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Slavic Accentuation
SLAVIC ACCENTUATION
To Carl Ebeling
on the occasion of his 50th birthday
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"[...] 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 Iliič-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 Iliič-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 Iliič-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 Iliič-Svityč in terms of laryngeals, and by the law which I have called Iliič-Svityč's law (cf. below).

Combining Iliič-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 laryngeal 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, kuritsja (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. Ilić-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).
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23. Lengthening of short rising vowels in Czech (2.5).
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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 /-PARTICIPLE

1.1 INTRODUCTION

The subject of this chapter is the origin and the persistence of accentual mobility in the Slavic /-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. mögut, mogli, nösjat, nosili.
3. The unstressed root syllable is acute, e.g. Ru. gryzút, grýzli, edját, éli.
4. The unstressed root syllable is circumflexed, e.g. Ru. nesút, nesli, rodját, 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 /-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 /-participle and the passive participle. The symbol $N$ stands for a nasal of unknown quality, $S$ for a spirant of unknown quality.


(b) Law of marginal oxytones: if in one paradigm $xx$ and $x\bar{x}x$, then $x\bar{x}x > xx\bar{x}$, where $x$ symbolizes a syllable. Examples: *rodıjN, *rodejSi, *rodılë, but *rodıtei, *rodıénä because the infinitive and the passive participle constitute separate nominal paradigms, *nesöN, *neséjSi, *nesésënä.
(c) Law of maximal contrasts: if in one paradigm \( xx \) and \( xxx \) (but no \( xx \) or \( xx \)), then \( xx > xx \). Examples: \( *nésōN, *neseSi, *néset, *néslā, but *piHlā \) 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. griva, dym (gen. sg. dýma) versus Skt. grivā, dhúmáḥ. Thus: \( *grúzenā, but *grúzeSi, *nesēnā. \)

(e) Reshuffling of mobile paradigms: if in one paradigm \( x(x) \) and \( xx \), then \( xx > xx \) 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, pila, pil, *pilu, *pilā.

(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: \( *nosīti, *nosō, *nosīša, *nestī, neuter *nōšeno, *nesēnō, *nosilo, *neslō, but *pilo. \)

(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: \( *nōsiš/*nōsiš (dialectally conditioned). \)

1.3 HIRT’S LAW

As was pointed out ten years ago by Illić-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. \( *káHylos, Latv. kāils, Gr. kaulōs, versus *tenHyōs, Latv. tiēvs, Gr. tanaōs. \) 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 \( *piHlā \) 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. pilā cannot be due to restoration because the other \( l \)-particiles had received root-stress by the law of maximal contrasts, e.g. \( *néslā, *grúzlā, 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 \( *grúzlā \) if it was in \( *piHlā \) because these types had coalesced after Hirt’s law. The inevitable conclusion is that the ictus was never retracted in \( *piHlā \).
and that, consequently, the reconstruction *piHlā is incorrect. This conclusion is supported by the Sanskrit and Greek material, which points to a stem *poH/*poHi/*pHi, e.g. Skt. pāyāyati, pitiḥ. On the basis of this connection I assume that Ru. pilā goes back to *pHilāH and that the ictus was not retracted because the laryngeal preceded the vowel. Thus, the place of the stress in Ru. pilā 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. lilā, where I assume *lHilāH, cf. OChSl. lējo from *léHiāN, and in Ru. vilā, gnīlā, žilā, plylā, stylā, bylā. The accentuation must be old in view of Latv. liēt, būt, 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. śuṣkaḥ < *Huṣkos does not hold because both Lith. saūsas and Čak. sū < *sousōs point to the absence of a laryngeal, in spite of Gr. aūos). 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. phūsis and Lat. futūrus with the short i underlying Irish del from the stem *dheH/*dheHi/*dhHī. [See also Appendix C.]

The situation is slightly different in the case of Ru. dala and rodila, which cannot go back to *doHlāH, *rodiHlāH for the same reason as pilā cannot go back to *piHlāH: Hirt’s law would have prevented the rise of accentual mobility. I am inclined to assume an original *dHlāH, 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. duktē, Gr. thugātēr. Incidentally, there is no evidence for the vocalization of an interconsonantal laryngeal in Baltic or Slavic. The form Ru. rodilā presents greater difficulties, especially because of the long i in Čak. (Novi) rōdīl, rodītā, rōdīlo, as opposed to short i under the stress, e.g. pāhīla, ženīla. Here short i under the stress may have been generalized on the basis of the infinitive and
long *i* in the case of mobility on the basis of the (mobile) passive particle, so that neither may be old, cf. *kovát, kovála* but *skóván, skóvána, skóváno*, where Slovene *kovál, kovála, koválo* points to earlier *kóvalh, *kóval, *kóvalo*. 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 *kővá*. On the basis of these considerations I regard the final stress in Ru. *rodilá, Čak. rodilá* as sufficient evidence for the absence of a laryngeal in the -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 *něslá* because the -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 -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 -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 -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 -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 *piHlá* by Hirt’s law and yields a doubtful retraction in *něslá*
which must be restored later under unclear conditions. As to \textit{\^{n}esōN}, \textit{\^{n}ešet}, t.t.s retraction need not be separated chronologically from the reshuffling of mobile paradigms. The reconstruction \textit{*maHtrēs} is probably incorrect: on the basis of Lith. \textit{móţė} vs. \textit{duktē} I assume gen.sg. \textit{*maHtrēs} for the oldest period of Balto-Slavic, with regular retraction according to Hirt's law and subsequent insertion of \textit{*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. \textit{*bāšē} but loc.sg.fem. \textit{*basē}, and gen.sg.masc.neut. \textit{*bāsā} but nom.acc.pl.neut. \textit{*basā}, cf. Ru. \textit{bosōj}. 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. \textit{*basū} because the ending was not homonymous with the ending of the acc.pl.masc. \textit{*bāsū} at this stage, cf. OChSl. acc.pl. \textit{konjē}, inst.pl. \textit{konji}, ORu. acc.pl. \textit{konē}, inst.pl. \textit{koni}, Slovene acc.pl. \textit{kōnje}, inst.pl. \textit{kōnji}.  

Finally, a similar retraction law operated in Baltic, cf. Lith. gen.sg. \textit{vēlko}, dat.sg. \textit{vēkui}, but inst.pl. \textit{vēkais}, and nom.sg. \textit{galvā}, gen.sg. \textit{galvōs}, but dat.sg. \textit{galvai}. 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. *neslō, *vezlō, *peklō versus *pilo, *žilo, *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. *vilkā, *vilkōj, *vilkōjS, *golHvāH, *golHvāş, *gólHvāj, *pHilāH, *pHilo, aorist *néše because final *t has been lost, cf. the gen.sg.masc., but *neslāH, *neslō, *nešeSi.

For the 1st sg. of the present tense and for the inst.sg.fem. I assume concurrent forms *nesōH/*nēsā, *golHvāH/*golHvāq, with *-ā from *-ām like *-ō from *-ōN in Lith. akmuō, OChSl. kamy and *-č from *-čr in Lith. mōtē, 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. rańką. Lith. nešū goes back to the first and OChSl. neso to the second variant, cf. ORu. žīvu 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. gā́va, which goes back to *gólHvaH, and šaltája, which points to *šolHtā-jaH (i.e. the definite form of the adjective šáltas). Slavic had probably *golHvā.

The retraction in Ru. grýzla (vs. gryzēś') is not accounted for by the law formulated in the preceding paragraph. This retraction must be due to Hirt’s law: *gruḤlaH, *gruḤeSi. 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. pēla, where the present stem poēš /pajos/ indicates that the laryngeal cannot have preceded the *i, so we have to reconstruct *pojHeSi. But the l-participle cannot have been *pojHlāH 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 *piHlāH, *piHlo was replaced by *póiHlāH, *póiHlo, just as *dHlāH, *dHlō was replaced by *dāHlāH, *dāHlo. This substitution was certainly favoured by the existence of *pHilāH, *pHilo, Ru. pila, pilo. 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 zvâla, prâla These verbs belong to the mobile type, cf Čak oprâl, pobrâlo The same holds true for Slovene kovâl, kovala, kovâlo < *kovaHb, *kovaH, *kovalo If we assume that the a is secondary before the l-suffix, the latter forms must have replaced earlier *kouHl, *kouHlaH, *kouHlo, 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 *berâH, *zouâH or *burlaH, *zulaH, mobility is regular in both cases

15 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, *rodênaH, which is supported by Čak (Novi) rodira, rohilo, 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 < *lomHiHtei (with final stress) must be analogical after pielomljen < *per-lomHiHtei from *per-lomHiHtei (with fixed stress, so that Dybo’s law applies), cf lomum vs prelomum

Verbs with original root-stress have root-stress in the n-participle, e.g SCr noHsen from *noHsên because of Stang’s law, from *nosem because of Dybo’s law, from *nosâm because of Van Wijk’s law (cf Ebeling 1967 587) The long a in SCr pîsân presents a problem Stang states that the “causes are not known to us” (1957 147), and Ebeling explains the length by analogy after noHsen, 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 pîsân if it was in noHsen In view of the analogy with *neslaH, *nesenaH and *rodilaH,
I am inclined to assume *pisaHlaH, *pisaHenaH, with regular fall of *H and contraction yielding *pisānaH. 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. dāl(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: *dáno. A similar case is presented by Slovene končán vs. končäl and brân(o) vs. brâl(o), cf. Čak. (Novi) nabrānô vs. pōbrālo. 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 zastōpan (-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 düša. 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 hvalite is secondary, cf. nesī 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. kūpovao, kūpovän is due to analogy after the aorist kūpovä, cf. Slovene kūpovál, kūpovan (Stang 1957:144).

Pedersen’s Law

Ebeling’s law as stated above yields mobility in disyllabic words, e.g. Ru. pilá, pilo, but the retraction does not operate in polysyllabic words, cf. Lith. sūnumi. Nevertheless, mobility has spread to polysyllabic l-participles, as is shown by Čak. rodilà, rōdilō. It is not quite clear how this mobility came about. I would suggest that *rodilō was replaced by *rodilo after the model *pHilo 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. dūkterī, dūkteres,
THE /-PARTICIPLE

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. dûkteri, dûkteres 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. nà 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, prôdal 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. vedû, vëda, nèveda, priveda, vëdâs, vëdantî, preterit vëdë. Other verbs have fixed stress on the root-syllable except in the forms where de Saussure’s law operated, e.g. sakâû, sâko, nesâko, sâkâs, preterit sâkë. On the basis of the form vëdâs I am inclined to assume that this verb was originally end-stressed and that it became mobile as a result of Ebeling’s law: *vedôH, *védo from earlier *vedôH, *vedô. The same retraction must be assumed in the preterit *vëdé, which goes back to pre-Baltic *vedêHet, 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, priveda, nèvedë in a period after Ebeling’s law. The ictus was not retracted in nesâko, nesâkë because the latter paradigm had fixed stress until de Saussure’s law operated. The retraction in nèveda, prîveda cannot be identical with the retraction in kâtinus, vâlandas (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. \( kiekas, meñkas \)), (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.

17 MEILLET’S LAW

A final point to be discussed here is the metatony in Slovene \( hódil \) (from *\( hódi\f \), \( hódila, hódílo \), which is matched by the converse metatony in \( gostil, gostila, gostílo \). The latter forms are the regular reflexes of *\( gòstilb, *gostilà, *góstilo \), cf. Čak. (Novi) \( zvònil, zvonilà, zvônilo \). A falling accent shifts to the next syllable in early Slovene, and a short final accent is retracted to a preceding long vowel, cf. \( okô, dúša \) 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 \( ē \)-verbs, e.g. \( žélel, želêla, želêlo \). This is all the more remarkable because Dybo’s law never applied to \( ē \)-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. \( gâlva, sînu \). 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. vāntā, vanārāh, jāṇītoḥ, jāntuḥ (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. duktē < *dukHtēr), between two full vowels (Lith. gen.sg. galvōs < *golHvaHes), and before word-final nasal (Lith. acc.sg. raņka < *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: *golvāH < *golHvaH, *sūmumī < *suHnumī, *piľāH < *piHilāH. The alternation between the presence of a laryngeal in *golHvā, *sūHnuN, *pHilo and its absence in the end-stressed forms was eliminated by the removal of the laryngeal from the barytone forms as well: *golvā, *sūmuN, *piľo. This is Meillet's law. The laryngeal was retained in words with fixed stress, cf. SCR. dim, grīva < *dūHmuN, *grīHvaH.

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 osnŏva, nosilā, ženāmī. 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 nosú, nōsīs' with retraction in accordance with Stang's law. I reconstruct *ősnŏvā, *nōsī(H)lā, *ţęnaHmiS from earlier *-aH, *-miHS, cf. Lith. galvomis. After Stang's law, the posttonic quantity in *osnŏvā, *nosilā, *ţęnāmī was lost in Slovene with compensatory lengthening of the preceding vowel, which yielded the standard forms (cf. Stang 1957:28 f.). 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. *ţęna < *ţęnaH, Ru. žená after Dybo's law, like
*sûn> < *sûnuN and *slôv> < *slôvos, cf. Gr. kléos. The loss of laryngeals in the first posttonic syllable entailed the rise of new timbre oppositions /a~/o, ê~e, i~i/, y~î/. Henceforth I shall write *e instead of *ê 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: *dûm> < *dûHuN like *zôb> < *zôNbuN, Ru. zub. The symbol ' denotes the laryngeal feature (and simultaneously the place of the ictus). I assume that *ŷ, like *ô, 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. kônj 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. kôńju and the other in the gen.pl. kônj, in the inst.pl. kôńji (kôńji), and in the loc.pl. kônjih (kônjih). 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 Omisalj (Krk), where we find nom.sg. stô, gen.sg. stolâ, dat.sg. stolû, 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. *vŏdā, *nā vodā, *rōnkā, *lōmja, cf. Ebeling 1967:585f. I assume that the other stressed vowels became rising, e.g. *ženā, *travā, *nosjā, *xvaljā, *nesēno, *lomis, Ru. ženū, travū, nošū, xvaljū, nesesō, Scr. lōmiš. 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. *zeno, *nošo, *nosiso, *nesenō, cf. Ebeling 1967:590. This is Dybo’s law. Thus, the final stress in Čak. (Omišalj) stolā, stolu points to an earlier *stola, *stolu, 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. nosiš’, Scr. nosiš. 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) stoli, stolih goes back to *stolā, *stolē, which is the reflex of Balto-Slavic *stolās, *stolēs. The same must be assumed for the loc.sg.: Slovene kōnju < *konju < *kōnjū.

23 QUANTITY

The most complicated characteristic of the paradigm is the quantitative difference between the nom.sg. konj and the gen.pl. konj. 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 bōg, Scr. bōg, 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 *-o. 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 *-ŏm 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 *-ŏm in Baltic either, since this ending
would regularly have developed into *-ō, cf. Lith. akmuō, Gr. ākmōn.
Thus, I assume that both Lith. -u and OChSl. -b regularly continue
IE *-om and that Slavic length is secondary.

Ebeling assumes (1967:588) that stressed *-b 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 -b was lost in the same way as short -b.
The modernSCR. ending -ā cannot go back to a long -b which dates
from this period because of the rising accent in kosācā, ovācā, where
Stang’s law would have caused retraction of the ictus. The SCR.
ending -ā must have arisen shortly after Stang’s law, cf. sestārā.

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 *kōnjb
and that, consequently, the length in Slovene kōnj was introduced
analogically after the originally mobile paradigm, cf. Slovene gor < *gorb. It should be noted that length cannot have been analoga-
ically 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. kōnj, SCR.
kōnj. 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. golov, volos, Čak. (Novi)
brād, nebēs, Slovene mož, dial. dān, Posavian dān (Ivšič 1913:214)
< *dūn, loc.pl. Czech mužich, Slovene možēh, dat.pl. Czech mužūm,
cf. also Čak. dā, želī, želē, sū. Apparently, the ictus could not be
retracted to a preceding jer in non-initial syllable, so that we have
Ru. dētjam, dētjaš, ljūdjam, ljūdjaš < *dētmē 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. gōstem, gōstex, cf. Stang 1957:89. These forms
probably received falling pitch after the other barytone forms of the
paradigm, cf. Slovene kostēm, which points to an earlier *kōstēm.
Indeed, I think that the source of the accentuation in Slovene možēm
must be sought in the u-stems, cf. gorām, where there was no such
influence. The rising pitch in *možéh, kostéh* 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, rička, Czech hlávka, roučka, Polish główka, rączka < *róčka < *rčoka. Besides, pretonic jers in medial syllables did not lose their stressability before *i, where the oppositions /i~i/, /y~y/ were neutralized, e.g. Ru. detéj < *dětí.<b>

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. konj, pás (Posavian pás, cf. Ivšič 1913:213) versus nom.sg. konj, pás. This generalization of quantity must have taken place partly before and partly after the operation of Stang's law. Thus, we find Čak. (Novi) svétać, kőscăc, őtāc, with retraction from a long vowel in accordance with Stang's law, next to kosăc, otāc, ovăc, where the vowel was lengthened later. The Slovenian gen.pl. źvac, lōncă must be due to analogy after the inst.pl. lōnci and the loc.pl. lōncih. The SCr. gen.pl. lōpátǎ, kőljênă from lōpata, kőljeno present a problem. These words belong either with prózor, gen.pl. prózoră to the type where Dybo's law applied, or with jēzik, gen.pl. jēzikă 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 *język, the paradigm conformed to *józor, *józoră, which had arisen from *józor, *józoră in accordance with Dybo's law. Shortly after Stang's law the gen.pl. ending -b was dialectally lengthened in mobile paradigms when it received the stress analogically after the other plural cases, e.g. Štokavian žēnă, pōljă, gradōvă, Slovene goră next to gor, cf. Čak. žēn, 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. bōg, kōst, dān, Slovene bōg, kōst, dān. This lengthening was probably Common Slavic in view of Ru.dial. bōg, as opposed to kōn'. 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. *rāka, *bōga, SCr. rāka, bōga, Slovene rāka, bogā.

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 o 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. kōnju is the regular reflex of the retraction according to Stang’s law, cf. móreš, nōsiš, vōlja, kōža < *mōžešb, *nōsišb, *volā, *kožā < *mōžešb, *nōsišb, *vōlja, *kōža. There are two remarkable things about this vowel. Firstly, it is reflected as a diphthong [uo] in Ru.dial. mōžeš’, nōsiš’, vōlja, kōža, Czech můžeš, vůle, kůže, Slovak můžeš, 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. mōžeš, nōsiš, vōlja, kōža, Czech nōsiš, Slovak nōsiš, koža, Polish mōżesz, nosisz, wola (but stróża for Ru. storóża, Čak. stráža). On the basis of this comparison I assume that Stang’s law yielded a Common Slavic quantitatively neutral rising diphthong *šo and write *mōžešb, *nōsišb, *vōlja, *kōža 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. vōsem’, vōstryj, dial. vōkna. 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 *šo.

The long vowel in Slovene kōnj, gor 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. *kôńji and the loc.pl. *kôńjih 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) kyôônox, i.e. kôńjih (Ramovš 1921:229). Thus, we have an alternation between *ô in kôńj, which goes back to the rise of distinctive pitch, *ô in kôńj, which was lengthened analogically after the retraction of the stress from a final jer in gôr, *ô in kôńju, which arose as a result of Stang's law, and open ô 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. gotôviti, osnôva.

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. kôńju 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 nôsiš < *nôsiš < *nôsiš indicates that a long circumflexed vowel was shortened when it lost the ictus in accordance with Stang's law. The final length in *kôńu must have been restored on the analogy of paradigms where Stang's law did not apply, e.g. (o) brâtu, (u) grâdu (Valjavec 1897:158) < *brâtû, *gradû. Length was introduced even in the dat.sg. after a preposition, e.g. k brâtu, h kôńju. 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) dêlo, dêjõa (Ramovš 1935:184), i.e. dêlo, dêla < *dêlo, *dêlã.

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 *kráva, *rězati 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 < *mőžeš, but with *ô in nosíš < *nôsiš after the restoration of long i in the second syllable, cf. baviš, budiš < *baviš, *budiš. 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 mőžeš versus nesieš < *nesěš, 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. ἀλφῆ, 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. ἀλφῆς, Lith. algōs. 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. piemuō, ėdu, Gr. poiμήν, ēdō. 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. vilkū cannot go back to *vilkōN, which would yield **vilkuō, cf. ākmūō < *ākmōN. The long vowel was generalized in the nom.sg. of stems ending in a resonant, e.g. Gr. mētēr, ākmōn, ēkhō, Skt. mātā, āśmā, sākhā, Lith. mōtē, ākmūō. The lengthened grade in Skt. eumēnēs, Skt. sumānāh was introduced after the resonant stems, cf. Gr. mēnos, Skt. mānah with short vocalism, but Gr. hūdōr with lengthened grade. In Skt. bhāran < *bhēronṭs 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. pāt, Gr. (Dor.) pōs, Lat. pēs, versus gen.sg. Skt. padāh, Gr. podōs, Lat. pedis. The long stem-vowel is generalized in the flexion of Skt. vāk, rāt, Lat. vōx, rēx, and then found its way into athematic denominative verbs such as Skt. tāṣṭi, rāṣṭi, Avestan tāṣṭi (cf. Watkins 1969:30). The short stem vowel was generalized in Gr. óps, Skt. spāt. In Slavic we find lengthened grade in Ru. rec', tvar', gar', žar, mel, which probably go back to monosyllables. I think that
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the phonetic lengthening in monosyllabic word forms is also the origin of the vṛddhi in Skt. stāuti, māṛṣṭi, cf. the injunctive staut, impf. astaut, as opposed to full grade in the archaic medial form stāve and in Avestan staoiti, staoata, 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. vēxi, OChSl. vēṣa stems from the 3rd sg. *uēghs, *uēds, which later disappeared, cf. OChSl. īz-ē, 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. akmuo, duktē, rēkti, SCr. rīječ, tvār, gār, žār, aor. 1st sg. klēh, Posavian zaklē (Ivšić 1913:91) with neo-acute indicating earlier circumflex, cf. also Lith. ėjo, ėmē, 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. jēsti, sjēsti, sjēći. 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. gŏveda, cf. Gr. boūs < *g̣uHus. 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
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syllable containing a vowel which is immediately followed by a laryngeal, e.g. SCr. grīva, Skt. grivā < *griHvā. Ilić-Svityč has shown (1963:78 ff.) that the ictus was not retracted if the laryngeal followed the second component of a diphthong, e.g. Lith. galvā < *golHuāH. As I have pointed out before, the ictus was not retracted either if the laryngeal preceded the vowel, e.g. Ru. pilā < *pHilāH. Consequently, the laryngeal was in this period a full-fledged phonemic unit, characterized by a position (cf. Kortlandt 1972:141 ff.). 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, sēla, sēkla, as opposed to velā, leglā, teklā, and in the infinitive SCr. įēstī, sījēstī, sījēci, as opposed to dovēstī, lēčī, tēčī. These verbs belong together with Ru. grūzlā, strīgla, prjāla, ušībla, SCr. grīstī, strīčī, pēstī, šībatī, cf. the final accentuation in the present forms Ru. (3rd pl.) edjāt, sekūt, gryzūt, strigūt, prjadūt, ušībūt, SCr. (1st sg.) sījēčēm, grizēm, strīžēm, prēdēm. Similarly, we have Ru. pribēgla, bēgat', but final stress in begūt. The Baltic forms do not point unambiguously to a retraction of the ictus, cf. Lith. ėdās, but also duodās (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. sēdēti, SCr. sjiēditi, cf. Lat. sedēre and OCz. sedēti with a short stem vowel. The original stem *seHd- is found in SCr. sjēdāti, Lat. sēdāre, and in Old Irish sid < *sēHdos, as opposed to Gr. hēdos. Lengthening is found in SCr. sāditi, Lith. sodinti. Other examples where I suspect an IE alternation between *e and *eH are Lith. uostī, uolektis, cf. Gr. ózō, olēnē.

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. raĩka, 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. gūvs, which is identical with Skt. gauh, and 3rd sg. Lith. duōs, SCr. dā < *dōHs, where the circumflex cannot have been introduced after other forms of the paradigm, cf. 1st sg. SCr. dāh. [Cf. Appendix E.]

Finally, I have to mention the alleged vrddhi in Ru. voroũna, voročat’ as opposed to voroũ, voroti, cf. SCr. vrāna, vrāčati vs. vrān, vrātiti. In these stems I suspect original IE doublets, cf. Hittite yar- and (u)arh- (Shevelov 1964:47), and SCr. závrat next to vrāt, pōvrāt, Ru. povorot 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, golovrat 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 ~ *ē ~ *eH developed into *e ~ *ē ~ *ē in the same period when the vowel system changed from *e, *ē ~ *ā ~ *o, *ō into *ē ~ *e, *ē ~ *a, *ā ~ *ō. The rise of the nasal vowels in Lith. kāsti, kėsti probably also belongs to this period. The respective transitions of *eH, *et, *en into *ē, *ē, *ē 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 stod in Danish, or the pitch in Vietnamese mà. 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. aukštis (2), cf. aukštas (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. vilkė (1), cf. Ru. volčica, volčixa. In Latvian, on the other hand, the retraction yielded rising tone on both laryngealized and plain vowels, e.g. sniedze. The other stressed vowels became falling per oppositionem, e.g. sniegs, cf. Lith. sniešas. The loss of the laryngeal feature under falling
tone yielded a stretched intonation, which later fell together with the new rising tone, e.g. sēt, cf. Lith. sēti. 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 *ē, *o, which were later diphthongized into ie, uo, e.g. luōgs, pieci, i.e. Lith. lāngas, penki. In Lithuanian, however, old *ē, *o were diphthongized into ie, uo at an early stage, so that *ē, *a could become ē, o when *e, *a were lengthened under stress, e.g. vēda, sāko. This lengthening preceded the retraction of the ictus from medial syllables in mobile paradigms (Pedersen’s law), as I have pointed out earlier, cf. nēveda. Here again, the retraction of the ictus onto a laryngealized vowel yielded rising tone and loss of the laryngeal feature, e.g. ēdesis, ēdalas, ēsena, taūkinas, aūtinās (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, meņkas (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 rānkā, rānkās. 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 *anās, katrās has been maintained over a long period while the ictus was analogically retracted in all other nom.sg. forms, e.g. *gēras. 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 *rankō, *rankōs. 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. *golvāH, *sūnumi, *pilāH < *golHvāH, *suHnumi, *pHilāH. The laryngeal was analogically eliminated in the barytone forms of mobile paradigms, e.g. *golvā, *sūnuN, *pilo, 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, *nósí(H)lā, *žėnaHmiS, 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 osnōva, nosīla, ženāmi. 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. *duHmuN, SCR. dım. 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. *dvōruN, *dvorāH, Ru. dvor. Fourthly, there were mobile paradigms without a laryngeal in the root, e.g. *gōlsuN, SCR. glās. 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. *vilkū, 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. *zūb. This development was established by Ilič-Svityč (1963:119). The old accentuation was retained in the Čak. dialects of Susak and Istria, where we find e.g. gen.sg. *zūbā, with final stress as a result of Dybo's law. I assume that Ilič-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. *povōduN, *nāroduN. Formations of the former type received final stress in the oblique cases of the plural as a result of Ilič-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. nā vodu, né byl, prōdal, pōvod, ORu. privedu, gōvorju, as opposed to Ru. na vodē, ne bylā, prodalā, na povodū, privedēt, govorit. The lateral mobility in nominal prefix formations shows that Pedersen's law was posterior to Ilič-Svityč's law. Indeed, lateral mobility did not arise here when the latter law did not operate, cf. Čak. (Istria) razdēl, gen.sg. razdēlā, 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. *vōdā, *nā vōdā, *žēnā, *trāvā, *lōmjā, *nōsjā, *xvāljahā, *nesēno. Ru. vōdu, nā vodu, žeňu, travu, lomljū, nosū, xvalju, nesenō. 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. źūb.

From the other developments which took place during this period I want to mention the narrowing of word-final *ē, *ō into *i, *u, e.g. OChSl. mati, kamy, cf. Lith. móţe, akmuō, the merger of *ā, *aH with *ō, *oH, e.g. OChSl. dati, acc.pl. ženy, cf. Lith. duōti, jūras, and the Slavic Umlaut of back vowels after *j, e.g. OChSl. igo, konjęp < *jūgo, *konjensburg, but zemlję, znaję < *zemjē, *znōHjē 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 *u because word-final *ā was preserved in the gen.sg. ending of the o-stems, e.g. Ru. vółka, cf. Lith. vīlka, 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. zemlįę < *zemijaHns. 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 *dỳmēb < *duHmûN just as we have *zōbë < *zōNuN. As a result of the loss of the laryngeals, the timbre oppositions /a~o, e~e, i~y, y~i/ became phonemic. For typographical reasons I shall again use *ē instead of *ė in the sequel. The loss of final *N in *sûnuN probably preceded the loss of final *s in *sōvos, and the latter probably preceded the loss of final *H in *zēnaH (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 *žêna. 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. *gỳnësîb < *gùHneSi (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 *vòlã from earlier *vòljaH, so that we may have to postulate an intermediate stage *gỳbneSb, *vòlja. It should be noted that long vowels in posttonic syllables were not shortened, cf. SCr. nòsiš, bâviš < *nòsiš, *bâviš and Slovene osnôva < *òsnovâ, 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 rëka, SCr. mâlina < *rökâ, *malina, cf. Polish wâtroba, SCr. nàröd < *ôtroba, *nàroðb. The length in SCr. rûka was introduced later after the accusative rûku, cf. the oblique plural form rûkama. 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. gòlûb, zêlûd, lâbûd, ôblûst, whereas Czech and Polish generalized the short vowel, cf. Czech holûb, žalûd, labût’, oblûst. 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. mjësèc, pënézi, jàstrèb, pàûk, Czech mèsic, peniz, jestràb, pavouk. The latter words had a laryngealized vowel in the first syllable. Cf. in this connection the difference between SCr. pëkûr, âelûd, Cz. pekař, čeleď, and SCr. rûbûr, rûbnjûk, Cz. rybûř, rybník. The former type has original mobility, the latter type fixed stress. The old mobility is still evident in SCr. sjëcîvo, plur. sjëcîva, Cz. palîvo. The absence of end-stressed words with the same suffix as SCr. rûdûj, âelûd, 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, sîdit.

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 noszë 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 gòr, and analogically kònj. This retraction yielded long rising nasal vowels in Polish rak, niosq < *ròk, *nesòt < *rok, *nesòt. Other long vowels arose after Dybo’s law as a result of the shortening in monosyllables, e.g. Slovene bòg, kòst, dàn, 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 *rò, 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 *rò. 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 < *bórdah, *bordâH. In Polish and Sorabian, however, the order was reversed, cf. Po.US. brözda, 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. klàda, US. klòda, but not in SCr. klòda, Slk. klada, Po. kloda. The difference between US. klòda and broda on the one hand, and between Po. kloda and brözda 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. làkat 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. rádló < *örHdlo, 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. jäblán, Po. jabloň. Thus, the o in Cz. loket may be due to analogical levelling after the end-stressed forms of the paradigm, cf. also role from *orłyjaH. In OChSl. kamí 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. akmuó < *(H)ákmó(N). The laryngeal is posited on the basis of Gr. ákmén and SCr. kámen.

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 *žéna, *tráva, long in *voľa, *ošnová, and indifferent with respect to length in *gorà, *dušà. Similarly, the neuter nom.pl. ending was short in *lěta, *vina, long in *sémená, *těletá, and indifferent in *pořá, *imená. Other case endings were always long, e.g. the inst.pl. ending, where length has been preserved in Slovene stibrí, räki, with neo-circumflex indicating earlier *râký, možmi, 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. *kôna, *niti, dat.sg. *kônú, *niti. Length was generalized in the unstressed nom.pl. ending in Slovene lêta, but not under the stress, cf. drvá. Conversely, the distinction between a short unstressed nasal vowel and a long nasal vowel under the stress was preserved in Slovene gen.sg. lípe, gorê, and in SCr. acc.pl. gláve, gen.sg. glávé. 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 trábä, noszę from *trôbä, *nôšo, later *trôbá, *nošó.

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 bog, kóst, dán, SCR. bóg, kóst, dán, Ru.dial. bog as opposed to Sln. kòn, pás, SCR. kòn, pás, Ru.dial. kón’. 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. *dýma, *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. *nósiš, *nóšem, *pýtaš, *vóša. The latter development may have been evoked by the general shortening of falling vowels, cf. Polish ręka, Czech ruku, mladost, SCR. mladost, gen.sg. prášta, the second syllable in nöšen, nöšeno, 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. bóg, ruku, práše. 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. rokó, mladost. I assume that in the period before the shift length was neutralized under falling tone, as it was in bóg. 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 imé, mesé. 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. diša. 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. rükama. Short rising vowels were lengthened in different languages under different conditions, e.g. Cz. kráva, Sln. léto, Ru.dial. kón’.

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. jëzikâ, as I pointed out earlier. The short vowel in the gen.pl. Cz. krav, dël 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. krâl. 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. kultûrâ, literatûrâ. Other loans may be older than Dybo's law, e.g. Ru. koster. 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 Slovincian

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 fxoud and zbjég have fixed stress, whereas a few simplicia like hjég are mobile (1922:13). This is indeed an important indication that Dybo’s law did operate in Slovincian. The difference between fixed stress in fxoud and analogically xoud on the one hand and mobility in bóub, dvór, nówz, 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 golàoloud, dariovac, dariovoul, as opposed to Ru. gololéd, darovár, 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 kolòodzei, loc.sg. kolodziejü. In the verb the old accentuation has been preserved in the fem.sg. form of the l-participle darová, 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. zàbava, vouétròoba, 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. pjiša and the imp.sg. pjiša 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, začnico, pomož-mja. 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. rakani, hrégami. 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 gorâm, gorâh, Čak. (Novi) gorâmi. Second, the final vowel of the ending must be identified with *-y, like in xliuopi, not with *-i, which would regularly palatalize the preceding consonant, cf. mjili. The long vowel in the gen.dat.sg. břegũ cannot be old either, cf. the short ending in nom.pl. xliuopji. 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. lôsêca, doplâta, casnûota, acc.sg. lôsêca, dîoîlata, cásnûota, and dûoxoud, gen.pl. doxûodou, neuter kûolano, kûopato, nom-acc.pl. kolâna, kopôta like fîezoro, jeziûora. The same development took place in the verb, e.g. nàpjiša, napjišês, imp. nàpjiša, like dûonjosqa, donjèses, imp. prônjesa. 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. bûogœc, kârück, kûovûl, loc.sg. bogueûcû, karêmâû, kovâûlû. 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. mûotska, inst.sg. motôkou, gen.pl. motûk. This process was under way at the beginning of our century (cf. Kurylowicz 1952:13f.). It had affected such words as bûogûcâ, kârückâ, kûovûlka, 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. komûora, komûrka, kûobûla, kobûlka, nûogûca, nogûcâka, sôrûta, sôrotkâ. For the details I refer to Kurylowicz’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. *důša. 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 zábáva, voutrúoba, there are other indications that Dybo's law operated in Slovincian like everywhere else. First, there is the isolated word *vijígu, 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 *teněja, 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 mőžeš, vól'a, Polish stróža (cf. Čak. stráža) can only be explained by assuming final accentuation at an earlier stage.
4.1 INTRODUCTION

In the simple adjective we find the same accentuation types as in the substantive, e.g. *rādb, *stārā, *čistā, *sýtā with a laryngealized root vowel, *bēla, *gōla, *ōstrā, *nōvā with later oxytonesis according to Dybo's law, and *bōsa, *sūxa, *jūma, *mōldā with old mobility, cf. Čak. (Novi) stāra, čīsta, bēlō, gōlo, Slovene juno, mladō. The same types occur in suffixed forms, e.g. *glādākā, *kūseī, *težākā, *debehā, *mēkākā, *vēsēlā, 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 glātko, teškō, mehkō. 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. novā, nōvo is definitely secondary in view of the short vowel in nōv, 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 geras, gerāsis 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. nòcás, jëšénas, zimús, but ljëtös, jùtrós. 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. rodiljsjá, rodilis’, 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 lahkegá, 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. gölyj, Slovene göli 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) pìtá, Bulg. píta, Polish pytà < *pytâb < *pýtaeò. Later contractions did not affect the whole Slavic territory, e.g. Čak. kopà, Bulg. kopâe, Old Polish kopaje < *kopâ(ʃ)etò. It is unclear to what extent the first type of contraction affected the East Slavic dialects. Adjectival forms like Ru.Ukr. dòbrym and the neuter nom.sg. Ukr. dòbre seem to indicate that the older contractions did reach East Slavic. Here Ru. pytâet, Ukr. pytâje may or may not be back-formations after Ru. kopáet, Ukr. kopâje, 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.

| *novỳ   | *bosỳjb   | *novâgo   | *bosaegò   |
| *novâ   | *bosâja   | *novùmu   | *bosuemù   |
| *novê   | *bosojè   | *novỳmb   | *bosỳumù   |
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 *gôre < *gôrje is wholly analogous to the development of *vôla < *vôljaH.

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 *ɔ instead of *ơ if the origin of the intonation were analogical. The only argument against an original neo-acute is the short vowel in Čak. (Novi) víše, drâže, sùše. But here the short vowel can easily have been introduced after the long forms of the comparative, e.g. mlâji, cf. Štok. mlâdti, mlâdôšt. There is no reason to assume any real metatony at any stage in the development of Slavic.

Indeed, the possibility of métatonic 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, ogorôd 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 contradiction 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, *ū, and a large number of diphthongs. The syllabic resonants had been lost, cf. Lith. vĭk̑as, gurkī̂s, Polish wilk, gardo, going back to *i̯l, *u̯r.

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. diĕvas, ašis, sūnūs, žiemū, patī, žēmē, duktē, akmuō. The sigmatic ending is also present in the participles, e.g. Lith. sukū̯s.
The neuter ending is zero except for the o-stems, which will be discussed below.

The circumflex intonation of the ending in Lith. žėmė presents a problem. Endzelin’s suggestion of analogy after dukte 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. duōs, SCr. dâ < *dōHs. On the other hand, Lith. žėmė 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 < *ēHm is analogous to the development of *ē < *ēr in dukte or *ē < *ēN < *ēHm in raṅka. A definite conclusion does not seem possible on the basis of the available evidence. Apart from the isolated nom.sg. form, the paradigm of žėmė has been remodelled after the paradigm of ranka. Since it is impossible to distinguish between the original and the analogous forms, I shall leave the paradigm of žėmė out of consideration in the sequel. I have no satisfactory explanation for the circumflex in Slovene kri, which may or may not be analogical after kōst, cf. SCr. kri, gen.sg. kri. The original acute has been preserved before the formative suffix in *jezyk surprisingly, cf. OPr. insuwis.

The nominative plural of masc. and fem. nouns ends in *-es except for the o-stems, e.g. Lith. raṅkos, with *-ās from *-aHes, dial. ākmenes (Stang 1966:222), OChSl. kamene, synove, and potje < *-ejes with reduction of *e before *i. The nom.pl. ending of Lith. ākys, sūmūs probably goes back to the ending *-iHes, *-uHes of the corresponding H-stems, cf. Czech cirkve, Skt. taniḥaḥ. The neuter nom.pl. ending is *-aH, e.g. SCr. sëla, pôleja, neksesësa, Slovene telêta.

One of the most difficult problems in Baltic historical grammar is the nom.pl. ending of the o-stems, e.g. Lith. vilkāi. The ending, which may or may not be identical to the ending in the adjective geri and the pronoun tē, 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. vākāḥ and Gothic wulfōs, and also in Oscan-Umbrian, was replaced by the pronominal ending *-oi in the majority of IE dialects, e.g. Gr. lōkoī, Lat. lupi,
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. *vlbcē just as the imperative beri differs from the old medial perfect vēdē. The development of *oi into i instead of ē in beri is best explained by assuming a narrowing before word-final *S at some stage in the history of Slavic, cf. Gr. phéros. This assumption is supported by the development of *-ōiS, *-oHns into *-y, *-y, OChSl. věsky, as opposed to -u, -o from *-ōi, *-ont. Similarly, we have to assume that the nom.pl. *vlbcē goes back to the enlarged form *vilkois, with *-s analogically after the other flexion types, as opposed to the loc.sg. vlbcē < *vilkoi. The only problem in this approach is the chronology of the enlargement. On the basis of Lith. vilkai 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. vīkui < *-ōi and inst.pl. vīkāis < *-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. *tē vilkai versus inst.pl. *taiS vilkaiS. The relation between *tē 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 *tē, the alternation between *tē and *ai was suppressed except in the isolated paradigm Latv. iēt.

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. geri 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. vilkū, rankī, avi, sūnu, OChSl. vēka, iē, ročē, kostī, syny < *OH, *-oi, *-aHi, *-iH, *-uH. The old accentuation may have been preserved in Slovene gōri < *gori, while the stress was analogically retracted elsewhere, e.g. Lith. gālvi, kēlnu, Slovene gubē, možā, kostī < *gūbe, *mōža, *kōsti, cf. nom-acc.pl. gorē, kostī. 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. ākmenį, nāktį, sūnu, OChSl. kamenę, nošťę, synę < *-iN, *-uN. Stem-final *H was lost before this ending, e.g. Lith. rańka, OChSl. rōkō < *-ā. The o-stems present a problem. The Slavic material points to narrowing of *o before word-final nasal, e.g. OChSl. vēkō < *vilkNu. In spite of Lith. vilkā 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. vilkūt, 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. sēdo < *-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. vilko, 3rd sg. nėša, SCR. aor. nēse. 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. yugām, 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. dvāram (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. šālta 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. *vilkūs, avis, sūmus, šunis, rankūs, OChSl. vībky, rōkys, OPr. rānkans. The laryngeal may or may not offer an explanation for the long vowel in Skt. vṛkāṇ, āvīn, sūnūn, 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. āśvāḥ, Gothic giƀōs but wulfans.

5.4 GENITIVE

The gen.sg. ending was *-es after a consonant, including *H, e.g. Lith. rankūs, with *-ās < *-aHes, OChSl. kamene, svekrve < *-enes, *-uHes. The circumflex in Lith. pačiūs, which goes back to *potjaHs, is borrowed from the aH-stems. In the i- and u-stems the IE endings have been preserved in Lith. ašūs, sūnūs, OChSl. kosti, suņu < *-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 nīti, cf. nom.sg. nīt. The gen.sg. ending of the o-stems was *-ā, which goes back to the IE ablative, e.g. Lith. vīko, OChSl. vīkka. The alleged preservation of the old IE genitive in OPr. deivas 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. ālglas 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. *ōsnovā. The number of words with *-ā in the nom.sg. was considerably increased by Van Wijk’s law, e.g. *vōlā. 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. akmenų, OChSl. kamenų. The same ending is found in the other flexion types, e.g. Lith. vikū, rašy, OChSl. vbkē, rōkē, and porūja, synova, svekrūva < *-eioN, *-ojoN, *-uoHoN. Like in the nominative, the ending of Lith. avū, sūnū goes back to the ending *-iHoN, *-uHoN of the corresponding H-stems, which developed into *-iuN, *-uN after the loss of the laryngeal. The old gen.pl. ending is still found in Skt. asmākam, yusmākam, which betray its origin. Elsewhere the long vowel resulting from the contraction with a preceding formative vowel has been generalized, e.g. Skt. padām, Gr. podōn. 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. *ākmuō < *akmōN, but simply impossible because of Slavic *-ă. 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 gôr. The lengthening of short stem vowels in the gen.pl. results from the retraction of the stress from a final je 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. vbēkai, rōkai, synovu. The old locative has been preserved in Lith. dviejai, pusiaū, pointing to *-ou, which is confirmed by the Avestan loc.du. zastayō. It is possible that Skt. vēkayō 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. nogū (Stang 1957:63). It does not seem possible to base any conclusions on SCR. rūkū, where the short stem vowel points to a contraction in the desinence. There is a variant Lith. dviejaus, but this form can easily have arisen after the model geriaū, geriaūs. The accentuation of pusiaū 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. vbēcē, roccē < *-oi, *-ahi, and in Lith. namiē, dial. (Buividze) vilkimē, where the final accentuation must be borrowed from the loc.sg. of other flexion types. If this explanation
is correct, the ending of Lith. *labātī 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. zūbe, Čak. (Novi) vlāsī 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 *kosteji, where the final accentuation which originated from the Balto-Slavic oxytonesnēsis was regularly maintained, and that the ending *-oui 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. raṅkoje, and the original shape of the ending to which the postposition was added. After Būga and Stang, I assume that Lith. butė goes back to *būtē eN or *būtē e. 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: *būtēHeN, *būtēHe. When the laryngeal lost its segmental status and became a feature of the vowel, the form changed into *būtē, which regularly developed into butė. In the other flexion types the development was slightly more complicated. The form *rōNkaHi eN developed into *rānkāįe, with dissimilation of the first laryngeal, so that the ictus was not transferred according to de Saussure’s law in Lithuanian. In sūnuje 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 *sūnuįe < *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 avyje must be analogical after the one in gaidyje, which is the expected loc.sg. form if the contraction in gaidyōs is older than the monophthongization. The forms OLit. nakteie, ugnip may go back to expansions of the original loc.sg. forms *nokteji, *ugniHi.

The IE loc.pl. ending *-su is found in OChSl. kostēxb, synēxb, rōkaxe with analogical *x, and vhcexe < *-oiSu, cf. Skt. vēksu. The Lithuanian forms which end in -se have been remodelled after the
singular. The old quantity has been preserved in the adverbial form *akisū (Stang 1966:213) and in dial. *avisū, *tūiguse. The long vowel in *avysē, raňkose is borrowed from the loc.sg. form *avyyē, raňkoje. I think that the ending -uose of the o-stems goes back to an analogical formation *-ōsu after *-āsu in raňkose, 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. gorāh, moţēh, cf. Čak. (Novi) gorăh, vlāsih, going back to *-aHsu, *-oiSu. This confirms that the loss of the laryngeal in Lith. raňkose is an innovation.

5.6 DATIVE

The dat.sg. ending *-ei is found in OChSl. rōcē, with *-āi < *-aHei, svekrovī < *-uHei, synovi, kamenī. The same ending *-āi is found in Lith. raňkai. In the o-stems the ending is *-ōi, which is represented in Lith. vilkuı, OChSl. vbku. 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,ý/. The same loss of the final semivowel in the dat.sg. ending of the o-stems is found in Lith. dial. (Gervėčiai) vilkuo. The ending *-ei in the i-stems goes back to a Balto-Slavic haplological simplification, e.g. OChSl. kosti, Lith.dial. (Gervėčiai) ėvie.

The dat.pl. ending was *-mus, e.g. Lith. raňkoms, vilkams, avims, sūnūms, OChSl. rökamı, vbkomı, kostumı, symum. The retraction of the ictus according to Hirt’s law in Lith. galvōms, Latv. siēvām was analogically extended to the other end-stressed types. Later the laryngeal was eliminated in Lith. raňkoms after the locatives raňkoje, raňkose, so that de Saussure’s law did not operate. In Slavic the retraction remained confined to the aH-stems, cf. Slovene gorām, moţēm < *-aHmus, *-omus. The ending in OPr. gennāmans, waikammans is due to the influence of the acc.pl. ending in gennams, deiwans.
The dative and instrumental of the dual ended in *-maH, e.g. OChSl. vikôma, syrôma, Slovene gorôma. The final vowel was lost in Lithuanian, where the intonational difference between dat.du. vîlkâm, galvóm, sûnum and inst.du. vîlkañ, galvôm, sûnumñ betrays an earlier accental difference *-âmaH, *-amâH 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. dievû, avimi, sûnumi, OChSl. prîtë, syrë. The ending of Lith.dial. (N.W. Žem.) sînômi, which points to *-miH, must be analogical after the plural. In the aH-stems I assume concurrent forms, e.g. *golHvaH, *golHvû, with *-q < *-âm, 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. gâlva, which goes back to the first variant with the accentuation of the second, and šaltâja, 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. vîkômû, rôkojô, and analogically kostôjô.

The inst.pl. ending was *-ôiS in the o-stems and *-miHôS elsewhere, e.g. Lith. vîlkaïs, raîkômis, avîmis, sînumis, Slovene râki, kônji, lêti, gorâmî, nîtmi, kostmi. In the aH-stems the ictus was retracted according to Hirt’s law, cf. Čak. (Novî) gorâmî. The final accentuation was restored in Lith. galvômîs 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 *-ôiS was regularly shortened in Lith. vîlkaîs and narrowed in OChSl. vîkî, lêty. The narrowing of the diphthong before word-final *S in the latter forms is known from the nom.pl. ending in vîcei, and the loss of the palatal element after a long rounded vowel from the dat.sg. ending in vîkû. It follows that these two developments must have taken place in this order. The neo-circumflex in Slovene gorâmî is analogical after the one in ženâmî, where it is regular, and points to a generalization of the long vowel, cf. kostmi < *kostûmi after nîtmi < *nîtûmi. The ending in Slovincian rôhamî is a contamination of *-î and *-mi, *-mi, 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 Nonnemacher-Pribić 1961. The additional sources are listed in the bibliography.

A1. NOUNS WHERE HIRT’S LAW OPERATED
Cf. Illič-Svityč 1963:153 ff. For Hirt’s law see section 1.3 above.
Ru. griva, SCr. griva, Sln. griva, Cz. hriva, Slk. hriva; Latv. grīva, Skt. grivā.
Ru. dever’, SCr. djēver, Sln. devēr; Latv. diēveris, Skt. devā, Gr. dāēr.
Ru. dólog, SCr. dūg, Sln. dolg, Cz. dlouhý, Slk. dlhý; Latv. īģis, Lith. īlgas, Skt. dirghāh.
Ru. dym, SCr. dīm, Sln. dīm, Cz. dým, Slk. dym; Latv. dūmi, Lith. dūmai, Skt. dhūmāḥ, Gr. thūmós, Lat. fūmus.
Ru. mat’, SCr. māti, Sln. máti, Cz. máti, Slk. mat’; Latv. māte, Lith. móte, Skt. mātā, Lat. māter, OHG. muoter.
Ru. pōlon, SCr. pīn, Sln. poln, Cz.Slk. plny; Latv. pīlns, Lith. pilnas, Skt. pūrnāḥ, OLr. lān.
SCr. pīr, Sln. pīr, Cz.Slk. pýr; Gr. pūrós.
SCr. jāto, Sln. játo; Skt. yātām.
A2. OTHER IE NOUN CORRESPONDENCES

Only identical or immediately comparable formations have been included.

Ru. berëza, SCr. brëza, Sln. brëza, Cz. brëza, Slk. breza, US. brëza, Po. brzoza; Lith. bérëzas, Latv. bërzs, Skt. bhûrjâh, OHG. birihha.

Ru. brëmja, berémja, SCr. brême, Sln. brême, Cz. brîmê, Slk. bremâ, US. brêmjo; Skt. bhárma, bhárîmâ.

Ru. brat, SCr. brât, Sln. brât, Cz.Slk. bratr; Lith. brólis, Skt. bhrátâ, Gr. prató, OHG. bruoder.

Ru. vêter, SCr. vêtar, Sln. vêter, Cz. vitr, Skl. vietor, vetor; Lith. vêtra, Latv. vêtra, Skt. vâtâh, Lat. vêntus.

Ru. vîlha, SCr. vîna, Sln. vîlna, Cz.Slk. vîna; Latv. vîlha, Lith. vîlha, Skt. ãrmâ, Lat. lâna.

Ru. zernô, Ukr. zéerno, SCr. zîno, Sln. zîno, Cz.Slk. zrno; Lith. žîrnis, Latv. zîrnis, Skt. jirñâh, Lat. grûnum, Olr. grân.

Ru. znamja, SCr. znâmën, Cz. znamâ; Gr. gnôma.

Ru. iva, SCr. iva, Sln. iva, Cz. jiva, Slk. iva; Latv. iewa, Lith. ieva, Gr. oîê, OHG. iwa.

Ru. kâmen', SCr. kâmën, Sln. kâmen, Cz. kâmen, Slk. kameň; Lith. akmuõ, âsmuõ, Latv. asmens, Skt. âsmâ, Gr. âkmôn.

Ru. kilâ, Ukr. kûla, SCr. kîla, Sln. 'kîla, Cz. kîla, Slk. kyla; Lith. kûla, Gr. kêlé, kâlê, OHG. hâla.

Ru. mak, SCr. mûk, Sln. mák, Cz. mák, Slk. mak; Gr. mêkôn, mákôn, OHG. mâho, mâgo.

Ru. mësjac,SCr. mjèsëc, Sln. mësec, Cz. mësic, Slk. mësiac, Po. miesiac; Skt. mâh, Gr. mën, Olr. mi.

Ru. mës', SCr. miš, Sln. miš, Cz.Slk. mës; Gr. mûs, Lat. mûs, OHG. mûs.

Ru. përvyj, SCr. pëvi, Sln. prêvi, Cz.Slk. prv'y; Lith. pirmas, WLatv. pirmais, Skt. pûrvaḥ.

Ru. rălo, SCr. rălo, Sln. rălo, Cz. rádro, Slk. radlo; Lith. ârkla, Latv. ârklas, Gr. ârottron, Lat. ara'trum, Olr. arathar.

Ru. rămo, SCr. răme, rămo, Sln. ráme, Cz. rámê, Slk. ramâ; Skt. ërmâh, Goth. armâs.

Ru. rătaj, SCr. rătâr, Sln. rătaj, Cz.Slk. rataj; Lith. artâjas, Gr. arotêr, Lat. arâtôr.

Ru. sëmja, SCr. sjëme, Sln. séme, Cz. simê, Slk. semâ; Lith. sëmens, Lat. sëmen, OHG. sâmo.

Ru. solómâ, SCr. slâma, Sln. slâma, Cz. slâma, Slk. slama, US. slôma, Po. sloma; Latv. sâlms, Gr. kálamos, OHG. hal(a)m.
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Ru. sorōka, SCr. svrāka, Sln. sráka, OCz. stráka, Slk. straka, US. sróka, Po. sroka; Lith. sárka, Skt. sārī, sārikā, Gr. kóraς.
Ru. star, SCr. stār, Sln. stār, Cz.Slk. starý; Lith. stóras, Skt. sthurāḥ, ON. stórr.
Ru. tyl, Sln.tīl, Cz. týl, Slk. tyl; Lith. tūlas, Skt. tūlam.
Ru. úťka, SCr. ūťva, Sln. źťva; Lith. úntis, Lat. anas, OHG. amuτ.

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. zvījer, Sln. zvěř, Lith. žverši, acc.sg. žvėrį. The old gen.pl. form žvėrį points to an original consonant stem, corresponding to Gr. théρion, cf. also Latv. zvērs, gen.pl. zvēŗu. If the form corresponding to Gr. théρion 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. žvėrį next to žvėrį and omitted the word from the following list. A similar case is Lith. širdēs, acc.sg. širdį, cf. Gr. kēr and kardia, Skt. hārdi. The Slavic word for ‘heart’ is inconclusive because it is a trisyllabic neuter and therefore mobile, cf. Sln. srcē, Ru. nom.pl. serdcā. For Meillet’s law see section 1.7 above.

Ru. beg, SCr. biţeg, Sln. bēɡ, Cz. běh, Slk. beh; Lith. bėgas, SCr prēbjet.
Ru. vid, SCr.Sln. vid, Cz.Slk. vid; Lith. véidas, Gr. εἴδος.
Ru. vôlot’, SCr.Sln. vlat’; Lith. vältis.
Ru. golovā, SCr.Sln. glāva, Cz.Slk. hlava; Lith. galvā, Latv. galvā.
Ru. dar, SCr.Sln. dār, Cz.Slk. dar; Gr. dōron.
Ru. živ, SCr.Sln. žīv, Cz.Slk. žīvý; Lith. gývas, Latv. dzīvs, Skt. jīvāḥ.
Ru. žīr, SCr.Sln. žīr, Cz.Slk. zīr; cf. OCS. žīti.
Ru. il, Sln. il, Cz. jil, Slk. il; Latv. ıls, Gr. ılūς, SCr. ĭlovača.
Ru. kvas, SCr.Sln. kvās, Cz.Slk. kvas; Lat. cāseus.
Ru. ķiļ, Sln. ķiļ, Cz.Slk. kyi; Lith. kūjis.
Ru. klet', SCr. kļē̈t, Sln. klet; Lith. klėtis, Latv. klēts.
Ru. lub, SCr.Sln. lūb, Cz.Slk. lub; Lith. lūobas.
Ru. lug, SCr. lūg, Sln. lūg; Cz.Slk. luh; Lith. ląugas, Latv. luōgs.
Ru. mir, SCr.Sln. mīr, Cz. mīr, Slk. mier; Latv. miērs.
Ru. nag, SCr.Sln. nāg, Cz.Slk. nahý; Lith. niūgas, Latv. nuōgs.
Ru. nōrot; Lith. nārtas, Latv. nārts.
Ru. pīvo, SCr. pīvo, Sln. pīvo, Cz.Slk. pīvo; Gr. pīnon.
Ru. pir, SCr.Sln. pīr; cf. OCS. piti.
Ru. pjatā, SCr. pēta, Sln. pēta, Cz. pata, Slk. pāta, Po. pięta; Lith. pėntis.
Ru. raz, SCr.Sln. rāz, Cz. ráz, Slk. raz, rāz; Lith. rūožas, Ru. óbrąz, SCr. óbrąz, Sln. obrāz, Cz.Slk. obrąz.
Ru. rez, SCr. rē̈z, Sln. rē̈z, Cz. rē̈z, říž, Slk. rez; Lith. rē̈zas, SCr. pōrez, pōreza, Sln. pōreza.
Ru. rjad, SCr. rē̈d, Sln. rē̈d, OČz. rad, Slk. rad; Latv. rīnda, Ru. rjadā, SCr. rē̈da, Cz. řada.
Ru. sad, SCr.Sln. sād, Cz.Slk. sad; Skt. sādāḥ, ON. sōt.
Ru. sied, SCr. sli̯d, Sln. sē̈d, Cz.Slk. sied; ON. slōd.
Ru. smrad, smórod, SCr.Sln. smrād, Cz.Slk. smrad; Lith. smārdas, Latv. smārdzs.
Ru. sólod, SCr.Sln. slād, Cz.Slk. slad; Lith. saldūs, Latv. salīds, SCr. slādak, Sln. slādek.
Ru. stan, SCr.Sln. stān, Cz.Slk. stan; Lith. stōnas, Skt. sthānam, SCr. òstanak.
Ru. syn, SCr.Sln. sīn, Cz.Slk. syn; Lith. sūnis, Skt. sūnūḥ.
Ru. tē̈sto, SCr. tē̈sto, Sln. testō, Cz. tě̈sto, Slk. cesto; Gr. staǐs, Olr. táis.
Ru. tuk, Čak. tūk, tūk, Cz.Slk. tuk; Lith. taukāi, Sln. tuča.
Ru. jun, Sln. jūn; Lith. jáunas, Latv. jauns.
Ru. jār', SCr.Sln. jē̈r, OČz. jē̈r, Slk. jar; Gr. hōrā, hōros, Goth. jēr.

A4. OTHER BALTO-SLAVIC NOUN CORRESPONDENCES
Ru. bāba, SCr. bāba, Sln. bāba, Cz. bába, baba, Slk. baba; Lith. bāba, Latv. bāba.
Ru. bolóna, Ukr. bolóna, Sln. blána, Cz. blána, Slk. blana; Lith. bálnas, Gr. pholís.
Ru. bolóto, SCr. bláto, Sln. bláto, Cz. bláto, Slk. blato, US. blōto, Po. bloto; Lith. báltas.
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Bulg. bôrna; Lith. burnâ.
Ru. vápa, Sln. vápa; Latv. väpe, Skt. väpf.
Ru. véko, Sln. véko, Cz. víko, Slk. veko; Lith. vókas, Latv. váks.
Ru. vixr', SCR. vihár, Sln. viher, Cz. vichr, Slk. vichor; Lith. viesulas, Latv. vešuols.
Ru. voróna, SCR. vrâna, Sln. vrâna, Cz. vrána, Slk. vrana, US. wrána, Po. wrona; Lith. várna, Latv. várna.
Ru. výdra, SCR. vîdra, Sln. vidra, vidra, Cz.Slk. vydra; Lith. ûdra, Latv. ûdrâ, Skt. udrâh, Gr. húdros, húdřa.
Ru. gâd, SCR. gùd, Sln. gâd, Cz. hád, Slk. had; Lith. gëda, Dutch kwaad.
Ru. gîlva, SCR. glîva, Sln. glîva, Cz. hlîva, Slk. hlîva; Lith. glîivos, Gr. gloios.
Ru. gnîda, SCR. gnjîda, Sln. gnîda, Cz. hnîda, Slk. hnîda; Latv. gnûda, Lith. glînda.
Ru. gôrlo, SCR. gêlo, Sln. gîlo, Cz.Slk. hrdlo; Lith. gurkîys, Gr. hărîthron.
Ru. gorôx, SCR. grâh, Sln. grâh, Cz. hrâch, Slk. hrach, US. hrôch, Po. groch; Latv. gárâsa, Lith. girsa, Gr. krî, krîthê.
Ru. grâbli, SCR. grâblje, Sln. grâblje, Cz. hrâbê, Slk. hrâble; Lith. grêblîys.
Ru. grad, SCR. grâd, Sln. gràd, Cz. hrâd; Lith. grûodas, Arm. karkut.
Ru. grûša, Bulg. krûşa; Lith. kriâusë.
Ru. gùbâ, Ukr. hùba, SCR. gùba, Sln. gôba, Cz. huba, houba, Slk. huba, Po. gêba; Lith. gêmbê.
Ru. ladôn', dolôn', SCR. dlân, Sln. dlâń, Cz.Slk. dlań, US. dłoń, Po. dłoń; Lith. dêlna, Latv. dêlîna.
Ru. žîla, SCR. žîla, Sln. žîla, Cz. žîla, Slk. žîla; Lith. gîsla, Latv. dzîsla, Arm. jîl, Skt. jyá.
Bulg. žûna; Lith. šiûnos, Latv. šaûnas, OHG. kuwan.
Ru. zoród; Lith. žârâsas, Latv. zârâs.
Ru. zjat', SCR. zêt, Sln. zêt', Cz. zet', Slk. zat', Po. ziecë; Lith. žëntas, Latv. znuûts, Skt. jñâtih.
Ru. istyj, SCR. ľsti, Sln. ľsti, Cz. jistý, Slk. isty'; Latv. ľsts, Lith. ľîtssus, Arm. ľsk, Skt. ľse.
Ru. korôva, SCR. krâva, Sln. krâva, Cz. krâva, Slk. krâva, US. kruwa, Po. krowa; Lith. kárve, Gr. keraós.
Bulg. krâka, Sln. krâka; Lith. kárka.
SCR. kîplje, Sln. kîplja, Cz. krîpê; Lith. kûrpê, Latv. kûrîpe, Gr. krêpis.
Ru. krêslo, Cz. křeslo, Slk. krieslo; Lith. krêslas, Latv. krêslo.
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Ru. küpa, SCr. küp, küpa, Sln. küp, Cz. kupa; Lith. küopa, Latv. kuōpa, OHG. hüfo.
Ru. kust; Lith. kūokštas.
Ru. láva, Sln. láva, Cz. lava; Lith. lōva, Latv. lāva, Skt. lāvah.
Ru. lákom, SCr. läkom, Sln. lákom, Cz.Slk. lakomý; Lith. álkanas, Gr. olékō.
Ru. lan', SCr. lāne, Sln. lānjec, Cz.Slk. lañ; Latv. aðnis, Lith. ėlnias, Arm. eln, Gr. ἐλαφός.
Ru. lápa, Sln. lápa; Lith. lōpa, Latv. lāpa, Goth. lōfa.
Ru. lāčnyj, SCr. lāčan, Sln. lāčen, Cz.Slk. lačný; Lith. álkanas, Gr. olékō.
Ru. lesá, SCr. ljēsa, Sln. lēsa, Cz. lisa, Skl. lesa; Latv. lēsa.
Ru. lin', SCr. linj, Sln. linj, OCz. liñ, Slk. liñ; Latv. līnis, Lith. līnas, OHG. slio.
Ru. lipa, SCr. lipa, Sln. lípa, Cz. lipa, Slk. lipa; Lith. liepa, Latv. lēpa.
Ru. lýko, SCr. ūko, Sln. líko, Cz. lýko, Slk. lýko; Lith. lūkas, Latv. lūks.
Ru. mil, SCr. mīo, Sln. mīl, Cz.Slk. mīłý; Lith. mīelas, mīlas, Latv. mūš, Skt. máyaḥ.
SCr. mlāka, Sln. mláka, Cz.Slk. mláka; Lith. mālka.
Ru. nit', SCr. nīt, Sln. nīt, Cz.Slk. nīt'; Lith. nūtis, Latv. nūts, Skt. nīvīḥ, snāyati, Lat. nēre, OHG. nājan.
Ru. pāsmo, SCr. pāsmo, Sln. pāsmo, Cz.Slk. pāsmo; Latv. puōsms.
Ru. pēna, SCr. pįēna, spįēna, Sln. pēna, OCz. piena, SCz. pīna, Slk. pena; Lith. spāinē, Skt. phēnāḥ.
Ru. porog, SCr. prąg, Sln. prąh, Slk. prah; Lith. pērgas.
Ru. presen, SCr. prielēsan, Sln. prēsen; Lith. prēskas.
Ru. pūto, SCr. pūto, Sln. pōto, Cz. pouto, Slk. puto, Po. pēto; Lith. pāntis.
Ru. répa, SCr. rēpa, Sln. répa, OCz. řiepa, Slk. repa; Lith. rōpē, Lat. rāpa, OHG. ruoba.
Ru. rūlo, SCr. rūlo, Sln. rūlo, Cz.Slk. rydlo; Latv. raūklis.
Ru. rys', SCr. rīs, Sln. rīs, Cz.Slk. rys; Lith. lūsis, Latv. lūsis.
Ru. rjēda, SCr. rēda, Cz. řada; Latv. riēda.
Ru. sāža, Sln. sāja, OCz. sázē, Slk. sadza; Lith. sūodžiai, OIr. suide, ON. sót.
Ru. sēver, SCr. sjēvēr, Sln. sēver, Cz.Slk. sever; Lith. šiūrė, OHG. scūr.
Ru. sīv, SCr. sīv, Sln. sīv, Cz.Slk. sīvý; Lith. sīvas, Skt. śyāvāḥ.
Ru. sīla, SCr. šīla, Sln. sīla, Cz. sīla, Slk. sīla; Lith. sīla.
Ru. sīto, SCr. sīto, Sln. sīto, Cz. sīto, Slk. sīto; Lith. sītas, Latv. sīētis, Gr. ðēthmos.
Ru. slāva, SCr. slāva, Sln. slāva, Cz.Slk. slāva; Lith. šlovē, OIr. clú.
Ru. slēme, SCr. slēme, šlēme, Sln. slēme, Cz. slēmē, Slk. slēmā; Lith. šelmuō.
Ru. slīna, SCr. sfīna, Sln. slīna, Cz. slīna, Slk. slīna; Latv. slīēnas, slēkas, ON. slīm.
Ru. slūka, SCr. slūka, šljūka, Sln. slōka, OCz. slūka, Slk. sluka; Lith. slanka, slankā, Latv. slūoka, slūōka, OHG. slango.
Ru. slādkij, solōdkij, SCr. slādak, Sln. slādek, Cz.Slk. sladkj; Lith. salūēs, Latv. salēs.
Ru. strūga, SCr. strūga, Sln. strūga, Cz. strouha, Slk. struha; Latv. straiēga.
Ru. syr, SCr. šir, Sln. šir, Cz. syr, Slk. syr; Lith. sūras, Latv. sūrs, OHG. sūr.
Ru. tūšjēc, SCr. tīsuć, Sln. tīsōč, tīsōća, Cz.Slk. tīsic, Po. tysiqc; Lith. tūkstantis, OPr. tūsimtons, Goth. ūsundi.
SCr. šīka; Latv. aūka.
Ru. čist, SCr. čist, Sln. čist, Cz.Slk. čistý; Lith. skūstas, Latv. škūsts, ON. skūta.
Ru. čītyj, SCr. čīt, čītav; Lith. kietas, Latv. ciēts.
Ru. jābloko, SCr. jābuka, Sln. jābolko, Cz.Slk. jablko; Lith. ūbuolas, Latv. ūbuōls.
Ru. jāgoda, SCr. jāgoda, Sln. jāgoda, Cz.Slk. jahoda; Lith. ūoga, Latv. ūōga.
Ru. jāsen, SCr. jāsan, Sln. jāsen, Cz.Slk. jasný; Lith. aĩškus.

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. basnŠ, bāsna, SCr. bāsna, bāsma, Sln. bāsien, Cz.Slk. bāsēn; Arm. ban, ON. bōn.
SCr. bīlo, Sln. bīlo, SCz. bīdlo, Slk. bīdlo; Arm. bir, OHG. bihal.
Ru. bītva, SCr. bītva, Sln. bītva, Cz.Slk. bītva.
Ru. belēnā, Ukr. belēna, SCr. bēn, Sln. blēn, Cz. blēn, Slk. blen; OHG. bilisa.
Ru. blizok, SCr. bľizak, Sln. blţek, Cz.Slk. blīzký; Latv. bļažit, Lat. fligere.
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Ru. bórošno, SCr. brūšno, Sln. brášno; Latv. barība, Lat. farīna.
Ru. hério, SCr. hřědo, Sln. hřádo, Cz.Slk. hřdo; Goth. haurd.
Ru. brirva, SCr. brítva, Sln. brūtva, Cz. hřítva, Slk. brítva; Skt. bhrināti.
Ru. buj, SCr. būjan, Sln. būjen; Skt. bhūyān, Dutch bui.
Ru. būra, SCr. būra, Sln. būra, Cz. hůre, Slk. hura, hůra; Latv. baūruoit, Olr. būriud.
Cz.Slk. bydlo; Gr. phūtla.
SCr. bišje, Sln. biš, bíla, bišje, Cz. býl, býlí, Slk. byl', byl'a; Gr. phulōn, phūlon.
Ru. bystr, SCr. bīstār, Sln. bīstart, Cz.Slk. bystrý; Skt. bhūsati.
Sln. věda, Cz. věda, Slk. veda; Skt. vēḍaḥ.
Ru. věža, SCr. vjeḍja, Sln. vēja; Gr. ēidos.
Ru. vēra, SCr. vjēra, Sln. vēra, Cz. vīra, Slk. viera; Lat. vērus, Olr. fir, OHG. wār.
Ru. vetv', Sln. vēja, Cz. vētev; Latv. vīte, Gr. oisūā, itēā, Lat. vitis, OHG. wīda.
Ru. vīly, SCr. višle, Sln. vīle, Cz. vidle, Slk. vidly.
Ru. vīra; Lith. vīras, Skt. vīrāḥ, vārām.
SCr. vítao, Sln. vītel; Skt. vītāḥ.
Ru. víšnja, SCr. višnja, Sln. višnja, Cz. višně, Slk. višňa; OHG. wihsila.
Ru. vológa, Völga, SCr. vlāga, Sln. vlāga, völgek, Cz. vlāha, vēhký, Slk. vlaha, vlīký, US. włoха, Po. wilgi; Lith. válgyti, vilgyti, Latv. valgs, OHG. wēlc.
SCr. vrēlo, Sln. vrēlo, Cz. vřídlo; Lith. virti, Latv. vīrt.
Ru. vymja, SCr. víme, Sln. vīme, Cz. výmě, Slk. vemă; Skt. údhar, OHG. ūtar.
Ru. gāči, SCr. gāče, Sln. gāče, OCz. háčě; Skt. gātīḥ.
Ru. glādok, SCr. glādek, Sln. gládek, Cz.Slk. hladký; Lith. glodus.
Ru. glīna, SCr. gnīila, Sln. glīna, Cz. hlīna, Slk. hlīna; ON. klna.
Ru. gnev, SCr. gnēv, Sln. gnēv, OCz. hniev, Slk. hnev, US. hṇēv, Po. gniew; OHG. gnitan.
Ru. gorb, SCr. gība, Sln. gība, Cz.Slk. hrb; Lith. gārbana, Arm. karth.
Ru. grūda, SCr. grūda, Sln. grūda, Cz. hrouda, Slk. hruda; Lith. grūstī, ON. griót.
Ru. gryzha, SCr. grīža, Sln. grīža; Lith. grūžtis.
Ru. gūija, SCr. gūnj, Sln. gūnj, gūna, Cz. houně, Slk. hūna.
Ru. gūslī, SCr. gūsle, Sln. gōsli, Cz. housle, Slk. husle.
Ru. dēva, SCr. dēva, Sln. dēva, Cz. děva, Slk. deva; Gr. thēlus, Lat. fēmina.
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Ru. ded, SCR. džëd, Sln. dëd, Cz. dëd, Slk. ded ; Gr. ἐθέθε.
Ru. dëlo, SCR. džëlo, Sln. dëlo, Cz. dilo, dëlo, Slk. delo, dielo ; Lith. dëti, Gr. tithémi.
Ru. dëvo, SCR. džëvo, Cz.Slk. div ; Skt. dhīh.
Ru. dorëga, SCR. drëga, Sln. drëga, Cz. dráha, Slk. draha, dráha, US. dróha, Po. droga ; Lith. dirginti, Gr. tarakhé.
Ru. dëma, Bulg. dëma, Slk. duma ; Skt. dhûmâ, Gr. thûmós.
Ru. dënya, SCR. džënya, Sln. dënya, Cz. dûnê, Slk. dûna.
SCR. jëdja, Sln. jëja, OPr. jedza ; Lith. ėda, ėdžia.
SCR. jëlo, Sln. jëlo, Cz. jëlo, Slk. jedlo.
Ru. žëba, SCR. žëba, Sln. žëba, Cz. žaba, Slk. žaba.
Ru. žëva, SCR. žëva, Sln. žëva, žëtev, Cz.Slk. Žatva ; Lith. ginti.
Ru. žërtva, SCR.Sln. žërtva ; Lith. girti, Lat. grâtus.
Ru. žîn' ; Lith. gîtî.
Ru. žîto, SCR. žîto, Sln. žîto, OCz. žîto, Slk. žîto ; OPr. geits.
Ru. žîca, SCR. žîca, Sln. žîca ; Lith. gi:jâ, Skt. jyâ.
Ru. zâjac, SCR. zèć, Sln. zâjëc, zèc, Cz. zajic, Slk. zajac, Po. zajac ; Lith. žâisti, Skt. jihi:te.
Ru. zdorëv, SCR. zdräv, Sln. zdrâv, Cz.Slk. zdravý.
Ru. įskra, SCR. įskra, Sln. įskra, Cz. jiskra, Slk. iskra ; Lith. įškus.
Ru. känja, SCR. känja, Sln. känja, Cz. kânê, Slk. kaña ; Lat. cicônia, OHG. huon.
Ru. kâplja, SCR. kâplja, Sln. kâplja, Cz. kâpê ; Lith. kópti.
Ru. kâša, SCR. kâša, Sln. kâša, Cz. kâše, Slk. kaša ; Lith. kósti, Latv. kâst.
Ru. kâšel', SCR. kâšelj, Sln. kâšelj, Cz. kašel, Slk. kašel' ; Lith. kòsëti, Latv. kâsét, Skt. kâsate, OHG. h(w)uosto.
SCR. kvâka, Sln. kvâka, Cz.Slk. kvaka.
Ru. kîka, SCR. kîka, Sln. kîka.
Ru. kîslyj, SCR. kîseo, Sln. kisel, Cz. kyselý, Slk. kyslý ; Latv. kûsât.
Ru. kîst', SCR. kîščica, Slk. kyst'.
Ru. kîta, SCR. kîta, Sln. kîta, Cz. kîta, Slk. kyta ; Lith. kûtìs, ON. skûfr.
Ru. kîlin, SCR. kîlin, Sln. kîlin, Cz. kîlin, Slk. kîlin.
Ru. kljuká, Ukr. kljúka, SCR. kljúka, Sln. kljúka, Cz. klika, Slk. kl'uka ; Lith. klûati, Lat. clâvis.
Ru. kolóda, SCR. klûda, Sln. kláda, Cz. klâda, Slk. klada, US. klóda, Po. kloda ; Lith. káliti, Lat. clâdës.
Ru. korósta, SCR. krâsta, Sln. krâsta, OCz. krâsta, Po. krosta.
Ru. krâža, SCR. krâdja, Sln. krâja.
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Ru. kraj, SCr. kräj, Sln. kràj, SCz. kráj, Slk. kraj ; Lith. skròsti.
Ru. krépek, SCr. křepak, Sln. krépek, Cz. křepý, Slk. krepký ; ON. kråga.
Ru. krux, SCr. krüh, Sln. krüh, Cz.Slk. kruch.
Ru. kúka, SCr. kúka, Sln. kúka.
Ru. kur, SCr. kür, Sln. kür, Cz. kur, kour, Slk. kür ; Skt. káuti.
Ru. kúča, SCr. kúča, Sln. kóča, Cz. kuče, Slk. kuča.
Ru. laź, SCr. lůź, Sln. lůź, Cz. laź, läz ; Latv. lēzns, ON. làg.
Ru. láška, SCr. láška, Cz.Slk. láška ; Lith. lokšnūs.
Ru. leito, SCr. ljěto, Sln. léto, Cz. leto, Slk. leto, US. lëto ; Lith. lietūs.
Ru. ml, SCr. mäo, Sln. mäli, Cz.Slk. malý ; Gr. mēlon, Olr. mēl.
Ru. máma, SCr. māma, Sln. máma, Cz. máma, Slk. mama ; OHG. muoma.
Ru. máslo, SCr. mäšlo, Sln. máslo, Cz. máslo, Slk. maslo ; Latv. mužēt.
SCr. muh, Sln. māh ; Lith. mōti, Latv. māt, Skt. māyā, Gr. mēmos.
SCr. mäčka, Sln. mäčka, Cz.Slk. mäčka.
Ru. med, SCr. mjēd, Sln. mēd, Cz. mēd', Slk.-med.
Ru. mēra, SCr. mjēra, Sln. mēra, Cz. mēra, Slk. miera ; Skt. máti, Lat. mētior.
Ru. merēža, SCr. mrēža, Sln. mrēža, Cz. mříže, Slk. mreža ; Lith. märška, Gr. brōkhos.
Ru. město, SCr. mjěsto, Sln. město, Cz. město, město, Slk. mesto, miesto.
Ru. moróz, SCr. mráz, Sln. mráz, Cz.Slk. mráz, US.Po. mróz.
Ru. múka, SCr. múka, Sln. múka, OCz. múka, Slk. muka, Po. męka ; Lith. minkyti.
Ru. mūxa, SCr. mūha, mūha, Sln. mūha, Cz. moucha, Slk. mucha ; Gr. mūa.
Ru. mýlo, SCr. mīlo, Sln. milo, Cz. mýdlo, Slk. mydlo ; Latv. maüt.
Ru. mysł', SCr. mīsao, Sln. mīsel, Cz. mysl, Slk. mysel' ; Gr. mūthos.
Ru. mjágok, SCr. mēk, Cz. mēkký, Slk. mäkký, Po. miękki ; Lith. minkštas.
Ru. néga, SCr. njēga, Cz. nēha, Slk. neha.
Ru. nědra, SCr. njēdra, Sln. nědra, Cz. ňádra, Slk. ňadrá ; Gr. nēdús.
Ru. nīva, SCr. njīva, Sln. njīva, Cz.Slk. nīva.
Ru. nīzok, SCr. nīzak, Sln. nīzek, Cz.Slk. nīzký.
Ru. núža, nuždā, SCr. nūžda, Sln. nōja, Cz. nouze, Slk. núda, Po. nędza ; Lith. naudā.
Ru. par, SCr. pāra, Sln. pāra, Cz. pāra, Slk. para ; Gr. prēthō.
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Ru. pastva, Sln. pāśta, Cz.Slk. pastva; Lat. pāscere.
Ru. pāša, SCr. pāša, Sln. pāśa, Slk. paśa; Lat. pāscere.
SCr. pjēga, Sln. pēga, OCz. pieha, Slk. peha.
Ru. pēśnya, SCr. pjēsna, pjēsma, Sln. pēšem, Cz. pīšeń, Slk. pīšeń.
Ru. pīšča, SCr. pīča, Sln. pīča, Cz. pīce.
Ru. plāmja, SCr. plūmēn, Sln. plāmen, Cz. plamen, Slk. plameń, US. plōmjo, Po. plomień; Lith. pelenāi.
Ru. plāč, SCr. plāč, Sln. plāč, Slk. plač; Gr. plēssō.
SCr. plūta, Sln. plūta; Lith. plädūti.
Ru. polōva, SCr. plēva, Sln. plēva, Cz. pleva, Slk. pleva, US. pluwa; O.Lith. pēlūs, Skt. palāvaḥ.
Ru. porōm, SCr. prūm, Cz.Slk. prām, Po. prom; Gr. perāo.
Ru. prav, SCr. prāv, Sln. prāv, Cz.Slk. pravý; Lat. probus.
Ru. právo, SCr. prāvo, Sln. prāvo, Cz.Slk. prāvo.
SCr. prūmēn, Sln. prāmen, Cz. pramen, Slk. prameń, US. prōmjo, Po. promień.
Ru. prūga, SCr. prūg, Sln. prōga, Cz. prouha, Po. pręga; ON. springa.
Ru. prjāža, SCr. prēdja, Sln. prēja, Cz. příze, Slk. priadza, Po. przedza; Lith. sprésti.
Ru. pūzdro, SCr. pūzdro, Sln. pouzdro, Slk. puzdro; Gr. pūgē.
Ru. pup, SCr. pūpek, Sln. pōpek, Po. pep; Lith. bāmba.
Ru. p'jan, SCr. pjān, Sln. pijān, Cz.Slk. pijan; Skt. pyānāh.
Ru. pijast', SCr. pěst, pěst, Sln. pěst, Cz. pěst, Slk. pāst', Po. pięscę; Lith. kūmstė, OHG. füst.
Ru. rad, SCr. rād, Sln. rád, Cz.Slk. rád; Gr. éramai.
Ru. raj, SCr. rāj, Sln. rāj, Cz. rāj, Slk. raj; Skt. rāti, Lat. rēs.
Ru. rak, SCr. rāk, Sln. rāk, Cz.Slk. rāk, Slk. rak.
Ru. rāna, SCr. rāna, Sln. rāna, Cz. rāna, Slk. rana.
Ru. rāno, SCr. rāno, Sln. rāno, Cz.Slk. rāno, raný; Skt. ūrdhvāḥ, Gr. órthros.
Ru. rāt', SCr. rāt; Gr. éris.
Ru. rīza, SCr. rīza, Cz. rīza.
Ru. rus, SCr. rūs, Sln. rūs, Cz.Slk. rusy; Latv. rūsa.
Ru. rūxo, SCr. rūho, Sln. rūho, Cz. roucho, Slk. rūcho; Lith. rauți.
Ru. ryba, SCr. rība, Sln. riba, OCz. ryba, Slk. ryba; OHG. rūppa.
Ru. ryk, SCr. řika, Sln. rīk, Cz.Slk. ryk; Lith. rūkti.
Ru. rūžyj, Cz.Slk. rychłý; Latv. rūsa, ON. rūst.
Ru. sālo, SCr. sālo, Sln. sālo, Cz. sādlo, Slk. sadlo; Skt. sādāḥ.
Ru. svat, SCr. svāt, Sln. svāt, Cz.Slk. svat; Goth. swēs.
Ru. svérdel, SCr. svedao, Sln. svėder, Cz. sviděr; OHG. swěrt.
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Ru. séža, SCr. sjédja, Sln. séja; Skt. sádāḥ.
Ru. sen', SCr. sjën, Sln. sěnca, Cz. sín, Slk. sieň; Skt. chāyā, Gr. skēnē.
Ru. séra, SCr. sjěra, Cz.Slk. sira; Skt. śārāḥ.
Ru. séča, SCr. sjēča, Sln. séča; Lat. secāre.
Ru. séčivo, SCr. sjēčivo; Lat. secivum.
Ru. sinj, SCr. sinji, Sln. sinj; Cz.Slk. siný; Skt. śyāmāḥ.
Ru. skalá, SCr. skála, Sln. skála, Cz. skála, Slk. skala; Lith. skėlti.
Ru. skvára, SCr. skvára, Sln. skvára.
Sln. skrānja, OCz. skrāně, Slk. skraňa.
Ru. slab, SCr. sláb, Sln. sláb, Cz.Slk. slabý; Lat. lábor, ON. slápr.
Ru. sliva, SCr. šľiva, Sln. sliva, Cz. sliva, Slk. sliva, Lat. lividus.
Ru. smel, SCr. smēo, Sln. směl, Cz. smělý, Slk. smely; Lat. mōs, OHG. muot.
Ukr. smerék, SCr. smrěka, Sln. smrěka, Cz. smrk, Slk. smrek, US. smrek; Gr. smīlaks.
Ru. snasť; OIr. snáthe.
Ru. stádo, SCr. stādo, Cz.Slk. stádo; OHG. stuot.
Ru. stája, SCr. stāja, Sln. stája, OCz. stājě, Slk. staja; Lith. stōti.
Ru. strexa, SCr. strēha, Sln. strēha, Cz. strecha, Slk. strecha, US. třécha; Lith. striegti.
Ru. struná, SCr. strūna, Sln. strūna, Cz.Slk. struna; Lat. struere.
Ukr. sūkňa, SCr. sūknja, Sln. sūkňa, Cz. sukňě, Slk. sukňa.
Ru. syt, SCr. sìt, Sln. sīt, Cz. sytý, Slk. sýty; Skt. sūraḥ, Gr. kūros.
Ru. tar', SCr.Sln. tåt; Skt. tāyūḥ, OIr. táid.
Ru. témja, SCr. tēme, Sln. tēme, Cz. těmě, Slk. temā; Gr. témnō.
Ru. tīna, OCz. tīna; Latv. ērelis, Gr. tīlos.
Ru. tis, SCr. tīs, tīsa, Sln. tīs, tīsa, Cz.Slk. tīs.
Ru. tix, SCr. tih, Sln. tīh, Cz.Slk. tichý.
Ru. tūča, SCr. tūča, Sln. tča, Slk. tuča, Po. tęća; Lith. tānkus.
Ru. tíkva, SCr. tīkva, Sln. tīkva, tīkev, Cz. tykev.
Ru. udā, ūdočka, SCr. ūdica, Sln. ūdica, Cz. udice, Po. węda.
Ru. úza, SCr. ĭza, Sln. ĭza.
Ru. ūzel, SCr. ūzao, Sln. ózel, Cz. uzel, Slk. uzol, Po. węzel; Lith. ažuolas, Latv. užuolūs.
Ru. útro, SCr. jūtro, Sln. jūtro, OCz. jítro, Slk. jutro; Lith. aušrą, Gr. aúrion.
Ru. xort, SCr. hēt, Sln. hēt, Cz.Slk. chrt; Lith. kurči.
Ru. xren, SCr. hrēn, Sln. hrēn, OCz. chřen, Slk. chřěn, US. chrēn; Skt. ksārāḥ, Gr. kṣērōs.
A6. VERBS
Here again I confine myself to the Slavic evidence. I have not included the verbs in -κρίζ, Ru. -KM/' with a laryngealized root because the laryngeal is often secondary in this class, as I intend to show on another occasion.

Ru. bávit', SCR. báviti, Sln. báviti se; Skt. bhāvah.
Ru. bájat', SCR. bájati, Sln. bájati; Gr. phēmi, Lat. fāri.
Ru. bégat', SCR. bjēgati, Sln. bēgati; Lith. bēgti, Latv. bēgt, Gr. phēbomai.
Ru. bit', SCR. biti, Sln. biti, Cz. biti, Slk. bit; OIr. benim, OHG. bihal.
Ru. bljevāt', SCR. bljuvati, Sln. bljuvāti, Cz. bliti, Slk. bl'ut'; Lith. bliūuti, bliūti, Latv. blaūt.
Ru. borōt'sja, US. wo-broč so; Lith. bārti, Latv. bārt, Lat. ferire.
SCr. *břisatı*, Sln. *brisatı*.
Ru. *dīmatʼ*, SCr. *dūmatı*.
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Ru. est', SCr. jësti, Sln. jësti, Cz. jisti, Slk. jest'; Lith. ësti, Gr. édó, Lat. edere.
Ru. ézdî', SCr. jèzditì, Sln. jèzditì.
Ru. éxat', SCr. jàhatì, Sln. jàhatì; Lith. jòti, Latv. jât, Skt. yàti, OIr. áth.
Ru. żat', SCr. żëti, Sln. żëti, Cz. žìti, Slk. żat'; Lith. genëti.
SCz. zoutì, Slk. žout'; Lith. žìáunos, OHG. kiowan.
Ru. žitì, Sln. žÌti, Cz. žìti, Slk. žit'; Lith. gỳti, Latv. dzît, Skt. jîvati, Lat. vivere.
Ru. ra-zinut', SCr. zìnùti, Sln. zìnìti; Gr. khainò, ON. gìna.
Ru. znat', SCr. znàti, Sln. znàti, Cz. znàti, Slk. znàt'; Skt. jñàtah, Gr. gnòtòs, OIr. gnàth.
Ru. znet', Cz. znèti, Slk. znìet'.
Ru. zret' 'see', SCr. zrèti, Sln. zrèti, Cz. zrèti, Slk. zriet'; Lith. žérëti.
Ru. zret' 'ripen', SCr. zrèti, Sln. zrèti, Cz. zrèti, Slk. zriet'; Skt. járati.
Ru. zybåt', SCr. zìbatì, Sln. zìbati.
Ru. kàpat', SCr. kàpåti, Sln. kàpatì.
Ru. kàjåt'sja, SCr. kàjåti, Sln. kàjåti.
SCr. kvåsåti, Sln. kvåsåti; Lat. cåseus.
Ru. kìdåt', SCr. kìdåti, Sln. kìdåti; Latv. kûdåti, Skt. khudåti.
SCr. kìsåti, Sln. kìsåti; Latv. kûsåt.
Ru. klànjåt'sja, SCr. klànåjåti, Sln. klànåjåti se; Skt. shrñâyåti.
Ru. klåsti', SCr. klåstì, Sln. klåstì, Cz. klåstì, Slk. klåst'; Lith. klòti, Latv. klåt.
Ru. klèvåt', SCr. klìouvåti, Sln. klìouvåti, Slk. kl'ùt'; Lith. klìùti.
SCr. klèchì, Sln. klèkåti; Lith. klènkåti.
Ru. klìkåt', SCr. klìčì, Sln. kÌcìati.
Ru. klìjùçì', SCr. klìjùçìti, Sln. klìjùçìti; Lith. klìùti.
Ru. kòvat', SCr. kòvåti, Sln. kòvåti, Cz. koutì, Slk. kùt'; Lith. kåuti, Latv. kàutì, Lat. cùdere.
Ru. kòlàt', SCr. klàtì, Sln. klàtì, Cz. klàti, Slk. klat', US. kÌc; Lith. káltì, Latv. kàlt, Lat. cådås.
Ru. kòrëtì', SCr. kìrëti, Sln. kÌrëti.
Ru. kråstì', SCr. kråstì, Sln. kråstì, Cz. kråstì; Latv. kråt.
Ru. krìtì', SCr. krÌtì, Sln. krÌtí, Cz. krìtí, Slk. kryìt'; Lith. krÌuti, Latv. kryåtì, Gr. kryptoù.
Ru. kùdåt', SCr. kùdåti, Sln. kùdåti.
Ru. klùkåt', SCr. klùkåti, Sln. klùkåti.
Ru. klùsåt', SCr. klùsåti, Sln. klùsåti; Lith. kàsåti, Latv. kùsåt, Skt. khådatì.
LARYNGEALIZED VOWELS IN SLAVIC ROOTS

Ru. lázit', SCr. lăziti, Sln. lăziti; Latv. lēzns, ON. lágr.
Ru. lájat', SCr. lăjati, Sln. lăjati; Lith. lōti, Latv. lāt, Skt. ráyati, Lat. lātrāre.
Ru. liez', SCr. s-lëstī, Sln. lëstī, Cz. lézti, Slk. liez'; Latv. lēzēt, ON. lágr.
Ru. hjàgu, SCr. hēžēm, Sln. lēžem.
Ru. lit', SCr. īti, Sln. īti, Cz. īti, Slk. īat'; Lith. īeti, Latv. īēt, Gr. īeβο, Lat. īēbre.
Ru. māzat', SCr. māzati, Sln. māzati; Latv. muōzēt.
Ru. mājat'xja, SCr. mājati, Sln. mājati; Lith. móti, Latv. māt, Skt. māvā, Gr. mēmos.
Ru. mérit', SCr. mjēriti, Sln. mēriti; Skt. māti, Lat. mētor.
SCr. mīcati, Sln. mīcati.
SCr. müstim, Sln. mōlstit, mēstī; Lith. mūžtī, mēžtī.
Ru. mōlōt', SCr. mlēti, Sln. mlēti, Cz. mlēti, Slk. mlēt', US. mlēć; Lith. māltī, Latv. mālti, Skt. mṛṇāti, Lat. molore.
Ru. mūč̆it', SCr. mūč̆iti, Sln. mūč̆iti, Po. męczyć; Lith. mānkyti.
Ru. mūs̆it', SCr. mūs̆iti, Sln. mūs̆iti; Gr. mūthos.
Ru. mūt', SCr. mūt̆i, Sln. mūt̆i, Cz. mūt̆i, Slk. mūt'; Lith. māudyti, Skt. mūtram, Dutch mooi.
Ru. mjat', Sln. mēt̆i, OCz. mieti, Slk. māt'; Lith. mīnti, Latv. mīt.
Ru. nādit', SCr. nāditi, Sln. nāditi.
SCr. nūditi, Sln. nūditi, Po. nudzić.
Ru. nyt', Cz. nỳti, Slk. nỳt̆; Lith. nōvyti, Latv. nāvēt.
Ru. njūxat', SCr. njūšiti, Sln. njūšati, njūhati; OHG. niūsan.
Ru. orāt', SCr. orāiti, Sln. orāti; Lith. ārtī, Latv. ārt, Gr. arōό, Lat. arāre.
SCr. pāziti, Sln. pāziti.
Ru. pārit', SCr. pāriti, Sln. pāriti.
Ru. past', pādat', SCr. pāsti, pādati, Sln. pāsti, pādati.
Ru. pasti, SCr. pāsti, Sln. pāsti, Cz. pāsti, Slk. pāst'; Lat. pāscere, Goth. fōdjan.
SCr. pātriti, Po. patrzyć; Skt. pātī.
Ru. per', SCr. pēt̆i, pēvati, Sln. pēt̆i, pēvati.
Ru. pit', SCr. pīti, Sln. pīti, Cz. pīti, Slk. pit̆; Skt. pītāh, Gr. pūnō.
Ru. plāvit', SCr. plaviti, Sln. plaviti; Lith. plāuti, Gr. plōō, ON. plōā.
Ru. plākat', SCr. plākati, Sln. plākati; Lith. plō̄ti, Gr. plēsσ, Lat. plangere.
SCr. plāšiti, Sln. plāšiti, US. plōšić, Po. ploszyć; Gr. pólemos.
Ru. plevāt', SCr. pljuvati, Sln. pljuvati, Cz. plīti, Slk. pl'ut'; Lith. spiāuti, Latv. splāūt.
Ru. plyt', SCR. pliti, Sln. plúti, Cz. plouti, Slk. plut'; Lith. plústi, Latv. plúst, Gr. plúnó.
Ru. póltzat', SCR. púzatì, Sln. pólzati.
Ru. półźiţ', SCR. plźzati, Sln. pláziti.
Ru. polót', SCR. pléti, Sln. pléti, Cz. plíti, Slk. pliet', US. plěć.
Ru. polót', Sln. pláti, Cz. pláti, US. plóc.
Ru. poróti', Sln. práti, US. próć; Gr. peráo.
Ru. preť', Po. przeć; Gr. přečhó.
Ru. pórtit', SCR. přtíti, prátiti, prátti; Gr. prássó.
Ru. prüźit', SCR. přüziti, Sln. průžiti.
Ru. prüžit', SCR. přžiti, průžiti, Sln. přžiti, prážiti; Lith. sprógti, Latv. sprágt, Skt. spherjati.
Ru. prjasţ', SCR. prěsti, Sln. přěsti, Cz. přěisti, Slk. priäst'; Lith. sprěsti, Latv. spriěst.
Ru. prjátaţ', SCR. prětati.
Ru. pükat', půčit', SCR. půči, Sln. půkati, půčiti, Po. pěkać.
SCR. půžiti, Sln. půžiti; Arm. phukh, Gr. phūsáò.
Ru. rvat', SCR. řvati se, Sln. rváti, Cz. rváti, routi, Slk. rvat', rut'; Lith. räuti, Latv. raút.
Ru. rézat', SCR. rězati, Sln. rězati; Lith. rěžti, Gr. rěgnúmi.
Ru. vstrétiţ', SCR. srěsti, Sln. srěsti, srěčati.
Ru. růšit', SCR. řůšiti, Sln. růšiti; Lith. räuti, ON. růst.
Ru. ryt', SCR. řiti, Sln. riti, Cz. rýti, Slk. ryt'; Lith. räuti, Latv. raút, ON. rýja.
Ru. šest', sjádu, SCR. sjěsti, sjěděm, Sln. sěsti, sědem; Lith. sěsti, Latv. sěst, Skt. sídati.
SCR. sjětiti se, Sln. sětiti se.
Ru. sėtovaţ', SCR. sjětovati.
Ru. sceţ', SCR. sjěči, Sln. sěči, Cz. sici, Slk. siect'; Lat. secäre, Ir. ęsgid.
Ru. sėjat', SCR. sjįati, Sln. sejáti, Cz. siti, Slk. sят'; Lith. sėti, Latv. sēt, Lat. serere, OHG. ąsén.
Ru. slūšat', slŷşat', SCR. slūšati, slįšati, Sln. slūšati, slĩšati; Lith. kląusti, klausyti, Skt. śrósati.
Ru. smet', SCR. směti, Sln. směti, Cz. směti, Slk. smiet'; Lat. mōs, OHG. mōt.
Ru. spel', SCR. dō-spjeti, Sln. spěti, Cz. spěti, Slk. spiet'; Lith. spěti, Latv. spēt, Skt. spháyate, Lat. spēs, OHG. spuot.
Ru. stávit', SCR. stāviti, Sln. stāviti; Lith. stovēti, Latv. stāvēt, Gr. stůō.
Ru. stat', SCR. stāti, Sln. stāti, Cz. stāti se, Slk. stat'; Lith. stōti, Latv. stāt, Gr. histēmi, Lat. stāre, OHG. stān.
LARYNGEALIZED VOWELS IN SLAVIC ROOTS

Ru. *do-stié*, SCR. stūći.
Ru. *straští*, SCR. strašiti, Sln. strášiti; Latv. strūostīt.
Ru. *stríč*, SCR. striči, Sln. striči; OHG. strihhan.
Ru. *sýpát*, SCR. sīpati, Sln. sīpati; Lith. sūpoti, Latv. šūpāt.
SCR. šēzati, Sln. sēgati, Po. sięgač.
Ru. *tájat*, SCR. tājati, Sln. tájati; Gr. tēkō, Lat. tābēre.
Ru. *terēt*, SCR. tēti, Sln. trēti; Lith. tūrti, Gr. teirō, Lat. terere.
Ru. *terzāt*, torgāt*, SCR. tēzati, tēgati, Sln. tēzati, tēgati.
Ru. *tēšit*, SCR. tēšiti, Sln. tēšiti.
Ru. *tiskat*, SCR. tiskati, Sln. tiskati.
SCR. tlačiti, Sln. tlačiti, US. tloczyć; Lith. tīkti.
Ru. *tlet*, Sln. tleti, Cz. tliťi, Slk. tlet’; Lith. tīti, Lat. tollere.
SCR. trāpiti, Sln. trāpiti.
Ru. *trātit*, SCR. trātiti, Sln. trātiti; Lith. trōtinti.
SCR. trājati, Sln. trājati; Skt. trāyate.
Ru. *trébovat*, SCR. trēbovati, Sln. trēbiti; Gr. trēbō.
SCR. třilíti, Sln. třilíti; Lith. tūrti.
SCR. třesiti, Sln. třesiti se.
Ru. *tutit*, SCR. tūtiti, Sln. tūrati.
Ru. *tyt*, SCR. ĭti, Cz. týti, Slk. tyť; Lith. tūlas, tāukas.
Sln. těti, Cz. títí, Slk. tťat’; Lith. tīti, Gr. témmō.
Ru. ūditi*, SCR. ūditi; Skt. ūdhār, OHG. ātar.
SCR. ūmiti, Sln. ūmiti; Lith. aumuō.
Ru. *xájat*, SCR. hájati, Sln. hájati.
Ru. xulit*, SCR. hūliti, Sln. hūliti.
Ru. *čekát*, SCR. čekati, Sln. čákatì; Lat. cārus, OHG. huora.
Ru. *čájat*, SCR. čájati, Sln. čájati; Skt. cāyati, Gr. tēróō.
Ru. *čut*, SCR. čüti, Sln. čüti, Cz. čité, Slk. čüť; Skt. kaviḥ, Gr. koēō, Lat. cāvere.
Ru. *u-sibit*, SCR. šibati, Sln. šibati.
Ru. *šit*, SCR. šiti, Sln. šiti, Cz. šiti, Slk. šit’; Lith. siūti, Latv. šūt, Skt. sūyatì, Lat. suere.
SCR. jāditì, Sln. jāditi; Gr. oidēō.
Ru. *po-jášat*, SCR. pásati, Sln. pásati; Lith. jūosti, Latv. juōzt, 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.  bâńja, SCr. bâńja, Sln. bâńja, OCz. bâně, Slk. baňa ; Lat. balneum.
Ru.  bljúdo, SCr. bljúdo ; Goth. biudan.
SCr.  brâďva, Sln. brâďva ; OHG. barta.
Ru.  buk, bukva, SCr. bük, bukva, Sln. bûkev, bukva, Cz.Slk. buk ; Goth. bôka, ON. bôk.
SCr.  bûlja, Sln. bûla, Cz. boule, Slk. bul'a ; OHG. bàlla.
Ukr.  vátra, SCr. vâtra, Cz.Slk. vatrá ; Avestan âtarš.
Ru.  vertogrâd, SCr. vît, Sln. vît ; Goth. aûrtigards.
Ru.  volôx, SCr. vlâh, Sln. vlâh, Cz.Slk. vlach ; OHG. wal(a)h.
Ru.  vûźlec, SCr. vûžao, vûžle, Sln. vûžel, Cz. vûžel, vûžle, Slk. vûžla ; OHG. wiso.
Ru.  dûlja, SCr. gdûnja, Cz. kdoule, Slk. dula ; Lat. cydônea.
Ru.  kad', SCr. kâd, Sln. kâd, Cz. kâd', Slk. kâďa ; Gr. kâdion.
Ru.  kit, SCr. kît, Sln. kît ; Gr. kêtos.
Ru.  knjûga, SCr. knjûga, Sln. knjûga, OCz. knîha, Slk. knîha.
Ru.  liûxa, SCr. liûva, Sln. liûva, Cz.Slk. liûcha ; Goth. leihvan.
Ru.  luk, SCr. lûk, Sln. lûk, Cz. luk ; ON. laukr.
Ru.  mísa, Cz. mísa, Slk. mísa ; Lat. mînna.
Ru.  mîn, SCr. mîn, Sln. mîn, Cz. mîn, Slk. mîn ; OHG. muln.
Ru.  mjûta, SCr. mûtva, Sln. mûta, Cz. mûta, Slk. mûta, Po. miêta ; Lat. mentha.
Ru.  pênjaz', SCr. pîênêzi, Sln. pêniz, Cz. peníz, Slk. peniaz ; OHG. pfennig.
Ru.  plûg, SCr. plûg, Sln. plûg, SCz. plouh, Slk. pluh ; OHG. pfluog.
Ru.  pûška, SCr. pûška, Sln. pûška, Cz.Slk. puška ; OHG. buhsa.
Ru.  râka, SCr. râka, Sln. râka, râkev, Cz.Slk. râkev ; Goth. arka.
Ru.  rûta, SCr. rûta, Sln. rûta ; Lat. rûta.
Ru.  sâblja, SCr. sâblja, Sln. sâblja, Cz. šavle, Slk. šabl'a ; Hung. száblya.
Ru.  skîba, Cz. skîva, Slk. skyva ; OHG. sciba.
Ru.  skrin, SCr. skrînja, Sln. skrînja, Cz. skrîň, Slk. skrîňa ; OHG. scrini.
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Ru. stúpa, SCr. stūpa, Sln. stópa, Cz. stoupa, Slk. stupa, Po. stepa; OHG. stampfôn.
Ru. tyn, SCr. tin, Sln. tin, Cz. týn; ON. tín.
Ru. xiz, xíža, SCr. híža, Sln. his, hiša, Cz. chýše, Slk. chyža; OHG. hūs.
Ru. xleb, SCr. hljèb, Sln. hlèb, Cz. chlēb, Slk. chlieb; Goth. hlaifs.
Ru. xulá, SCr. hülə, Sln. hülə; Goth. hōlôn.
Ru. čerēšnja, SCr. trēšnja, Sln. črēšnja, Cz. třešně, US. třěšnja; Lat. cerasus.
Ru. šelóm, SCr. šljēm, Sln. šlēm; OHG. hēlm.
Ru. šūba, SCr. šūba, Sln. šūba, Cz.Slk. šuba.
Ru. ščir, SCr. štir, Sln. ščir, Cz. štir; OHG. stir.
Ru. jávor, SCr. jävōr, 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. žár, 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. požár, with secondary mobility. If the lengthened grade would originally have yielded an acute intonation, neither the long root vowel in Cz. požár, SCr. požár, 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, sélá, sékla, pribégle 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. pámět, präded, 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. sláva, for which we have Lith. šlóvë or šlovë, acc.sg. šlóvë or šlévë. There were derivatives with and without a laryngeal from this root in Balto-Slavic, e.g. Lith. klaūso < *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. slüşat', Scr. slüşati '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. važ, Scr. Sln. vāl; Lith. vore, Latv. vāle, Lat. volvere, ON. vār.
 Ru. vār, Scr. Sln. vār, Cz.Slk. var; Lith. varūs, Dutch warm.
 Ru. vedrō, Scr. vjedro, Sln. vēdro, Cz. vědro, Slk. vedro; ON. vātr, Ru. vodā.
 Ru. vēno, Cz. věno, Slk. veno.
 Ru. gal; Latv. gāle, OHG. kalo, Ru. golyj.
 Ru. gar', rasgār, ugār, Scr. gār, gāra; Skt. hāraḥ, Gr. théros, Ru. gorē'.
 Ru. grań', Scr. grāna, OCz. hrano, Cz.Slk. hrana, Po. grań; OHG. grana.
 Ru. dāvnō, Scr. dāvno, Sln. dāvnō, Cz. dāvný, Slk. dāvny; Skt. dāraḥ,
 Arm. tev, Lat. dūdum.
 Ukr. dirā, Sln. dēra, Cz. dīra, Slk. diera; Skt. dhrāti, Gr. dérō, Ru. drat'.
 Ru. žal', Scr. žāo, Sln. žāl, Cz. žal, Slk. žai; Lith. gēlā, OHG. guāla.
 Ru. žar, požār, žarā, Scr. žār, pōžār, žāra, Sln. žār, požār, Cz. žår,
 požār, Slk. žiar, žiara; Skt. hāraḥ, Gr. théros, Ru. gorē'.
 Ru. zar', zarjā, Sln. zārja, Cz. zār, zāre; Lith. žerēti, žarā, Ukr.
 zorjā, Scr. zōra, Sln. zōrja, Cz. zōre, Slk. zora.
 Ru. zveř', Scr. zvijer, Sln. zvěř, Cz. zvěř, Slk. zver; Lith. žvēris, Gr.
 thēr, Lat. ferus.
 Ru. izgāga, Sln. izgāga, OCz. zhāha, Slk. zhāha; Lith. dėgti, Skt.
 dāhati, Ru. žec'.
 Ru. kal, Scr. kāo, Sln. kāl, Cz.Slk. kal.
 Ru. kāra, Scr. Sln. kār, Cz.Slk. kāra; Latv. karināt, Lat. carināre,
 Ru. korī'.
 Ru. krasā, Scr. krās, krāsa, Sln. krās, Cz.Slk. krāsa; ON. hrōsa.
 Ru. len', Scr. lījen, Sln. lēn, OCz. lēň, Slk. lieň; Lith. lēnas, lēnas,
 Latv. lēns, Lat. lēnis.
 Scr. mār, nēmār, Sln. mār, nēmar; Skt. smārati, Lat. memor.
 Ru. mel, Sln. mēl, Cz. měl, Slk. mel'; Lith. smėlys, Ru. molōr'.
LENGTHENED VOWELS IN SLAVIC ROOTS

Ru. mjáso, SCR. měso, Sln. mesô, Cz. maso, Slk. mäso; Lith. mėsà, Latv. mēsa, Skt. māṃsām, māh, Arm. mis, Goth. mimz.

Ru. rec', SCR. rěječ, Sln. rěč, Cz. řeč, Slk. rec; Lith. rēkti, Latv. rēkt, Skt. racāyati, Goth. ragin.

Ru. sam, SCR. Sln. sām, Cz. Slk. sām; Skt. samāh, Gr. homós, Goth. sama.

Ru. sap, Sln. sāpa; Skt. śāpati, Ru. sopē'.

Ru. svāra, Sln. svār, Cz. Slk. svār; Lat. sermo, ON. svara.

Ru. slep, SCR. slījep, Sln. slēp, Cz. Slk. slep; Lith. slēpti, Latv. slēpt.

Ru. tvar', SCR. Sln. tvār, Cz. tvāř, tvār, Slk. tvār, tvar; Lith. tvarā, Ru. tvarī'.

Ru. travā, SCR. Sln. trāva, Cz. Slk. trāva; Gr. trōō, SCR. trōvati.

Ru. treqk, SCR. třjeskā, Sln. trēskā, Cz. třeska, Slk. třesk; Lith. treškēti, Cz. troska.

Ru. udār, SCR. ūdār, Sln. udār, Cz. Slk. ūder; Ru. dra'.

Ru. ūžas, SCR. ūžas, Sln. ūžas; Lith. gēsti, Gr. sbēnnümi, Ru. gasit'.

Ru. xvalā, SCR. Sln. hvāla, Cz. Slk. chvāla; ON. skvāla.

Ru. čary, Ukr. čarā, SCR. čār, Sln. čār, čāra, Cz. čár, čára, Slk. čary; Lith. kērēti, Skt. krnōti.

Ru. ščap, SCR. štāp, Sln. ščāp, Cz. štēp, Slk. štep; Latv. škēps, OHG. skaft, Ru. šēpā.

Ru. jaz, SCR. jāz, Sln. jēz, Cz. jez, Slk. jaz; Lith. ežē, Latv. eža, Arm. ezr.

Ru. jajčo, SCR. jāje, Sln. jāje; Gr. ōión, Lat. ōvum, OHG. ei.

B2. VERBS

SCR. bādati, Cz. bádati.

Ru. valit', Sln. valiti, Cz. valiti.

Ru. varit', SCR. váriti, Sln. variti, Cz. väriti.

Ru. gadāt', Sln. gadati, Cz. hádati; Lith. guōdas, Latv. guōds, ON. gāta.

Ru. gālit', SCR. gāliti.

SCR. gānjati, Sln. gānjati.

Ru. gasit', SCR. gāsiti, Sln. gasiti, Cz. hasiti; Lith. gēsti, Gr. sbēnnümi.

Ru. dāvit', SCR. Sln. dāviti, Cz. dāviti; ON. deyja.

Ru. drāpat', SCR. Sln. drāpati, Cz. drāpati; Gr. drēpō.

Ru. žalēt', SCR. žaliti, Sln. žaliti, Cz. želeti; Lith. gēlti, OHG. quēlan.

Ru. žārit', SCR. žāriti, Sln. žāriti.

Ru. zārit', Cz. zāřiti; Lith. žērēti.
LENGTHENED VOWELS IN SLAVIC ROOTS

Ru. karát', SCr.Sln. kárati, Cz. kárati.
Ru. krákát', Sln. krákati, Cz. krákati; Lith. kräkti, Latv. krâkt, Gr. krózō, Lat. crōcire.

SCr. lijėgati, Sln. légati, Cz. lehati.
Ru. letát', SCr. lijétati, Sln. létati, Cz. létati; Lith. lěkti, Latv. lēkt.

SCr. märīti, Sln. mārīti.

Sln. méniti, Cz. miniti; OHG. meinen.

Ru. palit', SCr.Sln. páliti, Cz. páliti; Lith. pelenāi.
Ru. parit', SCr. párīti, Cz. páriti; Goth. faran.
Ru. ráčit', SCr.Sln. ráčiti, Cz. ráčiti; Skt. racāyati, Goth. rahnjan.

Sln. rēkati, Cz. řikati.

Ru. sadit', SCr. sāditi, Sln. sāditi, Cz. sāditi; Lith. sodīnti, Goth. satjan.

Sln. sāpati, Cz. sāpati se.

Ru. svarit'sja, Sln. svariti, Cz. svářiti se.

Ru. skakát', SCr.Sln. skákati, Cz. skákati; ON. skaga.
Ru. tákát', SCr. tákati, Sln. tákati; Lith. tekēti.

Sln. tvārjati, Cz. tvářeti; Lith. tvérti.

Sln. tēkati, Cz. tēkati; Lith. tekēti.

Ru. travit', SCr. tráviti, Cz. tráviti; Gr. tróō.

Ru. xvalit', SCr.Sln. hváliti, Cz. chváliti; ON. skvala.
Ru. čapati', Sln. čapati, Cz. čapati; Lat. capere, Goth. haffjan.
Ru. šalit', Sln. šaliti se, Cz. šáliti.

B3. SIGMATIC AORIST

OChSl. basb, bljusb, vēsb, vlēxb, vřēsb, grēsb, ēsā, jaxb, žaxb, lēxb, mesb, nēsb, rēxb, sēxb, tēxb, třesb, cvisb, čisb.
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 Ilić-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. cūtis, W. cwd, but OHG. hūt;
2) Lat. defrūtum, OIr. bruth, but OHG. prūt;
3) Lat. fūturus, OIr. ro-both, but Skt. bhūtāḥ, Lith. būtas;
4) Lat. sūcūla, W. hwec, but Skt. sūkarāḥ;
5) Lat. pūter, Ir. othar, othrach (root pū-);
6) Lat. unā (< *ōlenā), Ir. uile, Goth. aleina, but Gr. őlēnē, őlēn, Arm. un (u < IE ő);
7) Lat. vir, Ir. fer, Goth. wair; but Skt. virāḥ, Lith. vyras;
8) Lat. serēscō, Ir. serb, OHG. serawēn, but Skt. kṣārāḥ, Gr. kṣērōs;
9) Osc. bivus (acc.pl.), W. byw, Goth. *qūsus, but Skt. jivāḥ, Lith. gývas;
10) Lat. *tūmus (in tūmēre), W. twf, Ge.(dial.) dūm, but Avestan tūma-, OChSl. tyti;
11) OIr. del, Sw.(dial.) del (masc.), but Latv. dēls (gen. dēla);
12) Ir. lōn, Goth. lun (the brevity of the u is established on the basis of OE. ālynnan), but Skt. lānāḥ;
13) Ir. *len (in lenomnaib ‘lituris’), Ge.(dial.) len, Sw. len, but Skt. līnāḥ;
14) Celt. *nōvis (in Ir. nóine, núna, W. newyn, Bret. naoun), Goth. nāwis, but Latv. nāvis, Lith. nōvis, 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 ź and ž 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. fûnum, grânum, Ir. grân, lán, SCr. dîm, zèno, pûn, Skt. dhûmâh, jîrnâh, pûrnâh. 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. sûs, sùcîla, pûrus, pûtus, cûrus, Olr. 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. ëtus, ëtum, pùtâre, fûtâre, fûtûrus, Olr. ro-both, bith, W. ffrwst, ffraeth, but Lat. sûtûs, sùtûm, rûta, strûtûs, strûtûm, Olr. ro-ðîth, brâth, W. prîd, blawt. These classes must be old because the same distribution is found in Baltic and Slavic, cf. Latv. lièlt/lît, plûut, ëút, dzûit, sprûst, sprûgît, sût, bûit, mûit, Ru. lîlà, bûlî, žîlà, šîla, rûla, prostûrla, bûla, krûla, molôla. 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-
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. āṛṇā, bhrātā, as opposed to pūrnāh, mātā. 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 < *sjiūtōs, cf. Lat. māter, sūtus, Skt. mātā, sūtāḥ. 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. brāt, 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. pilnas, Latv. pilns, Scr. pūn, Ir. lán, Skt. pūrnāḥ.

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. trāg, 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. plōnas, Latv. plāns, 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. *źrno* 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. *mātā*. In this very word Greek has preserved a stem-stressed nominative *mētēr*, Dor. *mātēr*, 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. plânum, and the mobility in Lith. plônus is secondary, while Latv. plâns 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. sünûs, SCr. sîn (cf. Ebeling 1967:582). Or the laryngeal followed the second component of a diphthong, as in Latv. tiêvs, Gr. tanaôs. 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. jirâh, cf. Lat. vîrêre.

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. lēju, Hitt. pahlur, perhaps Gr. phûtôn,
bios. The case of Lat. vīr is slightly different. The retraction in Lith. vyras, Latv. vīrs, as compared with Skt. virāh, points to *viHrōs, 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. jīrāh, where the Balto-Slavic evidence points to a root *gItHi-, cf. Lat. vīrēre. 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 (< *gHivos, Gr. bios), byw (< *gHivos, Skt. jivāh), Lat. pūrus, pūtus, cārūs, 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. sūcūla, W. hwch, cf. Lat. sūs < *suH-. It is not necessary to assume the complicated mechanism which Illič-Svityč suggests in this connection (1962:71 f.). 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. virāh. It follows from this example that the shortening was posterior to the loss of the laryngeals, cf. also Goth. qius, sumus, Skt. jivāh, sūnūḥ. Besides, Dybo adduces 17 items with a long vowel before an intervocalic resonant corresponding to barytona in other IE languages, e.g. ON. sūrr, OHG. sūr, Latv. sūrs, Scr. sūr. In oxytona the long vowel was preserved before an obstruent, e.g. OHG. fluot, Gr. πλότος.

Dybo also draws attention to traces of barytones 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. Ilič-Svityč 1962:68 f.). It would seem more appropriate to assume a generalization of barytones in the old perfect, cf. the recessive stress in Ru. mogu, 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 vorausgehende betonte kurze Silbe gedehnt, dagegen eine unmittelbar vorausgehende betonte lange Silbe mit gestossenem 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. kēr, méthu go back to IE *kērede, *mēdeye (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. ástosí. 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 vāk ‘speech’ next to vácaḥ ‘word’ led to the creation of a collective āsvāṁ ‘herd of horses’ next to āśvah ‘horse’.

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

(c) The final syllable of noun stems in the nom.sg. and loc.sg. forms, e.g. sākhā, agnā. In the nominative Wackernagel assumes lengthening of the vowel before r in IE *pāters with subsequent spread to other resonant stems, and in the locative he posits an original ending *-e-i, *-e-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 pītā and sākhā, the hypothesis of compensatory lengthening does not explain the short vowel in participles like adān < *edōnts.

Wackernagel’s theory does not account for the alleged lengthened grade in such instances as Gr. ēlēnē, SCR. pēmēt. 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. duōs, SCR. dā, cf. especially Latv. sāls, guovs. These instances show that the laryngeal was lost after a long vowel in monosyllables. The assumption
of late metatony in Lith. *duōs* would leave the other forms unexplained. Moreover, it is difficult to account for the difference between Lith. *lis* and *raśys* 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 *duōs*, which is required as a model for the one in *raśys*, cannot be identical with the one in *tē*, 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. *duosių*, SCR. *dăh* 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. *gāvā, gāve, gāvi* suggests that this noun belongs to the proterodynamic paradigm (cf. Kuiper 1942:32). The nominative *gāuh* is monosyllabic in the Veda, contrary to what one would expect on the basis of the reconstruction nom.sg. *gūHUS*. The simplest solution is to assume that the laryngeal was lost in the nominative after the introduction of lengthened grade, resulting in a form *guōu* or *gaus*. If this is correct, Skt. *gāuh* is identical to Latv. *gūovs*. It cannot be decided whether Greek shared the loss of *H* after a long vowel.
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RUSSIAN

begat bežar' to run 3 2, bog god 2 3 3 6, bolee more 4 3, bosoj barefooted 1 4 4 2, bras' to take 1 4, brat' to be 1 3 1 4 1 6 3 4, vesty to convey 1 4, vesty to lead 3 2, vit' to twist 1 3, voda water 1 6 3 4, volk wolf 3 4, vol'ica vol'ica she-wolf 3 3, volja will 2 4, voron raven 3 2, vorota collar 3 2, vorotat' to turn 3 2, vosen' eight 2 4, gms' to rot 1 4, gnit' to rot 1 3, govorat' to speak 3 4, golovka little head 2 3, goloped ice-crusted ground 3 7, golyj naked 4 2, gorod town 4 3, gost' guest 2 3, griva mane 1 2, gryzt' to gnaw 3 2, darovat' to grant 3 7, dvoj yard 3 4, dets' children 2 3, doby' kind 4 2, dorogoj dear 4 3, duša soul 1 7, 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, zvati' to call 1 4, zoša gold 4 3, zub tooth 1 7 5 5, koža skin 2 4, kon' horse 1 4 2 3 6 3 6, kapat' to dig 4 2, korol' king 3 6, koster bonfire 3 6, lazi ležit' to climb 1 1, leč' to lie down 3 2, lit' to pour 1 3, lomut' to break 3 4, ljudi people 2 3, mel' chalk 3 2, molodoy young 4 3, moč' to be able 1 1 2 4 1 5 2 3 4 4, novyj new 2 4 5 4, nosit' to carry 1 1 1 7 2 2 2 2 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, pyl' to swim 1 3, povorot turn 3 2, požiloj elderly 1 4, pozolota gilding 4 3, postyd'ja' to be ashamed 4 2, prihegnet' to have recourse 3 2, privest' to bring 3 4, prodat' to sell 1 6 3 4, prjast' to spin 3 2, pyvati' to torture 4 2, reč' speech 3 2, rodi' 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, seeč' to flog 3 2, sli' to have a reputation 1 3, sobrat' to collect 1 5, straža guard 2 4, stric' to cut 3 2, sud'ja judge 3 7, tvor creatuure 3 2, tec' to flow 3 2, trava grass 2 3 2 4, ustalyj tired 1 4, ushit' to hit 3 2, xvalit' to praise 2 2 3 4

UKRAINIAN
doby' good 4 2, kapat' to dig 4 2, pytaty to ask 4 2

BULGARIAN
kopaya to dig 4 2, ptam 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, brađa furrow 3 5, čeljad household 3 5, čist clean 4 1, don day 2 3 3 6, dat' to give 2 3 3 2 5 2, dcol smoke 1 7 3 4, dovesti to bring 3 2, drag dear 4 3, duša soul 3 6 3 7, gas soot 3 2, glas voice 3 4, glava head 1 7 3 5, go naked 4 1, golovat' with a naked neck 3 2, golub pigeon 3 5, goru 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, jaban poplar 3 5, jastreb hawk 3 5, jesen this autumn 4 2, jesti to eat 3 2, jezik tongue 2 3 3 6, jutros this morning 4 2, kamen stone 3 5, klađa log 3 5, kleti to curse 3 2, koljeno knee 2 3, kon' horse 2 3 3 6, kapat' to dig 4 2, kosac mower 2 3, kost bone 2 3 3 6, kovati to forge 3 1, koža skin 2 4, krila' wing 3 6, krv blood 5 2, kupovati to buy 1 5, labud swan 3 5, ljakat
elbow 3 5  lesi to lie down 3 2, Ionmi to break 1 5 2 2, lopatā spade 2 3, ljetos this summer 4 2, molnā raspberry 3 5, myveč month 3 5, mlad young 4 3, mladost youth 3 6 4 3, moci to be able 2 4, nabāt to collect 1 5, na rod people 3 5, nebo sky 2 3 5 2, nesti to carry 3 3, nositi to carry 1 5 2 2 4 2 4 3 5 6 nov new 4 1, oblast region 3 5, opati to wash 1 4, otac father 2 3, ovcà sheep 2 3, palīt to burn 1 3, pās dog 2 3 6, pauk spider 3 5, pekar baker 3 5, penezi money 3 5, pseti to write 1 3 1 5, pštast to ask 4 2, pohrati to collect 1 4 1 5, polje field 2 3 5 2, powar return 3 2, prase sucking-pig 3 6, prati to wash 1 4, prelomiti to break 1 5, presti to spin 3 2, prozz window 2 3, rak crawfish 2 3, razdo division 3 4, ribar fisherman 3 5, ribnak pond 3 5, rječ word 3 2, robu to enslave 3 5, rodti 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, vestra sister 2 3, sin son 1 7, gečno blade 3 5, jesi to cut 3 2, jedisti to sit down 3 2, jesst to sit down 3 2, skovati to forge 1 3, srati angry 3 5, stv old 4 1, sto table 2 2, straža guard 2 4 3 7, strei to shear 3 2, suh dry 1 3 4 3, svetac saint 2 3, šbati to flog 3 2, tec to flow 3 2, rav matter 3 2, visok high 4 3, vlas hair 5 5, volja will 2 4, viacati to return 3 2, vranen ravens 3 2, vrat neck 3 2, vrati to return 3 2, zakleti to swear 3 2, zavra return 3 2, zimis this winter 4 2, zub tooth 3 4, svati to call 1 4, zvomiti to ring 1 7, žar heat 3 2, želed acorn 3 5, željeti to wish 2 3, žena woman 2 3 žentti to marry 1 3

SLOVENE  bog god 2 3 5 3 6, brada beard 3 5, brat brother 2 5, bratu 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, duva 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 5 5 5 5 5 5 5 5, gostiti to treat 1 7, gotoviti to prepare 2 4, grad castle 2 5, guba crease 5 2, hoditi to go 1, hvaliti to praise 1 5, ime name 3 6, jun young 4 1, kladu log 3 5, končati to end 1 5, konj horse 1 4 2 1 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, loce pot 2 3, mehek soft 4 1, meso meat 3 6, mlad young 4 1, mladost youth 3 6, moci to be able 2 4, mož man 2 3 3 5 5 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, oka eye 1 7, osnova base 1 7 2 4 3 4 3 5, ovcà 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, željeti to wish 1 7, žena woman 1 7 3 4 5 7

CZECH  barvit to amuse 2 5, brada chin 3 5, brazda furrow 3 5, buditi to wake 2 5, cíkev church 5 2, čeled tribe 3 5, delo work 2 5, hlačka cabbage-head 2 3, holub pigeon 3 5, hůře worse 4 3, jabolan apple-tree 3 5, jazyk tongue 2 3, jestřáb hawk 3 5, kladu log 3 5, krava cow 2 3 3 6 5 4, kůže skin 2 4, labur’ swan 3 5, loker elbow 3 5, meně less 4 3, měsíc 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 3, oblast region 3 5, palivo fuel 3 5, pavouk spider 3 5, pekar baker 3 5, penz coin 3 5, radio plough 3 5, robiti to do 3 5, role field 3 5, roučka little hand 2 3, ruka hand 3 6, rybar fisherman 3 5, rybník pond 3 5, řezati to cut 2 5, seděti to sit 3 2, vůle wall 2 4 3 7, žalud acorn 3 5

SLOVAK  brada chin 3 5, brazda furrow 3 5, kladu log 3 5, koža skin 2 4, loket elbow 3 5, moci to be able 2 4 2 5 3 7, nesti’ to carry 2 5, nositi’ to carry 2 4, robiti’ to do 3 5, vola will 2 4 3 7

UPPER SORBIAN  broda beard 3 5, brozda furrow 3 5, kloza prison 3 5, wrot turn 3 2, zawrot return 3 2
GLOSSARY

Polish  broda beard 3 5  bluza furrow 3 5  gardło throat 5 1  gęśka little head 2 3  jabłon apple-tree 3 5  jeść to eat 1 4  język tongue 2 3  kloda log 3 5  kopec to dig 4 2  moc to be able 2 4  mesic to carry 3 5  noseć to carry 2 4 3 5  pytac to ask 4 2  rączka little hand 2 3  ręka hand 3 5 3 6  stroż guard 2 4 3 7  trąba trumpet 3 5  wątroba liver 3 5  wilk wolf 5 1  wola will 2 4

Slovinian  bič Lauf 3 7  houb Bohne 3 7  bič Uher 3 7  buošči(k)a Reche 3 7  cascnot Enge 3 7  cenjau Schatten 3 7  daruvač schenken 3 7  doplata Zuzahlung 3 7  daoxtoud Einkommen 3 7  duonjesc hintragen 3 7  dvor Hof 3 7  fxoud Engang 3 7  gholoul Glatteis 3 7  hlup Mann 3 7  xoud Gang 3 7  jezoro See 3 7  karčmov karčmörka Gastwirt(m) 3 7  kobila junge Stute 3 7  koloudzer Stellmacher 3 7  komorka Kammerchen 3 7  komura Kammer 3 7  kuobola Stote 3 7  kuolano Knie 3 7  kuopito Huf 3 7  kuvorol Schmed 3 7  kuvorolka Frau des Schmeds 3 7  lösze weiblicher Fuchs 3 7  mjil lieb 3 7  mrtzka Hacke 3 7  nápišac aufschreiben 3 7  nagovuča kleiner Strumpf 3 7  novč Messer 3 7 输出 Strumpf 3 7  píšac schreiben 3 7  prúnsesc bringen 3 7  puomac helfen 3 7  raba Fisch 5 7  ręka Hand 3 7  sárot(k)à Waize 3 7  vyguo Joch 3 7  youl Ochse 3 7  výtroba Leber 3 7  začen anfängen 3 7  záhava Unterhaltung 3 7  žhjer Zu-
sammentreffen 3 7

Old Church Slavic  buati to collect 5 2  vesti to lead 3 2  vlkös wolf 5 2 5 3 5 4 5 5 5 6 5 7  vědět to know 5 2  datu to give 3 4  dvora court yard 5 3  žena woman 3 4  zemlja earth 3 4  znati to know 3 4  igo yoke 3 4 5 2 5 3 5 4 5 5 5 6 5 7  konj horse 1 4 3 4  kosvu bone 5 2 5 4 5 5 6 5 7  lyati to pour 1 3  léto year 5 1  matu mother 1 4 3 4  nesti to carry 1 4  nořts night 5 3  poš wide 5 2 5 4 5 7  ręka hand 5 2 5 3 5 4 5 5 6 5 7  sękry mother-in-law 5 3 5 4 5 6  slovo word 3 5  sym son 5 2 5 3 5 4 5 5 6 5 7  sěsti to sit down 5 3  yasti to eat 3 2

Lithuanian  akiš eye 5 2 5 5  akmuo stone 1 4 2 3 2 3 4 3 5 5 2 5 3 5 4 5 5 6 5 7  veščiul to know 5 2  datu to give 3 4  dvora courtyard 5 3  žena woman 3 4  žemlja earth 3 4  znati to know 3 4  davo yoke 3 4 5 2 5 3 5 4 5 5 6 5 7  konju horse 1 4 3 4  kosvu bone 5 2 5 4 5 5 6 5 7  lyati to pour 1 3  léto year 5 1  matu mother 1 4 3 4  nesti to carry 1 4  nořts night 5 3  poš wide 5 2 5 4 5 7  ręka hand 5 2 5 3 5 4 5 5 6 5 7  sękry mother-in-law 5 3 5 4 5 6  slovo word 3 5  sym son 5 2 5 3 5 4 5 5 6 5 7  sěsti to sit down 5 3  yasti to eat 3 2
Glossary

Sanskrit  
avh  sheep  5 3,  asmā  stone  3 2,  asvā  mare  5 3,  asmākam  our  5 4,  gauh  ox  3 2,  
griva  neck  1 2 3 2,  janaṭi  to give birth  1 7,  jantuḥ  creature  1 7,  tanāḥ  body  5 2,  täṣṭi  
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,  pīṭhaḥ  drinking  l 3,  prā-  to fill  3 2,  bharan  bearing  3 2,  manāḥ  mind  3 2,  
mātā  mother  3 2,  māṣṭi  to wipe  3 2,  yugam  yoke  5 3,  yuṃakam  your  5 4,  rāt  king  3 2,  
vāstū  to be king  3 2,  vanati  to win  1 7,  vāk  speech  3 2,  wkah  wolf  5 2 5 3 5 4 5 5,  
svkak  dry  1 3,  sakkā  friend  3 2,  sumanāḥ  well-disposed  3 2,  sūmuh  son  5 3,  stauti  to praise  
3 2,  spat  spy  3 2

Avestan  
tāṣṭi  to carve  3 2,  stauti  to praise  3 2,  zasti  hand  5 3

Greek  
ākmōn  anvil  2 3 3 2 3 5,  alphē  gain  3 2  auros  dry  1 3,  hous  ox  3 2,  gonphos  
bolt  3 4,  hedos  seat  3 2,  edo  to eat  3 2,  eumenēs  well-disposed  3 2,  zugon  yoke  5 3,  
ekhō  echo  3 2,  thugatēr  daughter  1 3 1 6,  kaiōs  stem  1 3,  kleos  rumour  1 7,  lukos  wolf  
5 2,  menos  spirit  3 2,  mētēr  mother  3 2,  ozo  to smell  3 2,  opoś  voice  3 2,  poimēn  shepherd  
3 2,  pous  foot  3 2 5 4,  tānus  tall  1 3,  hudōr  water  3 2,  pherō  to carry  5 2,  phusis  
nature  1 3,  olenē  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,  sud  peace  3 2

Gothic  
blins  blind  5 2,  giba  gift  5 3,  wulfs  wolf  5 2 5 3

Hittite  
da-  to take  3 2,  (u)ar(h)-  to burn  3 2

Vietnamese  
ma  rice  seedling  3 3
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