

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. *alphē*, 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. *alphēs*, 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. *poimēn*, *édō*. As far as I know, the conditions under which the latter vowels are acute or circumflexed in Lithuanian have not been cleared up so far. While Greek circumflex seems to be a reliable indi-

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

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

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

Secondly, I assume that late IE **e*, **o* were phonetically long in monosyllabic word forms. The relationship is still maintained in nom.sg. Skt. *pāt*, Gr. (Dor.) *pós*, Lat. *pēs*, versus gen.sg. Skt. *padāh*, Gr. *podós*, 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. *tāṣti*, *rāṣti*, Avestan *tāšti* (cf. Watkins 1969:30). The short stem vowel was generalized in Gr. *óps*, Skt. *spāt*. In Slavic we find lengthened grade in Ru. *reč'*, *tvar'*, *gar'*, *žar*, *mel*, which probably go back to monosyllables. I think that

the phonetic lengthening in monosyllabic word forms is also the origin of the *vrddhi* in Skt. *stáuti*, *márṣti*, cf. the injunctive *staut*, impf. *astaut*, as opposed to full grade in the archaic medial form *stáve* and in Avestan *staoiti*, *staota*, with short diphthong (Watkins 1969:115). Moreover, I think that this is also the origin of the lengthened grade in the *s*-aorist. Indeed, the only monosyllabic verb forms in late Indo-European are found precisely in the injunctive and in the *s*-aorist, while nominal forms can only be monosyllabic in the nom.sg. Thus, I assume that the long stem vowel in Lat. *vēxi*, OChSl. *věsъ* stems from the 3rd sg. **uēghs*, **uēds*, which later disappeared, cf. OChSl. *iz-ě*, 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. *akmuō*, *duktē*, *rēkti*, SCr. *rìječ*, *tvâr*, *gâr*, *žâr*, aor. 1st sg. *klēh*, Posavian *zaklē* (Ivšić 1913:91) with neo-acute indicating earlier circumflex, cf. also Lith. *ẽjo*, *ẽmẽ*, 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. *bẽgti*, *ẽsti*, *sẽsti*, SCr. *jěsti*, *sějěsti*, *sějěci*. I think that the stem of these verbs goes back to **beHg-*, **eHd-*, **seHd-*, **seHk-*. It should be noted that positing an alternation between **e* and **eH* in the stem is no more extraordinary than the traditional postulation of an independent phonemic unit **ē* in order to cover precisely the same type of alternation. There is no explanation for the rise of a Balto-Slavic acute vowel from IE lengthening in these words. Thus, I assume that the only source of an old acute in Balto-Slavic is an IE laryngeal. Moreover, the alternation between **e* and **eH* is unmistakable in SCr. *gòveda*, cf. Gr. *boũs* < **g^uóHus*. The origin of Greek and Sanskrit long vowels can only be determined on the basis of the alternations which they display, not on the inherent properties of the vowels themselves. Consequently, if one admits that an alternation between **e* and **eH* in the stem is theoretically possible, the choice between this possibility and IE lengthened grade cannot be made on the basis of the Greek or Sanskrit evidence. It can only be made on the basis of material where the presence of a laryngeal in a word form can be established without reference to genetically related word forms, i.e. where the laryngeal produces an effect which is absent when the laryngeal is absent. Such an effect is produced by Hirt's law in Baltic and Slavic.

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

syllable containing a vowel which is immediately followed by a laryngeal, e.g. SCr. *grīva*, Skt. *grīvā* < **griHuáH*. Illič-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* < **golHuáH*. As I have pointed out before, the ictus was not retracted either if the laryngeal preceded the vowel, e.g. Ru. *pilá* < **pHiláH*. Consequently, the laryngeal was in this period a full-fledged phonemic unit, characterized by a position (cf. Kortlandt 1972:141 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*, *séla*, *sékla*, as opposed to *velá*, *leglá*, *teklá*, and in the infinitive SCr. *jěsti*, *sjěsti*, *sjěci*, as opposed to *dověsti*, *lěci*, *těci*. These verbs belong together with Ru. *grýzla*, *strígla*, *prjála*, *ušíbla*, SCr. *grǐsti*, *strǐci*, *prǐsti*, *šǐbati*, cf. the final accentuation in the present forms Ru. (3rd pl.) *edját*, *sekút*, *gryzút*, *strigút*, *prjadút*, *ušíbút*, SCr. (1st sg.) *sijěčēm*, *grízēm*, *strižēm*, *prédēm*. Similarly, we have Ru. *pribégla*, *bégat'*, but final stress in *begút*. The Baltic forms do not point unambiguously to a retraction of the ictus, cf. Lith. *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. *sėdėti*, SCr. *sjěditi*, cf. Lat. *sedēre* and OCz. *seděti* with a short stem vowel. The original stem **seHd-* is found in SCr. *sjědati*, Lat. *sēdāre*, and in Old Irish *síd* < **séHdos*, as opposed to Gr. *hédos*. Lengthening is found in SCr. *sáditi*, Lith. *sodinti*. Other examples where I suspect an IE alternation between **e* and **eH* are Lith. *úosti*, *úolektis*, cf. Gr. *ózō*, *ōlénē*.

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

no repercussions outside Balto-Slavic, but it is definitely the least attractive when the motivation of the sound change is taken into account. It should be borne in mind that the change must have occurred before the operation of Hirt's law, i.e. at a stage when the laryngeal was still a segmental phoneme. On the other hand, the last hypothesis does not necessarily conflict with the circumflex intonation before word-final resonant and in the *s*-aorist. Indeed, a laryngeal before word-final nasal must have been lost at an early stage of development in Balto-Slavic, cf. Lith. *rañka*, where the ending does not attract the ictus. Moreover, it is probable that a laryngeal was also lost in monosyllabic words after a full vowel, e.g. Latv. *gùovs*, which is identical with Skt. *gáuh*, and 3rd sg. Lith. *duõs*, 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. *voróna*, *vorócat'* as opposed to *vóron*, *vorotít'*, cf. SCr. *vrāna*, *vrācati* vs. *vrān*, *vrátiti*. In these stems I suspect original IE doublets, cf. Hittite *uar-* and *(u)arh-* (Shevelov 1964:47), and SCr. *závrat* next to *vrāt*, *pòvrāt*, Ru. *povorót* next to *vórot*, *závorot*, Upper Sorabian *wrót*, *zawrót*. In view of the dialectal discrepancies I find it hard to assume that the short vowel in SCr. *závrat*, *golòvrat* is due to Common Slavic *métatonie rude*, as Stang suggests (1957:167). On the contrary, I intend to show that in Slavic, in contradistinction to Baltic, there has never been any kind of real metatony.

3.3 BALTIC

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

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

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

The rise of phonemic pitch does not imply the rise of a tonal opposition. I propose to use the term "pitch" for any vowel feature which is neither timbre nor quantity, and to reserve the term "tone" for rising and falling tone movements. Though the rise of phonemic pitch goes back to the Common Baltic period, I assume that its development into tone took place independently in Latvian and Lithuanian. The original laryngeal pitch must have been similar to the so-called broken intonation in Latvian, the *stød* in Danish, or the pitch in Vietnamese *mā*. 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. *sniegas*. 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. *sėti*. 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*, **ō*, which were later diphthongized into *ie*, *uo*, e.g. *luôgs*, *pieci*, i.e. Lith. *lāngas*, *penkī*. In Lithuanian, however, old **ē*, **ō* were diphthongized into *ie*, *uo* at an early stage, so that **ē*, **ā* could become *ė*, *o* when **e*, **a* were lengthened under stress, e.g. *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*, *ēšena*, *taūkinas*, *añtinas* (Hjeltslev's law, cf. Hjeltslev 1932:10ff., 62ff., Pedersen 1933:10, Stang 1966:154). The retraction preceded de Saussure's law, as I have pointed out earlier.

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

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

Firstly, I find it hard to assume that the final stress in *anàs*, *katràs* has been maintained over a long period while the ictus was analogically retracted in all other nom.sg. forms, e.g. *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 **rankó*, **rankós*. Shortening of the acute vowel entailed the neutralization of intonation in final syllables, except in Žemaitian. Similarly, long vowels and diphthongs in final syllables of polysyllabic words were shortened in Latvian when most short vowels were syncopated.

3.4 MEILLET'S LAW

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

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

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

At this stage, nominal prefix formations were stressed either on the stem or on the prefix, e.g. **povóduN*, **národuN*. Formations of the former type received final stress in the oblique cases of the plural as a result of Illič-Svityč's law. Then the ictus was retracted to the prefix in the other case forms as a result of Pedersen's law. According to Pedersen's law, the ictus is retracted from medial syllables in mobile paradigms. As I have pointed out earlier, this law operated twice in Slavic, first in the earliest Balto-Slavic period, and later again after the dissolution of the Balto-Slavic unity. The latter retraction yielded the accentuation of Ru. *ná vodu*, *né byl*, *pródal*, *póvod*, ORu. *prívedu*, *góvorju*, as opposed to Ru. *na vodé*, *ne bylá*, *prodalá*, *na povodú*, *privedët*, *govorít*. The lateral mobility in nominal prefix formations shows that Pedersen's law was posterior to Illič-Svityč's law. Indeed, lateral mobility did not arise here when the latter law did not operate, cf. Čak. (Istria) *razdél*, gen.sg. *razdělà*, 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. **vòdā*, **nā vodā*, **žènā*, **trávā*, **lòmjā*, **nòsjā*, **xváljā*, **nesèno*, Ru. *vódu*, *ná vodu*, *ženú*, *travú*, *lomljú*, *nošú*, *xvaljú*, *nesenó*. I think that the rise of distinctive intonation can hardly be separated from Pedersen's law in Slavic because these developments are, in a sense, variants of the same phenomenon. The rise of distinctive intonation is certainly later

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

From the other developments which took place during this period I want to mention the narrowing of word-final **ē*, **ō* into **ī*, **ū*, e.g. OChSl. *mati*, *kamy*, cf. Lith. *môtė*, *akmuō*, the merger of **ā*, **aH* with **ō*, **oH*, e.g. OChSl. *dati*, acc.pl. *ženy*, cf. Lith. *dùoti*, *jūras*, and the Slavic *Umlaut* of back vowels after **j*, e.g. OChSl. *igo*, *konje* < **jūgo*, **kònjons*, but *zemljō*, *znajō* < **zèmjā*, **znòHjā* because the nasal vowel in the latter words was indifferent with respect to the distinction between front and back vowels. The relative chronology of these sound changes is clear: the merger of **ā* and **ō* cannot have preceded the narrowing of **ō* into **ū* because word-final **ā* was preserved in the gen.sg. ending of the *o*-stems, e.g. Ru. *vólka*, cf. Lith. *vĩlko*, 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. *zemljē* < **zèmjāHns*. 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 **dỳm̃* < **dùHmuN* just as we have **zôb̃* < **zòNbuN*. As a result of the loss of the laryngeals, the timbre oppositions /*a* ~ *o*, *ě* ~ *e*, *i* ~ *ь*, *y* ~ *ь*/ became phonemic. For typographical reasons I shall again use **ē* instead of **ě* in the sequel. The loss of final **N* in **sûnuN* probably preceded the loss of final **s* in **slôvos*, and the latter probably preceded the loss of final **H* in **žènaH* (cf. Ebeling 1963:34ff.). This chronological difference is irrelevant for the present exposition, however.

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

As a result of the rise of the new timbre distinctions in posttonic syllables, the quantitative oppositions in pretonic syllables were re-interpreted as timbre distinctions. When Dybo's law restored the quantitative oppositions in pretonic syllables, the old long vowels became distinctively short, e.g. Polish *reka*, SCr. *mālina* < **røkā*, **mālina*, cf. Polish *wątroba*, SCr. *národ* < **ȳtrobā*, **národb*. The length in SCr. *rūka* was introduced later after the accusative *rūku*, cf. the oblique plural form *rūkama*. The shortening of pretonic long vowels yielded an alternation between pretonic short and posttonic long vowels in mobile paradigms. Here too, Serbo-Croat generalized the long vowel, e.g. *gòlūb*, *žèlūd*, *lābūd*, *òblāst*, whereas Czech and Polish generalized the short vowel, cf. Czech *holub*, *žalud*, *labuť*, *oblast*. The long vowel was retained everywhere if it did not alternate with a short vowel, i.e. in paradigms with fixed stress such as SCr. *mjēsēc*, *pěņēzi*, *jāstrēb*, *pāūk*, Czech *měsic*, *peníz*, *jestřáb*, *pavouk*. The latter words had a laryngealized vowel in the first syllable. Cf. in this connection the difference between SCr. *pěkār*, *čeljād*, Cz. *pekař*, *čeledř*, and SCr. *ribār*, *ribnjāk*, Cz. *rybář*, *rybník*. The former type has original mobility, the latter type fixed stress. The old mobility is still evident in SCr. *sječivo*, plur. *sječiva*, Cz. *palivo*. The absence of end-stressed words with the same suffix as SCr. *ròďāj*, *čeljād*, 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. *bogat*, *sèdit*.

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 *nosze* 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 *gór*, and analogically *kónj*. This retraction yielded long rising nasal vowels in Polish *řák*, *niosq* < **řǫkǫ*, **nesǫtǫ* < **řǫkǫ̃*, **nesǫtǫ̃*. Other long vowels arose after Dybo's law as a result of the lengthening in monosyllables, e.g. Slovene *bôg*, *kôst*, *dân*, and dialectally under various conditions.

It is interesting to compare the rise of the new timbre distinctions chronologically with the metathesis of liquids. The metathesis was often accompanied by lengthening. If **or* yielded **rā*, the metathesis must have preceded the rise of the new timbre distinctions. On the other hand, the latter must have preceded the former if **or* yielded **rō*. Finally, no conclusions about the chronology can be drawn in the cases where **or* yielded **ro* without lengthening. It turns out that the relative chronology of these developments was different in different dialectal areas. In Czecho-Slovak and South Slavic the metathesis preceded the rise of the new timbre distinctions, e.g. Cz.Slk. *brázda*, *brada*, SCr.Sln. *brázda*, *bráda* < **bǫrzdāH*, **bordāH*. In Polish and Sorabian, however, the order was reversed, cf. Po.US. *brózda*, *broda*. Here the long *o* in the former word indicates that at least under rising accent the metathesis was posterior to the rise of the new timbre distinctions. These results are corroborated by the development of **kǫlHdaH*, which yielded **klāda* in Czecho-Slovak and South Slavic, and **klōda* 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 **klāda*, **klōda*. The short rising vowel was regularly lengthened in Cz.Sln. *klāda*, US. *klōda*, but not in SCr. *klāda*, Slk. *klada*, Po. *kloda*. The difference between US. *klōda* and *broda* on the one hand, and between Po. *kloda* and *brózda* on the other hand clearly shows that the laryngeal feature was still preserved after the rise of the new timbre distinctions.

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

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

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 **žēna*, **tráva*, long in **vòlā*, **òsnovā*, and indifferent with respect to length in **gorà*, **dušā*. Similarly, the neuter nom.pl. ending was short in **lěta*, **vína*, long in **sěmenā*, **těletā*, and indifferent in **poļā*, **imenā*. Other case endings were always long, e.g. the inst.pl. ending, where length has been preserved in Slovene *stābrī*, *rāki*, with neo-circumflex indicating earlier **rākȳ*, *možmī*, *nogāmī*. 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. **kòṇa*, **nìti*, dat.sg. **kòṇu*, **nìti*. Length was generalized in the unstressed nom.pl. ending in Slovene *lěta*, but not under the stress, cf. *drvā*. Conversely, the distinction between a short unstressed nasal vowel and a long nasal vowel under the stress was preserved in Slovene gen.sg. *līpe*, *gorē*, and in SCr. acc.pl. *glāve*, gen.sg. *glāvē*. 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 *trāba*, *nosę* from **trēba*, **nòšq*, later **trēbā*, **nošq̄*.

3.6 THE LOSS OF THE LARYNGEAL FEATURE

The opposition between long and short vowels in pretonic syllables was restored as a result of Dybo's law (cf. Ebeling 1967:590). According to this law, rising vowels in non-final syllables lost the ictus to the following syllable, e.g. **nositi*, **nošq̄*, **nosīšb*, **nosīlo*, **nošēno*, **pȳtāti*, **pȳtāšb*, **ženā*, **trāvā*, **voļā*, **osnovā*, **nāròdb*, **koṇā*, **gotòvo*.

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

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. **nôsišb*, **nôšenb*, **pýtašb*, **vôla*. The latter development may have been evoked by the general shortening of falling vowels, cf. Polish *rękę*, Czech *ruku*, *mladost*, SCr. *mlādōst*, gen.sg. *prāseta*, the second syllable in *nōšen*, *nōšeno*, Ru.dial. *bog*. The shortening did not affect monosyllables in Slovene and Serbo-Croat and the first syllable of disyllabic words in the latter language, e.g. SCr. *bôg*, *rûku*, *prāse*. 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. *rok̑*, *mlad̑st*. I assume that in the period before the shift length was neutralized under falling tone, as it was in *bôg*. 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 *im̑*, *mes̑*. The shortening of falling vowels was preceded by the South Slavic generalization of length in pretonic vowels which alternated with long vowels under the stress, e.g. SCr.Sln. *dúša*. This development, which was a logical consequence of the phonemicization of pretonic quantity as a result of Dybo's law, did not affect trisyllabic word forms such as SCr. *rûkama*. Short rising vowels were lengthened in different languages under different conditions, e.g. Cz. *kráva*, Sln. *lêto*, Ru.dial. *kôn'*.

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

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

The absolute chronology is indicated by the final accentuation in Ru. *koról'*, SCr. *krāl̑j*. The accentuation of this word does not imply that the borrowing preceded Dybo's law because the word may have been adapted to the existing accent pattern, cf. Lith. *kultūrà*, *literatūrà*. Other loans may be older than Dybo's law, e.g. Ru. *kostēr*. 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 *fxóud* and *zbjég* have fixed stress, whereas a few simplicia like *bjég* are mobile (1922:13). This is indeed an important indication that Dybo's law did operate in Slovincian. The difference between fixed stress in *fxóud* and analogically *xóud* on the one hand and mobility in *bóub*, *dvór*, *nóuž*, *vóul* etc. on the other can only be explained by assuming that the latter paradigms were stressed on the ending at an earlier stage and joined the mobile pattern after a retraction of the ictus.

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

As far as I can see, we have to assume three phonetic retractions of the ictus in Slovincian. The stress was first retracted from any final syllable to a preceding long vowel (cf. Kuryłowicz 1952:16). This can be viewed as an expansion of Stang's law. The stress was not retracted from medial syllables, cf. *zābàva*, *voutrùoba*, 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. *pjišq* and the imp.sg. *pjišə* 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*, *zàčnjica*, *pomožə-mjə*. Finally, the ictus was regularly retracted from final syllables of polysyllabic word forms. Final stress was restored in the inst.pl. forms of mobile paradigms, e.g. *rąkami*, *břegami*. The latter forms cannot be old because of two reasons. First, the stress was retracted in the *aH*-stems according to Hirt's law, cf.

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

There have been two more retractions of the stress in Slovincian. As a rule, the ictus was retracted in those forms of polysyllabic words with fixed stress on the syllable preceding the ending, where the mobile type stressed the initial syllable, e.g. *lāsàca*, *doplàta*, *casnùota*, acc.sg. *lāsàcq*, *dùoplatq*, *càsnotq*, and *dùoxoud*, gen.pl. *doxùodou*, neuter *kùolano*, *kùopəto*, nom-acc.pl. *kolàna*, *kopəta* like *ĵezoro*, *jezùora*. The same development took place in the verb, e.g. *nàpjišq*, *napjišəš*, imp. *nàpjišə*, like *dùonjosq*, *donĵieseš*, imp. *přənjəsə*. This retraction must have preceded the retraction from short vowels in final open syllables, which eliminated the motivation for a deviating accentuation in the acc.sg. of the *aH*-stems. On the other hand, it must have been posterior to the general retraction of the ictus from final syllables of polysyllabic word forms because the Slavic oxytone type and the type with fixed stress on a medial syllable had apparently coalesced, e.g. *bùogōč*, *kàrchmōř*, *kùovōl*, loc.sg. *bogáučŭ*, *karčmārŭ*, *kováuŭ*. 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. *mùotàka*, inst.sg. *motàkou*, gen.pl. *motàk*. This process was under way at the beginning of our century (cf. Kuryłowicz 1952:13f.). It had affected such words as *bùogōčka*, *kàrchmōrka*, *kùovōlka*, where the new accentuation was supported by the corresponding masculines. The new development reached derivations later than the words from which they were derived, cf. *komùora*, *komórka*, *kùobəla*, *kobilka*, *nùogəica*, *nogəička*, *sərota*, *sərotka*. For the details I refer to Kuryłowicz's article about Slovincian accentuation.

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

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

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