*, **mòldъ* with old mobility, cf. Čak. (Novi) *stàra*, *čîsta*, *bēlò*, *golò*, Slovene *junọ̑*, *mladọ̑*. The same types occur in suffixed forms, e.g. **glàdъkъ*, **kỳselъ*, **tęžьkъ*, **debèlъ*, **mę̑kъkъ*, **vẽselъ*, where the retraction of the ictus is due to Hirt's law in the first and to Pedersen's law in the last examples, cf. Slovene *glátko*, *teškò*, *mehkọ̑*. The problem is that the distribution of the patterns has been obscured by the transition of many adjectives into other classes. Thus, the mobility in Čak. *novà*, *nòvo* is definitely secondary in view of the short vowel in *nòv*, which points to an old rising accent. As a result of the numerous transitions, it is hard to find exact correspondences between different languages. Now the question must be posed how this situation came about.

4.2 DOLOBKO'S LAW

The compound adjective results from the composition of two elements which gradually merged to form a unity. The composition goes probably back to the Balto-Slavic period in view of the close correspondence between Baltic and Slavic in this respect. The unity can hardly be so old, however. The Lithuanian forms *gẽras*, *geràsis* point to the fact that the pronominal element in the compound adjective was still an enclitic particle at the time when stressed *e,a* were lengthened, i.e. shortly after the dissolution of the Letto-Lithuanian linguistic unity, but that it had developed into a regular suffix in the period when Nieminen's law operated (cf. Kortlandt 1974). In Slavic the clitic had become a suffix before the earliest loss of intervocalic **j*, which took place before Dybo's law.

In words with mobile stress the ictus moved from the initial syllable

to the end of the word when an enclitic was added, e.g. SCr. *nòćas*, *jesènas*, *zìmūs*, but *ljȅtōs*, *jùtrōs*. This is Dolobko's law, which must be dated somewhere between the end of the Balto-Slavic linguistic unity and the loss of intervocalic **j*. Like Dybo (1962:26f.), I do not agree with Stang (1957:103) and Ebeling (1967:587) that the ictus advanced to the syllable preceding the enclitic. The above cases, like Ru. *rodilsjá*, *rodilís'*, are inconclusive in this respect because of the lost jer. However, ORu. *postyžusjá* shows that the stress shifted to the enclitic itself, or rather to the last syllable of the compound, cf. Slovene *lahkegà*, *lahkemù*. The latter accentuation is also found in some Serbo-Croatian dialects. For the Old Russian and Middle Bulgarian evidence see Dybo 1971. Thus, the shift strengthened rather than attenuated the lateral mobility in Slavic noun inflection. This is another indication that Dolobko's law must be dated in approximately the same period as Pedersen's law. The similar accent shift in Bulgarian occurred much later and operated differently (Bulaxovskij 1921:286).

The timbre of the vowel in Ru.dial. *gôlyj*, Slovene *gǫ̑li* shows that the retraction of the stress is a result of Stang's law. Consequently, the paradigm must have had a number of long endings, which can only have arisen by contraction after the loss of intervocalic **j*. I assume that Slavic contractions go back to two different periods. Before the operation of Dybo's law, vowels in posttonic syllables were contracted after the loss of intervocalic **j*, e.g. Čak. (Novi) *pítā*, Bulg. *píta*, Polish *pyta* < **pytâtь* < **pýtaetь*. Later contractions did not affect the whole Slavic territory, e.g. Čak. *kopâ*, Bulg. *kopáe*, Old Polish *kopaje* < **kopà(j)etь*. It is unclear to what extent the first type of contraction affected the East Slavic dialects. Adjectival forms like Ru.Ukr. *dóbrym* and the neuter nom.sg. Ukr. *dóbre* seem to indicate that the older contractions did reach East Slavic. Here Ru. *pytáet*, Ukr. *pytáje* may or may not be back-formations after Ru. *kopáet*, Ukr. *kopáje*, or the timbre of the vowels may have prevented contraction.

As a result of Dolobko's law and the early contractions, approximately the following paradigms existed in the Common Slavic period between Dybo's law and the loss of the laryngeal feature.

**novŷ*	**bosŷjь*	**novâgo*	**bosaegò*
**novâ*	**bosàja*	**novûmu*	**bosuemù*
**novê*	**bosojè*	**novŷmь*	**bosŷimь*

**novî*	**bosìi*	**novŷxъ*	**bosỳixъ*
**novę̂*	**bosyjȩ̀*	**novŷmъ*	**bosỳimъ*
**novâ*	**bosȁja*	**novŷmi*	**bosỳimi*

The loss of the laryngeal feature and the later contractions gave rise to an extensive interchange between these two paradigms. According to Stang's law, the ictus was retracted in the majority of forms belonging to the first paradigm, cf. Ru. *nóvyj*, *bosój*.

4.3 THE COMPARATIVE

The stem vowel is rising in the comparative before the suffix **-je*, e.g. Ru. *molóže*, *doróže*. The long stem vowel in Old Czech *hůře*, *méně*, Ru.dial. *bôle* points unambiguously to a neo-acute. The most plausible explanation is that originally the comparative had fixed stress on the root so that the stem vowel received rising pitch, and that the word-final vowel was lengthened as a result of Van Wijk's law. Thus, the development of **gôr̥e* < **gòrje* is wholly analogous to the development of **vôl̥a* < **vòljaH*.

Stang assumes (1957:104f.) that the comparative shows proto-Slavic metatony and that the neo-acute in the words mentioned above is due to analogy. However, I fail to see the motivation for the analogy. After the loss of the laryngeal feature, the old acute vowels fell together with the short rising vowels, so that one would expect **ò* instead of **ô* if the origin of the intonation were analogical. The only argument against an original neo-acute is the short vowel in Čak. (Novi) *vìše*, *dràže*, *sùše*. But here the short vowel can easily have been introduced after the long forms of the comparative, e.g. *mlàjī*, cf. Štok. *mlȁđī*, *mlȁdōst*. There is no reason to assume any real metatony at any stage in the development of Slavic.

Indeed, the possibility of *métatonie rude* is hard to accept if one agrees that the final loss of the laryngeal feature occurred as late as I have suggested. The difference between Ru. *zóloto*, *górod* and *pozolóta*, *ogoród* goes back to an original distinction between mobile stress in the simple noun and fixed stress on the prefix in the compound, with later shift in accordance with Dybo's law. In Slavic, in contradistinction to Baltic, there never was any metatony because there was no model for it.

CHAPTER 5

CASE ENDINGS

5 1 INTRODUCTION

If the theory presented in the foregoing chapters is correct, there was a period of common Balto-Slavic development between the times of IE linguistic unity and the separation into a Baltic and a Slavic branch. To this period belong the earliest retraction of the ictus from medial syllables in mobile paradigms, the extension of barytonesis to nouns with vocalic stems, the oxytonesis in paradigms with end-stressed forms, the retraction of the ictus known as Hirt's law, and the retraction from final open syllables in disyllabic word forms (cf. Kortlandt 1974). The decisive argument for assuming a separate Balto-Slavic period is not the mere existence of common innovations but the shared chronology of these innovations. It follows that the Balto-Slavic period comprises at least the period between the first common innovation after the dissolution of the IE linguistic unity and the last shared development of the two branches.

In view of this result, we have to assume that there was a common Balto-Slavic flexional system before the separation of the branches. In this chapter I shall try to reconstruct the case endings of the substantive at the end of the Balto-Slavic period, concentrating upon the points where the accentuation provides valuable information. At this stage, there were four short vowels **i*, **e*, **o*, **u*, five short vowels before laryngeal **iH*, **eH*, **aH*, **oH*, **uH*, at least four long vowels **ē*, **ā*, **ō*, **q̄*, and a large number of diphthongs. The syllabic resonants had been lost, cf. Lith. *vil̃kas*, *gurklỹs*, Polish *wilk*, *gardło*, going back to **il*, **ur*.

5 2 NOMINATIVE

The nominative singular is either sigmatic or asigmatic. In masculine and feminine nouns we find **-s* after **o*, **i*, **u* and zero after **H*, **r*, **n*, e.g. Lith. *diẽvas*, *ašìs*, *sūnùs*, *žiemà*, *patì*, *žẽmė*, *duktẽ*, *akmuõ*. The sigmatic ending is also present in the participles, e.g. Lith. *sukq̃s*.

The neuter ending is zero except for the *o*-stems, which will be discussed below.

The circumflex intonation of the ending in Lith. *žẽmė* presents a problem. Endzelin's suggestion of analogy after *duktẽ* is not convincing. If the contention that a Balto-Slavic acute goes back to a laryngeal is correct, the circumflex cannot simply be ascribed to a contraction because the laryngeal was word-final. It is possible that the laryngeal was regularly lost after a long vowel, cf. Lith. *duõs*, SCr. *dâ* < **dōHs*. On the other hand, Lith. *žẽmė* is the expected form of the acc.sg. if the hypothesis of regular loss of a word-final resonant after a long vowel is correct. In the latter case, the development of **ē* < **ēN* < **eHm* is analogous to the development of **ē* < **ēr* in *duktẽ* or **ą̄* < **āN* < **aHm* in *rañką*. A definite conclusion does not seem possible on the basis of the available evidence. Apart from the isolated nom.sg. form, the paradigm of *žẽmė* has been remodelled after the paradigm of *rankà*. Since it is impossible to distinguish between the original and the analogous forms, I shall leave the paradigm of *žẽmė* out of consideration in the sequel. I have no satisfactory explanation for the circumflex in Slovene *krî*, which may or may not be analogical after *kọ̑st*, cf. SCr. *krȋv*, gen.sg. *krȉvi*. The original acute has been preserved before the formative suffix in **języ̏kъ*, cf. OPr. *insuwis*.

The nominative plural of masc. and fem. nouns ends in **-es* except for the *o*-stems, e.g. Lith. *rañkos*, with **-ās* from **-aHes*, dial. *ãkmenes* (Stang 1966:222), OChSl. *kamene*, *synove*, and *pǫtьje* < **-e̯es* with reduction of **e* before **i̯*. The nom.pl. ending of Lith. *ãkys*, *sū́nūs* probably goes back to the ending **-iHes*, **-uHes* of the corresponding *H*-stems, cf. Czech *církve*, Skt. *tanúaḥ*. The neuter nom.pl. ending is **-aH*, e.g. SCr. *sèla*, *pòlja*, *nebèsa*, Slovene *telẹ̑ta*.

One of the most difficult problems in Baltic historical grammar is the nom.pl. ending of the *o*-stems, e.g. Lith. *vilkaĩ*. The ending, which may or may not be identical to the ending in the adjective *gerì* and the pronoun *tiẽ*, is enigmatic in all respects. Firstly, the ictus has escaped both the early Balto-Slavic barytonesis and the late Balto-Slavic retraction from final syllables in disyllabic words. Secondly, it is unclear why *-ai* has not regularly developed into *-ie* in the noun. Thirdly, the intonation presents a problem.

The IE ending **-o-es*, which is still found in Skt. *vṛ́kāḥ* and Gothic *wulfōs*, and also in Oscan-Umbrian, was replaced by the pronominal ending **-oi* in the majority of IE dialects, e.g. Gr. *lúkoi*, Lat. *lupī*,

OChSl. *vlъci*. This replacement may have been a common innovation in the central IE dialectal area. In any case it must go back to the earliest dialectal period because it was apparently earlier than the Balto-Slavic barytonesis, which belongs to the oldest innovations of the branch. The fact that the barytonesis did not reach the nom.pl. of the *o*-stems can only be explained by assuming that the ending differed considerably from the other flexion types.

The question why the ictus was not retracted in accordance with Ebeling's law, as it was in the loc.sg. of the *o*-stems, is more complicated. I think that the answer is provided by the Slavic material. The nom.pl. OChSl. *vlъci* differs from the loc.sg. OChSl. *vlъcě* just as the imperative *beri* differs from the old medial perfect *vědě*. The development of **oi* into *i* instead of *ě* in *beri* is best explained by assuming a narrowing before word-final **S* at some stage in the history of Slavic, cf. Gr. *phérois*. This assumption is supported by the development of **-ōiS*, **-oHns* into **-ȳ*, **-y*, OChSl. *vlъky*, as opposed to *-u*, *-ǫ* from **-ōi*, **-ont*. Similarly, we have to assume that the nom.pl. *vlъci* goes back to the enlarged form **vilkois*, with **-s* analogically after the other flexion types, as opposed to the loc.sg. *vlъcě* < **vilkoi*. The only problem in this approach is the chronology of the enlargement. On the basis of Lith. *vilkaĩ* I assume that it goes back to the Balto-Slavic period. The final **-s* distinguished the noun from the adjective, which simply had the pronominal ending, like Gothic *blindai*. In Slavic, the sigmatic ending was later extended to the adjective.

This solution accounts for two problems but creates a third one, viz. the subsequent loss of the final **s* in Baltic. I think that the latter phenomenon is explained by the diphthong *-ai*, which is in turn explained by the presence of the **s*. Elsewhere I have pointed out that the difference between Lith. dat.sg. *vil̃kui* < **-ōi* and inst.pl. *vilkaĩs* < **-ōis* is a valuable indication for the relative chronology of the (East) Baltic monophthongization and the shortening of long diphthongs (Kortlandt 1974). The monophthongization entailed the well-known shift in the ablaut relations. This reshuffling must have occurred in the same period as the shortening of long diphthongs in view of the many doublets with *ai* and *ui* (cf. Stang 1966:71). Most probably, length was neutralized in closed final syllables before the monophthongization, whereas the shortening of word-final long diphthongs was posterior to the reshuffling. As a consequence of the neutralization, the nom.pl. **vilkoiS* and the inst.pl. **vilkōiS*

became homophonous. The syncretism did not take place in the adjective and the pronoun, which had no final **s* in the nominative. The homophony in the noun was resolved by elimination of the final **s* after the monophthongization of relevantly short **oi*. Thus, we arrive at nom.pl. **tę̄ vilkai* versus inst.pl. **taiS vilkaiS*. The relation between **ę̄* and **ai* was particularly clear because both of them alternated with **ai* in unstressed syllables, where the opposition was neutralized. After the introduction of unstressed **ę̄*, the alternation between **ę̄* and **ai* was suppressed except in the isolated paradigm Latv. *iêt*.

Finally, the intonation has to be taken into account. If the above hypothesis is correct, the circumflex in the noun is original and the acute in the adjective must be explained as a secondary development. I think that it must be connected with the loss of the neuter gender in Baltic. The form Lith. *gerì* has probably arisen as a contamination of the masculine **geroi* and the neuter **geraH*. This is not the only contamination of this kind, cf. below.

The nominative and the accusative of the dual ended in **H* or **i*, e.g. Lith. *vilkù*, *rankì*, *avì*, *sūnu*, OChSl. *vlъka*, *izě*, *rǫcě*, *kosti*, *syny* < **oH*, **-oi*, **-aHi*, **-iH*, **-uH*. The old accentuation may have been preserved in Slovene *góri* < **gorì*, while the stress was analogically retracted elsewhere, e.g. Lith. *gálvi*, *kélmu*, Slovene *gubę̂*, *možâ*, *kostî* < **gûbę*, **mǫ̃ža*, **kòsti*, cf. nom-acc.pl. *gorę̂*, *kostî*. There are a few OLith. instances of the old nom.du. ending of the consonant stems **-e*, which is also found in Greek.

5.3 ACCUSATIVE

The acc.sg. ending was **-m* for masculine and feminine nouns, e.g. Lith. *ãkmenį*, *nãktį*, *sūnų*, OChSl. *kamenь*, *noštь*, *synъ* < **-iN*, **-uN*. Stem-final **H* was lost before this ending, e.g. Lith. *rañką*, OChSl. *rǫkǫ* < **-ą̄*. The *o*-stems present a problem. The Slavic material points to narrowing of **o* before word-final nasal, e.g. OChSl. *vlъkъ* < **vilkuN*. In spite of Lith. *vil̃ką* I think that this narrowing goes back to the Balto-Slavic period. There are several arguments for this point of view. Firstly, the regular reflex of the ending **-oN* is present in the gen.pl. Lith. *vilkų̃*, cf. below. Secondly, there is a chronological argument. In Slavic we find a nasal vowel in the 3rd plural of the thematic aorist, e.g. OChSl. *sědǫ* < **-ont*. Consequently, the narrowing

of *-*oN* into *-*uN* must have been anterior to the loss of word-final *-*t*. But the latter phenomenon must be dated in the Balto-Slavic period because it preceded the retraction of the ictus from final open syllables in disyllabic words (Ebeling's law), cf. Lith. gen.sg. *vil̃ko*, 3rd sg. *nẽša*, SCr. aor. *nȅse*. Thirdly, the narrowing must be viewed in connection with the loss of the neuter gender in Baltic.

The nom. and acc.sg. of the neuter *o*-stems ended in *-*om*, cf. Skt. *yugám*, Gr. *zugón*. In Slavic there is no narrowing in the IE oxytone neuters, e.g. OChSl. *igo*, but there is in the IE barytone neuters, e.g. OChSl. *dvor*, cf. Skt. *dvâram* (see Illič-Svityč 1963:124). This must be explained by the substitution of the pronominal ending for the ending *-*om* in the oxytone neuters. Here again the chronological problem presents itself. In view of the absence of mobility within the singular of neuter paradigms, we have to assume that the old oxytone neuters were barytonized as a result of Ebeling's law and that the historical oxytone neuters in Slavic can only have arisen as a result of Dybo's law. Consequently, the replacement of the ending by that of the pronoun must be dated in the Balto-Slavic period. Thus, I assume that the old neuter ending in Lith. *šálta* was not confined to the adjective at an earlier stage. This is confirmed by certain loan words from Baltic in Finnish.

The question remains why the replacement of the ending *-*om* was confined to IE oxytone neuters. I think that the reason is found in the early Balto-Slavic barytonesis. After the rise of lateral mobility in the polysyllabic consonant stems (Pedersen's law), the retraction of the ictus in the acc.sg. form was extended to the other flexion types. Consequently, the acc.sg. ending of the masc. *o*-stems *-*oN* became marked in relation to the other case endings of the oxytone paradigm as an unstressed ending. The re-evaluation of the ending *-*oN* as markedly unstressed, which was perfectly compatible with the existence of barytone neuter *o*-stems, was hampered by the existence of oxytone neuters in *-*oN*. The antinomy was resolved by the substitution of the pronominal ending in the oxytone neuters. The replacement preceded the narrowing, which in turn preceded the loss of final *-*t*. Thus, we arrive at the following relative chronology: (1) barytonesis, (2) replacement of the neuter ending, (3) narrowing of *-*o* before final nasal, (4) loss of final *-*t*, (5) Ebeling's law. The replacement of *-*oN* in the oxytona and the narrowing of *-*oN* in the barytona led to the separation of the two neuter paradigms and to the merger of the old barytone neuters with the barytone masculine *o*-stems. Ebeling's law barytonized

the remaining neuters, which then merged with the masculines in Baltic, but not in Slavic, where the old masc. nominative form was lost.

There were three motive forces for the replacement of the old accusative ending *-*uN* by *-*oN* in the *o*-stems in Baltic. Firstly, the nom. and acc.sg. were in every other flexion type characterized by one and the same vocalic formative before the consonantal case marker. Secondly, the replacement removed the homonymy between the acc.sg. and gen.pl. endings. Thirdly, the neuter nom. and acc.sg. was already characterized by the vowel **o*, after which the consonantal case marker was added. In Slavic the old masc. nominative was replaced by the accusative form after the general loss of final consonants had yielded the syncretism of nom. and acc.sg. in the *i*- and *u*-stems and the rise of new neuter words in *-o*, e.g. OChSl. *slovo*. These developments eventually led to the merger of the masculine *o*- and *u*-stems as well as to the merger of the neuter *o*- and *s*-stems.

On the basis of these considerations I assume for the last stage of Balto-Slavic the existence of three *o*-stem paradigms. There were stem-stressed masculines with a nominative in *-*os*, e.g. **vilkos*, or *-*uN*, e.g. **dvoruN*, and an accusative in *-*uN*. There were masculines with an end-stressed nominative in *-*os* and a stem-stressed accusative in *-*uN*. And there were neuters with a stem-stressed nom.-acc. in *-*o*. The second type was lost in Slavic and the third type in Baltic. The previous existence of an asigmatic nominative in Baltic is still confirmed by OPr. *assaran*, etc.

The accusative plural ended in *-*HNs*, e.g. Lith. *vilkùs*, *avìs*, *sūnus*, *šunìs*, *rankàs*, OChSl. *vlъky*, *rǫky*, OPr. *rānkans*. The laryngeal may or may not offer an explanation for the long vowel in Skt. *vṛ́kān*, *ávīn*, *sūnū́n*, where the *ad hoc* hypothesis of lengthening before *-*ns* is not satisfactory. The ending *-*HNs* may or may not have resulted from a blending of *-*Hs* and *-*Ns*, cf. Skt. *áśvāḥ*, Gothic *gibōs* but *wulfans*.

5.4 GENITIVE

The gen.sg. ending was *-*es* after a consonant, including **H*, e.g. Lith. *rankõs*, with *-*ās* < *-*aHes*, OChSl. *kamene*, *svekrъve* < *-*enes*, *-*uHes*. The circumflex in Lith. *pačiõs*, which goes back to **potiaHs*, is borrowed from the *aH*-stems. In the *i*- and *u*-stems the IE endings have been preserved in Lith. *ašiẽs*, *sūnaũs*, OChSl. *kosti*, *synu* < *-*eis*, *-*ous*.

The retraction of the ictus in Slavic presents a problem. The old accentuation is still found in Old Russian (cf. Stang 1957:87). In other dialects the ictus was retracted after the loss of the final **s* in order to avoid homonymy with the locative. The long vowel which resulted from the diphthong gave rise to the neo-circumflex in Slovene *nîti*, cf. nom.sg. *nìt*. The gen.sg. ending of the *o*-stems was **-ā*, which goes back to the IE ablative, e.g. Lith. *vil̃ko*, OChSl. *vlъka*. The alleged preservation of the old IE genitive in OPr. *deiwas* is purely hypothetical. As Vaillant has pointed out (1958:30), the form is best explained by assuming the addition of a secondary **-s* to the Balto-Slavic genitive on the analogy of the other flexion types, all of which had a genitive in **-s*, cf. OPr. *ālgas* with the same ending.

The enigmatic gen.sg. ending in the Slavic *aH*-stems must be due to the substitution of the acc.pl. ending after the loss of final **s*. The latter phenomenon caused the syncretism of nominative and accusative in a number of flexion types, which then could be extended analogically. Presumably the acc.pl. ending was first introduced in the nom.pl. of words where the loss of final **s* had yielded homonymy of nom.sg. and nom.pl. forms, e.g. **òsnovā*. The number of words with **-ā* in the nom.sg. was considerably increased by Van Wijk's law, e.g. **vòl̥ā*. The old nom.pl. form in **-ā* was finally lost when the levelling of quantity in unstressed endings made the confusion with the nom.sg. form complete. If this view is correct, concurrent nom.pl. forms may have existed during a considerable period. The existence of doublets during the period of gradual replacement led to the introduction of the new ending in the gen.sg. form, where both the old ending and the motivation for an analogical replacement were the same.

The IE gen.pl. ending was **-om*, which was narrowed to **-uN* in the Balto-Slavic period, as was pointed out above, e.g. Lith. *akmenų̃*, OChSl. *kamenъ*. The same ending is found in the other flexion types, e.g. Lith. *vilkų̃*, *rañkų*, OChSl. *vlъkъ*, *rǫkъ*, and *pǫtьjь*, *synovъ*, *svekrъvъ* < **-e̯i̯oN*, **-o̯u̯oN*, **-uHoN*. Like in the nominative, the ending of Lith. *avių̃*, *sūnų̃* goes back to the ending **-iHoN*, **-uHoN* of the corresponding *H*-stems, which developed into **-i̯uN*, **-uN* after the loss of the laryngeal. The old gen.pl. ending is still found in Skt. *asmā́kam*, *yuṣmā́kam*, which betray its origin. Elsewhere the long vowel resulting from the contraction with a preceding formative vowel has been generalized, e.g. Skt. *padā́m*, Gr. *podō̃n*. The Italic and Celtic evidence is inconclusive as to the length of the desinential vowel.

The supposition that the gen.pl. ending goes back to IE *-*ōm* is not just highly improbable because of Lith. *akmuõ* < **akmōN*, but simply impossible because of Slavic *-*ъ*. There is no reason to assume that the ending was shortened at any stage in the development of Slavic. The connection with the apparent metatony before the gen.pl. ending, which is supported by Van Wijk, Pedersen, and Stang, is incorrect because it neglects the chronology of the Slavic developments: the shortening, if any, must have preceded the rise of the new timbre distinctions, whereas the metatony must have been later, cf. Slovene *gọ́r*. The lengthening of short stem vowels in the gen.pl. results from the retraction of the stress from a final jer and its analogical extension, as was pointed out above. The retraction must be dated between Van Wijk's law and Dybo's law. The extension did not affect acute stem vowels because they were indifferent with respect to length at that stage. After the loss of the laryngeal feature, length was generalized in the gen.pl. in Slovene (neo-circumflex) and Serbo-Croat. On the other hand, the new short rising vowel was lengthened in Czech *kráva*, but not in *krav*. Thus, the whole development of quantitative alternations in the gen.pl. is posterior to the rise of the new timbre distinctions.

The genitive and locative of the dual ended in *-*ou* or *-*ous*, e.g. OChSl. *vlъku*, *rǫku*, *synovu*. The old locative has been preserved in Lith. *dvíejau*, *pusiaũ*, pointing to *-*ou*, which is confirmed by the Avestan loc.du. *zastayō*. It is possible that Skt. *vṛ́kayoḥ* represents the old genitive, but it is unclear whether this form ever existed in Balto-Slavic. Unfortunately, the Slavic accentuation has not been preserved, except for the isolated form ORu. *nogú* (Stang 1957:63). It does not seem possible to base any conclusions on SCr. *rùkū*, where the short stem vowel points to a contraction in the desinence. There is a variant Lith. *dvíejaus*, but this form can easily have arisen after the model *geriaũ*, *geriaũs*. The accentuation of *pusiaũ* may also be due to the influence of other adverbial formations.

5 5 LOCATIVE

The locative offers more problems than any other case. The IE loc.sg. ending *-*i* is found in OChSl. *vlъcě*, *rǫcě* < *-*oi*, *-*aHi*, and in Lith. *namiẽ*, dial. (Buividze) *vilkiẽ*, where the final accentuation must be borrowed from the loc.sg. of other flexion types. If this explanation

is correct, the ending of Lith. *labaĩ* is the regular reflex of unstressed **-oi*, which later received the ictus after the end-stressed forms of the adjectival paradigm. The accentuation of Ru. *zúbe*, Čak. (Novi) *vlâsi* must be old because it is the only stem-stressed locative and lacks a model for analogical development. Both the retraction of the ictus in this form and the long vowel in the Slavic loc.sg. ending of the *i*- and *u*-stems point to the absence of a laryngeal. On the other hand, the final accentuation in the latter forms presents a problem. I think that we have to start from a trisyllabic form **kosteii̯i*, where the final accentuation which originated from the Balto-Slavic oxytonesis was regularly maintained, and that the ending **-ou̯i* was analogically replaced. The locative ending in such forms as OChSl. *kamene* is enigmatic.

In Baltic the locative endings have been enlarged by the fusion with a postposition **en*. The resulting forms present three problems: the acute intonation of the postposition, the loss of a preceding laryngeal in such forms as Lith. *rañkoje*, and the original shape of the ending to which the postposition was added. After Būga and Stang, I assume that Lith. *butè* goes back to **bùtę̄ eN* or **bùtę̄ ę*. If my contention that at this stage the laryngeal was something like a glottal stop is correct, we can write **H* instead of the word boundary: **bùtę̄HeN*, **bùtę̄Hę*. When the laryngeal lost its segmental status and became a feature of the vowel, the form changed into **bùtę̀*, which regularly developed into *butè*. In the other flexion types the development was slightly more complicated. The form **ròNkaHi eN* developed into **ràṇkāi̯ę̀*, with dissimilation of the first laryngeal, so that the ictus was not transferred according to de Saussure's law in Lithuanian. In *sūnujè* there is a short vowel in the medial syllable. Since this is the only flexion type where we find a short vowel in the prefinal syllable, it cannot be the result of an analogical development. I think that the form goes back to **sṷnui̯ę̀* < **suHnuHi eN*, where the ending was borrowed from the *uH*-stems, like in the nom. and gen. forms of the plural. The long vowel in *avyjè* must be analogical after the one in *gaidyjè*, which is the expected loc.sg. form if the contraction in *gaidỹs* is older than the monophthongization. The forms OLith. *nakteie*, *ugnip* may go back to expansions of the original loc.sg. forms **nokteii̯i*, **ugniHi*.

The IE loc.pl. ending **-su* is found in OChSl. *kostьxъ*, *synъxъ*, *rǫkaxъ* with analogical **x*, and *vlъcěxъ* < **-oiSu*, cf. Skt. *vŕ̥keṣu*. The Lithuanian forms which end in *-se* have been remodelled after the

singular. The old quantity has been preserved in the adverbial form *akisù* (Stang 1966:213) and in dial. *avisù*, *tuřguse*. The long vowel in *avysè*, *rañkose* is borrowed from the loc.sg. form *avyjè*, *rañkoje*. I think that the ending *-uose* of the *o*-stems goes back to an analogical formation **-ōsu* after **-āsu* in *rañkose*, and that the nasal vowel found in certain dialects is due to a much later influence of the acc.pl. form (illative). The latter influence cannot have been old because of the intonational difference. In Slovene we find the expected retraction of the stress according to Hirt's law in the *aH*-stems and final accentuation in the *o*-stems, e.g. *goràh*, *možéh*, cf. Čak. (Novi) *goràh*, *vlāsíh*, going back to **-aHsu*, **-oiSu*. This confirms that the loss of the laryngeal in Lith. *rañkose* is an innovation.

5.6 DATIVE

The dat.sg. ending **-ei* is found in OChSl. *rǫcě*, with **-āi* < **-aHei*, *svekrъvi* < **-uHei*, *synovi*, *kameni*. The same ending **-āi* is found in Lith. *rañkai*. In the *o*-stems the ending is **-ōi*, which is represented in Lith. *vĩlkui*, OChSl. *vlъku*. The latter form is due either to the *Umlaut* of the final palatal element after the long rounded vowel, which is an *ad hoc* supposition, or simply to its loss in the period between the change of final **ō* into **ū* in OChSl. *kamy* and the monophthongization of diphthongs, when **ou* became **ō*, e.g. in the gen.sg. *synu*. The latter development preceded the rise of the new timbre distinctions, when the opposition /*ō* ~ *ū*/ was rephonemicized as /*u*,*ū* ~ *y*,*ȳ*/. The same loss of the final semivowel in the dat.sg. ending of the *o*-stems is found in Lith. dial. (Gervėčiai) *vĩlkuo*. The ending **-ei* in the *i*-stems goes back to a Balto-Slavic haplological simplification, e.g. OChSl. *kosti*, Lith.dial. (Gervėčiai) *ãvie*.

The dat.pl. ending was **-mus*, e.g. Lith. *rañkoms*, *vilkáms*, *avìms*, *sūnùms*, OChSl.*rǫkamъ*, *vlъkomъ*, *kostьmъ*, *synъmъ*. The retraction of the ictus according to Hirt's law in Lith. *galvóms*, Latv. *siẽvãm* was analogically extended to the other end-stressed types. Later the laryngeal was eliminated in Lith. *rañkoms* after the locatives *rañkoje*, *rañkose*, so that de Saussure's law did not operate. In Slavic the retraction remained confined to the *aH*-stems, cf. Slovene *goràm*, *možę̂m* < **-aHmus*, **-omus*. The ending in OPr. *gennāmans*, *waikammans* is due to the influence of the acc.pl. ending in *gennans*, *deiwans*.

The dative and instrumental of the dual ended in **-maH*, e.g. OChSl. *vlъkoma*, *synъma*, Slovene *gorâma*. The final vowel was lost in Lithuanian, where the intonational difference between dat.du. *vilkám*, *galvóm*, *sūnùm* and inst.du. *vilkaũ̃*, *galvõm*, *sūnuũ̃* betrays an earlier accentual difference **-àmaH*, **-amàH* etc., which must have been introduced analogically after the plural forms.

5.7 INSTRUMENTAL

The inst.sg. form ended in **H* or **mi*, e.g. Lith. *dievù*, *avimì*, *sūnumì*, OChSl. *pǫtьmь*, *synъmь*. The ending of Lith.dial. (N.W. Žem.) *sûnọmi*, which points to **-miH*, must be analogical after the plural. In the *aH*-stems I assume concurrent forms, e.g. **golHvaH*, **golHvą̄*, with **-ą̄* < **-ām*, like in the acc.sg. ending. Since the ictus was regularly retracted in the second variant but not in the first, the first variant was homonymous with the nom.sg. and the second with the acc.sg. form. The homonymy was eliminated by a contamination of the two variants, cf. Lith. *gálva*, which goes back to the first variant with the accentuation of the second, and *šaltą̂ja*, which points to the second variant with the accentuation of the first. In Slavic we find pronominal endings in the *o*- and *aH*-stems, e.g. *vlъkomь*, *rǫkojǫ*, and analogically *kostьjǫ*.

The inst.pl. ending was **-ōiS* in the *o*-stems and **-miHS* elsewhere, e.g. Lith. *vilkaĩs*, *rañkomis*, *avimìs*, *sūnumìs*, Slovene *râki*, *kọ́nji*, *lę̑ti*, *gorâmi*, *nîtmi*, *kostmí*. In the *aH*-stems the ictus was retracted according to Hirt's law, cf. Čak. (Novi) *goràmi*. The final accentuation was restored in Lith. *galvomìs* after the other flexion types, and the laryngeal in the medial syllable was eliminated on the analogy of the locative so that de Saussure's law did not operate. In the *o*-stems, the ending **-ōiS* was regularly shortened in Lith. *vilkaĩs* and narrowed in OChSl. *vlъky*, *lěty*. The narrowing of the diphthong before word-final **S* in the latter forms is known from the nom.pl. ending in *vlъci*, and the loss of the palatal element after a long rounded vowel from the dat.sg. ending in *vlъku*. It follows that these two developments must have taken place in this order. The neo-circumflex in Slovene *gorâmi* is analogical after the one in *ženâmi*, where it is regular, and points to a generalization of the long vowel, cf. *kostmí* < **kostьmī̀* after *nîtmi* < **nìtьmī*. The ending in Slovincian *rəbamī* is a contamination of **-ȳ* and **-mi*, **-mī*, as was pointed out above.

APPENDIX A

LARYNGEALIZED VOWELS IN SLAVIC ROOTS

It will be clear that the theory presented in the preceding chapters has certain consequences for IE reconstructions in general and laryngeal theory in particular. In this appendix I intend to present the material where the Slavic evidence points to a laryngeal in the root. I have to stress that the items listed here have been selected not on the basis of comparative IE evidence, but exclusively on the basis of the Slavic indications. The material adduced from other IE languages is merely illustrative. I have omitted the cases where the Slavic evidence is insufficient for any conclusions. Though the list presented here has no pretension to exhaustiveness, I think that it is fairly complete. The main sources for the list have been Kolesov 1972 and Nonnenmacher-Pribić 1961. The additional sources are listed in the bibliography.

A1. NOUNS WHERE HIRT'S LAW OPERATED

Cf. Illič-Svityč 1963:153ff. For Hirt's law see section 1.3 above.

Ru. *gríva*, SCr. *grȉva*, Sln. *gríva*, Cz. *hříva*, Slk. *hriva*; Latv. *grīva*, Skt. *grīvā́*.

Ru. *déver'*, SCr. *djȅvēr*, Sln. *devȩ̑r*; Latv. *dieveris*, Skt. *devā́*, Gr. *dāḗr*.

Ru. *dólog*, SCr. *dȕg*, Sln. *dolg*, Cz. *dlouhý*, Slk. *dlhý*; Latv. *ilgs*, Lith. *ìlgas*, Skt. *dīrgháḥ*.

Ru. *dym*, SCr. *dȉm*, Sln. *dȉm*, Cz. *dým*, Slk. *dym*; Latv. *dūmi*, Lith. *dū́mai*, Skt. *dhūmáḥ*, Gr. *thūmós*, Lat. *fūmus*.

Ru. *mat'*, SCr. *màti*, Sln. *máti*, Cz. *máti*, Slk. *mat'*; Latv. *māte*, Lith. *mótė*, Skt. *mātā́*, Lat. *māter*, OHG. *muoter*.

Ru. *pólon*, SCr. *pȕn*, Sln. *poln*, Cz.Slk. *plný*; Latv. *pilns*, Lith. *pìlnas*, Skt. *pūrṇáḥ*, OIr. *lán*.

SCr. *pȉr*, Sln. *pīr*, Cz.Slk. *pýr*; Gr. *pūrós*.

SCr. *jàto*, Sln. *játo*; Skt. *yātám*.

A2. OTHER IE NOUN CORRESPONDENCES

Only identical or immediately comparable formations have been included.

Ru. *berëza*, SCr. *brèza*, Sln. *brẹ́za*, Cz. *bříza*, Slk. *breza*, US. *brěza*, Po. *brzoza* ; Lith. *béržas*, Latv. *bę̃rzs*, Skt. *bhūrjaḥ*, OHG. *birihha*.

Ru. *brémja*, *berémja*, SCr. *brème*, Sln. *bréme*, Cz. *břímě*, Slk. *bremä*, US. *brěmjo* ; Skt. *bhárma*, *bhárīmā*.

Ru. *brat*, SCr. *bràt*, Sln. *bràt*, Cz.Slk. *bratr* ; Lith. *brólis*, Skt. *bhrā́tā*, Gr. *phrā́tēr*, OHG. *bruoder*.

Ru. *véter*, SCr. *vjȅtar*, Sln. *vę̑ter*, Cz. *vítr*, Slk. *vietor*, *vetor* ; Lith. *vė̃tra*, Latv. *vę̃tra*, Skt. *vā́taḥ*, Lat. *vēntus*.

Ru. *vólna*, SCr. *vȕna*, Sln. *vólna*, Cz.Slk. *vlna* ; Latv. *vi͡lna*, Lith. *vìlna*, Skt. *ū́rṇā*, Lat. *lāna*.

Ru. *zernó*, Ukr. *zérno*, SCr. *zȓno*, Sln. *zŕno*, Cz.Slk. *zrno* ; Lith. *žìrnis*, Latv. *zi͡rnis*, Skt. *jīrṇáḥ*, Lat. *grānum*, OIr. *grán*.

Ru. *známja*, SCr. *znȁmēn*, Cz. *znamě* ; Gr. *gnõma*.

Ru. *íva*, SCr. *ìva*, Sln. *íva*, Cz. *jíva*, Slk. *iva* ; Latv. *ie͡va*, Lith. *ieva*, Gr. *oíē*, OHG. *īwa*.

Ru. *kámen'*, SCr. *kàmēn*, Sln. *kámen*, Cz. *kámen*, Slk. *kameň* ; Lith. *akmuõ*, *ašmuõ*, Latv. *asmens*, Skt. *áśmā*, Gr. *ákmōn*.

Ru. *kilá*, Ukr. *kýla*, SCr. *kȉla*, Sln. *'kíla*, Cz. *kýla*, Slk. *kyla* ; Lith. *kū́la*, Gr. *kḗlē*, *kā́lē*, OHG. *hōla*.

Ru. *mak*, SCr. *màk*, Sln. *màk*, Cz. *mák*, Slk. *mak* ; Gr. *mḗkōn*, *mā́kōn*, OHG. *māho*, *māgo*.

Ru. *mésjac*, SCr. *mjȅsēc*, Sln. *mę̑sec*, Cz. *měsíc*, Slk. *mesiac*, Po. *miesiąc* ; Skt. *mā́ḥ*, Gr. *mḗn*, OIr. *mí*.

Ru. *myš'*, SCr. *mȉš*, Sln. *mìš*, Cz.Slk. *myš* ; Gr. *mũs*, Lat. *mūs*, OHG. *mūs*.

Ru. *pérvyj*, SCr. *pȓvī*, Sln. *pŕvi*, Cz.Slk. *prvý* ; Lith. *pìrmas*, WLatv. *pi͡rmais*, Skt. *pū́rvaḥ*.

Ru. *rálo*, SCr. *ràlo*, Sln. *rálo*, Cz. *rádlo*, Slk. *radlo* ; Lith. *árklas*, Latv. *ar̂kls*, Gr. *árotron*, Lat. *arātrum*, OIr. *arathar*.

Ru. *rámo*, SCr. *ràme*, *ràmo*, Sln. *ráme*, Cz. *rámě*, Slk. *ramä* ; Skt. *īrmáḥ*, Goth. *arms*.

Ru. *rátaj*, SCr. *ràtār*, Sln. *rátaj*, Cz.Slk. *rataj* ; Lith. *artójas*, Gr. *arotḗr*, Lat. *arātor*.

Ru. *sémja*, SCr. *sjème*, Sln. *sę́me*, Cz. *símě*, Slk. *semä* ; Lith. *sė̃mens*, Lat. *sēmen*, OHG. *sāmo*.

Ru. *solóma*, SCr. *slàma*, Sln. *sláma*, Cz. *sláma*, Slk. *slama*, US. *słóma*, Po. *słoma* ; Latv. *sa͡lms*, Gr. *kálamos*, OHG. *hal(a)m*.

Ru. *soróka*, SCr. *svràka*, Sln. *sráka*, OCz. *stráka*, Slk. *straka*, US. *sróka*, Po. *sroka*; Lith. *šárka*, Skt. *śārī́*, *śārikā*, Gr. *kóraks*.
Ru. *star*, SCr. *stȁr*, Sln. *stàr*, Cz.Slk. *starý*; Lith. *stóras*, Skt. *sthuráḥ*, ON. *stórr*.
Ru. *tyl*, Sln.*tîl*, Cz. *týl*, Slk. *tyl*; Lith. *tū́las*, Skt. *tū́lam*.
Ru. *útka*, SCr. *ùtva*, Sln. *ǫ̑tva*; Lith. *ántis*, Lat. *anas*, OHG. *anut*.

A3. NOUNS WHERE MEILLET'S LAW OPERATED

In contradistinction to the rest of this appendix, the Slavic material presented in this section does not itself point to a laryngeal. The presence of a laryngeal is generally derived from the Balto-Slavic correspondence. The latter is not sufficient for the postulation of a laryngeal, however, because the Baltic acute may be due to metatony. An example of this situation is SCr. *zvȉjer*, Sln. *zvę̑r*, Lith. *žvėrìs*, acc.sg. *žvėrį*. The old gen.pl. form *žvėrų̃* points to an original consonant stem, corresponding to Gr. *thḗr*, cf. also Latv. *zvę̂rs*, gen.pl. *zvę̂ru*. If the form corresponding to Gr. *thēríon* ever existed in Balto-Slavic, it regularly obtained a metatonical acute in Lithuanian as a result of the retraction from prevocalic *i* (Kortlandt 1974, section 5) if the long vowel goes back to lengthened grade, which must have been taken from the monosyllable, where it is regular. On the other hand, a laryngealist explanation cannot be excluded on the basis of Lat. *ferus*, where the short stem vowel can be due to the regular shortening of pretonic vowels (cf. below). I have chosen for lengthened grade because of Lith. acc.sg. *žvḕrį* next to *žvėrį* and omitted the word from the following list. A similar case is Lith. *širdìs*, acc.sg. *šìrdį*, cf. Gr. *kḗr* and *kardía*, Skt. *hā́rdi*. The Slavic word for 'heart' is inconclusive because it is a trisyllabic neuter and therefore mobile, cf. Sln. *srcę̂*, Ru. nom.pl. *serdcá*. For Meillet's law see section 1.7 above.

Ru. *beg*, SCr. *bȉjeg*, Sln. *bę̑g*, Cz. *běh*, Slk. *beh*; Lith. *bė̃gas*, SCr *prèbjeg*.
Ru. *vid*, SCr.Sln. *vîd*, Cz.Slk. *vid*; Lith. *véidas*, Gr. *eĩdos*.
Ru. *vólot'*, SCr.Sln. *vlât*; Lith. *váltis*.
Ru. *golová*, SCr.Sln. *gláva*, Cz.Slk. *hlava*; Lith. *galvà*, Latv. *galva*.
Ru. *dar*, SCr.Sln. *dâr*, Cz.Slk. *dar*; Gr. *dō̃ron*.
Ru. *živ*, SCr.Sln. *žîv*, Cz.Slk. *živý*; Lith. *gývas*, Latv. *dzîvs*, Skt. *jīváḥ*.
Ru. *žir*, SCr.Sln. *žîr*, Cz.Slk. *žír*; cf. OCS. *žiti*.
Ru. *il*, Sln. *íl*, Cz. *jíl*, Slk. *il*; Latv. *īls*, Gr. *ilū́s*, SCr. *ȉlovača*.
Ru. *kvas*, SCr.Sln. *kvâs*, Cz.Slk. *kvas*; Lat. *cāseus*.

Ru. *kij*, Sln. *kîj*, Cz.Slk. *kyj* ; Lith. *kůjis*.
Ru. *klet'*, SCr. *klîjet*, Sln. *klệt* ; Lith. *klĕtis*, Latv. *klẽts*.
Ru. *lub*, SCr.Sln. *lûb*, Cz.Slk. *lub* ; Lith. *lúobas*.
Ru. *lug*, SCr. *lûg*, Sln. *lǫ̑g*, Cz.Slk. *luh* ; Lith. *lángas*, Latv. *luôgs*.
Ru. *mir*, SCr.Sln. *mîr*, Cz. *mír*, Slk. *mier* ; Latv. *miêrs*.
Ru. *nag*, SCr.Sln. *nâg*, Cz.Slk. *nahý* ; Lith. *núogas*, Latv. *nuôgs*.
Ru. *nórot* ; Lith. *nártas*, Latv. *naŕts*.
Ru. *pívo*, SCr. *pîvo*, Sln. *pívo*, Cz.Slk. *pivo* ; Gr. *pĩnon*.
Ru. *pir*, SCr.Sln. *pîr* ; cf. OCS. *piti*.
Ru. *pjatá*, SCr. *péta*, Sln. *péta*, Cz. *pata*, Slk. *päta*, Po. *pięta* ; Lith. *péntis*.
Ru. *raz*, SCr.Sln. *râz*, Cz. *ráz*, Slk. *raz*, *ráz* ; Lith. *rúožas*, Ru. *óbraz*, SCr. *òbraz*, Sln. *obràz*, Cz.Slk. *obraz*.
Ru. *rez*, SCr. *rêz*, Sln. *rệz*, Cz. *řez*, *říz*, Slk. *rez* ; Lith. *rĕžas*, SCr. *pòrez*, *pòreza*, Sln. *porệza*.
Ru. *rjad*, SCr. *rêd*, Sln. *rệd*, OCz. *řad*, Slk. *rad* ; Latv. *riñda*, Ru. *rjáda*, SCr. *rèda*, Cz. *řada*.
Ru. *sad*, SCr.Sln. *sâd*, Cz.Slk. *sad* ; Skt. *sādáḥ*, ON. *sót*.
Ru. *sled*, SCr. *slîjed*, Sln. *slệd*, Cz.Slk. *sled* ; ON. *slóð*.
Ru. *smrad*, *smórod*, SCr.Sln. *smrâd*, Cz.Slk. *smrad* ; Lith. *smárdas*, Latv. *smaŕds*.
Ru. *sólod*, SCr.Sln. *slâd*, Cz.Slk. *slad* ; Lith. *saldùs*, Latv. *saĺds*, SCr. *slàdak*, Sln. *sládek*.
Ru. *stan*, SCr.Sln. *stân*, Cz.Slk. *stan* ; Lith. *stónas*, Skt. *sthā́nam*, SCr. *òstanak*.
Ru. *syn*, SCr.Sln. *sîn*, Cz.Slk. *syn* ; Lith. *sūnùs*, Skt. *sūnúḥ*.
Ru. *tésto*, SCr. *tîjesto*, Sln. *testǫ̑*, Cz. *těsto*, Slk. *cesto* ; Gr. *staĩs*, OIr. *táis*.
Ru. *tuk*, Čak. *tùk*, *tûk*, Cz.Slk. *tuk* ; Lith. *taukaĩ*, Sln. *túča*.
Ru. *jun*, Sln. *jûn* ; Lith. *jáunas*, Latv. *jaûns*.
Ru. *jar'*, SCr.Sln. *jâr*, OCz. *jěř*, Slk. *jar* ; Gr. *hṓrā*, *hōros*, Goth. *jēr*.

A4. OTHER BALTO-SLAVIC NOUN CORRESPONDENCES

Cf. Stang 1957:5ff.

Ru. *bába*, SCr. *bäba*, Sln. *bába*, Cz. *bába*, *baba*, Slk. *baba* ; Lith. *bóba*, Latv. *bãba*.
Ru. *boloná*, Ukr. *bolóna*, Sln. *blána*, Cz. *blána*, Slk. *blana* ; Lith. *bálnas*, Gr. *pholís*.
Ru. *bolóto*, SCr. *blàto*, Sln. *bláto*, Cz. *bláto*, Slk. *blato*, US. *błóto*, Po. *błoto* ; Lith. *báltas*.

Bulg. *bȃrna*; Lith. *burnà*.
Ru. *vápa*, Sln. *vápa*; Latv. *vãpe*, Skt. *vāpí*.
Ru. *véko*, Sln. *vẹ́ko*, Cz. *víko*, Slk. *veko*; Lith. *vókas*, Latv. *vâks*.
Ru. *vixr'*, SCr. *vȉhār*, Sln. *víher*, Cz. *vichr*, Slk. *víchor*; Lith. *víesulas*, Latv. *veĩsuôls*.
Ru. *voróna*, SCr. *vrȁna*, Sln. *vrána*, Cz. *vrána*, Slk. *vrana*, US. *wróna*, Po. *wrona*; Lith. *várna*, Latv. *vãrna*.
Ru. *výdra*, SCr. *vȉdra*, Sln. *vîdra*, *vídra*, Cz.Slk. *vydra*; Lith. *ū́dra*, Latv. *ûdrs*, Skt. *udráḥ*, Gr. *húdros*, *húdrā*.
Ru. *gad*, SCr. *gȁd*, Sln. *gàd*, SCz. *hád*, Slk. *had*; Lith. *gẽda*, Dutch *kwaad*.
Ru. *glíva*, SCr. *glȉva*, Sln. *glíva*, Cz. *hlíva*, Slk. *hliva*; Lith. *gléivos*, Gr. *gloiós*.
Ru. *gnída*, SCr. *gnȉda*, Sln. *gnída*, SCz. *hnída*, Slk. *hnida*; Latv. *gnĩda*, Lith. *glìnda*.
Ru. *górlo*, SCr. *gȑlo*, Sln. *gŕlo*, Cz.Slk. *hrdlo*; Lith. *gurklỹs*, Gr. *bárathron*.
Ru. *goróx*, SCr. *grȁh*, Sln. *gràh*, Cz. *hrách*, Slk. *hrach*, US. *hróch*, Po. *groch*; Latv. *gãrsa*, Lith. *gìrsa*, Gr. *krĩ*, *krīthḗ*.
Ru. *grábli*, SCr. *grȁblje*, Sln. *gráblje*, Cz. *hrábě*, Slk. *hrable*; Lith. *grėblỹs*.
Ru. *grad*, SCr. *grȁd*, Sln. *gràd*, Cz. *hrád*; Lith. *grúodas*, Arm. *karkut*.
Ru. *grúša*, Bulg. *krúša*; Lith. *kriáušė*.
Ru. *gubá*, Ukr. *húba*, SCr. *gȕba*, Sln. *gǫ́ba*, Cz. *huba*, *houba*, Slk. *huba*, Po. *gęba*; Lith. *gémbė*.
Ru. *ladón'*, *dolón'*, SCr. *dlȁn*, Sln. *dlàn*, Cz.Slk. *dlaň*, US. *dlóň*, Po. *dłoń*; Lith. *délna*, Latv. *dę̃lna*.
Ru. *žíla*, SCr. *žȉla*, Sln. *žíla*, Cz. *žíla*, Slk. *žila*; Lith. *gýsla*, Latv. *dzîsla*, Arm. *jil*, Skt. *jyā́*.
Bulg. *žúna*; Lith. *žiáunos*, Latv. *žaũnas*, OHG. *kiuwan*.
Ru. *zoród*; Lith. *žárdas*, Latv. *zãrds*.
Ru. *zjat'*, SCr. *zȅt*, Sln. *zèt*, Cz. *zet'*, Slk. *zat'*, Po. *zięć*; Lith. *žéntas*, Latv. *znuõts*, Skt. *jñātíḥ*.
Ru. *ístyj*, SCr. *ȉstī*, Sln. *îsti*, Cz. *jistý*, Slk. *istý*; Latv. *īsts*, Lith. *áiškus*, Arm. *isk*, Skt. *íše*.
Ru. *koróva*, SCr. *krȁva*, Sln. *kráva*, Cz. *kráva*, Slk. *krava*, US. *kruwa*, Po. *krowa*; Lith. *kárvė*, Gr. *keraós*.
Bulg. *kráka*, Sln. *kráka*; Lith. *kárka*.
SCr. *kȓplje*, Sln. *kŕplja*, Cz. *krpě*; Lith. *kùrpė*, Latv. *kuřpe*, Gr. *krēpís*.
Ru. *kréslo*, Cz. *křeslo*, Slk. *krieslo*; Lith. *krẽslas*, Latv. *krę̂sls*.

Ru. *kúpa*, SCr. *kȕp*, *kùpa*, Sln. *kùp*, Cz. *kupa*; Lith. *kúopa*, Latv. *kuõpa*, OHG. *hūfo*.
Ru. *kust*; Lith. *kúokštas*.
Ru. *láva*, Sln. *láva*, Cz. *lava*; Lith. *lóva*, Latv. *lâva*, Skt. *lāvaḥ*.
Ru. *lákom*, SCr. *lȁkom*, Sln. *lákom*, Cz.Slk. *lakomý*; Lith. *álkanas*, Gr. *olékō*.
Ru. *lan'*, SCr. *lȁne*, Sln. *lânjec*, Cz.Slk. *laň*; Latv. *alnis*, Lith. *élnias*, Arm. *eln*, Gr. *élaphos*.
Ru. *lápa*, Sln. *lápa*; Lith. *lópa*, Latv. *lãpa*, Goth. *lōfa*.
Ru. *láčnyj*, SCr. *lȁčan*, Sln. *láčen*, Cz.Slk. *lačný*; Lith. *álkanas*, Gr. *olékō*.
Ru. *lesá*, SCr. *ljȅsa*, Sln. *lę́sa*, Cz. *lísa*, Slk. *lesa*; Latv. *lę̂sa*.
Ru. *lin'*, SCr. *lȉnj*, Sln. *lînj*, OCz. *liň*, Slk. *liň*; Latv. *līnis*, Lith. *lýnas*, OHG. *slīo*.
Ru. *lípa*, SCr. *lȉpa*, Sln. *lípa*, Cz. *lípa*, Slk. *lipa*; Lith. *liepa*, Latv. *liẽpa*.
Ru. *lýko*, SCr. *lȉko*, Sln. *líko*, Cz. *lýko*, Slk. *lyko*; Lith. *lùnkas*, Latv. *lûks*.
Ru. *mil*, SCr. *mȉo*, Sln. *mīl*, Cz.Slk. *milý*; Lith. *míelas*, *mýlas*, Latv. *mīļš*, Skt. *máyaḥ*.
SCr. *mlȁka*, Sln. *mláka*, Cz.Slk. *mláka*; Lith. *málka*.
Ru. *nit'*, SCr. *nȉt*, Sln. *nìt*, Cz.Slk. *nit'*; Lith. *nýtis*, Latv. *nīts*, Skt. *nīvíḥ*, *snā́yati*, Lat. *nēre*, OHG. *nājan*.
Ru. *pásmo*, SCr. *pȁsmo*, Sln. *pásmo*, Cz.Slk. *pásmo*; Latv. *puõsms*.
Ru. *péna*, SCr. *pjȅna*, *spjȅna*, Sln. *pę́na*, OCz. *piena*, SCz. *pína*, Slk. *pena*; Lith. *spáinė*, Skt. *phénaḥ*.
Ru. *poróg*, SCr. *prȁg*, Sln. *pràg*, Cz. *práh*, Slk. *prah*; Lith. *pérgas*.
Ru. *présen*, SCr. *prijèsan*, Sln. *pręsen*; Lith. *prẽskas*.
Ru. *púto*, SCr. *pȕto*, Sln. *pǫ́to*, Cz. *pouto*, Slk. *puto*, Po. *pęto*; Lith. *pántis*.
Ru. *répa*, SCr. *rȅpa*, Sln. *ré̩pa*, OCz. *řiepa*, Slk. *repa*; Lith. *rópė*, Lat. *rāpa*, OHG. *ruoba*.
Ru. *rýlo*, SCr. *rȉlo*, Sln. *rílo*, Cz.Slk. *rydlo*; Latv. *raûklis*.
Ru. *rys'*, SCr. *rȉs*, Sln. *rîs*, Cz.Slk. *rys*; Lith. *lūšis*, Latv. *lūsis*.
Ru. *rjáda*, SCr. *rȅda*, Cz. *řada*; Latv. *riņda*.
Ru. *sáža*, Sln. *sája*, OCz. *sázě*, Slk. *sadza*; Lith. *súodžiai*, OIr. *suide*, ON. *sót*.
Ru. *séver*, SCr. *sjȅvēr*, Sln. *sę́ver*, Cz.Slk. *sever*; Lith. *šiáurė*, OHG. *scūr*.
Ru. *siv*, SCr. *sȉv*, Sln. *sìv*, Cz.Slk. *sivý*; Lith. *šývas*, Skt. *śyāváḥ*.

Ru. *síla*, SCr. *sȉla*, Sln. *síla*, Cz. *síla*, Slk. *sila*; Lith. *síela*.
Ru. *síto*, SCr. *sȉto*, Sln. *síto*, Cz. *síto*, Slk. *sito*; Lith. *síetas*, Latv. *siêts*, Gr. *ēthmós*.
Ru. *sláva*, SCr. *slȁva*, Sln. *sláva*, Cz.Slk. *sláva*; Lith. *šlovẽ*, OIr. *clú*.
Ru. *slémja*, SCr. *slȅme*, *šljȅme*, Sln. *slę́me*, Cz. *slémě*, Slk. *slemä*; Lith. *šelmuõ*.
Ru. *slína*, SCr. *slȉna*, Sln. *slína*, SCz. *slína*, Slk. *slina*; Latv. *sliẽnas*, *sliẽkas*, ON. *slím*.
Ru. *slúka*, SCr. *slȕka*, *šljȕka*, Sln. *slǫ́ka*, OCz. *slúka*, Slk. *sluka*; Lith. *slánka*, *slankà*, Latv. *slùoka*, *sluõka*, OHG. *slango*.
Ru. *sládkij*, *solódkij*, SCr. *slȁdak*, Sln. *sládek*, Cz.Slk. *sladký*; Lith. *saldùs*, Latv. *saĺds*.
Ru. *strúga*, SCr. *strȕga*, Sln. *strúga*, Cz. *strouha*, Slk. *struha*; Latv. *straũga*.
Ru. *syr*, SCr. *sȉr*, Sln. *sìr*, Cz. *sýr*, Slk. *syr*; Lith. *sū́ras*, Latv. *sũrs*, OHG. *sūr*.
Ru. *týsjača*, SCr. *tȉsuća*, Sln. *tisǫ́č*, *tisǫ́ča*, Cz.Slk. *tisíc*, Po. *tysiąc*; Lith. *tū́kstantis*, OPr. *tūsimtons*, Goth. *þūsundi*.
SCr. *ùka*; Latv. *aũka*.
Ru. *čist*, SCr. *čȉst*, Sln. *čȉst*, Cz.Slk. *čistý*; Lith. *skýstas*, Latv. *šķīsts*, ON. *skíta*.
Ru. *čítyj*, SCr. *čȉt*, *čȉtav*; Lith. *kíetas*, Latv. *ciêts*.
Ru. *jábloko*, SCr. *jȁbuka*, Sln. *jábolko*, Cz.Slk. *jablko*; Lith. *óbuolas*, Latv. *âbuõls*.
Ru. *jágoda*, SCr. *jȁgoda*, Sln. *jágoda*, Cz.Slk. *jahoda*; Lith. *úoga*, Latv. *uôga*.
Ru. *jásen*, SCr. *jȁsan*, Sln. *jásen*, Cz.Slk. *jasný*; Lith. *áiškus*.

A5. OTHER NOUNS

As I pointed out above, the material has been selected on the basis of the Slavic evidence alone. A detailed comparison with the other IE evidence remains a task for the future.

Ru. *basn'*, *básnja*, SCr. *bȁsna*, *bȁsma*, Sln. *bâsen*, Cz.Slk. *báseň*; Arm. *ban*, ON. *bón*.
SCr. *bȉlo*, Sln. *bílo*, SCz. *bídlo*, Slk. *bidlo*; Arm. *bir*, OHG. *bīhal*.
Ru. *bítva*, SCr. *bȉtva*, Sln. *bîtva*, Cz.Slk. *bitva*.
Ru. *belená*, Ukr. *beléna*, SCr. *bȗn*, Sln. *blèn*, Cz. *blín*, Slk. *blen*; OHG. *bilisa*.
Ru. *blízok*, SCr. *blȉzak*, Sln. *blízek*, Cz.Slk. *blízký*; Latv. *blaîzît*, Lat. *flīgere*.

Ru. *bórošno*, SCr. *brȁšno*, Sln. *brášno* ; Latv. *barîba*, Lat. *farīna*.
Ru. *bërdo*, SCr. *brđo*, Sln. *brdo*, Cz.Slk. *brdo* ; Goth. *baúrd*.
Ru. *brítva*, SCr. *brȉtva*, Sln. *brîtva*, Cz. *břitva*, Slk. *britva* ; Skt. *bhrīṇáti*.
Ru. *buj*, SCr. *bûjan*, Sln. *bújen* ; Skt. *bhúyān*, Dutch *bui*.
Ru. *búrja*, SCr. *bùra*, Sln. *búrja*, Cz. *bouře*, Slk. *bura*, *búra* ; Latv. *baũrụôt*, OIr. *búriud*.
Cz.Slk. *bydlo* ; Gr. *phútla*.
SCr. *bîlje*, Sln. *bíl*, *bíla*, *bîlje*, Cz. *býl*, *býlí*, Slk. *byľ*, *byľa* ; Gr. *phũlon*, *phúllon*.
Ru. *bystr*, SCr. *bȉstar*, Sln. *bíster*, Cz.Slk. *bystrý* ; Skt. *bhū́ṣati*.
Sln. *vę́da*, Cz. *věda*, Slk. *veda* ; Skt. *védaḥ*.
Ru. *véžda*, SCr. *vjȅdja*, Sln. *vę́ja* ; Gr. *eĩdos*.
Ru. *véra*, SCr. *vjȅra*, Sln. *vę́ra*, Cz. *víra*, Slk. *viera* ; Lat. *vērus*, OIr. *fír*, OHG. *wār*.
Ru. *vetv'*, Sln. *vę́ja*, Cz. *větev* ; Latv. *vîte*, Gr. *oisúā*, *ītéā*, Lat. *vītis*, OHG. *wīda*.
Ru. *víly*, SCr. *vȉle*, Sln. *víle*, Cz. *vidle*, Slk. *vidly*.
Ru. *víra* ; Lith. *výras*, Skt. *vīráḥ*, *váiram*.
SCr. *vȉtao*, Sln. *vítel* ; Skt. *vītáḥ*.
Ru. *víšnja*, SCr. *vȉšnja*, Sln. *vîšnja*, Cz. *višně*, Slk. *višňa* ; OHG. *wīhsila*.
Ru. *vológa*, *Vólga*, SCr. *vlȁga*, Sln. *vlága*, *vólgek*, Cz. *vláha*, *vlhký*, Slk. *vlaha*, *vlhký*, US. *włóha*, Po. *wilgi* ; Lith. *válgyti*, *vìlgyti*, Latv. *vaĺgs*, OHG. *wëlc*.
SCr. *vrȅlo*, Sln. *vrę́lo*, Cz. *vřídlo* ; Lith. *vìrti*, Latv. *vîrt*.
Ru. *výmja*, SCr. *vȉme*, Sln. *víme*, Cz. *výmě*, Slk. *vemä* ; Skt. *ū́dhar*, OHG. *ūtar*.
Ru. *gáči*, SCr. *gȁće*, Sln. *gâče*, OCz. *háčě* ; Skt. *gātúḥ*.
Ru. *gládok*, SCr. *glȁdak*, Sln. *gládek*, Cz.Slk. *hladký* ; Lith. *glodùs*.
Ru. *glína*, SCr. *gnjȋla*, Sln. *glína*, Cz. *hlína*, Slk. *hlina* ; ON. *klína*.
Ru. *gnev*, SCr. *gnjȅv*, Sln. *gnèv*, OCz. *hniev*, Slk. *hnev*, US. *hněw*, Po. *gniew* ; OHG. *gnītan*.
Ru. *gorb*, SCr. *gȓba*, Sln. *gŕba*, Cz.Slk. *hrb* ; Lith. *gárbana*, Arm. *karth*.
Ru. *grúda*, SCr. *grȕda*, Sln. *grúda*, Cz. *hrouda*, Slk. *hruda* ; Lith. *grū́sti*, ON. *griót*.
Ru. *grýža*, SCr. *grȉža*, Sln. *grîža* ; Lith. *grū́žtis*.
Ru. *gúnja*, SCr. *gûnj*, Sln. *gúnj*, *gúnja*, Cz. *houně*, Slk. *huňa*.
Ru. *gúsli*, SCr. *gȕsle*, Sln. *gǫ́sli*, Cz. *housle*, Slk. *husle*.
Ru. *déva*, SCr. *djȅva*, Sln. *dę́va*, Cz. *děva*, Slk. *deva* ; Gr. *thẽlus*, Lat. *fēmina*.

Ru. *ded*, SCr. *djȅd*, Sln. *dèd*, Cz. *děd*, Slk. *ded*; Gr. *tḗthē*.
Ru. *délo*, SCr. *djȅlo*, Sln. *dẹ́lo*, Cz. *dílo*, *dělo*, Slk. *delo*, *dielo*; Lith. *dėti*, Gr. *títhēmi*.
Ru. *dívo*, SCr. *dȉv*, Cz.Slk. *div*; Skt. *dhíṃ*.
Ru. *doróga*, SCr. *drȁga*, Sln. *drága*, Cz. *dráha*, Slk. *draha*, *dráha*, US. *dróha*, Po. *droga*; Lith. *dìrginti*, Gr. *tarakhḗ*.
Ru. *dúma*, Bulg. *dúma*, Slk. *duma*; Skt. *dhūmáḥ*, Gr. *thūmós*.
Ru. *dýnja*, SCr. *dȉnja*, Sln. *dínja*, Cz. *dýně*, Slk. *dyňa*.
SCr. *jȅdja*, Sln. *jẹ́ja*, OPo. *jedza*; Lith. *ėda*, *ėdžia*.
SCr. *jȅlo*, Sln. *jẹ́lo*, Cz. *jídlo*, Slk. *jedlo*.
Ru. *žába*, SCr. *žȁba*, Sln. *žába*, Cz. *žába*, Slk. *žaba*.
Ru. *žátva*, SCr. *žȅtva*, Sln. *žẹ̑tva*, *žẹ̑tev*, Cz.Slk. *žatva*; Lith. *gìnti*.
Ru. *žértva*, SCr.Sln. *žȓtva*; Lith. *gìrti*, Lat. *grātus*.
Ru. *žizn'*; Lith. *gýti*.
Ru. *žíto*, SCr. *žȉto*, Sln. *žíto*, OCz. *žíto*, Slk. *žito*; OPr. *geits*.
Ru. *žíca*, SCr. *žȉca*, Sln. *žíca*; Lith. *gijà*, Skt. *jyā́*.
Ru. *zájac*, SCr. *zȅc*, Sln. *zâjec*, *zẹ̑c*, Cz. *zajíc*, Slk. *zajac*, Po. *zając*; Lith. *žáisti*, Skt. *jihīte*.
Ru. *zdoróv*, SCr. *zdrȁv*, Sln. *zdràv*, Cz.Slk. *zdravý*.
Ru. *ískra*, SCr. *ìskra*, Sln. *ískra*, Cz. *jiskra*, Slk. *iskra*; Lith. *áiškus*.
Ru. *kánja*, SCr. *kȁnja*, Sln. *kánja*, Cz. *káně*, Slk. *kaňa*; Lat. *cicōnia*, OHG. *huon*.
Ru. *káplja*, SCr. *kȁplja*, Sln. *káplja*, Cz. *kápě*; Lith. *kópti*.
Ru. *káša*, SCr. *kȁša*, Sln. *káša*, SCz. *káše*, Slk. *kaša*; Lith. *kóšti*, Latv. *kãst*.
Ru. *kášel'*, SCr. *kȁšalj*, Sln. *kášelj*, Cz. *kašel*, Slk. *kašeľ*; Lith. *kósėti*, Latv. *kãsêt*, Skt. *kā́sate*, OHG. *h(w)uosto*.
SCr. *kvȁka*, Sln. *kváka*, Cz.Slk. *kvaka*.
Ru. *kíka*, SCr. *kȉka*, Sln. *kíka*.
Ru. *kíslyj*, SCr. *kȉseo*, Sln. *kísel*, Cz. *kyselý*, Slk. *kyslý*; Latv. *kûsât*.
Ru. *kist'*, SCr. *kȉščica*, Slk. *kyseľ*.
Ru. *kíta*, SCr. *kȉta*, Sln. *kíta*, Cz. *kýta*, Slk. *kyta*; Lith. *kū́tis*, ON. *skúfr*.
Ru. *klin*, SCr. *klȉn*, Sln. *klìn*, Cz. *klín*, Slk. *klin*.
Ru. *kljuká*, Ukr. *kljúka*, SCr. *kljȕka*, Sln. *kljúka*, Cz. *klika*, Slk. *kľuka*; Lith. *kliū́ti*, Lat. *clāvis*.
Ru. *kolóda*, SCr. *klȁda*, Sln. *kláda*, Cz. *kláda*, Slk. *klada*, US. *kłóda*, Po. *kłoda*; Lith. *kálti*, Lat. *clādēs*.
Ru. *korósta*, SCr. *krȁsta*, Sln. *krásta*, OCz. *krásta*, Po. *krosta*.
Ru. *kráža*, SCr. *krȁdja*, Sln. *krâja*.

Ru. *kraj*, SCr. *krâj*, Sln. *kràj*, SCz. *kráj*, Slk. *kraj*; Lith. *skrósti*.
Ru. *krépok*, SCr. *krȅpak*, Sln. *krẹ́pek*, Cz. *křepký*, Slk. *krepký*; ON. *hráfa*.
Ru. *krux*, SCr. *krȕh*, Sln. *krùh*, Cz.Slk. *kruch*.
Ru. *kúka*, SCr. *kùka*, Sln. *kúka*.
Ru. *kur*, SCr. *kȕr*, Sln. *kùr*, Cz. *kur*, *kour*, Slk. *kúr*; Skt. *káuti*.
Ru. *kúča*, SCr. *kùća*, Sln. *kǫ́ča*, Cz. *kuče*, Slk. *kuča*.
Ru. *laz*, SCr. *lȁz*, Sln. *lâz*, Cz. *laz*, *láz*; Latv. *lę̃zns*, ON. *lágr*.
Ru. *láska*, SCr. *lȁska*, Cz.Slk. *láska*; Lith. *lokšnùs*.
Ru. *léto*, SCr. *ljȅto*, Sln. *lẹ́to*, Cz. *léto*, Slk. *leto*, US. *lěto*; Lith. *lietùs*.
Ru. *mal*, SCr. *mȃo*, Sln. *mâli*, Cz.Slk. *malý*; Gr. *mē̃lon*, OIr. *míl*.
Ru. *máma*, SCr. *màma*, Sln. *máma*, Cz. *máma*, Slk. *mama*; OHG. *muoma*.
Ru. *máslo*, SCr. *màslo*, Sln. *máslo*, Cz. *máslo*, Slk. *maslo*; Latv. *muõzêt*.
SCr. *màh*, Sln. *màh*; Lith. *móti*, Latv. *mãt*, Skt. *māyā́*, Gr. *mī̃mos*.
SCr. *mȁčka*, Sln. *mâčka*, Cz.Slk. *mačka*.
Ru. *med'*, SCr. *mjȅd*, Sln. *mẹ̑d*, Cz. *měď*, Slk. *med'*.
Ru. *méra*, SCr. *mjȅra*, Sln. *mẹ́ra*, Cz. *míra*, Slk. *miera*; Skt. *mā́ti*, Lat. *mētior*.
Ru. *merëža*, SCr. *mrȅža*, Sln. *mrẹ́ža*, Cz. *mříže*, Slk. *mreža*; Lith. *márška*, Gr. *brókhos*.
Ru. *mésto*, SCr. *mjȅsto*, Sln. *mẹ́sto*, Cz. *místo*, *město*, Slk. *mesto*, *miesto*.
Ru. *moróz*, SCr. *mràz*, Sln. *mràz*, Cz.Slk. *mráz*, US.Po. *mróz*.
Ru. *múka*, SCr. *mùka*, Sln. *mǫ́ka*, OCz. *múka*, Slk. *muka*, Po. *męka*; Lith. *mìnkyti*.
Ru. *múxa*, SCr. *mùha*, *mùha*, Sln. *múha*, Cz. *moucha*, Slk. *mucha*; Gr. *muĩa*.
Ru. *mýlo*, SCr. *mȉlo*, Sln. *mílo*, Cz. *mýdlo*, Slk. *mydlo*; Latv. *maût*.
Ru. *mysl'*, SCr. *mȉsao*, Sln. *mîsel*, Cz. *mysl*, Slk. *myseľ*; Gr. *mū̃thos*.
Ru. *mjágok*, SCr. *mȅk*, Cz. *měkký*, Slk. *mäkký*, Po. *miękki*; Lith. *mìnkštas*.
Ru. *néga*, SCr. *njȅga*, Cz. *něha*, Slk. *neha*.
Ru. *nédra*, SCr. *njȅdra*, Sln. *nẹ̑dra*, SCz. *ňádra*, Slk. *ňadrá*; Gr. *nēdū́s*.
Ru. *níva*, SCr. *njȉva*, Sln. *njíva*, Cz.Slk. *niva*.
Ru. *nízok*, SCr. *nȉzak*, Sln. *nízek*, Cz.Slk. *nízký*.
Ru. *núža*, *nuždá*, SCr. *nùžda*, Sln. *nǫ́ja*, Cz. *nouze*, Slk. *núdza*, Po. *nędza*; Lith. *naudà*.
Ru. *par*, SCr. *pȁra*, Sln. *pâra*, Cz. *pára*, Slk. *para*; Gr. *prḗthō*.

Ru. *pástva*, Sln. *pâstva*, Cz.Slk. *pastva* ; Lat. *pāscere*.
Ru. *páša*, SCr. *pȁša*, Sln. *pãša*, Slk. *paša* ; Lat. *pāscere*.
SCr. *pjȅga*, Sln. *pẹ́ga*, OCz. *pieha*, Slk. *peha*.
Ru. *pésnja*, SCr. *pjȅsna*, *pjȅsma*, Sln. *pẹ̑sem*, Cz. *píseň*, Slk. *pieseň*.
Ru. *píšča*, SCr. *pȉća*, Sln. *píča*, Cz. *píce*.
Ru. *plámja*, SCr. *plȁmēn*, Sln. *plámen*, Cz. *plamen*, Slk. *plameň*, US. *plómjo*, Po. *płomień* ; Lith. *pelenaĩ*.
Ru. *plač*, SCr. *plȁč*, Sln. *plȁč*, Cz. *pláč*, Slk. *plač* ; Gr. *plḗssō*.
SCr. *plȕta*, Sln. *plúta* ; Lith. *pláuti*.
Ru. *polóva*, SCr. *pljȅva*, Sln. *plẹ́va*, SCz. *plíva*, Slk. *pleva*, US. *pluwa* ; OLith. *pẽlūs*, Skt. *palávaḥ*.
Ru. *poróm*, SCr. *prȁm*, Cz.Slk. *prám*, Po. *prom* ; Gr. *peráō*.
Ru. *prav*, SCr. *prȁv*, Sln. *pràv*, Cz.Slk. *pravý* ; Lat. *probus*.
Ru. *právo*, SCr. *prȁvo*, Sln. *prâvo*, Cz.Slk. *právo*.
SCr. *prȁmēn*, Sln. *prámen*, Cz. *pramen*, Slk. *prameň*, US. *prómjo*, Po. *promień*.
Ru. *prúga*, SCr. *prȕg*, Sln. *prọ́ga*, Cz. *prouha*, Po. *pręga* ; ON. *springa*.
Ru. *prjáža*, SCr. *prȅdja*, Sln. *prẹ̑ja*, Cz. *příze*, Slk. *priadza*, Po. *przędza* ; Lith. *sprę́sti*.
Ru. *púzdro*, SCr. *pȕzdro*, Cz. *pouzdro*, Slk. *puzdro* ; Gr. *pūgḗ*.
Ru. *pup*, SCr. *pȕpak*, Sln. *pọ̑pek*, Cz. *pupek*, Po. *pęp* ; Lith. *bámba*.
Ru. *p'jan*, SCr. *pjȁn*, Sln. *pijàn*, Cz.Slk. *pijan* ; Skt. *pyānáḥ*.
Ru. *pjast'*, SCr. *pȅst*, *pêst*, Sln. *pẹ̑st*, Cz. *pěst*, Slk. *päst'*, Po. *pięść* ; Lith. *kùmstė*, OHG. *fūst*.
Ru. *rad*, SCr. *rȁd*, Sln. *ràd*, Cz.Slk. *rád* ; Gr. *éramai*.
Ru. *raj*, SCr. *rȃj*, Sln. *ràj*, Cz. *ráj*, Slk. *raj* ; Skt. *rā́ti*, Lat. *rēs*.
Ru. *rak*, SCr. *rȁk*, Sln. *ràk*, SCz. *rák*, Slk. *rak*.
Ru. *rána*, SCr. *rȁna*, Sln. *rána*, Cz. *rána*, Slk. *rana*.
Ru. *ráno*, SCr. *rȁno*, Sln. *ráno*, Cz.Slk. *ráno*, *raný* ; Skt. *ūrdhváḥ*, Gr. *órthros*.
Ru. *rat'*, SCr. *rȁt* ; Gr. *éris*.
Ru. *ríza*, SCr. *rȉza*, Cz. *říza*.
Ru. *rus*, SCr. *rȕs*, Sln. *rûs*, Cz.Slk. *rusý* ; Latv. *rûsa*.
Ru. *rúxo*, SCr. *rȕho*, Sln. *rúho*, Cz. *roucho*, Slk. *rúcho* ; Lith. *ráuti*.
Ru. *rýba*, SCr. *rȉba*, Sln. *ríba*, OCz. *rýba*, Slk. *ryba* ; OHG. *rūppa*.
Ru. *ryk*, SCr. *rȉka*, Sln. *rīk*, Cz.Slk. *ryk* ; Lith. *rū́kti*.
Ru. *rýxlyj*, Cz.Slk. *rychlý* ; Latv. *rũsa*, ON. *rúst*.
Ru. *sálo*, SCr. *sȁlo*, Sln. *sálo*, Cz. *sádlo*, Slk. *sadlo* ; Skt. *sādáḥ*.
Ru. *svat*, SCr. *svȁt*, Sln. *svât*, Cz.Slk. *svat* ; Goth. *swēs*.
Ru. *svérdel*, SCr. *svȓdao*, Sln. *svẹ́der*, Cz. *svider* ; OHG. *swërt*.

Ru. *séža*, SCr. *sjȅdja*, Sln. *séja* ; Skt. *sādáḥ*.
Ru. *sen'*, SCr. *sjȅn*, Sln. *sę̑nca*, Cz. *síň*, Slk. *sieň* ; Skt. *chāyā́*, Gr. *skēnḗ*.
Ru. *séra*, SCr. *sjȅra*, Cz.Slk. *síra* ; Skt. *śāráḥ*.
Ru. *séča*, SCr. *sjȅča*, Sln. *sę́ča* ; Lat. *secāre*.
Ru. *séčivo*, SCr. *sjȅčīvo* ; Lat. *secīvum*.
Ru. *sínij*, SCr. *sȉnji*, Sln. *sínji*, Cz.Slk. *siný* ; Skt. *śyāmáḥ*.
Ru. *skalá*, SCr. *skȁla*, Sln. *skála*, Cz. *skála*, Slk. *skala* ; Lith. *skélti*.
Ru. *skvára*, SCr. *skvȁra*, Sln. *skvára*.
Sln. *skránja*, OCz. *skráně*, Slk. *skraňa*.
Ru. *slab*, SCr. *slȁb*, Sln. *slàb*, Cz.Slk. *slabý* ; Lat. *lābor*, ON. *slápr*.
Ru. *slíva*, SCr. *šljȉva*, Sln. *slíva*, Cz. *slíva*, Slk. *sliva*, Lat. *līvidus*.
Ru. *smel*, SCr. *smȅo*, Sln. *smę̑l*, Cz. *smělý*, Slk. *smelý* ; Lat. *mōs*, OHG. *muot*.
Ukr. *smerék*, SCr. *smrȅka*, Sln. *smrę́ka*, Cz. *smrk*, Slk. *smrek*, US. *šmrěk* ; Gr. *smī̃laks*.
Ru. *snast'* ; OIr. *snáthe*.
Ru. *stádo*, SCr. *stȁdo*, Cz.Slk. *stádo* ; OHG. *stuot*.
Ru. *stája*, SCr. *stȁja*, Sln. *stája*, OCz. *stáje̋*, Slk. *staja* ; Lith. *stóti*.
Ru. *strexá*, SCr. *strȅha*, Sln. *strę́ha*, Cz. *střecha*, Slk. *strecha*, US. *třěcha* ; Lith. *striegti*.
Ru. *struná*, SCr. *strȕna*, Sln. *strúna*, Cz.Slk. *struna* ; Lat. *struere*.
Ukr. *súknja*, SCr. *sȕknja*, Sln. *sûknja*, Cz. *sukně*, Slk. *sukňa*.
Ru. *syt*, SCr. *sȉt*, Sln. *sìt*, Cz. *sytý*, Slk. *sýty* ; Skt. *śū́raḥ*, Gr. *kū̃ros*.
Ru. *tat'*, SCr.Sln. *tât* ; Skt. *tāyúḥ*, OIr. *táid*.
Ru. *témja*, SCr. *tjȅme*, Sln. *tę́me*, Cz. *témě*, Slk. *temä* ; Gr. *témnō*.
Ru. *tína*, OCz. *tina* ; Latv. *tīrelis*, Gr. *tī̃los*.
Ru. *tis*, SCr. *tȉs*, *tȉsa*, Sln. *tîs*, *tísa*, Cz.Slk. *tis*.
Ru. *tix*, SCr. *tȉh*, Sln. *tîh*, Cz.Slk. *tichý*.
Ru. *túča*, SCr. *tȕča*, Sln. *tǫ́ča*, Slk. *tuča*, Po. *tęcza* ; Lith. *tánkus*.
Ru. *týkva*, SCr. *tȉkva*, Sln. *tîkva*, *tīkev*, Cz. *tykev*.
Ru. *udá*, *údočka*, SCr. *ȕdica*, Sln. *ǫ́dica*, Cz. *udice*, Po. *węda*.
Ru. *úza*, SCr. *ȕza*, Sln. *ǫ́za*.
Ru. *úzel*, SCr. *ȕzao*, Sln. *ózel*, Cz. *uzel*, Slk. *uzol*, Po. *węzel* ; Lith. *ąžuolas*, Latv. *uôzuõls*.
Ru. *útro*, SCr. *jȕtro*, Sln. *jútro*, OCz. *jítro*, Slk. *jutro* ; Lith. *aušrà*, Gr. *aúrion*.
Ru. *xort*, SCr. *hȓt*, Sln. *hȓt*, Cz.Slk. *chrt* ; Lith. *kùrti*.
Ru. *xren*, SCr. *hrȅn*, Sln. *hrèn*, OCz. *chřěn*, Slk. *chren*, US. *chrěn* ; Skt. *kṣāráḥ*, Gr. *ksērós*.

Ru. *cáplja*, SCr. *čȁplja*, Sln. *čâplja*, OCz. *čiepě*.
SCr. *cȅsta*, Sln. *cę̑sta*, OCz. *ciesta*, Slk. *cesta*; Lith. *skiesti*.
Ru. *čádo*, SCr. *čȅdo*, OCz. *čád*, OPo. *czędo*; Skt. *kanyā́*, OIr. *cenél*.
Ru. *čas*, SCr. *čȁs*, Sln. *čȃs*, OCz. *čás*, Slk. *čas*; OPr. *kīsman*.
Ru. *čáša*, SCr. *čȁša*, Sln. *čáša*, Cz. *číše*, Slk. *čaša*; OPr. *kiosi*.
Ru. *čúdo*, SCr. *čȕdo*, Sln. *čúdo*, Slk. *čudo*; Skt. *kavíḥ*, Gr. *kũdos*.
Ru. *šéja*, SCr. *šȉja*, Sln. *šíja*, Cz. *šíje*, Slk. *šija*; Lith. *siū́ti*.
Ru. *šílo*, SCr. *šȋlo*, Sln. *šílo*, Cz. *šídlo*, Slk. *šidlo*; Lat. *sūbula*, OHG. *siula*.
Ru. *škvára*, Sln. *škvára*, Cz. *škvár*, *škvára*, Slk. *škvar*, *škvara*.
Ru. *šútyj*, SCr. *šȕt*, Cz.Slk. *šutý*; Gr. *ksū́õ*.
SCr. *štȁva*, Sln. *ščáva*, Cz. *št'áva*, Slk. *št'ava*.
Ru. *ščúka*, SCr. *štȕka*, Sln. *ščúka*, Cz. *štika*, Slk. *št'uka*.
Ru. *jug*, SCr. *jȕg*, Sln. *jùg*, SCz. *jih*, Slk. *juh*; Gr. *augḗ*.
Ru. *jágnja*, SCr. *jȁgnje*, Sln. *jágnje*, Cz. *jehně*, Slk. *jahňa*; Gr. *amnós*, Lat. *agnus*.
Ru. *jázva*, Sln. *jâzba*, OCz. *jiezva*, Slk. *jazva*; Lith. *áiža*, Latv. *aîza*.
Ru. *jáma*, SCr. *jȁma*, Sln. *jáma*, Cz. *jáma*, Slk. *jama*.
Ru. *jar*, SCr. *jȁra*, Sln. *járen*, Slk. *jarý*, US. *jěry*; Gr. *zōrós*.
SCr. *jȁrēb*, Sln. *jerę̑b*, Cz. *jeřáb*, Slk. *jarab*, Po. *jarząb*; Latv. *īrbe*.
Ru. *jásen'*, SCr. *jȁsēn*, Sln. *jásen*, Cz. *jasan*, Slk. *jaseň*; Lith. *úosis*, Latv. *uôsis*, Lat. *ornus*.
Ru. *jásli*, SCr. *jȁsle*, Sln. *jásli*, OCz. *jěsli*, Slk. *jasle*; Lith. *ėdžios*.
Ru. *jástreb*, SCr. *jȁstrēb*, Sln. *jâstreb*, Cz. *jestřáb*, Slk. *jastrab*, Po. *jastrząb*; Skt. *āśúḥ*, Gr. *ōkús*.

A6. VERBS

Here again I confine myself to the Slavic evidence. I have not included the verbs in *-nǫti*, Ru. *-nut'* with a laryngealized root because the laryngeal is often secondary in this class, as I intend to show on another occasion.

Ru. *bávit'*, SCr. *bȁviti*, Sln. *báviti se*; Skt. *bhāváḥ*.
Ru. *bájat'*, SCr. *bȁjati*, Sln. *bájati*; Gr. *phēmí*, Lat. *fāri*.
Ru. *bégat'*, SCr. *bjȅgati*, Sln. *bę́gati*; Lith. *bė̃gti*, Latv. *bêgt*, Gr. *phébomai*.
Ru. *bit'*, SCr. *bȉti*, Sln. *bíti*, Cz. *bíti*, Slk. *bit'*; OIr. *benim*, OHG. *bīhal*.
Ru. *bljevát'*, SCr. *bljȕvati*, Sln. *bljuváti*, Cz. *blíti*, Slk. *bl'ut'*; Lith. *bliáuti*, *bliū́ti*, Latv. *bļaût*.
Ru. *borót'sja*, US. *wo-bróć so*; Lith. *bárti*, Latv. *bãrt*, Lat. *ferīre*.

Ru. *brit'*, SCr. *brȉjati*, Sln. *bríti*; Skt. *bhrīṇáti*.
Ru. *brýzgat'*, SCr. *brȉzgati*, Sln. *brízgati*.
SCr. *brȉsati*, Sln. *brísati*.
Ru. *byt'*, SCr. *bȉti*, Sln. *bíti*, Cz. *býti*, Slk. *byt'*; Lith. *bū́ti*, Skt. *bhūtíḥ*, OIr. *buith*.
Ru. *vádit'*, SCr. *vàditi*, Sln. *váditi*; Skt. *vādaḥ*.
Ru. *ot-vérgnut'*, SCr. *s-vȓći*, Sln. *vrę́či*.
Ru. *za-verét'*, Sln. *s-vrę́ti se*, Cz. *ote-vřít*i; Lith. *vérti*, Latv. *vẽrt*.
Ru. *vérit'*, SCr. *vjȅriti*, Sln. *vę́riti se*; Lat. *vērus*, ON. *vár*.
Ru. *vésit'*, SCr. *vjȅšati*, Sln. *vę́siti*.
Ru. *véjat'*, SCr. *vȉjati*, Sln. *vę́ti*; Skt. *vā́ti*.
Ru. *vídet'*, SCr. *vȉdjeti*, Sln. *vídeti*; Lith. *véidas*, Lat. *vidēre*.
Ru. *visét'*, SCr. *vȉsjeti*, Sln. *visę́ti*.
Ru. *vit'*, SCr. *vȉti*, Sln. *víti*, Cz. *víti*, Slk. *vit'*; Lith. *výti*, Latv. *vît*, Skt. *vītáḥ*, Lat. *viēre*.
Ru. *voróčat'*, SCr. *vràćati*, Sln. *vráčati*.
Ru. *výknut'*, SCr. *s-vȉći*; Lith. *jùnkti*, Skt. *úcyati*.
Ru. *vyt'*, SCr *vȉti*, Sln. *víti*, Cz. *výti*, Slk. *vyt'*; Skt. *ūtíḥ*.
Ru. *gádit'*, SCr. *gȁditi*, Sln. *gáditi*; Dutch *kwaad*.
SCr. *gȁziti*, Sln. *gáziti*; Skt. *gā́hate*.
Ru. *gládit'*, SCr. *glȁditi*, Sln. *gláditi*; Lith. *glósti*.
Ru. *gljadét'*, SCr. *glȅdati*, Sln. *glę́dati*; Lith. *galą́sti*.
Ru. *gnit'*, SCr. *gnjȉti*, Sln. *gníti*, Cz. *hníti*, Slk. *hnit'*; OHG. *gnītan*.
Ru. *grábit'*, SCr. *grȁbiti*, Sln. *grábiti*; Lith. *gróbti*, Latv. *grâbt*, Skt. *grābháḥ*.
Ru. *grájat'*, SCr. *grȁjati*, Sln. *grájati*; Lith. *gróti*, Skt. *gṛṇā́ti*, OHG. *krājan*.
Ru. *gret'*, SCr. *grȉjati*, Sln. *grę́ti*.
Ru. *gryzt'*, SCr. *grȉsti*, Sln. *grísti*, Cz. *hrýzti*, Slk. *hrýzt'*; Lith. *gráužti*, Latv. *graûzt*, Gr. *brū́khō*, Goth. *kriustan*.
Ru. *dat'*, SCr. *dȁti*, Sln. *dáti*, Cz. *dáti*, Slk. *dat'*; Lith. *dúoti*, Latv. *duôt*, Skt. *dádāti*, Gr. *dídōmi*.
Ru. *dvígat'*, SCr. *dȉći*, Sln. *dvígati*.
Ru. *délat'*, SCr. *djȅlati*, Sln. *dę́lati*.
Ru. *dërgat'*, Sln. *dŕgati*; Lith. *dìrginti*.
Ru. *det'*, SCr. *djȅti*, Sln. *dę́ti*, Cz. *díti*, Slk. *diet'*; Lith. *dė̃ti*, Skt. *dádhāti*, Gr. *títhēmi*.
Ru. *dúmat'*, SCr. *dùmati*.
Ru. *dut'*, SCr. *dȕti*, Sln. *na-dǫ́ti se*, Cz. *douti*, Slk. *dut'*; Lith. *dùmti*, Skt. *dhámati*.

Ru. *est'*, SCr. *jȅsti*, Sln. *jẹ́sti*, Cz. *jísti*, Slk. *jest'* ; Lith. *ẽsti*, Gr. *édō*, Lat. *edere*.
Ru. *ézdit'*, SCr. *jèzditi*, Sln. *jẹ́zditi*.
Ru. *éxat'*, SCr. *jȁhati*, Sln. *jâhati* ; Lith. *jóti*, Latv. *jât*, Skt. *yā́ti*, OIr. *áth*.
Ru. *žat'*, SCr. *žȅti*, Sln. *žéti*, Cz. *žíti*, Slk. *žat'* ; Lith. *genėti*.
SCz. *žouti*, Slk. *žut'* ; Lith. *žiáunos*, OHG. *kiuwan*.
Ru. *žit'*, Sln. *žíti*, Cz. *žíti*, Slk. *žit'* ; Lith. *gýti*, Latv. *dzît*, Skt. *jī́vati*, Lat. *vīvere*.
Ru. *ra-zínut'*, SCr. *zȉnuti*, Sln. *zíniti* ; Gr. *khaínō*, ON. *gína*.
Ru. *znat'*, SCr. *znȁti*, Sln. *znáti*, Cz. *znáti*, Slk. *znat'* ; Skt. *jñātáḥ*, Gr. *gnōtós*, OIr. *gnáth*.
Ru. *znet'*, Cz. *znětí*, Slk. *znieť*.
Ru. *zret'* 'see', SCr. *zrȅti*, Sln. *zrẹ́ti*, Cz. *zříti*, Slk. *zrieť* ; Lith. *žėrėti*.
Ru. *zret'* 'ripen', SCr. *zrȅti*, Sln. *zrẹ́ti*, Cz. *zráti*, Slk. *zrieť* ; Skt. *járati*.
Ru. *zybát'*, SCr. *zȉbati*, Sln. *zíbati*.
Ru. *kápat'*, SCr. *kȁpati*, Sln. *kápati*.
Ru. *kájat'sja*, SCr. *kȁjati*, Sln. *kájati*.
SCr. *kvȁsiti*, Sln. *kvásiti* ; Lat. *cāseus*.
Ru. *kidát'*, SCr. *kȉdati*, Sln. *kídati* ; Latv. *kûdît*, Skt. *khudáti*.
SCr. *kȉsati*, Sln. *kísati* ; Latv. *kûsât*.
Ru. *klánjat'sja*, SCr. *klànjati*, Sln. *klânjati se* ; Skt. *śrāṇayati*.
Ru. *klast'*, SCr. *klȁsti*, Sln. *klásti*, Cz. *klásti*, Slk. *klásť* ; Lith. *klóti*, Latv. *klât*.
Ru. *klevát'*, SCr. *kljùvati*, Sln. *kljuváti*, Slk. *kl'ut'* ; Lith. *kliūti*.
SCr. *klȅći*, Sln. *klẹ́kati* ; Lith. *klénkėti*.
Ru. *klikat'*, SCr. *klȉći*, Sln. *klícati*.
Ru. *kljúčit'*, SCr. *kljùčiti*, Sln. *kljúčiti* ; Lith. *kliūti*.
Ru. *kovát'*, SCr. *kòvati*, Sln. *kováti*, Cz. *kouti*, Slk. *kut'* ; Lith. *káuti*, Latv. *kaût*, Lat. *cūdere*.
Ru. *kolót'*, SCr. *klȁti*, Sln. *kláti*, Cz. *kláti*, Slk. *klať*, US. *kłóć* ; Lith. *kálti*, Latv. *kal̃t*, Lat. *clādēs*.
Ru. *kórčit'*, SCr. *krčiti*, Sln. *kŕčiti*.
Ru. *krast'*, SCr. *krȁsti*, Sln. *krásti*, Cz. *krásti* ; Latv. *krât*.
Ru. *kryt'*, SCr. *krȉti*, Sln. *kríti*, Cz. *krýti*, Slk. *kryť* ; Lith. *kráuti*, Latv. *kr̨aũt*, Gr. *krúptō*.
Ru. *kudít'*, SCr. *kùditi*, Sln. *kúditi*.
Ru. *kúkat'*, SCr. *kùkati*, Sln. *kúkati*.
Ru. *kúšat'*, SCr. *kùšati*, Sln. *kúšati* ; Lith. *kąsti*, Latv. *kuôst*, Skt. *khā́dati*.

Ru. *lázit'*, SCr. *làziti*, Sln. *láziti*; Latv. *lę̃zns*, ON. *lágr*.
Ru. *lájat'*, SCr. *làjati*, Sln. *lâjati*; Lith. *lóti*, Latv. *lãt*, Skt. *rấyati*, Lat. *lātrāre*.
Ru. *lezt'*, SCr. *s-ljèsti*, Sln. *lę́sti*, Cz. *lézti*, Slk. *liezt'*; Latv. *lẽzêt*, ON. *lágr*.
Ru. *ljágu*, SCr. *ljèžēm*, Sln. *lę̃žem*.
Ru. *lit'*, SCr. *līti*, Sln. *líti*, Cz. *líti*, Slk. *liat'*; Lith. *líeti*, Latv. *liêt*, Gr. *leíbō*, Lat. *lībāre*.
Ru. *mázat'*, SCr. *màzati*, Sln. *mázati*; Latv. *muõzêt*.
Ru. *májat'sja*, SCr. *màjati*, Sln. *májati*; Lith. *móti*, Latv. *mãt*, Skt. *māyấ*, Gr. *mîmos*.
Ru. *mérit'*, SCr. *mjèriti*, Sln. *mę́riti*; Skt. *mấti*, Lat. *mētior*.
SCr. *mìcati*, Sln. *mícati*.
SCr. *mùsti*, Sln. *mólsti*, *mlę́sti*; Lith. *mìlžti*, *mélžti*.
Ru. *molót'*, SCr. *mljèti*, Sln. *mlę́ti*, Cz. *mlíti*, Slk. *mliet'*, US. *mlěć*; Lith. *málti*, Latv. *maĩlt*, Skt. *mṛṇấti*, Lat. *molere*.
Ru. *múčit'*, SCr. *mùčiti*, Sln. *múčiti*, Po. *męczyć*; Lith. *mánkyti*.
Ru. *mýslit'*, SCr. *mìsliti*, Sln. *mísliti*; Gr. *mũthos*.
Ru. *myt'*, SCr. *mìti*, Sln. *míti*, Cz. *mýti*, Slk. *myt'*; Lith. *máudyti*, Skt. *mū́tram*, Dutch *mooi*.
Ru. *mjat'*, Sln. *mę́ti*, OCz. *mieti*, Slk. *mät'*; Lith. *mìnti*, Latv. *mĩt*.
Ru. *nádit'*, SCr. *nàditi*, Sln. *náditi*.
SCr. *nùditi*, Sln. *núditi*, Po. *nudzić*.
Ru. *nyt'*, Cz. *nýti*, Slk. *nyt'*; Lith. *nõvyti*, Latv. *nâvêt*.
Ru. *njúxat'*, SCr. *njùšiti*, Sln. *njúšati*, *njúhati*; OHG. *niusan*.
Ru. *orát'*, SCr. *òrāti*, Sln. *oráti*; Lith. *árti*, Latv. *arĩt*, Gr. *aróō*, Lat. *arāre*.
SCr. *pàziti*, Sln. *páziti*.
Ru. *párit'*, SCr. *pàriti*, Sln. *páriti*.
Ru. *past'*, *pádat'*, SCr. *pàsti*, *pàdati*, Sln. *pásti*, *pádati*.
Ru. *pastí*, SCr. *pàsti*, Sln. *pásti*, Cz. *pásti*, Slk. *pásť*; Lat. *pāscere*, Goth. *fōdjan*.
SCr. *pàtriti*, Po. *patrzyć*; Skt. *pấti*.
Ru. *pet'*, SCr. *pjèti*, *pjèvati*, Sln. *pę́ti*, *pę́vati*.
Ru. *pit'*, SCr. *pìti*, Sln. *píti*, Cz. *píti*, Slk. *pit'*; Skt. *pītáḥ*, Gr. *pínō*.
Ru. *plávit'*, SCr. *plàviti*, Sln. *plavíti*; Lith. *pláuti*, Gr. *plóō*, ON. *flóa*.
Ru. *plákat'*, SCr. *plàkati*, Sln. *plákati*; Lith. *plóti*, Gr. *plḗssō*, Lat. *plangere*.
SCr. *plàšiti*, Sln. *plášiti*, US. *plóšić*, Po. *płoszyć*; Gr. *pólemos*.
Ru. *plevát'*, SCr. *pljùvati*, Sln. *pljuváti*, Cz. *plíti*, Slk. *pl'ut'*; Lith. *spiáuti*, Latv. *spļaũt*.

Ru. *plyt'*, SCr. *plȉti*, Sln. *plúti*, Cz. *plouti*, Slk. *pluť*; Lith. *plū́sti*, Latv. *plûst*, Gr. *plū́nō*.
Ru. *pólzat'*, SCr. *pùzati*, Sln. *pólzati*.
Ru. *polózit'*, SCr. *plàziti*, Sln. *pláziti*.
Ru. *polót'*, SCr. *pljȅti*, Sln. *plẹ́ti*, Cz. *plíti*, Slk. *pliet'*, US. *plěć*.
Ru. *polót'*, Sln. *práti*, Cz. *práti*, US. *próć*.
Ru. *porót'*, Sln. *práti*, US. *próć*; Gr. *peráō*.
Ru. *pret'*, Po. *przeć*; Gr. *prḗthō*.
Ru. *pórtit'*, SCr. *pȓtiti*, *pràtiti*, Sln. *pŕtiti*, *prátiti*; Gr. *prā́ssō*.
Ru. *prúžit'*, SCr. *prùžiti*, Sln. *prǫ́žiti*.
Ru. *prjážit'*, SCr. *pȓžiti*, *pràžiti*, Sln. *pŕžiti*, *prážiti*; Lith. *sprógti*, Latv. *sprâgt*, Skt. *sphū́rjati*.
Ru. *prjast'*, SCr. *prȅsti*, Sln. *prẹ́sti*, Cz. *přísti*, Slk. *priasť*; Lith. *sprę́sti*, Latv. *spriêst*.
Ru. *prjátat'*, SCr. *prètati*.
Ru. *púkat'*, *púčit'*, SCr. *pùći*, Sln. *pǫ́kati*, *pǫ́čiti*, Po. *pękać*.
SCr. *pȕšiti*, Sln. *púšiti*; Arm. *phukh*, Gr. *phūsáō*.
Ru. *rvat'*, SCr. *rvati se*, Sln. *rváti*, Cz. *rváti*, *routi*, Slk. *rvať*, *ruť*; Lith. *ráuti*, Latv. *raût*.
Ru. *rézat'*, SCr. *rèzati*, Sln. *rẹ́zati*; Lith. *rė̃žti*, Gr. *rḗgnūmi*.
Ru. *vstrétit'*, SCr. *srȅsti*, Sln. *srẹ́sti*, *srẹ́čati*.
Ru. *rúšit'*, SCr. *rùšiti*, Sln. *rúšiti*; Lith. *ráuti*, ON. *rúst*.
Ru. *ryt'*, SCr. *rȉti*, Sln. *ríti*, Cz. *rýti*, Slk. *ryť*; Lith. *ráuti*, Latv. *raût*, ON. *rýja*.
Ru. *ẹst'*, *sjádu*, SCr. *sjȅsti*, *sjȅdēm*, Sln. *sẹ́sti*, *sệdem*; Lith. *sė̃sti*, Latv. *sêst*, Skt. *sī́dati*.
SCr. *sjȅtiti se*, Sln. *sẹ́titi se*.
Ru. *sétovat'*, SCr. *sjȅtovati*.
Ru. *seč'*, SCr. *sjȅći*, Sln. *sẹ́či*, Cz. *síci*, Slk. *siecť*; Lat. *secāre*, Ir. *ésgid*.
Ru. *séjat'*, SCr. *sȉjati*, Sln. *sejáti*, Cz. *síti*, Slk. *siať*; Lith. *sė̃ti*, Latv. *sẽt*, Lat. *serere*, OHG. *sāen*.
Ru. *slúšat'*, *slýšat'*, SCr. *slȕšati*, *slȉšati*, Sln. *slúšati*, *slíšati*; Lith. *kláusti*, *klausýti*, Skt. *śróṣati*.
Ru. *smet'*, SCr. *smjȅti*, Sln. *smẹ́ti*, Cz. *smíti*, Slk. *smieť*; Lat. *mōs*, OHG. *muot*.
Ru. *spet'*, SCr. *dò-spjeti*, Sln. *spẹ́ti*, Cz. *spěti*, Slk. *spieť*; Lith. *spė̃ti*, Latv. *spẽt*, Skt. *sphā́yate*, Lat. *spēs*, OHG. *spuot*.
Ru. *stávit'*, SCr. *stàviti*, Sln. *stáviti*; Lith. *stovė̃ti*, Latv. *stãvêt*, Gr. *stū́ō*.
Ru. *stat'*, SCr. *stàti*, Sln. *státi*, Cz. *státi se*, Slk. *stať*; Lith. *stóti*, Latv. *stât*, Gr. *hístēmi*, Lat. *stāre*, OHG. *stān*.

Ru. *do-stíč'*, SCr. *stȉći.*
Ru. *strašít'*, SCr. *strȁšiti*, Sln. *strášiti*; Latv. *struõstît.*
Ru. *strič'*, SCr. *strȉći*, Sln. *stríči*; OHG. *strīhhan.*
Ru. *sýpat'*, SCr. *sȉpati*, Sln. *sípati*; Lith. *sū́poti*, Latv. *šũpât.*
SCr. *sȅzati*, Sln. *sẹ́gati*, Po. *sięgać.*
Ru. *tájat'*, SCr. *tȁjati*, Sln. *tájati*; Gr. *tḗkō*, Lat. *tābēre.*
Ru. *terét'*, SCr. *tȓti*, Sln. *trẹ́ti*; Lith. *tìrti*, Gr. *teírō*, Lat. *terere.*
Ru. *terzát'*, *torgát'*, SCr. *tȓzati*, *tȓgati*, Sln. *tŕzati*, *tŕgati.*
Ru. *téšit'*, SCr. *tjȅšiti*, Sln. *tẹ́šiti.*
Ru. *tískat'*, SCr. *tìskati*, Sln. *tískati.*
SCr. *tlȁčiti*, Sln. *tláčiti*, US. *tlóčić*, Po. *tłoczyć*; Lith. *tìlkti.*
Ru. *tlet'*, Sln. *tlẹ́ti*, Cz. *tlíti*, Slk. *tliet'*; Lith. *tìlti*, Lat. *tollere.*
SCr. *trȁpiti*, Sln. *trápiti.*
Ru. *trátit'*, SCr. *trȁtiti*, Sln. *trátiti*; Lith. *trótinti.*
SCr. *trȁjati*, Sln. *trájati*; Skt. *trā́yate.*
Ru. *trébovat'*, SCr. *trȅbovati*, Sln. *trẹ́biti*; Gr. *tríbō.*
SCr. *tȓliti*, Sln. *tŕliti*; Lith. *tìrti.*
SCr. *tȓsiti*, Sln. *tŕsiti se.*
Ru. *turít'*, SCr. *tùriti*, Sln. *túrati.*
Ru. *tyt'*, SCr. *tȉti*, Cz. *týti*, Slk. *tyt'*; Lith. *tū́las*, *táukas.*
Sln. *tẹ́ti*, Cz. *títi*, Slk. *t'at'*; Lith. *tìnti*, Gr. *témnō.*
Ru. *údit'*, SCr. *ùditi*; Skt. *ū́dhar*, OHG. *ūtar.*
SCr. *ùmiti*, Sln. *úmiti*; Lith. *aumuõ.*
Ru. *ob-út'*, SCr. *òb-uti*, Sln. *ob-úti*, Cz. *ob-outi*, Slk. *ob-ut'*; Lith. *aũti*, Lat. *ex-uere.*
Ru. *xájat'*, SCr. *hȁjati*, Sln. *hájati.*
Ru. *xvatít'*, SCr. *hvȁtiti*, Sln. *hvátiti.*
Ru. *po-xítit'*, SCr. *hȉtiti*, Sln. *hítiti.*
Ru. *xulít'*, SCr. *hùliti*, Sln. *húliti.*
Ru. *čekát'*, SCr. *čȅkati*, Sln. *čákati*; Lat. *cārus*, OHG. *huora.*
Ru. *čájat'*, SCr. *čȁjati*, Sln. *čâjati*; Skt. *cā́yati*, Gr. *tēréō.*
Ru. *po-čít'*, Sln. *po-číti*; Lat. *quiēs.*
Ru. *čut'*, SCr. *čȕti*, Sln. *čúti*, Cz. *číti*, Slk. *čut'*; Skt. *kavíḥ*, Gr. *koéō*, Lat. *cavēre.*
Ru. *u-šibít'*, SCr. *šȉbati*, Sln. *šíbati.*
Ru. *šit'*, SCr. *šȉti*, Sln. *šíti*, Cz. *šíti*, Slk. *šit'*; Lith. *siū́ti*, Latv. *šũt*, Skt. *sī́vyati*, Lat. *suere.*
SCr. *jȁditi*, Sln. *jáditi*; Gr. *oidéō.*
Ru. *po-jásat'*, SCr. *pàsati*, Sln. *pásati*; Lith. *júosti*, Latv. *juôzt*, Gr. *zōstós.*

A7. Loan words

Next to the inherited material, there are a number of loan words where the Slavic evidence points to a laryngealized vowel in the root. These borrowings go back to the first millennium of our era, when the laryngeal feature had already been integrated in the system of pitch oppositions. The reason why these words belong to this accentuation class must be sought in the pitch characteristics of the Germanic dialects from which the words were taken.

Ru. *bánja*, SCr. *bȁnja*, Sln. *bânja*, OCz. *báně*, Slk. *baňa* ; Lat. *balneum*.
Ru. *bljúdo*, SCr. *bljȕdo* ; Goth. *biudan*.
SCr. *brȁdva*, Sln. *brâdva* ; OHG. *barta*.
Ru. *buk*, *búkva*, SCr. *bȕk*, *bȕkva*, Sln. *búkev*, *bûkva*, Cz.Slk. *buk* ; Goth. *bōka*, ON. *bók*.
SCr. *bȕljav*, Sln. *búla*, Cz. *boule*, Slk. *bul'a* ; OHG. *būlla*.
Ukr. *vátra*, SCr. *vȁtra*, Cz.Slk. *vatra* ; Avestan *ātarš*.
Ru. *vertográd*, SCr. *vȓt*, Sln. *vȓt* ; Goth. *aúrtigards*.
Ru. *volóx*, SCr. *vlȁh*, Sln. *vlàh*, Cz.Slk. *vlach* ; OHG. *wal(a)h*.
Ru. *výžlec*, SCr. *vȉžao*, *vȉžle*, Sln. *vížel*, Cz. *vyžel*, *vyžle*, Slk. *vyžla* ; OHG. *wīso*.
Ru. *dúlja*, SCr. *gdȕnja*, Cz. *kdoule*, Slk. *dula* ; Lat. *cydōnea*.
Ru. *kaď*, SCr. *kâd*, Sln. *kàd*, Cz. *káď*, Slk. *kad'a* ; Gr. *kádion*.
Ru. *kit*, SCr. *kȉt*, Sln. *kìt* ; Gr. *kētos*.
Ru. *kníga*, SCr. *knjȉga*, Sln. *knjíga*, OCz. *kníha*, Slk. *kniha*.
Ru. *líxva*, SCr. *lȉhva*, Sln. *líhva*, Cz.Slk. *lichva* ; Goth. *leihvan*.
Ru. *luk*, SCr. *lȕk*, Sln. *lùk*, Cz. *luk* ; ON. *laukr*.
Ru. *mísa*, Cz. *mísa*, Slk. *misa* ; Lat. *mēnsa*.
Ru. *mlin*, SCr. *mlȉn*, Sln. *mlīn*, Cz. *mlýn*, Slk. *mlyn* ; OHG. *mulīn*.
Ru. *mjáta*, SCr. *mȅtva*, Sln. *mę̑ta*, Cz. *máta*, Slk. *mäta*, Po. *mięta* ; Lat. *mentha*.
Ru. *pénjaz'*, SCr. *pjȅnēzi*, Sln. *pę̑nez*, Cz. *peníz*, Slk. *peniaz* ; OHG. *pfenning*.
Ru. *plug*, SCr. *plȕg*, Sln. *plùg*, SCz. *plouh*, Slk. *pluh* ; OHG. *pfluog*.
Ru. *púška*, SCr. *pȕška*, Sln. *pûška*, Cz.Slk. *puška* ; OHG. *buhsa*.
Ru. *ráka*, SCr. *rȁka*, Sln. *ráka*, *rákev*, Cz.Slk. *rakev* ; Goth. *arka*.
Ru. *rúta*, SCr. *rȕta*, Sln. *rúta* ; Lat. *rūta*.
Ru. *sáblja*, SCr. *sȁblja*, Sln. *sâblja*, Cz. *šavle*, Slk. *šabl'a* ; Hung. *száblya*.
Ru. *skíba*, Cz. *skýva*, Slk. *skyva* ; OHG. *scība*.
Ru. *skrin*, SCr. *skrȉnja*, Sln. *skrínja*, Cz. *skříň*, Slk. *skriňa* ; OHG. *scrīni*.

Ru. *stúpa*, SCr. *stȕpa*, Sln. *stǫ́pa*, Cz. *stoupa*, Slk. *stupa*, Po. *stępa*; OHG. *stampfōn*.
Ru. *tyn*, SCr. *tȉn*, Sln. *tìn*, Cz. *týn*; ON. *tún*.
Ru. *xiz*, *xíža*, SCr. *hȉža*, Sln. *hìs*, *híša*, Cz. *chýše*, Slk. *chyža*; OHG. *hūs*.
Ru. *xleb*, SCr. *hljȅb*, Sln. *hlèb*, Cz. *chléb*, Slk. *chlieb*; Goth. *hlaifs*.
Ru. *xulá*, SCr. *hȕla*, Sln. *húla*; Goth. *hōlōn*.
Ru. *čerémša*, SCr. *trȅšnja*, Sln. *črę́šnja*, Cz. *třešně*, US. *třěšnja*; Lat. *cerasus*.
Ru. *šelóm*, SCr. *šljȅm*, Sln. *šlèm*; OHG. *hëlm*.
Ru. *šúba*, SCr. *šȕba*, Sln. *šûba*, Cz.Slk. *šuba*.
Ru. *ščir*, SCr. *štȉr*, Sln. *ščîr*, Cz. *štír*; OHG. *stir*.
Ru. *jávor*, SCr. *jȁvōr*, Sln. *jávor*, Cz.Slk. *javor*; OHG. *ahorn*.

APPENDIX B

LENGTHENED VOWELS IN SLAVIC ROOTS

Occurrences of IE lengthened grade are even harder to identify in Slavic than instances of IE laryngeals. The problem is that, like in Baltic, the large majority of cases go back to a period posterior to the linguistic unity. The rise of new long vowels in derivatives was particularly productive in Baltic as well as in Slavic during the first millennium before our era.

According to the theory presented in the preceding chapters, the regular reflex of the lengthened grade is a circumflex in monosyllables and a long vowel in unstressed roots. A typical case is Ru. *žar*, *žará*, SCr. *žâr*, *žára*. The co-existence of the two stems points to the enlargement of an earlier consonant stem with different suffixes. The former word can only show accentual mobility because of Illič-Svityč's law (cf. section 3.4 above), and the latter has final accentuation in accordance with Dybo's law (section 3.6), cf. Ru. acc.sg. *žarú*. Czech *žár* has its long vowel from the compound *požár*, where length was regularly maintained in the posttonic syllable, cf. Ru. *požár*, with non-initial accentuation as a result of Dybo's law, and SCr. *pòžār*, with secondary mobility. If the lengthened grade would originally have yielded an acute intonation, neither the long root vowel in Cz. *požár*, SCr. *pòžār*, nor the final accentuation in Ru. *žará*, SCr. *žára* could be explained.

The instances where an apparent lengthened grade manifests an acute intonation must be explained differently. The case of Ru. *éla*, *séla*, *sékla*, *pribégla* was discussed above (section 3.2). A similar explanation is generally accepted for the apparent lengthened grade of the prefix in Ru. *pámjat'*, *práded*, SCr. *pāmēt*, *prāded*, which goes back to the old instrumental ending **-oH* (Meillet 1934a:351, Beekes 1973:216). A third type is exemplified in the acute of Ru. *sláva*, SCr. *slāva*, for which we have Lith. *šlóvė* or *šlovẽ*, acc.sg. *šlóvę* or *šlõvę*. There were derivatives with and without a laryngeal from this root in Balto-Slavic, e.g. Lith. *klaũso* < **klausā* 'obeys' and *kláusia* < **klauHsia* 'interrogates' (cf. Meillet 1934b:164). When the laryngeal

lost its segmental status, the existence of such pairs gave rise to a metatonical relationship. The laryngealized root variant was generalized in Slavic, e.g. Ru. *slúšat'*, SCr. *slȕšati* 'to listen'.

The evaluation of the material presented in this appendix requires a detailed chronological analysis, which remains a task for the future. Here again I have no pretension to exhaustiveness. I have concentrated upon roots which show transparent apophonic relationships and omitted clearly secondary cases.

B1. NOUNS

Ru. *val*, SCr.Sln. *vâl*; Lith. *volč̃*, Latv. *vàle*, Lat. *volvere*, ON. *valr*.
Ru. *var*, SCr.Sln. *vâr*, Cz.Slk. *var*; Lith. *varùs*, Dutch *warm*.
Ru. *vedró*, SCr. *vjèdro*, Sln. *vẹ́dro*, Cz. *vědro*, Slk. *vedro*; ON. *vátr*, Ru. *vodá*.
Ru. *véno*, Cz. *věno*, Slk. *veno*.
Ru. *gal*; Latv. *gàle*, OHG. *kalo*, Ru. *gólyj*.
Ru. *gar'*, *razgár*, *ugár*, SCr. *gâr*, *gára*; Skt. *háraḥ*, Gr. *théros*, Ru. *gorét'*.
Ru. *gran'*, SCr. *grána*, OCz. *hrano*, Cz.Slk. *hrana*, Po. *grań*; OHG. *grana*.
Ru. *davnó*, SCr. *dâvno*, Sln. *dávno*, Cz. *dávný*, Slk. *dávny*; Skt. *dūráḥ*, Arm. *tev*, Lat. *dūdum*.
Ukr. *dirá*, Sln. *dẹ́ra*, Cz. *díra*, Slk. *diera*; Skt. *dṛṇā́ti*, Gr. *dérō*, Ru. *drat'*.
Ru. *žal'*, SCr. *žȁo*, Sln. *žàl*, Cz. *žal*, Slk. *žial*; Lith. *gėlà*, OHG. *quāla*.
Ru. *žar*, *požár*, *žará*, SCr. *žâr*, *pòžār*, *žára*, Sln. *žâr*, *požâr*, Cz. *žár*, *požár*, Slk. *žiar*, *žiara*; Skt. *háraḥ*, Gr. *théros*, Ru. *gorét'*.
Ru. *zar'*, *zarjá*, Sln. *zárja*, Cz. *zář*, *záře*; Lith. *žėrėti*, *žarà*, Ukr. *zorjá*, SCr. *zòra*, Sln. *zórja*, Cz. *zoře*, Slk. *zora*.
Ru. *zver'*, SCr. *zvȉjer*, Sln. *zvẹ́r*, Cz. *zvěř*, Slk. *zver*; Lith. *žvėrìs*, Gr. *thḗr*, Lat. *ferus*.
Ru. *izgága*, Sln. *izgâga*, OCz. *zháha*, Slk. *žháha*; Lith. *dègti*, Skt. *dáhati*, Ru. *žeč'*.
Ru. *kal*, SCr. *kȁo*, Sln. *kâl*, Cz.Slk. *kal*.
Ru. *kára*, SCr.Sln. *kâr*, Cz.Slk. *kára*; Latv. *karinât*, Lat. *carināre*, Ru. *korít'*.
Ru. *krasá*, SCr. *krâs*, *krása*, Sln. *krâs*, Cz.Slk. *krása*; ON. *hrósa*.
Ru. *len'*, SCr. *lȉjen*, Sln. *lẹ́n*, OCz. *léň*, Slk. *lieň*; Lith. *lėnas*, *lẽnas*, Latv. *lę̃ns*, Lat. *lēnis*.
SCr. *mâr*, *nèmār*, Sln. *mâr*, *nẹ́mar*; Skt. *smárati*, Lat. *memor*.
Ru. *mel*, Sln. *mẹ́l*, Cz. *měl*, Slk. *mel'*; Lith. *smėlỹs*, Ru. *molót'*.

Ru. *mjáso*, SCr. *mêso*, Sln. *mesọ̑*, Cz. *maso*, Slk. *mäso* ; Lith. *mėsà*, Latv. *mìesa*, Skt. *māṃsám*, *māḥ*, Arm. *mis*, Goth. *mimz*.
Ru. *reč'*, SCr. *rȉječ*, Sln. *rẹ̑č*, Cz. *řeč*, Slk. *reč* ; Lith. *rẽkti*, Latv. *rèkt*, Skt. *racáyati*, Goth. *ragin*.
Ru. *sam*, SCr.Sln. *sâm*, Cz.Slk. *sám* ; Skt. *samáḥ*, Gr. *homós*, Goth. *sama*.
Ru. *sap*, Sln. *sápa* ; Skt. *śápati*, Ru. *sopét'*.
Ru. *svára*, Sln. *svâr*, Cz.Slk. *svár* ; Lat. *sermo*, ON. *svara*.
Ru. *slep*, SCr. *slȉjep*, Sln. *slẹ̑p*, Cz.Slk. *slepý* ; Lith. *slẽpti*, Latv. *slèpt*.
Ru. *tvar'*, SCr.Sln. *tvâr*, Cz. *tvář*, *tvar*, Slk. *tvár*, *tvar* ; Lith. *tvorà*, Ru. *tvorít'*.
Ru. *travá*, SCr.Sln. *tráva*, Cz.Slk. *tráva* ; Gr. *trṓō*, SCr. *tròvati*.
Ru. *tresk*, *treská*, SCr. *trȉjesak*, *trèska*, Sln. *trẹ̑sk*, *trẹ́ska*, Cz. *třesk*, *tříska*, Slk. *tresk*, *trieska* ; Lith. *trešk ėti*, Cz. *troska*.
Ru. *udár*, SCr. *ùdār*, Sln. *udâr*, Cz.Slk. *úder* ; Ru. *drat'*.
Ru. *úžas*, SCr. *ȕžās*, Cz.Slk. *úžas* ; Lith. *gèsti*, Gr. *sbénnūmi*, Ru. *gasít'*.
Ru. *xvalá*, SCr.Sln. *hvála*, Cz.Slk. *chvála* ; ON. *skvala*.
Ru. *čáry*, Ukr. *čará*, SCr. *čâr*, Sln. *čâr*, *čára*, Cz. *čár*, *čára*, Slk. *čary* ; Lith. *kerėti*, Skt. *kṛṇóti*.
Ru. *ščap*, SCr. *štâp*, Sln. *ščáp*, Cz. *štěp*, Slk. *štep* ; Latv. *šķẹ̀ps*, OHG. *skaft*, Ru. *ščepá*.
Ru. *jaz*, SCr. *jâz*, Sln. *jẹ̑z*, Cz. *jez*, Slk. *jaz* ; Lith. *ežẽ*, Latv. *eža*, Arm. *ezr*.
Ru. *jajcó*, SCr. *jáje*, Sln. *jájce* ; Gr. *ōión*, Lat. *ōvum*, OHG. *ei*.

B2. VERBS

SCr. *bádati*, Cz. *bádati*.
Ru. *valít'*, Sln. *valíti*, Cz. *valiti*.
Ru. *varít'*, SCr. *váriti*, Sln. *varíti*, Cz. *vařiti*.
Ru. *gadát'*, Sln. *gádati*, Cz. *hádati* ; Lith. *guõdas*, Latv. *gùods*, ON. *gáta*.
Ru. *gálit'*, SCr. *gáliti*.
SCr. *gánjati*, Sln. *gânjati*.
Ru. *gasít'*, SCr. *gásiti*, Sln. *gasíti*, Cz. *hasiti* ; Lith. *gèsti*, Gr. *sbénnūmi*.
Ru. *davít'*, SCr.Sln. *dáviti*, Cz. *dáviti* ; ON. *deyja*.
Ru. *drápat'*, SCr.Sln. *drápati*, Cz. *drápati* ; Gr. *drépō*.
Ru. *žalét'*, SCr. *žȁliti*, Sln. *žáliti*, Cz. *želeti* ; Lith. *gélti*, OHG. *quëlan*.
Ru. *žárit'*, SCr. *žáriti*, Sln. *žaríti*.
Ru. *zárit'*, Cz. *zářiti* ; Lith. *žėrėti*.

Ru. *karát'*, SCr.Sln. *kárati*, Cz. *kárati*.
Ru. *krákat'*, Sln. *krâkati*, Cz. *krákati*; Lith. *krõkti*, Latv. *kràkt*, Gr. *krṓzō*, Lat. *crōcīre*.
SCr. *lijègati*, Sln. *lę́gati*, Cz. *lehati*.
Ru. *letát'*, SCr. *lijètati*, Sln. *lę́tati*, Cz. *létati*; Lith. *lẽkti*, Latv. *lèkt*.
SCr. *máriti*, Sln. *mârati*.
Sln. *mę́niti*, Cz. *míniti*; OHG. *meinen*.
Ru. *palít'*, SCr.Sln. *páliti*, Cz. *páliti*; Lith. *pelenaĩ*.
Ru. *parít'*, SCr. *páriti*, Cz. *pářiti*; Goth. *faran*.
Ru. *ráčit'*, SCr.Sln. *ráčiti*, Cz. *ráčiti*; Skt. *racáyati*, Goth. *rahnjan*.
Sln. *rę́kati*, Cz. *říkati*.
Ru. *sadít'*, SCr. *sáditi*, Sln. *sadíti*, Cz. *saditi*; Lith. *sodìnti*, Goth. *satjan*.
Sln. *sápati*, Cz. *sápati se*.
Ru. *svarít'sja*, Sln. *svaríti*, Cz. *svářiti se*.
Ru. *skakát'*, SCr.Sln. *skákati*, Cz. *skákati*; ON. *skaga*.
Ru. *tákat'*, SCr. *tákati*, Sln. *tâkati*; Lith. *tekė̃ti*.
Sln. *tvârjati*, Cz. *tvářeti*; Lith. *tvérti*.
Sln. *tę́kati*, Cz. *těkati*; Lith. *tekė̃ti*.
Ru. *travít'*, SCr. *tráviti*, Cz. *tráviti*; Gr. *trṓō*.
Ru. *xvalít'*, SCr.Sln. *hváliti*, Cz. *chváliti*; ON. *skvala*.
Ru. *čápat'*, Sln. *čápati*, Cz. *čapati*; Lat. *capere*, Goth. *hafjan*.
Ru. *šalít'*, Sln. *šáliti se*, Cz. *šáliti*.

B3. SIGMATIC AORIST

OChSl. *basъ*, *bljusъ*, *věsъ*, *vlěxъ*, *vrěsъ*, *grěsъ*, *ěsъ*, *jaxъ*, *žaxъ*, *lęxъ*, *męsъ*, *něsъ*, *rěxъ*, *sěxъ*, *těxъ*, *tręsъ*, *cvisъ*, *čisъ*.

APPENDIX C

SHORTENING OF PRETONIC LONG VOWELS IN ITALIC AND CELTIC

The reconstruction of the oldest Balto-Slavic accentual system requires an evaluation of the comparative IE evidence. The only detailed comparison available so far is presented in Illič-Svityč's monograph on nominal accentuation in Baltic and Slavic (1963). In this study the Baltic and Slavic material is confronted with identical formations in Sanskrit, Greek, and Germanic. These are not the only languages which supply useful information about IE accentuation, however. As Dybo demonstrated in 1961, the shortening of pretonic long vowels in Italic and Celtic provides another valuable clue for the reconstruction of accentual differences in prehistoric times. Here I quote the main part of the introduction to this important article (Dybo 1961a:9f.).

"Comparative linguistics often has to deal with variants of a root where side by side with a long vowel or long resonant (respectively heavy base or root with a laryngeal) a short vowel or resonant (respectively light base or root without a laryngeal) appears. Both variants are usually supposed to go back to IE times.

But a careful examination of the material shows this view to be unwarranted:

1. If one leaves aside the instances when the root with a long vowel appears before a vowel or where the root (stem) is split by a nasal infix, and also some cases of shortening of vowels before certain consonant clusters, then the overwhelming majority of the words with a short root variant belongs to the Western part of the IE area, viz. to the Italic, Celtic and, partly, the Germanic languages.

2. Moreover, where there are corresponding words or words with a similar structure, the Italic short root variant coincides with the Celtic one, and in the case of a root ending in an intervocalic resonant, also with the Germanic one:

1) Lat. *cŭtis*, W. *cwd*, but OHG. *hūt*;

2) Lat. *defrŭtum*, OIr. *bruth*, but OHG. *prūt*;

3) Lat. *fŭturus*, OIr. *ro-both*, but Skt. *bhūtáḥ*, Lith. *bŭtas* ;

4) Lat. *sŭcula*, W. *hwcc*, but Skt. *sūkaráḥ* ;

5) Lat. *pŭter*, Ir. *othar*, *othrach* (root *pū-*) ;

6) Lat. *ulna* (< **ŏlenā*), Ir. *uile*, Goth. *aleina*, but Gr. *ōlénē*, *ōlḗn*, Arm. *uln* (*u* < IE *ō*) ;

7) Lat. *vĭr*, Ir. *fer*, Goth. *wair* ; but Skt. *vīráḥ*, Lith. *výras* ;

8) Lat. *sĕrēscō*, Ir. *serb*, OHG. *serawēn*, but Skt. *kṣāráḥ*, Gr. *ksērós* ;

9) Osc. *bivus* (acc.pl.), W. *byw*, Goth. **qĭus*, but Skt. *jīváḥ*, Lith. *gývas* ;

10) Lat. **tŭmus* (in *tŭmēre*), W. *twf*, Ge.(dial.) *dŭm*, but Avestan *tūma-*, OChSl. *tyti* ;

11) OIr. *del*, Sw.(dial.) *del* (masc.), but Latv. *dę̂ls* (gen. *dę̂la*) ;

12) Ir. *lon*, Goth. *lun* (the brevity of the *u* is established on the basis of OE. *ālynnan*), but Skt. *lūnáḥ* ;

13) Ir. **len* (in *lenomnaib* '*lituris*'), Ge.(dial.) *len*, Sw. *len*, but Skt. *līnáḥ* ;

14) Celt. **nŏvis* (in Ir. *nóine*, *núna*, W. *newyn*, Bret. *naoun*), Goth. *nawis*, but Latv. *nâvs*, Lith. *nõvis*, OPr. *nowis*, Ru. *nav'*.

These two peculiarities of the distribution of the material with a short root variant compel one to look for the causes of the emergence of this short variant in the phonetic processes of the Celto-Italic dialectal area, and also in the similar and, probably, connected phonetic processes in the dialects underlying the Proto-Germanic language.

The analysis of the Celtic and Italic material from the point of view of IE accentology shows that long vowels and resonants were preserved in these languages under the stress only and were shortened in unstressed position, probably already in the period of Celto-Italic unity, at a time of close contact with the dialects underlying the Proto-Germanic language.

The different reflexes of long $\bar{r}$ and $\bar{l}$ can also be explained by the place of the stress (Celto-Ital. *ar*, *al* in unstressed position, Celto-Ital. *rā*, *lā* under the Indo-European stress)."

Dybo then presents the material, consisting of 42 items where long IE vowels and resonants have been shortened in unstressed syllables, and 44 items where long IE vowels and resonants have been preserved under the stress. I refrain from repeating the material here and refer to the source for full information.

In addition to the material which is in accordance with the hypothesis, Dybo adduces 17 items with a long stem vowel in Italic and Celtic corresponding to a stressed stem vowel in Baltic and Slavic but to a pretonic long stem vowel in Greek and Sanskrit, e.g. Lat. *fūmus, grānum*, Ir. *grán, lán*, SCr. *dȉm, zr̂no, pȕn*, Skt. *dhūmáḥ, jīrṇáḥ, pūrṇáḥ*. The difference between the Balto-Slavic and the Greek and Sanskrit accentuation is generally explained by Hirt's law. On the basis of the Italic and Celtic material Dybo rejects this law and assumes that the stress placement in Baltic and Slavic goes back to the proto-language and that the final accentuation in the oldest IE evidence is due to an innovation.

The explanation of the difference between a short vowel in Italic and Celtic and a long vowel elsewhere as resulting from the shortening of pretonic long vowels in the former languages is supported by the existence of an alternation between a long and a short vowel in derivatives from the same root in Italic and Celtic, e.g. Welsh *biw* 'cattle', *byw* 'living', Lat. *sūs, sŭcŭla, pūrus, pŭtus, cārus*, OIr. *caraim*. According to Dybo, the quantitative opposition in these words reflects an earlier accentual difference.

The same explanation is put forward for the quantity of the stem vowel in deverbative nominals in *-to-* (participle) and *-tu-* (supine). The *to*-participle has final accentuation in Greek and Sanskrit, whereas the latter language has generalized both full grade and barytonesis in the infinitive in *-tum*. If the preservation or loss of quantity in the root reflects an earlier accentual opposition in Italic and Celtic, one has to assume two classes of *t*-formations which merged in Greek and Sanskrit, e.g. Lat. *lĭtus, lĭtum, pŭtāre, fŭtāre, fŭtūrus*, OIr. *ro-both, bith*, W. *ffrwst, ffraeth*, but Lat. *sūtus, sūtum, rūta, strātus, strātum*, OIr. *ro-bíth, bráth*, W. *prid, blawt*. These classes must be old because the same distribution is found in Baltic and Slavic, cf. Latv. *liêt/lît, pļaût, ļût, dzît, sprûst, sprâgt, šũt, bĩ̃t, mal̃t*, Ru. *lilá, bylá, žilá, šíla, rýla, prostërla, bíla, krýla, molóla*. On the basis of the agreement between the Western and the Northern languages Dybo assumes that the accentuation of the Greek and Sanskrit forms is secondary in these categories.

Dybo's article provoked a reaction by Illič-Svityč (1962), who accepted the thesis that pretonic long vowels were shortened in Italic and Celtic, but rejected the suggestion that these languages together with Baltic and Slavic preserved the old stress placement on the stem in a number of cases where Greek and Sanskrit show final accen-

tuation. Illič-Svityč's main objection is that the motivation for the oxytonesis in the latter languages remains unclear, especially because the stem is stressed in such words as Skt. *ūrṇā*, *bhrātā*, as opposed to *pūrṇáḥ*, *mātā́*. Moreover, the Germanic evidence generally supports the antiquity of the Greek and Sanskrit accentuation rather than the stress placement conjectured on the basis of Italic and Celtic quantity, e.g. OHG. *muoter* < **mātēr*, OE. *sēod* < **sḭūtós*, cf. Lat. *māter*, *sūtus*, Skt. *mātā́*, *syūtáḥ*. Illič-Svityč concludes that the Sanskrit, Greek, and Germanic accentuation goes back to the proto-language and that the stress was retracted in Italic and Celtic under the same conditions as it was in Baltic and Slavic.

According to Illič-Svityč, the origin of the retraction must be sought in the intonation of the root vowel. He posits the existence of four types in the proto-language:

(1) IE barytona with a rising intonation on the root syllable: fixed stress on the stem and preservation of length in Balto-Slavic and Celto-Italic, e.g. SCr. *brât*, Lat. *frāter*, OIr. *bráthir*, Skt. *bhrātā*, Gr. *phrātēr*, OHG. *bruodar*.

(2) IE oxytona with a rising intonation on the root syllable: retraction of the stress and preservation of length in Balto-Slavic and Celto-Italic, e.g. Lith. *pìlnas*, Latv. *pilns*, SCr. *pûn*, Ir. *lán*, Skt. *pūrṇáḥ*.

(3) IE oxytona with a 'broken' intonation on the root syllable: mobile stress in Balto-Slavic and shortening of pretonic length in Celto-Italic, e.g. SCr. *trâg*, Ir. *trog*.

(4) IE barytona with a 'broken' intonation on the root syllable: mobile stress in Balto-Slavic and preservation of length under the stress in Celto-Italic, e.g. Lith. *plónas*, Latv. *plâns*, Lat. *plānus*.

Thus, the opposition between preservation and loss of quantity in Italic and Celtic reflects an earlier intonational difference, which is independent of the IE stress placement. The *to*-participle was stressed on the ending but could have different intonations in the root.

Leaving the Germanic evidence aside, I think that Illič-Svityč is right for two reasons when he sticks to the view that Sanskrit and Greek have preserved the IE stress placement better than Italo-Celtic and Balto-Slavic. First, the original accentuation cannot be established without taking the apophonic evidence into account. When apophony and accentuation in Greek and Sanskrit coincide, there can hardly be any doubt. The combination of final stress and zero grade of the root vowel in the *to*-participle suggests that this is the

original situation. In the *tu*-formation we may expect proterodynamic mobility (cf. Kuiper 1942:35). Second, the preservation of the neuter gender in SCr. *zȓno* and similar words cannot be explained if we start from original barytonesis. The merger of barytone neuters and masculines in the singular must have preceded the retraction of the stress in these words (cf. section 5.3 above). There is no way to avoid Hirt's law in Baltic and Slavic.

On the other hand, I do not agree with Illič-Svityč that a similar retraction must have operated in Italic and Celtic. The preservation of pretonic long vowels in these languages can be explained more easily if we base ourselves on the principle of relative chronology, i.e. if we assume that the pretonic long vowels which have been preserved had not yet arisen at the time when the shortening operated. It is remarkable that all of the items with preservation of pretonic length adduced by Dybo have a 'long sonant' in the root with the single exception of the word Lat. *māter*, OIr. *máthir*, Skt. *mātā́*. In this very word Greek has preserved a stem-stressed nominative *mḗtēr*, Dor. *mā́tēr*, which must be the remnant of an old type of mobility. It is probable that the long vowel in Italic and Celtic, which was regularly preserved under the stress in the nominative, was analogically introduced in the other case forms. Alternatively, one could suggest that these languages, in contradistinction to Sanskrit and Slavic, generalized the barytonesis of the nom.sg. form throughout the paradigm.

If this view is correct, the loss of the laryngeals after a vocalic resonant is posterior to the shortening of pretonic long vowels in Italic and Celtic. The specific development of the vocalic liquids, which is posterior to the common shortening of pretonic long vowels, which is in turn posterior to the development of *ē*, *ā*, *ō* from short vowel plus laryngeal, supports the hypothesis of Italo-Celtic linguistic unity.

Illič-Svityč's conjecture about the presence of different intonations in the root must be reconsidered in this connection. It should be clear that his solution is no explanation: it merely shifts the problem. Even if the observed differences reflect an earlier pitch opposition, the latter must still be explained in terms of the root structure. Moreover, the quadripartition into stem-stressed and end-stressed nouns with rising and 'broken' intonation is not so straightforward as Illič-Svityč suggests. Not all of his comparisons are equally acceptable. In particular, his third type is a heterogeneous class and his

fourth type is a fallacy. The broken intonation of Latv. *plâns* is the regular reflex of an old acute in neuter nouns, cf. Lat. *plānum*, and the mobility in Lith. *plónas* is secondary, while Latv. *plãns* points to original barytonesis. The other items belonging to the same class are also objectionable. This reduces the problem to establishing the difference between the second and third type, i.e. to determining the conditions of Hirt's law and its Italo-Celtic analogue.

In his monograph on Baltic and Slavic accentuation (1963), Illič-Svityč abandons Kuryłowicz's idea that the place of the ictus in Baltic and Slavic is independent of the place of the ictus in Indo-European and proves that Balto-Slavic mobility is the reflex of IE oxytonesis, and that fixed stress in Baltic and Slavic continues IE root stress, with the exception of a few definable classes. One of these classes owes its existence to Hirt's law, which I adopted in this book in Illič-Svityč's formulation: the ictus was retracted if the vowel of the preceding syllable was immediately followed by a laryngeal. As a result of this retraction, we find fixed stress on the stem in Baltic and Slavic corresponding to final accentuation in Sanskrit and Greek. (Another exceptional class, where we find Slavic mobility corresponding to IE barytonesis, originated from what I have called Illič-Svityč's law, cf. section 3.4 above.)

If this formulation of Hirt's law is correct (as I think it is), we can identify the above 'rising intonation' as the presence of a vowel or syllabic resonant which is immediately followed by a laryngeal, and the 'broken intonation' as the absence of this situation. In the latter case there are at least four possibilities. Either there was no laryngeal and the long vowel goes back to lengthened grade, which is a possible solution for SCr. *trâg*, Ir. *trog*. Or the root contained vowel plus laryngeal but the accentual mobility was preserved, as in Lith. *sūnùs*, SCr. *sîn* (cf. Ebeling 1967:582). Or the laryngeal followed the second component of a diphthong, as in Latv. *tiêvs*, Gr. *tanaós*. Or the laryngeal preceded a vocalic resonant. The latter solution was put forward in section 1.3 above as an explanation of the final accentuation in Ru. *pilá*, *lilá*, *žilá*, *bylá*. I think that this suggestion is now corroborated by the Italo-Celtic evidence. It can also be advanced for SCr. *žîr*, Skt. *jīráḥ*, cf. Lat. *vīrēre*.

Thus, I assume that the shortening of a pretonic 'long sonant' in Italic and Celtic points to the presence of a laryngeal preceding the syllabic resonant. This conjecture is supported by other IE evidence in a number of cases, cf. Latv. *lêju*, Hitt. *paḫḫur*, perhaps Gr. *phŭtón*,

bíos. The case of Lat. *vĭr* is slightly different. The retraction in Lith. *výras*, Latv. *vīrs*, as compared with Skt. *vīráḥ*, points to **viHrós*, which would yield a long vowel in Italo-Celtic. The expected quantity is indeed attested in Umbr. *veir-*. The short vowel in Latin must be explained by a merger with the cognate of Skt. *jīráḥ*, where the Balto-Slavic evidence points to a root **gᵘHi-*, cf. Lat. *vĭrēre*. The original length was preserved in *vīs*.

As Dybo pointed out, the shortening of pretonic long vowels yielded a quantitative alternation in such cases as Welsh *biw* (< **gᵘHívos*, Gr. *bíos*), *byw* (< **gᵘHivós*, Skt. *jīváḥ*), Lat. *pūrus*, *pŭtus*, *cārus*, OIr. *caraim*. The alternation was analogically extended by shortening of the root vowel in certain morphological categories to stems which originally had a vocalic resonant followed by a laryngeal, e.g. in Lat. *sŭcŭla*, W. *hwch*, cf. Lat. *sūs* < **suH-*. It is not necessary to assume the complicated mechanism which Illič-Svityč suggests in this connection (1962:71f.). The agreement of Italic and Celtic at this stage is another argument in favour of the Italo-Celtic hypothesis. A final solution to the problem requires a detailed chronological analysis of the material, which remains a task for the future.

APPENDIX D

SHORTENING OF PRETONIC LONG VOWELS IN GERMANIC

In his article about the shortening of pretonic length discussed in the preceding appendix (1961a) Dybo points to the same phenomenon in the Germanic languages, where it took place under different conditions. He adduces a list of 16 items where a pretonic long vowel before an intervocalic resonant was shortened, e.g. Goth. *wair*, ON. *verr*, OHG. *wer*, Skt. *vīráḥ*. It follows from this example that the shortening was posterior to the loss of the laryngeals, cf. also Goth. *qius*, *sunus*, Skt. *jīváḥ*, *sūnúḥ*. Besides, Dybo adduces 17 items with a long vowel before an intervocalic resonant corresponding to barytona in other IE languages, e.g. ON. *súrr*, OHG. *sūr*, Latv. *sũrs*, SCr. *sȉr*. In oxytona the long vowel was preserved before an obstruent, e.g. OHG. *fluot*, Gr. *plōtós*.

Dybo also draws attention to traces of barytonesis in the *to*-participle, e.g. OHG. *kund*. The same indication is found in the preterit *kunda*. Dybo's attempt to connect the accentuation of these forms with the Italo-Celtic and Balto-Slavic phenomena is not convincing (cf. Illič-Svityč 1962:68f.). It would seem more appropriate to assume a generalization of barytonesis in the old perfect, cf. the recessive stress in Ru. *mogú*, *móžeš'*. Thus, I do not think that the Germanic evidence helps clarify the accentual opposition suggested for the *to*-participle by the material from other IE languages.

APPENDIX E

THE ORIGIN OF IE LENGTHENED GRADE

In 1894 Streitberg formulated the following rule: "Findet in einem Wort ein Morenverlust statt, so wird eine der Verluststelle unmittelbar vorausgehnde betonte kurze Silbe gedehnt, dagegen eine unmittelbar vorausgehnde betonte lange Silbe mit gestossnem Akzent geschleift" (1894:313). Two years later Wackernagel (who incidentally omitted the word "betonte" in his quotation of Streitberg's rule) pointed out that "Für die ig. Dehnstufe passt diese Erklärung nicht, da es in den wenigsten Fällen möglich ist, für die Dehnform eine um eine More reichere Grundform wahrscheinlich zu machen" (1896:68). Nevertheless Streitberg's theory became almost generally accepted in the following decades. Hirt simply disregards Wackernagel's objections (1921:37f. and 1931:65). Yet I think that Streitberg's rule is both theoretically weak and materially inadequate.

From the theoretical point of view it is weak because it offers no explanation but merely shifts the problem to determining the conditions under which the "Morenverlust" and the subsequent analogical levelling took place. These problems are far from trivial. Van Wijk carries the principle through *ad absurdum* when he suggests that Gr. *kẽr*, *méthu* go back to IE **k̂érede*, **médheu̯e* (1907:340). This is mere speculation and does not further our understanding of the apophonic relationships in any respect.

Besides, Streitberg's theory is factually untenable, as Wackernagel demonstrated in his short discussion of the matter. Streitberg assumes that the lengthened grade in the active *s*-aorist goes back to the loss of a *schwa* in the next syllable. On the one hand, he does not explain why the alleged vowel was not lost elsewhere under the same conditions. On the other, he does not explain the absence of lengthened grade in the subjunctive and in the medial *s*-aorist, e.g. *ástoṣi*. The same objection can be made in the case of the other relevant categories.

At the same time, the essentially correct solution to the problem is put forward precisely by Wackernagel himself (1896:66ff.). He distinguishes three categories with seven subdivisions:

(a) Derivative nouns. Wackernagel accepts Streitberg's suggestion (1894:380) that lengthened grade in this category stems from the vrddhi in monosyllabic word forms. The existence of *vā́k* 'speech' next to *vácaḥ* 'word' led to the creation of a collective *āśvám* 'herd of horses' next to *áśvaḥ* 'horse'.

(b) Roots in monosyllabic nouns, before primary suffixes, in the singular of athematic presents, and in the active *s*-aorist, e.g. *-hārd-*, *hā́rdi*, *mārṣṭi*, *ajaiṣam*. The long vowel of these words goes back to phonetic lengthening in monosyllabic word forms, e.g. **hārd*, **jaiṣ*.

(c) The final syllable of noun stems in the nom.sg. and loc.sg. forms, e.g. *sákhā*, *agnā́*. In the nominative Wackernagel assumes lengthening of the vowel before *r* in IE **paters* with subsequent spread to other resonant stems, and in the locative he posits an original ending **-eḭ-i*, **-eu̯-u*.

I agree with Wackernagel that the origin of the long vowel in the first and second category is the phonetic lengthening in monosyllabic word forms, but I do not think that the endings which he suggests for the third category are correct. I wonder if the matter was clear in his own mind, because in one and the same paragraph he mentions both "uralte Ersatzdehnung" and lengthening "gemäss der allgemeinen Neigung für Dehnung eines Vokals vor *r*-Konsonant" for this category. I think that the latter suggestion is correct and that we have to assume phonetic lengthening before word-final resonant. Even if we ignore the fact that there is no indication whatever for the assumption of a sigmatic nominative in the case of *pitā́* and *sákhā*, the hypothesis of compensatory lengthening does not explain the short vowel in participles like *adán* < **edónts*.

Wackernagel's theory does not account for the alleged lengthened grade in such instances as Gr. *ōlénē*, SCr. *pȁmēt*. These are the cases where I assume an alternation involving laryngeals.

While the first part of Streitberg's rule quoted in the first paragraph of this appendix refers to the origin of the lengthened grade, the second part is a statement of IE metatony. Since it is clear by now that evidence from all daughter languages (perhaps with the exception of Germanic) points to the preservation of the IE laryngeals up to a period posterior to the linguistic dissolution, the statement cannot be correct as it stands. Yet there is one kind of metatony in Balto-Slavic which may be very old indeed, viz. the one in Lith. *duõs*, SCr. *dâ*, cf. especially Latv. *sȁls*, *gùovs*. These instances show that the laryngeal was lost after a long vowel in monosyllables. The assumption

of late metatony in Lith. *duõs* would leave the other forms unexplained. Moreover, it is difficult to account for the difference between Lith. *lìs* and *rašỹs* unless we assume that the latter form received its circumflex before the acute vowel in the former was shortened in accordance with Leskien's law. Thus, the metatony in *duõs*, which is required as a model for the one in *rašỹs*, cannot be identical with the one in *tiẽ*, which is probably posterior to Leskien's law because it did not reach the Žemaitian dialects.

If this conjecture is correct, the loss of a laryngeal after a long vowel must be very old indeed. It follows from Lith. *dúosiu*, SCr. *dȁh* that it preceded the generalization of the long vowel in the polysyllabic forms of the *s*-aorist. Since the latter development was shared by Sanskrit, I wonder if there are any traces of the former in this language.

The accentuation of Skt. *gávā*, *gáve*, *gávi* suggests that this noun belongs to the proterodynamic paradigm (cf. Kuiper 1942:32). The nominative *gáuḥ* is monosyllabic in the Veda, contrary to what one would expect on the basis of the reconstruction nom.sg. **g$^{\text{u}}$óHus*. The simplest solution is to assume that the laryngeal was lost in the nominative after the introduction of lengthened grade, resulting in a form **g$^{\text{u}}$ṓus* or **gắuṣ*. If this is correct, Skt. *gáuḥ* is identical to Latv. *gùovs*. It cannot be decided whether Greek shared the loss of **H* after a long vowel.

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GLOSSARY

The numbers refer to the sections of the book The material cited in the appendices has not been included

RUSSIAN *begat bežat'* to run 3 2, *bog* god 2 3 3 6, *bolee* more 4 3, *bosoj* barefooted 1 4 4 2, *brat'* to take 1 4, *byt'* to be 1 3 1 4 1 6 3 4, *vezti* to convey 1 4, *vesti* to lead 3 2, *vit'* to twist 1 3, *voda* water 1 6 3 4, *volk* wolf 3 4, *volos* hair 2 3, *volčixa volčica* she-wolf 3 3, *volja* will 2 4, *voron* raven 3 2, *vorona* crow 3 2, *vorot* collar 3 2, *vorotit' voročat'* to turn 3 2, *vosem'* eight 2 4, *gar'* burning 3 2, *gniloj* rotten 1 4, *gnit'* to rot 1 3, *govorit'* to speak 3 4, *golovka* little head 2 3, *gololed* ice-crusted ground 3 7, *golyj* naked 4 2, *gorod* town 4 3, *gost'* guest 2 3, *griva* mane 1 2, *gryzt'* to gnaw 1 1 1 4 3 2, *darovat'* to grant 3 7, *dat'* to give 1 3 1 5, *dvor* courtyard 3 4, *deti* children 2 3, *dobryj* kind 4 2, *dorogoj* dear 4 3, *duša* soul 1 7, *dym* smoke 1 2, *est'* to eat 1 1 1 4 3 2, *žar* heat 3 2, *žena* wife 1 7 2 2 3 4, *žit'* to live 1 3 1 4, *zavorot* bend 3 2, *zvat'* to call 1 4, *zoloto* gold 4 3, *zub* tooth 1 7 5 5, *koža* skin 2 4, *kon'* horse 1 4 2 3 3 6, *kopat'* to dig 4 2, *korol'* king 3 6, *koster* bonfire 3 6, *lazit lezt'* to climb 1 1, *leč'* to lie down 3 2, *lit'* to pour 1 3, *lomit'* to break 3 4, *ljudi* people 2 3, *mel* chalk 3 2, *molodoj* young 4 3, *moč'* to be able 1 1 2 4, *nesti* to carry 1 1 1 4 1 5 2 2 3 4, *novyj* new 4 2, *noga* foot 5 4, *nosit'* to carry 1 1 1 7 2 2 2 4 3 4, *ogorod* kitchen-garden 4 3, *okno* window 2 4, *oko* eye 1 7, *ostryj* sharp 2 4, *pet'* to sing 1 4, *peč'* to bake 1 4, *pit'* to drink 1 2 1 3 1 4 1 6 3 2, *plyt'* to swim 1 3, *povod* rein 3 4, *povorot* turn 3 2, *požiloj* elderly 1 4, *pozolota* gilding 4 3, *postydit'sja* to be ashamed 4 2, *pribegnut'* to have recourse 3 2, *privesti* to bring 3 4, *prodat'* to sell 1 6 3 4, *prjast'* to spin 3 2, *pytat'* to torture 4 2, *reč'* speech 3 2, *rodit'* to give birth 1 1 1 3, *rodit'sja* to be born 4 2, *ručka* little hand 2 3, *sest'* to sit down 3 2, *seč'* to flog 3 2, *slyt'* to have a reputation 1 3, *sobrat'* to collect 1 5, *straža* guard 2 4, *strič'* to cut 3 2, *sud'ja* judge 3 7, *tvar'* creature 3 2, *teč'* to flow 3 2, *trava* grass 2 2 3 4, *ustalyj* tired 1 4, *usibit'* to hit 3 2, *xvalit'* to praise 2 2 3 4

UKRAINIAN *dobryj* good 4 2, *kopaty* to dig 4 2, *pytaty* to ask 4 2

BULGARIAN *kopaja* to dig 4 2, *pitam* to ask 4 2

SERBO-CROAT *baviti se* to stay 3 5, *bio* white 4 1, *biti* to be 2 3, *bog* god 2 3 3 6, *bogat* rich 3 5, *brada* beard 2 3 3 5, *brazda* furrow 3 5, *čeljad* household 3 5, *čist* clean 4 1, *dan* day 2 3 3 6, *dati* to give 2 3 3 2 5 2, *dim* smoke 1 7 3 4, *dovesti* to bring 3 2, *drag* dear 4 3, *duša* soul 3 6 3 7, *gar* soot 3 2, *glas* voice 3 4, *glava* head 1 7 3 5, *go* naked 4 1, *golovrat* with a naked neck 3 2, *golub* pigeon 3 5, *gora* mountain 3 7 5 5 5 7, *goveda* cattle 3 2, *grad* town 2 3, *gristi* to bite 3 2, *griva* mane 1 7 3 2, *jablan* poplar 3 5, *jastreb* hawk 3 5, *jesenas* this autumn 4 2, *jesti* to eat 3 2, *jezik* tongue 2 3 3 6, *jutros* this morning 4 2, *kamen* stone 3 5, *klada* log 3 5, *kleti* to curse 3 2, *koljeno* knee 2 3, *konj* horse 2 3 3 6, *kopati* to dig 4 2, *kosac* mower 2 3, *kost* bone 2 3 3 6, *kovati* to forge 1 3, *koža* skin 2 4, *kralj* king 3 6, *krv* blood 5 2, *kupovati* to buy 1 5, *labud* swan 3 5, *lakat*

elbow 3 5 *leci* to lie down 3 2, *lomiti* to break 1 5 2 2, *lopata* spade 2 3, *ljetos* this summer 4 2, *malina* raspberry 3 5, *mjesec* month 3 5, *mlad* young 4 3, *mladost* youth 3 6 4 3, *moci* to be able 2 4, *nabirati* to collect 1 5, *narod* people 3 5, *nebo* sky 2 3 5 2, *nesti* to carry 5 3, *nocas* this night 4 2, *nositi* to carry 1 5 2 2 2 4 3 5 3 6 *nov* new 4 1, *oblast* region 3 5, *oprati* to wash 1 4, *otac* father 2 3, *ovca* sheep 2 3, *paliti* to burn 1 3, *pas* dog 2 3 3 6, *pauk* spider 3 5 *pekar* baker 3 5, *penezi* money 3 5, *pisati* to write 1 3 1 5 *pitati* to ask 4 2, *pobirati* to collect 1 4 1 5, *polje* field 2 3 5 2, *povrat* return 3 2, *prase* sucking-pig 3 6, *prati* to wash 1 4, *prelomiti* to break 1 5, *presti* to spin 3 2, *prozor* window 2 3, *rak* crawfish 2 3, *razdio* division 3 4, *ribar* fisherman 3 5, *ribnjak* pond 3 5, *riječ* word 3 2, *robiti* to enslave 3 5, *roditi* to give birth 1 3 1 5 1 6, *rodjaj* birth 3 5, *ruka* hand 3 5 3 6 5 4, *saditi* to plant 3 2, *selo* village 5 2, *sestra* sister 2 3, *sin* son 1 7, *sječivo* blade 3 5, *sjeci* to cut 3 2, *sjedati* to sit down 3 2, *sjediti* to sit 3 2, *sjesti* to sit down 3 2, *skovati* to forge 1 3, *srdit* angry 3 5, *star* old 4 1, *sto* table 2 2, *straža* guard 2 4 3 7, *strici* to shear 3 2, *suh* dry 1 3 4 3, *svetac* saint 2 3, *šibati* to flog 3 2, *teci* to flow 3 2, *tvar* matter 3 2, *visok* high 4 3, *vlas* hair 5 5, *volja* will 2 4, *vracati* to return 3 2, *vran* raven 3 2, *vrana* crow 3 2, *vrat* neck 3 2, *vratiti* to return 3 2, *zakleti* to swear 3 2, *zavrat* return 3 2, *zimus* this winter 4 2, *zub* tooth 3 4, *zvati* to call 1 4, *zvoniti* to ring 1 7, *žar* heat 3 2, *želud* acorn 3 5, *željeti* to wish 2 3, *žena* woman 2 3 *ženiti* to marry 1 3

SLOVENE *bog* god 2 3 3 5 3 6, *brada* beard 3 5, *brat* brother 2 5, *brati* to read 1 5, *brazda* furrow 3 5, *dan* day 2 3 3 5 3 6, *dati* to give 1 5, *delo* work 2 5, *drva* firewood 3 5, *dusa* soul 1 5 1 7 3 6 3 7, *gladek* smooth 4 1, *gol* naked 4 2, *gora* mountain 2 3 2 4 3 5 3 7 5 2 5 5 5 6 5 7, *gostiti* to treat 1 7, *gotoviti* to prepare 2 4, *grad* castle 2 5, *guba* crease 5 2, *hoditi* to go 1 7, *hvaliti* to praise 1 5, *ime* name 3 6, *jun* young 4 1, *klada* log 3 5, *končati* to end 1 5, *konj* horse 1 4 2 1 2 2 2 3 2 4 2 5 3 5 3 6 5 7, *kost* bone 2 3 3 5 3 6 5 2 5 7, *kovati* to forge 1 3 1 4, *koža* skin 2 4, *kri* blood 5 2, *kupovati* to buy 1 5, *lahek* light 4 2, *leto* year 3 5 3 6 5 7, *lipa* lime-tree 3 5, *lonec* pot 2 3, *mehek* soft 4 1 *meso* meat 3 6, *mlad* young 4 1, *mladost* youth 3 6, *moči* to be able 2 4, *mož* man 2 3 3 5 5 2 5 5 5 6, *nesti* to carry 1 5, *nit* thread 5 4 5 7, *noga* foot 3 5, *nositi* to carry 1 7 2 4 2 5 3 4, *oko* eye 1 7, *osnova* base 1 7 2 4 3 4 3 5, *ovca* sheep 2 3, *pes* dog 2 3 3 6, *počesati* to comb 1 5, *rak* crawfish 2 3 3 5 5 7, *roka* hand 3 6, *steber* column 3 5, *tele* calf 5 2, *težak* heavy 4 1, *volja* will 2 4, *zastopati* to replace 1 5, *želeti* to wish 1 7, *žena* woman 1 7 3 4 5 7

CZECH *bavit* to amuse 2 5, *brada* chin 3 5, *brazda* furrow 3 5, *budit* to wake 2 5, *cirkev* church 5 2, *čeled'* tribe 3 5, *dilo* work 3 6, *hlavka* cabbage-head 2 3, *holub* pigeon 3 5, *hůře* worse 4 3, *jabloň* apple-tree 3 5, *jazyk* tongue 2 3, *jestřab* hawk 3 5, *klada* log 3 5, *krava* cow 2 5 3 6 5 4, *kůže* skin 2 4, *labut'* swan 3 5, *loket* elbow 3 5, *méně* less 4 3 *měsic* month 3 5, *mladost* youth 3 6, *moci* to be able 2 4 2 5 3 7, *muž* man 2 3, *nositi* to carry 2 4 2 5, *oblast* region 3 5, *palivo* fuel 3 5, *pavouk* spider 3 5, *pekař* baker 3 5, *penize* coin 3 5, *radlo* plough 3 5, *robiti* to do 3 5, *role* field 3 5, *roučka* little hand 2 3, *ruka* hand 3 6, *rybař* fisherman 3 5, *rybnik* pond 3 5, *řezati* to cut 2 5, *seděti* to sit 3 2, *vůle* will 2 4 3 7, *žalud* acorn 3 5

SLOVAK *brada* chin 3 5, *brazda* furrow 3 5, *klada* log 3 5, *koža* skin 2 4, *laket'* elbow 3 5, *môct'* to be able 2 4 2 5 3 7, *niest'* to carry 2 5, *nosit'* to carry 2 4, *robit'* to do 3 5, *vôl a* will 2 4 3 7

UPPER SORBIAN *broda* beard 3 5, *brozda* furrow 3 5, *kloda* prison 3 5, *wrot* turn 3 2, *zawrot* return 3 2

POLISH *brɔda* beard 3 5, *brɯzda* furrow 3 5, *gardło* throat 5 1, *głowka* little head 2 3, *jablon* apple-tree 3 5, *jesc* to eat 1 4, *język* tongue 2 3, *kłoda* log 3 5, *kopac* to dig 4 2, *moc* to be able 2 4, *niesc* to carry 3 5, *nosic* to carry 2 4 3 5, *pytac* to ask 4 2, *rączka* little hand 2 3, *ręka* hand 3 5 3 6, *stroz* guard 2 4 3 7, *trąba* trumpet 3 5, *wątroba* liver 3 5, *wilk* wolf 5 1, *wola* will 2 4

SLOVINCIAN *bjeg* Lauf 3 7, *boub* Bohne 3 7, *břeg* Ufer 3 7, *buogŏč(ka)* Reiche 3 7, *casnuota* Enge 3 7, *cenjau* Schatten 3 7, *daruovac* schenken 3 7, *doplata* Zuzahlung 3 7, *duoxoud* Einkommen 3 7, *duonjesc* hintragen 3 7, *dvor* Hof 3 7, *fxoud* Eingang 3 7, *goluoloud* Glatteis 3 7, *xluop* Mann 3 7, *xoud* Gang 3 7, *jiezoio* See 3 7, *karčmoř karčmŏrka* Gastwirt(in) 3 7, *kobilka* junge Stute 3 7, *koluodzei* Stellmacher 3 7, *komorka* Kammerchen 3 7, *komuora* Kammer 3 7, *kuobəla* Stute 3 7, *kuolano* Knie 3 7, *kuopəto* Huf 3 7, *kuovol* Schmied 3 7, *kuoiolka* Frau des Schmieds 3 7, *ləsəca* weiblicher Fuchs 3 7, *mjili* lieb 3 7, *muotəka* Hacke 3 7, *napjîsac* aufschreiben 3 7, *nogəicka* kleiner Strumpf 3 7, *nouž* Messer 3 7, *nuogəica* Strumpf 3 7, *pjîsac* schreiben 3 7, *přənjesc* bringen 3 7, *puomoc* helfen 3 7, *rəba* Fisch 5 7, *rąka* Hand 3 7, *sərot(k)a* Waise 3 7, *vjiguo* Joch 3 7, *voul* Ochse 3 7, *voutruoba* Leber 3 7, *začic* anfangen 3 7, *zābava* Unterhaltung 3 7, *zbjeg* Zusammentreffen 3 7

OLD CHURCH SLAVIC *bьrati* to collect 5 2 *vesti* to lead 3 2, *vlьkъ* wolf 5 2 5 3 5 4 5 5 5 6 5 7, *věděti* to know 5 2, *dati* to give 3 4, *dvorъ* courtyard 5 3, *žena* woman 3 4, *zemlja* earth 3 4, *znati* to know 3 4, *igo* yoke 3 4 5 2 5 3, *kamy* stone 1 4 3 4 3 5 5 2 5 3 5 4 5 5 5 6, *konjь* horse 1 4 3 4, *kostь* bone 5 2 5 4 5 5 5 6 5 7, *lьjati* to pour 1 3, *lěto* year 5 7, *mati* mother 1 4 3 4, *nesti* to carry 1 4, *nošt'* night 5 3, *pǫtь* way 5 2 5 4 5 7, *rǫka* hand 5 2 5 3 5 4 5 5 5 6 5 7, *svekry* mother-in-law 5 3 5 4 5 6, *slovo* word 5 3, *synъ* son 5 2 5 3 5 4 5 5 5 6 5 7, *sěsti* to sit down 5 3, *jasti* to eat 3 2

LITHUANIAN *akis* eye 5 2 5 5, *akmuo* stone 1 4 2 3 3 2 3 4 3 5 5 2 5 3 5 4, *alga* salary 3 2, *anas* that 3 3, *antinas* drake 3 3, *asis* axis 5 2 5 4, *aukštas* high 3 3, *aukštis* height 3 3, *avis* sheep 5 2 5 3 5 4 5 5 5 6 5 7, *begti* to run 3 2, *butas* house 5 5, *dievas* god 5 2 5 7, *dukte* daughter 1 3 1 4 1 6 1 7 3 2 5 2, *duoti* to give 3 2 3 4 5 2, *dviejau(s)* two 5 4, *edalas edesis* food 3 3, *eiti* to go 3 2, *esena* eating 3 3, *esti* to eat 3 2, *gaidys* cock 5 5, *galva* head 1 4 1 7 3 2 5 2 5 6 5 7, *geras* good 3 3 4 2 5 2, *geriau(s)* better 5 4, *gurklys* craw 5 1, *imti* to take 3 2, *jura* sea 3 4, *kąsti* to bite 3 3, *katinas* tom cat 1 6, *katras* which 3 3, *kauti* to beat 1 4, *kelmas* stump 5 2, *kęsti* to suffer 3 3, *kiekas* how much 1 6 3 3, *kultūra* culture 3 6, *labai* very 5 5, *langas* window 3 3, *literatūra* literature 3 6, *menkas* petty 1 6 3 3, *mote* woman 1 4 3 2 3 4, *naktis* night 5 3 5 5, *namie* at home 5 5, *nešti* to carry 1 4 5 3, *pati* wife 5 2 5 4, *penki* five 3 3, *piemuo* shepherd 3 2, *privesti* to bring 1 6, *pusiau* half 5 4, *ranka* hand 1 4 1 7 3 2 3 3 5 2 5 3 5 4 5 5 5 6 5 7, *rekti* to cry 3 2, *sakyti* to say 1 6 3 3, *sausas* dry 1 3, *sedeti* to sit 3 2, *sesti* to sit down 3 2, *seti* to sow 3 3, *sniegas* snow 3 3, *sodinti* to seat 3 2, *sukti* to twist 5 2, *sunus* son 1 6 1 7 5 2 5 3 5 4 5 5 5 6 5 7, *saltas* cold 1 4 5 3 5 7, *suo* dog 5 3, *tas* that 5 2, *taukinas* greasy 3 3, *turgus* market 5 5, *ugnis* fire 5 5 *uolektis* ell 3 2, *uosti* to smell 3 2, *valanda* hour 1 6, *vesti* to lead 1 6 3 3, *vilkas* wolf 1 4 3 2 3 4 5 1 5 2 5 3 5 4 5 5 5 6 5 7, *vilke* she-wolf 3 3, *žeme* earth 5 2, *žiema* winter 5 2

LATVIAN *but* to be 1 3, *guovs* cow 3 2, *iet* to go 5 2, *kauls* bone 1 3, *liet* to pour 1 3, *luogs* window 3 3, *pieci* five 3 3, *sēt* to sow 3 3, *sieva* wife 5 6, *sniedze* snow-bunting 3 3, *sniegs* snow 3 3, *tievs* thin 1 3

OLD PRUSSIAN *ālgas* Lohn 5 4, *assaran* See 5 3, *deiws* Gott 5 4 5 6, *genno* Weib 5 6, *insuwis* Zunge 5 2 *rancko* Hand 5 3, *wais* Knecht 5 6

SANSKRIT *avih* sheep 5 3, *asmā* stone 3 2, *asvā* mare 5 3, *asmākam* our 5 4, *gauh* ox 3 2, *grīvā* neck 1 2 3 2, *janati* to give birth 1 7, *jantuh* creature 1 7, *tanūh* body 5 2, *tāsti* to carve 3 2, *dvāram* aperture 5 3, *dhūmah* smoke 1 2, *pāt* foot 3 2 5 4, *pāyayati* to cause to drink 1 3, *pitih* drinking 1 3, *prā-* to fill 3 2, *bharan* bearing 3 2, *manah* mind 3 2, *mātā* mother 3 2, *mārsti* to wipe 3 2, *yugam* yoke 5 3, *yusmakam* your 5 4, *rāt* king 3 2, *rāsti* to be king 3 2, *vanati* to win 1 7, *vāk* speech 3 2, *vrkah* wolf 5 2 5 3 5 4 5 5, *suskah* dry 1 3, *sakhā* friend 3 2, *sumanāh* well-disposed 3 2, *sūnuh* son 5 3, *stauti* to praise 3 2, *spat* spy 3 2

AVESTAN *tāšti* to carve 3 2, *staoiti* to praise 3 2, *zastō* hand 5 4

GREEK *akmōn* anvil 2 3 3 2 3 5, *alphē* gain 3 2 *auos* dry 1 3, *bous* ox 3 2, *gomphos* bolt 3 4, *hedos* seat 3 2, *edo* to eat 3 2, *eumenes* well-disposed 3 2, *zugon* yoke 5 3, *ēkhō* echo 3 2, *thugatēr* daughter 1 3 1 6, *kaulos* stem 1 3, *kleos* rumour 1 7, *lukos* wolf 5 2, *menos* spirit 3 2, *mētēr* mother 3 2, *ozō* to smell 3 2, *ops* voice 3 2, *poimēn* shepherd 3 2, *pous* foot 3 2 5 4, *tanaos* tall 1 3, *hudōr* water 3 2, *pherō* to carry 5 2, *phusis* nature 1 3, *ōlenē* elbow 3 2

LATIN *futurus* future 1 3, *lupus* wolf 5 2, *pes* foot 3 2, *rex* king 3 2, *sedare* to calm 3 2, *sedere* to sit 3 2, *vehere* to carry 3 2, *vox* voice 3 2

IRISH *del* nipple 1 3, *sid* peace 3 2

GOTHIC *blinds* blind 5 2, *giba* gift 5 3, *wulfs* wolf 5 2 5 3

HITTITE *dā-* to take 3 2, (*u̯*)*ai*(*ḫ*)- to burn 3 2

VIETNAMESE *ma* rice seedling 3 3

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