S. L. Nikolayev S. A. Starostin

A NORTH CAUCASIAN ETYMOLOGICAL DICTIONARY

Edited by S. A. Starostin

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The two volumes contain a systematic reconstruction of the phonology and vocabulary of Proto-North-Caucasian - the ancestor of numerous modern languages of the Northern Caucasus, as well as of some extinct languages of ancient Anatolia. Created by two leading Russian specialists in linguistic prehistory, the book will be valuable for all specialists in comparative linguistics and history of ancient Near East and Europe.

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S. A. Starostin

A NORTH CAUCASIAN ETYMOLOGICAL DICTIONARY: PREFACE

EDITOR'S FOREWORD

This dictionary has a long history. The idea of composing it was already ripe in 1979, and the basic cardfiles were composed in 1980-1983, during long winter months of our collaboration with S. L. Nikolayev in the village of Dubrovki, some 300 miles away from Moscow. Nikolayev, being unable to get a job in Moscow, was teaching in the village school at that time, and I was visiting him from time to time, spending several weeks far from civilization.

The first version was handwritten and was ready around 1982. The second version was typed on a Cyrillic typewriter by S. Nikolayev in Dubrovki in 1983, a year before he came back to Moscow from his Dubrovki "exile". After that — until 1988 — the dictionary continued its life as original cardfiles plus handwritten manuscript plus typewritten manuscript. There was absolutely no prospect of publishing the dictionary, because some chief figures in Soviet caucasology were violently against our North Caucasian reconstruction, and there was no way of avoiding them while publishing the book. Consequently, I turned basically to Chinese and Altaic studies, and S. Nikolayev to Slavic. But I managed, together with and due to the reputation of Prof. I. M. Diakonoff, to publish a book in München, called "Hurro-Urartian as an Eastern Caucasian Language". This was in 1986, and the book did not go unnoticed by reviewers.

In 1987 things started happening. George Soros succeeded in opening a division of his foundation in Moscow. This was the first non-government institution we had ever seen. Then an American armenologist, Prof. John Greppin, came to Moscow from Cleveland, Ohio, looked at our data and wrote a recommendation letter to the Soros Foundation. I received a grant — just enough for buying a personal computer to make a camera-ready copy of the dictionary. In November 1988 a group of scholars, including S. Nikolayev and me, flew off to the USA to participate in the first Ann Arbor conference on historical linguistics (this was the first time most of us were abroad), where I bought the PC. I am glad to use this occasion to express my gratitude to Prof. Greppin and to the Soros Foundation for their assistance.

Since 1988 I was busy developing the database format for the dictionary (I will not go into computer details here, but I am rather proud that the computer program that I had designed primarily for the North Caucasian etymological dictionary is now widely used for all kinds of lexicographic purposes), writing the introduction with phonetic comparative tables, translating everything into English and typing it into the computer. Meanwhile the reconstruction and transcription system was slightly changed, some etymologies modified, some abandoned and some added. All changes were discussed with S. L. Nikolayev and approved by him, but all the work of the past five years was done exclusively by me, and I bear all responsibility for the final text of the dictionary. Now, in December 1993, the work seems to be completed. There is still very much to be done, both in comparative phonology and in etymology of North Caucasian, and I am quite sure that "Addenda et corrigenda" will follow, but I certainly feel that the publication of what we know so far is necessary.

The dictionary in its present state embraces roots common to East Caucasian and West Caucasian languages, as well as the roots shared by at least two subgroups of East Caucasian languages. I did not include roots attested within a single branch of East Caucasian (e.g., in Lezghian languages) or West Caucasian roots having no obvious parallel in East Caucasian. Sometimes, however, reference to such roots can be found in the body of the dictionary; I hope to publish all available roots of this kind later, in a separate edition.

The dictionary contains some information concerning grammatical reconstruction, but it is not a comparative grammar, so most inflectional morphemes were not included. However, pronouns and numerals are abundantly represented.

It is important to say that external data — all evidence in favour of the so called Sino-Caucasian or Dene-Caucasian hypothesis — is left out of the book. All reconstructions were made purely on the basis of the internal Caucasian evidence. It is clear that the final proof of the Sino-Caucasian hypothesis depends substantially on the North Caucasian evidence presented in this dictionary, but it should be a subject of a special study.

I would like to thank numerous friends and colleagues without whom this work would never have been done: Vyach. Vs. Ivanov, I. M. Diakonoff, A. B. Dolgopolski, V. A. Dybo, V. V. Shevoroshkin, A. Y. Militarev, I. Catford, S. V. Kodzasov, M. Ruhlen, V. Chirikba, V. Ardzinba. My special thanks are due to Ramazan Radzhibov — a speaker of Tsezi and the provider of most Khvarshi data in the dictionary; to M. Y. Alekseyev and Y. G. Testelets who took pains to read the whole manuscript and helped with many important corrections and suggestions; to O. A. Mudrak who helped designing fonts for the laser printer; to my son, George Starostin, who translated the lengthy "Introduction" into English; to American friends, Douglas Smith and Laura Little, who had read through the manuscript and corrected style; and finally to Prof. Greppin and the Soros Foundation, without whose assistance the work would have never been published.

Sergei Starostin
1994

PREFACE

The present work is not the first comparative dictionary of North Caucasian languages (for East Caucasian cf. Leksika 1971, Khaidakov 1973; for part of West Caucasian see Kuipers 1975), but certainly the first etymological dictionary with systematic reconstructions. See the "Introduction" below for the outline of North Caucasian classification and comparative phonology.

The dictionary is an outprint from a computer database on North Caucasian languages, which actually is a system of interrelated database files on every subgroup of North Caucasian languages. This determines the structure of an average etymological entry which is the following:

1) Proto-North Caucasian reconstruction. If there are no Western Caucasian reflexes, we give only the Proto-East Caucasian reconstruction (it should be noted, that, in general, Proto-East Caucasian and ProtoNorth Caucasian differ only in a few minor details, see below);

2) The reconstructed meaning (the semantic reconstruction is of course quite tentative; we do not pretend that meanings can be exactly reconstructed in most cases).

3) Reflexes in daughter protolanguages, as well as in isolated Lak and Khinalug languages. If a root is attested only in one language of some subgroup (e.g., in Tindi, but in none of the other Andian languages), we still give a tentative reconstruction for that subgroup. It must be stressed that, for convenience, we grouped Avar together with Andian languages, although we do not present any Avaro-Andian reconstruction (only Proto-Andian). It should be kept in mind that the Avar forms do not go back directly to the Proto-Andian reconstructions. Therefore the tentative "Proto-Andian" forms, given in cases when the Avar form alone is attested, are doubly tentative (because no Andian forms are attested at all). Still we list them for uniformity's sake.

4) Within each subgroup we list reflexes in basic languages and dialects (see below). The reflexes are preceded by a list of enumerated meanings, and the respective numbers are repeated after particular reflexes (to avoid repetition).

The list of reflexes is followed by comments that include all additional information: semantic nuances, forms from other dialects, references and discussion. It is important to note that some existing intermediate reconstructions are also systematically given within the commentary: this concerns Proto-Gunzib-Bezhta, Proto-Tsezi-Khvarshi, Proto-Abkhaz-Tapant and Proto-Adyghe-Kabardian.

5) Every etymological entry is concluded by a general comment (with the same kind of information, but concerning the entry as a whole).

The corpus of the dictionary is followed by indices for every language — which, we are happy to say, were made with the help of a computer.

For Caucasian languages it is highly important to use the most reliable sources available, because in many early sources (such as all records of Dirr), as well as in some later ones (such as Khaidakov 1973 or Leksika 1971), phonetic transcription is

highly inaccurate and may be misleading. Throughout the dictionary we apply the following method of citation: for every language a single dialect and a single source is chosen as a standard. If relevant data from other dialects and/or sources are available, we give the reference explicitly (as an abbreviation). Below we list NC languages with a brief description of sources. Basic dialects are given in bold type.

1. Abkhaz

Abzhui dialect: The basic source, against which everything was tested, is now Shakryl-Kondzharia 1986-1987. Earlier the basic source was Bgazhba 1964a; Dzhanashia 1954 was also frequently used, less often — Uslar 1887.

Bzyb dialect: The basic source is Bgazhba 1964b; Marr 1926 was also used (although the quality of records is poorer here). In 1980 one of the authors (S. A. Starostin) made his own recordings of the Bzyb dialect. Unfortunately, it was a Bzyb sub-dialect that lost hissing-hushing sibilants (the special archaic feature of Bzyb), which is why we seldom use these field records in the present dictionary.

2. Abaza

Tapant dialect. The basic source is Tugov 1967. Also used was Gonov 1956, as well as field recordings made by one of the authors (S. A. Starostin) in 1981. The data of the Ashkhar dialect are not described systematically and were utilized only occasionally.

3. Ubykh.

The basic source is Vogt 1963.

4. Adyghe.

Temirgoi dialect (literary Adyghe). The basic source is Vodozhdokov 1960. Less frequently we also used Kerasheva-Khatanov 1960.

A regular source for Bzhedug data is Kuipers 1975. Kuipers' dictionary also contains some Shapsug data, although there does not exist a systematic recording of Shapsug. The Abadzekh dialect (rather close to Temirgoi) is also not described systematically.

5. Kabardian (Circassian)

Dialect of the **Great Kabarda** (literary Kabardian): the basic source was Kardanov 1957 (as well as Bichoyev-Kardanov 1955). A source which was also utilised is Nogma 1956 (actually recorded in 1844 by A. M. Schögren, after Sh. Nogma's death).

Other Kabardian dialects (Mozdok, Beslene, Kuban) are not described systematically, but according to existing records they are quite close to literary Kabardian.

6. Batsbi

The basic source, against which all data were tested, is Kadagidze 1984. Other important sources are: Matsiyev 1932, Desheriyev 1953, Imnayshvili 1977, Schiefner 1856.

7. Chechen

Level-land dialect (literary Chechen): the basic source is Matsiyev 1961. Also useful in some cases is Karasayev-Matsiyev 1978; very valuable information is contained in Uslar 1888.

Data on all other Chechen dialects (Akka, Cheberlo, Melkhi, Itumkala, Galanchozh, Kista, Sharo, Khildikharo) were taken from Imnayshvili 1977.

8. Ingush

The primary source for Ingush is Dzhamalkhanov-Matsiyev-Ozdoyev 1962. Two other valuable sources are Matsiyev-Ozdoyev 1966 and Ozdoyev 1980.

9. Andi

Upper Andi (Andi proper). The basic source is now the vocabulary contained in Kibrik-Kodzasov 1988, 1990. We used also the data from Tsertsvadze 1965 (although there is no vocabulary there and one has to pick out Andi data from the text passim), as well as (with caution!) Dirr 1903. Extensive data on Andi, as well as on other Andian languages, are contained in Gudava 1964.

Data on other Andi dialects (Munib, Kvankhidatl) are occasionally found in Gudava 1964 and Tsertsvadze 1965, but are not described systematically.

10. Botlikh

The vocabulary of **Botlikh** proper is taken from Gudava 1962. The Miarsu dialect is not described systematically (occasional forms are taken from ibid. and Gudava 1964).

11. Godoberi

The vocabulary of **Godoberi** proper is taken from Saidova 1973. The Ziberkhala dialect is not described systematically (occasional forms are cited from Gudava 1964).

12. Karata

The basic source for **Karata** proper is Magomedbekova 1971. Occasional data from the Tokita dialect are cited from Gudava 1964.

13. Akhvakh

Northern Akhvakh: the primary source is Magomedbekova 1967. We also used the Akhvakh nominal recordings contained in Kibrik-Kodzasov 1990.

Vocabulary of other dialects of Akhvakh (Ratlub, Southern Akhvakh with the subdialects Tlanub and Tsegob) is rather systematically collected in Magomedbekova 1967; also valuable is, of course, Gudava 1964.

14. Bagvalal

Gemerso dialect: the basic source is Gudava 1971, as well as Gudava 1964. Both books contain some forms of other dialects: Kvanada, Tlondoda-Khushtada, Tlissi-Tlibisho.

15. Tindi

Tindi proper: the primary source is Kibrik-Kodzasov 1988, 1990 (we should perhaps mention that the data contained there were collected by the authors themselves during the MSU expedition of 1975).

The MSU expedition also collected some vocabulary of the Aknada dialect; some very sparse data on the Angida dialect are contained in Gudava 1964. However, there are no systematic recordings, and we rarely utilize this information in the dictionary.

16. Chamalal

Lower Gakvari dialect: the primary source is Kibrik-Kodzasov 1988, 1990, complemented by Bokarev 1949. The MSU expeditions also collected some vocabulary of the Upper Gakvari dialect (although it is still unpublished), as well as vocabulary of the more archaic Gigatl dialect. Some dialectal data (from Upper Gakvari, Gadyri, Gigatl) are also contained in Bokarev 1949 and Gudava 1964.

17. Avar

Khunzakh dialect (literary Avar): the basic source is Saidov 1967. Also used were Zhirkov 1936, Mikailov-Saidov 1951, Uslar 1889 (the latter source actually describes the Salatav subdialect of Khunzakh).

Of the numerous Southern Avar dialects only the Antsukh dialect was described more or less systematically. We cite its forms (from the Chadakolob subdialect) from Kibrik-Kodzasov 1988, 1990. All other Southern Avar dialectal forms (for the

Karakh, Andalal, Gid, Keleb, Untib, Shulani dialects) are taken from Mikailov 1959.

18. Tsezi

Kidero dialect: most Tsezi sources are recorded in Kidero. We do not note the source explicitly if the Tsezi form was taken from Bokarev 1959 or Imnayshvili 1963 (virtually identical idiolects were recorded); the mark Kid. is reserved for the forms cited from Kibrik-Kodzasov 1988, 1990, slightly differing from earlier records.

Forms from other dialects (Shaitl, Asakh, Shapikh, Sagada) are taken mainly from Imnayshvili 1963.

19. Ginukh

The main source is Lomtadze 1963; much information is also contained in Bokarev 1959.

20. Khvarshi

Khvarshi proper: until recently the basic source was Sharafuddinova-Levina 1961, as well as some scarce data in Bokarev 1959. However, due to Ramazan Nadzhipov, all forms were checked and many new forms collected in Khvarshi in summer 1992.

Other dialects (Inkhokvari, Kvantlada, Santlada) actually belong to Inkhokvari, which we regard as a distinct language, not a dialect of Khvarshi.

21. Inkhokvari

Inkhokvari proper: the main source is Kibrik-Kodzasov 1988, 1990 (just like the Tindi data, the nominal part of Inkhokvari records was taken down by the authors during the 1975 MSU expedition).

Occasional data from other dialects (Kvantlada, Santlada) are cited from Bokarev 1959.

22. Bezhta

Bezhta proper: the basic source is Madiyeva 1965; Bokarev 1959 was also used.

For the Khoshar-Khota and Tladal dialects the principal source is Kibrik-Kodzasov 1988, 1990.

23. Gunzib

Gunzib proper: the basic source is Bokarev 1961a. Kibrik-Kodzasov 1988, 1990 also contain records of the Gunzib dialect: forms taken from this source are marked

Gunz. (forms from Bokarev 1961a are left unmarked).

Occasionally we also cite unpublished expedition materials on the Nakhada dialect of Gunzib (very close to Gunzib proper).

24. Lak

Kumukh dialect (literary language): the main source is Khaidakov 1962. This dictionary is quite extensive and the forms are well recorded (except, unfortunately, labialisation which is poorly noted in most sources), so we used other sources on Kumukh (Murkelinski 1953, Uslar 1890) only occasionally.

We frequently use the MSU data (Kibrik-Kodzasov 1988, 1990) on the Khosrekh dialect (more or less regularly preserving labialisation). Forms from all other Lak dialects (Bartkhi, Vitskhi et al.) are taken from Khaidakov 1966.

25. Dargwa

Akushi dialect: all forms cited from Abdullayev 1950.

Systematically recorded are also data of the Urakhi dialect (called Khürkili by Uslar 1892), as well as data of the Chirag dialect (a subdialect of Amukh, recorded in Kibrik-Kodzasov 1988, 1990). We should note that in some of the entries the Urakhi data are sometimes adduced, when the Akushi data are not available. A notation like "Ak. abʔa (Ur.)" is equivalent to "Ur. abʔa". We were unfortunately not able to include the latest MSU recordings of the Megeb dialect.

Forms of all other dialects are basically cited from Musayev 1978.

26. Lezghi

Northern dialect (literary Lezghi). The main source is Talibov-Gadzhiyev 1966 (with occasional additions from Gadzhiyev 1951 and, very rarely, from Uslar 1876). Literary Lezghi is actually a mixture of all Northern dialects (Güne, Yarki and Kurakh); forms from these dialects, when attested, are taken from Meilanova 1964 and Gaidarov 1963.

Forms from the Khliut subdialect of the Akhty dialect are cited from Kibrik-Kodzasov 1988, 1990; other Akhty forms, as well as forms from other Southern dialects (Samur, Kuba) are taken from Meilanova 1964 and Gaidarov 1963.

27. Tabasaran

Southern dialect (literary Tabasaran). The most extensive source is Khanmagomedov 1957. We also use Kibrik-Kodzasov 1988, 1990, containing records of the Kandik subdialect of Southern Tabasaran (one of the authors, S. Starostin, took part in collecting them in 1974).

For the Northern dialect we possess systematic MSU recordings of the Dübek subdialect (Kibrik-Kodzasov 1988, 1990) and of the Khanag subdialect (Uslar 1979 — a manuscript published more than a hundred years after it was written). Data of other subdialects can be occasionally found in Magometov 1965.

28. Agul

Keren dialect (Richa subdialect): the basic source is Kibrik-Kodzasov 1988, 1990. The same source also contains systematically recorded data of the Koshan dialect (Burshag subdialect), as well as nominal recordings of the Gekkhun (Burkikhan) and Fite dialects. Verbal recordings, as well as recordings of Agul proper (Tpig subdialect) were also done by the MSU expeditions, but for some reason were left unpublished.

Other sources for Agul, that we have used less extensively, are: Dirr 1907 (rather poor quality of records), Shaumyan 1941 and Magometov 1970. We also used field records of the Kurag dialect that were kindly supplied by M. Y. Alekseyev.

29. Rutul

Mukhad dialect (Luchek subdialect): the basic source is Kibrik-Kodzasov 1988, 1990. We should note that one of the authors (S. Starostin) took part in collecting Luchek vocabulary during the expedition of 1974.

Data of the Mishlesh subdialect were kindly presented to us by M. Y. Alekseyev. The MSU expeditions collected also forms from other dialects (Shinaz, Ikhrek, Khnov) which we use in this dictionary although they are still unpublished. However, most data from dialects other than Luchek are taken from Ibragimov 1978 (it is worth noting that the latter source contains also some valuable Tsakhur recordings).

30. Tsakhur

Mikik dialect: the basic source is Kibrik-Kodzasov 1988, 1990. For some reason Mikik verbs were left unpublished in this edition, although they were collected by the MSU expedition of 1974; we cite them from our cardfiles.

Kibrik-Kodzasov 1988, 1990 present also a systematic description of the vocabulary of Tsakhur proper, as well as nouns from the Gelmets dialect.

The only other existing source of Tsakhur vocabulary is the highly unreliable work by Dirr (Dirr 1913), which we preferred not to utilize.

31. Kryz

Kryz proper: data taken from Kibrik-Kodzasov 1988, 1990 (the authors have themselves collected Kryz lexical data during the MSU expedition of 1977).

Occasionally cited are materials from the Alik dialect, collected by the same expedition, but not yet published. Other dialects (Dzhek and Khaputli) were not recorded systematically.

32. Budukh

All data contained in the dictionary were taken from Kibrik-Kodzasov 1988, 1990 and checked with Meilanova 1984.

33. Archi

At present the most authoritative and extensive source is Kibrik-Samedov 1977. A few words (for some reason left out of Kibrik-Samedov 1977) were taken from Mikailov 1967 and from Dirr 1908 (a highly unreliable source).

34. Udi

Nidzh dialect: the basic source is Gukasyan 1974. All data were checked with Dzheiranishvili 1971 and Kibrik-Kodzasov 1988, 1990 (we avoided using the highly unreliable recordings of Dirr 1904).

All forms from the Vartashen dialect are also cited from Gukasyan 1974.

35. Khinalug

At present the principal source is Kibrik-Kodzasov 1988, 1990 (containing more data and more accurately recorded than Kibrik-Kodzasov-Olovyannikova 1972).

All Hurro-Urartian data contained in the dictionary duplicate the materials in Diakonoff-Starostin 1986 (with some minor corrections).

Throughout the text of the dictionary we use names of researchers while citing forms from some non-basic sources. Following conventions are being observed:

(Bokarev) stands for Bokarev 1959 (for all Tsezian languages)
(Bokarev) stands for Bokarev 1949 (for Chamalal)
(Gudava) stands for Gudava 1964 (for all Andian languages)
(Desheriyev) stands for Desheriyev 1953 (for Batsbi)
(Ibragimov) stands for Ibragimov 1978 (for Rutul and Tsakhur)
(Imnayshvili) stands for Imnaishvili 1963 (for Tsezi)
or for Imnayshvili 1977 (for all Nakh languages)
(Isakov) stands for Isakov-Khalilov 1986 (for Tsezian)
(Khaidakov) stands for Khaidakov 1973 (for all EC languages)
(Leksika) stands for Leksika 1971 (for all EC languages)
(Lomtadze) stands for Lomtadze 1963 (for Ginukh)
(Madiyeva) stands for Madiyeva 1965 (for Bezhta)
(Magometov) stands for Magometov 1965 (for Tabasaran)
or for Magometov 1970 (for Agul)
(Marr) stands for Marr 1926 (for Abkhaz)
(Matsiyev) stands for Matsiyev 1932 (for Batsbi)
(Radzhibov) stands for Ramazan Radzhibov's records (for Tsezi and Khvarshi)
(Shaumyan) stands for Shaumyan 1941 (for Agul)
(Schiefner) stands for Schiefner 1856 (for Batsbi)
(Tsertsvadze) stands for Tsertsvadze 1965 (for Andi)

(Uslar) stands for Uslar 1876 (for Lezghi);
for Uslar 1887 (for Abkhaz);
for Uslar 1888 (for Chechen);
for Uslar 1889 (for Avar);
for Uslar 1892 (for Dargwa);
for Uslar 1979 (for Tabasaran).

Throughout the text of the dictionary we use a unified phonetic transcription, developed specially for Caucasian languages. It is basically the same transcription as in Kibrik, Kodzasov 1988, 1990, but with an important distinction: glottalized consonants are marked with a ˌ, not with an apostrophe (monosymbolic writing places groups glottalization together with basic laryngeal features, such as voice or voicelessness, and distinguishes it from complementary features, like tenseness or palatalization). What is listed below simultaneously represents the alphabetical order accepted in the dictionary.

NB: Computer data handling has its drawbacks. Within the whole text of the dictionary the end of the word is treated as a special symbol, being the last in the alphabet (thus, e.g., *q̇a* comes after *q̇at*, not before). When this flaw was discovered, it was already too late to reorder all the entries in the dictionary and in the indices. The reader should keep in mind this peculiarity.

ʔ — glottalized laryngeal (glottal) stop
ʔʷ — same, labialized
ʕ — voiced emphatic laryngeal fricative
ʕʷ — same, labialized (in Abkhaz — also palatalized)
ʡ — glottalized emphatic laryngeal stop
ʡʷ — same, labialized
a — back low unrounded vowel (short or irrelevant as to the length distinction)
ă — same, but short
ā — same, but long
ä — front low unrounded vowel (short or irrelevant as to the length distinction)
ӑ — same, but short
ӓ — same, but long
A — some back unrounded vowel (symbol used in reconstructions)
Ă — some back short unrounded vowel (symbol used in reconstructions)
Ā — some back long unrounded vowel (symbol used in reconstructions)
b — voiced labial stop
ƀ — same, palatalized
bʷ — same, labialized
ƀʷ — same, labialized and palatalized
b: — tense voiced labial stop
c — voiceless (aspirated) hissing affricate
cʷ — voiceless (aspirated) labialized hissing affricate
ć — voiceless (aspirated) hissing-hushing (= palatalized) affricate
ćʷ — voiceless (aspirated) palatalized labialized hissing affricate
ćᵛ — voiceless (aspirated) dentolabialized hissing-hushing affricate
c: — tense (unaspirated, but in Avaro-Andian languages — aspirated) hissing affricate
c:ʷ — tense (unaspirated, but in Avaro-Andian languages — aspirated)

labialized hissing affricate

ć: — tense (unaspirated) hissing-hushing (= palatalized) affricate
ć:^{w} — tense (unaspirated) palatalized labialized hissing affricate
C — some consonant (symbol used in reconstructions)
ç — lax glottalized hissing affricate
ç^{w} — lax glottalized labialized hissing affricate
ć — lax glottalized hissing-spirated) palatalized labialized hissing affricate
ć^{w} — lax glottalized palatalized labialized hissing affricate
ç^{v} — lax glottalized dentolabialized hissing-hushing affricate
ç: — tense glottalized hissing affricate
ç:^{w} — tense glottalized labialized hissing affricate
č — voiceless (aspirated) hushing affricate
č^{w} — voiceless (aspirated) labialized hushing affricate
ǰ — voiceless (aspirated) palatalized hushing affricate
ǰ^{w} — voiceless (aspirated) palatalized labialized hushing affricate
č^{v} — voiceless (aspirated) dentolabialized hushing affricate
č: — tense (unaspirated) hushing affricate
č:^{w} — tense (unaspirated) labialized hushing affricate
ǰ: — tense (unaspirated) palatalized hushing affricate
ǰ:^{w} — tense (unaspirated) palatalized labialized hushing affricate
č:^{v} — tense (unaspirated) dentolabialized hushing affricate
ǯ — lax glottalized hushing affricate
ǯ^{w} — lax glottalized labialized hushing affricate
ǰ — lax glottalized palatalized hushing affricate
ǰ^{w} — lax glottalized palatalized labialized hushing affricate
ǯ^{v} — lax glottalized dentolabialized hushing affricate
ǯ: — tense glottalized hushing affricate
ǯ:^{w} — tense glottalized labialized hushing affricate
d — voiced dental stop
ɗ — same, palatalized
d^{w} — same, labialized
ɗ^{w} — same, palatalized and labialized
d: — tense voiced dental stop
δ — voiced interdental fricative
e — front mid-low unrounded vowel (short or irrelevant as to the length distinction)
ĕ — same, but short
ē — same, but long
E — some front unrounded vowel (symbol used in reconstructions)
Ĕ — some front short unrounded vowel (symbol used in reconstructions)
Ē — some front long unrounded vowel (symbol used in reconstructions)
ə — mid mid-low unrounded vowel (short or irrelevant as to the length distinction)
ə̆ — same, but short

ə̄ — same, but long
f — voiceless labial fricative
f: — tense (voiceless) labial fricative
g — voiced velar stop
ǵ — same, palatalized
gʷ — same, labialized
ǵʷ — same, palatalized and labialized
g: — tense voiced velar stop (affricate)
G — voiced uvular stop (affricate)
Ǵ — same, palatalized
Gʷ — same, labialized
Ǵʷ — same, palatalized and labialized
G: — tense voiced velar stop (affricate)
ɣ — voiced velar fricative
ɣ́ — same, palatalized
ɣʷ — same, labialized
ɣ́ʷ — same, palatalized and labialized
h — voiceless laryngeal fricative
hʷ — same, labialized
H — some laryngeal (symbol used in reconstructions)
ħ — voiceless emphatic laryngeal fricative
ħʷ — same, labialized
ɦ — voiced laryngeal fricative
ɦʷ — same, labialized
i — front high unrounded vowel (short or irrelevant as to the length distinction)
ĭ — same, but short
ī — same, but long
i̯ — palatal glide
I — after any vowel or consonant signifies pharyngealization
ɨ — mid high unrounded vowel (short or irrelevant as to the length distinction)
ɨ̆ — same, but short
ɨ̄ — same, but long
j — palatal resonant
k — voiceless (aspirated) velar stop
ḱ — same, palatalized [in Tindi: palatal]
kʷ — same, labialized
ḱʷ — same, palatalized and labialized
k: — tense (unaspirated) velar stop [but in Avaro-Andian languages except Tindi — tense velar affricate]
ḱ: — same, palatalized [in Tindi — palatal]
k:ʷ — same, labialized
ḱ:ʷ — same, palatalized and labialized
k̓ — glottalized velar stop
ḱ̓ — same, palatalized [in Tindi — palatal]
k̓ʷ — same, labialized
ḱ̓ʷ — same, palatalized and labialized
k̓x — glottalized velar affricate (symbol used only in some intermediate reconstructions)

ḳ: — tense glottalized velar affricate
ḳ:ʷ — same, labialized
K — some back (velar or uvular) consonant (symbol used in reconstructions)
l — lateral resonant
Í — same, palatalized
ł — lateral resonant or glide (symbol used only in reconstructions)
ƛ — voiceless (aspirated) lateral affricate
ƛ́ — same, palatalized
ƛʷ — same, labialized
ƛ́ʷ — same, palatalized and labialized
ƛ: — tense (unaspirated) lateral affricate
ƛ́: — same, palatalized
ƛ:ʷ — same, labialized
ƛ́:ʷ — same, palatalized and labialized
ƛ̓ — lax glottalized lateral affricate
ƛ̓́ — same, palatalized
ƛ̓ʷ — same, labialized
ƛ̓́ʷ — same, palatalized and labialized
ƛ̓: — tense lateral affricate
ƛ̓́ — same, palatalized
ƛ̓ʷ — same, labialized
ƛ̓́ʷ — same, palatalized and labialized
Ł — voiced lateral affricate
Ł́ — same, palatalized
Łʷ — same, labialized
Ł́ʷ — same, palatalized and labialized
ʎ — voiceless lateral fricative
ʎ́ — same, palatalized
ʎʷ — same, labialized
ʎ́ʷ — same, palatalized and labialized
ʎ: — tense lateral fricative
ʎ́: — same, palatalized
ʎ:ʷ — same, labialized
ʎ́:ʷ — same, palatalized and labialized
L — voiced lateral fricative
Ĺ — same, palatalized
Lʷ — same, labialized
Ĺʷ — same, palatalized and labialized
m — labial nasal resonant
ḿ — same, palatalized
n — dental nasal resonant
ń — same, palatalized
ŋ — velar nasal resonant
N — some nasal resonant (symbol used in reconsstructions)
o — back mid-low rounded vowel (short or irrelevant as to the length distinction)
ŏ — same, but short

ō — same, but long
O — some back rounded vowel (symbol used in reconstructions)
Ŏ — some back short rounded vowel (symbol used in reconstructions)
Ō — some back long rounded vowel (symbol used in reconstructions)
ö — front mid-low rounded vowel (short or irrelevant as to the length distinction)
ŏ — same, but short
ō̄ — same, but long
p — voiceless (aspirated) labial stop
ṕ — same, palatalized
pʷ — same, labialized
ṕʷ — same, palatalized and labialized
p: — tense (unaspirated) labial stop
ṕ: — same, palatalized
p:ʷ — same, labialized
ṕ:ʷ — same, palatalized and labialized
ṗ — glottalized labial stop
ṕ — same, palatalized
ṗʷ — same, labialized
ṕʷ — same, palatalized and labialized
P — some labial consonant (symbol used in reconstructions)
q — voiceless (aspirated) uvular affricate
q́ — same, palatalized
qʷ — same, labialized
q́ʷ — same, palatalized and labialized
q: — tense (unaspirated) uvular stop [but in Avaro-Andian — tense uvular affricate; in some Lezghian languages (Rutul, Shakhdagh) it is functionally not tense, but voiced, because they lack other tense consonants — but actually pronounced as voiceless tense unaspirated]
q́: — same, palatalized
q:ʷ — same, labialized
q́:ʷ — same, labialized and palatalized
q̇ — lax glottalized uvular affricate
q̇́ — same, palatalized
q̇ʷ — same, labialized
q̇́ʷ — same, palatalized and labialized
r — dental vibrant
ŕ — same, palatalized
rʷ — same, labialized
ʁ — voiced uvular fricative
ʁ́ — same, palatalized
ʁʷ — same, labialized
ʁ́ʷ — same, labialized and palatalized
R — some resonant (symbol used in reconstructions; in ProtoTsezi-Khvarshi it denotes: "either *r or *l")
R̀ — voiced pharyngeal fricative
s — voiceless hissing fricative

sʷ — voiceless labialized hissing fricative
ś — voiceless hissing-hushing (= palatalized) fricative
śʷ — voiceless palatalized labialized hissing fricative
śᵛ — voiceless dentolabialized hissing-hushing fricative
s: — tense hissing fricative
s:ʷ — tense labialized hissing fricative
ś: — tense hissing-hushing (= palatalized) fricative
ś:ʷ — tense palatalized labialized hissing affricate
ṣ — glottalized hissing fricative
ṣ́ — glottalized hissing-hushing fricative
ṣʷ — glottalized hissing labialized fricative
ṣ́ᵛ — glottalized dentolabialized hissing-hushing fricative
š — voiceless hushing fricative
šʷ — voiceless labialized hushing fricative
s̋ — voiceless palatalized hushing fricative
s̋ʷ — voiceless palatalized labialized hushing fricative
šᵛ — voiceless dentolabialized hushing fricative
š: — tense hushing fricative
š:ʷ — tense labialized hushing fricative
s̋: — tense palatalized hushing fricative
s̋:ʷ — tense palatalized labialized hushing fricative
š:ᵛ — tense dentolabialized hushing fricative
t — voiceless (aspirated) dental stop
ť — same, palatalized
tʷ — same, labialized
ťʷ — same, labialized and palatalized
t: — tense (unaspirated) dental stop
ť: — same, palatalized
t:ʷ — same, labialized
ť:ʷ — same, labialized and palatalized
ṭ — glottalized dental stop
ṭ́ — same, palatalized
ṭʷ — same, labialized
ṭ́ʷ — same, palatalized and labialized
ϑ — voiceless interdental fricative
T — some dental consonant (symbol used in reconstructions)
u — back high rounded vowel (short or irrelevant as to the length distinction)
ŭ — same, but short
i — same, but long
ü — front high rounded vowel (short or irrelevant as to the length distinction)
ŭ̈ — same, but short
ṻ — same, but long
u̯ — labial glide
v — voiced labial fricative
V — some vowel (symbol used in reconstructions)
V̆ — some short vowel (symbol used in reconstructions)

V̄ — some long vowel (symbol used in reconstructions)
w — labial resonant
x — voiceless velar fricative
ẋ — same, palatalized
x^{w} — same, labialized
$ẋ^{w}$ — same, labialized and palatalized
x: — tense velar fricative
ẋ: — same, palatalized
$x:^{w}$ — same, labialized
$ẋ:^{w}$ — same, palatalized and labialized
χ — voiceless uvular fricative
χ́ — same, palatalized
$χ^{w}$ — same, labialized
$χ́^{w}$ — same, labialized and palatalized
χ: — tense uvular fricative
χ́: — same, palatalized
$χ:^{w}$ — same, labialized
$χ́:^{w}$ — same, palatalized and labialized
X̌ — voiceless pharyngeal fricative
z — voiced hissing fricative
z^{w} — voiced labialized hissing fricative
ź — voiced hissing-hushing (= palatalized) fricative
$ź^{w}$ — voiced palatalized labialized hissing fricative
$ź^{v}$ — voiced dentolabialized hissing-hushing fricative
ž — voiced hushing fricative
$ž^{w}$ — voiced labialized hushing fricative
ž̋ — voiced palatalized hushing fricative
$ž̋^{w}$ — voiced palatalized labialized hushing fricative
$ž^{v}$ — voiced dentolabialized hushing fricative
ʒ — voiced hissing affricate
$ʒ^{w}$ — voiced labialized hissing affricate
ʒ́ — voiced hissing-hushing (= palatalized) affricate
$ʒ́^{w}$ — voiced palatalized labialized hissing affricate
$ʒ^{v}$ — voiced dentolabialized hissing-hushing affricate
ǯ — voiced hushing affricate
$ǯ^{w}$ — voiced labialized hushing affricate
ǯ̋ — voiced palatalized hushing affricate
$ǯ̋^{w}$ — voiced palatalized labialized hushing affricate
$ǯ^{v}$ — voiced dentolabialized hushing affricate

In the dictionary we usually left superfluous features unmarked. E.g., in all East Caucasian languages hushing affricates are phonetically palatalized; since they are not opposed to non-palatalized affricates, we did not mark their palatalization. On the other hand, in West Caucasian languages the opposition in palatalization between affricates is usual, and one has to mark it carefully.

This principle is violated only once: in all East Caucasian languages we regularly mark tense affricates with a colon, even if they are not opposed to lax ones (this concerns, e.g., the affricate q̇: in most Andian languages). We do it in order to conserve a uniform transcription (otherwise we would have to write, e.g., Tind. *miq̇i* 'road' — although it is pronounced exactly like Akhv. *miq̇:i* and goes back to **miq̇:i*).

Some additional phonemic features are not reflected in the list of phonemes presented above:

1) nasalization of vowels (marked with ˜);

2) pharyngealization of vowels and consonants (marked with I). Usually it is rather difficult to decide (in any particular language that possesses this feature) whether it is a feature of consonants, vowels, or both (a prosodic feature), and the decision varies from language to language (see the discussion in Trubetzkoy 1931 and the comments on pp. 465-473).

3) In Proto-North Caucasian and Proto-East Caucasian we introduce a distinction, marked as _ (underlining) of the first affricate or fricative in the root. This is probably a phonational feature like tenseness, which can be reconstructed only if the root contains a fricative or an affricate (see below, pp. 90-91).

Dynamic accent is marked by the sign ´; tonal distinctions are left unmarked (they still await description).

Morphemic boundaries are usually marked by a hyphen (-); the place of insertion of the variable class markers is, however, marked by the symbol =.

In comparative phonetic tables variants are delimited by the symbol / if their distribution is known; by the symbol ~ if their distribution is not discovered. The latter symbol (after a bracket) also introduces possible alternative reconstructions in the text of the dictionary. The symbol ^{v} between phonemes is used when the choice between two variants is uncertain (because of insufficient evidence).

In phonetic tables the hyphen (-) denotes position: thus, "k-" means "k in initial position"; "-k-" — "k in medial position", "-k" — "k in final possition". If any two positions are combined, the hyphen is omitted: thus, the expression "k: in non-final, k in final position" can be noted as "k:-,-k:-,-k" or, shorter, as "k:, -k".

LIST OF ABBREVIATIONS

AA	Avaro-Andian
Abadz.	Abadzekh dialect of Kabardian
Abaz.	Abaza
Abkh.	Abkhaz
Abzh.	Abzhui dialect of Abkhaz
Ad.	Adyghe
Afg.	Afgani
Ag.	Agul
AK	Adyg (Adyg-Kabardian)
Ak.	Akushi dialect of Dargwa
Akht.	Akhty dialect of Lezghi
Akhv.	Akhvakh
Akk.	Akka dialect of Chechen
Akkad.	Akkadian
Akn.	Aknada (Aknada-Angida) dialect of Tindi
Al.	Alik dialect of Kryz
Alyut.	Alyutor
Am.	Amukh dialect of Dargwa
Ams.	Amsar dialect of Rutul
Anch.	Anchikh dialect of Karata
And.	Andi
Andal.	Andalal dialect of Avar
Ants.	Antsukh dialect of Avar
Arab.	Arabic
Arak.	Arakul dialect of Lak
Arch.	Archi
Archo.	Archo dialect of Karata
Arm.	Armenian
Ars.	Arsug dialect of Agul (subdialect of the Koshan dialect)
Asakh.	Asakh dialect of Tsezi
Ashkh.	Ashkhar dialect of Abaza
Asht.	Ashtikuli dialect of Dargwa
AT	Abkhaz-Tapant

Av.	Avar
Avest.	Avestan
Azer.	Azeri
Bacb.	Batsbi
Bagv.	Bagvalal
Balk.	Balkarian
Balkh.	Balkhar dialect of Lak
Bartkh.	Bartkhi dialect of Lak
Besl.	Beslene dialect of Kabardian
Bezht.	Bezhta
Botl.	Botlikh
Bud.	Budukh
Burk.	Burkikhan dialect of Agul
Bursh.	Burshag dialect of Agul
Bz.	Bzyb dialect of Abkhaz
Bzhed.	Bzhedug dialect of Adyghe
Chab.	Chabakori dialect of Karata
Chad.	Chadakolob dialect of Avar
Cham.	Chamalal
Chan.	Chan
Cheb.	Cheberlo dialect of Chechen
Chech.	Chechen
Chir.	Chirag dialect of Agul
Cush.	Cushitic
Dig.	Digor dialect of Ossetian
Düb.	Dübek dialect of Tabasaran
EC	East Caucasian
Engl.	English
Fij.	Fij dialect of Lezghi
Fit.	Fite dialect of Agul
Gad.	Gadyri dialect of Chamalal
Gag.	Gagatl dialect of Andi
Gal.	Galanchozh dialect of Chechen
Gapsh.	Gapshima dialect of Dargwa
GB	Gunzib-Bezhta
Gelm.	Gelmets dialect of Tsakhur
Georg.	Georgian
Germ.	Germanic
Gid.	Gid dialect of Avar
Gig.	Gigatl dialect of Chamalal
Gin.	Ginukh
God.	Godoberi
Got.	Gothic
Gr.	Greek
Gunz.	Gunzib
Gün.	Güne dialect of Lezghi

Hebr.	Hebrew
Hitt.	Hittite
HU	Hurro-Urartian
Hung.	Hungarian
Hurr.	Hurrian
IE	Indo-European
Ikhr.	Ikhrek dialect of Rutul
Ind.	Indian (Old Ind. — Old Indian)
Ing.	Ingush
Inkh.	Inkhokvari
Iran.	Iranian
It., Itumk.	Itumkala dialect of Chechen
Itsar.	Itsari dialect of Dargwa
K.	Kurag dialect of Agul (recorded by M.Y. Alekseev)
Kab.	Kabardian (Circassian)
Kad.	Kadar dialect of Dargwa
Kafir.	Kafiri
Kait.	Kaitag dialect of Dargwa
Kand.	Kandik dialect of Tabasaran
Kar.	Karata
Karakh.	Karakh dialect of Avar
Keg.	Keger dialect of Avar (subdialect of Andalal)
Kel.	Keleb dialect of Avar
Ker.	Kere dialect of Agul
Kh.	Khamaitlakh dialect of Tsezi
Khak.	Khakuchi dialect of Adyghe
Khan.	Khanag dialect of Tabasaran
Khant.	Khanty
Kharb.	Kharbuk dialect of Dargwa
Khild.	Khildikharo dialect of Chechen
Khin.	Khinalug
Khiv.	Khiv dialect of Tabasaran
Khl.	Khliut dialect of Lezghi
Khn.	Khnov dialect of Rutul
Khniukh.	Khniukh dialect of Rutul
Khosh.	Khoshar-Khota dialect of Bezhta
Khosr.	Khosrekh dialect of Lak
Khu.	Khushtada dialect of Bagvali
Khud.	Khudig dialect of Agul
Khup.	Khupri dialect of Tsezi
Khür.	Khürig dialect of Tabasaran
Khvarsh.	Khvarshi
Kich.	Kiche dialect of Rutul
Kid.	Kidero dialect of Tsezi
Kirgh.	Kirghiz
Kist.	Kista dialect of Chechen

Kosh.	Kosha dialect of Agul (= Bursh.)
Kryz.	Kryz
Kub.	Kubachi dialect of Dargwa
Kuba.	Kuba dialect of Lezghi
Kuban.	Kuban dialect of Kabardian
Kul.	Kuli (Vachi-Kuli) dialect of Lak
Kum.	Kumyk
Kumukh.	Kumukh dialect of Lak
Kur.	Kurakh dialect of Lezghi
Kuyad.	Kuyada dialect of Avar (subdialect of Andalal)
Kvan.	Kvanada (Kvanada-Gemerso) dialect of Bagvalal
Kvankh.	Kvankhidatl dialect of Andi
Kypch.	Kypchak
Lak.	Lak
Lat.	Latin
Lev.	Level-land dialect of Chechen
Lezg.	Lezghi
L.-Enkh.	Lower Enkhida dialect of Karata
L.-Gakv.	Lower Gakvari dialect of Chamalal
Lit.	Lithuanian
Luch.	Luchek dialect of Rutul
Mans.	Mansi
Mar.	Mari
Masht.	Mashtada dialect of Karata
Meg.	Megeb dialect of Dargwa
Megr.	Megrel
Mek.	Mekeg dialect of Dargwa
Melkh.	Melkha dialect of Chechen
Miar.	Miarsu dialect of Botlikh
Migr.	Migrakh dialect of Lezghi
Mik.	Mikik dialect of Tsakhur
Mishl.	Mishlesh dialect of Tsakhur
Mong.	Mongolian
Mord.	Mordva
Mozd.	Mozdok dialect of Kabardian
M.-Pers.	Middle Persian
MSU	Materials of the expeditions of the Moscow State University
Mug.	Mugi dialect of Dargwa
Muir.	Muiri dialect of Dargwa
Mukh.	Mukhad dialect of Rutul
Mukhakh.	Mukhakh dialect of Tsakhur
Mun.	Munib dialect of Andi
Mükhr.	Mükhrek dialect of Rutul
Mür.	Müregi dialect of Dargwa
Nakh.	Nakhada dialect of Gunzib

N.-Akhv.	Northern Akhvakh
NC	North Caucasian
Nidzh.	Nidzh dialect of Udi
Nüt.	Nütüg dialect of Lezghi
Obokh.	Obokh dialect of Avar (subdialect of Andalal)
Osset.	Ossetian
PAA	Proto-Avaro-Andian
PAK	Proto-Adyghe-Kabardian
PAT	Proto-Abkhaz-Tapant
PGB	Proto-Gunzib-Bezhta
PEC	Proto-East Caucasian
Pers.	Persian
Pharch.	Pharcho dialect of Chechen
PHU	Proto-Hurro-Urartian
PIE	Proto-Indo-European
PK	Proto-Kartvelian
PL	Proto-Lezghian
PNC	Proto-North Caucasian
Pol.	Polish
PT	Proto-Turkic
PTsKh	Proto-Tsez-Khvarshi
PWC	Proto-West Caucasian
Rach.	Rachabaldi dialect of Karata
Ratl.	Ratlub dialect of Akhvakh
Rats.	Ratsitl dialect of Karata
Rich.	Richa dialect of Agul
Rikv.	Rikvani dialect of Andi
Russ.	Russian
Rut.	Rutul
S.-Akhv.	Southern Akhvakh
Sag.	Sagada dialect of Tsezi
Samurz.	Samurzakan dialect of Abkhaz
Santl.	Santlada dialect of Inkhokvari
Scyth.	Scythian
Sem.	Semitic
Sh.	Shaitl dialect of Tsezi
Shangud.	Shangud dialect of Avar
Shaps.	Shapsug dialect of Adyghe
Shar.	Sharo dialect of Chechen
Shin.	Shinaz dialect of Rutul
Shugn.	Shugnan
Shul.	Shulani dialect of Avar
Sirg.	Sirgokala dialect of Dargwa
Slav.	Slavic
Sogd.	Sogdian
Sum.	Sumerian

Svan.	Svan
Tab.	Tabasaran
Tap.	Tapant dialect of Abaza
Tat.	Tatar
Tem.	Temirgoi dialect of Adyghe
Tind.	Tindi
Tlad.	Tladal dialect of Bezhta
Tlan.	Tlanub dialect of Akhvakh
Tlis.	Tlissi (Tlissi-Tlibisho) dialect of Bagvalal
Tlond.	Tlondoda (Tlondoda-Khushtada) dialect of Bagvalal
Tok.	Tokita dialect of Karata
Tokh.	Tokharian
Tp.	Tpig dialect of Agul
Tsakh.	Tsakhur
Tseg.	Tsegob dialect of Akhvakh
Tsez.	Tsezi (Dido)
Tsirkh.	Tsirkhe dialect of Agul
TsKh	Tsezi-Khvarshi
Tsud.	Tsudakhar dialect of Dargwa
Turk.	Turkish
Ub.	Ubykh
Ud.	Udi
Udm.	Udmurtian
U.-Gakv.	Upper Gakvari dialect of Chamalal
Ukr.	Ukranian
Ulz.	Ulzig dialect of Tabasaran
Unt.	Untib dialect of Avar
Ur.	Urakhi dialect of Dargwa
Urart.	Urartian
Vart.	Vartashen dialect of Udi (basic dial.)
Ved.	Vedeno dialect of Chechen
Veps.	Veps
Vikhl.	Vikhli dialect of Lak
Vitskh.	Vitskhi dialect of Lak
WC	West Caucasian
Yark.	Yarki dialect of Lezghi
Zak.	Zakatal dialect of Avar
Zan.	Zan
Zib.	Zibirkhali dialect of Godoberi
Zil.	Zilo dialect of Andi

Names of protolanguages are usually abbreviated as PWC, PEC, PL etc. However, in etymological headings we use "W.-Cauc." for PWC, "Nakh." for PN, "Av.-And." for PAA, "Tsez." for PTs, "Darg." for PD and "Lezg." for PL.

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INTRODUCTION

A description of the comparative phonology of the North Caucasian languages

The family of North Caucasian languages is a distinct white spot on the linguistic map of the Old World. Despite the presence of a number of quite valuable works (starting with those of N. S. Trubetskoy [Trubetskoy 1922, 1926, 1929, 1930, 1931], then — Y. A. Bokarev, [Bokarev 1961, 1981], T. Gudava [Gudava 1964, 1979], B. Gigineyshvili [Gigineyshvili 1977], A. Kuipers [Kuipers 1963, 1975] and others), we can certainly state that up to the present there is no common notion of the original phonologic structure of Proto-North Caucasian. This is the result of several factors (not the least of which is the extreme complexity of phonetic and phonological systems of the regarded languages), but the main reason seems to be the lack of any ancient written tradition of the North Caucasian languages. Until recently the matter was aggravated by insufficient description of phonetic, morphological and lexical systems of many North Caucasian languages, but now this gap may be considered virtually filled (thanks to the active work of researchers during the last twenty years, and mainly to the systematic field research of the Department of Structural and Applied Linguistics of the Moscow University under the guidance of A. Y. Kibrik and S. V. Kodzasov who kindly provided the authors of this work with the expedition materials concerning a number of little known languages (published later as [Kibrik-Kodzasov 1988, 1990]).

The absence of ancient languages — a natural resource for reconstruction — can be compensated for in two ways. The first method is to choose a number of modern languages as the basis for reconstructing the protolanguage of the whole family; the data from other languages are included in the already discovered rows of correspondences afterwards. This method is certainly accurate at the first stage of research, and is therefore used in the works of N. S. Trubetskoy, Y. A. Bokarev and B. Gigineyshvili. But more preferable — especially if the languages of the family are well studied — would be another method; namely, the reconstruction (as full and adequate as possible) of several intermediate protolanguages and, only afterwards, of the initial system. Here intermediate protolanguages stand for the missing old languages; besides, since in this case the data of all the languages are considered, the reconstructed state of the language will inevitably be more trustworthy than in the first case — assuming that one uses correct methods of reconstruction.

This work uses the following intermediate reconstructions:

1) Proto-West Caucasian (PWC). The proper West Caucasian reconstruction is based on the reconstruction of two intermediate protolanguages: Proto-Abkhaz-Tapant (PAT) and Proto-Adyghe-Kabardian (PAK), with due regard for the data of the third branch of the West Caucasian languages, Ubykh. The reconstruction of PWC that is used in this work was completed by S. A. Starostin on the basis of his own reconstruction of PAT (with account of available works, those of K. V. Lomtatidze [Lomtatidze 1944, 1964, 1976] in particular), and of A. Kuipers' reconstruction of PAK (see [Kuipers 1963]).

2) Proto-Nakh (PN). The reconstruction of the PN phonologic system has been done by S. L. Nikolaev, with account of the work of D. Imnayshvili [Imnayshvili 1977].

3) Proto-Andian (PA). While reconstructing the PA system we based our work completely upon the excellent reconstruction of Proto-Andian consonantism, completed by T. Gudava [Gudava 1964]. Single corrections and the reconstruction of PA vocalism were made by S. L. Nikolaev.

4) Proto-Tsezian (PTs). The reconstruction of the PTs phonologic system was completed by S. L. Nikolaev and was based on the reconstruction of two intermediate protolanguages: the Proto-Tsezian-Khvarshi (PTsKh) and the Proto-Gunzib-Bezhta (PGB), also done by S. L. Nikolaev. The author only partly used the correspondences of Y. A. Bokarev's classic work [Bokarev 1959], and his reconstruction seriously differs from the PTs reconstruction suggested in the posthumous edition of the work of T. Gudava [Gudava 1979].

5) Proto-Dargwa (PD). The initial reconstruction of the Proto-Dargwa system was done by M. Epshtein on the basis of field materials, collected and prepared by I. O. Olovyannikova during the Caucasian expeditions of the Department of Structural and Applied Linguistics of the Moscow University. This work uses this reconstruction (with some corrections by S. L. Nikolaev).

6) Proto-Lezghian (PL). The reconstruction of the Proto-Lezghian system has been completely done by S. A. Starostin. Its main issues and differences from the later published reconstruction of B. B. Talibov [Talibov 1980] are related below (see pp. 122-179); see also [Alekseyev 1985].

7) Proto-East Caucasian (PEC). The reconstruction of the PEC phonologic system has been accomplished jointly by the authors of this work on the basis of comparison of the above mentioned protolanguages and also of three modern languages — Lak, Avar and Khinalug — that are taxonomically outside the listed genetic units. Some aspects of the PEC reconstruction resemble or coincide with the results of the reconstructions of N. S. Trubetskoy, E. A. Bokarev and B. K. Gigineyshvili, but the number of differences surpasses the number of resemblances (not mentioning the fact that quite a lot of aspects, such as the reconstruction of vocalism or of the laryngeal system, are not regarded at all by the authors named above).

While comparing the reconstructed PEC and PWC systems it became clear that the second system can be almost completely deduced from the first (see below for some exceptions from this rule). Thus the finally obtained Proto-North Caucasian

(PNC) phonologic system virtually coincides with the PEC, at least on today's level of our knowledge. Therefore, for practical purposes, we shall operate below with the WC languages as if they were part of the East Caucasian family (though this is surely wrong from a taxonomic point of view). Already after the authors completed the PNC reconstruction, there appeared new evidence for the fact that the Hatti and the Hurro-Urartian languages, localised in ancient Asia Minor, are related to the North Caucasian language family (see the works [Ardzinba 1979, Ivanov 1985, Diakonoff-Starostin 1986]). However, we do not use their evidence in this work: because of its fragmentation they still do not offer much for the PNC reconstruction.

Of course, the detailed account of the reconstruction of all intermediate protolanguages mentioned above could not fit within the limits of one book (the manuscript of the PL reconstruction alone takes about 500 typewritten pages). Within the limits of this work we plan to give only the tables of phonetic correspondences with a minimum of necessary commentary.

1. Phonetic tables.

1.1. From PNC to the intermediate (proto)languages.

Below we will inspect the reflexes of the PNC phonemes in PEC (and further in PN, Avar, PA, PTs, Lak, PD, Khinalugh and PL) and in PWC. The data of Avar, Lak and Khinalugh are given in their modern shape (for Proto-Avar and Proto-Lak it would also be possible to give the forms, reconstructed on the basis of modern dialects, but the dialects of Avar and Lak respectively form very compact genetic unities, and such a reconstruction would not be very informative).

1.1.1. Consonantism

For PNC the following system of consonants is reconstructed:

	Voiceless occlusives	Voiced occlusives	Glottalized occlusives	Voiceless fricatives	Voiced fricatives	Resonants	Nasal resonants	Glides
Labials	p	b	ṗ	f		w	m	u̯
Dentals	t	d	ṭ			r	n	j
Hissing	c	ʒ	ç	s	z			
Hushing	č	ǯ	ç̌	š	ž			
Palatal (hissing-hushing)	ć	ʒ́	ḉ	ś	ź			
Lateral	ƛ	Ł	ƛ̣	λ		l, ł		
Velar	k	g	ķ	x				
Uvular	q	G	q̇	χ	ʁ			
Laryngeals			ʔ	h	ɦ			
Emphatic laryngeals			ʡ	ħ	ʕ			

Two more very rare voiced fricatives are reconstructed for PEC (lateral L and velar ɣ), as well as the supposedly interdental fricatives ϑ and ϑ:. These phonemes have no correspondences in PWC, and their existence in PNC is dubious. In fact, it is possible phonologically to treat *w, *r and *l as voiced fricatives, and *u̯, *j, *ɬ respectively — as resonants (thus avoiding the reconstruction of glides altogether).

The typical features of the PNC consonantism were:

a) the ability of all consonants except the labials and resonants to be combined with the following resonant w. We do not regard these combinations on the PNC level as labialized phonemes; this would lead to postulating too many (a typologically unlikely number) phonemes for PNC. However, since in some descendant languages the 'w' combinations develop specifically and, as a rule, are transformed into monophonemic sequences, it seems convenient to regard them in the tables together with simple phonemes.

b) the presence in affricate series (hushing, hissing, palatal, lateral, as well as velar and uvular) of the so-called "geminates", which will be marked below by underlining respective phonemes (c̲, č̲, ǧ̲, and so on). For these consonants on the PNC level the monophonemic treatment is also inconvenient (for the same reason as for the labialized ones); moreover, there are reasons to suppose that the opposition of "geminated" and "nongeminated" consonants initially had a prosodic nature (see below). The PNC geminates will also be placed in the tables together with simple phonemes, because they regularly give monophonemic reflexes in descendendant languages.

In the tables hyphens mark reflexes in different positions (C- in the beginning, -C- in the middle, -C in the end); the sign / divides motivatedly split reflexes (i. e. different reflexes of the same phoneme, whose appearance is caused by factors known and explained in the comments); the sign ~ divides unmotivatedly split reflexes (i. e. different reflexes of the same phoneme, whose appearance is caused by factors yet unknown).

1.1.2. Labial consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khi	PWC
*p	*p	*p	*p	p	*p	p	*p	*p	p	*p/p:
*b	*b	*b	*b	b	*b	b/p:	*b/p:	*b~p:	b~p:	*b/p:
*ṗ	*ṗ	*b-~p-, *-ṗ-~-b-	*b	b	*b-, -ṗ-	ṗ	*ṗ~b	*ṗ /-p:-	ṗ-,b	*b-,-ṗ-
*f	*f	*ħ~χ	*x^{w}~h	x~χ	*χ~h	h~χ	*x:~χ: ~$χ^{w}$	*$χ:^{w}$	*x^{w}	
*f̲	*f̲	*ħ~pχ	*š:	š:	*λ:~χ:	$x:^{w}$~χ:	*x	*$λ:^{w}$	px-	*f~x^{w}
*u̯	*v	*w	*w	w	*w	w	*w	*u̯	w~j	*w~j
*w	*w	*b	*b	b	*b	b-,w	*b	*w	w~∅	*w~∅
*m	*m	*m	*m	m	*m	m	*m	*m	m	*m

Notes.

In the labial series, as in all the others (except the laryngeals), we reconstruct a triple opposition "voiceless (lax)": "voiced (tense)" : "glottalized" in the subsystem of occlusives. In Lak, Dargwa and (judging by the available examples) Khinalugh the initial *b is represented by p: most often if there is no adjacent voiced or glottalized occlusive, and by b in other cases. The phoneme *b in PL is rather rare and represents *b only in expressive forms (in other cases *p:).

The postulation of labial fricatives f and f̲ for PNC and PEC causes much doubt for us, first of all because of rather unsystematic reflexes in descendant languages, where the unmotivated splitting of reflexes is often observed. However, the presence of some semantically quite trustworthy and widespread roots among the words with the regarded correspondences does not allow presently to consider these rows occasional and unessential. We may deal here with the result of phonologisation of some old positional distinctions in descendant languages, whose general principle is hard to determine because of the lack of material.

The opposition *u̯-*w is completely parallel to that of *j-*r (see below), though, unlike *j, the phoneme *u̯ is reconstructed only in pronominal and grammatical morphemes (for example, in the 2nd pers. sing. pronoun, see p. 1014-1015). It is, however, not quite clear in which row one should reconstruct *u̯ (a glide), and in which — *w (a resonant). We tentatively reconstruct *w for the more frequent phoneme (with w/b reflexes), and *u̯ — for the other row of correspondences (modern languages do not as a rule distinguish between /u̯/ and /w/).

In the above table we only list the reflexes of the resonants *w and *m in initial and medial positions without the combinations with other consonants; the behaviour of such combinations will be specially considered below (see pp. 62-72). But there is one more type of cases, namely the modification of initial *w, *m and *b under the influence of following syllable-final resonants *n, *m and *l. One may note that in nominal NC roots variations of initial m,w,n and b occur very frequently. These variations up to now were either not explained at all, or were explained by the interchange of "petrified" class markers. However, after serious examination, all of them can be reduced to a comparatively small number of rows of correspondences that agree well with the reconstruction of resonants in the medial consonant clusters (see below, pp. 62-72). The general system of correspondences looks like this:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khi	PWC
*w(..n)	*m-	*m~b-	m~b-	*m~b-	b-	*b-	*w-	w~m-	*m~∅-
*b(..n)	*b-	*m~b-	m-	*m-	m-	*m-	*m-	m-	*b-~m-
*w(.. M)	*b-	*b-	m-	*b-	b-	*b-	*w-	w-	*m-~∅-
*b(.. M)	*b-	*b-	m-	*b-	b-	*m-	*m-	m-	*b-~m-
*w(..l)	*b-	*m-	b-	*m~b-	b-	*m-	*w-	w-	*b-
*b(..l)	*b-	*m-	b-	*m~b-	b-	*m-	*m-	m-	*b-~m-
*m(..n)	*n-	*m~n-	m~n-	*m-	m-	*m-	*m-	m-	*b-~m-

It is also necessary to make some more particular remarks about the behaviour of labial consonants in separate languages:

1) Lak regularly drops initial syllables with nasal m- (and also with b- < *w-) and subsequent narrow vowels i, u (about the similar process in Lezghian see below, page 127).

2) PWC regularly splits the reflexes of PNC voiceless occlusives and affricates. The general rule of distribution is as follows: before short PNC vowels PWC preserves (with proper modifications) the initial opposition of laryngeal features (voicelessness, voice, glottalisation), but before long PNC vowels (on the reconstruction of long vowels see below, p. 72ff.) a special series of PWC tense (so-called "preruptive") consonants takes the place of initial voiced, voiceless and glottalized consonants.

This special feature of the PWC reflexation seems to be connected with the general process of shifting the quality and quantity vowel features onto the preceding consonants that occurred in PWC (and led to an extraordinary expansion of the consonant system and to a corresponding extraordinary reduction of the vowel system in PWC). This process is best seen in the subsystem of affricates; in the explosive (labial and dental) series only the intensification of consonants mentioned above happens regularly; the shift of vowel quality features to consonants is regularly seen only in PWC monoconsonantic roots.

3) Resonant consonants reconstructed for PNC can either be preserved or disappear in PWC, though the latter happens more often. The reasons for this process (that has not afflicted only the resonant *m, regularly preserved in PWC except in middle position in consonant combinations) are not quite clear yet. However, we think the suggestion of a secondary loss of resonants in PWC is more trustworthy than the alternative suggestion of a secondary appearance of different resonants (in the beginning and in the end of a root) in PEC. It is this circumstance (also considering the prevalence of roots with one obstruent and one or more resonant consonants in PNC; on the structure of the root see below) that has caused the prevalence of monoconsonantal roots in PWC. Among the consonants listed above, the process of the loss of resonants has also affected the resonant *w.

4) Besides the processes listed above, we must also mention the denasalisation *m->*b- that regularly happens in PWC before the following syllable-final liquid *r and *l.

1.1.3. Dental consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*t	*t	*t	*t	t	*t	t	*t	*t	t	*t/*t:
*d	*d	*d	*d	d	*d	t:~d	*d-,t:	*t:~*d	d~t:	*d/*t:
*ṭ	*ṭ	*ṭ	*ṭ	ṭ	*ṭ	ṭ	*ṭ	*ṭ	ṭ	*ṭ/*t:

Dental consonants in combination with w.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*tw	*tw	*t	*t(w)	t	*t(w)	t	*t	*t(w)	t	*t(w)
*dw	*dw	*t	*d(w)	d	*d	t:-,d	*t:-, *d~*d(w)	*t:(ʷ)	d	*t(w)/*t:(ʷ)
*ṭw	*ṭw	*ṭ	*ṭ(w)	ṭ	*ṭ(w)	ṭ	*ṭ	*ṭ(w)	ṭ	*ṭ(w)/*t:(ʷ)

Dental resonants and glides.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*j	*j	*j-,Ø	*ʔ-,j	ʔ-,Ø	*ʔ-,Ø	ʔ-,Ø	*ʔ-,Ø	*j	ʔ-,Ø	*j~Ø
*r	*r	*d-,r	*r	r	*r	*r	*d-,r	*j-,r	r/z	*r~Ø
*n	*n	*n	*n	n	*n	*n	*n	*n	n	*n~Ø

Comments.

1)The opposition of voiced and voiceless dentals is generally reliably reconstructed for PEC and PNC, though there are some untrivial moments in the development of voiced consonants in descendant languages (particularly the devoicing *dw > t in Nakh and in PWC).

In Lak d is generally met in intervocal position as a reflex of *dw as well as in expressive and reduplicated roots; in other cases we have a normal reflex *d > t:. We must also note that many modern dialects have further changed -d- to -r-, and the variation -d-/-r- is frequently met in literary Lak.

In PL the voiced reflex *d is also for the most part attested in expressive forms. On the development of *d in medial clusters see below.

2) Some words in EC languages reveal a peculiar variation of t-type and s-type reflexes. The following correspondences are established: a) PN *-t-, Av., PA *-t-, Lak. -s-, PD *-s-, PL *-t-; b) PN *-t-, PA *H-, s:, Av. -ʔ-, PT *s:-,-ṭ-, Lak. -t:-, PD *H-,s, PL *ʔ-, t:. In these series we may tentatively reconstruct interdental fricatives *ϑ and *ϑ̣. Their PNC antiquity is dubious (first of all, because of the lack of WC parallels); some cases are probably loanwords in PEC.

3) Concerning the behaviour of dentals (explosives and resonants) in PWC see comments 2 and 3 on page 43.

4) It is necessary to make a few general notes on the behaviour of labialized consonants in descendant languages. Generally labialization is better preserved by back consonants (see below); as for front ones, they often reveal a tendency to delabialize. Delabialization is most often caused by position (vocalic environment), but cases with unmotivated delabialization are not unusual either. In this work it is not possible to go over the details of the behaviour of labialized consonants in individual languages, and we use the designation C(w) to indicate that labialization is generally preserved, but can disappear, depending on the position within the word. We must also say that among the NC subgroups labialization has completely disappeared only in PN (though having left some traces in a specific development of originally labialized consonants.)

5) Initial resonants *j, *r and *n (just as the labials *w, *m, see above) modify their reflexes in different languages if following syllable-final resonants are present. The general system of correspondences in this case looks like this:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*j(..r)	*d-	*r-	r-	*r-	d-(~ʔ-)	*ʔ-	*j-	ʔ-	*∅-
*j(..n)	*j-	*ʔ-	ʔ-(ʕ-)	*ʔ-		*ʔ-	*j-	ʔ-	*j-~∅-
*j(..l)		*r-	r-	*ʔ-	l-	*l-	*j-	ʔ-	
*r(..n)	*d-	*r-	n-	*r-	n-	*n-	*j-	ʔ-	*r-
*j(.. m)	*j-	*ʔ-	ʔ-	*ʔ-~j-	m-~n-	*ʔ-	*j-	ʔ-	*j-~∅-
*r(.. m)	*d-	*r-	n-	*r-	n-	*d-	*j-	*∅-	
*n(.. m)	*m-	*n-	n-	*n-	n-	*n-	*n-	n-	*∅-

It must be stated that roots with resonant combinations *r(..r), *n(..l), *r(..l), *n(..n) are not attested; in roots with the combination *n(..r) the initial *n- behaves normally (i. e. it is always preserved as n-). Roots with initial dental resonants are more rare than roots with initial labial resonants (this explains the lack of some types of combinations and also some gaps in reflexes).

1.1.4. Hissing consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*c	*c	*c (*Ntt)	*c	c	*s:	c	*c	*s-,c	c	*s(~z)/*c:
*ʒ	*ʒ	*ʒ (*Ntt)	*z	z	*s	s:~c:, Rz	*c:	*c:~z	c:, Rz	*ʒ~z/*c:
*ç	*ç	*ç (*Nṭṭ)	*ç	ç	*ç	ç	*ç	*ç	ç,-z	*ç~z/*c:
*s	*s	*s	*s	s	*z(*z:)	s	*s	*s	s(-z?)	*s
*z	*z	*s	*d	d	*d	t:	*d	*z	z	*s

Hissing consonants in combination with -w-.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*cw	*cw	*č,Rš	*s	c	*z	c	*s:-, s~s:	*s:(^{w})-, s(^{w})	ps-~ pš-,c:	*š^{w}/c:^{w}
*ʒw	*ʒw	*d-,ǯ	*z	z	*s	z	*ʒ	*c:^{w}		*ʒ^{w}(~z^{w})
*çw	*çw	*ṭ-,č̣,Rš	*ç	ç	*ç	ç	*ç	*ç(^{w})	-z	*ç(^{w})~*z(^{w}) /*c:(^{w})
*sw	*sw	*š	*s(^{w})	s	*z	s(^{w})	*s:	*s:(^{w})	s	*š(^{w})~ž(^{w})

Hissing "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*c̱	*c̱	*c	*c:	c:	*s	s:~c:	*c:	*c,Rc:	c	*c(~z) /c:
*c̱w	*c̱w	(*st)	*s:(ʷ)	c:	*s:ᵛ*s	s:	*s	*s:		*ž^{w}
*ʒ̱	*ʒ̱	*ç (*Ntt)	*ç:	ç:	*c	ç	*z	*ç:	ç	*ç~z
*ʒ̱w	*ʒ̱w	*ṭ-,č̣	*ç:(ʷ)	ç:(ʷ)	*c(ʷ)	ç	*z	*ç:^{w}	ç	*ç(ʷ)
*ç̱	*ç̱	*ç (*Ntt)	*ç:	ç:	*c~ç	ç-~c:-, ç,Rz	*ç, Rc:	*ç,Rc:	ç	*ç~z
*ç̱w	*ç̱w	*t-(?),č̣, Rš	*ç:(ʷ)	ç:(ʷ)	*c~ç	ç(~c:-)	*c:-,ç	*ç(ʷ)		*ç(ʷ) ~z(ʷ)
*s̱	*s̱	*s	*s:	s:	*s:	s:	*s:	*s:	s(~z?)	*s
*s̱w	*s̱w	*š	*s:(ʷ)	s:	*s:	s(ʷ)	*s:	*s:(ʷ)		*s^{w}

Comments.

1) Not all rows of correspondences listed above (and therefore the reconstructed protoforms) are established with equal reliability. For example, the voiced fricative *z is reconstructed only in the 1st person singular pronoun (however, this reconstruction seems valid to us because voiced fricatives of other series are reconstructed in some other pronominal roots as well). The combination *zw is not reconstructed at all for PNC; as for PEC, we can talk about the reconstruction of *zw only in onomatopoeic roots.

However, in general the system of reconstructed phonemes and combinations suggested above seems to explain the present correspondences more adequately than the reconstructions suggested before (a five-affricate and three-fricative system of E. A. Bokarev or a five-affricate and two-fricative system of B. K. Gigineyshvili can not explain the whole variety of NC languages correspondences).

Let us go over some details of reflexes of hissing sounds in separate subgroups.

2) PN. In PN, as the table shows, hissing sounds are preserved as they are, but are transformed if a -w- follows. The disappearing labialization in this case transforms hissing sounds into hushing, while initial voiced and glottalized labialized affricates develop into dental explosives. We must state that in particular cases (e.g. if a labial resonant is present before the affricate) the delabialization could have occurred even before the described processes; in such cases PN has the reflexes of ordinary hissing sounds.

Other processes were also active in PN that have seriously complicated the picture of the reflexation of hissing sounds. First, desaffrication č, ç̌ > š occurred in medial combinations with preceding liquid resonants (it is significant that such desaffrication is absent in the hushing series, see below, and therefore occurred in PN even before the transformation of labialized hissing sounds). Second, geminated tt (ṭṭ) appeared in the place of different PEC hissing affricates in medial combinations with preceding nasal resonants (the nasals themselves disappear in this case). It must be stated that PN *tt (ṭṭ) cannot in principle be explained (as, e.g., by N. S. Trubetskoy, see [Trubetskoy 1930]) as a reflex of a single PEC (PNC) phoneme,

because this PN cluster is simultaneously present in several rows of correspondences. PN reflects in the same way (as tt) the PEC geminates *ҫ and *ǯ after the liquid *l; in these cases we must probably suggest a preliminary development *lC > *nC. A special feature of PN reflexation is the fact that the development *C > tt never happens if a -w- follows (in all these cases we have normal PN hushing reflexes).

Most difficult to explain are cases of PN reflecting PEC hissing (and hissing-hushing, see below) affricates and fricatives as a *st (*sṭ) cluster (both in initial and non-initial positions), not included in the table above. The simplest solution would be the reconstruction of PEC combinations like *st, that were preserved in PN, but lost in other languages. However, this solution seems to be wrong — basically because of the fact that the *st (*sṭ) reflex is also observed in place of PEC fricatives.

One may note that in all cases where we can reconstruct *j and a sibilant (not hushing) affricate or fricative within one root, PN has a *st (sṭ) reflex. Thus one can formulate a rule, according to which all hissing and hissing-hushing (but not hushing!) phonemes develop into *st-clusters in PN (probably as a result of distant palatalization) after or before a *j. In some cases we may therefore reconstruct medial clusters like *-jc- or *-js- on Nakh evidence alone.

The second type of cases, where the development *C > *st(*sṭ) occurs, are the combinations of hissing affricates with the preceding resonant -l-, perhaps, also through the stage *lC > jC > st(sṭ). However, we know some cases in which original combinations like *lC preserve the liquid (as -r-) in PN. In general, this question needs further elaboration.

One should finally note that there is no clear-cut distinction between *st and *sṭ in PN: the distinction is preserved only in Batsbi, and there is considerable variation between st and sṭ there, according to existing sources. We may suppose that originally the distinction between *st and *sṭ was as solid as that between *t and *ṭ, but it was impaired already on the PN level.

3) Andi-Avar-Tsezian languages. Here it is necessary to pay attention to the fricativization of labialized *cw and *c̣w in PA (in this respect Andian languages differ seriously from Avar, and usually this difference is not regarded with due attention.) The other processes that have changed the subsystem of hissing consonants in Avar-Andian languages are quite simple (the development *ʒ > z , *ҫ > c:; the merger of glottalized and voiced geminates in *ҫ:). In PTs there occurred a further deglottalization *ҫ: > *c: > c and fricativization of all non-glottalized affricates that led to an untrivial PTs system of fricative distinctions *s — *s: — *z — *z: (for their reflexes in individual languages see below, page 112).

4) Lak, PD and PL. First of all we must note a positional development *ҫ > *c: (*ʒ) in combinations with preceding medial resonants that is common for all three of these subgroups. The row of correspondences "PL *c: : PD *c: : Lak. z : Av., PA *ҫ:", usually serving as a basis for reconstructing PEC voiced *ʒ (see [Trubetskoy 1930, Bokarev 1961 et al.]), thus appears to be in complementary distribution with the row of correspondences "PL, PD, Lak *ҫ : Av., PA *ҫ:" (usually ignored). It must be emphasized that in our reconstruction we clearly distinguish the PEC (and PNC) phoneme *ʒ (that does not give glottalized reflexes) and the geminates *ҫ and *ǯ

that often give glottalized reflexes.

It is worth noting that Khinalug, in its reflexation of PEC *ç̣, is clearly connected with Western Daghestan languages (*ç̣ is always reflected as ç, in post-resonant positions too), and not with Lezghian, to which it is often attributed.

5) PWC. In the table we have listed PWC reflexes of PNC hissing phonemes before non-front PNC vowels. Before original front vowels PWC regularly reveals palatalized affricates and fricatives; this is the consequence of the basic rule active in PWC, concerning the shift of quantitative and qualitative vocalic features to preceding consonants. The quantitative aspect of this rule in PWC led to the appearance of a tense ("preruptive") *c: (*c:^{w}) reflecting all PNC hissing affricates before originally long vowels. It is quite possible that hissing fricatives could also become tense (in the same position) in PWC; but within PWC the evidence for reconstructing the distinction *s — *s: is still missing (see below on the PWC reconstruction).

One can also pay attention to the unmotivated variation of voice/voicelessness (and also glottalization) in some PWC reflexes. The reasons for a secondary voicing in PWC are not clear yet (it could be possibly connected with the fall of laryngeals in PWC).

1.1.5. Hushing consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*č	*č	*č	*č	č	*č	č	*č	*č	č	*č~ǯ
*ǯ	*ǯ	*ǯ	*ž	ž	*ž-,č,Rž	ž~č:	*ž~č:	*č:	ž	*ž~ǯ/č:
*ç̌	*ç̌	*ç̌	*ç̌	ç̌	*ç̌	ç̌	*ç̌	*ç̌	ç̌	*ç̌ (~č)
*š	*š	*š	*š	s	*ž	š	*š	*š		(*š)
*ž	*ž		*š:	ž		ž		*ǯ	j/š	*š

Hushing consonants in combination with -w-.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*čw	*čw	*č	*č(^{w})	č	*č	č(^{w})	*č	*š(^{w})	pš-~č	*č^{w}/č:^{w}
*ǯw	*ǯw	*ǯ	*ž	ž	*ž:(^{w}), č,Rž(^{w})	č:~š:	*ž	*č:(^{w})		*ž(^{w})
*ç̌w	*ç̌w	*š-,ç̌	*č(^{w})	č(^{w})	*ł(^{w})-,č(^{w})	ç̌	*ç̌	*ç̌(^{w})		*ç̌(^{w})~ǯ(^{w})
*šw	*šw	*š	*š(^{w})	s/x	*ž^{v}*ž:	š(^{w})	*š:	*š:(^{w})	š	*š(^{w})

Hushing "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ç̲	*ç̲	*č	*š:	š:	*šᵛ*š:	š:~č:	*š:	*č:~š:	š(?)	
*ç̲w	*ç̲w	*č	*č(ʷ)	č:	*šᵛ*š:	š:~č:	*č	*čʷ		*č(ʷ)
*ǯ̲	*ǯ̲	*ç̣	*ç̣:	ç̣:~ç:	*č	ç̣	*č:	*ç̣:	ž(?)	*ž
*ǯ̲w	*ǯ̲w		*ç̣:	ç̣:		ç̣		*č:ʷ		
*ç̲̆	*ç̲̆	*ç̣	*ç̣:	ç̣:	*č~ç̣	(R)ž		*ç̣,Rč:	ç̣	
*ç̲̆w	*ç̲̆w	*š	*ç:(ʷ) ~ç̣:	ç̣:(ʷ)	*č-	ç̣	*ç̣	*ç̣ʷ		*ç̣~ǯ/č:ʷ
*š̲	*š̲	*š	*š:	š:	*š:	š:	*š:	*š:		*š/š:
*š̲w	*š̲w	*š	*š:(ʷ)	š:(ʷ)	*šᵛš:	š:	*š:~š	*š(ʷ)	š	*š(w)

Comments.

1) Hushing phonemes are generally more rare than the hissing ones. Therefore here we observe somewhat more gaps in correspondences. The voiced fricative *ž is reconstructed only for one root — the 1st pers. pl. excl. pronoun (see above on the reconstruction of *z in the 1st pers. sg. pronoun). The reconstruction of the PNC combination *žw is also rather dubious.

2) In PN the hushing sounds are generally reflected more uniformly than the hissing ones: in all cases hushing reflexes are present. We must note a specific reflex of the labialized *ç̣w (in initial position) and *ç̲w as a hushing fricative *š. It is important that hushing sounds never yield the PN *tt or *st reflexes that are so typical for the system of hissing affricates and fricatives.

3) In Andi-Avar we must notice a specific reflexation of the "geminate" ç̲ as a fricative *š:, as well as variations between reflexes *ç̣: and ç: in the place of PEC geminates *ǯ̲ and *ç̲. In Avar we also see the complementary distribution of s and x reflexes in the place of a common Avar-Andian lax fricative *š; x — in front of i, s in other cases (in details see [Starostin 1987, 448-450]).

4) In PTs hushing fricatives are generally reflected in a manner similar to that of the hissing ones (see above); but the reflexation of affricates is quite different. The most serious difference is the lack of fricativization of the affricate *č (and, in some positions, *ǯ) that led to their merger with the reflexes of "geminates" *ǯ̲ and *ç̲. We must also note a very specific PTs reflex of the initial labialized *ç̣w > ṭ(ʷ) (such a desaffrication is unusual for Daghestan languages).

5) In Eastern Daghestan languages the reflexation of hushing sounds is generally similar to that of hissing ones (also as far as concerns the development of the glottalized "geminate" *ç̲), though there are some minor differences (for example, in the subsystem of fricatives).

6) The development of hushing consonants in PWC is typologically similar to their development in PTs (neither family has fricativized the affricate *č, though the fricativization of the hissing *c is present). In other respects the development of hushing sounds in PWC is characterised by standard features (the appearance of palatalized hushing sounds before original front vowels, strenghthening before initially long vowels). As in other local series, there is a variation of

voice/glottalization in reflexes of originally glottalized consonants, as well as (more rarely) of voice/voicelessness in the reflexes of initially voiceless (lax) consonants. It must be stated that PWC hushing consonants are more often subject to the process of secondary delabialization than consonants of other local series.

In some cases we have an unexpected affricate reflex in PWC where PEC has fricatives. It is not to be excluded that this reflex must be explained by a fusion of a fricative with the dental derivational prefix *d-(*t-), that in PWC could probably be attached to nominal stems.

1.1.6. Palatal (hissing-hushing) consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ć	*ć	*c	*č	č	*š:(~-s:-)	č	*c	*č	č	*č/č:(~c:)
*ʒ́	*ʒ́	*ʒ(Ntt)	*ž	ž	*ž:-,š	z-,š:~č:	*c:	*č:(~ž)	č:	*z
*ḉ	*ḉ	*ç-, ss, (Ntt)	*č̣	č̣	*ç/č̣	č̣	*ç	*č̣	č̣	*č̣~ç
*ś	*ś	*s	*s~š	s/x	*ž-,š~s	š:	*š:-, s~š	*s:-,š	s(?)	*s
*ź	*ź	*s	*z		*ž:	z	*ʒ	*c:		*z

Palatal consonants in combination with -w-.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ćw	*ćw	*c	*č(ʷ)	č(ʷ)	*ž-,š:	č(ʷ)	*s:	*š:ʷ-, č(ʷ)		*cʷ~č(ʷ)
*ʒ́w	*ʒ́w	*ʒ	*ž(ʷ)	ž	*š-~š:-,š	z	*č:	*č:(ʷ)	c:	*sʷ(?)/č:(ʷ)
*ḉw	*ḉw	*ps-, ss~ç	*č̣(ʷ)	č̣(ʷ)	*č̣(ʷ)	č̣(ʷ)	*ç~č̣	*č̣(ʷ)	ç,-z	*ʒ́(ʷ)~ zʷ/c:ʷ
*św	*św	*ps-,s	*š(ʷ)	s/x	*š	š	*s:	*s:	s(ʷ)	*šʷ
*źw	*źw	*š	*š:	ž	*ž:	z		*ʒ́ʷ	z/s	*sʷ

Palatal "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ć̱	*ć̱	*-c-(~-š-)	*c:~č:	c:~č:	*s:	s:	*c:	*č	c	*č(~ʒ́)
*ć̱w	*ć̱w	*-c-	*š:	č:	*š:	š	*s:	*š:(ʷ)		*ʒʷ
*ʒ̱́	*ʒ̱́	*ç (Ntt)	*č̣:	č̣:	*č	č̣(~ž)	*c:	*č̣:	-c	*ɣ(?)
*ḉ̱	*ḉ̱	*ç(Ntt)	*č̣:	č̣:	*č	č̣,Rz	*ç,Rc:	*č̣,Rč:	č̣	*č̣ (č)
*ć̱w	*ć̱w	*ç		č̣:	*č~c	č̣	*ç	*č̣ʷ~çʷ		*ç(ʷ)
*ś̱	*ś̱	*-ss-	*š:	s:	*š:~s:	š:	*š:	*š:	š(?)	*s
*ś̱w	*ś̱w	*ps-,ss	*š:~s:	š:	*š:	š(w)	*s:	*šʷ~sʷ	pš(ʷ)-	*šʷ/s:ʷ

Comments.

1) We have to reconstruct a third affricate series in PEC and PNC, because there is a great number of etymologies with correspondences that do not at all fit into one of the two usually postulated affricate series. A typical feature of the third series is the prevalence of hissing reflexes in PN and PD, while in other languages, as a rule, hushing reflexes are dominant.

2) Palatal (hissing-hushing) consonants in PWC and PNC had approximately the same frequency as the hushing ones (see above). Therefore not all rows of correspondences are established with equal reliability. In particular, the combinations *ʒ́w and *ź́w are very rare (the last one is reconstructed only for the personal pronoun of the 2nd pers. pl.) The reconstruction of the voiced fricative *ź́ is not quite reliable. Finally we must state a weak ability of palatal "geminates" to combine with labialization (only the combinations *ć̦w and *ć̣w are reconstructed quite reliably).

3) As we noted above, in PN hissing reflexes are typical. Another thing in common with the hissing series is the appearance of the PN geminate tt (ṭṭ) in the place of various medial affricates (in the same positions as in the hissing series in combinations with preceding nasal resonants). Furthermore, in the place of PEC hissing phonemes as well as PEC palatal affricates and fricatives, a specific combination st(sṭ) can be developed (adjacent to an older *j or following the resonant *l, see above, page 47). Still, there are some differences in the palatal reflexation and the hissing reflexation; some phonemes (the glottalised *ć̣ and the fricative *ś̱) have a specific medial reflex *ss; labialized hissing and labialized palatal sounds have quite different reflexes in PN.

4) In PA and in Avar, palatal reflexes in most cases have merged with hushing reflexes (only occasionally — in the case of some fricative phonemes and the affricate *ć̦ — do we meet hissing reflexes; there is also a characteristic correspondence "PA *š: : Av. č:" as a reflex of PEC *ć̦w, that, as far as the development of laryngeal features is concerned, is rather similar to the hissing series — cf. PEC *ć̦w > PA *s:, Av. c: — than to the hushing series). On the distribution of s and x reflexes in Avar see page 49.

5) In PTs, in most cases, we also encounter hushing reflexes of PEC palatal sounds (though sporadic hissing reflexes here are more usual than in Avar-Andian languages). It is still hard to formulate the principles of the distribution of hissing and hushing reflexes in PTs (sometimes such variations are observed inside a single lexeme); we can only state the fact that in initial position PEC *ć̣ > PTs *ç, but in other positions > PTs *č̣. However, we must note that, while hushing reflexes in PTs are generally prevalent, the general development of palatals here is quite different from that of PEC hushing phonemes (cf. the fricativization *ć > š:, *ʒ́ > š with an analogical fricativization *c > s:, *ʒ > s, but *č,*ǯ > č with the preservation of the affricate features).

6) In Lak the reflexes of palatals generally merge with the reflexes of the hushing phonemes (see above). However, we must note a specific development of

fricatives (more similar to the development of hissing than hushing fricatives), as well as the regular presence of the hissing z in all rows, where one could expect the hushing ž (as a reflex of PEC *ʒ́, *ź, *ʒ́w, *źw, *ʒ́).

7) Dargwa is strikingly different from all other Daghestan languages in its treatment of palatals; in most rows of correspondences (except only the fricatives *ś, *ʂ́ and affricates *ʒ́w, *ʧ́w, where sporadic hushing reflexes are observed) Dargwa reveals hissing reflexes that bring it closer to Nakh languages. One can see that except some minor differences in development, PEC hissing and palatal affricates give the same reflexes in Dargwa.

8) In PL palatals generally merge with hushing phonemes (though the fricatives and the labialized *ćw, *ʧ́w develop in a somewhat different way than the respective hushing consonants). As for Khinalug, we can observe there both hissing and hushing reflexes, but there are too few examples from this language to establish strict rules of reflexation.

9) In PWC we can state a variation of hissing and hushing reflexes, whose distribution it is yet hard to establish. As regards the development of laryngeal and quality features, palatal sounds in PWC develop in a manner similar to other affricates and fricatives (see above). It must be emphasized that PNC palatal (hissing-hushing) consonants have no direct relation to modern hissing-hushing consonants, present in Adygh languages, in Ubykh and in some Abkhaz dialects (see below on their origin).

1.1.7. Lateral consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ƛ	*ƛ	*-l-~-r-	*ƛ	λ	*λ:-, L	x:~x	(*h-), k	*λ-, λ:	č-(?)	*λ/λ:
*Ł	*Ł	*l-, r(Ł)	*l	l	*L:	k: (~l)	*g~k:	*ƛ:	ɣ	*L~l
*ƛ̣	*ƛ̣	*l-,-Ł-, -l, (-Rλ-)	*ƛ̣	ṭ	*ƛ̣	ḳ (~l)	*ḳ	*ƛ̣	ḳ	*ƛ̣~Ł
*λ	*λ	*l	*λ	λ	*λ	x	*-x:-	*λ:	x	*λ/λ:
*ɬ	*ɬ	*l-(~-r-)	*l	l	*l	l	*l	*l	l	*l~∅
*l	*l	*l	*r	r	*r	l	*l	*l	l	*l~∅

Lateral consonants in combination with -w-.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ƛw	*ƛw	*l-~k-, -χ-	*xʷ-, -k-	x(ʷ)	*-k-~ -λ:-	k(ʷ)	*k(ʷ)	*λ(ʷ) ~-ƛ(w)-		*ƛ
*Łw	*Łw	*l-,-g-	*kʷ	l-,-g-	*k(ʷ)	-k:(ʷ)-	*-k:ʷ-	*ƛ(ʷ):		*L
*ƛ̣w	*ƛ̣w	*ḱ	*ƛ̣	ṭ	*ƛ̣	ḳ(ʷ)	*ḳ(ʷ)	*ƛ̣(ʷ)	ḳ	*ƛ̣ʷ~Łw
*λw	*λw	*f-,lχ	*λ(ʷ)	λ	*λ(ʷ)	h~x:(ʷ)	*x:(ʷ)	*λ(ʷ)		*λʷ/λ:ʷ

Lateral "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ӆ	*ӆ	*-lχ-,(r)Ł	*ƛ:	ƛ:	*λ:	x:-, -k:-(~l)	*k:	*ƛ, rƛ:	k	*ƛ~Ł
*ӆw	*ӆw	*k-,ƛ	*λ:	ƛ:	*λ:-	x-, -k:^{w}-(~l)	*x(w)	*λ:(^{w})	k-	*ƛ(^{w})
*Ł̲	*Ł̲	*l-,λ,Rλ	*ӄ:	ӄ:	*ƛ	k:~l	*k:(ʁI)	*ƛ:	ḳ	*L
*Ł̲w	*Ł̲w	*l-,χḳ,Rλ	*ӄ:(^{w})	ӄ:(^{w})	*ƛ	k:~l	*k:(^{w})	*ӄ:(^{w})		*Ł(^{w})~ӄ^{w}
*ӆ	*ӆ	*-lχ-,Rλ	*ӄ:	ӄ:	*ƛ~ӄ	k:~l	*ɣ	*ӄ:	ḳ-, -k:-,-g	*L~l/ƛ:
*ӆw	*ӆw	*-χḳ	*ӄ: ~(-ḳ:-)	ӄ: ~(-ḳ:-)	*ƛ~ӄ ~(-k$_1$-)	ḳ(^{w})	*ɣ(w)	*ӄ:(^{w})	ḳ	*ӄ^{w}~ L^{w},Ł^{w}
*ӆ	*ӆ	*l-	*λ:	λ:	*λ:-,L	h~x	*-x:-	*λ:		
*ӆw	*ӆ^{w}	*f-,l,Rλ	*x(^{w}) ~λ:	x(^{w}) ~λ:	*-λ:- ^{v}-λ-	h~x:(^{w}) /l	*x(w)	*λ:(^{w})		*λ^{w}

Comments.

1) In the 1st pers. pl. incl. pronoun we can reconstruct for PEC a voiced lateral fricative *L (cf. a similar reconstruction of voiced fricatives in other personal pronouns, see above) with the following reflexes: PN *tχ(?), Av., PA *ƛ:, PTs *l, PL *Ł, Khin. k. At any rate, PWC correspondences for PEC *L are missing, and this phoneme is not included in the table for lateral consonants.

2) In PN the initial system of laterals has undergone serious transformations. Two lateral phonemes (PN *λ and *Ł) are preserved in PN only in medial position. The basic principle of the reflexation of laterals in PN is the preservation of lateral reflexes (l, λ, lχ) of non-labialized PEC phonemes and the appearance of velar (and uvular) reflexes in the place of PEC labialized laterals. The *l-reflex, occasionally met in labialized series of correspondences, is probably a consequence of an early delabialization of corresponding phoneme combinations in PN; only the PEC medial labialized *λw and *ӆw have systematically yielded lateral reflexes in PN. When labialized laterals are velarized in PN, they are usually reflected in the initial position as *k (original non-glottalized occlusives), *ḱ (original glottalized phonemes) and *f- (original fricatives); in medial position we observe the reflexes *χ, *g, *χḳ. PEC *Ł̲w in a few as yet unclear cases can be reflected in PN (in non-initial position) as *q̇.

3) Avar-Andian languages are rather conservative in the reflexation of laterals. Except some well-known processes (like the development *ӄ > Av. ṭ), we must also note a rather systematic process of velarization of labialized laterals (that has not affected only the combinations of -w- with lax *ӄ and *λ, as well as with the "geminate" Ł). However, it must be stated that this process was going on

basically in non-initial position; in initial position only the development *x̲w > x^w (as well as *ƛw > x^w) had occurred, and the appearance of initial k:, k (in the place of *x̲w, *Łw) is probably caused by the dissimilative influence of the following resonant *ł. Sporadically (as reflexes of *x̲̄w and *x̲w) we also meet non-velarized ƛ:, λ:, probably as a result of early delabialization.

We must also note a specific correlation of Av. ƛ:-: PA *λ:- in the place of PEC labialized *x̲w (on the similar development of PEC *c̲w > Av. c:, PA *s:; PEC *ć̲w > Av. č:, PA *š: see above).

4) The same process of velarization of old labialized laterals, except for the velarization of fricatives, is typical for PTs; thus, the beginning of this process can be dated from as far back as the period of Avar-Andi-Tsezian unity. In other respects the reflexation of laterals in PTs is generally similar to the reflexation of consonants in the hissing and hushing series; e. g., we observe the fricativization of all affricates, except the glottalized and the voiced "geminate".

5) In all Eastern Daghestan languages, lateral consonants (except the resonant l) are lost at present; the only exception is Archi, which has obviously preserved the laterals as a result of contact with Avar-Andian. But evidently the process of the loss of laterals was comparatively recent; thus, in Lak, together with normal velar reflexes in many series of correspondences, we observe a sporadic l reflex; we can reconstruct a PL system of lateral affricates and fricatives even without using the Archi data (see below).

We must state that the opposition of voiced and glottalized "geminates" in the lateral, as well as in other affricate series, is generally reconstructed on the basis of Eastern Daghestan evidence. However, the development of these geminates here differs a bit from their development in other affricate series; glottalized geminates here do not merge with the reflexes of plain glottalized consonants (cf. *x̲̄ > PL *x̣:, PD *ɣ vs. *x̣ > PL *x̣, PD *ķ), while voiced geminates give reflexes, similar to those of PEC voiced (not aspirated) *Ł. Therefore we could swap the reconstructions and reconstruct ł̲ instead of x̲̄ and vice versa. This, however, would contradict the circumstance that the PEC geminate *ł̲ < PNC *g̲ (see below) has the same reflexes in Eastern Daghestan languages. Therefore it is probably appropriate here to suggest a shift in reflexation; first occurred the development *ł̲ > *Ł, and then the initial geminate *x̲̄ became voiced, taking the place of the lost ł̲ (with the following development > PL *x̣:, PD *ɣ — cf. *ʒ̲ > PL *ç:, PD *z and so on).

We should note the following specific features of development in individual Eastern Daghestan languages:

a) in Lak: we observe a regular palatalization of velar reflexes before the vowels a, i (k > č, k: > č:, ķ > ǩ, x > š, x: > š:) — this process (not noted in the table) has affected both original lateral and velar sounds (see below). In addition, if pharyngealization is present, we can sporadically meet uvular reflexes *x̲̄ > χI as well as *ł̲ > *ʁI > *j.

b) in Dargwa, as in Lak, if an adjacent pharyngealized vowel is present, we sometimes meet uvular or laryngeal reflexes instead of velar ones.

On the further development of lateral reflexes in Dargwa dialects and Lezghian languages see below, pp. 117-119, 131, 144.

Khinalug stands close to Eastern Daghestan languages in its treatment of

laterals: for the most part they have been transformed here into velars (it is unclear yet whether the development *ƛ > č is regular). However, because of insufficient evidence, Khinalug reflexes in many rows of correspondences are yet unclear.

6) In PWC lateral consonants systematically give lateral reflexes (on the reconstruction of PWC laterals see below, page). As for the development of qualitative and laryngeal features in PWC, the lateral series is similar to other affricate series (fricativization *ƛ > λ and some other special features of development bring the lateral series close to the hissing one).

7) The opposition of two lateral resonants — *l and *ɬ — is reconstructed on the basis of the reflexes of Western Daghestan languages (where *l > r). The status of the phoneme *ɬ in PEC and PNC is not yet quite clear (some features draw it near to resonants, others — to fricatives). In PWC *l and *ɬ, as other resonants (see above), are subject to loss.

The behaviour of the initial *l before the following syllable-final resonants n and m requires a special comment (it is worth noting that there are no examples of *ɬ in this position). We have the following correspondences here (although on the whole there are not many examples):

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*l(..n)		*n-	m-		(*m- >∅-)	*l-	*l-		
*l(.. M)	*l-~m-	*r-	r-	*n-	l-	*l-	*n-		*l-~∅-

An unusual reflex m- in Avar (and *m- > ∅- in Lak; on the development of the initial *m in this language see above, page 43) is explained by the fact that in the single example where we have Avar and Lak reflexes, the medial consonant, following *-n-, is labialized; this labialization conditioned the secondary labialization of the initial nasal. Tsezian and Khinalug reflexes of *l- with the following nasals are not attested yet.

1.1.8. Velar consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*k	*k	*k	*k	k	*k	k	*k	*k	k	*k
*ķ	*ķ	*ķ	*ķ	ķ	*ķ	ķ	*ķ	*ķ	ķ,-∅,-Ng	*ķ/k:
*g	*g	*g	*g	g	*g-,g_1	g~k:	*k:	*g~k:	g	*g
*x	*x	*χ	*λ	λ	*λ~λ:	x	*x	*λ	š(?)	*x

Velars in combination with -w-.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*kw	*kw	*k	*k(ʷ)	k(ʷ)	*k(ʷ)	k(ʷ)	*k(ʷ)	*k(ʷ)	k	*kʷ/k:ʷ
*gw	*gw	*k	*g(ʷ)	g(ʷ)	*g_1ʷ	gʷ~	*gʷ~	*k:(ʷ)	g	*gʷ/k:ʷ
		(~g)			(~gʷ)	k:ʷ	*k:ʷ	~*g(w)		
*ķw	*ķw	*ķ	*ķ(ʷ)	ķ(ʷ)	*ķ(ʷ)	ķ(ʷ)	*ķ(ʷ)	*ķ(ʷ)	ķ-,-Ng	*ķʷ~gʷ
*xw	*xw	*χ	*x(ʷ)	x(ʷ)(~λ)	*L-,λ:	x(w)	*x:(ʷ)	*λ(ʷ)	x	*xʷ

Velar "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*k̲	*k̲	*k	*k	k~g	*k	k:	*k:	*k		*k̲(?)/k:
*k̲w	*k̲w	*k	*kʷ	k(ʷ) ~g(ʷ)	*k(ʷ)	k(ʷ)	*k(ʷ)	*k:(ʷ)	k:ʷ	*kʷ
*g̲	*ɬ̲ (see above)									*ɣ
*g̲w	*ɬ̲w (see above)									*ɣ(ʷ)
*ḳ̲	*ḳ̲	*g-,ḳ	*ḳ:	ḳ:	*k(~ḳ)	k:	*k:	*k:-,ḳ	ḳ	*ḳ
*ḳ̲w	*ḳ̲w	*ḳ (~ṭq̇?)	*ḳ:(ʷ)	ḳ:(ʷ)	*q(ʷ) (~q̇(ʷ))	ḳ(ʷ)	*k:(ʷ)-, ḳ(w)	*k:(ʷ)-, ḳ(w)	ḳ	*q̇ʷ~ʁʷ
*x̲	*x̲	*χ	*λ:	λ:	*λ:	x:	*x	*λ:	x	*x
*x̲ʷ	*x̲ʷ	*pχ-,χ	*λ(ʷ)	x~λ		x:(ʷ)	*x(ʷ):	*λ:(ʷ)		*xw

Comments.

1) Velar consonants, judging by their phonological features, were regarded as an affricate series (typical features — the presence of fricatives and geminates) in PNC and PEC. This situation is best preserved in modern Avar-Andian languages (that have a tense ḳ: opposed to the lax ḳ, as well as a velar fricative x), but to some extent the traces of the original state are preserved in other languages as well.

2) The velar fricatives *x, *x: are reconstructed for PNC primarily on the basis of the joint evidence of Nakh and West Caucasian languages, where their reflexes are markedly different from the reflexes of lateral fricatives (see above). However, in other languages the reflexes of velar and lateral fricatives are also somewhat different (e.g., in PD both lateral fricatives have merged in lax *x, while both velar ones have merged in tense *x:, etc.). For the detailed account of the reconstruction of the opposition of velar and lateral fricatives (not reconstructed by N. S. Trubetskoy and differently reconstructed by E. A. Bokarev and B. K. Gigineyshvili) see Starostin 1987, 440-441.

3) There is some evidence in favour of reconstructing a PEC voiced fricative *ɣ (correspondences: PN *ʁ-,g: PA *h~*ç: Av. g: PTs *h-,∅: PD *ɣ: PL *g~k:), as well as the combination *ɣw (correspondences: PN *ʁ-: PA *h: Av. g(ʷ): Lak g(ʷ)~h: PL *ʁ-). However, not a single root with this fricative has a PWC correspondence — therefore the presence of *ɣ in PNC is still dubious.

4) The tense affricate k:, present in Avar-Andian languages, in all cases known to us, has developed either from laterals (see above) or from uvulars (see below). Therefore we cannot reconstruct PEC and PNC velar geminates in its place. However, there is a rather significant number of words that in different languages show velar reflexes with non-standard correspondences of laryngeal features. We have grouped these correspondences into rows where it seems plausible to reconstruct the geminates *k̲ and *k̲w respectively (if we suppose a development *k̲ > *k, *k̲w > *k(ʷ) in Avar-Andi-Tsezian and the development *k̲ > *k: or *k̲ > *k in the Lak-Lezghian-Dargwa area).

5) Some special comments on the behaviour of voiced *g and *gw are appropriate.

The split of reflexes (*g > g~k:) is observed in Lak and PL. One can note that in Lak g occurs basically within grammatical and pronominal morphemes and within expressive words; otherwise k: is common. In PL the split rules are not quite clear, but it seems that g occurs in some cases within medial clusters after preceding liquid and nasal resonants, while in some other cases it is a result of assimilation (or dissimilation) to adjacent consonants.

As for *gw, the situation here is more complicated:

a) in PN the basic reflex is probably *k (cf. *dw > *t, see above), but in some cases (probably as a result of early delabialization) we observe the development *gw > *g.

b) in PTs the rules of the variation *g^{w}~g_{1}^{w} are not clear (as opposed to the distribution of non-labialized reflexes *g/*g_{1}, see above).

c) in Lak and PL the voiced reflex *g(^{w}) is typical after an immediately preceding resonant; as for Dargwa, there is not enough evidence for establishing reliable rules of distribution.

6) The voiced geminate *$\bar{g}$ can not be reconstructed for PEC; as for PNC, it is reconstructed on the basis of the correspondence PEC *$\underline{ɬ}$: PWC *ɣ (one of the few cases, when we can suppose a difference between PNC and PEC).

7) In Lak, velars (both original ones and reflexes of laterals, see above) usually become palatalized and develop into hushing consonants before the vowels a, i; this (obviously late) process is not specially noted in the table.

8) In PTs the reflex of the labialized geminate *$\underline{\underline{k}}$w is regularly shifted into the uvular series (a phenomenon opposite to the one that was happening in many languages with labialized uvulars, see below). The same shift is typical for PWC (this is one of several characteristic phonetic isoglosses between PTs and PWC); it is not quite clear whether the sporadically occurring PN reflex *$\underline{\underline{k}}$w > ṭq̇ is somehow related to this. We must state that in PTs, in some cases, we also observe the development *$\underline{k}$w > q̇(^{w}) in initial position, but it is less regular (in most cases in PTs the initial $\underline{k}$(^{w}) is preserved).

9) In PWC, velars generally are preserved (with the standard development of quantity and quality features, depending on the vocalic environment). We must note the devoicing *gw > kw (similar to what happened in PN; see above on a similar development of the labialized dental *dw in PWC and PN), and also the presence in some cases of an unexpected glottalized reflex of old non-glottalized "geminates" (however, the evidence available is not quite reliable).

1.1.9. Uvular consonants.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*q	*q	*q	*q	h,Rχ	*χ~ʁ:,Rχ:	q	*q	*χ	q,-χ(ʔ)	*χ/q:
*G	*G	*ʁ	*ʁ	ʁ	*χ~ʁ:	q:	*q:	*q: /qI	q:	*ʁ
*q̇	*q̇	*q~ʔ (~-R-)	*q̇	ʕ	*q̇	q̇~ʔ	*q̇-, -q̇-~-ʔ-	*q̇	q̇,-ʁ	*q̇(~ʁ)
*χ	*χ	*χ	*χ:,Rχ	χ:/ħ, Rχ	*χ:(/ʁ:-), Rχ	χ:~h (/ħ)	*χ:-,χ	*χ	χ	*χ(/q:?)
*ʁ	*ʁ	*ʁ	*ʁ	ʁ	*χ~ʁ:	ʁ	*ʁ	*ʁ	ʕ	*ʁ

Uvular consonants in combinations with *w.

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*qw	*qw	*pħ-	*q(ʷ)	h,Rχ	*χ~ʁ:, Rχ:	q(ʷ)	*q(ʷ)	*χ(ʷ)	q	*χʷ/q:ʷ
*Gw	*Gw	*q~ʁ	*ʁ(ʷ)	ʁ(ʷ)	*χ(ʷ)~ ʁ:(ʷ)	q:(ʷ) (~ʁʷ)	*ʁ(ʷ)-, q:(ʷ)	*q:(ʷ) /qI(ʷ)	q-	*ʁʷ/q:ʷ
*q̇w	*q̇w	*bʔ- ~ʔ-, q̇(~ʁ,ʔ)	*q̇w-, ḳ(ʷ), Rq̇(ʷ)	ʕ-, ḳ(ʷ), ʁ	*q̇(ʷ)	ʔ-(w-) ~q̇-, ḳ(ʷ),Rʔ	*q̇(ʷ)-, ḳ(ʷ), Rq̇(ʷ)~Rʔ	*q̇(ʷ)	q̇-,ḳ	*q̇ʷ~ Gʷ/q:(ʷ)
*χw	*χw	*χ	*χ:, Rχ	χ:(ʷ)~h, Rχ(~Rh)	*χ:,Rχ~ Rʁ:	χ(ʷ):~h	*χ(ʷ)	*χ(ʷ)	χ	*χʷ
*ʁw	*ʁw	*H	*ʁʷ	ʁʷ	*ʁ:ʷ	h(~ʁʷ)	*h~ħ-,ʁ	*ʁ(ʷ)	ʁ~χ	*ʁʷ

Uvular "geminates".

PNC	PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*q̲	*q̲	*ʁ~q (~Rχ)	*q:	q: (~χ:)	*χ:	q~χ:	*q/qI:	*χ:~ q,Rq:	χ(ʔ) /q:	*G~ʁ
*q̲w	*qw	*ʁ~q	*q:(ʷ), k:(ʷ), Rq:(ʷ)	q:(ʷ), k:(ʷ), Rq:(ʷ)	*χ:(ʷ)	q(:)-(w), x:(ʷ), Rqʷ~Rχ:ʷ	*q:(ʷ), k:(ʷ), Rq:(ʷ)	*χ:(ʷ) ~q(ʷ)	q:-,k, Rq:	*qʷ~ χʷ/q:ʷ
*G̲	*G̲	*q̇~ʁ	*q̇:	q̇:	*q	q̇	*ʁ-,q:	*q̇:/q:I	q̇(/qI)	*G
*G̲w	*G̲w	*pħ-~ q̇-,q̇	*q̇:(ʷ)	q̇:(ʷ)	*q(ʷ)	q̇(ʷ) (~-∅)	*ʁʷ (~q:ʷ)	*q:ʷ-, q̇:ʷ, Rq:ʷ	q̇ (~ʁ?)	*ʁʷ~ q̇(ʷ)
*q̲̇	*q̲̇	*ʁ-,q̇	*q̇:	q̇:	*q~q̇	q̇,Rʁ	*q̇-,q̇~ʔ, Rh(/RhI)	*q̇,-q: (/q̇I-,q̇:I)	q̇,-R	*q̇~ʁ /q:
*q̲̇w	*q̇w	*pħ- ~q̇-,q̇	*q̇:(ʷ)-, ḳ:(ʷ), Rq̇:(ʷ)	q̇:(ʷ)-, ḳ:(ʷ), Rq̇:(ʷ)	*q(ʷ)~ q̇(ʷ)	q:(ʷ)- ~ʔ-,ḳ(ʷ), Rq̇(ʷ)	*q̇ʷ-, Rq̇(ʷ)	*q̇(ʷ) (~q̇:Iʷ-)	q̇-,ḳ, Rq̇	*q̇w~ Rw/qʷ:
*χ̲	*χ̲	*χ-,ħ	*χ,Rχ: (/χ:-)	h/χ:, Rχ:	*χ:~ʁ:	χ:~h (/ħ)	*χ: (~h)	*χ:	χ	*χ(~ʁ?)
*χ̲w	*χw	*(p)ħ-, ħ	*χ(ʷ), Rχ(ʷ):	χ:(ʷ)~ h,Rχ	*χ:(ʷ) ~ʁ:(ʷ)	χ:(ʷ) ~h(ħ)	*χ:(ʷ)	*χ:(ʷ)	pχ-,χ	*χʷ

Comments.

1) Many North Caucasian languages (Tsezian, Lak, Dargwa, Lezghian, Ubykh) possess, besides plain uvulars, a special series of uvular pharyngealized consonants (though in many of those languages pharyngealization can be combined not only with uvulars, and from the phonological point of view it may be considered an independent vocalic or prosodic feature — see [Starostin 1987, 465-466]). Pharyngealization (and the pharyngealization of uvulars in particular) is apparently the result of the fall of certain laryngeals (see below), therefore we do not reconstruct a special pharyngealized uvular series for PNC. However, it must be noted that pharyngealization rather often (especially in PL) leads to the modification of the reflex of the uvular consonant. Such modified reflexes were indicated in the table by the pharyngealization marker — I; the lack of such a marker in any row of correspondences means that the quality of a pharyngealized reflex does not differ from a corresponding non-pharyngealized one.

2) In the reflexes of the labialized uvular affricates *q̇w, *q̣̇w and *qw in Avar-Andian, Lak, Dargwa and Khinalug, we observe a very characteristic parallel development: the uvular affricates in non-initial position shift to the velar series. This shift does not occur in combinations with preceding liquid resonants (r and l) or in initial position (a single exception from the last rule is the numeral "two", which is characterized by the development *q̇w- > *k̇w-; this is apparently motivated by the exceptional monosyllabic structure of this root). For the correspondence Av. k: : PL *q^{w}, E. A. Bokarev [Bokarev 1981] and B. K. Gigineyshvili [Gigineyshvili 1977] reconstruct a tense affricate *k:. The correspondence of Av. ḳ: : PL *q̇^{w} is interpreted by E. A. Bokarev as reflecting the PEC tense affricate *ḳ:, while B. K. Gigineyshvili classifies it (as well as the correspondence of Av. ḳ: : PL *q̇^{w}, not noticed by E. A. Bokarev) as irregular (with a provisional reconstruction *ḳ$_1$). Neither of the authors have given thought to the circumstance that all the listed correspondences demand the obligatory presence of labialization and the medial position of corresponding reflexes and therefore are in strict complementary distribution with the correspondences "Av.-And. q: : PL *q^{w}", "Av.-And. *q̇^{w}: PL *q̇^{w}" and "Av. And. *q̇:(^{w}): PL *q̇^{w}". These facts do not leave any doubt as to the necessity of reconstructing PEC (and PNC) uvular consonants in all these cases.

The development of uvular labialized *q̣w, *q̇w and *q̣̇w into velars in medial postvocalic position has not at all afflicted Nakh, Tsezian, Lezghian and West Caucasian languages. This development must be dated in a rather late period (after the break of the Avar-Andi-Tsezian unity); this is an important areal

phonetic isogloss, which obviously can provide us with information about the geographic location of separate families of the East Caucasian languages in the period about the 2nd-3rd millennium B.C.

3) For Nakh languages, the difference between the reflexes of *χ and *χ̲ is characteristic (other tense and lax fricatives usually merge there — see above), as well as the specific initial reflexes of labialized uvulars (*qw-, *χ̲w-,*G̲w-,*q̲̇w> *pħ-, *q̇w> *bʔ-). The reasons for the sporadic appearance of the reflex ʁ (along with regular q and q̇) in many rows of correspondences are not yet clear.

4) Avar-Andian languages demonstrate a rather specific positional development of uvular fricatives ("the swapping of places" of the reflexes of *χ and *χ̲ in all positions respectively, except the position after the medial liquid resonants; historically it can be explained as the treatment *χ = χh and *χ̲ = χ respectively in an independent position (not in combinations with consonants), with a further allophonic development *χ > χ, *χh > χ:). In Avar this process was going on not quite consequently; as a result we see frequent variations between χ: and h (the latter reflects in Avar an earlier lax *χ (in all positions except after original medial liquid resonants, where the fricative χ is preserved as a rule, see [Starostin 1987, 448-449]). One may also note the presence of the emphatic laryngeal ħ instead of χ in Avar in words with lost pharyngealization (a rare case of segment reflection of pharyngealization in Avar).

5) In Tsezian languages the distribution of the reflexes of *χ is similar to that of Andian languages (see above) and probably dates from the period of Avar-Andi-Tsezian unity. Unfortunately, it is hard to show a similar distribution for the reflexes of PEC *χ̲ : it is connected with the general instability of PTs fricative reflexes of PEC uvulars (we observe here an unmotivated and unexplained variation *χ~ʁ:, *χ:~ʁ:).

In other respects, the behaviour of uvulars in PTs is similar to that of other affricates.

6) In Lak we must note the variation q̇~ʔ in the place of PEC *q̇, as well as the variation between χ: and h (the latter appears as ħ if pharyngealization is present) in the place of PEC uvular fricatives. We can not state any strict rules of distribution between these reflexes; they apparently result from old dialect mergers. One can also note the voicing *Rq̲̇ > *Rʁ, parallel to the similar process in the system of front affricates (see above).

7) In Dargwa, as in Lak, we meet the reflex ʔ in the place of PEC *q̇, and occasionally — h in the place of *χ̲; however, these sporadic reflexes are much less common here than in Lak (thus, the fricatives *χ, *χw and *χ̲w give quite uniform reflexes). The Lak Rʁ (< *rq̲̇) corresponds here to the combination *Rh (*RhI) that has obviously developed from an earlier *Rʁ; therefore, Dargwa also reveals a positional voicing of the reflex of the glottalized geminate *q̲̇ after medial resonants (parallel to the development of other similar geminates, see above).

8) In PL we see a split of the reflexes of several uvular consonants, depending on the presence or lack of pharyngealization (the *q:I reflex, expected in the place of PEC *G with pharyngalization, shifted early to lax (aspirated) *qI, but a new *q:I has developed here in the place of the voiced geminated *G̲; thus there

occurred a kind of "shift" of pharyngealized uvular consonants). PL reflexes of uvular voiced and glottalized geminates are very complicated; we see different positional complementary distributions of reflexes and a different development of pharyngealized and non-pharyngealized variants. In particular, one may note an untrivial development, *q̣̲ > *q:, in final position (i.e. in the final position of the PL nominal root already after the reduction of final vowels, see below) as opposed to the glottalized reflex *q̣ in initial and medial position (e.g., inside verbal roots). Despite the complexity of PL reflexes, they seem inwardly quite logical and are confirmed by a large number of examples, therefore seem quite reliable to us.

9) The development of labialized uvulars in Khinalug is another feature that strictly distinguishes this language from Lezghian and brings it closer to Lak-Dargwa dialect zones on one side, and to Andi-Avar on the other. On the contrary, the development *χ̲w- > pχ- (as well as some other features of consonantism) cuts Khinalug off from other Daghestan languages and brings it closer to Nakh. Unfortunately the materials on this interesting language are rather scanty, and the reflexes of some phonemes in it are either completely unknown or not reliable.

10) In the reflexes of uvulars in PWC, as in those of the consonants of other local series (see above), we observe sporadic variation between voice/voicelessness and (more often) glottalization/voice. In other respects the development is standard (e.g., we observe the appearance of "new tense" consonants in the place of old voiceless uvulars before initially long vowels as well as the appearance of palatalized and labialized variants of reflexes, depending on the quality of original following vowels).

In two roots there is an unusual correspondence PEC *χ̲w : PWC *Ł^{w}. The reasons for the appearance of a lateral reflex in PWC (we can judge about its laterality by the Abkhaz reflex l, see below) are yet unclear (it is not to be excluded that in PWC these roots had a combination like *r-χ^{w} with the following development *rχ^{w} > *rw: the reflexes of this *rw could have merged with those of the PWC *Ł^{w} in individual languages). This correspondence is not included in the general table (because of the uncertainty of its interpretation), though it seems quite real and reliable.

1.1.10. Laryngeal consonants.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ʔ	*ʔ-,Ø	*ʔ~h-	ʔ-,Ø	*ʔ	ʔ-,Ø	*ʔ-,Ø	*ʔ	ʔ-,Ø	Ø
*h	*H	*h~ħ	h	*h	h-	*ʔ-~h-	*h	h-	Ø
*ɦ	*ħ,-Ø-	*h-~ ʔ-,-ʔ-	ħ~ʕ	*ʔ-~j-, -Ø(I)-~-h-	ʔI~j	*ʔ-~h-, ħ~Ø	*ʢ-/hI-, -ʔ(I)-	h-(?), -Ø	Ø
*ʢ	*H-	*H	h-~ʔ-	*H-,ʔ	ʔ-	*ʕ-	*ʔ	ʕ	Ø
*ħ	*ħ-,Ø		ħ-,Ø	*h-,-(I)	-ħ-	*-ħ-	*j	-Ø	Ø
*ʕ	*ħ	*ʔ-	ʕ	*ʔ-	h	*h-,ħ	*ħ		Ø

Laryngeals in combination with -w-.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ʔw	*H	*ʔ-~b-, -ʔ-	ʔ~b	*ʔ	h-~b-, -Ø-	*ʔ (~ʕ-)	*ʔ(I)^{w}	w-	Ø
*ħw	*(b)ʡ-, ʡ~Ø	*H	h(~ħ-)	*ħ-~ h-, j-,j~w	ʔI-,Ø	*ħ-(~w-), ħ~Ø	*ʔ		Ø
*ɦw	*H- (~b-),ħ	*H	ħ~ʕ	*ħ-~ʔ-, ʔ(-ØI-)	ʔI-(~w-, j-),ØI(j)	*ħ (~b-ʔ)	*ħ- (~w-ʔ)		Ø
*ʡw	*bʡ-,ħ	*h(^{w})	b	*ħ-~h-	ʔI-~j-,Ø	*ħ-,h (~ʔ)	*ʔ(^{w})	p-	Ø
*ħw	*ħ-,ʡ	*ħ~ h(w)	ħ	*ħ-	ʔI-~ bI-, ØI	*ʕ-/ hI-	*ʡ^{w}-		Ø
*ʕw		*H	ʕ		ʔI-	*ʕ(^{w})	*ʔI(^{w})		

Comments.

1) Laryngeals are the most unstable class of consonants in North Caucasian languages. Their exact reflexes are often hard to establish (especially in PN and PA, where in some cases we use the symbol H, denoting an arbitrary laryngeal). Laryngeals are subject to frequent articulatory variations; such processes as dropping, development into j (for nonlabialized laryngeals) or w (for labialized ones) are typical for them. In PWC, as it is shown in the table, all laryngeals have been simply dropped (laryngeal consonants cannot be reconstructed for PWC, see below).

Despite these difficulties, however, the established correspondences allow us to reconstruct a six-laryngeal system for PEC — three plain (*ʔ, *h, *ɦ) and three emphatic (*ʡ, *ħ, *ʕ) (and for PNC by extrapolation). A typical feature of the emphatic laryngeals is that nouns that contain them reveal in Avar an immobile accent paradigm (the so-called "Paradigm A"), while words with plain laryngeals (or without laryngeals) have in Avar either an oxyton or a mobile accent paradigm (paradigms B and C).

In the table above we give only the reflexes of laryngeals in independent (initial and medial) positions. For their reflexes in combinations with other consonants (that seriously differ from their independent reflexes), see below.

1.1.11. Consonant clusters

Consonant clusters in PNC and PEC can be divided into three main groups:

a) Clusters of identical consonants — the so-called "geminates" (their reflexes were shown above). These clusters have a "quasiphonemical" character, because, like simple consonants, they can occupy the second position in medial clusters with preceding resonants. On a possible prosodic treatment of the PNC "geminates", see below.

b) Clusters of obstruents (except labial ones) with a following resonant

w (their reflexes were also shown above). They too can occupy the second position in medial combinations with preceding resonants (therefore complexes like -rtw- or -nc̱w- are possible).

c) Clusters of different consonants that have an exact "biphonemical" status, i.e. do not let other consonant phonemes precede them. The components of these clusters are obstruents (plain or "geminated", with the following w or without it) and resonant consonants.

The reflexes of the cluster types a) and b) (that can theoretically be treated as monophonemic) have been examined above. The c) type clusters may be grouped as follows:

1) Clusters of obstruents. The combinations of oral obstruents were apparently not allowed (or extremely rare) in PNC and PEC; but there is a numerous and important group of clusters of oral obstruents and laryngeals (combinations like CH- and HC-).

2) Clusters of obstruents and resonants. In PEC and PNC, combinations like RC are allowed; they are rather rarely encountered in initial position and very frequently otherwise. A subtype of this type of clusters are the combinations "resonant+laryngeal" (RH). The combinations of oral obstruents and following resonants (CR) were not allowed; however, the combinations "laryngeal+resonant" (HR) are reconstructed quite reliably (see below).

3) Clusters of resonants. This type of combinations is rather rare and usually met only in non-initial position.

In this section we will examine only the medial combinations of consonants in nominal roots; as for the behaviour of initial consonant clusters (in most languages simplified) as well as of consonant clusters in verbal roots, we would rather examine them in the section concerning root structure and prosody (see below).

As we see from the above, possible clusters inside the PNC (PEC) root were RC, RH, HR, RR; we will now examine their reflexes.

1.1.11.1. Clusters of the type RC ("resonant"+"obstruent").

A typical feature of the behaviour of such clusters in North Caucasian languages is the frequent dropping of resonants and the usual instability of their reflexes. Its consequence is in particular the fact that in PTs and PWC clusters like this were altogether simplified and preserved only the second obstruent component (in PTs some resonants have left a trace by having nasalized the previous vowel). We must specifically note the instability of the resonant *-l-, which is not preserved almost anywhere, but which has a tendency to change either into -r- or into -n- (with a possible following disappearance and nasalization of the previous vowel).

1.1.11.1. A. Clusters "resonant+labial consonants".

Such clusters are rather rare (the most frequent are combinations of the resonant -m- with different labials) and have the following reflexes:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rp	*p	*p		*p		*rp	*rp		
*rb		*p					*rp:		*b
*lp	*p		l(V)p	*p	p	*rp	*p		*p:
*mp	*m	*b	m	*m	m	*m~b	*m	m	*p(?)
*mb	*b	*b	b	*b~m	m	*m	*m		

It can be seen that the nasal -m- has a tendency to consume the following explosive articulation. On the whole, the reconstruction here is rather tentative — primarily because the clusters in question are rare (each cluster being present in one or two examples, and in many cases reflexes in individual languages are not attested at all).

1.1.11.1.B. Clusters "resonant+front consonants"

The general picture of reflexation here is as follows (the symbol T means any front consonant — dental explosive, hissing, hushing or palatal):

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rT	*(r)T	*rT/(r)T	(r)T	*T	rT	*rT/T	*rT	T	*T

In PN and Avar, -r- either disappears or is preserved (statistically in Avar the disappearance of this consonant is prevalent). In PA r is preserved if T is a dental explosive, but it can disappear before affricates or fricatives. In Dargwa -r- is usually preserved, but regularly disappears before the glottalized *ʔ, *ç̲. The most stable reflexation is that of PL and Lak on one side (where *r is always preserved) and in PTs and PWC on the other (where it always disappears).

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*lT	*(r)T	*T/nT	(r)T	*(V~)T	(r)T	*rT/T	*lT/T	T	*T

The resonant *l in combinations with front consonants is reconstructed basically on the evidence of PL (on the reconstruction of *l-clusters in PL see below, page 153).

In PN and Avar, *l in the examined combinations can either develop into r or disappear (the distribution between these two types of reflexes is unclear yet); on a special reflexation of some clusters with *l in PN (> PN *tt, *st) see above, page 47). Lak has similar reflexes (either development into r or disappearance of *l), though here we also meet sporadic cases of preserving -l- or the change -l- > -n-.

In PA *l (unlike *r, see above) usually disappears, leaving no trace. However, before the PA hushing consonants *č, *ž we see the development *l > *n (in single cases even the preservation of l).

In PTs the medial *l regularly disappears, leaving behind a nasalisation of the preceding vowel (apparently through an intermediate state *-l- > *-n-).

In PD the reflexes of *l are generally similar to those of *r; *l usually develops into r, but it can disappear before following hissing consonants (not only

before glottalized, as in the case of *r).

PL preserves *l in most cases; this consonant disappears only before hushing sounds in the sequence *mVlč- > *mVč- (apparently as a result of a progressive nasalization *mVlč- > *mVnč- > *mVč-).

Finally, in Khinalug (in the few attested cases) and in PWC *-l- disappears without a trace.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*nT	*nT/T/rT	*nT/T	nT/T	*(Ṽ)T~(V)T	nT/T	*(n)T	*nT/rT	T	*T

The medial *n, as all other resonants, is best preserved in PL (though the sequences *bVnT-, *mVnT- in PL had undergone an early dissimilative development *mVnT- > *mVrT- or resonant dropping *mVnT- > *mVT-).

In PN *n is preserved before dental explosives, develops into *r (becomes subject to denasalization) or disappears before fricatives and disappears before affricates. A similar distribution of reflexes (though without the development *n > r) is met in Avar and Lak, where *n is usually preserved before dental explosives, but dropped before affricates.

In PA *n usually is preserved in combinations; however, if a nasal *n is present in initial position or in the following syllable it disappears by dissimilation; sometimes it is dropped also before fricatives.

In PD *n is in most cases preserved, though it may sporadically disappear.

In Khinalug, PWC and PTs *-n-, like the other resonants, usually disappears. PTs reveals in some cases the nasalization of the preceding vowel; however, sometimes *n disappears without any trace.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mT	*nT/T	*(n)T	T	*(Ṽ)T~(V)T	(n)T	*mT/nT/T	*mT/T	mT/T	*T

In PL and PD, the nasal in clusters of the type *mT is usually preserved, disappearing only (as a consequence of dissimilation) after the initial resonants. PL always preserves the labial character of *m, while Dargwa preserves *m proper only if a hissing consonant is following; in other cases it turns into n.

PA and Lak reveal a variation between *nT and *T; in Khinalug in the few known cases we observe either the preservation of m, either its disappearance (with unclear distribution).

In PN *m (unlike *n, see above) usually disappears before dental explosives, but is preserved (as n, rarely m) before affricates; the character of Nakh reflexes before original fricatives is not quite clear. It must be noted that when the original affricates after *-m- develop into PN *tt (see above, page 46), *-m- (just as *-n-) regularly disappears. In rare cases in PN we see a sporadic denasalization *-mT- > *-bT-.

Avar regularly simplifies *mT > T (including the position before dental explosives, where the old *n is preserved, see above). The same is true for PTs (where we observe the same occasional nasalization of the previous vowel, as in the case with *n) and for PWC.

The resonants *w and *j are rather rarely met as components of medial consonant clusters; the medial -j- is not preserved at all in modern languages, but it

can be reconstructed in some cases, judging by the character of the PN reflex of adjacent affricates or fricatives (see above, page 47).

Front consonants themselves, as components of clusters with preceding resonants, usually give normal reflexes (see above), though we must note a specific development of the voiced dental *d, which may be consumed by the preceding resonant articulation:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rd	*rd~r	*rd	rd~r	*d~r	rt:~d	*(r)t:	*rt:	r	*d
*rdw	*t	*rd	rd	*d	rt:	*rt:	*rd		
*ld		*ld	(l)d	*l	j(?)~ll	*lt:	*rt:		
*nd	*d	*nd	(n)d	*d	t:~nn	*(n)t:			*d
*md	*d	*(n)d	d	*d_1~d	(n)t:~d	*(n)t:	*mt~t:		

1.1.11.1.C. Clusters "resonant+lateral consonants".

In the table of correspondences given below we will mark the laterals by the symbol L, and velars — by K. Before laterals we reconstruct the same set of resonants that we do before other obstruents (i.e. *r, *l, *n, *m; *w is met very rarely and its reflexation will not be specially examined; combinations with *j cannot be reconstructed).

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rL	*rL	*rL	L	*L	K	*(r)K	*rL	K	*L

As we see in this table, *r in lateral clusters is preserved by PL, PN, PA and (not always) in PD; in other languages *-r- disappears.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*lL	*L	*rL	rL	*L	rK	*rK	*L		

The clusters "l+lateral" are reconstructed here only from systematic considerations (by analogy with the development of *l in combinations with other consonants). The loss *l > ∅ in PL, where resonants usually are preserved, is characteristic; it is quite probable that the lateral articulation of *l was preserved here too, which ultimately resulted in its dropping by dissimilation with the following lateral obstruent. In rare cases, when *l and the following lateral obstruent happen to be divided by the syllable border, *l can even be preserved in PL. In other languages *l can either develop into r or disappear; however, it is worth noting that its reflexes in most languages differ from those of *r.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*nL	*rL	*nL/L	L	*L	K	*(n)K~rK	*nL/L	K	*L

The resonant *n, in combinations with following laterals, is also rather unstable. It is preserved in PA (but disappears here as a consequence of

dissimilation after initial resonants: *wVnL- > *mVL-~ *bVL-), in PL (with a similar disappearance *wVnL- > *wVL-), and sometimes in PD (though the disappearance *n > ∅ or the development *n > r is more frequent here). In other languages *n disappears before laterals (although PTs, Lak and Khinalug may preserve its trace as nasalization of initial resonants; in Lak this nasalization was followed by the dissimilative denasalization of *-n- and its development into -r-: *bVnL- > *mVnL- > *mVrK-). In PN it develops into -r-.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mL	*L	*mL/L	L	*L	nK	*(n)K	*mL/rL	*L	

The resonant *m is preserved in PA (though it disappears as a consequence of dissimilation in the sequence *bVmL- > bVL-) and in PL (where *m in the same sequence had undergone a more complicated development: *bVmL- > *bVnL- > *mVnL- > mVrL-). In Lak *mL > nK (unlike the sequence *nL, where *n disappears). In other languages the reflexes of *m and *n in clusters with laterals usually coincide.

1.1.11.1. D. Clusters "resonant+back consonants".

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rK	*(r)K	*rK/(r)K	rK/(r)K	*K	rK/K	*(r)K	*rK	nK	*K

The resonant *r before back consonants is preserved in PL and regularly disappears in PTs and PWC. In PN -r- may be both preserved and dropped. In PA and Avar such a variation is observed before uvular consonants; before velars r is usually preserved. In Lak r is preserved in most cases, but regularly disappears before uvulars which yield Lak q. Finally, in Khinalug, judging by the few available examples, *r either disappears or develops into n.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*lK	*(r)K	*nK/K	K	*(Ṽ)K	(r)K	*(r)K	*lK/K	*K	

The resonant *l, before back consonants, usually behaves more or less in the same way as before the front ones. It is preserved in PL (though we must specially note the development of the sequence *wVlK- > *wVK- ~ *wVnK-). In PN, PD and Lak there is a variation between the reflexes K and rK (in Lak and PD lK may also be sporadically preserved). In Avar -l- is sporadically preserved, too, although in most cases the resonant disappears. In PA *l, before back consonants, regularly develops into n (but in the sequence *wVlK- > *wVnK- > *mVK- this medial nasal disappears through dissimilation; Avar in this position sometimes reveals not the disappearance, but a dissimilative development *wVnK- > mVrK-). In PTs *l first developed into a nasal, then disappeared, leaving behind the nasalization of the previous vowel. Finally, in PWC we observe a regular disappearance of the resonant in clusters like this.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*nK	*K	*nK/K	nK/K	*(V)K~(Ṽ)K	nK	*rK	*nK/K	(n)K	*K

The combination *nK is preserved in Avar-Andian (with the usual limitation: -n-> -∅- after initial resonants) and in Lak. In PL *n is preserved before velars but disappears before uvulars (combinations "n+uvular" are missing in PL). In the sequence *mVnK- the resonant -n- can be preserved or disappear arbitrarily (*mVnK- > *mVnK- ~ *mVK-); we must specially note a dissimilative development *bVnQ- >*mVnQ- > *mVrQ-). In PTs, after the disappearance of *-n-, the nasalization of the previous vowel can be preserved (as in combinations with front consonants, see above). In PN and PWC *n usually disappears.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mK	*mK~nK	*nK	K	*(Ṽ)K	nK~wK	*nK	*mK		*K

The nasal labial in combinations with the following back consonants is well preserved in PL and sometimes preserved in PN (though more often transformed into -n-); in PD *m may be preserved in reduplicated morphemes (i.e. on the syllable border), but usually develops into -n-. Traces of labialization are also found in Lak, where we can sometimes discover a denasalizated reflex -wK-, though in most cases we find the reflex -nK-. This reflex is usual in PA. In Avar (as in the case with the combination *mT), PWC and PTs the nasal disappears (and in PTs often, though not always, leaves a trace as the nasalization of the preceding vowel).

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*wK	*(b)K	*(w)K	K	*K	(w)K	*(b)K	*(w)K		

The resonant *w is met more often before back consonants than before others (though on the whole it is much less frequen than other resonants). It may be preserved in PN (as b), in PA, Lak, PD (as b) and PL.

1.1.11.2. Clusters of the type RH ("resonant"+"laryngeal").

Of all the subgroups of North Caucasian languages such combinations (and only a limited number of them) can only be reconstructed for Proto-Andian. However, there is a whole series of phenomena that may be conveniently explained if we assume the presence of such combinations in PNC and PEC. First of all, there are frequent cases of the loss of non-initial resonants in PD, Lak, PTs, Avar and PN, which rather often (see below) correlate with the presence of RH clusters in PA. In these cases it is natural to suggest a development of the type *-RH- > *-H- > -∅- with the weakening of resonant articulation in the medial cluster (a phenomenon which is quite usual in other medial clusters, see above) that led to the disappearance of the resonant, and ultimately to the disappearance of the whole medial cluster (because intervocalic laryngeals are themselves very unstable, see above). We must emphasize that in these cases there is no question of any grammatical affixes ("determinatives") being joined or not joined to the root, because in two subgroups — PL and PA — the resonants in the examined cases are always preserved,

and because in other languages, if resonant reflexes are present, they reflect the same PNC resonant (and not different ones, which would be natural, if we were dealing with reflexes of different grammatical morphemes).

The second circumstance to which we must pay attention is the presence, in PL, in many of the cases mentioned above (i.e. as correspondences to PA clusters of the type *RH and to the dropped resonants in other languages) of the so-called "tense" resonants *m:, *n:, *l: (on the reflexes of these consonants in modern Lezghian languages, see below). This means that in PL there occurred a process inverse to the one described above — i.e. the strengthening of resonants in combination with following laryngeals, with a total consumption of the laryngeal articulation. It must be emphasized that the *RH-clusters are the only source of PL tense resonants; the sometimes proposed suggestion that in these cases we are dealing with earlier combinations of the type *mb or *nd is thus apparently unfounded.

The combinations "resonant+laryngeal" can be divided into three main types by the character of reflexation in the subgroups. We tentatively reconstruct therein the laryngeals *ʔ, *h and *ɦ (tense resonants in PL appear in two last types of combinations, therefore the reconstruction of similar laryngeals would be natural for them; however, the question where to reconstruct *h and where *ɦ is solved rather arbitrarily, primarily because laryngeal reflexes are missing in most languages, and PA reflections are not sufficient to determine the exact character of laryngeal articulation in PNC and PEC).

Since Avar has both barytonal and non-barytonal accent paradigms in words with *RH-clusters (see above, page 62, on the connection of Avar paradigms with the quality of laryngeals), there are reasons for reconstructing both plain and emphatic laryngeals in *RH-clusters (the latter having caused the appearance of the immobile paradigm A in Avar). We can thus also reconstruct the combinations *Rʔ, *Rh, *Rʕ, that, however, generally give the same segment reflexes as the combinations *Rʔ, *Rh, *Rɦ (the difference between the combinations of the types *Rʔ and *Rʔ is probably also reflected in Lak, see below).

The development of the clusters of the type *RH may be summarized in the following way:

A. Clusters of the type *Rʔ/*Rʔ

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mʔ(*mʔ)	*m~Ø	*mH	m	*(Ṽ)Ø	m/Ø	*m	*m	m	*Ø
*nʔ(*nʔ)	*n~Ø	*nʔ	n~Ø	*(Ṽ)Ø	n/Ø	*n~Ø	*n	n	*Ø~n
*rʔ(*rʔ)	*r~Ø	*r(H)	Ø	*(Ṽ)Ø	r/Ø	*r~Ø	*r		*Ø
*lʔ(*lʔ)	*Ø	*rH	r	*r	l/Ø	*l	*l	l	*Ø(~*l)
*ɬʔ(*ɬʔ)	*Ø	*l(H)	l	*Ø	l/Ø	*l	*l	l	*Ø

The variation between zero and non-zero reflexes is observed in some cases in PN, Avar and PD. In PWC, in most cases, we observe zero reflexes (which corresponds to the general tendency of dropping resonants in PWC). Characteristic for PTs is the compensating nasalization of the vowel preceding the lost resonants

(which also confirms the suggestion of original consonant clusters here — cf. a similar phenomenon in the development of *RC-clusters, see above).

As for Lak reflexes, in the few cases, when Lak and Avar reflexes are present at the same time, we have Lak ∅ corresponding to the Avar paradigm A (cf. *ja* : *ber* 'eye', *ka* : *k^{w}er* 'hand') while the preservation of the resonant corresponds to Avar paradigms B and C (cf. *ula* : *ʕer* 'board, pole', *ʔun* : *ç:ínu* 'navel', *q̇an* : *ʕonó* 'flat stone'). Thus, we may suggest that PEC *Rʔ-clusters are reflected in Lak as resonants, while *Rʡ-clusters yield ∅ (with the disappearance of resonants before *-ʡ> -∅-).

B. Clusters of the type *Rh/*Rħ.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mh(*mħ)	*m(~∅)	*m	m	*m	∅	*m	*m:		*∅
*nh(*nħ)	*∅	*nH	∅	*(Ṽ)∅	∅	*∅	*n:	∅~n	*∅
*rh(*rħ)	*∅	*r	r	*(Ṽ)∅	∅	*∅	*r	∅	*∅
*lh(*lħ)		*r	∅		∅	*∅	*l:		*∅
*ɬh(*ɬħ)	*l	*l	l	*l	∅	*∅	*l:	l	*∅

This type of clusters is characterized by the presence of tense resonants in PL (except *r, which only has a lax variant in PL), the prevalent disappearance of resonants in Lak and Dargwa (except *m, which is always preserved in Dargwa) and the lack of laryngeals in PA reflexes (except the combination *nh > *nH). The latter may to some extent serve as an argument for reconstructing the laryngeal *h in this case: since the reflexes of the cluster types A and C (see below) in PA generally coincide, but somewhat differ from the reflexes of type B, it is natural to suggest that in types A and C we are dealing with the reflexes of the laryngeals *ʔ and *ʕ (whose non-initial reflections coincide in PA, but differ from the reflection of *h: see above, page 61).

C. Clusters of the type *Rʕ/*Rʢ.

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*mʕ(*mʢ)	*∅	*m(H)	∅	*(Ṽ)H	m	*m	*m:		*∅
*nʕ(*nʢ)	*∅	*nʔ	n	*(Ṽ)∅	n	*n	*n:	∅	
*rʕ(*rʢ)	*∅	*rH	r	*∅	r	*r	*r		*∅
*lʕ(*lʢ)	*∅		r	*r	l~∅	*l	*l:		
*ɬʕ(*ɬʢ)	*∅	*l(H)	∅(~l)	*l	l	*l	*l:	l	*∅(~l)

In this type of clusters PL has the same reflexes as in the previous one, while PA reflexes generally coincide with the reflexes of the type *Rʔ/*Rʡ. For PN zero reflexation is typical, while, on the contrary, PD (and, in most cases, in Lak) regularly preserve resonants.

As a conclusion to this section we must note the preservation of the distinction between two lateral resonants (*l and *ɬ) with following laryngeals;

this opposition is lacking in the clusters of the type *RC (see above), which once again emphasizes the ambiguous character of the phoneme *ɬ in PNC and PEC (the possibility of regarding it both as an obstruent and a resonant).

Reliable cases of combinations of the resonants *w and *j with following laryngeals have not been found.

1.1.11.3. Clusters of the type *HR ("laryngeal"+"resonant").

In some nominal roots we discover correspondences somewhat similar to those described in p. 1.1.11.2, but differing in several respects. In some languages (e.g. in Tsezian and Andian) the reflexes are just the same, but in others (e.g. in Nakh, Avar and Lezghian) we meet a total loss of resonants and the preservation of the reflexes of laryngeal consonants. In these cases we tentatively reconstruct original PEC (and PNC) clusters of the type *HR, suggesting either the development *HR > *RH or *HR > *H in descendant languages. Here we will list all types of such correspondences, known to us:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*ʔn		*n(H)	n	*(Ṽ)Ø	Ø	*Ø	*ʔ		
*ʔr	*Ø	*rʔ	r		Ø	*Ø	*j		*r
*hn	*n	*nH	n~Ø	*n	Ø	*Ø~j	*h	(?)l	*Ø
*hl~ɦl	*ʔ	*r(H)					*l~l:		*Ø
*ɦɬ	*ʔ	*l	ʕ	*l	Ø		*l	Ø	
*ɦr	*ħ		ħ	*r			*r	z	
*ɦn	*n	*nʔ			ØI	*ħ	*hI		
*ʔn	*Ø~ħ	*nH	Ø	*(Ṽ)h	Ø	*h	*ʔ	Ø	(*m)
*ħn	*n	*n(H)	h	*(Ṽ)Ø			*j	Ø	
*ħr	*Ø	(*h)	Ø	*Ø	r	*r	*r	*r	
*ħl		*r	r	*(Ṽ)Ø			*j~ʔ		
*ʕr	*Ø	*r	Ø	*(Ṽ)Ø		*Ø	*ʡ		
*ʕn(?)		*ʔ			n	*n	*n		

*HR-clusters are more rare than *RH-clusters, therefore in many cases the reconstructions are quite tentative.

1.1.11.4. Clusters of the type *RR ("resonant"+"resonant").

In a small number of nominal roots we discover a variation of reflexes of different resonants. We may suppose that these variations reflect original clusters of resonants, simplified in all descendant languages. We can establish the following rows of correspondences:

PNC,PEC	PN	PA	Av	PTs	Lak	PD	PL	Khin	PWC
*rn	*rn	*nH	n	*n	n	*r	*r	*r	
*ln		*n	n		l		*l~l:		
*mn	*n	*m					*m	*Ø	
*wn					m		*w		
*nm	*m	*n	n	*m	nn	*m	*n		
*wɬ	*l	*l	l			*w			

In some words it seems possible to reconstruct also other medial clusters of resonants with *w and *j as the first component; in such clusters all languages usually reflect only the second resonant (though sometimes we see reflexes similar to *RH-clusters); as for the first component, it is indirectly reflected in its influence on vowels or initial consonants.

1.1.2. Vocalism.

The only attempt to reconstruct the PEC (Proto-Daghestan) vocalism was made by E. A. Bokarev, who had reconstructed an original system of five vowels, based on a small number of examples from Avar, Lak, Dargwa, Lezghian and Tabasaran (see [Bokarev 1981]). At the present time the data of the reconstructed PN, PA, PTs, PD and PL languages call for a total revision of the correspondences established by E. A. Bokarev. It must be also noted that it now seems pointless to reconstruct nasalized vowels (on their secondary development in PTs as a result of the fall of medial resonants, see above), as well as the pharyngealized ones (on their origin, see section 1.1.3); however, we have reasonable evidence in favour of the distinction between long and short vowels.

The reconstruction of vowels is made generally on the basis of nouns (see below on the behaviour of vowels in verbal roots). We should also note that vowels behave quite differently in medial and word-final positions.

1.1.2.1. Medial vocalism.

In medial (non-final) position we reconstruct 9 vowels for PNC (or 18-vowels, considering the length feature);

*ĭ	*ī	*ŭ	*ū̆			*ɨ̆	*ɨ̄	*ŭ	*ū
*ĕ	*ē			*ə	*ə̄			*ŏ	*ō
*ä	*ā̆			*ă	*ā				

In the tables below we demonstrate three types of reflexes: 1) reflexes when there is no labial w adjacent to the vowel; 2) reflexes of the vowel after the labial w; 3) reflexes of the vowel before the labial w. Such a division is necessary, because labialization in North Caucasian languages has significantly influenced the development of vowels.

The development of vowels is also influenced by pharyngealization (that appears as a result of the fall of laryngeals, see below), as well as by nasalization in PTs (that appears as a result of the fall of medial resonants, see above). We list the nasalized variants of PTs reflexes after the main ones in square brackets. See below for more detailed comments on the development of vowels in East Caucasian languages.

In West Caucasian languages, the original PNC vocalism system has been totally destroyed (as we know, most modern West Caucasian languages possess bi- or trivocalic systems that have developed from the initial PWC bivocalic vowel system). The main principle of the reflexation of vowels in PWC is as follows:

a) front vowels are reflected as the palatalization of the preceding consonant, being themselves transformed into neutral *ə/a; if the preceding consonant is labialized, it becomes palatalized too. This gives rise to the specific series of "palatalized-labialized" consonants (on their development in West Caucasian languages, see below).

b) the labialized back vowel *u is reflected as the labialization of the preceding consonant; thus, the reflexes of non-labialized consonants before *u merge with the reflexes of labialized consonants. The vowel itself is also transformed into neutral *ə or *a.

c) the mid vowels *i̯, *ə as well as back *o, *a are reflected in PWC as neutral *ə or *a;

d) long vowels in PWC merge with short ones, but preceding consonants become tense (strong). This gives rise to the specific series of PWC tense (so-called "preruptive") consonants.

Generally speaking, all the listed rules of vowel reflexation in PWC can be reduced to one: the transfer of qualitative and quantitave features of vowels onto the preceding consonants. As a result of this rule, the system of vowels in PWC was drastically reduced, but the system of consonants was significantly increased (because of the appearance of palatalized, "palatalized-labialized" and "tense" phonemes). We must note that the height opposition of two PWC vowels (*ə-*a) still cannot be connected with the respective opposition in PEC. High vowels were probably originally reflected as *ə, mid and low vowels — as *a, but afterwards, under the influence of ablaut, the connection of PWC vowel height with the corresponding Proto-North Caucasian phonetic categories became obscured.

In the table given below we do not list PWC reflexes (which were basically described above).

PNC,PEC	PN	PA	Av	PTs[1]	Lak	PD	PL	Khin
*ĭ	*ă	*i	i	*i[ĭ][2]	i[3]	*i~a[4]	*i	i
*(Cw)ĭ	*ŭ~ŏ /ă	*C^{w}i ~*Cu[5]	C^{w}e ~Co	*C^{w}i̯	C^{w}a~ Cu	*Cu~ C^{w}a	*C^{w}i	Cu ~C^{w}a
*ĭ(Cw)	*ŭ/ă	*iC^{w} ~uC	i~u	*iC(^{w})~ uC[ẽ]	VC(^{w})	*iC^{w}~aC^{w}	*iC^{w}	
*ī	*ē/ā	= *ĭ	= *ĭ	= *ĭ	i	= *ĭ	= *ĭ	= *ĭ
*(Cw)ī	*ō~ū/ā	= *ĭ	= *ĭ	= *ĭ	C^{w}i~Cu	= *ĭ	= *ĭ	= *ĭ
*ī(Cw)	*ō/ā	= *ĭ	= *ĭ	= *ĭ	iC^{w}~uC	= *ĭ	= *ĭ	= *ĭ
*ŭ[6]	*ŏ~ĭ	*i	e~i	*a[ã]	u~a	*a(~u)	*e~ä	
*ŭ(Cw)	*ŭ~ĭ	*iC(^{w})	o~i	*e[õ]	u~a	*a	*e~ä	
*ū	*ō/ā	= *ŭ	= *ŭ	= *ŭ	= *ŭ	= *ŭ	= *ŭ	
*ü(Cw)	*ō/ā	= *ŭ	= *ü	= *ŭ	= *ŭ	= *ŭ	= *ŭ	

PNC,PEC	PN	PA	Av	PTs[1]	Lak	PD	PL	Khin
*ĕ	*ă[7]	*o[8]	a[8]	*ɔ[õ][9]	a	*e/a[10]	*e~ä[11]	i[12]
*(Cw)ĕ	*ŏ/ă	*C^{w}i~ C^{w}o	C^{w}a~ Cu	*C^{w}ə~Cɔ [C^{w}ə̃~Cɔ̃]	a~u	*C^{w}e~ C^{w}a	*C^{w}e~ C^{w}ä	u
*ĕ(Cw)	*ŏ~ĕ	*iC^{w}~ oC^{w}	a	*ɔ[ɔ̃]	a~u	*eC^{w} ~aC^{w}	*eC^{w}~ äC^{w}[11]	u
*ē	*ē~ī/ā	*i	e[13]	*ɨ(~ə?)[14]	a	*e~i[15]	*e[16]	i
*(Cw)ē	*ō~ē	*C^{w}i~ Cu	Cu~C^{w}e, Co[13]	*C(^{w})ɨ	C^{w}i~ Cu	*C^{w}e~ Cu[15]	*C^{w}e	u
*ē(Cw)	*ē/ā	*iC(^{w})	e~o	*ɨC(^{w}) [õC]	a~u	*eC(^{w})~ *iC(w)	*eC^{w}	ɨ
*ă̆	*ĭ[17]	*i	i[18]	*i[ĩ][19]	i[20]	*i[21]	*ä[22]	ɨ(-u)
*(Cw)ă̆	*ĭ	*C(^{w})i	i~ u[18]	*C(^{w})ɨ[ɨ̃]	C^{w}V	*Cu~C^{w}a	*C(^{w})ä~ C^{w}e	ɨ
*ă̆(Cw)	*ĭ (~ŭ,ŏ)	*iC(^{w})	a~u	*i	i~u	*iC^{w}~uC	*äC(^{w})	
*ā̆	*ō/ā	= *ă̆	=*ă̆[23]	*ɔ[ɔ̃~ẽ]	= *ă̆	= *ă̆	= *ă̆	ɨ~i
*(Cw)ā̆	*ā	= *ă̆	= *ă̆	*C(^{w})e	= *ă̆	= *ă̆	= *ă̆	
*ā̆(Cw)	*ā	= *ă̆	= *ă̆		= *ă̆	= *ă̆	= *ă̆	i
*ĭ	*ă[24]	*o	a	*ɨ[ẽ],-u	a	*u	*ɨ(-i?)	ɨ~u
*(Cw)ĭ	*ŏ/ă	*C^{w}o/ C^{w}i[25]	u~C^{w}e /C^{w}a[26]	*C(^{w})ɨ [ẽ][27]	Cu~ C^{w}a	*u~a[28]	*Cu~ C^{w}ɨ[29]	
*ɨ̆(Cw)	*ă	*oC(^{w}) ~iC(^{w})	u~o (~a)[30]	*ɨC(^{w})[ẽ]	aC^{w}~ uC	*aC^{w}~uC	*uC ~ɨC^{w}[31]	
*ɨ̄	*ā[32]	*i	i	*ɨ[ɔ̃][33]	u~i	*i~u	*ɨ(*ji-)	i~ɨ~u
*(Cw)ɨ̄	*ū/ā	*C(^{w})i ~Cu	u~i[34]	*C(^{w})ɨ [C(^{w})ɨ̃]	u~i	*C(^{w})i~ Cu	*C^{w}ɨ~ Cu[35]	i
*ɨ̄(Cw)	*ā	*iC^{w}~ oC^{w}	i	*ɨ	u~i	*i~u	*ɨC^{w}	
*ə̆	*ŏ/ă	*i[36]	o	*o[ɔ̃][37]	a(-u)	*a	*a(*ja-)	ä~a,o
*(Cw)ə̆	*ŭ~ŏ	*C^{w}o	o	*o~ɔ	u	*u~a[38]	*Cu~ C(^{w})a[39]	
*ə̆(Cw)	*ŏ	*iC(^{w}) ~uC	o~u	*o[ɔ̃] ~aC(^{w})[40]	iC(^{w})	*a	*aC(^{w})	
*ə̄	*ē/ā	*i[36,41]	= *ə̆	o[ã~õ][42]	= *ə̆	= *ə̆	= *ə̆	= *ə̆
*(Cw)ə̄	*ō/ā	*C(^{w})i ~Cu	= *ə̆	*u~ɔ	= *ə̆	= *ə̆	= *ə̆	
*ə̄(Cw)	*ē~ō/ā	*iC(^{w}) ~uC	= *ə̆	*o~ɔ	= *ə̆	= *ə̆	= *ə̆	
*ŭ	*ŏ~ŭ/ă	*u	u	*o~u	u	*u	*o	a(?)
*ū	*ō~ū	*u	u	*ɨ~i	u	*u	*o	a(?)

PNC,PEC	PN	PA	Av	PTs[1]	Lak	PD	PL	Khin
*ŏ	*ŏ (/ă)[43]	*i	e~i[44]	*ɔ[ã~õ][45]	u	*a~u	*a	ɨ(?)
*(Cw)ŏ	*ŭ	*C^{w}i~Cu	u	*ɔ	u (*C^{w}aI-)	*u	*C^{w}a	
*ŏ(Cw)	*ŏ	*iC^{w}~uC	u	*ɔ	u (*-aIC^{w})	*iC^{w}	*aC^{w}	
*ō	*ā(-o)	*i[46]	e~i	*ɨ[ĩ~ə̃][47]	u	*a/i[48]	*o	a~ä
*(Cw)ō	*ō/ā	*C^{w}o	C(^{w})e [ẽ~ã]	*Ce~C^{w}ə	u	*C^{w}i	*o	ä
*ō(Cw)	*ā	*oC(^{w})~iC(^{w})	i	u	*iC(^{w})~uC	*oC(^{w})		
*ă	*ă (-e)[49]	*a	a/e[50]	*a~e [ã~õ]	a(-u)	*a	*a(*ji-) (-u?)[51]	ä~a
*(Cw)ă	*ŏ/ă	*C^{w}a	C^{w}a/C^{w}e[52]	*C^{w}a~C^{w}e[ã~õ]	Cwa~Cu	*C^{w}a[53]	*C^{w}a	a~o
*ă(Cw)	*ă	*aC^{w}	aC^{w}~eC^{w}	*a~e	aC(^{w})	*aC(^{w})	*aC^{w}	
*ā	*ē/ā	*a	a	*ɨ~i [ĩ~ə̃]	a(-u)	*a[54]	*a(*ji-)	
*(Cw)ā	*ē~ō/ā	*C^{w}a~Cu	C^{w}a~Cu	*C(^{w})i~Cu	C(^{w})a~Cu	*C^{w}a	*C(^{w})a	a~o
*ā(Cw)	*ā	*aC(^{w})	aC(^{w})~uC	*ɨ(i)~u	aC(^{w})	*aC(^{w})	*aC(^{w})	

Comments.

1) In Proto-Tsezian-Khvarshi (PTsKh) we observe a phenomenon of splitting the reflexes of some PTs vowels (see below), which causes us to reconstruct two series of vowel phonemes (series A and series B) of the first syllable: *i^{A}-*i^{B},*e^{A}-*e^{B},*ɨ^{A}-ɨ^{B},*ə^{A}-ə^{B}, *o^{A}-o^{B}, *u^{A}-u^{B}. In the table we have not taken into account this distinction, the origin of which seems to be caused by prosodic reasons. Indeed, in all the rows of correspondences listed above we observe an exact correspondence of Tsezian series of vowels to Avar accent paradigms:

PEC vowel	PTs series	Avar accent paradigm
*i	A	B~C
	B	A
*ü	A	B~C
	B	A
*ə	A	B~C
	B	A
*a	A	B~C
	B	A
*e	A	B~C
	B	A
*ä	A	A~B~C
	B	B~C
*ɨ	A	(A)~B~C
	B	B~C
*o	A	A~B~C
	B	B~C

From this scheme we see that the PTs series B corresponds to Avar barytonal accentuation if the root vowel goes back to PEC *i, *ü, *ə or *a, while the same PTs series B corresponds to Avar non-barytonal accentuation if the root vowel goes back to PEC *e, *ä, *ɨ or *o. On the contrary, the PTs series A corresponds to Avar non-barytonal accentuation if the root vowel goes back to PEC *i, *ü, *ə, *a, but to different Avar accent patterns if the root vowel goes back to PEC *e, *ä, *ɨ or *o. It is not to be excluded that the reconstructions of PEC vowels *ə and *ɨ should be swapped; in that case we would have a general rule according to which the PTs series A corresponds to non-barytonal paradigms when the root contains an original narrow vowel (or the neutral *a), and to any paradigm when the root contains an original wide vowel; on the contrary, the series B corresponds to the barytonal paradigms if the root contains an original narrow vowel (or the neutral *a), and to non-barytonal paradigms if the root contains an original wide vowel. However, the phonetic articulation of the vowels *ə and *ɨ could probably vary in time, and by now we would rather preserve the reconstruction presented in the table (see above). The reasons why non-barytonal accent paradigms correspond to both PTs series (A and B) are to be examined additionally. But the correspondences given above evidently confirm the suggestion of a connection between PTs vocalic series and prosodic factors (ultimately with fallen laryngeals, see below).

2) The vowel *i develops in a different way adjacent to laryngeals, where *Hwi- > *Hɔ- [Hõ-] and *-CwiH > -aI(j).

3) In Lak the initial sequence *wĭ- >ba- (cf. *Cwĭ- > C(ʷ)a-), and in final position *-iw > -uw.

4) In Dargwa e can appear in the place of *i in the sequence *CiCa > *CeCa as well as before the resonant in the sequence *CiRC- > *CeRC-. Other specific features of the development of *i in Dargwa: we usually observe *u after labials, as well as in the sequence *-iw > *-ub; before the final laryngeal widening occurs: *-iH > *-eH.

5) In PA after h(w), widening occurs: *h(w)i- > *h(ʷ)a-.

6) Labialized high vowels *ü and *u are more rarely encountered than other vowels and their secondary character is not to be excluded. Besides that, the vowel *ü is characterized by an extreme instability of reflexes (as a result, the reconstruction of *ü and not, for example, *ö, is rather tentative). Up to now, however, we do not see any means to eliminate these vowels from the PEC system (i. e. any other way of interpreting the existing correspondences).

7) In PN *ĕ > *ŏ after and before labials (though after *m a non-labialized reflex *ă also occurs). Besides, the development *ĕ > *ă apparently does not occur before laryngeals and in final position after labialized consonants.

8) In PA and Avar the medial sequence *-ĕm- > *-um-.

9) In PTs *mĕCw- > muC-; *-ɔƛu > -eƛu.

10) In Dargwa in this row we observe a complicated distribution between the reflexes e and a (e after labials, dental explosives, hissing sounds, before ħ; a after hushing, velar, uvular, laryngeal consonants); *ĕ with pharyngealization (caused by fallen laryngeals) > aI.

11) PL also has a reflex i after r-, j- and some laryngeals.

12) In Khinalug i is the most frequent reflex; however, we also meet other vowels as descendants of *ĕ.

13) Avar has a after m-. The vowel *ē after front labialized consonants is here usually reflected as u, while after back labialized consonants it is either preserved or develops into o (*Kwe- > Ko-; the latter rule reflects an already quite late process).

14) Before and after hushing consonants PTs has i instead of ɨ.

15) In Dargwa, before pharyngealized uvulars, widening occurs: *-eQI > -aQI. After labialized front consonants and lateral fricatives *ē > u, after labialized back consonants e is preserved.

16) In PL, before pharyngealized uvulars, widening occurs: *-eQI > -äQI (cf. above about a similar process in PD).

17) After labial consonants in PN *ă̄ > ŏ. In a few cases (after ħ, after labialized consonants in final position) *ă̄ > ă.

18) Sometimes we also observe Avar e (it happens, in particular, regularly after Av. ʕ). Labialized front consonants before *ä lose their labialization (*Twä- > Ti-); after back labialized consonants *ä > u.

19) In a few cases PTs has *ɨ as a reflex of *ă̄ even without adjacent labialization. The distribution rules are not quite clear yet.

20) In the case of pharyngealization in Lak, *ä > iI, but *äCw > aIC^{w}. After front labialized consonants we usually have i here (with the loss of labialization of the preceding consonant); the sequence *Kwä- usually gives Ku- or K^{w}a-.

21) In PD before pharyngealized uvulars, the development *-äQI > -aQI occurs (see above, comm. 15), and *ä > e before ħ. Adjacent to -w-, *ä behaves as follows: *Twä- > Tu-, *-äTw > -uT(^{w}); *Kwä- > K^{w}a-, *-äK^{w} > -iK^{w}.

22) In the case of pharyngealization in PL, *ä > aI, but in the sequence *äCw, äI is preserved. The sequence *Cwä- usually gives C^{w}e- (but Cä- the in case of delabialization). The reflex e is also present before labialized laterals. After PL *j- *ä > a (the *a — *ä distinction is neutralized in this position).

23) Judging by Avar *maλ* 'nail', the sequence *mā̆- is reflected as ma- in Avar (just like *mē-, see comm. 13).

24) The sequence *-ĭw- gives ŭ~ŏ or ăw here.

25) In PA C^{w}i occurs after velar and lateral fricatives.

26) In Avar C(^{w})a occurs after labialized front consonants; after labialized back consonants we observe the reflexes Cu~C^{w}e (with a later development C^{w}e>Co).

27) In PTs *ĭ develops into u after labial consonants.

28) In Dargwa u occurs after front consonants and fricatives; a in other cases.

29) The reflex C^{w}ɨ is observed after PL front fricatives; in other cases *C^{w}ĭ > Cu.

30) We see the reflex a in Avar in the case of early delabialization of the consonant.

31) In PL ɨ is preserved only before combinations of the type RCw; in other cases *ĭCw > uC.

32) Judging by PN **l(ħ)ōṭ* 'waste of corn', the medial combination *-īwis reflected as ō in PN.

33) After labial consonants *ī (just like *ĭ, see comm. 27) develops into u in PTs.

34) In Avar i occurs in the case of an early delabialization *Cwī > *Cī.

35) The reflex C^{w}ɨ is observed after PL front fricatives; in other cases we have C^{w}ɨ as well as Cu (with a not quite clear distribution).

36) The reflexes of *ə in PA are modified before the following m: *-əm- > -um-~-im-, *-əmV > -omV.

37) In PTs *ă gives the normal reflex o after labialized consonants, unlike *ā (see comm. 41); however, after m- we meet a labialized reflex u.

38) In PD *Cwə > Ca, if C is a front fricative (in rare cases the same development occurs after other dental consonants as well). In other cases *Cwə > Cu. We must also note the variation a~u in the reflexes of the medial combination *-əm-.

39) In PL *Cwə > C(^{w})a, if C is a front fricative (cf. the same development in PD, see comm. 37).

40) The variation i~a in Lak is also observed in reflexes of the medial combinations *-əw-, -əm-.

41) The different development of the sequences *Cwă and *Cwā in PA is established on the basis of rather little material; this rule can probably be neglected (we may simply state a variation of the reflexes of *ă after labialized consonants); in this case we should admit that the reflexes of short and long *ə are distinguished only in PN and (somewhat less) in PTs.

42) In PTs *ā is reflected as u after labial consonants (except m); after *m-, however, we meet the non-labialized reflex a.

43) After m- and b-, PN also has a more narrow reflex ŭ.

44) After initial nasals Avar reflexes are somewhat modified; after *m we have a or o (though *mŏCw- > miC(^{w})-).

45) After initial *m- we have the variation ɔ~u in PTs.

46) The medial combination *-ōw- > PA o (cf. *-ōCw > -oC(^{w})).

47) The medial combination *-ōw- (in *hōwɬ[ā] 'pea') > PTs *e(?).

48) After back and laryngeal consonants (as well as in the case of pharyngealization) we see the reflex a in PD; after labial and front consonants, the reflex i (though sometimes we meet e instead of i).

49) The vowel *ă becomes a front ĕ in PN, if it is located in final position or before the laryngeal ʔ. It is interesting that, adjacent to labial consonants, the non-labialized reflex ă is preserved in PN (unlike some other cases, where we see the labializing influence of labial consonants, see comm. 2,8,17). Still, in the combination *-ăwthe vowel is labialized and *-ăw- > ŏ~ŭ.

50) In Avar the fronting *ă > e usually occurs before the resonant *-m-(afterwards lost).

51) In Khinalug the reflex i is encountered as well (in *iχer* 'many', *ḳizä* 'hare': in both cases we deal with a pre-accent position in a bisyllabic word).

52) In Avar a is preserved if the previous labialized consonant is a back one; after front labialized consonants we observe both a and the fronted reflex e.

53) However, the sequence *Twă (where T is a dental consonant) is reflected as *Tu- in PD.

54) Before the laryngeal ħ in PD fronting occurs: a > e.

In conclusion, we must pay attention to the rather frequent PN reflex a(ā); this reflex is missing only in the reflection of the PEC vowels *ŭ, *ă̆. To explain this

phenomenon, we must point to the rather productive Nakh V/a ablaut, which involves a change of any vowel present in the direct nominal stem to a (ā) in the oblique one. In some cases the vocalism of the oblique base could probably have influenced the direct base, which led to the appearance of the "ablaut" a in many rows of correspondences. For more details on the PEC ablaut, see below.

1.1.2.2. Final vocalism.

In most of the subgroups of North Caucasian languages, word-final vocalism is represented by reduced systems compared to medial vocalism. Except vocalic end, in most languages the consonant end is represented as well (it is virtually missing only in PA, where the consonant /resonant/ end is allowed only in stems of the type CVCVC, where -VC usually is a word-formative affix, as well as in some monosyllabic pronominal stems). There is reason to believe that the consonant end was not allowed in PEC and PNC; there is a very small number of stems that have a uniform consonant end in all subgroups (except, of course, PA, where, as we mentioned above, it is not allowed at all), and the reflexes of the last consonant in such stems in PWC are usually labialized or palatalized, which points to the fact that in the protolanguage they had some labialized or front final vowel.

The comparison of final vowels in Avar, Lak, PD and PL allows us to state the presence of seven main types of vowel correlations in final position and to reconstruct the following system:

*i	*ɨ	*u
*e	*ə	*o
	*a	

The distinction of long/short vowels in the final syllable is missing in all modern languages, including Nakh (in some Lak dialects the opposition of final short/long vowels is noted, but this phenomenon has not been sufficiently described yet and therefore is not taken into account). However, there evidently are some reasons for reconstructing such a distinction in PEC and PNC. In fact, many rows of correspondences of final vowels (see below) contain somewhat different reflexes, depending on whether the corresponding word in Avar belongs to the accent paradigm B (the scheme of this paradigm: accent on the second syllable in Gen. Sg., and on the second syllable in Nom. Pl.) or to the accent paradigm C (the scheme of this paradigm: accent on the second syllable in Gen. Sg., but on the first syllable in Nom. Pl.). The accent paradigm A (its scheme: accent on the first syllable in Gen. Sg. and Nom. Pl.) is irrelevant here (this paradigm, as a result of the fall of emphatic laryngeals, or the influence of the preserved emphatic laryngeals, probably combined the words that originally belonged to paradigm B as well as to paradigm C; see below, section 1.1.3). The final vowel is often preserved if Avar has paradigm B, but is lost if Avar has paradigm C.

The described situation may be interpreted in two ways: we can either think that Avar preserves old accent characteristics and reconstruct for the Avar paradigm B a type of stems with the accent, e.g., on the second syllable, and for

the Avar paradigm C a type of stems with the accent on the first syllable; or we may think that in final position there also existed a contrast between long and short vowels. The long ones were subsequently shortened, but have caused an accent attraction to the long syllable in the Avar plural paradigm. As for short vowels (Av. paradim C), they never caused the shift of accent to the second syllable and were more often subject to reduction. The second solution seems more likely to us, because it receives a convincing affirmation in PWC, where the behaviour of long vowels in final position is similar to that in the medial position, i.e. they cause the strenghtening of the preceding obstruent.

The correspondences between Pl, PD, Lak and Avar may be shown in the following scheme:

PNC,PEC[1]	Av. acc. par.	Av	Lak[2]	PD	PL[3]
*-ĭ	C	-∅	-i	*-i~-∅[4]	*-e
*-ī	B	-∅	-i	*-i~-∅[4]	*-e
*-ĕ	C	-∅	-∅	*-i(-a)~-∅[4]	*-ä
*-ē	B	-i[5]	-i	*-i(-a)~-∅[4]	*-ä
*-ŭ	C	-∅	-∅	*-∅	*-ɨ
*-ū	B	-∅	-a~-u	*-a	*-ɨ
*-ŏ	C	-∅	-a~-u	*-a	*-a
*-ō	B	-a	-a	*-a	*-a
*-ă	C	-∅	-a	*-a	*-ä
*-ā	B	-a	-a~-u	*-a	*-ä
*-ŭ	C	-u[6]	-∅	*-∅	*-ɨ
*-ū	B	-u[6]	-a~-u	*-a	*-ɨ
*-ŏ	C	-∅	-∅	*-∅	*-a
*-ō	B	-∅	-u	*-∅	*-a

Comments.

1) The system of final vowels is by now reconstructed only on Av., Lak., PD and PL evidence. The rules of the development of these vowels in PN, PA and in PTs (as well as in Khinalug) are still to be specified, and therefore they are not examined here. As for PWC, here final vowels generally behave quite like non-final ones (see the rules on page 73); the only difference concerns the vowel *o, which in final position, unlike the medial one, causes the labialization of the preceding consonant (this vowel was probably more labialized in final position than otherwise). The phonetical characteristics of PEC and PNC vowels are basically reconstructed on PL evidence (though here some phenomena, not typical for the medial position, also occurred: the shift in height *i > *e, the delabialization *u > *ɨ, the shift in row *a > *ä — though the last rule is rather "orthographic", because the precise phonetic nature of the PL final *ä is rather obscure, see below). However, this reconstruction is also confirmed by West Caucasian data, where quantitative and qualitative vowel features leave their traces on preceding consonants.

2) Lak reflexes are generally not strict (though a certain correlation with the data from other languages is surely observed); let us note that in virtually every

type of correspondences Lak may have a zero reflex, i.e. a consonant auslaut (besides the reflexes presented in the table above). The reasons for such a frequent reduction of the final vowel in Lak are not clear yet.

3) In this table we give the PL vowel system that is reconstructed for the oblique nominal stem (see below, page 170). In the direct stem (i.e. in nominative) PL suffered a total reduction of final vowels, only one of which has been preserved (*-ä, probably pronounced in the direct stem as /-a/).

4) In the case of pharyngealization we have PD *-aI in these types of correspondences. Instead of -i we also sometimes meet the PD vowel -u, but it apparently represents a later development of *-i after labialized consonants.

5) After labialized consonants Avar has -u, not -i.

6) Together with -u we also meet a wider reflex -o in Avar; however, -u and -o are apparently not really opposed to each other, but represent dialect variants of the same final vowel.

In general we may state that during all the history of North Caucasian languages the final vowels were dynamically weaker than the medial ones (they are more prone to reduction and have a tendency to disappear completely; in the latter case they are preserved only if some formants are joined to the stem, i.e. in the oblique stem).

1.1.2.3. Ablaut.

The vowel gradation in nominal and verbal stems is rather widespread in modern North Caucasian languages. However, a big part of it appears to have had a quite recent origin: thus, vowel gradation in the Avar nominal paradigm is almost completely caused by the phenomena of vowel reduction and assimilation in preaccented syllables; most vowel alternations in Nakh paradigms are explained by rather late umlaut, etc.

However, a proper ablaut system (i.e. vowel gradation in different morphological categories) can still be reconstructed in PN, PL and (in a relic shape) in PTs. Apparently there is a connection between the ablaut in these languages and the PWC ablaut *ə/a.

The verbal ablaut (judging by the situation in PL and PN, see below) was apparently very complicated and its reconstruction is a self-standing task (hard to be separated from the task of reconstructing the whole PEC and PNC verb paradigm).

As regards the ablaut in the nominal system, the situation is somewhat easier. In a number of cases it is possible to link the vowel gradations in PTs, PN and PL. In most cases we are dealing with the gradations of mid and high vowels: *e/*i, *ə/*ɨ (it is not yet clear whether a similar gradation *u/*o had existed). The vowels *e and *ə characterize the direct nominal stem, and the vowels *i and *ɨ — the oblique one. The PWC ablaut *ə/a probably reflects the ancient vowel height gradation as well (both types of ablaut mentioned above are reduced to this type after the loss of vocalic quality characteristics).

Here we must emphasize that all cases of the PN ablaut *V/*a in nouns cannot be explained by just these two types of ancient gradation. Therefore it is

possible that vowel gradations in PEC were even more widespread (though a secondary joining of many nouns with originally non-alternating vowels to the PN ablaut system is probable as well).

Of course, all these introductory notes cannot play the part of a full model of the PEC (and PNC) ablaut system, which can be constructed only together with a careful reconstruction of the PNC morphological system.

1.1.3. Root structure and prosody.

1.1.3.1. Nominal root.

The nominal root structure in PEC and PNC can, in general, be characterized as CVCV, where C is a consonant or a combination of consonants, and V is a vowel. A typical feature of the PNC root (both nominal and verbal) is the fact that at least one obstruent must be present in it; roots containing only resonants were not allowed. A specific structure (CV without any consonant restrictions for C) could be possessed only by auxiliary (grammatical and pronominal) morphemes.

The system of vowels, simple consonants and medial combinations of consonants was characterized above. Only the problem of initial consonant clusters requires special examination in this section.

In most modern East Caucasian languages, initial combinations of consonants are not allowed; the situation in such languages as Lezghian or Tabasaran, where in some cases, as a result of reduction of narrow vowels of the first syllable, new initial clusters have appeared, is certainly secondary. However, initial combinations of consonants are well represented in Nakh languages (see below); though some of them go back to ancient labialized consonants (i.e. clusters with -w-), which we examined above, there is still a very important group of combinations left — i.e., the combinations of the type CH- ("consonant"+"laryngeal").

The Nakh situation is apparently very archaic. We can suggest that PNC and PEC possessed a class of initial combinations of the type *CH-, that were preserved in PN, but disappeared in all other subgroups. The fallen laryngeals could have caused the appearance of the barytonal accent paradigm A in Avar (cf. above on the connection of this paradigm with initial emphatic laryngeals), and in some other North Caucasian languages — the appearance of a prosodic feature of pharyngealization. We establish four main types of correspondences between PN initial combinations and prosodic features in other languages:

PNC,PEC	PN	Av. acc. par.	Lak, PD, PL pharyngealization
*Ch-	*Cḥ-	C/B	*V
*Cḥ-	*Cẖ-/*Cʔ-	C/B	*V~VI
*Cẖ-	*Cḥ-	A	*V~VI
*Cʕ-	*Cʕ-	A	*V~VI

Let us go over some details of the reflexation of these types of combinations in separate subgroups.

First, it is necessary to note that in PN the clusters "uvular + laryngeal" are

not allowed (unlike all other types of combinations). These rather frequent clusters are therefore reflected as simple uvulars in PN. In some — very rare — cases PN loses its laryngeals in combinations of the type "resonant+laryngeal" as well. It is not to be excluded that in these cases PEC had clusters of resonants with ʔ or ʡ (missing after initial obstruents), but this question is still open because there are too few examples. In reflexes of the combination *Cɦ- PN has the laryngeal ħ after voiceless consonants, and ʡ — after voiced, glottalized and resonant consonants.

Pharyngealized vowels in Lak, PD and PL usually correspond to each other rather well and can be traced to PEC fallen laryngeals (not only in initial combinations, but in medial clusters as well, see above). Pharyngealization is preserved best of all close to uvular consonants; on the contrary, in the vicinity of front consonants, this prosodic feature often weakens and disappears. Labial and velar (sometimes hushing as well) consonants occupy an intermediate position in their "pharyngealization attraction". As a result, systems often appear, in which pharyngealization is only or mostly combined with the uvular series; such systems would be better regarded phonologically as systems without prosodic or vocalic pharyngealization, but rather with a special local series of uvular pharyngealized consonants.

All of the above means that in the rows of correspondences given above, in PL, PD and Lak pharyngealization is best preserved after uvular consonants, but it has a tendency to disappear after consonants of other local series; on the contrary, in PN laryngeals are not preserved after uvulars, but are well preserved after the consonants of other local series. Thus, PN and Lak-Dargwa-Lezghian data complement each other and help to reconstruct the PEC system as a whole (which is also confirmed by Avar accentological evidence).

A characteristic feature of PL is the specific development of the initial combination *rH-; in those (rather rare) cases, when Nakh data requires the reconstruction of this combination in PEC, PL has got the initial reflex r- (unlike the normal development *r- > j-, see above). The accuracy of this rule is confirmed by a similar development, *Hr- > r-, see below.

In addition to Lak, Dargwa and Lezghian languages pharyngealization is also present in PTs and PWC (where, on the basis of Ubykh, we reconstruct the series of labial and uvular pharyngealized consonants, see below). Its origin, in this case, is also probably connected with the process of the fall of laryngeals (in many cases it corresponds to pharyngealization in East-Daghestan languages), but many details require further examination.

Besides the examined types of roots there is another group of nominal roots (stems) with very specific correspondences in different languages. We mean roots whose reflexes have an initial resonant consonant in some languages and a laryngeal one in others. In the latter case the reflex of the resonant may be present too, but already in medial position. In some of these cases we may be dealing with a secondary metathesis of the resonant from the medial into the initial position; this process is going on regularly, e.g., in Avar in the initial sequence "ʔ+narrow vowel+RC". However, in most cases such an explanation cannot be suggested. It is probable that here we are dealing with the development of PEC initial combinations

of the type *HR-, that in some cases are simplified into R-, and in other cases are simplified to H- with a transfer of resonants into the medial position (*HRVCV > *HVRCV). The examination of the material allows us to state that roots with initial combinations of the type *HR behave in two ways, depending on the Avar accent paradigm — i.e., on the brevity/length of final vowels (see above):

PNC, PEC	PN	PA	Av	PTS	Lak	PD	PL	Khin
1. HRVCV̆								
a) (R=r,l)	*RVC(V)	*RVCV	RVC(V)^{C}	*RVCV	t.VRC(V)~dVC(V)	*dVRC(V)	*HVRCV	HVnC(V)
b) (R=m,n)	*RVC(V)			*RVCV	RVC(V)		*HV(N)CV	
2. HRVCV̄								
a) (R=r,l)	*HV(R)C(V)	*HV(R)CV	*HV(R)CV^{B}	*HVCV(-V̄-)	t:VRVC(V)	*dVRVC(V)	*RVCV	RVC(V)
b) (R=m,n)	*HV(R)C(V)	*HV(R)CV	*HV(R)CV^{B}	*HVCV(-V̄-)	RVC(V)	*(HV)RVC(V)	*RVCV	RVC(V)

It is worth noting that in type 2 roots (*HRVCV̄), the initial combination *Hr- gives r- and not j- in PL (though the normal reflex is *r- > j-); thus, we establish a general rule according to which initial combinations *rH-,*Hr- > PL *r(see above, page 83, on *rH- > PL *r-). Therefore, the only source of PL initial r- are PEC combinations with laryngeals. The development *Hr- > r- is certainly connected with a very specific Lak-Dargwa reflection of PEC *Hr- (> Lak. t:Vr-, PD *dVr-). It must be noted, however, that in some numerals and adjective roots the initial dental explosive may be missing in Lak and Dargwa.

Very complicated reflexes in North Caucasian languages are characteristic for a subtype of roots with *HR-, namely, for roots with a medial resonant of the type *HRVRCV (this type is rather frequent). Here, when the initial cluster is being eliminated, a "collision" of two resonants in medial position can happen. As a result, one of them is pushed out by the other; besides, in individual reflexes mutual assimilations of resonants sometimes occur (described above, see pp. 42, 45, 55, for simple roots of the type *RVRCV). These roots may appear as a "merry-go-round" of resonants and laryngeals around a single obstruent and are very hard to examine. The most frequent sequences here are represented by the types *HrVNCV and *HNVrCV (N=n,m):

PNC, PEC	PN	PA	Av	PTS	Lak	PD	PL	Khin
*HrVNCV̆	*nVwC(V)	*NVCV	NVC(V)^{C}	*NVCV	NVC(V)	*(HV)NVCV	*RVCV	
*HNVrCV̆	*RV(N)CV	*HV(N)CV	HV(R)CV^{C}	*HVCV(-Ṽ-)	NVC(V)	*NVRC(V)	*RVCV~*mVrCV	
*HrVNCV̄	*HV(N)CV	*HVNCV	HV(N)CV^{B}	*HṼCV	t:VrVCV	*dVrVC(V)	*RVCV	*RVCV
*HNVrCV̄	*HV(R)CV	*HV(N)CV	RVCV^{B}	*HVCV(-Ṽ-)		*HVNCV	*RVCV	

Other types of resonant combinations are not frequent. It must be noted that the type *HrVNCV̆ — because of the preservation of the initial resonant in PL — could be interpreted as *rHVNCV̆ (except those sporadic cases, when Dargwa preserves the initial laryngeal).

Another interesting type of roots are those which in some languages reveal

the structure CVRV, and in others — HV(R)CV. By analogy with the roots of the previous type it seems quite probable that in this case we are dealing with old structures of the type *HCVRV. In some languages this structure is simplified into CVRV (cf. *HRVCV > RVCV), while in others it develops into *HVCRV (cf. *HRVCV > HVRCV), and afterwards — because combinations of the type CR are generally not allowed — into HVRCV (with a possible subsequent loss of the medial resonant). According to their behaviour in descendant languages these roots can also be divided in two subgroups correlated with Avar accent paradigms and therefore with the brevity/length of final vowels:

PNC, PEC	PN	PA	Av	PTS	Lak	PD	PL	Khin
*HCVRV̆	*RVCV		*HV(R)CV^{C}	*HVCV(-Ṽ-)	CVRV	*CVRV	*CVRV	RVC~CVR
*HCVRV̄	a) *HV(R)CV	*CVRV	CVR(V)^{B}	*CVRV	CVRV	*CVRV	*CVRV	CVR(V)
	b) *mHVCV							

We should note that the reflexes of the structure *HCVRV̄ differ from the reflexes of simple roots of the type *CVRV̄ only in PN, where we see the structure HV(R)CV with front resonants, and a special structure mHVCV with the labial m. It must, however, be stated that in the last table we have on purpose somewhat simplified the transcription of the root structures; in reality medial resonants in descendant languages rather often disappear, which suggests that the structure *HCVRV, while transforming itself, developed not just into *CVRV, but rather into *CVRHV or *CVHRV (on the development of the medial combinations *RH and *HR see above, pp. 69-71).

In PWC, owing to the general rule of dropping laryngeals and (in most cases) resonants, most root types listed above are reflected as the monosyllabic structure CV. However, in rather many cases PWC has a prothetic consonant before C (usually a labial b or p — depending on the voice/voicelessness of C, more rarely a dental t or d). The nature of this consonant is not quite clear yet. It is not to be excluded that West Caucasian languages preserve an important archaism — i.e., the prefixed class markers, that were preserved by PEC only within verbal word-forms (most of the "class markers" that some researchers discover in a "petrified" shape within East Caucasian nouns, are, as seen from what was said above, organic parts of the root and have nothing to do with class agreement) and within a small number of nouns, mostly kinship terms and names of "inalienable" body parts.

All the variants of the CVCV structure that have been examined above (we have not said anything only about two very hypothetical structures *HCVCV and *RCVCV, the reconstruction of which is yet dubious) are characteristic for PEC (PNC) non-derived nominal roots. In some cases we can probably regard the initial *H- as a prefixed element (e.g., the noun *hwmǐʒi "honey", that is probably a derivate from the adjective *mǐʒV "sweet"), but in most cases we cannot find any deriving roots (verbal or adjectival) with a simpler structure. The contrary is correct as well: an absolute majority of non-derived PEC (PNC) nouns has the phonetic root structure CVCV (where C, as has been noted above, is a consonant or a consonant combination of one of the examined types). The following cases must be specially noted:

1) There is a rather numerous class of nominal stems of the structure CVCVCV,

where the last consonant is usually a resonant. It is quite possible that all such stems are derived from obsolete simple roots of the structure CVCV, because virtually all of the resonants in PEC could act as derivative or inflectional suffixes. However, the final solution in each individual case depends on deeper inner reconstruction or external comparison.

2) There is a small number of nominal stems with the structure *-VCV and a variable initial class marker. As we said before, these are nouns denoting some kinship relations or inalienable body parts (e.g. face, belly, etc.) These words — both by their semantics and their shape — in a way occupy an intermediate position between nouns and verbs (on the verbal root structure, see below). There is no doubt that in PEC this class of nouns was not much more extensive than in modern Caucasian languages. It is not to be excluded, however, that in the original PNC system the class markers could be prefixed not only to verbal structures of the type *-VCV, but to noun structures of the type *CVCV as well. On one side, it is indicated by some facts of West Caucasian languages (see above, page 85), on the other side, we meet occasional prefixation of the syllable rV- or ʔVr- with an obscure meaning to some nominal roots of the type CVCV in individual East Caucasian languages. It is probable that a very archaic situation of this type is reflected in ancient Hatti texts (see [Ivanov 1985]). However, this problem still requires a fundamental elaboration.

Summing up, we may state that for an absolute majority of nouns we can reconstruct an original two-syllable root structure. The extreme point of view of some authors, who think that the PNC and PEC root had a monosyllabic structure and consisted of one obstruent+vowel must therefore be considered insubstantial. The semblance of "monoconsonantism" is created here, on one side, by the pseudo-"monoconsonantism" of the West Caucasian root (whose secondariness was already noted by N. S. Trubetskoy, see [Trubetskoy 1930, 281]), on the other side, by the stability of the reflexes of PNC oral obstruents, opposed to the general instability and active assimilative/dissimilative processes within the subsystems of laryngeals and resonants. There is no doubt that many nominal stems contain old derivational morphemes, but the number of these stems is very much smaller than is often suggested.

1.1.3.2. Verbal root.

One of the main tasks of the comparative grammar of North Caucasian languages must be the reconstruction of the PNC verbal paradigm. Up to now we have a very approximate notion about the system of PEC and PNC verb conjugation. However, such a reconstruction has been established for some intermediate protolanguages (e.g. PL), and we can already draw some preliminary conclusions.

The verbal word-form in PNC was apparently represented by a rather long chain of class and aspect/tense markers, with the verbal root in the middle. Unlike the nominal root, it was apparently never isolated, without auxiliary morphemes; such a situation is still preserved in most North Caucasian languages. The interaction with prefixes and suffixes has probably conditioned the specific

structure of the PNC verbal root.

The structure of the PEC (PNC) verbal root was already outlined by N. S. Trubetskoy (see [Trubetskoy 1929]), who had noted that it looked like -VCV(R), where C is an obstruent, V — alternating vowels and R — some resonant. The position of the initial consonant in the PEC verbal root was usually occupied by interchanging class (agreement) markers. We can now make this conception somewhat more detailed, by noting the possible presence of initial laryngeals (usually lost in descendant languages after prefixed class markers — see above on the development of the combinations CH-, — but preserved if prefixed morphemes are missing) as well as medial clusters of the type -RC- (see below for more detail on their reconstruction in PL) in the PNC (PEC) verbal root. Therefore, the full structure of the PNC (PEC) verbal root looks like *(H)V(R)CV(R); in PWC, owing to the phonetic processes of dropping laryngeals and resonants (mentioned above), most verbal roots acquire the monosyllabic structure CV.

The nature of the initial syllable *HV- in the PNC verbal root is not quite clear yet. It is possible that more profound internal reconstruction and external comparison will in many cases allow us to regard this syllable as prefixed (having arisen in some cases between the class indicator and the initial root consonant in order to eliminate a forbidden initial cluster; in some cases reflecting some ancient deictic or locative markers). It is also quite probable that ancient root structures of the type *RVCV, finding themselves in a position after the prefixed markers, were transformed into *-VRCV, while the ancient structures *CVRV in such a situation developed a prothetic vowel > *-VCVR-. However, on today's level of knowledge we may talk only about the known structure *(H)V(R)CV(R).

We should pay attention to a virtually complete (with very rare exceptions) lack of verbal roots with two oral obstruents of the structure CVCV. We can only guess about their fate in PNC (they could, even before the division of PNC, have been transformed into roots with the structure -VCCV with a later simplification of the forbidden consonant combination; or they could completely lose verbal functions, becoming nominal roots).

We will now sum up our knowledge of the behaviour of individual elements of the PEC verbal root in descendant languages (in PWC it was in most cases reduced to the simple structure CV, see above; a similar simplification of the verbal root structure has apparently come to pass in Khinalug, but material on it is rather scarce and it is too early to make any exact conclusions).

1. The initial consonant. This position in verbal roots is occupied only by laryngeals (for their reflexes, see above) that, in most cases, disappear after prefixed (class or locative) morphemes. Therefore, for most verbal roots we can regard the position of the initial consonant as not filled (thus following N. S. Trubetzkoy).

One of the as yet unclear questions of the reconstruction of the PEC verbal paradigm is the problem of the so-called "prefixless" conjugation, attested by some verbs in Avaro-Andian languages (it is not connected, of course, with the later process of dropping class markers in some Lezghian languages). It is not to be excluded that in PEC (and PNC?), class agreement could be absent in some aspect/tense forms, as a result of which the vocalic root beginning turned out to be "not covered". In such a situation initial vowels (especially narrow ones) could easily

be lost, and the structure -VCV(R)- could be reduced to a more simple structure CV(R)-. This phenomenon could explain the presence of a rather large number of doublet forms in Avar-Andian languages, which can be characterized as two states of root. Cf. in Avar: state 1 — *=uχ:-* "to rake, shovel", *=us:-* "to crumble, cut", *=eṭ-* "to pull, to pluck fruits", *=at-* "to be"; state 2 — *χ:a-* "to shovel up, to rake up", *s:u* — "to slit", *ṭe* — "to tear down", *te* — "to leave", etc.

It is not yet clear how the described phenomenon is related (and whether it is related at all) to the distinction of "strong" and "weak" series of class indicators in PL, where the "prefixless" conjugation is absent (on this opposition, see Алексеев 1985).

2.V_1. In many cases first syllable vowels are related to each other in different languages by the same rules as the first syllable vowels of nominal roots (see above). However, in verbal conjugation an undoubtedly significant role was played by ablaut, which was much more productive and diverse here than in the nominal system. The reconstruction of ablaut rows is by now made only for the Proto-Lezghian language (see below), and not transferred to more archaic stages. Because of that the exact reconstruction of the first syllable vowel for most verbal roots characterized by active vowel gradation is still unclear.

3.R_1. The clusters with medial resonants in the verbal root are reconstructed in PL (see below), PD, PA and PN. However, reconstructing the system of medial resonants in the verbal root is somewhat harder than in the nominal one, because here, due to several reasons (reduction of the initial vowel, a possibility of secondary infixation of some originally suffixed morphemes), root resonants are often reinterpreted as auxiliary morphemes and therefore can disappear (in some verbal forms or even in the whole paradigm). If one also considers the general phonetic instability of resonants in clusters of the type RC in North Caucasian languages (on the development of these clusters in nominal roots, see above), it becomes clear why, in many cases, medial resonants are preserved only sporadically as archaisms.

Nevertheless, a careful comparison of the reconstructed intermediate protolanguages, as well as the consideration of phonetic rules (in clusters of the type -RC-, obstruents behave in the same way as in nouns, and the analysis of the correspondences between obstruents often allows us to make a conclusion about the presence of a resonant before them in PEC and PNC), allow us to reconstruct in verbal roots, on the whole, the same system of medial -RC-clusters as in nominal ones (see above).

It must be noted that in PL and PA verbal roots, the medial nasals -m- and -nare completely missing. These medial resonants can be reconstructed only on the basis of PD data (-m- is preserved in PD) and indirect evidence of the Lezghian and Andian languages. As a matter of fact, both PL and PA have a so-called "n-conjugation", generally going back to PEC roots with a final *-n (see below on final resonants). But in some cases the n-conjugation in PL corresponds to the resonantless conjugation in PA, and vice versa. We may think that the dropped medial nasals may have left behind a nasalization that also spread over the second syllable of the verbal root, resulting in the mixture of roots with original final

nasals and roots with medial nasals. Judging by the correlation of known cases with Dargwa and PTs evidence (PTs reflects medial nasals as the nasalization of the vowel V_1), the medial -m- disappeared in PL without any trace, but was reflected as the "n-conjugation" in PA, and, vice versa, the medial -n- disappeared without any trace in PA, but was reflected as the "n-conjugation" in PL.

4. C. The root obstruent is the most stable element in the verbal root. For the verb we reconstruct the same system of obstruents as for the nominal root (on the correspondences, see above). We must pay attention only to the extreme rarity of labial consonants in verbal roots (in fact, within the whole bulk of North Caucasian and East Caucasian roots we know of only one root with a labial). In addition, we must note that the root obstruents can be laryngeals which easily disappear or are consumed by adjacent consonants, as a result of which in some languages "zero" verbal roots can appear.

5. V_2. Significant vowel distinctions in the second syllable of the verbal root are found in Lezghian languages (for the PL reconstruction of V_2, see below), in Lak, in Avar-Andian and probably Nakh languages. In other languages the differences among second syllable vowels are generally neutralized. Judging by the data from Lezghian and Nakh languages, vowel gradation (though of a somewhat different kind and with different functions than in the first syllable) was also present in the second syllable. However, the system of PEC verbal vowels in the second syllable is not yet clear; we can draw some conclusions about the PNC system by comparing the PL system with the behaviour of root obstruents in PWC (because they are apparently subject to the same modifications in the verb as in the noun). However, this problem needs special investigation.

6. R_2. Final resonants in verbal roots are attested in PA, PD and PL. We can quite reliably reconstruct *r, *l (perhaps *ɬ as well, judging by the PA data, though there are few examples on this resonant), and *n for PEC. The question of the reconstruction of the final labials *m, *w (> PA m, b) is still open, because their PL and PD correspondences are not clear; however, their presence in the original system seems quite possible. In other languages final resonants are lost. This process was apparently caused chiefly by morphological reasons: final resonants in the verbal root are easily reinterpreted as suffixal morphemes and therefore are separated from the root. This process is active, for example, in modern Lezghian languages and dialects (see below).

PEC final resonants *r, *n are well preserved in PL and PD. PA stems in "state 1" (see above) preserve only -n and lose -r; in "state 2" -r, -n are usually preserved. PEC final *l is preserved in PA in "state 2" and in PL; in PA "state 1" and in PD this consonant probably merges with -n. In addition, in PD roots with the original final *r, but containing a medial -l- are transferred into the n-conjugation (probably as a result of the process *-VlCVr > *-V(l)CVL > *-V(l)CVn). However, these rules have many exceptions as a result of different analogical processes, taking place in individual cases.

On the whole we may say that, though we know the general structure of the verbal root, there are still very many gaps in our reconstructions, for the filling of which more careful research in the field of North Caucasian verbal morphology will be needed.

1.1.3.3. Other types of roots.

Besides nominal and verbal, there are also some intermediate types of roots. We have already examined above nominal roots with variable class markers that are formally rather similar to verbal roots. They are adjoined by adjective roots, the structure of which partially resembles the verbal one, partially the nominal one. It should be noted that there are some adjective roots with a typical nominal structure (e.g. CVRV), that can obtain class prefixation and change the root structure: *CVRV > *=VCRV and (owing to the inadmissibility of -CR- combinations) > *=VRCV. It is possible that such (or similar) was the original process of the formation of verbal roots in North Caucasian languages (see above, page 87, on other possibilities).

1.1.3.4. Prosody.

The PEC and PNC prosody is still little known. We have all reason to think that the PNC word was characterized by tonal accentuation; this is confirmed by the data of the PWC accent system reconstructed by V. A. Dybo (see [Dybo 1977, 1989]), as well as by the discovery of tonal accent systems in modern East Caucasian languages (see [Kibrik-Kodzasov-Starostin 1978]). However, the PNC accent reconstruction is still very far from completion; for some preliminary observations on tonal correspondences in Avar-Andian languages see [Starostin 1978]. A successful solution of this problem still requires much field research and the creation of intermediate accent reconstructions for PTs, PA and PL protolanguages. Therefore all such questions are not examined in this work.

Some prosodic phenomena in North Caucasian languages (namely: pharyngealization, the split of vowel reflexes in Tsezian languages and Avar mobile accent) were already examined above — being by their very nature connected with segment factors (the system of laryngeal consonants and the brevity/length of vowels).

There is, however, one more question that is closely linked to the root structure, the consonant system and probably the original prosodic system in PEC and PNC. It is the problem of the so-called "geminates" (on their reflexes in the subgroups, see above).

If we examine the bulk of the reconstructed PEC and PNC roots with the structure AV(R)AV (where A is an affricate or fricative, R — a resonant), we will discover the following regularity: 1) roots with the structure AVAV allow either the combination of two plain affricates (CVCV), or two "geminates" (CCVCCV), but nothing else; 2) roots with the structure AVRAV allow either the sequence CVRCV (where both the affricates are plain), or CVRCCV (where the first affricate is plain, and the second one is geminated). (Possible exceptions are some reduplicated structures).

Thus, roots with two affricate (or fricative) consonants are divided exactly in two subgroups: a) roots containing only "plain" consonants; b) roots, where both consonants are "geminated" if the first syllable is open, but where only the second consonant is geminated if the first syllable is closed (in short, roots, where only the consonant in the open syllable is geminated). If we suggest here the

activity of some prosodic factor (e.g. phonation or tone), whose presence caused the strenghthening of affricates and fricatives in the open syllable, we can in fact eliminate all the "geminates" from the reconstruction. However, this possibility is still hypothetical; to confirm this hypothesis we would have to link the described distinction with some actually witnessed prosodic features.

1.2. From PN to modern Nakh languages.

Below we will examine PN phoneme reflexes in Batsbi, Ingush and literary Chechen language (based on the Akka dialect). Unfortunately, for other Chechen dialects (some of which, e.g. Cheberloy, are very archaic), lexicographical sources are missing; therefore materials of Chechen dialects, taken mostly from the work [Imnayshvili 1977], are used only occasionally.

1.2.1. Consonantism.

The following consonant system is reconstructed for PN:

Labials	p	b	ṗ	f		w	m
Dentals	t	d	ṭ			r	n
Hissing	c	ʒ	ç	s			
Hushing	č	ǯ	ç̌	š		j	
Laterals		Ł		ʎ		l	
Velars	k, ḱ	g, ǵ	ķ, ḳ́				
Uvulars	q		q̇	χ	ʁ		
Laryngeals	ʔ			h	ɦ		
Emphatic laryngeals	ʡ			ħ	ʕ		

Characteristic features of the PN system (compared to other North Caucasian languages) are a lack of labialized consonants (see above on their development); defectivity of the lateral series; the opposition of velar and palatalized velar (palatal) consonants. However, palatals are rather rare phonemes in PN and are not preserved in modern languages. The glottalized ḳ́ may develop from original laterals (see above), but in a few cases from the velar *ķ as well. The origin of the extremely rare PN phonemes ḱ and ǵ is not clear yet.

An opinion exists that non-initial glottalized consonants of Batsbi are secondary compared to Chechen-Ingush voiced consonants (see [Imnayshvili 1977]); however, the correspondences within Nakh as well as external data (that firmly prove the archaism of Batsbi in this aspect) lead us to agree with the point of view of A. Sommerfelt (see [Sommerfelt 1938]), who considers the glottalized consonants original. The reconstruction given here differs from the conclusions of D. S. Imnayshvili ([Imnayshvili 1977]) in this as well as in some other aspects (the question about the originality of PN *f, about the system of lateral consonants).

The correspondences of consonants within Nakh languages are as follows:

PN	Bats	Chech	Ing
*p	p	p	p
*b	b	b-, Ø~w	b-, Ø~w
*ṗ	ṗ	ṗ-, b	ṗ-, b
*f	w (~h, ʔ)	h/w	f
*w	w	w-, Ø~w	w-, Ø~w
*m	m	m	m
*t	t	t	t
*d	d	d-, Ø~j	d-, Ø~j
*ṭ	ṭ	ṭ-, d	ṭ-, d
*r	r	r	r
*n	n, -(Ṽ)Ø	n-, -(Ṽ)Ø	n-, (Ṽ)Ø
*c	c	c	c
*ʒ	ʒ-, z	z	z
*ç	ç	ç-, z	ç-, z
*s	s	s	s
*č	č	č	č
*ǯ	ǯ-, ž	ž	ž
*č̣	č̣	č̣-, ž	č̣-, ž
*š	š	š	š
*j	j	j	j
*Ł	λ_1	l	l
*λ	λ	l	l
*l	l	l	l
*k	k	k	k
*ḱ	k	č	k
*g	g	g-, Ø~j	g-, Ø~j
*ǵ	g	ž	ž
*ķ	ķ	ķ-, g	ķ-, g
*ḳ́	ķ	č̣-, ž	ķ-, ž
*q	q	q	q
*q̇	q̇	q̇	q̇
*χ	χ	χ	χ
*ʁ	ʁ	ʁ	ʁ
*ʔ	ʔ	ʔ	ʔ
*h	h~ʔ	h	h/v
*ɦ	ʕ	ʔ	ʔ
*ʡ	ʕ	ʕ	ʕ
*ħ	ħ	ħ	ħ
*ʕ	ʔ	ʔ	ʕ

Comments.

1) Well known is the thesis of N. S. Trubetskoy (see [Trubetskoy 1931, 318]) about the opposition of two consonant systems in Nakh languages: initial and non-initial. The PN reconstruction (and primarily the Batsbi evidence) allows us to

discard this opposition. However, it must be said that, in spite of the complete distribution of most PN phonemes, some of them are still reconstructed only for a single position. PN *f, *ɦ and *ʕ are specific "initial" phonemes; PN *Ł, *λ and *ǵ (there is, however, only one etymon containing the last phoneme, and it is basically reconstructed for symmetry) are never represented in the beginning. The cases of initial *r in PN are extremely rare; Ingush usually adds a prothetical vowel before r in these cases.

2) The phoneme f is preserved in Ingush; in Chechen and in Batsbi it develops into w in most cases (becomes voiced). The h reflex in Chechen appears only before old labialized vowels; the distribution of the sporadically met Batsbi reflexes h, ʔ is not quite clear yet. Historically PN *f developed either from labialized laterals (f < *xw < *λw) or from labialized laryngeals (f < *hw), see above.

3) Voiced explosives in Chechen-Ingush regularly disappear in noninitial position; depending on the vocalic context, they can disappear without any trace or leave behind the resonants w and j (as hiatus-filling). In the case of the disappearance of intervocalic voiced consonants a contraction of vowels occurs.

4) In Ingush Imnayshvili describes a process of devoicing voiced word-final consonants (i.e. original glottalized),that are articulated as voiceless tense p:, t:, k:, c:, č: in this position (see [Имнайшвили 1977]). It is interesting that the original voiced *ʒ, *ǯ which were not dropped (> Ing. z, ž) seem not to be subject to devoicing. Thus, the Ingush language preserves traces of the PN distinction between word-final *ʔ-ʒ, *č̣-ǯ that is completely neutralized in Chechen. Unfortunately, Ingush orthography does not distinguish such "devoiced" consonants from ordinary voiced ones.

5) The final n disappears in all Nakh languages, leaving behind the nasalization of the previous vowel (though it is regularly restored in the paradigm before added suffixes). Nasalized vowels that appear as a result of this process are usually not marked in Chechen-Ingush orthography (though Chechen orthography has the final -n in monosyllabic words with the final nasalized vowel).

6) In Chechen-Ingush orthography there is no ʒ — z or ǯ — ž distinction; in most Chechen dialects this opposition is also absent (a single exception is the Khildikharoy dialect, where *c̣-, -č̣- > -ʒ-,-ǯ- while *-ʒ-,-ǯ- >-z-,-ž-; unfortunately, we do not possess systematic records of this dialect). On the distribution of phonetical variants ʒ — z and ǯ — ž in Nakh languages and dialects see [Imnayshvili 1977].

7) All descriptions of Batsbi mention the presence of the voiceless lateral fricative λ, corresponding to l in Chechen and Ingush. However, we must pay attention to the fact that in some words, where the records of A.G. Matsiev ([Matsiyev 1932]) and Y. D. Desheriev ([Desheriyev 1953]) have λ, the records of D. N. Kadagidze ([Kadagidze 1984]) have l. We may suppose that Batsbi (or at least some Batsbi idiolects) in fact possess two lateral phonemes (besides the plain l), that have merged with l in Chechen-Ingush. The lateral fricative (L?) that D. N. Kadagidze marks as l, was tentatively transcribed as λ_1 in the table. The probability of the presence of this phoneme in Batsbi is also confirmed by a specific development of the combination *-rŁ- (> Batsbi /Matsiev, Desheriev/ rλ, /Kadagidze/ rl, Ing. rd) in Ingush, unlike *-rλ- (> Batsbi /Matsiev, Desheriev, Kadagidze/ rλ, Ing. r(h)), see below. But of course our suggestion requires a direct field verification.

6) All modern Nakh languages have four laryngeals (h, ʔ, ɦ, ʕ). However, for

PN two more (*ʜ and *ʔ) are rather securely reconstructed. It must be noted that the phonetic reconstruction of *ʜ, *ʔ and *ʕ is rather tentative (in modern languages the articulation of ʕ varies between the plosive ʔ and the fricative ʕ); the reconstructions *ʜ and *ʕ as well as *ʔ and *ʕ could be exchanged. Only the reconstructions of *ħ, *ʔ and *h are phonetically trustworthy (in Ingush the reflexes h and w are in complementary distribution: h before non-labialized vowels, w before labialized ones). The phonetic quality of the phonemes that we mark as *ʜ, *ʔ, *ʕ is determined on the basis of general considerations about the possible organization of a system with six laryngeals as well as on the basis of external data (see above).

1.2.1.1. Consonant combinations.

Nakh languages are distinguished from other East Caucasian languages by a multitude of consonant combinations as well as by an extremely specific feature: the possibility of consonant clusters in initial position. Let us examine the possible types of clusters in PN.

1.2.1.1.1. Initial consonant clusters.

In the initial position in PN the following three types of clusters are possible: a) "P + consonant" (the number of consonants in these combinations is limited, see below); b) "consonant + laryngeal" (in these clusters any consonants except uvulars and laryngeals can play the part of the first component); c) the clusters *st, *sṭ. Here are their reflexes in languages:

PN	Bats	Che	Ing
*ps-	ps-	s-	s-
*pš-	pš-	š-	š-
*pχ-	pχ-	pχ-	pχ-
*Cʔ-	Zʕ-[1]/Ç-	Zʕ-/Ç̇[2]	Zʕ-/Ç̇[3]
*Cħ-	Cħ-	Cħ-	Cħ-
*Cʕ-	Z-/Ç̇	Z-/Ç-/C-	Zʕ-/Ç̇/Cħ-
*Cʜ-	Zʕ-/Çʕ-/C[4]	Z-/Ç-/Cħ-	Z-/Çʕ-/C-[5]
*st-	s-	st-	s-
*sṭ-	sṭ-	st-	s-
*psṭ-	psṭ-	st-	s-

In the records of Batsbi, Chechen and Ingush reflexes we mark any voiced consonant (resonant as well) as Z, any voiceless consonant as C, any glottalized one as Ç. The table shows that the combinations of the types *Cʔ- and *Cħ- were already in PN in complementary distribution (*ʔ only after voiced and glottalized, *ħ only after voiceless); therefore we could in fact reconstruct here only one type of clusters (*Cʔ or *Cħ). For the full material on the reconstruction of *CH-combinations in PN see [Nikolayev 1984].

Comments.

1) Batsbi usually preserves *ʔ after voiced consonants (as ʕ); however, in combinations with affricates the laryngeal usually disappears: *ʒʔ, *ǯʔ > z-,ž-.

2) Chechen usually reflects *ʔ as a uvular q̇ after glottalized consonants; however, the cluster *ṗʔ- > ṗ-. In fact, this cluster gives a reflex different from the ordinary *ṗ- only in the Akka dialect of Chechen.

3) In Ingush, as in Chechen, after glottalized consonants the development *ʔ > q̇ usually happens; however, the clusters *ṗʔ- > ṗ-, *ṭʔ- > ṭ-, *čʔ- > č- are simplified (cf. below on the development of the clusters of the type *Cʕ-).

4) After voiceless consonants in this type of clusters the laryngeal usually disappears in Batsbi, though it appears to be preserved in the cluster *tʕ- > tʜ-.

5) Clusters of the type *Cʕ- in Ingush develop into Cʕ-; but the laryngeal falls after the labial *ṗ- and hushing *č- (see above, comment 3).

Besides the clusters examined above, there are also initial clusters tχ, cχ, ṭq̇, ʔq̇ (preserved in all languages), whose genesis is not quite clear (they have no specific PEC sources; in some cases they probably represent the result of a reduction of the initial vowel of the first syllable). In modern languages we occasionally meet some other combinations of initial consonants, representing a secondary effect of vocalic reduction.

1.2.1.1.2. Medial consonant clusters.

In PN we distinguish the following types of medial consonant clusters:

a) Geminates. We reconstruct the geminates *pp, *tt, *ṭṭ, *rr, *ss, *ll, *gg, *qq, *χχ. On the origin of the geminates *tt, *ṭṭ, *ss see above; the others are apparently a result of expressive gemination and are rather rare. The reflexes of the geminates *tt, *ṭṭ, *ss are:

PN	Bats	Chech	Ing
*tt	tt	tt	tt
*ṭṭ	ṭṭ	tt	tt
*ss	s(s)	ss/s	ss

In Batsbi the geminate ss is regularly marked in the records of A. G. Matsiyev, but is totally missing in those of D., N. Kadagidze. In Chechen ss is usually preserved after short vowels but is regularly shortened after long ones. In Ingush ss is usually preserved, but in some cases (also usually after long vowels) can be shortened, too.

b) Clusters "resonant+obstruent". These combinations are usually well preserved in all Nakh languages. Only the clusters "resonant+lateral" deserve special examination.

PN	Bats	Chech	Ing
*rŁ	rλ$_1$	r	rd
*rλ	rλ	r(h)	r(h)
*lŁ (?)		ll	ld
*nŁ (?)	n	n	nd

Two latter clusters are extremely rare and their PEC source is unclear. The conditions of the preservation or disappearance of h in the cluster rh in Chechen-Ingush are not clear as well (we observe frequent dialect variation here).

The PN combination *lχ (going back to PEC laterals, see above) also develops specifically: it is preserved in Chechen and Ingush, but yields tχ in Batsbi.

c) Clusters of two obstruents. First of all we must mention the widespread cluster type "b+consonant" (where b goes back to PEC resonants *w, *m, see above), most frequent in verbal stems (where -b- acts as an aspect infix). In this type of combinations b is preserved in Batsbi (turning into p before voiceless consonants and into ṗ before glottalized ones), but develops into w~∅ in Chechen-Ingush (its contraction with the previous vowel may cause the appearance of secondary long vowels ū, ī). Other common clusters are:

PN	Bats	Chech	Ing
*st	st	st	st
*sṭ	sṭ	st	st
*χḳ	χḳ	χk	χk
*ṭq̇	ṭq̇	ṭq̇	ṭq̇
*ṭH	ṭq̇	ṭq̇	d
*ʔH	ʔq̇	ʔq̇	z

On the origin of the first three clusters see above (pp. 47, 51, 53). The genesis of three other combinations (that are more rarely met) is not quite clear yet (in the combination ṭq̇, in some cases, -ṭ- seems to be a parasitic insertion between the original (fallen) resonant and q̇).

There are also sporadic cases of other clusters of two obstruents, that are obviously secondary.

d) Clusters "obstruent+resonant". Such clusters in PN can appear only on the border of two morphemes (they are not present in roots), or as a result of early vowel reduction. Preserved in Batsbi, they are subject to metathesis in Chechen-Ingush.

1.2.2. Vocalism.

For PN we reconstruct a ten-vowel system:

i	ī			u	ū
e	ē			o	ō
		a	ā		

The distinction between long and short vowels is relevant only in the first syllable; in other syllables only short vowels were allowed. It must be noted that the long high vowels ī and ū were already rather rare in PN; in modern languages their origin is in most cases secondary.

The opposition of long and short vowels is well preserved in Chechen and Ingush, though it is not marked in the orthography. However, we posess enough information about vowel length, because long vowels in Chechen open syllables are

systematically marked in the work [Matsiyev 1961], and some Ingush long vowels are specially marked in orthography.

The shortening of vowels occurred in many Chechen dialects in closed syllables and in monosyllabic words with an open syllable (however, secondary length resulting from contraction is preserved in monosyllabic words). This is also the situation in literary Chechen, in which the etymological length in such cases is being reinstated before suffixes beginning with a vowel. Batsbi generally shortens long vowels, though in a few words we meet a long ā in the records of D. N. Kadagidze (another long vowel, ī, existing in Batsbi is just a phonetical variant of the diphthong ej). The problem of vowel length in Batsbi still requires field verification.

The development of vocalism in modern Nakh languages depends greatly on umlaut, i.e. the modification of the vowels of the first syllable under the influence of the following one. In many dialects the second vowel had in this case afterwards weakened and become subject to neutralization (in most cases all the vowels of the second syllable either merge in a or are dropped). Therefore the Batsbi evidence is extremely important (Batsbi was virtually unaffected by this process), as well as the evidence of some archaic Chechen dialects (primarily Cheberloy) that have preserved the system of the vowels of the second syllable and have modified the system of first syllable vowels to a lesser extent than literary Chechen and Ingush. A detailed analysis of the interaction of the vowels of the first and second syllables is given in the work [Imnayshvili 1977]; however, it seems to us that D. S. Imnayshvili has somewhat overestimated the archaism of the Cheberloy dialect, having in fact identified its system with Proto-Nakh. In particular, it seems that the Cheberloy dialect has some variation while reflecting the vowels of the second syllable i~e and u~o; their more exact reconstruction may be completed only by comparing the behaviour of first vowels in Chechen and Ingush. It is also hard to rely upon Batsbi data while reconstructing the vowels of the second syllable, because there they were subject to a very strong reduction (in contrast to the very well preserved vowels of the first syllable). Therefore, the reconstruction, suggested by D. S. Imnayshvili, must be revised in many aspects.

In the transcription of the Chechen and Ingush vocalic systems we mark the closed e and o by the signs e, o, while the open e and o — by the signs ɛ and ɔ (the diphthongical interpretation of the closed e and o seems to us less apposite). Thus, unlike D. S. Imnayshvili who considered the diphthongs to be original (later simplified to plain e and o in Batsbi), see [Imnayshvili 1977], we consider the Batsbi system more archaic.

One more point that should be noted is the frequent reduction of final vowels in Ingush and Batsbi (Chechen usually preserves the final vowel). The reasons for this phenomenon are not clear yet; it is not to be excluded that this reduction could originally have been caused by accent factors that have not yet been specially studied.

The correspondences of vowels:

A. In monosyllabic words:

PN	Bats	Chech	Ing
*i	i	i	i
*ī[1]	i	i	i
*e	e	e[2]	e,-i[2]
*ē[3]	e	e	e,-i
*u	u	u	u
*ū[1]	u	u	u
*o	o	o	o[4]
*ō[3]	o	o	o
*a	a	a	a
*ā[3]	a	a	a

We see that the basic correspondences of vowels are rather uniform in Nakh languages; they may be violated only sometimes, in the case of adequation of paradigms, characterized by ablaut. For instance, we have Batsbi tχe (oblique stem tχa-) "wool" as opposed to Chech., Ing. tχa with an obviously secondary vowel adequation in the paradigm. On the whole such cases are few.

Other comments:

1. The vowels ī, ū were rather rare in PN, and within the nominal paradigm were regularly subject to the ablaut ī/ā, i/ā (i.e. CīC/CāCV-, CiC/CāCV-). As a result ī and ū became possible in PN only in closed syllables, where they were shortened afterwards and merged with the reflexes of *i and *u. Thus, we can reconstruct ī and ū only in paradigms of the type Chech. *buc,* obl. *bēca-* (< **bāci-*) "grass"; *jiš,* obl. *ʔēšara-* (< **ʔāširi-*) "voice", etc.

2. Ingush has a regular narrowing e > i at the end of monosyllabic words.

3. As we see from the table, the opposition of long and short vowels is neutralized in monosyllabic words and is reinstated only within the paradigm before affixes beginning with a vowel. However, the Level-land, Cheberloy and some other Chechen dialects still preserve the a — ā distinction in closed syllables (see [Imnayshvili 1977); in literary Chechen, instead of the opposition a — ā, one notes the opposition of closed and open a (see ibid.), that, however, is disregarded both in orthography and in the dictionary of A. G. Matsiev ([Matsiyev 1961]).

4. In Ingush, o sometimes (but not always) narrows and develops into u after labial consonants.

5. Modern Chechen and Ingush have a considerable number of monosyllabic words of the structure CV̄ with a long vowel; this length, however, is in all cases secondary (on the shortening of the old length in this position, see above) and is a result of vocalic contraction after the disappearance of voiced consonants (see above).

B. The correspondences of vowels in bisyllabic words:

PN	Bats	Chech	Ing
*CiCa[1]	CiC	CiCa	CeCa
*CiCe[2]	CiC(ĭ)	CiCa	CiCa
*CiCu[3]	CiC(ĭ)	CiCa/CüCa	CuC(a)
*CiCo[4]		CiCa	CiCa
*CēCa	CeC	CēCa/CeCCa	CēCa[5]/CeCCa
*CēCi[6]	CeCi-/CejCĭ,CīCĭ	CīCa/CiCCa	CīCa/CiCCa
*CēCe[7]	CīC(ĭ)	CīCa/CiCCa	CēC(a)[5]/CeCC(a)
*CēCu[8]		C$\bar{\text{o}}$Ca/CöCCa	CēC(a)[5]/CeCC(a)
*CēCo[9]	CeCŏ	CēCa/CeCCa	CēC(a)[5]/CeCC(a)
*CuCa	CuC	CuCa	CuCa
*CuCi	CuCi-	CüCa	CiCa
*CuCe	CujC(ĭ)	CüCa	CuC(a)
*CuCo[10]	CujC(ŭ)	CuCa	CoC(a)
*CōCa	CoCa-/CoC(ŏ)	CōCa/CoCCa	CōC(a)[5]/CoCC(a)
*CōCi	CoCi-/CujCĭ	C$\bar{\text{u}}$Ca	CēCa[5]/CeCCa
*CōCe	CoC(V̆)	C$\bar{\text{o}}$Ca	CōC(a)[5]
*CōCu		CūCa/CuCCa	CōC(a)[5]/CoCC(a)
*CaCa	CaCa-/CaC(ŏ)	CaCa	CaC(a)
*CāCa	CaCa-/CaC(ĕ)~CajC(ĭ)	CāCa/CaCCa	CāC(a)[5]/CaCC(a)
*CaCi	CaCi-/CaC	CɛCa(/CäCa[11])	CɛCa(/CäCa[11])
*CāCi	CaCi-~CaCe-/CaC(ĕ), CajC(ĭ)	C$\bar{\text{ɛ}}$Ca/CäCCa	C$\bar{\text{ä}}$C(a)/CäCC(a)
*CaCe	CaCe-~CaCa-/CaC(ŏ)	CɛCa(/CäCa[11])	CaC(a)
*CāCe	CaC(ĕ)	C$\bar{\text{ɛ}}$Ca/CäCCa	CāCa/CaCCa[5]
*CaCu	CaCV-/CaC(ŏ) CawCŭ/CajCŭ[12]	CɔCa	CoC(a)[13]
*CāCu	CaCV-/CaC(ŏ) CawCŭ/CajCŭ[12]	C$\bar{\text{ɔ}}$Ca/CɔCCa	C$\bar{\text{ɔ}}$C(a)/CɔCC(a)
*CaCo	CaC(ŏ)	CaCa	CoCa[13]/CaCa[14]
*CāCo	CaC(ŏ)	CāCa	C$\bar{\text{ɔ}}$Ca

Before we pass on to concrete comments (enumerated in the table), it is necessary to make a few general notes:

a) Chechen and Ingush orthography render the vocalic phonemes in a quite inadequate way. Ingush orthography does not distinguish between long and short vowels, as well as between the open and closed e; the open ɔ (ɔ̄), however, has a special denotation (oa). Chechen orthography does not distinguish between the long and short vowels either, nor between the open and closed e and o. This defect is partially eliminated in the dictionary of A. G. Matsiyev ([Matsiyev 1961]), where the length of vowels is systematically noted; but the open and closed e and o are not marked here, either. The existing gaps have to be filled by the records of P. K. Uslar ([Uslar 1888]) and by the records of Chechen dialects ([Imnayshvili 1977]), unfortunately, not at all abundant.

b) It must be noted that in bisyllabic (and polysyllabic) structures of Nakh languages we can neither reconstruct the long narrow vowels *ī, ū nor the short wide ones *e, *o. However, all these vowels are reliably reconstructed in monosyllabic structures (see above), therefore we cannot reduce the PN system of vowels. It is interesting that all the vowels listed above (*ī, *ū, *e, *o) are also

missing in verbal roots, which directly suggests their original bisyllabic character.

c) We can reconstruct the full system of second syllable vowels, which is rather well preserved in some Chechen dialects (Cheberloy, Khildikharoy and others) and also reflected in the Chechen grammar of P. K. Uslar ([Uslar 1888]), somewhat more poorly preserved in Batsbi (see the table) and totally destroyed in literary Chechen and Ingush (where the distinction of the vowels in the second syllable is partially preserved only within some nominal suffixes and verbal forms, but in most cases neutralized). Still, the correlations between the Chechen and Ingush umlautized vowels of the first syllable allow us in most cases to reconstruct the ancient second vowel quite reliably, even if direct evidence of Batsbi and Chechen dialects is missing.

d) In Batsbi the first vowel preserves the original quality only if the second syllable is closed (in the table such structures are marked as CVCV-), as well as before the reduced final wide vowels -ă, -ĕ, -ŏ (or in the case of a total reduction of the final vowel: CVC). If the second (open) syllable contains the narrow vowels -ĭ, -ŭ, the vowel of the first syllable turns into a diphthong (see [Imnayshvili 1977]). This involves the following processes:

-aCĭ > -ajCĭ~-ejCĭ	-aCŭ > a) -awCŭ~-owCŭ
	b) -ajCŭ
-eCĭ > -ejCĭ~-īCĭ	-eCŭ > -ejCŭ~-īCŭ
-oCĭ > -ujCĭ	-oCŭ > -ujCŭ
-uCĭ > -ujCĭ	

The sequences aj ~ ej, aw ~ ow, ej ~ ī are in free variation with each other. As for the sequence -aCŭ, Batsbi has -aw- if C is a labial or back consonant, but -aj- if C is a front consonant.

e) For PN (at least in nominal stems) we cannot reconstruct the sequences *CiCi, *CuCu or *CōCo with two identical high or mid vowels; this casts doubt on the reconstruction of the sequence *CēCe (see below).

f) In a comparatively small number of cases, the correspondences given above are violated. Most of these violations occur as a result of an adequation of the direct stem to the oblique one (see below on ablaut).

Now, particular comments to the table:

1) The structure *CiCa is very rarely encountered, and the Ingush reflex here is not quite reliable.

2) The structure *CiCe is almost completely represented by adjective stems.

3) In this structure (also rather rare) Chechen has a variation of reflexes with the labialized ü (these forms are usually met in verbal paradigms) and non-labialized i (in nouns); dialects also reveal variations, see [Imnayshvili 1977].

4) The final -o is indicated here by the forms of Cheberloy dialect, cf. Cheb. *litto* and Chech., Ing. *litta* "haycock". If Cheberloy data is missing, it is impossible to distinguish the structure *CiCo from *CiCe.

5) No long and short vowels are distinguished in Ingush orthography (see above).

6) The structure *CēCi (as well as *CiCe, see above) is almost completely

represented by adjectival stems and verbal forms (as well as some nouns with the suffix *-iḳ).

7) There are few examples of the reflexation of this structure in Batsbi; it is rare in general, and it is not to be excluded that we are merely dealing with an Ingush variative development of the structure *CēCi.

8) Despite the lack of Batsbi data, this structure is confirmed by a sufficient number of examples. The Cheberloy dialect reveals here, as in many other cases, a variation between final -u and -o.

9) This (rather rare) structure is reconstructed on the basis of Batsbi (-ŏ) and Cheberloy (-o) evidence; if it is absent, the structure is indistinguishable from the structure *CēCa.

10) A very rare structure.

11) The short vowel ä in Chechen and Ingush is a phonetical variant of ε adjacent to emphatic laryngeals and h.

12) On the Batsbi distribution between the reflexes -awCu and -ajCu see above, page 100.

13) After initial labials in Ingush we sporadically meet a narrow reflex u.

14) In Ingush the normal reflex of the structure *CaCo is CɔCa; before hissing consonants, however, the labialization -a- > -ɔ- is regularly missing. In these cases the reflexes of the structure *CaCo can be distinguished from those of *CaCa only with the help of Cheberloy data, where *CaCa > CaCa, but *CaCo > CɔCo.

1.2.2.1. Ablaut.

The main type of nominal ablaut in PN is the replacement of any vowel in the direct stem (Nom. Sg.) by a (ā) in the oblique stem (the stem of oblique cases, often also plural). In words with the structure CV other (possibly archaic) types of vowel gradation are present as well.

Verbal ablaut in PN is rather complicated. It is based on the opposition of durative (imperfective aspect) and terminative (perfective aspect) stems with the following main vocalic features:

Perfective aspect	Imperfective aspect
*ē	*ā
*a	*ē
*ā	*ē
*ō	*ē

The short vowels *u and *i are not usually alternating with anything; in some very rare cases we observe the ablaut i/e, i/o, u/a (thus there appear very rare verbal root structures with short *e, *o), the functions of which are not clear yet. Finally, in some exceptional cases (in verbs "to give", "to die", "to see") the ablaut a/∅ takes place.

There are also a few cases of the ablaut a/o, sometimes differentiating voice stems (cf. *=*āll-* "to be contained": *=*ōll-* "to put in smth."; *=*ātt-* "to be poured": *=*ētt-* "to pour").

If we also consider the infix *-b- (probably the original marker of plural forms or the "plural aspect") that can be present in the verbal stem and modifies the preceding vowel in Chechen-Ingush (PN *-ēb- > Che. -ī-, PN *-ōb- > Che. -ū-, PN *-ăb- > Che. -ŏw- and so on), the reason for extremely complicated vowel alternations in modern Chechen and Ingush (where alternating vowels are additionally subject to umlaut before vowels of the second syllable according to rules, described above, on pp. 98-101) becomes clear to us.

The origin of the PN ablaut (and its relation to the Proto-Lezghian one in particular) is yet to be studied.

1.2.2. Root structure and prosody.

The main structures of the PN nominal root are *C(C)V, *C(C)V(C)C(V). The final vowel in PN (unlike PEC, see above) can be missing, but it is usually restored when case markers and other suffixes are added (influencing the vowel of the first syllable and causing its umlautization in Chechen-Ingush).

The main structure of the PN verbal root is *=(H)V(C)C(V). The distinction of final vowels is visible in the Nakh verbal paradigm (this causes the presence of several types of conjugation here), but the exact reconstruction of final vowels is not completed yet.

The verbal stem may also begin with some obstruents (most often *ʔ, *ʡ, *ħ, *l, *q, *t, *χ). They apparently represent old preverbs; however, in PN the system of locative verbal prefixation was evidently already not productive, and in most cases the meaning of these preverbs is hard to define (though there are many instances of a single root with different prefixes).

The recording and studying of the Nakh prosodic system is a matter of future research (up to now nothing definite is known in this field).

1.3. The Avar language.

Avar is presently divided into rather many dialects split into two main groups: Northern and Southern. Most of our information comes from the Northern dialects, in particular from Khunzakh, on which the literary Avar is based. The information available on Southern Avar dialects (see, e.g., [Mikailov 1959]) shows that they are generally close to Northern dialects and do not allow a serious deepening of the Proto-Avar reconstruction (the most significant Southern Avar archaism is the preservation of the lax lateral glottalised ƛ̣ or its development into lʔ, l, ʔ, contrary to the Northern Avar development ƛ̣ > ţ).

The orthographic system used in the biggest lexicographic source for Avar — the dictionary of M. Saidov ([Saidov 1967]) — generally rather adequately renders the Avar phonetic system. The only omitted distinction is ƛ: vs. λ: (both are noted as лъ); this defect is, however, easily compensated for with the help of the records of L. I. Zhirkov ([Zhirkov 1936]) and P. K. Uslar ([Uslar 1889]); the latter work is also a valuable source for Avar accentuation, in many aspects complementing the dictionary of M. Saidov.

The development of Avar phonemes from PEC in general is described above.

In this work we do not specially examine vowel gradation in Avar; all the variants of this gradation are satisfactorily described by the rule of assimilation of pre-accent vowels (except u) to the accented ones (though there are some other processes as well) and in general are not very significant for the reconstruction of the original Avaro-Andian and EC protolanguages.

The consonant correspondences between Avar and Andian languages are examined in the work of T. E. Gudava ([Gudava 1964]); they are in general accepted here (with some minimal additions and corrections).

1.4. From PA to modern Andian languages.

By now there are enough sources on Andian languages (see [Tsertsvadze 1965], [Gudava 1962, 1971], [Saidova 1973], [Magomedbekova 1967, 1971], [Bokarev 1949]), that, together with the materials of the MSU expedition on Tindi, Chamali, Andi and Akhvakh, allow us to establish a rather complete reconstruction of the original PA system.

1.4.1. Consonantism.

The PA system of consonants was reconstructed in the important book of T. E. Gudava ([Gudava 1964]). We accept it with the following minor modifications:

1) In the book of T. Gudava the opposition of PA fricatives *š and *x is apparently not quite reliably reconstructed (see a detailed criticism in [Starostin 1987]).

2) The PA system of laryngeal consonants needs some corrections (it is examined least of all in the book of T.Gudava); we have also added the reconstruction of the clusters "resonant+laryngeal", absent in his book.

We reconstruct the following consonant system for PA:

Labials	p		b						w	m
Dentals	t		d	ṭ					r	n
Labialized dentals	t^w		d^w	$ṭ^w$						
Hissing	c	c:		ç	ç:	s	s:	z		
Labialized hissing										
Hushing	č	č:		ǯ	ǯ:	š	š:	ž		j
Labialized hushing	$č^w$			$ǯ^w$	$ǯ:^w$	$š^w$	$š:^w$	$ž^w$		
Lateral	ƛ	ƛ:		ƛ̣	ƛ̣:	λ	λ:		l	
Velars	k	k:	g	ķ	ķ:	(x)				
Labialized velars	k^w	$k:^w$	g^w	$ķ^w$	$ķ:^w$	x^w				
Uvulars	q	q:		q̇	q̇:	χ	χ:	ʁ		
Labialized uvulars	q^w	$q:^w$		$q̇^w$	$q̇:^w$	$χ^w$	$χ:^w$	$ʁ^w$		
Laryngeals	ʔ					h				
	(ʡ)					ħ				

In parentheses we list consonants, whose reconstruction is not quite reliable: the velar x is generally represented by its labialized variant x^w (except in the position before the vowel u, where the opposition of labialized and non-labialized is simply neutralized); the emphatic laryngeal ʔ (ʕ) is, in most languages, observed only in loanwords (basically from Avar). As an independent phoneme it is attested only in Akhvakh and Karata in a comparatively small number of words, and its PA antiquity is dubious.

The local series of labialized consonants are usually defective in PA (except labialized back consonants that are rather well represented). There are no reliable examples of PA labialized *c^w, *$c:^w$, *$č:^w$; apparently there is no reason to reconstruct PA labialized laterals (though there are a few roots, where one could attempt to reconstruct *$λ^w$, *$λ:^w$ and *$ƛ:^w$). Labialized front consonants (except the comparatively stable hushing series) in Andian languages are in general very unstable and easily subject to delabialization (in many words with original labialization this process has already come to pass on the PA level). Resonants in PA (just as in PEC) never had labialized correlates (though labialized resonants appeared in Chamalal after the reduction of final vowels). In a few cases we should possibly reconstruct (considering the behaviour of adjacent vowels) the PA labialized laryngeals *$ʔ^w$ and *h^w, but in reality such phonemes are absent in modern languages (if we do not count the secondary $ʔ^w$ developed from *$q̇^w$, e.g. in Tindi).

In the table of correspondences given below we do not specially note the reflexes of labialized phonemes; in most cases they are the same as the reflexes of the respective nonlabialized + labialization (or the transfer of labialization onto the adjacent vowel). We should specially note only the behaviour of velars: in those languages where plain velars are subject to palatalization and affrication (Tindi, Chamalal, Godoberi, Bagwali, Andi and Karata dialects), labiovelars are not palatalized. Moreover, in Chamalal, after the affrication of velars, the delabialization of labiovelars (as well as of other labialized consonants) occurred, that have thus normal velar reflexes (it is interesting, that already after the described processes Chamalal obtained a new class of labialized consonants as a result of reduction of the final -u and the penetration of new Avar loanwords).

The consonant correspondences between Andian languages are as follows (cf. [Gudava 1964]):

PA	And	Botl	God	Kar	Akhv	Bagv	Tind	Cham
*p	p	p	p	p	h(^{w})/p	p	p	p
*b	b	b	b	b	b	b	b	b
*w	w	w	w	w	w	w	w	w
*m	m	m	m	m	m	m	m	m
*t	t	t	t	t	t	t	t	t
*d	d	d	d	d	d	d(/-r-)	d(/-j-~-Ø-)	d
*ṭ	ṭ	ṭ	ṭ	ṭ	ṭ	ṭ	ṭ	ṭ

PA	And	Botl	God	Kar	Akhv	Bagv	Tind	Cham
*r	r	r	r	r	r	r	r	j/w(/-r-)
*n	n	n	n	n	n	n	n	n
*c	s	s	s	s	č	s	s	s
*c:	c:	c:	c:	c:	c:	c:	c:	c:
*ç	ç	ç	ç	ç	č̣	ç	ç	ç(/-z(z)-,-dd-)
*ç:	ç:	ç:	ç:	ç:/ṣ:	ç:	ç:	c:	ç:/ṣ:
*s	s	s	s	s	š	s	s	s
*s:	s:	s:	s:	s:	s:	s:	s:	s:
*z	z	z	z	z	ž	z	z	z
*č	č	č	č	č	č	č	č	č/š
*č:	č:	č:	č:	č:	c:	š:	č:	c:
*č̣	č̣	č̣	č̣	č̣	č̣	č̣	č̣	č̣
*č̣:	č̣:	č̣:	č:	č̣:/ṣ:	ç:	č̣:	č:	ç:/ṣ:
*š	š	š	š	š/x	š	š	š/h	š/h
*š:	š:	š:	š:	š:	s:	š:	š:	s:
*ž	ž	ž	ž	ž	ž	ž	ž	z
*j	j	j	j	j	j	j	j	j
*ƛ	λ	h	λ	λ	ƛ/λ	λ/h/lh	λ	λ
*ƛ:	ƛ:	ƛ:	ƛ:	ƛ:	ƛ:	λ:	ƛ:	ƛ:
*ƛ̣	ƛ̣/l/lʔ/ʔ	ʔ	l	ƛ̣/lʔ /ʔ/ṭ	ƛ̣/ṭ	ʔ-/ḱ'-,-l-	ʔ-,l	ʔ-,l
*ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:	ƛ̣:
*λ	λ	h	λ	λ	λ	λ/h/lh	λ	λ
*λ:	λ:	λ:	λ:	λ:	λ:	λ:	λ:	λ:
*l	l	l	l	l	l	l	l	l
*k	k/č	k	k/ḱ	k/ḱ	k	k/ḱ/č	k/ḱ	k/č
*k:	k:/č:	k:	k:/ḱ:	k:/ǵ	x	k/ḱ/č	ǵ:/k:/ḱ:	k/č/c
*g	g/ǯ/ž	g	g/ǵ	g/ǵ	g	g/ǵ/ž	g/ǵ	g/ǯ-,ž
*ķ	ķ/č̣	ķ	ķ/ḱ	ķ/ḱ	ķ	ķ/ḱ/č̣	ķ/ḱ	ķ/č̣
*ķ:	ķ:/č̣:	ķ:	k:/ḱ:	ķ:/ḱ:	ķ:	ķ/ḱ/č̣	k:/ḱ:	ķ:/ç:/ṣ:
*x	š	x	š	x	š	h/χ	š/h	h
*q	χ	χ	χ	χ/h	q	h/χ	h/χ	χ
*q:	q:	q:	q:	q:	q:	q:	q:	q:
*q̇	q̇(G)/ʔ/ʁ	ʁ/ʔ	ʔ	ʔ~ʕ	q̇/ʔ	ʔ	ʔ	ʔ
*q̇:	q̇:	q̇:	q̇:	q̇:	q̇:	q̇:	q̇:	q̇:
*χ	χ	χ	χ	χ/h	χ	h/χ	h/χ	χ
*χ:	χ:	χ:	χ:	χ:	χ:	χ:	χ:	χ:
*ʁ	ʁ	ʁ	ʁ	ʁ	ʁ	ʁ	ʁ	ʁ
*ʔ	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø	ʔ-,Ø
*h	h	h	h	h	ʔ-,h	h	h	h
*ħ-	h-	h-	h-	h-	h-	h-	h-	h-

Comments.

1) Andi. The lateral ƛ̣ is preserved in the Muni-Kwankhidatl dialect; in Andi proper we observe the reflex l, and in other dialects ʔ in initial position and lʔ (Gagatl, Rikvani) or ʔ (Zilo, Chankho) in the medial position. Velar consonants in Andi are palatalized before all vowels except u and o; in this case g > ǯ, but in the Rikvani dialect g > ž. Andi (just as Akhvakh) preserves the lax q̇, which is optionally articulated as G; however, in the Muni dialect we observe the development q̇ > ʔ, and in the Gagatl dialect — q̇ > ʁ (see [Tsertsvadze 1965, Gudava 1964]).

2) Botlikh. Here usually q̇ > ʁ, but in the Miarsu dialect q̇ > ʔ (see [Gudava 1964]).

3) In Godoberi all velars are systematically palatalized in all positions except before u.

4) Karata. The fricativization ç: > ș:, č: > š: is here observed in the Tokita dialect. The lateral *ƛ̣ has the following reflexes: in Karata proper ƛ̣, in the Upper-Inkheloy dialect — ț, in other dialects ʔ in initial position, lʔ in medial position. Palatalized reflexes of velars (before the vowels i, e, a) are observed in the Tokita dialect (here also k: > ǵ). The Tokita dialect also has a laryngealization *q, *χ > h (other dialects have χ) and a sporadic development q̇ > ʕ (in non-initial position; in other dialects q̇ > ʔ). See [Магомедбекова 1971, Гудава 1964].

5) Akhvakh. The Northern dialect has p > h(ʷ); others preserve p. The Northern Akhvakh dialect is the only Andian language that has preserved the lax lateral ƛ; in Southern Akhvakh the fricativization ƛ > λ has already occurred, as in all other Andian languages. The geographical distribution of the reflexes of *ƛ̣ and *q̇ is similar: North-Akhv. ƛ̣, q̇, South-Akhv. ț, ʔ respectively. See [Magomedbekova 1967, Gudava 1964].

6) Bagwalal. The development of the intervocalic d > r is observed here in the Kwanada, Gemersoy and Tlondoda dialects. The laterals develop as follows: *ƛ, *λ give λ in the Tlissi dialect, h in Kwanada, and h-, -lh- (depending on the position) in Tlondoda and Khushtada; *ƛ̣- > ƛ̣- in initial position in Kwanada, ʔ- in other dialects; in the medial position all dialects have -l- in the place of *-ƛ̣-. Velars before non-labialized vowels are palatalized in all dialects and affricated in Tlissi. In Bagwalal a regular laryngealization *q, *χ > h occurs; but the labialized χʷ is preserved in initial position in Tlissi. The velar *x in Bagwalal turns into h (unlike *š > š), and gives χ in the Kwanada dialect. See [Gudava 1964].

7) Tindi. The development of the intervocalic -d- > -j- (or -∅-, -w-, depending on the vocalic environment) is typical for Tindi proper; in other dialects -d- is preserved. In the same Tindi dialect we observe the merger of *š and *x into h; in other dialects both these phonemes merge into š. The palatalization of velars (before non-labialized vowels) is typical for all dialects; in this case in Tindi proper *k: > ǵ:, while other dialects preserve the non-fricative reflex k: (ḱ:) (see [Gudava 1964], although the Tindi development *k: > š: mentioned there is incorrect). Uvular *q, *χ are laryngealized (> h) in the Aknada dialect, and develop into χ elsewhere.

8) Chamalal. The development *ʀ- > j-/w- (depending on the following vowel) is typical for the Gakvari dialect but is absent in Gigatl. In the Gigatl and Gadyri dialects a specific development of the medial *ç occurs: Gig. -z(z)-, Gad. -dd-. The fricativization *č > š occurs in the Gakvari dialect, which is also characterized by the fricativization of tense glottalized ç:, č:. The velars before non-labialized

vowels have been affricated; one should also pay attention to the hissing reflexes c, ṣ: of the tense *k:, *ḳ: in the Gakvari dialect (the Gigatl dialect has č, but ç:).

9) The opposition of laryngeals *h and *ħ is tentatively reconstructed on the evidence of Akhvakh (where there are two types of initial reflexes: ʔ- and h-; other languages usually have h-). However, the PEC source of this opposition is not quite clear yet (see above).

10) As for other phonetic processes, occurring in the consonantism system of Andian languages, we must point out the distant nasal assimilation that often leads to the appearance of m-, n- in the place of b-, r- (this process is most clearly represented in many Andian languages in the verbal system); the open syllable tendency in Akhvakh that had resulted in Northern Akhvakh in the complete disappearance of syllable-final resonants.

1.4.2. Consonant clusters.

In Andian languages, just as in other languages of Daghestan, consonant clusters in initial position are not allowed. In medial position only "resonant+obstruent" clusters are permissible. Resonants in such clusters are rather unstable: in particular, as a result of the weakening of -n- in clusters like -nC- (and sometimes in final position of polysyllabic words) nasalized vowels can appear in all Andian languages (except Andi, see [Gudava 1964]) . Exact rules on the behaviour of consonants in medial clusters vary from dialect to dialect, and we will not discuss them in detail.

Besides the -RC-clusters, Andian languages also possess very rare and apparently secondary clusters of two obstruents. Finally, there is one more type of clusters, reconstructed for PA and playing a very important part in the PEC reconstruction: clusters of the type -RH- ("resonant+laryngeal"). They deserve special examination (T. Gudava does not dwell upon these clusters in his work).

In a rather large number of nominal roots we observe very specific auslaut correspondences, namely: some languages have a sequence -VHV (or -ṼHV, with a nasalized vowel) at the word's end, other languages have -VjV ~ -VwV (or -ṼjV ~ -ṼwV, with a nasalized vowel), i.e. the result of a dropped laryngeal (besides the structures with -j- ~ -w-, there are also cases of contraction, when only a long vowel, -V̄ or -Ṽ̄, is left in auslaut); finally, some languages reveal a reflex -VR(V) (with the laryngeal dropped but the resonant preserved). In such cases it seems natural to reconstruct PA structures of the type *-VRHV.

The reflexes of these structures behave rather "whimsically" in modern languages (which is natural, considering the instability of laryngeals, as well as resonants, in combination with following obstruents), significantly varying in dialects and depending on vocalic environment. The available data allow us to reconstruct the following types of the structure *-VRHV:

PA	And	Botl	God	Kar	Akhv	Bagv	Tind	Cham
*Vrʔi	-Vr	-Vri		-Vre	-Vr(i)	-Vri	-Vja	-Vja
*Vrʔa	-Vʔa			-Vri (Tok.)				
*Vrhi	-V	-Vj	-Vji	-Vj	-Vr(i)	-Vra	-VrV	-Vr (Gakv.-V̄)
*Vrha(?)					-Vr~-Vj		-V̄/-V̄r	
*Vlhi			-Vji	-Vl(i)	-Vl(i)			
*Vlha(?)	-Vl					-Vl	-V̄	-Vra (Gakv.-V̄)
*Vnʔi	-Vn	-Vni~ -Ṽʔi	-Vni~ -Ṽji	-Ṽji/-Vn(e) (Tok.)	-Vn(i)	-V̄(j) ~-Ṽʔi	-Ṽ̄	-Ṽ̄/-Ṽj
(*C^{w}inʔi	-un/-ūj	-ūʔi	-ūji	-ūji		-ūʔi	C^{w}ī̃	-ūj/Cwī)
*Vnʔu	-Vmu	-iũ	-Ṽwu	-iw/-ũ	-Vn/-V(w)	-V̄	-V̄	-V̄w
*Vnʔa	-V/-Vna			-Vna	-Vni		-Vna	-Vn
*Vnhi	-Vj~-V̄j	-Ṽ	-Ṽhi~ -Ṽʔi	-Ṽ/-Ṽhi~ -Ṽji (Tok.)	-Vn/-Ṽ	-V̄(j)	-Ṽ̄	-Vhī̃/-Vhi
*Vnhu	-Vw(u)	-Ṽʔu	-Vwũ	-VjṼ~ -VnV	-ṼwV	-V̄	-Ṽhu	-V̄(w)
*Vnha	-Ṽja	-Vna	-Vne	-Vni	-Vna	-Vne	-Vna	-VnV
*Vmʔi	-Vm(i)	-Ṽʔi		-Ṽj			-Ṽ̄	-Vm
*Vmʔa	-V/-Vma		-Vma				-Ṽ̄	-VmV
*Vmha	-Ṽw				-Vma		-Vma	-Vma

Many cases of variation are caused here by the vacillation of rather unstable final vowels; in some cases we apparently possess not quite exact records. However, the general plausibility of the reconstruction of -RH- combinations seems beyond doubt.

1.4.3. Vocalism.

We reconstruct a four-vowel system for PA:

*i	*u
*a	*o

The problem of reconstructing the PA vowel *e is rather complicated. All modern languages have it; but in correspondences the i~e variation is so frequent that it does not yet seem possible to reconstruct two PA phonemes here.

The vowel *o was preserved only in Andi, and merged with *a in all other languages. Some authors (T. E. Gudava in particular, see [Gudava 1964]) consider the Andi o to be secondary; but external correspondences clearly show that in this case Andi preserves an important archaism and prove the necessity of reconstructing the *o (phonetically probably = /ɔ/) — *a opposition in PA.

Vocalic reflexes can be modified in different contexts, in particular, adjacent to labialized consonants. Most often we encounter the development *i > u or *i > o in this position (the distribution between u and o is as unclear here as the distribution between i and e).

In the final position of the PA nominal root we reconstruct the same four-vowel system as in the medial position. However, here we often observe variations of reflexes (including variations within a single language or even a dialect), caused by the weakening of articulation in final position and by morphological analogy. In Bagwalal and Chamalal narrow vowels are usually reduced to zero (they are sporadically preserved only in some Chamalal dialects, and in Bagwalal — after obstruents). We must note that the reduction of -u usually leaves a trace in the labialization of the previous consonant.

Except the variations and positional modifications of vowels, stated above, as well as the development *o > a in all languages except Andi, all PA vowels preserve their quality in descendant languages. Nasalized vowels, present in nearly all modern languages, have a secondary origin (see above) and do not go back to the PA level.

A productive ablaut system, if any, was apparently already lost in PA and is missing in modern Andi languages (though traces of the old ablaut can perhaps be discovered in individual nominal paradigms and in the V/∅-alternation in some verbal stems).

1.4.4. Root structure and prosody.

PA nominal roots have the structure *CV(R)CV, usually preserved in modern languages (though it may be modified due to reduction of final vowels and loss of -RH-clusters; in the last case monosyllabic roots may appear). There are additionally some nominal stems with the structure *CV(R)CVR (where final resonants are apparently historically suffixed morphemes) and some individual cases of other structures.

The verbal root usually has either the structure *-V(R)C- (it is not yet clear whether we must reconstruct significant vocalic differences at the end of the PA verbal root) ("state 1"), or *CVR- ("state 2") (on the opposition of two "states" of the verbal root in Avar-Andi languages see above, pp. 87-88), though in rare cases we may find roots of other types (*CV(R)C-, or roots with a combination of two obstruents in non-initial position — these all are probably historically derived forms).

Judging by the results of the MSU expeditions of 1973 — 1978, all modern Andian languages possess systems of tonal (melodic, sometimes mixed dynamic-melodic) accentuation with significant pitch distinctions. However, a careful description and a corpus of accented lexical material are unfortunately still lacking. Therefore, despite some observations already made (see [Starostin 1978]), it is yet early to talk about the PA accent reconstruction.

1.5. From PTs to modern Tsezian languages.

While reconstructing PTs, it is convenient to use two intermediate reconstructions — PTsKh (the protolanguage of the modern West-Tsezian languages: Tsezi, Ginukh, Khvarshi and Inkhokwari) and PGB (the protolanguage of the modern East-Tsezian languages: Gunzib and Bezhta). Intermediate PTsKh and PGB reflexes will be listed in our tables together with reflexes in modern languages.

Some correspondences between Tsezian languages were established in the work of Y. A. Bokarev [Бокарев 1959], but there was no reconstruction of the original system. Extremely short and absolutely insufficient notes on the putative PTs system are contained in the work [Gigineyshvili 1977]. Finally, an attempt to reconstruct the common Tsezian phonological system was made by T. Gudava ([Gudava 1979]); but, unlike the Andian reconstruction of the same author, this work can hardly be considered plausible (there is no analysis of specific correlations in voice/voicelessness between different Tsezian languages, problems of the reconstruction of laterals, hissing, hushing and uvular fricatives are not solved, no adequate reconstruction of vocalism is given).

1.5.1. Consonantism.

We reconstruct the following consonant system for PTs:

Labials	p	b	ṗ					m	
Dentals	t	d, (d_1)	ṭ					n	r
Labialized dentals	t^w	d^w	$ṭ^w$						
Hissing	c		ç	s	s:	z	z:		
Labialized hissing	c^w		$ç^w$	s^w	$s:^w$	z^w	$z:^w$		
Hushing	č		č̣	š	š:	ž	ž:		j
Labialized hushing	$č^w$		$č̣^w$	$š^w$	$š:^w$	$ž^w$	$ž:^w$		
Laterals	ƛ		ƛ̣	λ	λ:	L	L:		l
Velars	k, (k_1)	g, g_1	ḳ						
Labialized velars	k^w	g^w, $g_1{}^w$	$ḳ^w$						
Uvulars	q		q̇	χ	χ:	ʁ	ʁ:		
Labialized uvulars	q^w		$q̇^w$	χ^w	$\chi:^w$	$ʁ^w$	$ʁ:^w$		
Laryngeals			ʔ	h					
Emphatic laryngeals				ħ		ʕ			

A very specific feature of the PTs system is the four-way opposition of fricatives. It is tentatively interpreted as a distinction in tenseness, but other suggestions are possible as well (e. g., the reconstruction of an opposition in aspiration,

etc.). We must however note that in the subsystem of hissing and hushing fricatives we observe in fact only three types of correspondences (in initial position: PTsKh s — PGB s, PTsKh z — PGB z, PTsKh z — PGB s; in non-initial position: PTsKh s — PGB s, PTsKh z — PGB z, PTsKh s — PGB z); therefore, we could assume the existence of only three PTs hissing and three PTs hushing fricatives. However, external data obviously shows that in PTsKh as well as in PGB a secondary merger of the reflexes of initial *s, *s: and, respectively, non-initial *z, *z: occurred. Taking into account the fact that the four-way opposition is reliably reconstructed for the subsystems of lateral and uvular fricatives, we can suppose that it existed in the subsystems of hissing and hushing fricatives as well, but was afterwards lost with a parallel development in PTsKh and PGB. Thus, the correspondence "PTsKh s-: PGB s-" can simultaneously point to two PTs phonemes (*s- or *s:-); similarly the correspondence "PTsKh -z-: PGB -z-" (PTs *-z- or -z:-), see below.

There is some reason to think that explosive local series in PTs were also characterized by a more than three-way opposition of laryngeal features. The respective "specific" phonemes were marked in the table as *d_1, *k_1, *g_1 (their reflexes reveal specific variations in voice/voicelessness in descendant languages, and in some cases it is possible to trace them to other PEC sources than the usual PTs voiced and voiceless explosives, see above). But there are very few examples for all these phonemes, and their reconstruction (to say nothing of their phonetic interpretation) is not at all secure.

It is apparently necessary to reconstruct a full set of labialized consonants (except resonants, labials, laryngeals and probably laterals) for PTs. However, labialized consonants (especially the front ones) are rather unstable and easily lose their labialization (especially in East-Tsezian languages). Therefore, reflexes of labialized consonants — with very few exceptions, that will be mentioned below — are the same as the reflexes of respective nonlabialized ones, and in many cases the presence of labialization in PTs can be determined only by the reflexes of adjacent vowels (see below). Therefore in the table we do not adduce correspondences for labialized consonants.

The consonant correspondences in Tsezian languages are as follows:

PTs	PTsKh	Tsez	Gin	Khv	Inkh	PGB	Bezh	Gunz
*p	*p	p	p	p	p	*p	p	p-,b
*b	*b	b	b	b	b	*b	b	b
*ṗ	*ṗ	ṗ	ṗ	ṗ	ṗ	*ṗ	ṗ	ṗ
*m	*m	m	m	m	m	*m	m	m
*t	*t	t	t	t	t	*t	t	t-,d
*d	*d	d	d	d	d	*d	d	d
*d_1	*t	t	t	t	t	*d	d	d
*ṭ	*ṭ	ṭ	ṭ	ṭ	ṭ	*ṭ	ṭ	ṭ
*n	*n	n	n	n	n	*n	n	n
*r	*r~l	r~l	r~l	r~l	r~l	*r	r/j/w	r
*l	*r~l	r~l	r~l	r~l	r~l	*l	l	l

PTs	PTsKh	Tsez	Gin	Khv	Inkh	PGB	Bezh	Gunz
*c	*c	c	c/č	c	c	*c	c	c
*ç	*ç	ç	ç/č̣	ç	ç	*ç	ç	ç
*s	*s	s	s/š	s	s	*s-,z	s-,z	s-,z
*s:	*s	s	s/š	s	s	*s	s	s
*z	*z	z	z/ž	z	z	*s-,z	s-,z	s-,z
*z:	*z	z	z/ž	z	z	*z	z	z
*č	*č	č	c/č	č	č	*č	c/č	č
*č̣	*č̣	č̣	ç/č̣	č̣	č̣	*č̣	ç/č̣	č̣
*š	*š	š	s/š	š	š	*š-,ž	s-/š-,z/ž	š-,ž
*š:	*š	š	s/š	š	š	*š	s/š	š
*ž	*ž	ž	z/ž	ž	ž	*š-,ž	s-/š-,z/ž	š-,ž
*ž:	*ž	ž	z/ž	ž	ž	*ž	z/ž	ž
*j	*j	j	j	j	j	*j	j	j
*ƛ	*ƛ	ƛ	ƛ	ƛ	ƛ	*ƛ	ƛ	ƛ
*ƛ̣	*ƛ̣	ƛ̣	ƛ̣	ƛ̣	ƛ̣	*ƛ̣	ƛ̣	ƛ̣
*λ	*l-~r-,-λ-	l-~r-,-λ-	l-~r-,-λ-	l-~r-,-λ-	l-~r-,-λ-	*h-,L	h-,λ	h-,l
*λ:	*λ	λ	λ	λ	λ	*λ	λ	λ
*L	*L	λ	λ	λ	l	*L	λ	l
*L:	*L	λ	λ	λ	l	*l	l	l
*k	*k	k	k	k	k	*k	k	k-,g
*k$_1$	*k$_1$	g	k	k	k	*k	k	k-,g
*g	*g	g	g	g	g	*g	g	g
*g$_1$	*k	k	k	k	k	*g	g	g
*ķ	*ķ	ķ	ķ	ķ	ķ	*ķ	ķ	ķ
*q	*q	q	q	q	q	*q	q	q
*q̇	*q̇	q̇-,∅ (w,j)	q̇	q̇	q̇	*q̇	q̇	q̇
*χ	*χ$_1$	ħ(~χ)	χ(~h)	h	h	*ʁ	ʁ	ʁ(~h)
*χ:	*χ	χ	χ	χ	χ	*χ	χ	χ
*ʁ	*ʁ	ʁ	ʁ	ʁ	ʁ	*χ	χ	χ
*ʁ:	*ʁ	ʁ	ʁ	ʁ	ʁ	*ʁ~h	ʁ~h	ʁ~h
*ʁ:^{w}	*ʁ^w	ʁ^w	ʁ^w	ʁ^w	ʁ^w	*w	w	w
*ʔ	*ʔ	ʔ	ʔ	ʔ	ʔ	*ʔ	ʔ	ʔ
*h	*h	h	h	h/ħ	h	*h	h	h
*ħ	*ʔ	ʔ	ʔ	ʔ	ʔ	*h	h	h
*ʕ	*ʕ	ʕ	ʔ	ʔ	ʔ	*ʔ	ʔ	ʔ

Comments.

1) In PTsKh we observe an unmotivated variation of the liquids r and l. Strict rules of reflexation are not determined yet; external data clearly shows that the original PTs situation (corresponding well with AvarAndi) is preserved in PGB.

2) In Ginukh the reflexes of hissing and hushing consonants have been redistributed according to the following rule: hissing consonants are present here mostly adjacent to back vowels, hushing consonants — adjacent to front vowels

(though there are some not quite clear exceptions).

3) Some variations in the reflexes of the phonemes *χ_1 and *h in Tsezi, Ginukh and Khvarshi are apparently connected with the influence of pharyngealized adjacent vowels.

4) In Bezhta PTs, PGB *r gives j or w (depending on the adjacent vowel); however, the initial r is well preserved in Tladal dialect (see [Bokarev 1959]).

5) The Tladal dialect of Bezhta also preserves the original PGB system of hissing and hushing consonants. In Bezhta proper the hushing consonants regularly become hissing if they are adjacent to front vowels.

PTs differs significantly from other East Caucasian languages in its nearly complete lack of consonant clusters (traces of clusters in PTs are preserved only as nasalization, see above). A small number of words with medial -RC-clusters in PTs can be interpreted either as loanwords from PA or as the result of elision of the middle vowel in the rare structure *CVRVCV.

1.5.2. Vocalism.

We reconstruct the following vowel system for PTs:

*i	*ü		*ɨ	*u
*e		*ə		*o
		*a		*ɔ

We must at once note that the vowel *ü is rather rare and probably has a secondary origin (apparently a result of an early transfer of labialization of adjacent consonants onto the vowels i and ɨ).

A characteristic feature of the development of vocalism in Tsezian languages is two series of reflexes of the vowels *i, *e, *ɨ, *u, *o, * ɔ, distinguished in PTsKh (the second series is characterized by a peculiar "shift into centre" of vocalic reflexes). For a possible reason for such a division of PTsKh reflexes, see above, pp. 75-76.

Vowel correspondences between Tsezian languages are as follows:

PTs	PTsKh	Tsez	Gin	Khv	Inkh	PGB	Bezht	Gunz
*i^A	*i	e	e	i	i	*i/u	i/u	i/u
*i^B	*ɨ	e	e	e	ɨ			
*e^A	*e	i	i	e	e	*e/ö	e	e/o
*e^B	*ə	i	e	a	o			
*ü	*ü	e	o	i	u,i	*ɨ	i	ɨ
*ɨ^A	*ɨ	e	e	e	ɨ	*ɨ/o,u	i/o,u	ɨ/o,u
*ɨ^B	*ə	i	e	a	o			
*ə	*ə	i	e	a	o	*ə/ɔ	o/a	ə/ɔ
*a	*a	a	a	a	a	*a	a	a
*u^A	*u	u	u	u	u	*u	u,-o	u
*u^B	*ü	e	o	i	u,i			
*o^A	*u	u	u	u	u	*o	o	o
*o^B	*ö	o~i	ü	e	e			
*ɔ^A	*o	o	o	o	o	*ɔ	a	ɔ
*ɔ^B	*ö	o~i	ü	e	e			

Comments.

1) The vowel ɔ in Gunzib is characterized by E. A. Bokarev ([Bokarev 1967, 472]) as a non-labialized back mid vowel; but a more exact characterization (judging by the field observations of the MSU expedition) would be "back low mid-open vowel". We transcribe it (as well as the vowel reconstructed in its place in PGB and PTs) as ɔ.

2) After the slash in PGB (and therefore in Bezhta and Gunzib) we give the reflexes of PTs vowels adjacent to labialized consonants (that have lost labialization in PGB).

3) The distinction of series A and B in PTsKh is relevant only in the first syllable; the second syllable usually has reflexes of "unshifted" vowels (series A). It must be noted that for the second (final) syllable in PTs we reconstruct not the full set of vowels, but only *e, *ə, *a, *u, *ɔ (their reflexes in this position are generally the same as in the first syllable).

4) Besides simple vowels, we reconstruct a complete set of nasalized vowels in PTs. They preserve their nasalization in Khvarshi, Inkhokvari, Bezhta and Gunzib (though they may sporadically lose it). The quality of the reflexes of nasalized vowels is usually the same as of the plain ones. A significant exception is the development of nasalized *ẽ and *õ in Khvarshi, where they give narrow reflexes (*ẽ > ĩ, *õ > ũ); it should be mentioned that plain *e and *o develop in the same way in the vicinity of nasal m or n (the rule of Y. Testelets). The opposition of nasalized/nonnasalized vowels in PTs (and in modern Tsezian languages) is relevant only in the first syllable (following syllables can be subject to assimilative, "prosodic" nasalization; but structures with a nasalized second vowel and a non-nasalized first do not exist).

5) All vowels — plain as well as nasalized — can also have the additional feature of pharyngealization in PTs. Pharyngealized vowels (generally yielding the same quality of reflexes as the plain ones) are now preserved in Tsezi and Inkhokwari, but lose pharyngealization without any trace in other Tsezian languages. The origin of the Tsezian pharyngealization is not quite clear yet (see above, page 83).

1.5.3. Ablaut.

The PTs nominal stems possessed ablaut of two main types: a) direct stem *o — oblique stem *ɨ; b) direct stem *ɔ — oblique stem *i (some paradigms secondarily mix both types of ablaut). In words with the structure CV some other types of vowel gradation (possibly archaic) are possible as well. It must be noted that the nominal ablaut was already not very productive in PTs, and the number of nouns with

alternating vowels is very small in modern languages. On the origin of the Tsezian ablaut see above, pp. 81-82.

Tsezian languages apparently preserve some remnants of verbal ablaut as well (though PTs evidently had already lost the productive verbal ablaut system), but this question still needs special research.

1.5.4. Root structure and prosody.

Most nominal roots in PTs have the structure CV or CVC(V); longer structures are rare (and are usually derived). A characteristic PTs feature (already mentioned above) is the inadmissibility (or at least extreme rarity) of consonant clusters within a single morpheme, despite the fact that closed-syllable structures (of the type CVC) are allowed. The CVC structures probably appeared in PTs as a result of the early process of dropping narrow final vowels (in the reconstructed PTs system -i and -ɨ are missing; -u is present, but this vowel is rather a result of a still later secondary narrowing from *-o, missing in final position). However, the correspondences between PTs and PEC final vowels are yet to be established.

Most verbal roots in PTs have the structure -VC(V) (or, more rarely, -VCVR). The most unstable element of the verbal root is its final vowel, which can disappear or be modified before suffixed morphemes. The problem of the verbal auslaut in PTs (and its PEC sources) is not yet well studied. Besides, there is a number of verbal roots with a different structure, e. g., CVC(V); however, historically they are mostly derived and contain old preverbs (no longer productive in PTs and in modern languages).

The prosody of PTs can be described as consisting of nasalization and pharyngealization, which have been examined above (though these phenomena can be also regarded as vocalic features). Besides, judging by the results of the MSU expeditions of 1973-1978, all Tsezian languages possess relevant tonal oppositions, and PTs certainly had a tonal accent system. However, all that was said above about Andian tonal systems (see page 109), could be applied to this case as well: we need more careful and full descriptions, on the basis of which one could accomplish the PTs tonal reconstruction.

1.6. Lak.

Despite a rather large number of speakers and villages where the Lak language is used, it is at the present time rather monolithic. There are many local dialects, but they do not seriously differ from each other, see [Khaidakov 1966] (although there is some reason to believe that the degree of dialectal divergence was higher in the past). Therefore, the inclusion of Lak dialectal data generally does not add much to the information that one can obtain from the description of Lak literary language and its lexicon.

The development of Lak phonemes from PEC was described in general above. We should pay attention only to some comparatively recent phonetical processes that are not reflected in the tables:

a) in Lak a general affrication of velars (including the velars that developed from PEC laterals) occurred before the vowels a, i. Original velars are easily reconstructed with the help of Lak morphological data (there is a regular alternation k/č, ḳ/č̣, etc., in nominal and verbal paradigms). However, the affrication may sporadically be missing in some dialects and in the literary language. Therefore, while using the main lexicographical source on Lak — the dictionary of S. M. Khaidakov ([Khaidakov 1962]), one may have orthographic problems, because in most cases the labialization of velar consonants is not marked there, and, e.g. the sequence -ka- may be read either as -ka- or as -k^{w}a-. In such cases we have to use dialectal records (the fullest available are the MSU records of the Khosrekh dialect).

b) Another recent phonetical process easily seen in morphonology is the weakening of all tense consonant phonemes in the closed syllable (-p: > -p, -t: > -t, -c: > -c, -s: > -s, etc.) They are restored before suffixes beginning with a vowel.

c) We should also note some other sporadic phonetic processes: the development of intervocal d and b into r and w respectively (a quite recent change, having affected some recent Arabic loanwords as well); the variation of l and velar reflexes of PEC laterals (see above, page); the variation of χ: and h in the place of PEC uvular fricatives (see above, page). Such phenomena certainly suggest intensive dialectal mixture within the history of Lak. It is, however, possible that some of these variations will one day be given a prosodic explanation (the system of Lak prosody — except the feature of pharyngealization — is not yet described at all).

As a specific feature of Lak we must mention that it has the most reduced vowel system of all EC languages (only three phonemes: i, u, a). In some dialects, however, long vowels are also present, but their systematic description does not exist.

1.7. From PD to modern Dargwa dialects.

Unlike Lak, the Dargwa language has many dialects that are rather far from each other, see [Gasanova 1971]. Unfortunately, sufficient lexicographical sources are available only for the following dialects: a) Akushi, on which literary Dargwa is based (see [Abdullayev 1950]); b) Urakhi, described already by P. K. Uslar (see [Uslar 1892]) and c) Chirag, on which we possess the voluminous records of the MSU expeditions of 1973-75. Rather many dialectal records are contained in the work of M.-S. M. Musayev ([Musayev 1975]); see also [Gasanova 1971]. Therefore , we have a generally more or less reliable system of phonetic correspondences and reconstructions, based on the material of 13 Dargwa dialects. However, in this work we will limit ourselves to the reflexes of PD phonemes in the four dialects which are described best of all and the evidence of which is quite sufficient to reconstruct the complete PD phonological system: Chirag, Akushi, Urakhi and Kubachi.

1.7.1. Consonantism.

We reconstruct the following system of consonants for PD:

Labials	p	p:	b	ṗ				w	m
Dentals	t	t:	d	ṭ				l, r	n
Labialized dentals			d^w	$ṭ^w$					
Hissing	c	c:	ʒ	ç	s	s:	z		
Hushing	č	č:		č̣	š	š:	ž		j
Velars	k	k:	g	ḳ	x	x:	ɣ		
Labialized velars	k^w	$k:^w$	g^w	$ḳ^w$	x^w	$x:^w$	$ɣ^w$		
Uvulars	q	q:		q̇	χ	χ:	ʁ		
Labialized uvulars	q^w	$q:^w$		$q̇^w$	$χ^w$	$χ:^w$	$ʁ^w$		
Pharyngealized uvulars	qI	q:I	(GI)	q̇I	χI	χ:I	ʁI		
Pharyngealized labialized uvulars	qI^w	$q:I^w$		$q̇I^w$	$χI^w$	$χ:I^w$	$ʁI^w$		
Laryngeals	ʔ				h	hI (?)			
Labialized laryngeals	$ʕ^w$				h^w				
Emphatic laryngeals	ʕ				ħ				

In this system the phoneme *GI (without a non-pharyngealized counterpart) is not quite certain; it is not to be excluded, that in the examples available we deal with an irregular development of the PD *ʁI. In addition, the status of the phoneme that we mark as *hI is not quite clear (other pharyngealized laryngeals seem to be missing in PL); the reconstruction of $*h^w$ can also be considered dubious (this phoneme is represented by a few examples in medial position, and the established correspondences should possibly be interpreted otherwise). In general, the reconstruction of the PD system of laryngeals probably needs some further elaboration.

We establish the following correspondences among Dargwa dialects:

PD	Chir	Akush	Urakh	Kub
*p	p	p	p	p
*p:	p:	b	b	p:,-p
*b	b	b	b	b
*ṗ	ṗ	ṗ	ṗ	ṗ
*w	w	w	w	w(-p:-)
*m	m	m	m	m
*t	t	t	t	t
*t:	t:	d	d	t:,-t
*d	d	d	d	d
*ṭ	ṭ	ṭ	ṭ	ṭ

PD	Chir	Akush	Urakh	Kub
*l	l	l	l	l
*r	r	r	r	j/w/Ø
*n	n	n	n	n
*dʷ		d	dʷ	
*ṭʷ		ṭ	ṭʷ	ṭ(ʷ)
*c	c	c	c	s
*c:	c:	z,-z~-c	z~ʒ	c:,-c
*ʒ	z	z	z	s(/-z)
*ç	ç	ç	ç	ç
*s	s	h-,-rh-	h-,-rh-	t
*s:	s:	s	s	s:,-s
*z	z	ʔ-,-rʔ-,-r	ʔ-,rʔ	d
*č	č	č	č	č
*č:	č:	ž	ʒ	č:,-č
*ç̌	ç̌	ç̌	ç̌	ç̌
*š	š	š	š	š
*š:	š:	š	š	š:,-š
*ž	ž	ž	ž	ž
*j	j	j	j	j
*k	k	k	k	k
*k:	k:	ɣ	ɣ	k:,-k
*g	ɣ	ɣ	ɣ	ɣ
*ķ	ķ	ķ	ķ	ķ
*x	x/š	š	š	š-,x
*x:	x:	x	x	x:,-x
*ɣ	ɣ(~j-)	ʔ-~j-,jʔ	ʕ-,jʔ	ɣ
*kʷ	k(ʷ)	k	kʷ	k(ʷ)
*gʷ	gʷ	w-,-h-	gʷ-,-hʷ-	gʷ
*ķʷ	ķʷ	ķ	ķ(ʷ)	ķʷ
*xʷ	xʷ	h,-x	h(ʷ)-,-wh-,-w	xʷ
*x:ʷ	x:(ʷ)	h,-x	h-,-h-~-xʷ-,-x	x:(ʷ),-xʷ
*ɣʷ	ɣ	ɣ-,-w	ʔʷ-,-w	
*q	q	q	q	q
*q:	q:	G	G	q:,-q
*q̇	q̇	q̇	q̇	q̇
*χ	χ	h	h	χ
*χ:	χ:	χ	χ	χ:,-χ
*ʁ	ʁ	ʁ	ʁ	ʁ
*qʷ	qʷ	q	q(ʷ)	qʷ
*q:ʷ	q:ʷ	G	G(ʷ)	q:ʷ,-q(ʷ)
*q̇ʷ	q̇ʷ	q̇	q̇ʷ	q̇ʷ
*χʷ	χ(ʷ)	χ	χʷ	χʷ
*χ:ʷ	χ:ʷ	χ	χ(ʷ)	-χ:ʷ-
*ʁʷ	ʁʷ	ʁ	ʁ(ʷ)	ʁ(ʷ)

PD	Chir	Akush	Urakh	Kub
*qI	qI	qI	qI	qI
*q:I	q:I	G(I)	GI	q:I,-qI
*GI	ʁI-	ʁI-		ʁI-
*q̇I	q̇I	q̇I	q̇I	q̇I
*χI	χI	ħ	ħ	ħ
*χ:I	χ:I	ħ		
*ʁI	ʁI	ʕ-	ʕ-	ʁI-
*qI^{w}	qI^{w}	qI	qI^{w}	qI^{w}
*q:I^{w}	q:I^{w}	GI	GI^{w}	q:I^{w}-
*q̇I^{w}	q̇I^{w}	q̇I	q̇I(^{w})	q̇I(^{w})
*χI^{w}	χI^{w}	ħ	ħ^{w}	χI-~ħ-
*χ:I^{w}	χ:I^{w}	χI-~ħ-	χI^{w}~ħ^{w}	χ:I^{w}-
*ʁI^{w}	ʁI^{w}	ʕ	ʕ^{w}	ʁI^{w}
*ʔ-	ʔ-	ʔ-	ʔ-	ʔ-
*h	h-,-j-	ʕ-~ħ-,-h-	ʕ-,-ʔ-	h
*hI	hI	ʕ-,-ʕ-~-ʔ-	ʕ-,-ʕ-~-ʔ-	ħ
*h^{w}		-h-	-w-	-∅-
*ʕ^{w}	ʕ^{w}	ʕ	ʕ(^{w})	ħ-,ʕ
*ħ	ʕ,-ʕ~-∅I	ħ	ħ	ʔ-~ʕ-,-∅-,-VIj
*ʕ	ʕ-,h	ʕ	ʕ	ʕ-~ʔ-,h

Comments.

1) It seems reasonable to reconstruct a separate series of PD uvular pharyngealized (and uvular pharyngealized labialized) consonants, because we meet the whole set of PD vowels beside them; as for non-uvular consonants, the only pharyngealized vowel that can be adjacent to them is aI (see below on the vowel system). Additionally, pharyngealized uvulars in Dargwa dialects often give reflexes other than the respective non-pharyngealized ones (see the table). We must remember, however, that historically the pharyngealized uvulars are secondary (see above, page 59) and we did not place them in the table of PEC reflexes.

2) We can easily reconstruct labialized back consonants for PD, but labialized front ones (except the very rare d^{w} and ṭ^{w}) virtually cannot be reconstructed. Labialization has totally disappeared in literary Dargwa (Akushi), but is rather well preserved in many other Dargwa dialects (except the cases of a secondary transfer of consonant labialization to the adjacent vowel).

3) The PD liquid *r in Kubachi most often develops into j (more rarely into w or ∅, depending on its position and the vocalic environment). There is also a very characteristic process of the disappearance of *r in Kubachi in medial clusters of the type -rC-, when the precedent vowel is lengthened after the fall of -r-. In this way Kubachi has developed a secondary opposition of vowels in brevity/length, absent in other Dargwa dialects.

4) Akushi usually reflects the final *-c: as -z; but in some words we have the reflex -c that has apparently penetrated from a dialect of the Kubachi type. The fact that in this case we are doubtlessly dealing with interdialectal loanwords is confirmed by transparent doublets like *baz* "month" — *bac* "moon" (PD **bac:*). The Urakhi variation z~ʒ in the place of PD *c: possibly has a similar origin.

5) The voiced g in most Dargwa dialects is absent or in free variation with

the fricative ɣ (we must note that in the literary orthography this consonant is marked as г). However, an explosive *g is reliably reconstructed for PD in the place of modern ɣ, because for the fricative *ɣ a special row of correspondences exists.

6) In Akushi and Urakhi we mark as G the phoneme, that is orthographically represented as къ; phonetically this consonant is not voiced, but rather voiceless unaspirated (tense). However, in the system it occupies the place of a voiced one, because the opposition in laxness/tenseness has been lost in these dialects, being replaced by the opposition of voice/voicelessness.

7) The Kubachi dialect has a regular affrication of non-labialized velars before front vowels i,e: k > č, ķ > č̣, k: > č: etc.

8) Labialized *ʁ^{w} turns into a laryngeal ʔ after -r- in Urakh.: -rʁ^{w}- > -rʔ-; in Akushi it is further weakened and disappears (-rʁ^{w}- > -r-).

10) The given table shows us the archaic character of the Chirag dialect (and, judging by the sparse available data, the other dialects of the Amukh type). In fact, with very few exceptions it has fully preserved the PD consonantism system and can act as a "protolanguage" for other Dargwa dialects (of which the Akushi dialect, the basis of modern literary Dargwa, is the most advanced and shattered one).

1.7.1.1. Consonant clusters.

The most frequent type of consonant clusters in Dargwa (as in most other EC languages) is the type "resonant+obstruent" (it is worth noting that the consonant b could also be related to resonants by this feature, because it is rather often found within the clusters -bC-, see above). These combinations are generally well preserved in dialects (though there are cases of losing resonants, especially in the Chirag dialect); on the development of combinations of the type -rC- in Kubachi see above, page 119.

In single cases we meet also consonant combinations of other types (in particular, of two obstruents), whose origin is not quite clear.

1.7.2. Vocalism.

We reconstruct the following vowel system for PD:

*i	*u
*e	*a

Besides that, we also reconstruct a single independent pharyngealized vowel *aI (all other pharyngealized vowels in PD and in modern dialects have the status of phonetical variants of simple vowels, adjacent to pharyngealized uvulars).

Of the dialects examined above, Chirag, Akushi and Kubachi preserve the original system (in Kubachi additional long vowels appeared as a result of the disappearance of -r- and some other phonetical processes, e.g. contraction; see above). We should also note that in Chirag vowels are less stable and more easily subject to positional variations, than in other dialects.

In Urakhi a narrowing *e > i occurred (e now occurs only in a few loanwords and as a phonetical variant of i after ħ). There are also long vowels

here, but they are rather rare and in most cases develop from contractions.

In the end of the Dargwa nominal root only two vowels were possible: -i and -a (as well as its pharyngealized counterpart -aI). The vowel -u, present in a few roots in modern dialects, apparently goes back to PD *-i after labialized consonants. In the end of the PD verbal root final -i, -u and -a are possible; but a full reconstruction of the PD verbal paradigm is still lacking, and the original system is not quite clear yet.

1.7.2.1. Ablaut.

The old nominal ablaut seems to be lost in Dargwa (the vowel gradation in the formation of plural, involving the development a,i > u or a > i in some dialects, is obviously a secondary result of the reduction of the root vowel before the added plural marker). However, we must note the strange process of "truncating" the final syllable in some oblique nominal stems in Dargwa (*qali* "house", Gen. *qa* and so on), the reasons of which are not yet clear.

The ablaut, however, is widely spread in the Dargwa verbal system as a means of differentiation of aspect stems. The comparison of Chirag, Akushi and Kubachi data allows us to reconstruct the following types of verbal vowel alternations in PD:

Perfective aspect	Imperfective aspect
*a	*i
*a	*u
*e	*i
*e	*u
*u	*i

The vowel *i is usually preserved in the imperfective aspect stem. The ablaut system in the Dargwa verb is combined with complicated processes of the disappearance and insertion of resonants -r-,-l- in medial position (these processes are, as it seems, related to the opposition of "strong" and "weak" series of class markers in PL, though many details are still unclear).

1.7.3. Root structure and prosody.

The bulk of nominal roots in PD have the structure CV or CV(R)C(V) (with the final vowel or without it), that are preserved in all modern dialects. As in other EC languages, there is a comparatively small number of nominal stems with a longer root structure, that are in most cases derived.

The verbal root in PD has the structure -V(R)CV(R); the final consonant may be represented by -r (r-conjugation) or -n (n-conjugation). We will not dwell in more detail on the analysis and the reconstruction of the PD verbal root (this topic should be specially studied together with an examination of the East Caucasian verbal system as a whole).

The Dargwa prosodic system is not yet sufficiently described. Judging by the descriptions, most modern Dargwa dialects have a system of morphologically fixed dynamic accent; data collected by the MSU expedition allows us to suggest the presence of other prosodic features (phonations) as well.

1.8. From PL to modern Lezghian languages.

The PL reconstruction is presently the most developed of all intermediate reconstructions. Besides, since the PL phonological system is characterized by special archaic features as a result of the early split of the Lezghian family, its reconstruction plays a specific part in the reconstruction of PEC and PNC phonological systems. Therefore we consider it necessary to go over the characteristics of the PL system in some detail.

The existing PL reconstruction had already been completed in its entirety in 1975 (see [Starostin 1975a, 1975б]) and is rather substantially different from the later presented reconstruction of B. B. Talibov ([Talibov 1980]), as well as from the systems, reconstructed sketchily by E. A. Bokarev ([Bokarev 1981]) and B. K. Gigineyshvili ([Gigineyshvili 1977]). The main differences in our reconstruction are: postulation of the originality of tense unaspirated explosives and affricates and the recognition of the secondariness of their voiced reflexes in some modern languages (see below); reconstruction of the full lateral series for PL; reconstruction of the PL system of laryngeal consonants; reconstruction of PL vocalism (significantly different from the system suggested by E. A. Bokarev); reconstruction of the PL root structure and ablaut system; reconstruction of a series of tense resonants in PL, etc. For a short sketch of our reconstruction and a table of correspondences (unfortunately, with some misprints), see the book [Alekseyev 1985, pp. 11-15].

1.8.1. Consonantism.

We reconstruct the following consonant system for PL:

Labials	p	p:	b	ṗ					u̯	w	m	m:
Dentals	t	t:	d	ṭ					j	r, l	n	n:, l:
Labialized dentals	t^w	$t:^w$		$ṭ^w$								
Hissing	c	c:		ʔ	ç:	s	s:	z				
Labialized hissing	c^w	$c:^w$		$ʔ^w$	$ç:^w$	s^w	$s:^w$					
Hushing	č	č:	(ǯ)	č̣	č̣:	š	š:	ž				
Labialized hushing	$č^w$	$č:^w$	(ǯ^w)	$č̣^w$		$š^w$	$š:^w$	$ž^w$				
Laterals	ƛ	ƛ:	(Ł)	ƛ̣	ƛ̣:	λ	λ:					
Labialized laterals	$ƛ^w$	$ƛ:^w$		$ƛ̣^w$	$ƛ̣:^w$	$λ^w$	$λ:^w$					
Velars	k	k:	g	ķ								
Labialized velars	k^w	$k:^w$		$ķ^w$								
Uvulars	q	q:		q̇	q̇:	χ	χ:	ʁ				
Labialized uvulars	q^w	$q:^w$		$q̇^w$	$q̇:^w$	$χ^w$	$χ:^w$					
Pharyngealized uvulars	qI	qI:		q̇I	q̇I:	χI	χI:					
Pharyngealized labialized uvulars	qI^w	$qI:^w$		$q̇I^w$	$q̇I:^w$	$χI^w$	$χI^w$:					
Laryngeals	ʔ					h						
Labialized laryngeals	$ʔ^w$											
Pharyngealized laryngeals	ʔI					hI						
Emphatic laryngeals	ʡ					ħ						
Emphatic labialized laryngeals	$ʡ^w$											

We must at once note that pharyngealized consonants in PL should not be necessarily regarded as independent phonemes, because in PL there was a full system of independent pharyngealized vowels (see below), and pharyngealized consonants can be regarded as allophones of simple uvulars (and laryngeals), adjacent to pharyngealized vowels. However, since in many modern Lezghian languages pharyngealized consonants represent a special series, often yield reflexes different from the respective non-pharyngealized phonemes and statistically occur much more frequently adjacent to pharyngealized vowels than other consonants, it is convenient to regard them as separate phonological units.

Let us now separately examine the reflexation of PL explosives, resonants, affricates and fricatives.

1.8.1.1. Explosives.

For PL it is necessary to reconstruct three local series of explosive consonants: labial, dental and velar. Each of these series is characterized by the presence of a four-way distinction "voiceless (aspirated)" — "tense (unaspirated)" — "glottalized" — "voiced". We must note at once that voiced explosives (as other voiced obstruents, see below) are more rarely encountered than explosives of other types, and can be regarded as "peripheral" phonemes (it is worth noting that in verbal roots voiced phonemes are lacking). However, the opposition "tense" — "voiced", found in Archi and in Lezghian, and a good correlation between the evidence of these two languages lead us to project this opposition onto the PL level; some features of other languages (e.g., a specific Tabasaran reflexation of PL *g opposed to *k:, see below) confirm this reconstruction — although, in the long run, it seems to be a PL innovation (compared to the PEC stage).

In the system of explosive consonants (as well as in the system of affricates and fricatives, see below) there was an opposition of labialized and non-labialized phonemes that was neutralized only in the labial series.

Let us now give the system of correspondences of explosive consonants in descendant languages.

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*p	p	p	p	p	p	p	p	p	p
*p:	b	b/w	b/w	p:,-b	b	b	b	b	b/p:?
*ṗ	ṗ	ṗ,-b-/-w-	ṗ/p:/p	ṗ,-b	ṗ,-b	ṗ,-b	ṗ-,ṗ/b	?-,ṗ	?-,p:
*b	b			b	b	b	b	b	b
*t	t	t	t/č	t/c	t	t	t/č	t/č	t/c
*t^{w}	t^{w}/t	t	t	t	t	t	t	t	
*t:	d-,-t:-,-t	d/r	d-/ǯ-(/-j-,-w-)	t:/c:, -d	d	d	d/ǯ	d/ǯ	d(/t:)/c-?
*t:^{w}	-t:(^{w})-	d/r	d/j	t:(^{w}),-d	d	d	d	d	
*ṭ	ṭ	ṭ	ṭ/č̣	ṭ/ʔ	ṭ	ṭ	ṭ/č̣	ṭ/č̣	t:
*ṭ^{w}	ṭ	ṭ	ṭ	ṭ(^{w})	ṭ(^{w})	ṭ	ṭ	ṭ	
*d	d-	d	d	d				d	
*k	k,-k:-	k	k	k	k	k	k	k	k
*k^{w}	k(^{w}),-k:-	k(^{w})	k(^{w})	k(^{w})	k(^{w})	k(^{w})	k(^{w})	k	k
*k:	g-,-k:-,-k	g,-ɣ-	g-,-g-	k:,-g	g	g,-g-/-ɣ-	g	g	g/k:
*k^{w}:	g(^{w})-,-k:(^{w})-,-k^{w}	g(^{w})	g(^{w})	k:(^{w}),-g(^{w})	g(^{w})	g(^{w}),-g(^{w})-	g	g	-k:
*ķ	ķ	ķ	ķ	ķ	ķ	ķ	ķ	ķ	k:
*ķ^{w}	ķ^{w}	ķ(^{w})	ķ(^{w})	ķ(^{w})	ķ(^{w})	ķ(^{w})	ķ(^{w})	ķ	k:
*g	g	g/k:	g/ǯ/k:	g	g	g	g	g	k:
*g^{w}	g(/-k:-)	k:(w)/g(^{w})	k:(^{w})/g(^{w})	g	g				

Comments.

The table shows that voiced, voiceless and glottalized consonants are preserved in all descendant languages (except Udi, in which glottalized consonants are regularly reflected as tense ones). The voiced *g is reflected (though just sporadically) as k: in Agul and Tabasaran, as well as in Udi; there is some reason to think that alrea-dy in PL the articulations *g and *g: were admitted as free variants.

Tense (unaspirated) consonants are at the present time preserved in Archi, Lezghi and Udi, though in Udi PL tense consonants generally give voiced reflexes; the preservation of tense ones is observed only sporadically, usually not in the initial position. (It is necessary to note at once that reflexes of PL phonemes in Udi are generally less exact than in other Lezghian languages; in many cases there probably exists a complementary distribution of reflexes, that is, however, hard to discover because of insufficient data). In Archi tense explosives are voiced in the initial position, preserved in the intervocalic position and weakened in final position (though PL *p: gives b in all positions here). In Lezghi tense consonants are preserved in the initial and intervocalic positions, but are voiced in final position.

In all other languages the PL tense explosives have been voiced. In Tabasaran

and Agul (to be precise: in the Northern dialect of Tabasaran and in the Koshan and Burkikhan dialects of Agul) we observe a further process of sonorization (probably through an intermediate stage of fricativization) of the reflexes of PL tense explosives in non-initial position, which led to the development PL *p: > w in all the afore-mentioned dialects. PL *t: is reflected as r in non-initial position in the Koshan and Burkikhan dialects of Agul and in some subdialects of the Northern dialect of Tabasaran; in the Dübek subdialect of Tabasaran PL *t: is reflected as j in final position and as -j- or -w- (depending on the character of the following vowel) in intervocalic position.

The voiced reflex g < PL *k: in non-initial position can be fricativized and develop into ɣ; this development is observed in non-initial position in Tabasaran, where -g- and -ɣ- are in free variation; in the Mikik dialect of Tsakhur the fricativization *-k:- > -g- >- ɣ- is obligatory. The development *-k:- > -j- (apparently, through the step -ɣ-) is observed in the Nidzh dialect of Udi.

Labialized consonants are completely lost in the Budukh and Udi languages, as well as in the Northern dialect of Tabasaran (here only specific "dentolabialized" consonants are preserved; on those, see below). Other Lezghian languages preserve labialized consonants. However, it must be noted that labialization is easily transferred from the consonant to the adjacent vowel; as a result of this, the labialization of the consonant itself is often lost. (Phonetically the consonant is certainly still labialized, but, since in all Lezghian languages the "labialized" — "non-labialized" opposition is neutralized in the position close to a labialized vowel, the labialization of the consonant becomes nondistinctive in this context). Especially unstable is the labialization of front consonants, which are preserved (in a few roots only) in Archi, Lezghian and Rutul, but which in other languages have been completely delabialized.

The palatalization of dental consonants before front vowels is more or less typical for all Lezghian languages. A strong palatalization of dental explosives is observed in Tsakhur. Here, however, the palatalized dentals have not been affected by the further affrication that is observed in Tabasaran, Kryz, Budukh, Lezghi and Udi (with hushing reflexes in Tabasaran, Kryz and Budukh, and hissing reflexes in Lezghi and Udi).

We should also dwell upon the following minor points:

a) The PL phoneme *ṗ is rather rare and does not have stable reflexes. Archi usually reflects it as ṗ (but -p- in *kupar* "manure" < PL **kuṗ).* Agul has ṗ- in initial position, but in other positions the deglottalization ṗ > p: occurred, after which this consonant behaved as PL *p: (see above). In Tabasaran the Southern dialect (and the literary language) have the reflex ṗ; a single known Northern dialect example *(kup* "dried dung") reveals the final -p. Rutul and Tsakhur have the reflexes ṗ- in initial position, -b- in the non-initial one.

Lezghi always has ṗ- in initial position. In other positions literary Lezghi also has ṗ, but the Akhty dialect (Khliut) shows a variation between ṗ and p: (-b in final position). The glottalization of the final -ṗ is lost if a preceding glottalized consonant is present (-ṗ > -b), but is restored in medial position (cf. Nom. *ṭab* — Erg. *ṭaṗuni).*

b) As has been mentioned above, PL tense explosives are preserved in Lezghi in

initial position. However, the Northern dialects of Lezghi sometimes have a secondary voicing of PL *p:-, *t:- and *k:- in this position. It usually occurs in polysyllabic words with medial glottalized or tense consonants (thus being a dissimilative process). The central (Samur) and Southern dialects usually preserve tense consonants in this position.

c) Unlike PL voiceless *p and *t, PL *k gives an unusual intervocalic reflex in Archi: a tense -k:-. This led to the merger of the non-initial reflexes of PL *k and *k: in Archi.

d) Velar explosives are not usually affected by affrication (unlike dental explosives, see above) before front vowels. An exception is the phoneme *g, which, in this position, developed into ǯ in Tabasaran (which, by the way, reliably distinguishes the reflexes of PL *g and *k: : the latter also yields Tabasaran g, but is not subject to palatalization and affricativization before front vowels).

1.8.1.2. Resonant consonants.

We reconstruct ten resonants for PL: *m, *m:, *w, *u̯; *n, *n:, *r, *j; *l, *l:. Modern languages lack the opposition w-u̯, as well as the tense resonants m:, n:, l:. In PL the distribution of these phonemes was limited as well: PL *u̯ is reconstructed only in initial position, and PL *m:, *n:, *l: — only in the non-initial one. Phonetically PL *w probably represented a somewhat fricativized bilabial b or a dentolabial v, and PL *u̯ — a bilabial glide.

Let us now give the table of correspondences of resonants in descendant languages:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*m	m/b	m	m	m	m	m	m	m	m
*m:	m	b/w	b/w	-p:-,-b	b	m	b	b	m
*w	b	w	w	w	w	w	w	w	b-,-w
*u̯	w/Ø	w/Ø/j	w/j	w/Ø	w/j/Ø	w/j/Ø	w/j	w/j	w/Ø
*n	n/d	n	n	n	n	n	n	n	n
*n:	-nn-,-n	d/r	d/j/ǯ	-t:-/ -c:-,-d	d	n	d/ǯ	d/ǯ	n
*r	d-,r	r	r	r	r	r/j/w/Ø	r	r	Ø/j/-r
*j	Ø	j/Ø,-j-	j,-j/-Ø	j/Ø	j,-j/-Ø	j,-Ø	j-,-Ø	j-,-Ø	Ø,-j-?
*l	l	l	l	l	l	l/Í/w	l	l	l(-Ø-)
*l:	-t:-,-t	l	l	l	l	l/Í/w	l	l	l

Comments.

1) Archi: PL *m and *n in the initial position are sporadically denasalized here (cf. the development in PL **miq̇ʷ* > Arch. *biq̇ʷ* "place"; **muq̇* > Arch. *buq̇* "barley"; **miχ̣* > Arch. *boķ* "malt"; **niʔ* > Arch. *di* "smell"); however, in most cases it does not happen. The causes of of this development are not quite clear. We do not exclude the possibility that one should reconstruct here PL *m:-, *n:-

in initial position (with "inverse" reflexes as opposed to those in the non-initial position), but there are too little data for final conclusions.

PL *u̯ gives w here, but ∅ (= ʔ) before labialized vowels. Cf. PL *u̯irƛ:i̯- > Arch. *wiƛ,* but PL *u̯o-n* "thou" > Arch. *un,* etc.

2) Agul: Here we must comment the development of PL *w, *u̯, *j. The initial *j- is usually preserved in Agul; only before the vowel *i do the Keren and Burkikhan dialects lose j- (replacing it with ʔ-), cf. PL **jirḳw* > Ag. Rich., Burk. *irḳw* (but Bursh., Fit. *jirḳw)* "heart". The Koshan (Burshag) and Fite dialects reveal an interesting reflexation in this position: they usually preserve *j before *i, but lose it (*j > ∅- = ʔ-) if the following consonant is a fricative (s, f, x). Cf. PL **jirḳw* "heart" > Ag. Bursh., Fit. *jirḳw,* but PL **jis:* "year" > Ag. Bursh. *is:,* Fit. *is.* In final position the Keren and Burkikhan dialects lose -j after back vowels (a, u), but preserve it after front ones (e, i; the sequence -ij is in fact already pronounced here as -i, but in case of secondary labialization -wij > -uj and j is preserved — unlike the old sequence *-uj > -u). Cf. PL **ça̯j* > Rich., Burk. *ça* "fire"; PL **χuj* > Rich. *χu* "field"; but PL **λ:aj* > Rich., Burk. *xej* "wool", etc.

PL *u̯ in Agul develops into w- before back vowels (cf. wu-n "thou"), but into j- before front ones (both Keren and Burkikhan dialects have ∅ = ʔ before the vowel i, cf. above on the reflexes of *j), cf. PL *u̯irƛi̯- "seven" > Ag. *jeri-d;* PL *u̯içi̯ — "ten" > Ag. Rich., Burk. *içu-d,* Bursh. *jiçu-r,* Fit. *jiçu-d.*

PL *w is usually preserved. However, the initial sequence *wi- is reflected as u- in Agul, and the final sequence *-iw — as -u/-uj. Cf. PL **wilč* "calf" > Ag. *urč*; PL **qI:ʷiw* "tuber" > Ag. Fit. *ʁIuj* "radish", etc.

On the development of PL tense resonants in Agul and other Lezghian languages, see below.

3) Tabasaran: PL *j is well preserved here (though the final -j is regularly lost in the Southern dialect, cf. PL **λ:aj* > Kand., lit. *xa,* Düb. *xaj* "wool").

PL *w is also preserved; however, the sequences *wi- and *iw develop in the same way as in Agul (see above), cf. PL **wit:ar* "grain" > Tab. *udar,* PL **s:iw* "oat flour" > Tab. *su,* etc. The sequence *we- also gives u- in some Tabasaran dialects (Dübek, Kandik), but is preserved as we- in the literary language. Cf. PL **werλ* > Kand., Düb. *urš,* lit. *werš* "maple".

PL *u̯ in Tabasaran is, in general, reflected in the same way as in Agul, i.e. it gives w, but j before the vowel i: cf. PL *u̯o-n* "thou" > Tab. *uwu,* but *u̯içi̯- "ten" > Tab. *jiçu-b.* However, the sequence *u̯i- can develop into u- as well (see above about *wi-). The principles of distribution of the reflexes ji- and u- are unclear due to insufficient evidence (PL *u̯ is in general a rather rare phoneme). Cf. PL *u̯iχ- "quickly" > Tab. *uχ-ti;* PL *u̯irƛ:i̯- "seven" > Tab. *urgu-b.*

4) Lezghi: Extremely characteristic of Lezghi is the disappearance of the initial sequences *mu-, *mo-, *wi-, *wo-, *u̯i-, *ji-, if the root consists of two or more syllables. Cf. PL **moƛ:or* > Lezg. *gur* "tomb", PL **murk:ul* > Lezg. *k:ul* "besom", PL **wit:ar* > Lezg. *tʷ:ar* "grain", PL **woher* > Lezg. *her* "ram", PL **u̯iʔi̯-* > Lezg. *ʔu-d* "ten", PL **jič:in* > Lezg. *č:in* "face", etc. The last four sequences are preserved as ji- in the Akhty dialect (cf. Khl. *jutʷ:ar* < **jitʷ:ar* "grain", Khl. *jɨc:ur* "stable" vs. lit. Lezg. *c:ur* < PL **wonc^{w}:i̯r,* Khl. *jič:in* "face", etc.). The same development is sporadically observed in other languages (except Archi), but it

is regular only in Lezghi.

5) Rutul. PL *u̯ gives w before non-front vowels (cf. *wɨ,* Erg. *wa* "thou"), and j- before front ones (cf. *jiwɨ-d* "seven", *jiçɨ-d* "ten"). On the zero reflex of PL *u̯ as marker of the first verb class in Rutul (as well as in Tsakhur, Kryz and Budukh) see below.

PL *j is usually preserved in Rutul. It disappears only after -i in final position (in the Ikhrek and Khnov dialects, after -a as well). In all dialects the reflexes of *j vary after u (-uj or -u). Cf. PL **çaj* "fire" > Luch., Shin. *çaj,* Ikhr. *çä,* Khn. *ça;* PL **ɬuj* "saliva, spit" > Rut. *tu* (Erg. *tuji-r),* but PL **χuj* "field" > Rut. *χuj* (Erg. *χuji-r*).

6) Tsakhur: PL *u̯ develops as in Rutul, i.e. gives either w or j, depending on the following vowel (cf. *wu* "thou", *jiçɨ-lle* "ten"). PL *j is preserved in the initial and medial positions, but regularly disappears in final position (cf. *jiḳ* "heart"; *xa,* gen. *xaji-n* "wool", etc.)

We must specially dwell upon the Tsakhur reflexes of PL *r and *l.

PL *r develops into r, j or ∅ in Tsakhur, depending on position. In initial position before an original *a we observe the reflexes r- (in the structure CVC, cf. PL **rap:,* Tsakh. *rab* "awl") or ∅- in the structure CVCV, cf. PL **raqI:a* > Tsakh. *aʁIa* "comb", PL **raχ̣:a* > Tsakh. *ak:a* "door", etc.). This variation is possibly connected with the prosodic opposition of these two types of roots. r- is also preserved before PL *o, cf. PL **roš:-* > Tsakh. *rɨš:i-n* "dense". Before PL front vowels *r > j, cf. PL **riqI*^{w}*:* > Tsakh. *jɨqI* "ashes", PL **räqI:* > Tsakh. *jaqI* "road", etc. (The same reflex is present before ɨ and *u before a hushing consonant, cf. PL **ruš:* > Tsakh. *jɨš* "daughter"). Finally, before PL *u, *r > Tsakh. w, cf. PL **ruqVna* > Tsakh. *wuqna* "cave".

In medial position the reflex of *r is split (-r- or -j-); -j- occurs only before -e (-ä), -r- occurs in other cases. Cf. PL **č:u-χIera* > Tsakh. Gelm. *žɨχIajä* (in proper Tsakhur with a contraction: *žiχIɛ̄*) "pear"; PL **s:wɨra* > Tsakh. *sura* "part".

In final position there is also a split reflex: -r or -∅ < -j; (the lost -j is regularly restored in oblique stems of nouns.) The zero reflex is observed in nouns whose oblique stem ends with -i- (Gelm. -i-, Mik. -ɨ-), going back to the PL oblique stem in *-ɨ- (see below on oblique stems); the reflex -r is represented in nouns whose oblique stems in PL end with *-a- or *-e- (> Proto-Tsakh. *-a- > Gelm. -a-/-o-, Mik. -a-/-ɨ-). Cf. PL **ç:*^{w}*er* (*-ɨ-stem) > Tsakh. do (Gen. Tsakh., Gelm. *doji-n,* Mik. *dojɨ-n*) "name"; PL **c:är* (*-a-stem) > Tsakh. *zer* (gen. *zera-n),* Gelm. *zär* (gen. *zära-n)* "cow".

PL *l and *l: are reflected in Tsakhur either as l (Í) or as w. (It must be noted that on the synchronous level, the variants l and Í are in complementary distribution: the palatalized Í is obligatory in final position, otherwise — only before front vowels; before the back ones we meet the hard l.) The distribution of the reflexes l and w was suggested by Gigineyshvili [Gigineyshvili 1977], pp. 68-69), who proposed a dissimilative development: l, if a labial consonant is present in the root, but w, if there is none. This distribution rule, however, is certainly wrong, because there are very many cases in which we observe the reflex l without any labial consonant at all, cf. the Tsakh. words *žil, čil, gaĺ, lat, laχa, ʁel, ʁuĺ, sili,* etc.

Actually the distribution of the reflexes of *l (and *l:) is similar to that of the reflexes of *r, that is:

a) in initial position the lateral articulation of l is preserved before original front vowels (where *r > j) and before *a (where *r > r or ∅); before *o (where *r > r) and *u (where *r > w) we observe the reflex w. Cf. PL *läχa > Tsakh. *Ĺäχa* "bracelet"; PL *laχ:a > Tsakh. *laχ:a* "stove" (cf. Rut. *laχ* "fireplace"); PL *loλ(w) > Tsakh. *wix* "louse"; PL *luǯa > Tsakh. *wuǯe* "heifer".

b) in medial position we observe the reflex l either before front vowels or preceded by a consonant and followed by a vowel (in the structure -VClV-); in other cases the reflex is -w-. Cf. PL *wo(r)ƛ:ɨl- > Gelm. *wɨgɨli-n* "male", PL *(mu)s:wäl > Tsakh. *sole* "wild turkey"; PL *m[a]zulaj > Tsakh. mɨzla "leprosy"; PL *ġula "board" > Tsakh. *ġuwa,* PL *ǯol:a "strap" > Tsakh. *ǯuwa,* etc. The medial complex -VwV- < *-VlV- before a closing consonant can be subject to contraction, cf. PL *mulVqI^{w} > Tsakh. *mɨqI* "worm". Within the paradigm such a contraction happens in the Mikik dialect in the sequence -awaC > -āC, the result of adding a suffix to the nominal root, cf. PL *χal 'house' > Tsakh. *χaw,* gen. *χawɨ-n,* Mik. *χā-n.*

c) in final position we always observe the reflex -l (=-Ĺ) after narrow vowels i, ɨ, u, cf. PL *q^{w}il > Tsakh. ġuĹ *"rock",* PL *ǯul > Tsakh. *ǯil* "perch", etc. After wide vowels the same reflex is present in nouns with an oblique stem in -i-/-e- < PL *-ɨ-, cf. PL *č^{w}:äl (*-ɨ-stem) > Tsakh. *ǯoĹ,* gen. *ǯole-n,* Gelm. *ǯ^{w}el,* gen. *ǯ^{w}eli-n* "sheaf". The reflex -w appears only after wide vowels in nouns with an oblique stem in -a-/-ɨ- < PL *-a-, *-e-, cf. PL *χal > Tsakh. *χaw,* gen. *χawɨ-n,* Gelm. *χaw,* gen. *χawa-n,* Mik. *χaw,* gen. *χā-n* "house".

7) Kryz and Budukh: PL resonants are well preserved here. PL *u̯ and *j give the same reflexes in Budukh and Kryz as in Tsakhur (see above), i.e. *u̯ gives either w or j, depending on the following vowel (cf. Kryz *wɨ-n,* Bud. *wə-n* "thou", Kryz *jiʔɨ-d,* Bud. *ji- ʔə-b* "ten"); *j is preserved in initial and medial positions, but disappears in the final position (cf. PL *jaƛ: > Kryz *jək,* Bud. *jək* "meat"; PL *ça*j* "fire"> Kryz *ça,* Bud. *ça,* etc.)

8) Udi: Here we must dwell on the reflexation of PL *u̯, *n, *n:, *r, *j and *l.

PL *u̯ in Udi usually gives w (cf. *wuʁI* "seven", *wiç* "ten"); the sequence *u̯o- gives u- (cf. *u-n* "thou", oblique stem *wa- < PL *u̯o-n, *u̯a-).* Cf. similar reflexes in Archi.

PL *n and *n: in usually develop into n in Udi, but in final position can disappear as well, the conditions of this loss being unclear. Cf. PL *näṭ "nit" > Ud. (with a metathesis) *t:e* (< *t:en*); PL *λ:än:* "water" > Ud. *χe* (with the restoration of -n in the derived *χene* "aquatic"). Without the loss cf. PL *s:än* "year" > Ud. *u-sen;* PL *ça̮n:* "flea" > Ud. *in,* etc.

The initial *r is dropped in Udi (less frequently *r- > j-; the distribution of the reflexes ∅- and j- is probably connected with vocalism). Cf. PL *raç:a* "threshing-floor" > Ud. *eǯ,* PL *riġI^{w}:* "ashes" > Ud. *iq:;* PL *räġI:* "road" > Ud. *jaq:.* In intervocalic position *r disappears as well, cf. PL *wiraq:* > Ud. *beʁI* "sun". In final position there is a split reflex: -r or -∅ (cf. with the reflexes of *-n above), with a yet unclear distribution. Cf. PL *χIera* "pear" > Ud. *ar,* but PL *qI:ora* "hare" > Ud. *ʁu.*

PL *j disappears in all positions in Udi, cf. PL *jaǰ:* "meet" > Ud. *eq:*, PL *jirḳ^{w}* "heart" > Ud. *uk:;* PL *λ:aj* "wool" > Ud. *χa,* etc. It can only be preserved between vowels (cf. *χaje* "woollen", derived from *χa* "wool"). In roots that consist of more than one syllable the initial sequence "j+vowel" is lost, cf. PL *jatur* > Ud. *tur* "foot"; PL *jič:in* > Ud. *č:Io* "face".

PL *l is usually preserved in Udi, but apparently disappears in intervocalic position, cf. PL *mulVqI^{w} > Ud. *meq* "worm".

9) The PL tense resonants *m:, *n: give nasal reflexes in Archi, Tsakhur and Udi. In all other Lezghian languages the reflexes of *m: and *n: have completely merged with the reflexes of PL *p: and *t:. Cf. PL *s:äm:* "gall, anger" > Arch. *s:am,* Tab. *seb* (Düb. *siw),* Ag. *seb* (Bursh., Burk. *sew*), Lezg. *seb* (pl. *sep:erar*), Rut. Shin. *seb;* PL *λ:äm:* "nail" > Tab. *šib* (Düb. *šaw*), Rut. *xäb,* Ud. *muχ* (a metathesis < *χum);* PL *q:I^{w}en:* "partridge" > Arch. *qIon* (Erg. *qIanna),* Tab. *ʁIud,* Ag. *Rud* (Bursh. Rud), Lezg. *q^{w}:ed* (Erg. *q:^{w}et:re),* Rut. ʁIud, Tsakh. *q:Ion;* PL *λ:än:* "water" > Arch. *λ:an* (Erg. *λ:enne),* Ag. *xed* (Bursh. *š:er*), Tab. *šid* (Düb. *šaj*), Lezg. *jad* (Erg. *c:i* < *jit:i,* pl. *jat:ar;* cf. Khl. *jad, jic:i, jat:ar*), Rut. *xäd,* Tsakh. *xan,* Kryz *xäd,* Bud. *xad,* Ud. *χe* (cf. *χene* "aquatic"). We must note that in intervocalic position PL *m: can give a zero reflex in Udi, cf. Ud. *ul* "wolf" with Tsakh. *umul,* Rut. *ubul,* Kryz *eb,* Bud. *eb,* Arch. *jam* (PL *ʔIam:*).

10) The reflexes of PL *u̯ were already examined above. We should note that *u̯ as a marker of the 1st grammatical class regularly develops into w- in Archi, but gives a zero reflex in Rutul, Tsakhur, Kryz and Budukh (Rutul also has j-, regularly developed from *u̯ in the same function). The reasons for such a development are not quite clear yet.

1.8.1.3. Affricates.

We reconstruct five local affricate series for PL: hissing, hushing, lateral, uvular and pharyngealized uvular. Each of these series is characterized by the presence of a four-way opposition "voiceless (aspirated)" — "tense (unaspirated)" — "lax glottalized" — "tense glottalized". The problem of voiced affricates in PL is much more complicated. It is not to be excluded that in the hissing, lateral and uvular series one has to reconstruct special voiced phonemes, that were, however, present only in some pronominal and expressive morphemes. This question will be specially discussed below.

Below we list the correspondences of affricates between Lezghian languages.

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*c	s	c	c	c	c-,-s/-c	c-/s-,c	?-,s	-s-	?-,s
*c^{w}	s	c	č^{v}/c	c(^{w})/k^{w}	c		c	-s-	?-,s
*c:	c	z	ʒ/z	c:,-z	z/ʒ	z	z-/ʒ-,z	z	c-,z/žI
*c:^{w}	c	z^{w}/z	ǯ^{v}/ž^{v}	c:(^{w})/ k:(^{w}),-z	z(^{w})	z	z	z	z
*ç	ç	ç	ç	ç	ç	ç	ç	ç	∅,-ç
*ç^{w}	ç	ç(^{w})	č^{v}	ç(^{w})/ḳ(^{w})	ç	ç	ç		

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*ҫ:	ҫ,-ҫ:-	t:	c:-/z-, c:	ҭ-/ҫ-/t:-/c:-, -ҭ-/-ҫ-/ -t:-/-c:-,-t	d-,-dd-/ -d-/-t-, -t	d-, -t:-,-t	t	t	c: (~č:~čI)
*ҫ:ʷ	ҫ-,-ҫ:-	t:	čᵛ:-/ žᵛ-/ʒ-, čːᵛ/žᵛ	ҭ(ʷ)/t:(ʷ), -t	d-, -dd-	d-,-t:-, -t	t	t	c:
*č	š	č (/-š?)	č	č-/š-,č	č-/š-,č	č	č-/š-,č	š-,č	č-, -č/-čI/ -š/-šI
*čʷ	š	č(ʷ)/ḱ	čʷ(/č)	č	š-	č-	š-	š-	č
*čː	č	ǯ/ž	ǯ/ž	čː,-ž	ǯ	ǯ-,-ǯ-/-ž-	ǯ	ǯ	č:(?)
*čʷː	č(ʷ)	ǯ(ʷ)/ ž(ʷ)	ǯᵛ/žᵛ	c:(ʷ)/k:(ʷ)/ č:(ʷ), -ž(ʷ)	ǯ(ʷ)	ǯ(ʷ)-, -ǯ-/-ž-	ǯ-	ǯ-	-žI-
*ҫ̌	ҫ̌	ҫ̌	ҫ̌	ҫ̌	ҫ̌	ҫ̌	ҫ̌	ҫ̌	∅/č:/č:I
*ҫ̌ʷ	ҫ̌(ʷ)	ҫ̌(ʷ)/ḳ̌	ҫ̌ᵛ/ҫ̌	ҫ(ʷ)/ ḳ(ʷ)/ ҫ̌(ʷ)	ҫ̌(ʷ)	ҫ̌	ҫ̌	ҫ̌	∅/č:
*ҫ̌ː	-ҫ̌-	čː	č:-/ǯ-,č:	ҫ̌-/čː-, -ҫ̌-/-tː-	č	č?	č-	?	č:-,-č-
*ƛ	ʎ	k/x/š	k/x/š	g	x	k-,x	x	x	-q:/-q
*ƛʷ		kʷ	k(ʷ)	f					
*ƛː	ƛ	j/g/∅	g/ɣ/ž/ w/š	g/ž/w	ɣ/w/j	ɣ-, -ɣ-/-l-	ɣ/w	j	q-,-ʁ
*ƛːʷ	ƛ	-w-,-ʁʷ	g/ɣ	g	ɣ		ɣ		
*ƛ̣	ḳ	ḱ	ḳ/č̣	q̇/ḳ	q̇ -q̇	ḳ/q̇	q̇/ḳ -q̇	q̇/ḳ	∅(/k:-)
*ƛ̣ʷ	-ḳʷ	-ḳʷ							
*ƛ̣ː	ƛ̣	kː	kː/g/ čː/ǯ	ḳ/kː,-k	g,-k	g-,-kː-, -k	k	k	q:
*ƛ̣ːʷ	ƛ̣ʷ-	kː(ʷ)	kː(ʷ)	ḳ(ʷ)/kː(ʷ), -kʷ	ʔ-,-g(ʷ)- -k(ʷ)	g-,-kː-, -k(ʷ)	k	k	-q:
*q	χ	q	q	q-	q-,χ	q	q	-q-	q-,-q:?
*qʷ	χʷ	q(ʷ)	q(ʷ)	qʷ-,-ʁʷ	qʷ,-χʷ	qʷ	-χ	-χ	-q
*qː	q	ʁ/ʕ	qː/ʁ	qː,-ʁ	qː/ʁ	qː/ʁ	qː-,-ʁ	qː-,-ʁ	ʁ
*qːʷ	qʷ	ʁ(ʷ)/ ʕ(ʷ)	qː/ʁʷ	q:(ʷ), -ʁ(ʷ)	ʁʷ	-ʁ-			ʁ

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*q̇	q̇	q̇	q̇	q̇	q̇	q̇	q̇	q̇	∅
*q̇^{w}	q̇^{w}, -q̇$^{(w)}$-	q̇$^{(w)}$	q̇$^{(w)}$	q̇$^{(w)}$	q̇$^{(w)}$	q̇$^{(w)}$	-q̇	q̇	-pː
*q̇ː	q̇-,-q̇ː-	qː	qː	q̇-/qː-, -q̇-/-qː-	qː	qː	ʔ-,-q-	q	qː
*q̇ː^{w}	q̇$^{(w)}$-	qː$^{(w)}$	qː$^{(w)}$	q̇$^{(w)}$-/qː$^{(w)}$-, -q̇-/-qː-	qː-, -q^{w}	qː-	-q^{w}-	qː-ʔ	qː-
*qI	χI	qI	qI	q-,-q-	qI-,-qI-	qI	q-	q-	ʁI-
*qI^{w}	χI$^{(w)}$	qI$^{(w)}$	qI$^{(w)}$	q^{w}-,-ʁ$^{(w)}$	qI^{w},-χI$^{(w)}$	qI	-ʁʔ	-ʕ	-qI/-χI
*qːI	qI	R̀/ʁI/ʕ	qːI/ʁI	qː,-ʁ	ʁI	qːI/ʁI	qː-,-ʁ	qː-	ʁ(I)
*qːI^{w}	qI$^{(w)}$	R̀/ʁI/ʕ	qI:-/ʁI-	qː$^{(w)}$-	ʁI-	qI:/ʁI			
*q̇I	q̇I	q̇I/ʔ	q̇I	q̇	q̇I	q̇I	q̇	q̇	
*q̇I^{w}	q̇I$^{(w)}$	q̇I$^{(w)}$/ʔ	q̇I$^{(w)}$	q̇^{w}	q̇I$^{(w)}$	q̇I	q̇$^{(w)}$	q̇	pː/∅,ʁI
*q̇ːI	-q̇ːI-, -q̇I	qːI/qː	qːI	q̇/qː, -q	qːI, -qI	-qːI-, -qI	q	q	qːI/ʁI
*q̇ːI^{w}	-q̇I:-, -q̇I	qːI$^{(w)}$/ qː$^{(w)}$	qːI	-q̇^{w}-/ -qː^{w}-,-q	qːI^{w}-, -qI	-qːI-, -qI	-q	-q	qːI/ʁI

Comments.

1. Archi.

As seen from the table of correspondences, the following cardinal changes occurred in Archi: a) PL lax (aspirated) affricates were fricativized (PL *c, *c^{w} > Arch. s; PL *č, *č^{w} > Arch. š; PL *ƛ > Arch. ƛ; PL *q, *q^{w} > Arch. χ, χ^{w}; PL *qI, *qI^{w} > Arch. χI, χI^{w}); b) PL tense (unaspirated) affricates were weakened (*cː, *cː^{w} > Arch. c; *čː, *č^{w}ː > Arch. č, č^{w}; *ƛː, *ƛ^{w}ː > Arch. ƛ; *qː, *q^{w}ː > Arch. q, q^{w}; *qIː, *qI^{w}ː > Arch. qI, qI^{w}). It must be noted that the reflexes of PL tense affricates in Archi on the phonetic level are still tense in the intervocalic position, being affected by weakening only in initial and final positions; but the tense articulation of Archi affricates is no longer phonologically relevant, because of the absence of the "tense-lax" opposition in the system of non-glottalized affricates.

Lax glottalized affricates were not changed in Archi, as far as the reflection of laryngeal features is concerned (cf. *ҫ > Arch. ҫ, *ǯ > Arch. ǯ, etc.). As for tense glottalized affricates, they have preserved their tense articulation in the medial position (where *ҫː > Arch. ҫː, *q̇ː > Arch. q̇ː, *q̇Iː > Arch. q̇Iː), but have been weakened in initial and final positions (cf. the similar behaviour of tense non-glottalized affricates). Somewhat different are the reflexes of PL *ǯː, that yields ǯ in medial position (the phoneme ǯː is therefore completely missing in Archi), and the reflexes of *ƛ̣ː, that yields ƛ̣ in all positions. The latter phoneme is phonetically rather tense, though there is no ƛ̣-ƛ̣ː opposition in Archi. Such behaviour of *ƛ̣ː is apparently connected with an early development of PL lax *ƛ̣ > Arch. ķ, as a result of which ƛ̣ː became the only Archi lateral glottalized phoneme.

Archi has well preserved the labialization of PL uvular affricates; the labialization of PL hushing and lateral affricates is preserved somewhat more poorly; finally, the labialization of PL hissing affricates is altogether lost.

2. Agul.

The Agul language has well preserved PL lax (aspirated) and lax glottalized affricates (cf. *c > Ag. c, *č > Ag. č, *ƛ > Ag. k, *q > Ag. q, *qI > Ag. qI; *ҫ > Ag. ҫ, *ҷ > Ag. ҷ, *ӄ > Ag. ӄ, *q̇ > Ag. q̇, *q̇I > Ag. q̇I). The fricativization *č > š occurs sporadically (in one case: Bursh. muš "hope" < PL *muč "wind"). The fricative reflex x (š in the Koshan dialect) is attested for PL *ƛ in combination with the preceding resonant -r- (cf. Ag. *jerxi-d,* Bursh. *jerši-r* "six" < PL **riƛi-;* Ag. *murx,* Bursh. *murš* "deer" < PL **meIrƛ*). We must also note the specific development *q̇I > ʕ in Agul proper and in the Burkikhan dialect (while the Keren, Koshan and Fite dialects preserve q̇I).

Tense (unaspirated) affricates in Agul, as in most Lezghian languages, have been voiced; the resulting voiced affricates have been for the most part fricativized afterwards. Thus, PL *c: > Ag. z; PL *č: > Ag. ž (in the Keren dialect; the Fite dialect has a free variation ǯ-/ž- in initial position and preserves the affricate ǯ in non-initial position; the Koshan and Burkikhan dialects have preserved the affricate character of ǯ < PL *č: in all positions); PL *ƛ: > Ag. j/g/∅ (in the Keren dialect — always j; in the Koshan dialect g- in initial position before the vowel a, the variation j-/∅- in initial position before the vowel i, j in other cases; such reflexation obviously points to the presence of the fricative *ɣ in the preceding stage of development); PL *q: > Ag. ʁ (with a further laryngealization ʁ > ʕ in the Koshan dialect); PL *qI: > Ag. ʁI (only in the Fite dialect; the Keren, Koshan and Burkikhan dialects have had a shift towards the pharyngeal series, i.e. ʁI > Ѐ, and Agul proper — a further laryngealization: Ѐ > ʕ). Deviations from these rules concern only a special reflexation of PL *ƛ: in combinations with preceding resonants (for examples, see the dictionary), as well as a sporadic reflection of PL *q: as q: (without fricativization). The latter phenomenon is apparently observed in loanwords from Tabasaran.

Tense glottalized affricates have lost their glottalization in Agul and have developed into tense ones (this could evidently happen only after the voicing of PL tense non-glottalized affricates). Therefore, PL *ҫ: > Ag. t: (with the loss of the fricative component); PL *ҷ: > Ag. č:; PL *ӄ: > Ag. k:; PL *q̇: > Ag. q:; PL *q̇I: > Ag. qI: (it is interesting to note that the Burkikhan dialect, usually preserving the pharyngealization quite well, loses it in this case and has the reflex q:).

Typical for Agul, as well as for most other Lezghian languages, is the velar character of the reflexes of PL laterals. The original reflexes of the PL laterals were apparently palatal; in particular, this is confirmed by the fact that PL *ӄ in Agul always yields a palatal ḱ, and *ƛ — a palatal ś (in the case of fricativization). Reflexes of other lateral phonemes (including labialized ones) in Agul do not preserve palatalization anymore: PL *ƛ > Ag. k (without fricativization); PL *ƛ^{w} > Ag. k^{w}; PL *ƛ: > Proto-Ag. *ɣ (see above); PL *ƛ^{w}: > Proto-Ag. *ɣ^{w} (in modern Agul *ɣ^{w} changed to -w- in medial position and apparently to -ʁ^{w} in final position); PL *ӄ^{w} > Ag. ḳ^{w}; PL *ӄ: > Ag. k:; PL *ӄ:^{w} > Ag. k:^{w}.

Labialized affricates are well preserved in Agul. Thus, no changes occurred in the articulation of labialized hissing (z^{w}, ҫ^{w}), labialized laterals (velarized in Agul: k^{w}, *ɣ^{w} > w, ḳ^{w}, k:^{w}), labialized uvulars (q^{w}, ʁ^{w}, q̇^{w}, q:^{w}, qI^{w}, q̇I^{w}, q:I^{w}). We should

specially dwell upon the Agul reflexes of PL labialized hushing affricates. The Keren and Burkikhan dialects preserve proper labialized hushing sounds (i.e. phonetically bilabialized); the Koshan dialect has turned bilabialized hushing consonants into dentolabialized; finally, in the Fite dialect labialized hushing consonants develop into palatalized (labialized) velars. Cf. *$\check{c}^{w}$ > Fit. $\acute{k}^{(w)}$; *$\check{ç}^{(w)}$ > Fit. $\acute{ķ}^{(w)}$; a similar reflex could be expected for PL *$\check{c}:^{w}$, but reflexes of this phoneme in the Fite dialect are not known. (Labialization is put in parentheses, because in all cases it is transferred onto the adjacent vowel and, therefore, becomes nonphonological.)

Some PL labialized phonemes lose their labialization in Agul. Delabialization is obligatory in the reflexes of PL *$ç:^{w}$ (> Ag. t:); *$q:I^{w}$ (> Ag. $\grave{R}$, ʕ: the consonants $\grave{R}$, ʕ do not have labialized correlates in Agul; in one case, however, we may suppose a development of PL *qI^{w}: > Ag. w (b in the Keren dialect), cf. PL *$ʔiqI^{w}:ä$ "to go" > Ker. *baI-s,* Bursh. *wä-s,* Tp. *wä-s*). Quite often, however, labialization is transferred onto the adjacent vowel even from those consonants, that are theoretically able to preserve it. This explains, e.g., the fact that PL *c^{w} (being in general a very rare phoneme) is reflected in Agul only as c (though theoretically c^{w} is possible, cf. the presence of phonemes z^{w} < *$c:^{w}$, $ç^{w}$ < *$ç^{w}$).

3. Tabasaran.

The development of PL affricates in Tabasaran is very similar to their development in Agul, described above. Thus, lax (aspirated) and lax glottalized consonants are preserved, as in Agul: *c > Tab. c; *č > Tab. č; *ƛ > Tab. k; *q > Tab. q; *qI > Tab. qI; *ç > Tab. ç; *č > Tab. č; *ƛ̣ > Tab. ķ/č̣; *q̇ > Tab. q̇; *q̇I > Tab. q̇I. (An exception: the fricativization of PL *ƛ > Tab. x/š in combination with a preceding -r-, cf. Tab. *jirxu-b* "six" < PL **rilƛɨ-;* Tab. *merš* "deer" < PL **meIrƛ*).

Tense (unaspirated) affricates in Tabasaran, as in Agul, have voiced reflexes. Cf. PL *c: > Tab. ʒ (in the Northern dialect; the Southern dialect (Kandik subdialect) preserves ʒ after resonants — in the combinations rʒ, lʒ, etc. — but has z in other cases; literary Tabasaran always has z); PL *c^{w}: > Tab. $ǯ^{v}$ (apparently in all dialects, though in literary orthography, the affricate $ǯ^{v}$ and the fricative $ž^{v}$ are not distinguished); *č: > Tab. ǯ (in all dialects; in literary orthography we meet ž as well, because ǯ and ž are not distinguished); PL *$č:^{w}$ > Tab. $ǯ^{v}$ (in the Northern dialect; in the Southern dialect the affricate $ǯ^{v}$ is preserved in non-initial position, but develops into the fricative $ž^{v}$- in the initial position); PL *ƛ: > Tab. ɣ/ž/w (with the following distribution: in initial position in all dialects ɣ- before back vowels, ž- before front ones; in medial position in all dialects -w- before back vowels, -ž- before front ones; in final position — if the word (noun) has an oblique stem with a back vowel, it reflects *ƛ: as -ɣ in the Northern dialect and some Southern subdialects (Kandik), -w in other Southern subdialects (Khiv) and in literary language; if the oblique stem contains a front vowel, the Southern dialect (Kandik) has -ž, while the Northern dialect and literary language have -j. The reflexes of *ƛ: may be somewhat modified in clusters with preceding resonants: in this position we can observe secondary occlusivization between vowels (like -rɣ- > -rg-, etc.), as well as a devoicing at the end of the word (like -rɣ > -rž > -rš etc.). The wide variety of

reflexes of *ƛ: can be easily explained here by the fricative articulation *ɣ in all positions in Proto-Tabasaran. A somewhat specific situation is characteristic for the reflexes of tense PL *q: and *q:I. Here the Northern dialect preserves the voiceless articulation q:, q:I, while the Southern dialect has normal voiced reflexes (already fricativized): ʁ, ʁI. According to the private information of S. V. Kodzasov, the summer 1980 MSU expedition has discovered the opposition G (voiced) — q: (voiceless), not described before, in the Dübek subdialect of the Northern dialect of Tabasaran. G here has developed from PL *q:, and q: — from PL *q̇: (see below). Thus, the main principle of the voiced reflexation of PL tense (unaspirated) phonemes seems to be observed in the system of uvulars as well.

PL tense glottalized consonants in Tabasaran, as in Agul, have lost their glottalization and give tense reflexes. Cf. PL *ҫ: > Tab. c:; PL *ҫ:^{w} > Tab. č:^{w}; PL *č̣: > Tab. č:; PL *ƛ̣: > Tab. k:/č:; PL *ƛ̣^{w}: > Tab. k^{w}:; PL *q̇:,*q̇^{w}: > Tab. q:, q^{w}:; PL *q̇I:, q̇I^{w}: > Tab. qI:. In some cases, however, we observe the further voicing of the reflexes of PL tense glottalized sounds. Thus, PL *ҫ: > z in the initial position in the Northern dialect (Dübek) and in the literary language (in the Dübek subdialect we additionally observe the development *-rҫ:- > -rʒ-). PL *ҫ:^{w} is reflected as ž^{v} (in all positions) in literary Tabasaran and yields a voiced delabialized ʒ- in initial position in the Dübek subdialect; PL *č̣: is voiced in initial position in Dübek (*č̣:->*č:> ǯ-), but preserves its voicelessness in the literary language. The tense glottalized *ƛ̣: also has the initial voiced reflexes g-/ʒ- in the Dübek subdialect, but is never voiced in the Southern dialect and in the literary language. In general, most subdialects of the Southern dialect (e.g. the Kandik subdialect) are rather conservative in this respect and always reveal voiceless tense reflexes of PL tense glottalized consonants.

PL lateral affricates in Tabasaran, as in Agul, originally had palatal reflexes. These palatals afterwards developed into velars before back vowels, but were affricated and changed into hushing affricates before front vowels (as opposed to the ancient velar consonants, that were not affricated in any position). Thus, in the position before front vowels PL *ƛ: > Tab. ǯ, PL *ƛ̣ > Tab. č̣, PL *ƛ̣: > Tab. č: (in the Northern dialect ǯ- in initial position); the Tabasaran reflex of *ƛ before front vowels is not attested.

The Southern dialect of Tabasaran has well preserved the PL labialized affricates (only the hissing and hushing labialized consonants have merged in one dentolabialized series). Cf. PL *c^{w}, *č^{w} > Tab. č^{v}; PL *c:^{w}, č:^{w} > Tab. ǯ^{v}/ž^{v}; PL *ҫ^{w}, *č̣^{w} > Tab. č̣^{v}; PL *ҫ:^{w} > Tab. č:^{v}/ž^{v}; PL *ƛ^{w} > Tab. k^{w}; PL *ƛ̣:^{w} > Tab. k:^{w}; PL *q^{w} > Tab. q^{w}; PL *q:^{w} > Tab. ʁ^{w}; PL *q̇^{w} > Tab. q̇^{w}; PL *q̇:^{w} > Tab. q:^{w}; PL *qI^{w} > Tab. qI^{w}; PL *q̇I^{w} > Tab. q̇I^{w}. Depending on the vocalic environment, the PL labialized affricates could, however, be subject to early delabialization (with a transfer of labialization onto the adjacent vowel); in this case Tabasaran preserves the original hissing or hushing character of the affricate (which indicates that the merger of hissing and hushing labialized consonants within one series occurred comparatively late). For some PL labialized consonants, because of the process of delabialization, only non-labialized Tabasaran reflexes are attested (this is true for the PL affricates *ƛ:^{w}, *q:I^{w} and *q̇:I^{w}).

The Northern dialect of Tabasaran has completely lost the labialization of back consonants, but has preserved the dentolabialized series. Here, therefore, the correlation in labialization is already lost, and the dentolabialized consonants form just one more local series of front affricates, in addition to the hissing and hushing series.

4. Lezghi.

The Lezghi language has well preserved the laryngeal features of PL affricates. Lax (aspirated), tense (unaspirated) and lax glottalized affricates are generally preserved here. Cf. PL *c > Lezg. c; PL *č > Lezg. č; PL *q > Lezg. q; PL *qI > Lezg. q; PL *c: > Lezg. c:; PL *č: > Lezg. č:; PL *q:, *qI: > Lezg. q:; PL *ç > Lezg. ç; PL *č̣ > Lezg. č; PL *ƛ̣ > Lezg. q̇/ḳ; PL *q̇,*q̇I > Lezg. q̇. Here, however, we must dwell on the following details:

a) PL *č is apparently fricativized in Lezghi before PL narrow vowels (on a similar process in Rutul, Kryz and Budukh see below), though there is only one example of this rule: Lezg. *šarag* "cub" < PL **čɨrag^{w}*.

b) The uvular labialized *q^{w} and *qI^{w} in Lezghi are reflected as voiced consonants in final position, i.e. PL *q^{w}, *qI^{w} > Lezg. -ʁ^{w}. The same voiced reflexes could be expected for PL *q, *qI, but final reflexes of these phonemes are not attested in Lezghi (cf., however, *reʁü* "shameful", presupposing **reʁ* "shame" < PL **riwqI*). The PL lax lateral **ƛ* has been voiced in Lezghian and is reflected as g (in some dialects also as ɣ) in all positions.

c) PL tense (unaspirated) affricates have been preserved in Lezghi in initial and medial positions, but have been voiced in the final position (cf. above on a similar process in the system of explosives). The resulting voiced final affricates were later fricativized. Thus, PL *c: > Lezg. -z; PL *č: > Lezg. -ž; PL *q:, *qI > Lezg. -ʁ.

The PL lateral affricate **ƛ:* yields voiced reflexes in all positions; in initial position Lezghi has either g- or ž- (their distribution is not quite clear); in final position either -g/-ž (the latter — if the oblique stem has a front vowel) or -w (after PL labialized vowels). This reflexation is evidently connected with the early fricativization **ƛ: > *gɣ > ɣ* (on a similar process in Agul and Tabasaran see above). The fricative ɣ is still preserved in the Yarki dialect, but all other dialects of the Lezghi language already have the explosive g.

The PL tense glottalized affricates yield glottalized reflexes in initial and medial positions in Northern dialects (Güne, Yarki) and in the literary language, but tense (unaspirated) ones in the Kurakh and Akhty dialects. Cf. PL *ç: > lit. ṭ/ç, Akht. ṭ/ç; PL *č̣:> lit. č̣, Akht. č:-, -t:-; PL *ƛ̣: > lit. ḳ, Akht. k:; PL *q̇:, *q̇I:> lit. q̇, Akht. q:. This reflexation (contrasting with the reflexation of lax glottalized consonants, uniformly yielding glottalized reflexes in all dialects) apparently points to the presence of tense glottalized consonants as late as in Proto-Lezghi. However, in final position PL tense glottalized consonants were early deglottalized and yield voiceless (aspirated) reflexes in all dialects (*-ç: > -t, *-ƛ̣: > -k; *-q̇I: > -q). It is necessary to pay attention to the desaffricatization of the reflexes of PL *ç: (cf. a similar process in Agul, see above, as well as in Rutul, Kryz and Budukh, see

below). The presence of parallel hissing reflexes (ç or c:, depending on the dialect) is apparently the result of a late secondary affricatization before front vowels (these reflexes are observed only in this position; on the same affricatization of PL explosives *t, *t:, *ṭ in Lezghi see above).

The transformation of PL laterals into back consonants in Lezghi apparently proceeded in a somewhat different way than in Agul and Tabasaran. Here the lateral affricates must have originally changed into velar affricates. In particular, PL *ƛ̣ developed into the velar *ķx; afterwards the affricate articulation of this consonant was lost if it was adjacent to back vowels (where *ƛ̣ > *ķx > *ķ), but it was preserved somewhat longer in the case of palatalization (before front vowels or in the vicinity of hushing consonants, which are phonetically palatalized in all Lezghian languages). The affricate *ķx, preserved in this position, later developed into the uvular affricate q̇χ = q̇ (NB: the sounds which we denote as q and q̇ are phonetically affricates /qχ/ and /q̇χ/ in all North Caucasian languages). Cf. PL *ƛ̣*an* "bottom" > Lezg. *ķan,* but PL *ƛ̣*in* "oath" > Lezg. *q̇in,* PL *ƛ̣*ača* > Lezg. *q̇ač* "stem", etc. Other lateral affricates in modern Lezghi only have explosive velar reflexes (on the reflection of PL *ƛ and *ƛ: in Lezghi, see above).

Labialized affricates are preserved in Lezghi (though, like other languages, Lezghi often has a secondary delabialization in certain vocalic contexts; therefore, for such rare PL phonemes as *čʷ > Lezg. č and *ƛ:ʷ > Lezg. g, only delabialized reflexes are attested). Cf. PL *ƛʷ > *xʷ (with a fricativization!) > Lezg. f; *ƛ̣:ʷ > Lezg. ķʷ/kʷ:/kʷ; *qʷ, *qIʷ > Lezg. qʷ/ʁʷ; *q:ʷ, *q:Iʷ > Lezg. q:ʷ/ʁʷ; *q̇ʷ, *q̇Iʷ > Lezg. q̇ʷ; *q̇:ʷ, *q̇:Iʷ > Lezg. q̇ʷ/qʷ:.

PL labialized hissing and hushing consonants yield specific reflexes in Lezghi. Hissing labialized consonants are preserved in Kurakh, Güne and some subdialects of the Akhty dialect (the subdialect of the village Khliut), develop into hushing labialized in most subdialects of the Akhty dialect, and change into labialized velars in the Yarki dialect. Thus, PL *cʷ > Gün., Kur., Khl. cʷ, Akht. čʷ, Yark. kʷ; PL *çʷ > Gün., Kur., Khl. çʷ, Akht. čʷ, Yark. ķʷ; PL *c:ʷ > Gün., Kur., Khl. c:ʷ, Akht. č:ʷ, Yark. k:ʷ. The literary Lezghi, based on Güne and Yarki dialects, reveals a variation between hissing and velar reflexes (but never has hushing ones). A specific reflection is attested for the early desaffricatized PL *ç:ʷ, which has dental labialized reflexes (ṭʷ or t:ʷ) in the initial and medial positions (on the dialectal distribution of the reflexes of tense glottalized consonants see above) and -t (with an obligatory delabialization) in the final position.

Hushing labialized consonants are preserved in the Kurakh and Akhty dialects (including the subdialect of the village Khliut), develop into hissing labialized in the Güne dialect, and yield labialized velars in the Yarki dialect. Thus, PL *č:ʷ > Kur., Akht., Khl. č:ʷ, Gün. c:ʷ, Yark. k:ʷ; PL *čʷ > Kur., Akht., Khl. čʷ, Gün. çʷ, Yark. ķʷ. Therefore, the distinction between PL hissing and hushing labialized consonants is preserved only in the Kurakh dialect, as well as in some subdialects of Akhty (Khlyut); in other dialects they either merge in hissing labialized consonants (Güne dialect), or in hushing labialized consonants (Akhty dialect), or else in labiovelar consonants (Yarki dialect).

Literary Lezghi, in the place of PL labialized hushing consonants, has a variation among all three types of reflexes, which suggests that the Kurakh dialect has also taken part in its formation (and not just Güne and Yarki).

A specific feature of Lezghi is the loss of pharyngealized consonants, whose reflexes have merged with the reflexes of nonpharyngealized ones. However, we must note that vowels adjacent to originally pharyngealized consonants in Lezghi are regularly fronted. Therefore, in most cases the presence or lack of original pharyngealization can be determined by the character of the adjacent vowel. In some Lezghian dialects (e.g., in Akhty) pharyngealization is still preserved by the vowel äI (< *a adjacent to uvular pharyngealized) and in this case, of course, the pharyngealization of respective consonants is still there, though it may already be considered phonologically irrelevant. In most dialects, however, pharyngealization is lost completely.

5. Rutul.

The PL lax (aspirated) affricates are generally well preserved in Rutul (cf. PL *c, *c^{w} > Rut. c; PL *č > Rut. č; PL *q > Rut. q-; PL *q^{w} > Rut. q^{w}-; PL *qI^{w} > Rut. qI^{w}-). However, in some positions we observe the fricativization of PL lax affricates. Thus, in final position uvular affricates are regularly fricativized: *q > Rut. -χ, *q^{w} > Rut. -χ^{w}, *qI^{w} > Rut. -χI^{w}. The affricate articulation of the final *-c is preserved only in the Khnov dialect and in some subdialects of the Mukhad dialect (Kiche); in most Rutul dialects, *-c was also fricativized: *-c > -s. PL *č was fricativized before the original narrow vowel *ɨ (cf. PL *~~*ri-čɨj*~~ "sister" > Rut. *riši,* PL *~~*čɨrag^{w}~~ > Rut. *šarak* "chick"), but was left intact in other positions. Finally, for the PL affricates *č^{w} and *ƛ, only fricative reflexes (resp. š and x) are attested in Rutul.

The quality of PL lax glottalized affricates has been preserved in Rutul (cf. PL *ҫ, *ҫ^{w} > Rut. ҫ; PL *č̣, *č̣^{w} > Rut. č̣, č̣^{w}; PL *ƛ̣,*χ̣^{w} > Rut. q̇; PL *q̇, *q̇^{w} > Rut. q̇, q̇^{w}; PL *q̇I, *q̇I^{w} > Rut. q̇I, q̇I^{w}).

PL tense (unaspirated) affricates have been voiced in Rutul. Cf. PL *c: > Rut. ʒ/z (ʒ before the narrow ɨ; in other cases the fricativization ʒ > z usually happens); PL *c:^{w} > Rut. z^{w}; PL *č: > Rut. ǯ; PL *č^{w}: > Rut. ǯ^{w}; PL *ƛ:, *ƛ^{w}: > Rut. ɣ/w/j (in non-final position ɣ before a, w before ɨ, j before front vowels; in final position usually -j, but after the vowel i the reflex -ɣ is preserved by dissimilation); PL *q: > Rut. q:/ʁ (the articulation /q:/ is preserved only in initial position before the vowel a, in other cases the fricativization q: > ʁ occurs); PL *q:^{w} > Rut. ʁ^{w}; PL *q:I, *q:I^{w} > Rut. ʁI. It is evident that at first PL tense consonants changed into voiced affricates, most of which were later fricativized (the hushing ǯ has been preserved best of all; in some positions the hissing ʒ and the uvular q: have been preserved as well).

[We must note that in Rutul the notation q: is to be treated phonologically as a voiced uvular phoneme, because (at least in most Rutul dialects) the opposition q: — G is missing. On the phoneme q̄: (G:) , present in some Rutul dialects, see below.]

PL tense glottalized consonants have lost their glottalization in Rutul and yield the following reflexes. In initial position in all dialects we observe voiced reflexes (PL *ҫ: > Rut. d; PL *ҫ:^{w} > Rut. d; PL *ƛ̣: > Rut. g; PL *q̇:,*q̇:^{w} > Rut. q:; PL *q̇:I, *q̇:I^{w} > Rut. q:I, q:I^{w}). In final position all the dialects have voiceless reflexes (PL *ҫ: > Rut. -t; PL *ƛ̣:, *ƛ̣:^{w} > Rut. -k, -k^{w}; PL *q̇:^{w} > Rut. -q^{w}; PL *q̇:I, *q̇:I^{w} > Rut. -qI).

In intervocalic position Rutul has peculiar reflexes: in the Myukhrek dialect — tense voiced consonants (*ҫ: > Myukhr. -d:-, *ƛ̣: > Myukhr. -g:-, *q̇: > Myukhr. -G:-, *q̇:I > Myukhr. -G:-); in the Ikhrek dialect — tense voiceless (resp. -t:-, -k:-, -q̄:-, -q̄:I-); in the Shinaz dialect — lax voiceless (-t-, -k-; the reflexes of tense glottalized uvulars are not known to us). Finally, the Mukhad dialect usually has lax voiced reflexes (resp. -d-, -g-, -q:-, -qI:-), but the Luchek subdialect of the Mukhad dialect has a variation of tense and lax voiced reflexes.

[We do not mark the difference between -q̄:- and -G:- in the orthography; the symbol q̄: in Myukhrek and Luchek means a tense voiced uvular, and in Ikhrek — a tense voiceless one. Within one dialect system a distinction between tense voiced and tense voiceless consonants never exists].

Labialized tense glottalized consonants give similar reflexes.

A specific reflex is yielded by the rare PL phoneme *č̣: : in the Mukhad and Khnov dialects it is reflected as č (its reflexes in other Rutul dialects are unknown to us); cf. PL *č̣:äIm "butter"> Rut. Khn. *čam;* PL *ħarč̣:- "right" > Rut. *harčä-d.* (Such reflexes are typical for Kryz and Budukh, see below).

The Rutul language preserves labialized uvulars rather well; labialized laterals (developing into labiovelars) and labialized hushing phonemes — somewhat worse; and it has virtually lost labialized hissing consonants (in modern Rutul they are extremely rare; we know only ҫ^{w} in the word *ҫ^{w}ar* "stone" and z^{w} in the verb *luz^{w}as* "to stand", where labialization can be considered positional after the vowel -u-). In most cases labialization is lost on a consonant, but preserved on the adjacent vowel (which becomes labialized).

6. Tsakhur.

Lax PL affricates are usually preserved in Tsakhur. Cf. PL *c > Tsakh. c; PL *č > Tsakh. č; PL *č^{w} >Tsakh. č; PL *ƛ >Tsakh. k-; PL *q > Tsakh. q; PL *q^{w} > Tsakh. q^{w}; PL *qI, *qI^{w} > Tsakh. qI; PL *ҫ, *ҫ^{w}>Tsakh. ҫ; PL *č̣, *č̣^{w} > Tsakh. č̣; PL *ƛ̣ > Tsakh. ķ/q̇; PL *q̇ > Tsakh. q̇; PL *q̇^{w} >Tsakh. q̇^{w}; PL *q̇I, *q̇I^{w} > Tsakh. q̇I. Only in two cases do we observe the fricativization of PL lax (aspirated) affricates: a) PL *c in initial position gives s- in Tsakhur proper, but is preserved in the Mikik and Gelmets dialects (cf. Mik., Gelm. *cɨwɨĺ,* Tsakh. *suwuĺ* "autumn"); b) PL *ƛ gives the explosive reflex k- in initial position (cf. *kuma* "smoke" < PL **ƛuma*), but is fricativized and gives -x- in medial position (cf. *jixɨ-lle* "six" < PL **riƛɨ-).*

PL tense (unaspirated) affricates in Tsakhur, as in most other Lezghian languages, are affected by voicing and are often fricativized afterwards. Thus, PL *c:, *c:^{w} > Tsakh. z; PL *č:, *č:^{w} > Tsakh. ǯ/ž (in Tsakhur proper the affricate articulation ǯ is always preserved; the Mikik and Gelmets dialects have ǯ- in initial position, but the fricative ž in other cases); PL *q: > Tsakh. q:/ʁ (the articulation q: is preserved only in initial position in Tsakhur proper; in other positions in Tsakhur and in all positions in the Mikik and Gelmets dialects we observe the reflex ʁ); PL *qI: > Tsakh. qI:/ʁI (with the same distribution of reflexes). PL *ƛ: usually yields ɣ, but there is also a very specific development of PL *ƛ: > Tsakh. l, observed in medial position before front vowels (cf. Tsakh. *h-ele-s* "to give" < PL **ʔiƛ:ɨ-;* Tsakh. *moli-lle* "eight" < PL **menƛ:ä-*). This is surely a valuable argument for the legitimacy of the reconstruction of lateral (and not

velar or palatal) affricates in PL.

PL tense glottalized affricates in Tsakhur are reflected in the same way as in the Ikhrek dialect of the Rutul language (see above), i.e. in initial position they have voiced reflexes, in medial position — tense (voiceless) ones, in final position — lax voiceless ones. For PL hushing *č̣: we know only the reflex in initial position, where, as in Rutul (see above), we observe the development *č̣:- > Tsakh. č-.

Lateral affricates in Tsakhur developed similarly to Lezghi and Rutul (see above), i.e. they first developed into velar affricates, and afterwards into velar explosives or velar fricatives (on a specific development of PL *ƛ: in Tsakhur see above). In fact, the affricate *k̡χ, in particular, should still have been present in Proto-Tsakhur: in Mikik and Tsakhur proper it has merged with the original velar explosive k̡, while the Gelmets dialect reflects it as the uvular affricate q̇. Thus, PL *ƛ̣ > Mik., Tsakh. k̡, Gelm. q̇.

Labialized consonants in modern Tsakhur are in the process of disappearing. In our materials we only find the labialized ǯw (< PL *č:^{w}), -k^{w} (< PL *-ƛ̣:^{w}), q̇^{w} (< PL *q̇^{w}). In most cases labialization was transferred from the consonant onto the adjacent vowels.

7. Kryz.

PL lax (aspirated) affricates in Kryz are generally preserved, but have a rather strong tendency to become fricativized. Thus, for PL *c, only a fricativized reflex s is attested (though the labialized *c^{w} is not fricativized and yields Kryz c); PL *č develops into the fricative š before the PL narrow *i̬ (on a similar development in Lezghi and Rutul see above), but is otherwise preserved. The labialized *č^{w} yields only the fricative reflex š; PL *ƛ > Kryz x reveals the same fricativization. Labialized PL *q^{w} (> Kryz -χ) and PL *qI^{w} are reflected as fricatives as well; the latter phoneme has an unexpected voiced reflex ʁ (cf. Kryz *meʁ* "oak" < PL **maqI^{w}a*). However, reflexes of uvular lax labialized affricates in Kryz are observed only in final position; in other positions fricativization probably would not be observed. The non-labialized uvular lax affricate *q is reflected as q in all known Kryz examples; for *qI in final position the reflex -ħ is attested (cf. *χI > ħ, see below), but in other positions *qI is not fricativized and yields Kryz q.

Lax glottalized affricates are preserved in Kryz, cf. PL *c̣, *c̣^{w} > Kryz c̣; PL *č̣, *č̣^{w} > Kryz č̣; PL *ƛ̣ > Kryz q̇/k̡; PL *q̇, *q̇^{w}, *q̇I, *q̇I^{w} > Kryz q̇.

PL tense (unaspirated) affricates in Kryz give voiced reflexes; PL *c: > Kryz ʒ/z (the affricate ʒ is preserved only at the beginning of some words in Kryz proper; the distribution of the reflexes ʒ- and z- in this position is probably dependent on prosodic factors; in other positions in Kryz proper and in all positions in the Alik dialect we already see the fricative reflex z); PL *c:^{w} > Kryz z; PL *č:,*č:^{w} > Kryz ǯ; PL *ƛ:, *ƛ:^{w} > Kryz ɣ (but > w before the vowel u); PL *q:,*q:I > Kryz q:/ʁ (in initial position q: is preserved, in other positions q: was fricativized and changed to ʁ — cf. the same development in the Tsakhur dialect of the Tsakhur language, see above).

PL tense glottalized affricates give uniform reflexes in Kryz: lax voiceless in

all positions. Cf. PL *ҫ:,*ҫ:^{w} > Kryz t; PL *č: > Kryz č; PL *ӄ:, *ӄ:^{w} > Kryz k; PL *q̇:, *q̇:I > Kryz q; PL *q̇:^{w}, *q̇:I^{w} > Kryz q(^{w}). On a similar development in Budukh, see below. It is evident that this is a result of the weakening of voiceless tense consonants, which appeared through the deglottalization of PL tense glottalized consonants (the previous stage — the preservation of tense voiceless consonants is attested, e.g., in Tabasaran and Agul, see above).

Laterals in Kryz have probably developed in the same way as in Lezghi, Rutul and Tsakhur (see above), i.e. first were turned into velar affricates, and afterwards — into velar explosives or fricatives (cf. *ƛ > x, PL *ƛ: > ɣ, PL *ӄ: > k). The lax glottalized *ӄ first developed into the velar affricate *ķx, and then — into the uvular affricate q̇. In a few cases the velar articulation of ķ is preserved; this apparently happens in initial position of bisyllabic roots as a result of the weakening of the articulation of *ķx > ķ (cf. *ķäräṗ* "bone" < PL **ӄorap:*, but *q̇än* "bottom" < PL **ӄan*, etc.).

Kryz has completely lost the labialization of front and lateral affricates. In the system of uvulars, labialization is still preserved (thus, the development *q̇:^{w} > Kryz q^{w}, *q̇I^{w} > Kryz q̇^{w} is attested), but in most cases labialization is transferred onto the adjacent vowel and becomes irrelevant.

8. Budukh.

PL affricates behave very similarly in Kryz and Budukh. Therefore, we shall examine here only the features distinguishing the Budukh reflexation.

Lax (aspirated) affricates. Here the differences from Kryz concern the reflexation of PL *c^{w} (> Bud. s, while Kryz preserves the articulation c) and PL *qI^{w} (in final position > Bud. -ʔ, while Kryz has -ʁ, cf. Bud. *mulaʔ* "meat-worm" < PL **mulVqI^{w}*). For PL *č in initial position only the reflex š- is attested (before the vowel *ɨ, cf. PL **čɨj* "sister" > Bud. *ši-der*); in other positions one would expect the preservation of č, but there is no evidence available.

Tense (unaspirated) affricates. Budukh always reveals the fricativization *c: > *ʒ > *z (in Kryz ʒ is preserved in some cases, see above). PL *ƛ: is reflected in Budukh as j (in Kryz the intermediate stage — the fricative ɣ — is preserved). Other reflexes are the same.

Glottalized affricates (both tense and lax) in Budukh are reflected in the same way as in Kryz.

As we have already noted above, Kryz still preserves some labialized consonants. Budukh has already completely lost the labialization of consonants.

9. Udi.

Lax (aspirated) affricates in Udi are only partially preserved; rather often they develop into voiceless fricatives. Thus, for PL *c, *c^{w} only the final reflex s is observed in Udi (in initial position one could perhaps expect c-, but there are no examples). The hushing č is preserved in initial position, while in final position there is a variation between -č/-š. The affricate reflex q is attested for PL *ƛ, *q, *q^{w}, *qI^{w} (it must be noted that reflexes of the latter phoneme are attested only in

final position, and that a parallel reflex, -χ, also exists). In some cases Udi reveals an unexpected tense reflex q: in the place of PL lax lateral and uvular affricates (cf. PL **meIrƛ* "deer" > Ud. *muq:I;* PL **ʔiqɨ-* "to hold, to find" > Ud. *b-iq:-sun*); the reasons for this development are yet unclear. Finally, Ud. *ʁIaina* "crow" < PL **qIan:* reveals a specific reflex of PL *qI — the voiced fricative ʁ.

Lax glottalized affricates develop in a rather peculiar way in Udi: they give zero reflexes, i.e. they are dropped. Udi apparently had at first eliminated the oral stop if there was a simultaneous glottal one, and afterwards eliminated the glottal stop, too (except, of course, in the initial position, where the glottal stop is automatically pronounced before any vowel). In some specific cases lax glottalized consonants in Udi yield non-zero tense reflexes (the "tense" — "glottalized" opposition is absent in Udi, therefore Udi tense consonants can be treated as glottalized as well). Namely:

a) PL *ç > Ud. c: in final position (cf. PL **u̯içɨ-* "ten" > Ud. *wic:*);

b) PL *č, *č^{w} are also apparently preserved in final position (cf. Ud. *k:äč:* "grain, speck" < PL **ƛ̣ača*). Besides, the reflex č: can be preserved in expressive roots (cf. Ud. *č:em* "mud" < PL **č^{w}Vm*), or as a result of an earlier assimilation (cf. Ud. *k:uč:an* "puppy" < PL **ku̯rč/*kurč*);

c) PL *ƛ̣ is reflected as k:- in a single word *k:äč:* "grain, speck" — probably as a result of an early assimilation to the final consonant; in other attested cases *ƛ̣ is reflected as zero in all positions;

d) PL clusters *mƛ̣, *wƛ̣, as well as the labialized uvulars *q̇^{w}, *q̇I^{w} are reflected in Udi as the labial explosive p: (cf. PL **näwƛ̣* "dream" > Ud. *nep:;* PL **hIamƛ̣* "sweat" > Ud. *ap:;* PL **ʔiq̇^{w}ä* > Ud. *ap:e-sun* "to be cooked, to ripen"; PL **q̇I^{w}ä* "two" > Ud. *p:aI*).

e) Being delabialized, PL *q̇I^{w} yields a zero reflex in the Vartashen dialect, but the variation hI/ʁI in the Nidzh dialect. PL *q̇I would probably have given the same reflex, but examples of its reflexation in Udi are missing.

PL tense (unaspirated) affricates usually yield voiced fricatives in Udi (apparently through an intermediate stage of voiced affricates). Cf. PL *c: > Ud. z/žI; PL *c:^{w} > Ud. z; PL *č:^{w} > Ud. žI; PL *ƛ: > Ud. -ʁ; PL *q:, *q:^{w}, *q:I > Ud. ʁ. There are, however, some not quite clear exceptions from this rule. Thus, PL *c: in initial position gives Ud. c-; PL *č: is reflected as č: in all available examples; PL *ƛ: gives Ud. q- in initial position.

Tense glottalized affricates in Udi regularly lose their glottalization and become tense voiceless. Cf. PL *ç:, *ç:^{w} > Ud. c:; PL *č: > Ud. č:- (though -č- in medial position, cf. Ud. *ača* "right" < PL **ħarč:-*); PL *ƛ̣:, *ƛ̣:^{w} > Ud. q:; PL *q̇:, *q̇^{w}: > Ud. q:. Pharyngealized *q̇I:, *q̇I^{w}:, on a par with the normal reflex q:I (sometimes with the loss of pharyngealization, see below), can also be reflected as the fricative ʁI. Both reflexes can vary within the same root.

All lateral affricates regularly yield uvular reflexes in Udi (apparently, through the stage of velar affricates), cf. PL *ƛ > Ud. q:/q; PL *ƛ: > Ud. q-, -ʁ; PL *ƛ̣:, *ƛ̣:^{w} > Ud. q:. Only the PL *ƛ̣ behaves differently: like other PL lax glottalized affricates, it yields Ud. ∅ (see above).

The Udi language has completely lost labialized affricates. However, their presence in some previous stage is confirmed by a special development of certain

labialized consonants in Udi (cf. above on the development of *q̇^{w}).

Unlike Kryz and Budukh, Udi preserves pharyngealization. If, however, the pharyngealizations in Archi, Agul, Tabasaran, Lezghi (in dialects), Rutul and Tsakhur correspond well to each other and allow us to reconstruct a reliable series of PL uvular pharyngealized affricates, the old pharyngealization in Udi can sometimes disappear. On the other hand, in some cases a new pharyngealization, missing in other languages, appears. The reason for this, as well as the reason for some other phenomena of Udi historical phonetics, are not yet clear. But it is probable that it was this new Udi pharyngealization that caused the hushing (and partially hissing) series of affricates to split in two: palatalized (non-pharyngealized) and non-palatalized (pharyngealized) affricates. As it is, the Udi distinctions č-čI, č:-čI:, ž-žI, š-šI, do not correspond to anything in other Lezghian languages, and must be considered an Udi innovation.

10. Voiced affricates in PL.

Three personal plural pronouns in Lezghian languages reveal specific correspondences, for which we tentatively reconstruct the PL voiced affricates *ǯ, *ǯ^{w} and *Ł (*ǯ*i*- "we (excl.)", *ǯ^{w}*[e]*- "you", *Łä- "we (incl.)". The reflexes of these sounds are: voiced fricatives (ž^{w}, *L > l) in Archi; voiceless affricates (or the fricative x) in Tabasaran, Agul and Lezghi; voiceless fricatives in Tsakhur; and either voiced fricatives or resonants in Rutul, Kryz, Budukh and Udi. The reconstruction of voiced affricates is probably optimal for these correspondences. The correspondences themselves appear as follows:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*ǯ		č	č	č	ž	š	ž	ž	
*ǯ^{w}	ž^{w}	č^{w}/ć	č^{w}	č^{w}/k^{w}	w	š	w	w	w
*Ł	l	x	x		j		j	j	j

1.8.1.4. Fricatives.

In the PL consonant system the local series of fricatives coincide with the local series of affricates, i.e. we reconstruct hissing, hushing, lateral, uvular and pharyngealized uvular fricatives. Each of these series is characterized by a three-way contrast "lax" — "tense" — "voiced". We must say at once, that voiced fricatives (as well as voiced explosives and affricates, see above) are rather rare phonemes; most of them are met in expressive words. In the lateral series the voiced fricative is not reconstructed at all.

The correspondences of fricatives in descendant languages appear as follows:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*s	s	s	s	s	s	s	s	s	∅
*s^{w}		s(^{w})	š^{v}	s	s	s	s	s	-šI-
*s:	s:,-s	s/s:	s/s:/z	s/z	s	s,-s:-	s	s,-z	š-,-s-, -s/-c
*s:^{w}	s:,-s	s/s:	š^{v}/ž^{v}	s(^{w})/z(^{w}) /ž(^{w})	s(^{w})-,s	s-	s	s-	š-/šI-
*z	z	z	z	z	z	z	z	z	z
*š	š	š	š	š	š	š	š	š	∅
*š^{w}	š(^{w})-,š	-š-	š^{v}	š-	š(^{w})	š	š	š	-šI-
*š:	š:,-š	š/š:	š/š:/ž	š/ž	š	š,-š:-	š	š,-ž	š-,-čI
*š:^{w}	š(^{w}):-, -š	š^{w}/š:^{w}/ɤ́	š^{v}/š:^{v}/ž^{v}	v/f/š^{w}	š(^{w})	?-,-š:-	f	f-,-v	š
*ž	ž		ž	ž	ǯ	ǯ	ǯ		z
*ž^{w}	ž^{w}			z^{w}	ǯ	ǯ			žI
*λ	λ	x	x/š	x	x	x	x/š	x/š	χ
*λ^{w}	λ(^{w})	f	f/x	f/x^{w}-	x^{w}/f	x(^{w})	f(/x)	f/x	-f-
*λ:	λ:,-λ	x:/x/š:	x:/x/š:/š	g/j/ž	x	x,-x:-	x	x	χ
*λ:^{w}	λ:(^{w}), -λ^{w}	f/f:	f/f:	f/v/ž	x^{w}/f	x-,-x:(^{w})-	f/x(^{w})	f/x	q-
*χ	χ	χ	χ	χ	χ	χ	χ	χ	∅-,χ
*χ^{w}	χ(^{w})	χ(^{w})	χ(^{w})	χ(^{w})	χ	χ(^{w})	χ	χ	χ-
*χ:	χ:,-χ	χ/χ:/ʁ	χ/χ:/ʁ	χ/ʁ	χ	χ,-χ:-	χ	-χ-	χ/q
*χ^{w}:	χ:^{w}, -χ(^{w})	χ(^{w})/χ:(^{w}) /ʁ(^{w})	χ(^{w})/χ:(^{w}) /ʁ(^{w})	χ^{w}/ʁ(^{w})	χ	χ^{w}-	χ^{w}-	χ-,-ʁ	χ
*ʁ	ʁ/h	ʁ	ʁ	ʁ	ʁ	ʁ	ʁ	ʁ	h
*ʁ^{w}	ʁ/h		ʁ(^{w})	ʁ(^{w})		ʁ	ʁ	-∅	
*χI	χI	X̀/χI/ħ	χI	χ	χI	χI	χ/ħ	χ/ħ	∅
*χI^{w}	-χI	X̀/χI/ħ	-χI	-χ(^{w})	-χI(^{w})	-χI	-χ	-χ	
*χ:I	χ:I,-χI	X̀/χI/ʕ	χI/χI:/ʁI	χ/ʁ	χI	χI,-χ:I-	ħ	ħ/ʕ	χ(I)
*χ:I^{w}	χ:I(^{w}),-χI^{w}	X̀/χI^{w}/ʕ	χ:I/ʁI	χ^{w}/ʁ^{w}	χI(^{w})	χI-,-χ:I-	ħ	(ħ)/ʕ	χ(I)
*ʁI	ʁI	ʁI	ʁI	ʁ	ʁI				

Comments.

1. Laryngeal features of fricatives.

PL lax fricatives are preserved without any changes in all Lezghian languages except Udi. In Udi all PL non-labialized lax fricatives (except the lateral *λ) have given zero reflexes, i.e. fallen out. It is not quite clear why the fricative *λ escaped this fate — probably, it was strengthened and already merged with *λ: in Proto-Udi. However, labialization prevented the disappearance of lax fricatives (cf. PL *s^{w}, *š^{w} > Ud. šI; PL *χ^{w}> Ud. χ).

Tense fricatives are at present preserved in the Archi, Agul, Tabasaran and Tsakhur languages. In Archi tense fricatives are preserved in initial and medial positions, but have weakened in final position.

In Agul tense fricatives are preserved in the Koshan dialect; in other dialects

they are already lost ([Magometov 1970] points to the presence of tense fricatives in some more Agul subdialects, particularly, in the subdialect of the village Khpyuk, but we have no data on these subdialects). We must specially mention the reflexes of tense uvular fricatives in Agul proper (Tpig subdialect); here PL *χ: > ʁ, PL *χ:^{w} > ʁ^{w}, PL *χ:I, *χ:I^{w} > ʕ, i.e. they are voiced.

In Tabasaran tense fricatives have been preserved in the Northern dialect (though not identically in all subdialects; thus the Dübek subdialect has already lost tense fricatives in initial position), but have already been lost in the Southern dialect and in the literary language. In the Northern (to some extent also in the Southern) dialect of Tabasaran, there is a strong tendency to voice PL tense fricatives. Thus in some cases the PL non-initial *s: and *š: are being voiced (*s: only in subdialects of the Northern dialect; the voicing *š: > ž is also encountered in the Southern dialect). PL *s:^{w} and *š:^{w} are regularly voiced in all Tabasaran dialects before the narrow vowels *ɨ, *i (in the Dübek subdialect cases of word-final voicing of *š:^{w} are also attested). PL uvular fricatives in non-initial position are regularly voiced in all Tabasaran dialects (thus, *χ: > ʁ, *χ:^{w} > ʁ^{w}, *χ:I > ʁI, *χ:I^{w} > *ʁI^{w}). The development *χ: > ʁ in initial position occurred only before Tab. u < PL *u, *o (it is worth noting that *χ:I is never voiced in this position). Of all PL fricatives only *λ:, *λ:^{w} are never voiced.

The Tsakhur language only preserves tense fricatives (s:, š:, x:, x^{w}:, χ:, χ^{w}:) in intervocalic position; elsewhere they have been weakened and merged with the reflexes of PL lax fricatives.

Other languages (Lezghi, Rutul, Kryz, Budukh, Udi) have not preserved tense fricatives as such. However, the reflexes of tense fricatives have completely merged with the reflexes of lax ones only in Rutul and Kryz (occasional differences — like the fact that in Kryz the reflex š is attested for PL *š^{w}, while f is attested for PL *š:^{w} — are apparently explained by insufficient evidence; we could expect Kryz f from PL *š^{w} as well, but all the available examples represent cases of early delabialization *š^{w} > *š). As for Lezghi, Budukh and Udi, the reflexes of PL tense and lax fricatives here remain distinct.

In Lezghi tense fricatives, unlike lax ones, can be subject to voicing. Its rules are as follows:

a) Voicing does not occur in the Akhty dialect, where reflexes of tense fricatives usually merge with the reflexes of lax ones. The only exceptions are the PL fricatives *s:^{w} and *λ:^{w}, which may be voiced in the Akhty dialect as well. (The voicing of *s:^{w} occurs before the PL narrow vowels *ɨ, *i; chronologically it probably preceded the voicing of other fricatives, because it represents an isogloss, connecting Lezghi and Tabasaran; on a similar development in Tabasaran see above. The rules of the voicing of *λ:^{w} are unclear — perhaps we are facing interdialectal loanwords). In addition, the voicing of PL lateral *λ: is obligatory.

b) In other dialects, voicing of the PL lateral fricative *λ: and of the uvulars *χ:, *χ:^{w}, *χ:I, *χ:I^{w} is obligatory. PL *s:^{w}, just as in the Akhty dialect, is voiced only before original narrow vowels. The hissing *s: has the voiceless reflex s in all positions in the Kurakh dialect, but is voiced in intervocalic position in the Güne and Yarki dialects (and therefore in the literary language). Labialized PL *š:^{w} and *λ:^{w} in non-initial position, on the other hand, yield voiceless reflexes in all

dialects; in initial position *šʷ: always develops voiced reflexes, while *λʷ:, like in the Akhty dialect, reveals a variation between voiced and voiceless reflexes. We cannot establish any rules for PL *š:, whose reflexes may be both voiced and voiceless. Such a complicated scheme of reflexes for PL tense fricatives apparently points to processes of interdialectal influence, active in the Lezghi-speaking area until recently.

In Budukh PL tense fricatives are regularly voiced in final position (*-s: > -z, *-š: > -ž, *-šʷ: > -w, *-χʷ: > -ʁ; one should also expect voiced final reflexes of PL *λ:, *λ:ʷ and *χ:, but reflexes of these phonemes in final position are not attested at all in Budukh). PL pharyngealized *χ:I and *χ:Iʷ can be voiced in other positions as well, but the rules of distribution for voiced and voiceless reflexes of these two phonemes are unclear due to insufficient evidence.

In Udi the basic difference between the reflexes of tense and lax fricatives is the fact that the former are not dropped (unlike the latter, whose normal reflex in Udi is zero, see above). Udi can also occasionally have affricates in the place of PL tense fricatives (such are the reflexes *-s: > -c; *-š: > -čI; *λ:ʷ, *χ: > q); in such cases we usually observe a free variation of fricative and affricate reflexes in the same roots in Udi (cf. Ud. *mes* / *mec* "nest" < PL **mäs:;* Ud. *χel* / *qel* "burden" < PL **χ:äl,* etc.). The process of the affricatization of fricatives is rather unusual; still, there is apparently no reason to try to reconstruct affricates in such cases, basing this conclusion on Udi evidence alone.

Voiced fricatives are preserved in all languages (we should note only the affricatization *ž > ǯ in Rutul, Tsakhur and Kryz and the laryngealization *ʁ > ʕ in Archi and Udi languages).

2. Local features of fricatives.

The main change that occurred in all Lezghian languages, except Archi, was the loss of lateral fricatives (on the loss of lateral affricates, see above). This led to the appearance of velar fricatives, not present in the PL system, in most languages. In Udi a further development of the velar x (< *λ, *λ:) into the uvular fricative χ occurred (on the uvular reflexes of lateral affricates in Udi, see above).

PL lax *λ developed into x in Agul, Tabasaran, Lezghi, Rutul, Tsakhur, Kryz and Budukh. In Tabasaran, Kryz and Budukh the palatalization x > š occurred before PL front vowels (cf. Tab. *šubu-b,* Düb. *šibbu-b,* Kryz *šibi-d,* Bud. *šub* "three" < PL **λep:i-*). In Tabasaran this is the usual development (cf. above on a similar affrication of lateral affricates); it is, however, not typical for Kryz and Budukh and characterizes only this phoneme (even PL *λ: in Kryz and Budukh yields only the velar x). A similar development *-λ > -x > -š has occurred in Kryz in final position (in a single example: Kryz *liš* "louse" < PL **loλ(ʷ)*).

PL tense *λ: yields x: (or x, depending on the dialect and on the position) in Agul, Tabasaran, Tsakhur; in Rutul, Kryz and Budukh only the lax reflex x is present (on the distribution of tense and lax reflexes, see above). In the Koshan dialect of the Agul language the reflexation is unusual: PL *λ: > Kosh. š: in all positions (thus, the tense fricative x: in Agul is preserved as such only in some subdialects of Agul proper, namely, in the Khpyuk and Tsirkhe subdialects; see [Magometov 1970, 23]).

Tabasaran has a regular palatalization *λ: > *x: > š: (š in the Southern dialect) before front vowels.

In Lezghi *λ: yields g (through an intermediate stage of the voiced fricative ɣ, still preserved in the Yarki dialect) before back vowels and ž/j before front ones (the distribution of the latter two reflexes is yet unclear). Thus, the reflexes of *λ: merge here with the reflexes of the PL tense lateral affricate *ƛ: (on the development of which see above).

Pharyngealized fricatives have lost their pharyngealization in Lezghi (though some dialects still preserve it, see above on the reflexes of affricates), Kryz and Budukh. In Lezghi the reflexes of pharyngealized and non-pharyngealized uvular fricatives have completely merged, while in Kryz and Budukh the original pharyngealized fricatives have been laryngealized and transformed into the emphatic laryngeals ħ, ʕ. A fricative reflexation (*χI > Kryz, Bud. χ) is observed only when this fricative was the second component in a medial consonant cluster.

A similar development is observed in Agul. Original pharyngealized fricatives are preserved only in the Fite dialect (where *χI, *χ:I > χI). In the Keren, Koshan and Burkikhan dialects, the pharyngealized fricatives have developed into the pharyngeal X̀ (i.e. *χI, *χ:I > X̀), and the distinction in tensity was lost (in Koshan, usually preserving it, the opposition X̀ — X̀: is absent). However, it is reflected in Agul proper (Tpig), where a further laryngealization happened: *χI > X̀ > ħ, *χ:I > *R̀ > ʕ. It is interesting that PL *ʁI is preserved as ʁI in Agul. This is perhaps an argument in favour of reconstructing in PL not the voiced fricatives *ʁ, *ʁI, but rather the voiced affricates *G, *GI, whose reflexes were subject to independent fricativization in descendant languages. (The fact is that the development *q:I > R̀ that happened in Agul (see above), had apparently passed through the intermediate state ʁI, preserved in the Fite dialect. In this case the original *ʁI and the new *ʁI < *qI: should have inevitably merged. Since this has not happened, it is reasonable to suggest, that in Proto-Agul in the place of PL *q:I there was a fricative like *ʁI, and in the place of PL *ʁI — an affricate like *GI, fricativized already after the *ʁI > R̀ development in Agul dialects). It is possible that PL had here a free variation of the articulations *G/*ʁ and *GI/*ʁI respectively.

Labialized fricatives usually develop similarly to labialized affricates in Lezghian languages, namely:

1) The Archi language preserves all labialized fricatives except the hissing ones (which are always delabialized). Labialized reflexes are not attested for PL *χI^{w}, because of the rarity of this phoneme.

2) The Agul language preserves the labialized hissing (s^{w}), hushing (š^{w} in the Keren and Burkikhan dialects) and uvular fricatives (χ^{w}, χ:^{w}, ʁ^{w}). The pharyngealized uvular labialized χI^{w} is preserved only in Fite dialect; other dialects have lost the labialization due to the development of pharyngealized uvulars into either pharyngeals or laryngeals (in these local series Agul has no distinction in labialization).

The PL labialized hushing *š:^{w} is reflected as a (bi)labialized consonant only in the Keren and Burkikhan dialects; in the Koshan dialect the dentolabialized š:^{v} is represented (cf. above on the reflexes of hushing labialized affricates). The Fite dialect

has the velarization *š:^{w} > ǵ here, too (just like in the reflexes of affricates). Similar reflexes could be expected from PL lax *š^{w}; but in fact, in the available examples we see only the delabialized reflex š (in all dialects). We may, however, note the development of the PL combination *mš in some Agul dialects, where -mhas disappeared, leaving behind the compensatory labialization of the following consonant: cf. PL *ħamš "caraway" > Bursh. *ħamš,* but Rich. *ħaš^{w},* Burk. (with metathesis) *š^{w}äħ,* Fite *heǵ^{w}.*

Labialized lateral fricatives in Agul have developed into labiodental fricatives (apparently through an intermediate stage of labiovelars). Thus, PL *λ^{w} > Ag. f, PL *λ:^{w} > Ag. f:/f. It is interesting that the clusters *-wλ, *-wλ: behave differently. Even in Proto-Agul *λ, in the combination wλ, had been strengthened and developed into *λ:. The Koshan dialect reflects the combination wλ: as a dentolabialized š:^{v} (unlike *λ:^{w} > Kosh. f:); other dialects have either the normal reflex f (< *λ:^{w} < *wλ:), or x (with the loss of labialization). Cf. PL *jiwλ* "snow" > Rich., Fit. *ibx,* Burk. *üx,* Bursh. *jiš:^{v};* PL *λ:^{w}e* "five" > Proto-Ag. *jewλ:i̯-* (restructured by analogy with *jewq̇i̯-* "four") > Rich. *Rafu-d* (with an unclear R), Fite *jüfü-d,* Burk. *ifa-d,* Bursh. *jiš:^{v}u-r.*

3) In the Tabasaran language the PL hissing and hushing labialized fricatives have merged in a single dentolabialized series (Tab. š^{v}, š:^{v}, ž^{v}). Labialized laterals, as in Agul, developed into dentolabial fricatives (f, f:); there are, however, cases of old delabialization, when *λ^{w} > *λ > Tab. x.

In the system of labialized back consonants labialization is completely lost in the Northern dialect, but is preserved in the Southern dialect and in the literary language.

4) In Lezghi labialized hissing fricatives are reflected exactly like labialized hissing affricates (see above), i.e. they are preserved in Kurakh, Güne and some subdialects of the Akhty dialect (Khliut), develop into labialized hushing fricatives in most subdialects of the Akhty dialect and yield labialized velars in the Yarki dialect. We must note, however, that such reflexes are only attested for PL *s:^{w}; in the few known cases of reflecting PL *s^{w} Lezghi has the delabialized reflex s.

By analogy with the labialized hushing affricates, one would expect the labialized hushing fricatives to be preserved in the Kurakh and Akhty dialects, to develop into hissing labialized in the Güne dialect and into labiovelars in the Yarki dialect. But in reality the labialized hushing *š^{w} in the few attested cases has the delabialized reflex š (cf., however, the reflection of the PL cluster *mš, that developed into *š^{w} in Proto-Lezghi: PL *ħamš* "caraway" > Lezg. lit. *if-erar,* Nüt. *üx^{w}-erar.).* The reflex š^{w} < PL *š:^{w} is observed only in initial position in the Khlyut subdialect of the Akhty dialect (cf. Khl. *š^{w}et* "mosquito" < PL *š:^{w}äç:; otherwise cf. lit. *weṭ,* Akht. *feṭ*). The hissing z^{w}, as a reflex of *ž^{w}, is known to us only in the literary language (*z^{w}al* "boiling" < PL *ž^{w}al*) and apparently represents the Güne development. The Yarki dialect indeed has labiovelar reflexes x^{w}/g^{w} < PL *š:^{w}. Other dialects (Kurakh, Akhty, Güne) always reflect PL *š:^{w} as a labiodental f or w (on the distribution of voice/voicelessness see above); the same labiodental reflexation is represented in final position in the Khlyut subdialect (cf. lit., Khl., Kur. *jif,* Nüt. *jüx^{w}* "night" < PL *ʔiš:^{w}*).

The labialized lateral *λ^{w} is usually reflected as labiodental f in all Lezghi

dialects. The labiodental reflex (f or w) is also typical for PL tense *λ:^{w} in most dialects; the Akhty dialect, however, reflects PL *λ^{w}: as labialized hushing š^{w}- (ž^{w}-) in the initial position (only the Khlyut subdialect has a labiodental reflex here, too). Thus, within the Akhty dialect the reflexes of *λ:^{w} resemble an "inversion" of the reflexes of *š:^{w}, cf.

PL	Akht.	Khlyut subdialect
*λ:^{w}	š^{w}-, f	f-, f
*š:^{w}	f-, f	š^{w}-, f

(voiced initial variants are not listed in this table).

Uvular fricatives in Lezghi generally preserve the PL labialization quite well.

5) Rutul preserves the labialization of PL *s:^{w} (> Rut. s^{w}), *š^{w}, *š:^{w} (> Rut. š^{w}), *χI^{w}, *χ:I^{w} (> Rut. χI^{w}). For PL *s^{w}, *ž^{w}, *χ^{w} and *χ:^{w} only delabialized reflexes are attested. The labialized laterals *λ^{w}, *λ:^{w} are reflected as x^{w} in the Mukhad and Shinaz dialects (in some subdialects of Mukhad dialect, e.g. Luchek, the younger generation already pronounces the labiodental f). The Amsar dialect has a variation x^{w}/f. Other Rutul dialects already have only the dentolabial f.

6) The Tsakhur language has preserved only the labialized χ^{w}, χ:^{w} (< PL *χ^{w}, *χ:^{w}) and x^{w}, x:^{w} (< PL *λ^{w}, *λ:^{w}), the Gelmets dialect having a variation between x^{w}/f and x^{w}:/f:. Other PL labialized fricatives are only represented by delabialized reflexes in Tsakhur.

7) In the Kryz language we have attested only the labialized χ^{w} < PL *χ:^{w}. In the past, however, there were apparently at least labialized hushing and labialized velar fricatives, judging by the development of PL *š:^{w} > Kryz f and PL *λ^{w}, *λ:^{w} > Kryz f (in the case of early delabialization PL *λ^{w}, *λ^{w}: can also be reflected as x).

8) Budukh, like Kryz, has specific reflexes of PL *š:^{w} and PL *λ^{w}, *λ:^{w} (*š:^{w} > Bud. f-, -w; *λ:^{w}, *λ^{w} > Bud. f). In other cases PL labialization has disappeared in Budukh without any trace.

9) In Udi the only trace of PL labialization is the fact that PL lax labialized fricatives yield non-zero reflexes, while PL lax non-labialized fricatives are dropped. Otherwise Udi has completely lost the distinction in labialization in the system of fricatives (as well as in the system of explosives and affricates, see above).

1.8.1.5. Laryngeals.

We reconstruct three local series of postuvular (laryngeal) consonants for PL: laryngeals proper, pharyngealized laryngeals and emphatic laryngeals. The reconstruction of pharyngealized laryngeals in the second series is quite hypothetic: it is clear only that this was a special series, different both from laryngeals proper and from emphatic laryngeals.

In each local series the binary opposition "explosive : fricative" is reconstructed. A correlation in labialization is also reconstructed in the system of laryngeals. It is interesting, however, that in each local series one can reconstruct only one labialized laryngeal. The articulation of labialized laryngeals could

probably vary between explosive and fricative (which explains some specific features of the reflexation of labialized laryngeals). For the purpose of uniformity we reconstruct only explosive labialized laryngeals for PL.

Let us adduce the system of correspondences of laryngeal consonants in Lezghian languages:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*ʔ	ʔ-,Ø	ʔ-/j-, -ʔ/-ʡ	ʔ(/j-)	ʔ-/j-, -ʔ/-Ø	ʔ,-Ø	ʔ,-Ø	ʔ/j-, -ʕ	ʔ-/j-, -ʔ-,-ʕ	ʔ-,Ø
*ʔʷ	h	ʔ	ʔ	w-/ʔ-,-ʔ-	ʔ	ʔ	ʕ	ʕ	p
*h	h,-j	h-,-h/-ħ	h	h	h(/j-)	h,-Ø(/j-)	h-,ʕ (/ʔ-)	h-,ʕ	h-
*ʔI	j	ʔ-/j-	ʔ-	j-/ʔ-, -q̇/-ʔ	ʔ	ʔ	ʔ	ʔ	ʔ-
*ʔIʷ	j-/w-	ʔ-/j-	ʔ-	w-,-h-	ʔ	ʔ-,-h-	ħ-,-ʔ-	w-	ʔ-
*hI	ʔ-/h-,-j	ʔ-/ʕ-, -ʕ/-ʡ/-ʔ	ʔ	j-(h-) /ʔ-	-ʔ	h-/ʔ-, -hI	ʕ-	h-/ ʔ-?	ʔ-,-Ø
*ʡ	ʔI/-,-j	ʕ/ʡ/ʔ	ʔI/ʔ	ʔ-	j-,-ØI	-Ø	ʕ-/j-,-ʕ		ʔ-,-Ø
*ʡʷ	-hI-	ʕ/ʡ/ʔ		w-/ʔ-	ʔI	ʔI			
*ħ	ʔI-,-ØI	ħ/h	hI/h	h/ʔ	ʔ-/j-,-Ø	j-/ʔ-	ʕ-/j-,-ʕ	j-,-ħ	ʔI-

Comments.

1) Archi. Plain laryngeals have been preserved here (with modifications in non-initial position, where the glottal stop ʔ has disappeared, and h > j). The pharyngealized laryngeal *hI has been depharyngealized and apparently merged with *h (but in initial position before back vowels *hI has fallen out, which explains the double reflex ʔ-/h-). The pharyngealized *ʔI has apparently developed into the emphatic *ʕ, which afterwards lost its laryngeal articulation and developed into j (similarly *ʔIʷ > *ʕʷ > w).

After the loss of pharyngealized laryngeals their place was taken by PL emphatic laryngeals that yield pharyngealized reflexes in Archi.

2) Agul. Here labialized laryngeals have merged early with the respective non-labialized ones. Plain laryngeals and emphatic laryngeals are rather well preserved, although, compared with PL, some changes still occurred:

a) in final position PL *ʔ and *h may obtain a secondary emphatization (*ʔ > ʡ, *h > ħ). The development *h > ħ is typical for Koshan, Burkikhan and Agul proper and apparently occurs after front vowels. The conditions of the development *ʔ > ʡ, observed only in Koshan (where the usual reflex of the final *ʔ is -Ø), are less clear.

b) The PL emphatic laryngeals *ʡ and *ħ are well preserved in Koshan, Burkikhan and Agul proper (we must note that in Koshan a deemphatization before front vowels

occurred: *ʡ > ʔ, *ħ > h). In the Keren dialect *ħ has been preserved, while *ʡ has been fricativized and developed into ʕ. The Fite dialect has lost the emphatic laryngeals: *ʡ > ʔ and *ħ > h.

PL pharyngealized *ʔI in Agul has been depharyngealized and merged with *ʔ. However, *hI gives specific reflexes here: the Burkikhan dialect has ʕ- in initial position, while others have *ʔ-, i.e. we observe an absolutely unique series of correspondences (cf. above on the reflexes of other laryngeals). In final position *-hI is reflected in the same way as the emphatic laryngeal *-ʡ (i.e. gives Fite -ʔ, Ker. -ʕ, Kosh., Burk. and Agul proper -ʡ). We can suppose that Proto-Agul had a special phoneme *ʕ < PL *hI, which was only preserved in initial position in Burkikhan, while in final position it merged early with the explosive *ʡ.

3. Tabasaran. In the Southern dialect of Tabasaran (and in the literary Tabasaran language) PL laryngeals give the same reflexes as in the Fite dialect of the Agul language (see above). The Northern dialect still preserves the pharyngealized laryngeals ʔI, hI < PL emphatic *ʡ, *ħ in non-initial position.

Labialized laryngeals were delabialized early in Tabasaran, just as in Agul. However, in Proto-Tabasaran a labialized laryngeal *h^{w} apparently existed, which originated from a metathesis of labialization and had afterwards developed into w. Cf. PL **ħämč* "apple" > Proto-Tab. **h^{w}älč* > South. *wič,* North. *walč.*

4. Lezghi. Characteristic for Lezghi is the fact that its Northern dialects (as well as the literary language) regularly have w in the place of PL labialized laryngeals; the Akhty dialect usually has ʔ (only sporadically w, probably due to the influence of the literary language). Therefore, at least one labialized laryngeal should have existed as late as in Proto-Lezghi; it yielded w in the Northern and ʔ in the Southern (Central) dialect.

In other respects Lezghi has very much reduced the system of PL laryngeals. Explosive laryngeals are usually reflected as ʔ (though before front vowels sporadically ʔ- > j-), fricatives — as h (though PL *hI, *ħ also yield ʔ or j before front vowels).

We should also dwell on the Lezghi final reflexes of PL *ʔ and *ʔI. In both cases the Akhty dialect regularly has ʔ; in the Northern dialect (as well as in the literary language) the final *-ʔ disappears, while the final *-ʔI yields an unexpected reflex -q̇ (cf. PL *maʔI "fat" > Khl. maʔ, lit. maq̇). Such a development probably points to the presence of two types of explosive laryngeals in Proto-Lezghi (apparently PL *-ʔ > Proto-Lezg. *-ʔ > Akht. -ʔ, North. -∅; PL *-ʔI > Proto-Lezg. *-ʡ > Akht. -ʔ, North. -q̇).

5. Rutul. At the present time there are three laryngeals in Rutul: ʔ, h and ʔI. As in most other languages, PL pharyngealized laryngeals were early depharyngealized here. However, their reflexes have not completely merged with the reflexes of plain laryngeals. It is probable that at first all three pharyngealized laryngeals merged in one phoneme, similar to *ʔI, and only afterwards *ʔI > ʔ. This change must have occurred already after the disappearance of the original *ʔ in final position: cf. *-ʔ >-∅, but *-ʔI > -ʔ.

Emphatic *ʡ and *ħ were apparently lost early. Their main reflexes are ʔ or j in initial position (in the Khnyukh subdialect we may also meet h in the place of *ħ) and ∅, with a possible preservation of pharyngealization, in final position.

The labialized *ʔˤʷ was apparently preserved longer, though, like other labialized laryngeals, it was subject to the delabialization *ʔˤʷ > *ʔˤ. Afterwards, when the pharyngealized *ʔI had been depharyngealized (see above), this *ʔˤ had taken its place: PL *ʔˤʷ > *ʔˤ > Rut. ʔI.

6. Tsakhur. Here we must note the preservation of the phoneme hI < PL *hI (at least in final position). Otherwise Tsakhur reflexes are quite similar to Rutul ones.

7. Kryz and Budukh. Here it is interesting to note the development of PL plain laryngeals into the emphatic ʕ (in some cases, such as the reflex of PL *ʔ and *h in final position, as well as the reflex of the PL labialized *ʔʷ). The PL emphatic laryngeals are generally preserved (although before front vowels they develop into j-); it is worth noting that both *ʔˤ and *ħ yield the same voiced reflex, ʕ, in Kryz. The pharyngealized *ʔI has lost its pharyngealization and developed into ʔ; however, traces of the original pharyngealization are preserved in the reflexes of PL *ʔIʷ and *hI, yielding emphatic ħ and ʕ respectively in Kryz (Budukh has w- and h- here).

8. Udi. Here only the laryngeal h < PL *h is preserved. PL labialized *ʔʷ apparently first developed into *hʷ (see above on the possibility of the variation *ʔʷ/*hʷ as early as in PL), after which *hʷ > Ud. p (see above on the similar development of PL *q̇ʷ > Ud. p:). All other laryngeals were lost in Udi (i.e. in initial position there is an automatic glottal stop, and in other positions — zero).

1.8.1.6. Consonant clusters.

In PL, as in most modern Lezghian languages, consonant clusters were not allowed in initial position. (Initial clusters existing in modern Lezghi and Tabasaran are secondary, being a result of the reduction of unaccented vowels of the first syllable). However, in the medial and final positions the number of possible clusters was rather large.

Here we will not examine the consonant clusters arising on morpheme boundaries, nor the consonant clusters in verbal roots, but will dwell only upon the development of consonant clusters within nominal root morphemes. These combinations may be divided into two types:

1) Consonant clusters on the syllable borders of a partly or wholly reduplicated morpheme (structures of the type *ʔamʔam, *daldam, *λʷitλʷil, *čurčul, etc.). In such morphemes virtually any consonant clusters are allowed. Their characteristic feature is their stability: except cases of irregular transformations (in expressive roots), both cluster components develop in the same way as in the isolated position.

2) Consonant clusters within a non-reduplicated morpheme (on the syllable border or at the end of the syllable). Here only "resonant+obstruent" clusters are allowed. In these clusters the first element may be represented by one of the resonants r, l, m, n or w (i.e. the opposition of tenseness-laxness is neutralized here; the correlates of the resonants listed above (j, l:, m:, n:, u̯) are not attested as first components of clusters). The second component of clusters may be represented by any obstruent except postuvulars (i.e. emphatic laryngeals and plain laryngeals).

There are few rules limiting the freedom of combination of resonants and obstruents (some of them may turn out to be fortuitous and it is possible that the gaps in the place of some clusters will be eventually filled). Here are these limitations:

1) there are no clusters of *w with following front consonants (of the type *wt, *wc, *wč) or with following velar ones (of the type *wk) (absence of the latter is probably accidental);

2) there are no clusters of *n with uvulars (of the type *nq) or labials (of the type *np);

3) there are no clusters of *l with laterals (of the type *lƛ);

4) clusters with labial consonants are in general very rare, and only two types of them are attested: "r+labial" and "m+labial".

No Lezghian language has left the PL system of consonant clusters intact. The main tendency in the development of such clusters is their simplification through the loss of the first component (resonant). One point should be, however, specially discussed: the reconstruction of combinations with the resonant *l.

In modern Lezghian languages, combinations with l as the first component are rather rare. However, we have reason to think that they were much more widespread in PL. The fact is that in most cases PL *l is either lost or changed to r in descendant languages. In such cases (when the reflex l is in fact not preserved in any language) we must reconstruct *l on the basis of system considerations. For example: if we have a correspondence "Tab. -lz: Ag., Lezg., Rut. z" (cf. "tongue": Tab. *melz,* Ag., Lezg. *mez,* Rut. *miz*), the reconstruction of *l in this case is based on Tabasaran evidence, allowing us to suppose that PL *l (at least before hissing consonants) yields Tab. l and Ag., Lezg., Rut. ∅. However, although Tabasaran has the cluster lz (lʒ), a similar combination with the voiceless c (lc) is missing. On the other hand, we know of the correspondence "Tab. rc: Ag., Lezg. c, Rut. s" (cf. Tab. *marc-ar* "clay stove for baking bread", Ag. Bursh. *mac* "fireplace", Lezg. *mac* "a clay shelf over the fireplace", Rut. *mas* "wall"). This correspondence does not allow us to reconstruct PL *rc (in such a case we would expect the preservation of r in Rutul and Lezghi, see below in the table of correspondences). Therefore, one can suppose that in this case we are dealing with the PL cluster *lc, whose development is quite symmetrical to the development of *lc: (i.e. a zero reflex of the resonant in Ag., Lezg. and Rut., but the preservation of the resonant in Tab.); in Tabasaran, however, the further change *lc > rc occurred. As a result of such reasoning, we can reconstruct a large number of PL combinations with the resonant *l, such reconstruction often being confirmed by the data of related Daghestan languages.

The same is true for some clusters with *-n-, where -n- has either disappeared or was denasalized and turned into -r-, and is reconstructed only on basis of system considerations.

Let us now give the system of correspondences of the reconstructed consonant clusters:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*rp			rp	p			p	p	p
*rt		rt		t	rt	rt	(r)t		
*rt:	t:	rd/d	rd	t:/rt:	d	d	d(r?)	d	d
*rṭ	rṭ	rṭ/ṭ	rṭ	(r)ṭ	ṭ	ṭ	(r)ṭ		(rd)
*rd	rd	rd	rd	rd	rd	rd			
*rc			rs(?)	rc	rc				
*rc:		rz/z	rž^{v}	z	z				
*rç	(nç?)	rç	rç	rç	ç	ç			
*rç:	rç:	rt:	rc:	rṭ		t:			c:
*rs	rs	rs/s	rs/s	rs/s	s		rs	rs	
*rs:	rs:		rs		s	s:			
*rč		rč	rč	rč/č	rč	rč			č
*rč:	č(/rč?)								žI
*rč̣		rč̣	rč̣	rč̣	rč̣		rč̣	rč̣	
*rč̣:	rč̣	rč:	rč:	rč̣	rč				č
*rš~lš		rš	rš						
*rƛ		rx	rš	rg	h				q
*rƛ:	ƛ	rg/r	rɣ	r	ɣ	ɣ	ɣ	j	ʁ
*rƛ̣	ƛ̣	rƛ̣			q̇			q̇	
*rƛ̣:	ƛ̣	rk:	rk:	ƛ̣/rƛ̣	k	k	k	k	q:
*rλ	λ	rf/rx	rx/rf	rx/rf	x				
*rλ:	λ:	rx	rx	rg/g	x				
*rk		rk	rk	rk/k	k		rk	rk	
*rk:	k:	g	rg	(k:)	g	g	g	g	(n)g
*rƛ̣	ƛ̣	rƛ̣	ƛ̣	rƛ̣	ƛ̣	ƛ̣	ƛ̣	ƛ̣	k:
*rq~lq?				rq			rq		
*rq̇	q̇	(r)q̇	rq̇	(rʁ)	q̇	q̇			q̇
*rq:~lq:		rʁ	rʁ						
*rq̇:	q̇:			rq̇	q:		rq		
*rχ:	χ:	rχ(rʁ)	rχ(rʁ)	rʁ(ʁ)				rʁ	
*rqI	l(rχ)	rqI							
*rq̇I	q̇I	rq̇I	(q̇I)		q̇I	q̇I	(r)q̇?		ʁ/h
*rq̇I:		qI:	rqI:	rq	qI		q		q:
*rχI		rχ	rχI	rχ/χ	χI	χI	rχ	rχ	
*lt	rt	t	rt			rt	lt		
*lt:	rt:	rd/d	rd	(t:)	d				(nt:)
*lṭ	rṭ				(ld?)	rṭ	ṭ	ṭ	
*lc		c	rc	c	s				
*lc:	c	z	lz	z	z	z	z	z	z
*lç			rç	ç					
*lč	š	rč	rč	rč	č	č	rč/č	rč	(č)
*lč̣	č̣	rč̣	(r)č̣	č̣	č̣	č̣	č̣	č̣	∅
*lč:	č	rǯ/lǯ	rž/lž	č:	ǯ	ž	č?		
*lš:	š:	rš	rž	š	š	š			čI
*lk	rk				rk(I)				
*lk:		lg/rg	rg	rg	rg	rg	rg	(rg)	k:

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*lḳ			rḳ	rḳ	rḳ	rḳ	(r)ḳ		
*lg/lg:	rk:		rž	rg					
*lq̇	(rq̇)	rq̇	rq̇	rq̇	(rq̇)	q̇?			
*lq̇:					lq	lq			
*lχ		rχ	lχ	lχ/χ	rχ	rχ			
*lχ:	rχ:		rʁ	rʁ			rχ	lχ	rχ
*lq̇I		rq̇I/rʔ	lq̇I/rq̇I	rq̇	rq̇I	rq̇I		q̇	
*nt		nt	nt	nt	nt	nt			
*nṭ	nṭ	nṭ	nṭ	nt(ṭ)	nṭ/ṭ	nṭ/ṭ	nṭ	nṭ	t:
*nd			nd	nd	nd		nd		
*nc:	c	nz/rz	rz	rc:					
*nç	ç		nç	nç					
*nč	nč/nž	nč/č	nč(č)	nč	nč		(n)č/nǯ	č/nǯ	(š)
*nƛ:	(ƛ)	j	rš/rž	k/ž	j	l	ɣ	j	ʁ
*nƛ̣:	nƛ̣	rk:	rk:		k	(k)	k	k	q:
*nλ(ʷ)		f	f	f	rxʷ	rx	f		
*nk	ng						k		
*nḳ	nḳ	nḳ	nḳ	nḳ	nḳ	nḳ	(n)ḳ	nḳ	
*mp	mp	p	mp	p	p	b	p/b	p	
*mp:	m	mb(b)	mb(b)	p:		b			
*mṗ		mṗ	mṗ	ṗ/mp					
*mt	nt	t(rt)			t				
*mṭ	nṭ	ṭ	(mč)	ṭ	(d)	ṭ	ṭ	ṭ	t:
*mc	ns	c(ʷ)	c	c	s	c			s
*mc:	(mz)	bz/wz	mz	kʷ:/cʷ:	ʒ	(ms)	z		z
*mç	mç/nç	(n)ç	(m)c:/ç	(n)ç	ç				
*mç:	mç:/nç:	tʷ:	čʷ:	rt	t	t(ʷ)	t	t	čI
*ms	(mu)s		šʷ						
*ms:			ms/ms:		s				
*mč	nš	č	č	č	č	č	č	č	šI
*mč̣	nč̣	č̣	č̣	č̣	č̣	č̣	č̣	č̣	
*mš	(mu)š	mš/šʷ		f	š	š			
*mƛ:			mš	w	j		w	w	
*mƛ̣	mḳ	mḳ/ḳ	mḳ/ḳ	q̇/ḳ			q̇	q̇	p:
*mq̇		q̇ʷ	mq̇		q̇				
*mχ	nχ	(mχ)	(mχ)	χ	χ				
*mχ:	nχ:			ʁ			χ		
*mq̇I		mq̇I	mq̇I						
*mk		bk	mk	k			k		
*mk:	bk	gʷ	mg				g	g	
*wλ		bx/šʷ	f	(ž)					
*wƛ̣	bḳ	ḳ/mḳ	wḳ		q̇	ḳ	q̇	q̇	p:
*wq:	bq	bʁʷ/ʁʷ	wq:	qʷ:	ʁʷ	ʁ	ʁ		ʁ
*wq̇	bq̇	q̇(ʷ)	q̇(ʷ)	q̇	q̇	q̇	q̇	q̇	p:
*wχ	bχ			χ					

Note: in the present table we show the combination reflexes of both PL labialized and non-labialized consonants; the behaviour of the resonant in the combination does not depend on the labialization of the following consonant.

1.8.1.7. The development of resonants in verbal roots.

1. The reconstruction of medial resonants in the PL verbal root is very much complicated by the following circumstances:

a) the resonant *r (sometimes *l as well, if develops into r by phonetic rules) can be reinterpreted as a class indicator; this process, for example, led to a nearly complete loss of consonant clusters inside the verbal root in Tabasaran;

b) the resonant *r (as well as *l, if it develops into r by phonetic rules) can be reinterpreted as the durative stem marker. This process is connected with the presence of three main types of conjugation in PL:

1) verbs without any resonant, neither in the durative stem nor in the terminative stem;

2) verbs without any resonant in the terminative stem, but with the infix -r-(possibly -rV-) in the durative stem;

3) verbs with a resonant (*r, *l or *w) in the durative stem as well as in the terminative stem.

We can properly talk about root resonants only concerning the last type of conjugation. However, in this type of conjugation the root resonant *r or *l could be reinterpreted as a durative marker and be lost in the terminative stem by analogy with the second type of conjugation. This process apparently took place in many Lezghian languages (except Agul).

[Let us note that from the historical point of view the proper "resonantless" roots are represented only in the second conjugation type; the first type of verbs in Proto-Daghestan probably contained the resonants -m-, -n-, lost in the PL verbal root. This explains, first, the fact that these roots do not accept the durative indicator -r-, second, that there are no combinations with the first component -m- or -n- in PL verbal root].

As a result of the shown processes medial resonants have been totally lost in Tsakhur.

In Tabasaran and Kryz resonants have been lost as well in most cases. Tabasaran preserves medial resonants only in some verbal derivatives (like *darš^{w}ul* "splinter" < *t:-ars^{w}:al,* though *kt-aš^{w}-uz* "to rip" < PL **ʔars^{w}:a,* cf. Arch. *ars:a-s* "to cut into pieces"), or in the case of a metathesis of -r- or -l- into the beginning of the root, mostly when the first root vowel is narrow (cf. **ʔirλ:ar* "to paint" > Tab. *rix-uz, *ʔilχan* "to work"> Tab. *liχ-uz,* etc.).

A similar metathesis is often observed in Agul, though in some dialects the old order may be preserved as well (cf. PL **ʔirq:är* "to freeze" > Rich. *ruʁ-as,* but Tp. *ürʕa-s;* PL **ʔirχ̣^{w}:är* "to kill" > Rich.,Tp. *ruk:as,* but Bursh. *urk:as;* PL **ʔilχan* "to work" > Bursh., Tp. *liχanas,* etc.). In other respects Agul is very conservative and preserves well the PL combinations with medial resonants (this conservatism is probably explained by the loss of the system of class agreement and, therefore, the arising possibility of mixing the medial resonant with the class marker in Agul).

In other Lezghian languages combinations with resonants inside the verbal root

generally developed in the same way as in the nominal one (though we must keep in mind the possibility of an irregular loss of the resonant as a result of the processes, described above).

2. Reconstruction of final resonants in the verbal root.

In final position verbal root resonants also develop differently from those in the nominal root. This condition is due to the fact that final consonants in certain verbal forms have a tendency to be reinterpreted as morphological markers (final -r and -l are mixed with the PL durative gerund suffix *-r, *-ri; the final *-n — with terminative gerund suffix *-na. We must take into account that these gerund suffixes could apparently already form certain finite verbal forms in PL and were quite frequent).

Final resonants in verbal roots are completely lost in Tabasaran, Rutul and Udi (according to [Ibragimov 1978] the Borchin-Khinov dialect of Rutul still preserves the traces of PL final resonants, but we do not possess any data from this dialect). Other languages have the following reflexes of PL *-r, *-l and *-n (no other resonants occurred in PL verbs in this position):

1) Archi. Here PL final *-l and *-n have merged in one -n-conjugation. Cf. PL **ʔeχan* "to forget" > Arch. *eχin- (eχmus);* PL **jeṭal* "to bind" > Arch. *eṭin-* (*eṭmus*), etc. The merger of *-l and *-n-conjugations in Archi (as well as in Agul, see below) was caused by the rarity of -l-conjugation roots and by a formal resemblance between the -l and -n-conjugations, manifested in the presence of the durative infix -l- in both of them (as opposed to -r-, present in the -r-conjugation and in roots without a final resonant).

PL *-r is lost in Archi bisyllabic roots (cf. PL **jatär* > Arch. *ati-s* "to let, to leave"), but preserved in monosyllabic roots (that have lost the PL vowel *i-, see below), cf. **ʔič:ar* "to fry" > Arch. *čar-as*, etc. However, there are cases when -r in monosyllabic roots is reinterpreted as a durative marker and consequently lost in the terminative forms (cf. PL **ʔiçar* "to melt" > Arch. *ça-s*, representing an adequation based on durative *çar*, etc.).

2) Agul. In Agul proper and in the Koshan dialect the *-l and *-n-conjugations have merged into a single -n-conjugation; in other dialects the n-conjugation is already lost. Cf. PL **jeṭal* "to bind" > Bursh. *i-l-ṭan-as,* Tp. *iṭan-as,* Rich. *iṭ-as;* PL **ṭ-iš:Vn* "to knead" > Bursh., Tp. *ṭišan-as,* Rich. *ṭiš-as.* In a single case the Koshan dialect preserves the final -l, cf. PL **ʔiʔʷäl* "to eat" > Bursh. *ʔüṭal-as* (*-d-ʔ-), but Tp. *ʕuṭan-as,* Rich. *ʕüṭ-as.* In some cases in the dialect of Agul proper the old *-n disappears (on the other hand, sometimes a resonantless verb can obtain the n-conjugation in this dialect), which is probably caused by morphological analogy.

All Agul dialects have lost the PL *-r-conjugation.

3) Lezghi. Here the final resonants -n and -r are only preserved sporadically. For *-n cf. PL **ṭiš:Vn* > Lezg. *ṭušun-iz* "to knead, rub"; PL **ʔalcʷ-an* > Lezg. *alcum-iz* "to measure" (< **alcʷan-iz* with a metathesis of labialization) and a few others. PL *-r can be preserved only in roots with the PL narrow initial vowel *i, lost in Lezghi (see below), and only in preverbless forms. Cf. PL **ʔilqIar* > Lezg. *qür-ez* "to laugh"; PL **jiçʷar* > Lezg. *çur-az* "to melt" (but with a preverb: *el-eç-iz* "to melt (metaphorically); be very content", etc. In most cases, however,

Lezghi has lost the final -r and -n; the final *-l has been lost completely.

4) Tsakhur, Kryz and Budukh.

In Tsakhur and Kryz, PL final *-r, *-l and *-n are preserved best of all. Budukh has preserved PL *-l and *-n well; as for the -r-conjugation, it has merged with the resonantless conjugation (therefore, both PL roots with the final -r and PL roots with a vocalic ending have at the present time an identical paradigm in Budukh).

In one type of cases Tsakhur loses the final -r: in roots with the structure *ʔi(R)Car, obtaining the vowel e in Tsakhur (< PL ablaut grade *ä, see below). Cf. PL **ʔič:ar* "to fry" > Tsakh. *q-eǯes* (vs. Lezg. *č:ra-z,* Kryz *ǯir-äǯ,* Arch. *čar-as*); PL **ʔiχar* "to weave" > Tsakh. *q-eχas* (vs. Lezg. *χra-z,* Kryz *χɨr-iǯ,* etc.). At the present time it is hard to determine the reason for such a development of this structure in Tsakhur.

Except this regular type, we occasionally observe the loss of *-r and *-n in Tsakhur and Kryz. Cf. PL **ʔirq:er* "to freeze" > Tsakh. *h-iʁar-as,* but Kryz *s-aʁ-uǯ;* PL **ʔiχ̣:an* "to want, to love" > Tsakh. *ɨk:an-as,* but Kryz *ik-äǯ;* PL **ʔ[e]χan* "to hang" > Kryz *k-eχn-iǯ,* Tsakh. (Tsakhur proper) *giwajχan-as,* but Mik. *ǵɨw-aχ-as.* However, these cases are very rare. Normally the evidence of Tsakhur and Kryz is most valuable for reconstructing the PL final resonants in verbal roots.

1.8.2. Vocalism.

For PL we reconstruct a 7-vowel system with three rows (front, mid and back) and three heights (high, mid and low). In the front and back rows all three degrees of height are filled (in the front row: i, e, ä; in the back row — u, o, a). The mid row is defective and represented by a single vowel ɨ, that could probably vary between high and mid.

All vowels could also be pharyngealized (iI, eI, äI, ɨI, uI, oI, aI); usually these vowels occurred adjacent to postvelar pharyngealized consonants, but they were possible in other positions as well. We should note that high pharyngealized vowels are extremely rarely met without adjacent postvelar pharyngealized consonants.

Below we give the system of vocalic correspondences between Lezghian languages. In this table we give only the reflexes of vowels without adjacent labialized consonants (and for pharyngealized vowels — also without adjacent postvelar pharyngealized consonants). Moreover, we will only list the reflexes of vowels in monosyllabic nominal roots, where there is no influence of other vowels. Unfortunately, it is hardly possible to examine all the positional modifications of PL vowels in each Lezghian language in this work. Therefore in this commentary we omit almost everything related to the development of vowels adjacent to labialized consonants, as well as to the modification of vowels in polysyllabic words. Nor will we examine the development of pharyngealized vowels near pharyngealized consonants. We hope to deal with all these questions in a special publication.

PL	Arch	Ag	Tab	Lezg	Rut	Tsakh	Kryz	Bud	Ud
*i	i	i	i	i	i	i	i	i	i
*iI	i	i	e/i	i	i	ɨI/e	e/i	i	?
*e	e/a/i	e/i	e/i	e	i	e	e	e	i
*eI	?	i	e	i	i	?	e	?	?
*ä	a/e	e/i	i	e	ä	e/a	ä/a/e	ə/e	e/a
*äI	aI	e/i/aI	aI/i	e/i	ä	e	e	e	e/a
*ɨ	o	i	i	i	ɨ	ɨ/i	i	i	u
*ɨI	oI	?	(i)	(i)e	?	?	i	e	?
*u	u	u	u	u	u	u	u/ɨ	u	u
*o	o	u	u	u/ɨ	ɨ	ɨ	ɨ	u/ɨ	o/u
*oI	oI/o	uI/u	uI/u	u/i	ɨI/i	ɨI	(i)	ɨ	u
*a	a/o	a	a	a	a	a	ä/a/e	a/e	a
*aI	aI/a	aI/ä/a	aI/a/e	a/e	ä/a	aI/a	e/a,ä	e/a	(a)

Comments

1. PL *i.

This vowel is usually well preserved in Lezghian languages, but appears to be rather unstable if it is adjacent to labialized consonants (the most frequent modification in this position is the labialization i > u, but shifts in height occur as well: e.g., a regular shift i > a after labialized back consonants in Lezghi).

2. PL *iI.

The independent (i.e. not adjacent to a pharyngealized consonant) pharyngealized *iI is extremely rare in PL. We know of only two roots (in both cases there is a labialized hushing consonant before *iI): **ç̣ʷiIm:* "span" and **čʷiIl-* "blue, green". We should note that in the root "span" all the languages except Archi and Rutul (Arch. *ç̣ʷim,* Rut. *ç̣ub*) reflect a non-labialized variant **ç̣iIm:,* which probably appeared as a result of dissimilation with the final labial consonant.

3. PL *e.

This vowel is preserved without changes in the Lezghi, Tsakhur, Kryz and Budukh languages. In Rutul and Udi, as well as in the Fite dialect of Agul and in the Northern dialect of Tabasaran the reflex is a narrow i (other Agul dialects and the Southern dialect of Tabasaran usually preserve the wide e). In Archi the narrowing e > i, judging by the few examples available, occurs near the resonant l (cf. PL **leʔ* "skin" > Archi *ili;* PL **hIel* "steam, breath" > Arch. *hil*). On the contrary, in some cases PL *e > Arch. a (cf. **ceh* "goat" > Arch. *caj; *melc:* "tongue" > Arch. *mac*); this is possibly connected with the presence of a hissing consonant near *e. In other cases Archi, too, preserves the vowel e.

In the case of adjacent labialized consonants the vowel *e, as well as *i, can be affected by various modifications. In Archi and Tsakhur the most typical development is *e > o, and in other languages *e > u (in Kryz and Budukh, depending on the consonant environment, a secondary delabialized reflex, ɨ, may appear as well).

4. PL *eI.

The positionally independent pharyngealized *eI, just like *iI, is very rare in PL. It is reconstructed in the roots **p:eIšʷ:-* "deaf" (cf. Ag. *buIrše-f*), **ç̌ʷeIl* "willow" (cf. Ag. dial. *çuIl*) and **meIrʎ* "deer". In the latter root pharyngealization as such is not preserved in any language, but some specific features of the vowel development (e.g., the narrow i in the Lezghi form *mirg* — a reflex, typical for *e in position near uvular pharyngealized consonants) make the reconstruction of *eI in this root probable.

5. PL *ä.

This phoneme is best preserved in Rutul, where it always yields the reflex ä. In other languages we observe various reflexes:

a) in Archi — front e near back consonants, but back a in other cases (cf. PL **läk-* > Arch. *lek:i* "bone", but **ʎ̣:äl* > Arch. *ʎ̣al* "lamb", etc.);

b) in Agul *ä and *e have merged; thus, in the Fite dialect the reflex is i, while other dialects have e;

c) in Tabasaran in all dialects the normal development is *ä > i. We must note that the reflexes of *ä and *i are not completely indistinguishable: in the Northern dialect after the reflexes of lateral consonants, PL *ä yields a wide reflex a, while *i is preserved: cf. **ʎ̣:äl* "lamb" > Düb. *ǯal,* but **ʎ̣:imč̣* "fear" > Düb. *giči* (the lack of affrication **ʎ̣:* > *ǯ* in the second root is probably caused by dissimilation with the next hushing consonant).

d) in Lezghi, as in Agul, the reflex of *ä has merged with the reflex of *e, i.e. usually in all dialects *ä > e;

e) in Tsakhur the most frequent reflex of PL *ä is e. The wide reflex a is observed if there was a resonant n, l or a lateral fricative (> Tsakh. x) before a, in which case the mentioned consonants become palatalized. Cf. PL **ʎ̣:äl* > Tsakh. *gew* "lamb", PL **s:än* > Tsakh. *sen* "year", but PL **näwʎ̣* > Tsakh. *ńaḳ* "dream", PL **läχa* > Tsakh. *Ɫaχa* "bracelet", PL **λ:än:* > Tsakh. *ɣan* "water", etc. The Gelmets dialect has an ä/e variation where Tsakhur proper and Mikik dialects have e.

f) in Kryz PL *ä gives three types of reflexes: back a before r (cf. below on the specific reflexes of *a in this position); e before l, hushing consonants and consonants, going back to PL laterals (i.e. before phonetically palatal or easily palatalized consonants); and ä in other cases. Cf. PL **c:är* > Kryz *ʒar* "cow"; PL **ʎ̣:äl* > Kryz *kel* "lamb"; PL **λ:än:* > Kryz *xäd* "water", etc.;

g) Budukh usually has the reflexes e or ə; e is observed in cases when Kryz also has e (cf. Budukh *kel* "lamb" with Kryz *kel* < PL **ʎ̣:äl*), and ə is observed when Kryz has a and ä (cf. Bud. *zər* "cow" < PL **c:är;* Bud. *xəd* "water" < PL **λ:än:,* etc.);

h) the most frequent reflex of PL *ä in Udi is e. In two cases we observe the reflex a: PL **ʎ̣:äl* "lamb" > Ud. *q:al;* PL **mä[rʎ]* "handful" > Ud. *maχIa* (although the latter etymology is somewhat dubious). In both cases *ä is adjacent to lateral affricates, but it is not clear whether this was the reason for a specific development of the vowel in these roots (the data is insufficient).

Being adjacent to labialized consonants, PL *ä is somewhat more stable than

the higher *e and *i, but it can also be subject to various modifications (e.g., it can be labialized and develop into o or u).

6. PL *äI.

Without adjacent uvular pharyngealized consonants the vowel *äI is reconstructed in a very small number of roots (still it is more frequent than *iI and *eI): **näIχ̣:* "milk", **č̣:äIm* "butter", **λ:äIm-* "liquid", **päIč̣-* "light" and possibly in a few more. Pharyngealization is preserved in Archi, Agul (in all dialects except Fite) and Tabasaran (Northern dialect) (on Tsakhur see below). In Agul and Tabasaran the preservation of pharyngealization requires the presence of a labial consonant adjacent to *äI (therefore, in the root **näIχ̣:* "milk" neither of these languages preserve pharyngealization); even if the labial is present, pharyngealization may still disappear in an unaccented syllable. In the same position pharyngealization is preserved in Tsakhur, judging by the form *xiImaI-n* "liquid" — probably a reduction < **x́aImaI-n* < **λ:äIm-*.

As for the qualitative development of PL *äI, we must say that when pharyngealization is preserved, the reflexes of *äI merge with the reflexes of *aI (see below), and in case of its loss — with the reflexes of *ä (see above).

7. PL *ɨ.

This vowel is preserved in Rutul and, though somewhat worse, in Tsakhur (there *ɨ develops into i near hissing and hushing consonants; ɨ can be sporadically preserved in this position only in the Gelmets dialect, and in the root *sɨ́wa* "mountain" (PL **sɨ́wa*) in all Tsakhur dialects; the vowel in this root behaves not quite regularly in other languages as well). In the Agul, Tabasaran, Lezghi, Kryz and Budukh languages, *ɨ has been fronted and has developed into i (the vowel ɨ, present in Lezghi dialects, Kryz and Budukh, has another source, see below). In Archi and Udi *ɨ was subject to a secondary labialization (Arch. o, Ud. u).

If adjacent labialized consonants are present, the vowel *ɨ turns out to be extremely unstable and most often develops into u (some other modifications of *ɨ also occur in this position).

8. PL *ɨI.

An independent pharyngealized *ɨI may be reconstructed only in one root: PL **pɨ́Imp/*ṗɨ́Imṗ* "knee, corner" (cf. the pharyngealization in Archi *poImp*). Though this root preserves pharyngealization only in Archi, some specific features of reflexation (e in the Akhty form *ṗeṗ* while the literary Lezghi has *ṗiṗ;* e in Budukh *pep;* lack of labialization *ɨ > u in Kryz *pip* — PL *ɨ before labial consonants is usually reflected as u in Kryz) confirm the reconstruction of a specific PL phoneme here.

9. PL *u.

This vowel is well preserved in all Lezghian languages (except near hushing consonants, where it is often fronted and delabialized). We must specially note the development of *u in Kryz and Budukh. In Kryz u is preserved only near back consonants; near hushing consonants and laryngeals, as well as after some fricatives

(lateral and uvular) *u > i; in other cases *u is reflected as ɨ. In Budukh, reflexes of the third type are unknown (because of the lack of data), and in the first two cases, reflexes are the same as in Kryz. Cf. **q̇ula* "board" > Kryz, Bud. *q̇ul; *ruk:* "dust, earth" > Kryz, Bud. *rug; *č̣un:* "flea" > Kryz., Bud. *č̣id; *ruš:* "girl, daughter" > Kryz. *riš,* Bud. *riž;* PL **ṭur* > Kryz *ṭɨr* "pimple"; PL **rup:* > Kryz. *rɨb* "needle", etc.

The pharyngealized correlate of PL *u is attested only near uvular pharyngealized consonants; therefore, an independent phoneme *uI is lacking in PL.

10. PL *o.

The original vowel *o has been preserved only in Archi (possibly also in Udi, where, however, in addition to o we observe the reflex u, and sometimes even a — there is not enough evidence to establish the distribution between these reflexes). In Tabasaran, Agul and the Northern dialects of Lezghi (as well as in literary Lezghi) PL *o has narrowed and merged with *u, so that the reflexes of *o and *u are completely identical in the mentioned languages. In Rutul and Tsakhur, as well as in the Central and Southern dialects of Lezghi, the vowel *o has been delabialized and has developed into ɨ (however, it has completely merged with the original *ɨ only in Rutul; in Tsakhur and Lezghi the original *ɨ — in Tsakhur at least in some positions, and in Lezghi in all cases — has fronted and developed into i even earlier, see above). In Proto-Shakhdag (the proto-language of Kryz and Budukh) PL *o has developed into *ɨ near back consonants, but has preserved labialization and developed into *u near front consonants. This situation is preserved in Budukh; in Kryz the further delabialization *u > ɨ occurred adjacent to front consonants (that affected PL *u as well, see above). Thus, in Kryz PL *o is most often reflected as ɨ (except some modifications near hushing and lateral fricatives). Cf. PL **ƛ̣:ola* > Kryz *kɨl* "arm", Bud. *kɨla* "shoulder"; PL **moƛ̣:or* > Kryz *mɨgɨr,* Bud. *jumur* "wooden ladder"; PL **ṭona* > Kryz *ṭɨn,* Bud. *ṭun* "trough", etc.

11. PL *oI.

The independent pharyngealized *oI is reconstructed in several roots: **s:oIla* "fox", **poIr-* "saddle", **t:oIt:-* "larynx, gullet", **s:oIl* "rye" (in the latter root we should probably reconstruct a variation oI~o, as well as in the root **qI:ol* ~ **q:ol* "wheat"). This vowel preserves pharyngealization in Tsakhur, somewhat more poorly — in Archi, Agul and Rutul, where independent pharyngealization is at present inadmissible near hissing consonants. We should note that the pharyngealized ɨI in the Rutul form (Khn. *pɨlpɨlr* "saddle" < PL **poIr-*) is the only case of preservation of independent pharyngealization in Rutul known to us. In other languages pharyngealization of *oI has not been preserved, but the reflexes of *oI are somewhat different from the reflexes of the plain *o in quality. A detailed examination of the reflexes of *oI is, unfortunately, impossible in this book.

12. PL *a.

This vowel is well preserved in all languages, and it is less subject to

positional modifications than other vowels. In particular, the vowel *a is usually well preserved adjacent to labialized consonants, where other vowels (especially *i, *e) are very unstable. We should specially note the following features of the development of PL *a:

a) in Archi, besides the usual reflex a, in some cases we observe the reflex o. The development *a > o occurs regularly in the case of metathesis in the structure *CV, cf. PL *ṣaj > *ṣa > Arch. *oç* "fire"; PL *s:a > Arch. *os* "one"; PL *λ:aj > *λ:a > Arch. *oλ* "wool", etc. (Such metathesis in the *CV structure also occurs if other vowels are present in this structure, cf. PL *χuj > *χu > Arch. *uχ* "field", etc., but other vowels do not modify their quality in the case of metathesis). The reflex o is also present in Archi as a result of the transfer of labialization from a following lateral consonant (cf. *$marλ^{w}$ > Arch. *moλ* "foam"). There are also individual cases of the correspondence "Arch. o : a in other Lezghian languages", even if the conditions mentioned above are not met (cf. PL *dagij* "donkey" > Arch. *dogi;* PL *t:alk:- "(eye)lid" > Arch. *dorki*), but we do not consider it necessary to reconstruct a specific PL vowel in this case (first of all, because the there are very few examples and because only Archi has a specific reflex here).

b) in the central dialects of Lezghi (e.g. in Akhty) two a-type vowels are observed: a more open a and a closed a. Both of these vowels correspond to the vowel a of other Lezghian languages. We do not exclude the possibility of a prosodic origin of this difference in Lezghi; however, this problem requires special examination.

c) in Kryz PL *a has a triple reflection: a, e and ä. The first reflex is present after all uvular consonants except q̇- and after the emhatic laryngeal ʕ- (cf. PL *χal > Kryz *χal* "roof, ceiling"; PL *hIamχ̣ "sweat" > Kryz *ʕaq̇,* etc.); before the uvular -ʁ, as well as before the resonants -r, -w (in the latter case there can be a development a > o before -w), cf. PL *čaʁa > Kryz *čaʁ* "jackdaw", PL *maq: > Kryz *maʁ* "ploughshare", PL *wiraq: > Kryz *wiraʁ* "sun", PL *t:ar > Kryz *dar* "tree", PL *c:aw > Kryz *ʒaw* "sky" (Al. *zow*), etc. The second reflex (e) is present after hushing consonants and j-, cf. PL *čal: "tongue, word" > Kryz *čel;* PL *č:ar > Kryz *šer* "cream"; PL *jaχ̣: "meat" > Kryz *jek,* etc. The same reflex is present in Kryz *eb* "wolf" < PL *ʔIam:* (i.e. after the laryngeal *ʔI-). In all other cases PL *a yields Kryz ä, cf. PL *ṣaj > Kryz *ṣä* "fire"; PL *k:aš > Kryz *gäš* "famine"; PL *χ̣an > Kryz *q̇än* "bottom"; PL *raχ̣:a > Kryz *räk* "door", etc.

d) in Budukh after hushing consonants and j- we observe the reflex e, the same as in Kryz (cf. *čel* "tongue, word", *jek* "meat", etc.). In other cases Budukh usually has the reflex a, though we may sometimes meet ə. The distribution of the two latter variants still requires some additional examination.

13. PL *aI.

This is the most frequent of PL pharyngealized vowels. It preserves its pharyngealization in Archi, Agul (in the Keren and Burkikhan dialects), Tabasaran (Northern dialect) and Tsakhur. The presence of adjacent labial consonants is favourable for the preservation of the pharyngealization of *aI. If this condition is missing, pharyngealization can disappear in the mentioned languages as well (we will not go into details of the disappearance or preservation of pharyngealization here). The loss of pharyngealization often leads to the fronting *aI > ä,

and, further, ä > e; therefore, the reflexes of *aI are easy to distinguish from the reflexes of PL *a, even if pharyngealization is not preserved in descendant languages.

1.8.2.1. The development of vocalism in verbal roots.

In PL verbal roots the set of vowels was smaller than in nominal ones; first, there were no narrow vowels *ɨ, *u; second, there were no independent pharyngealized vowels. Therefore, in the first syllable of PL verbal roots we only meet the vowels *i, *e, *ä, *o and *a. Their reflexes generally coincide with their reflexes in nominal roots, though there are some differences. Let us relate the most important ones:

1. Since most PL verbal roots are bisyllabic, the vowel of the first syllable is often reduced or modified under the influence of the following vowel. This is most obvious in Budukh, where the system of vowels of the first syllable in verbal roots has been totally rebuilt under the influence of the vowels of the second syllable.

The only PL narrow vowel allowed in the first syllable of the verbal root, *i, is very often subject to reduction and may disappear completely. This process (*i > ∅), facilitated by the fact that the initial vowel of PL verbal roots was usually preceded by a laryngeal (most often *ʔ-), which in this case disappeared itself, led to a total loss of initial i- in verbal roots in Archi (cf. *ʔič:ar- "to roast" > Arch. *čara-s;* *ʔiƛ:ɨ- "to give" > Arch. *ƛo-s,* etc.). In Archi i- is preserved only in a few roots with a medial combination of consonants (like *ʔilχan "to work" > Arch. *irχ^{w}mus*). Sporadic cases of the same development are present in Tabasaran and Agul, very rarely — in Rutul, Kryz and Budukh. The only language, in which *ii*s never reduced, is Tsakhur.

This tendency to reduce the vowel of the first syllable has reached its maximum in the Lezghi language, where in preverbless forms all PL vowels except *a are reduced. Cf. PL *ʔič:ar- "to roast" > Lezg. *č:ura-z;* PL *ʔec:a- "to pour" > Lezg. *c:a-z;* PL *ʔäχa- "to break" > Lezg. *χa-z;* PL *ʔot^{w}:a- > Lezg. *t^{w}:a-z* "to shave"; but PL *ʔac:a- > Lezg. *ac:a-z* "to milk", PL *ʔaṭ^{w}ɨ- > Lezg. *aṭu-z* "to tear, to cut", etc.

2. In the PL verbal system there was a productive system of ablaut (see below). Often a certain grade of ablaut spread over the whole verbal paradigm in descendant languages. As a result of this, regular vowel correspondences in verbal roots can be violated.

There are some more specific features of the reflexation of PL vowels in verbal roots in separate Lezghian languages, but their detailed examination is impossible in this work.

1.8.2.2. Ablaut.

Many nominal and verbal roots in modern Lezghian languages reveal paradigmatic vowel alternations, not conditioned by position (ablaut). Since these alternations, as a rule, correspond to each other in different Lezghian languages, it seems possible to trace them back to Proto-Lezghian.

1.8.2.2.1. Nominal ablaut.

Vowel alternations are only observed in roots with the structure CV(R)C(V). One should probably reconstruct the following types of ablaut for PL:

1. *a/*o.

This type of ablaut is comparatively rare. It is directly reflected in a very few Tabasaran and Agul paradigms of the type Tab. *χal* "house" — loc. *χula*ʔ, pl. *χular* "house", Ag. *χal* — erg. *χula,* pl. *χular* (PL **χal,* obl. stem **χola-*). In Rutul this type of ablaut gave rise to the paradigm *ɣal* "mouth" — erg. *ɣɨlir* (PL **ƛ:al,* obl. stem **ƛ:olV-*); however, in most cases the ablaut type *a/*o in Rutul has been mixed with the more widespread type *ä/*i (see below), as a result of which paradigms like *jak* — erg. *jigɨr* "meat", *rat* — erg. *ridir* "threshing-floor", *rak* — erg. *rigir* "door" appeared.

The PL ablaut *a/*o should apparently be reconstructed in the paradigm **ҫaj* "fire" — obl. stem **ҫojɨ-;* cf. Lezg. lit. *ҫaj* — erg. *ҫu,* Khl. *ҫaj* — erg. *jɨҫɨ* (metathesis < **ҫɨjɨ-*); Rut. *ҫaj* — erg. *ҫɨ-r;* Kryz *ҫä* — erg. *ҫɨ-r.* (The Tabasaran and Agul forms in this case reflect a contraction of the oblique stem: Tab. *ҫi-,* Ag. *ҫi-*).

Traces of *a/*o ablaut may be found in some adjective roots. Cf. Arch. *ġIas-kes* "to get tired", Rut. *ġIas-dɨ* "old", Tsakh. *ġIas:ɨ-n* "old" < PL **ġIas:-,* but Ag. *ġIuse-f,* Lezg. *ġüzü,* Kryz *ġusä* "old" < PL **ġIos:-,* and some others.

The main vowel in this type of ablaut is always *a, replaced by *o in the oblique stem; no inverse correlation has been discovered (i.e., nouns with *o in the direct stem never replace it with *a in the oblique one).

2. *ä/*i.

This type of ablaut is attested in Rutul, Tsakhur and Kryz; at the present time it is no longer productive, and paradigms with this alternation reveal a strong tendency towards unification. In other languages traces of this ablaut seem to have been lost (the Agul (Koshan) paradigms of the type *neṭ* "nit" — obl. stem *niṭani-,* pl. *niṭ-ar* can be explained by the narrowing of e > i in a preaccented syllable; see above on the development of *ä in Agul).

For Rutul, Tsakhur and Kryz cf. the following cases of *ä/*i:

PL **ћämč* "apple", obl. stem **ћimča-;* Rut. *äč,* erg. *ič-ir-.*

PL **ƛ:äl* "lamb", obl. stem **ƛ:ila-;* Rut. *gäl,* erg. *gil-ir-ɨr;* Kryz *kel,* erg. *kili-ǯ.*

PL **ġäl* "salt", obl. stem **ġila-:* Rut. *q:äl,* erg. *ġilir;* Kryz *ġel,* erg. *ġiliǯ.*

PL **räġI:* "road", obl. stem **riġI:ɨ-:* Rut. *raqI,* erg. *riqI:ɨr* (the backward shift of pharyngealized *äI, *iI is regular in Rutul); Tsakhur dialectal paradigms with different directions of unification also indirectly reflect ablaut — cf. Tsakh., Mik. *jaqI,* obl. stem *jaqI:ɨ-* vs. Gelm. *jɨqI, jɨqI:a-.*

PL **c:är* "cow", obl. stem **c:ira-:* Rut. *zär,* erg. *zirɨr;* Kryz *ʒar,* erg. *ʒɨrɨǯ* (apparently an adequation of vocalism < **ʒirɨǯ,* or else a transition into the

ablaut type *a/*o as a result of the development *ä > a in the direct stem).

PL *λ:äm:- "nail", obl. stem *λ:im:-: Rut. *xäb,* erg. *xibɨlɨr* (a rather obscure development in Tsakh. Mik. *xɨwna,* Gelm. *xɨbɨna*).

PL *λ:än: "water", obl. stem *λ:in:ɨ-: Rut. *xäd,* erg. *xijir;* Tsakh. Mik., Gelm. *ɣan,* obl. stem *xine-,* Gelm. *ɣan,* obl. stem *xini-;* Kryz. *xäd,* erg. *xižiž.* The uniform presence of the vowel i in oblique stems of Tabasaran (Düb. *šit:i-,* Kand. *št:u-* < **šidu-*), Agul (Rich. *xit:a-,* Bursh. *š:iri-,* Fite *xit:i-*) and Lezghi (Khl. *jic:i,* lit. *c:i* < **jic:i*) should be most probably considered a reflection of the same ancient ablaut.

PL *näIʎ: "milk", obl. stem *niIʎ:-; Tsakh. Mik. *ńak,* obl. stem *nik-ne-.*

PL *näq^{w} "chaff": Tsakh. Mik. *ńaq^{w},* obl. stem *ńuq-ne-* (< *niq^{w}-ne-).

PL *näwʎ "dream", obl. stem *niwʎ[a]-: Tsakh. *ńaḳ,* obl. stem *niḳɨ-.*

PL *mä[rʎ] "handful", obl. stem *mi[rʎ]-: Kryz *mek,* erg. *mikiž.*

PL *χ:äl "burden", obl. stem *χ:il-: Kryz *χel,* erg. *χiliž.*

It is not to be excluded that the ablaut *ä/*i can explain some cases in Agul and Tabasaran when, in the place of PL *ä, we find reflexes of *i. Cf. PL *λ:äl: "track" > Ag. Rich., Burk. *xil* (instead of **xel*), Bursh. *š:il* (instead of **š:el*), Tab. Khür. *š:il* (instead of **š:al*) — cf. regular forms — Lezg. *gel,* Rut. *xäl.* Cf. also the Kryz doublet *xel* "track" — *xil* "furrow", apparently representing the "split" of a single old paradigm "dir. stem *λ:äl: — obl. stem *λ:il:a-"; apparently, the Agul and Tabasaran forms, given above, are explained by an adequation to this oblique stem. A similar adequation probably explains Ag. Tp. *χil* "wing" (instead of **χIal* < PL **χäl,* cf. Tab. *χil* "sleeve", Lezg. *χel* "branch; sleeve"; Kryz *χel-xäž* "sleeve"); Ag. Rich. *nirX̀* "spelt" (instead of **nerX̀* < PL **närχI^{w}-,* cf. Lezg. *neχ^{w},* Rut. *naχI^{w},* Tab. *nurχI*), and some other cases.

3. Other types of ablaut.

In Archi and Kryz a small number of nominal roots reveal vowel alternations that cannot be traced back either to *a/*o or to *ä/*i. We mean the Archi ablaut a/e in cases like *naq̇^{w}* "earth" — erg. *neq̇^{w}i* (PL **näq̇^{w};* the form *neq̇^{w}i* cannot go back to the PL oblique stem **niq̇^{w}-,* on which, see above) and the Kryz ablaut e/i in cases like *mez* "tongue" — obl. stem *miz-* (PL **melc:;* other languages do not point to the existence of an ablaut type *e/*i).

Both of these phenomena are probably local innovations. The alternation a/e in the place of PL *ä in Archi should perhaps be explained by an old positional development *ä > e before front vowels of the next syllable. (Thus it turns out that nominal Archi roots do not reflect any PL ablaut at all; all Archi paradigms are adequated to the direct stem). The Kryz ablaut e/i in the place of PL *e has probably appeared by analogy with e/i < PL *ä/*i already after the merger (in some positions, see above) of the reflexes of PL *e and *ä. In any case, by now we do not possess any data that could serve as an argument for the archaism of the Archi and Kryz evidence.

1.8.2.2.2. Verbal ablaut.

In verbal roots, as well as in nominal ones, some Lezghian languages reveal vowel alternations (ablaut) in the 2nd position. We can reconstruct two main types of ablaut:

1. *i/*ä/*ɨ.

This type of ablaut is reflected in Archi, Rutul, Tsakhur and Kryz. Cf. in Archi (where *i- > Ø-, see above):

kar-as "to lead, to accompany" — dur. *orkir,* term. *oka* (*i/*ɨ)

χ:e-s "to carry" — dur. *orχ:ir,* term. *oχ:a* (*i/*ɨ)

qIe-s "to go" — dur. *orqIir,* term. *oqIa* — *herqIa-s* "to walk" (*i/*ɨ/*ä) (cf. also *qIa* — term. from *aƛis* "to come")

ƛo-s "to give" — *oƛa-s* "to sell" (*i/*ɨ)

ƛummus "to pull" — *oƛmus* "to (be) pulled(ed) out" (*i/*ɨ)

ġa atis "to seat smbd." — *oġi-s* "to mount (a horse)" — *eġi-s* "to be, to exist" (*"to sit", cf. also *ġeIġi-s* "to sit" < **ġaI eġi-s*) (*i/*ɨ/*ä)

šeI-s "to start running" — *heIršaIs* "to run" (*i/*ä)

čʼu-bus "to enter" — *ačʼa-s* "to hide" (*i/*ä)

In Rutul:

k-uč^{w}a-s "to begin" (*-*ič^{w}e-*) / *k-äč^{w}a-s* "to begin; to enter" (*-*äč^{w}a-*) — cf. the Archi pair *čʼu-bus/ ačʼa-s* (*i/*ä)

h-iġa-s "to be ripe" — *l-ä-j-ġa-s* "to mature" (*i/*ä)

jiġe-s "to die" — term. sg. *jiġi-r,* but pl. *l-ɨrġɨ-r* (*i/*ɨ)

s-uq^{w}a-s / *s-iq^{w}a-s* "to sit" — a parallel plural form *s-ɨlqIa-s* (vs the more common *s-ulq^{w}e-s*) (*i/*ɨ)

In Tsakhur many verbs with the root vowel i reveal the alternation i/e (i in the terminative stem, e in the durative stem), developed from PL *i/*ä. Cf. *ʔičʼ-es* "to enter" — dur. *ʔečʼe; al-iš:-es* "to buy" — dur. *il-eš:-e; q-ikʼ-as* "to die" — dur. *q-ekʼ-a; h-iχ^{w}-as* "to run away" — dur. *h-eχ^{w}-a; al-ik:-as* "to make smbd. do smth." — dur. *il-ek:-a,* etc. Traces of the grade *ɨ in Tsakhur verbal paradigms are hard to discover (cf., however, the paradigm: *ixe-s* "to become, to be born" — dur. *exe* — term. *ɨxa*).

In Kryz many verbs with PL root *i replace it with ä (*xij-iž* "to be" — imp. *s-äx; ġäj-iž* "to die" — imp. *s-äġ; kur-iž* "to stab" — imp. *s-äkɨr; žir-iž* "to roast" — imp. *s-äžir,* etc. Traces of the grade *ɨ in Kryz are hard to discover because of the merger of the reflexes of PL *i and *ɨ (see above).

All this evidence allows us to suppose that in the paradigms of verbs with the root vowel *i in PL, the vowel *i characterized the infinitive and terminative stems, while the vowel *ä characterized the durative stem.

This situation is well preserved in Tsakhur. In Archi this semantic opposition is seen in "split" paradigms, cf. *šeI-s* "to start running" — *heIršaI-s* "to run" (cf. also the terminative form of *šeI-s* — *šaI*); *qIe-s* "to go" — *herqIa-s* "to walk" — *qIa* "has come" (at present *qIa* is already part of another, suppletive paradigm of the verb *aƛi-s* "to come").

The meaning of forms with the grade *ɨ is harder to determine. We should probably start from Rutul evidence, where in a few cases the forms with ɨ are used in the plural (both in durative and in terminative). In Archi this usage is lost, and

forms with o (< PL *ɨ) have either supplanted other forms of the durative and terminative (cf. the terminative *oqIa* from *qIe-s,* probably with an old plural meaning, while the normal terminative *qIa* moved into another paradigm) or formed separate paradigms with various modified meanings (cf. *ƛo-s — oƛa-s, ƛummus — oƛmus, q̇a atis — oq̇is*).

The use of the grade *ä in imperative forms in Kryz is somewhat strange (the imperative is usually formed from the terminative stem); however, we may suppose that the PL imperative was not strictly tied to any particular aspect, but could be formed from the durative as well as from the terminative (with a later redistribution: the imperative began to be formed only from the terminative stem, and the prohibitive — only from the durative stem).

Though the ablaut *i/*ä/*ɨ is no longer productive in any language, its traces may be discovered in many verbal roots; the generalization of one of the grades of this ablaut often leads either to the split of verbal paradigms or to the violation of regular correspondences.

Let us stress once more that *ɨ could not occur as an independent vowel in the 2nd position in the PL verb. It is encountered in this position only as a grade of the ablaut *i/*ɨ. On the contrary, verbs with the independent root vowel *ä are rather numerous.

2. *a/*i.

This type of ablaut is at present productive only in the Northern dialect of the Tabasaran language, where the grade a characterizes the infinitive and the terminative stems, and the grade i — the durative stem. Cf. Düb. *a-w-q-us* "to fall" — dur. *i-w-q- ur-, ald-a-w-ṭ-us* "to cut down" — dur. *ild-i-w-ṭ-ur-,* etc. The same type of ablaut probably explains the Tsakhur a/i alternation in verbs of the -r-, -land -n- conjugations, such as *s-aḳal-es* "to return" — dur. *s-īḳal,* etc. (though this Tsakhur type also includes verbs with other PL vowels as a result of rather complicated modifications and unifications of paradigms).

In the past this type of ablaut was probably more productive. Cf. Arch. *aç:ar* "to be ill" (durative form; other forms are not preserved in Archi) and the Rut. derived *jad:al* "illness, pain", pointing to the existence of a PL form of the root **ʔaç:a-,* vs. the Tab. durative *ic:ru xuz* "to be ill" and the forms of other languages, pointing to the vowel *i: Ag. *it:ar xas* "to be ill", Lezg. *ṭa-z* "to ail", Kryz *tit-äǯ* "to nag". It is evident that for this (and some other similar cases) we must suppose a PL paradigm: term. **ʔaç:a-:*, dur. **ʔiç:a-,* unified afterwards in individual languages in one of the two directions. Cf. also the following cases:

PL **ʔasa(n):* Arch. *asa-s* "to put on"; Tab. Düb. *a-w-s-us* "to smear", *k-a-w-s-us* "to stick" (dur. *i-w-s-ur-, k-i-w-s-ur-*); Lezg. *hal-s-iz* "to put on with some effort"; Tsakh. *ǵ-ajsan-as* "to close (not the door)"; Kryz *q:-isn-iǯ* (with generalization of i) "to dress oneself".

PL **ʔarq̇:ä* "to see, to look": Tab. Düb. *a-w-qI:-us* (dur. *i-w-qI:-ur-*) "to see"; Ag. Bursh. *raqI:a-s;* Rut. *ǧ-aq:a-s* "to observe, to look"; Ud. *boʁIa-esun* "to be found"; in Kryz — split into two paradigms: *w-aq-uǯ* "to find; to graze, to guard", but *i-r-q-äǯ* "to see" (= Bud. *irqi* "to see").

3. Other types of ablaut.

There seem to be some reasons for reconstructing a third type of PL ablaut, that is, *ä/*i (i.e., inverse to the type *i/*ä, see above). Traces of this ablaut are found in Kryz, cf. the following two verbs: *jäh-äž* "to skin" — dur. *jih-ri* (? cf. Tab. *a-r-χI-uz* "to pick", Ag. Bursh. *arẊa-s* "to shear", Rut. *a-j- χI-as* "to pick" — probably < PL **(j)ärχIa*); *c-äʕ-äž* "to throw", *q:-äʕ-äž* "to pursue" — dur. *c-iʕ-ri, q:-iʕ-ri* (PL **ʔIähɨ).* Cf. also PL **ʔäc:a* "to sow, to plough" > Kryz *j-iz-äž;* the vowel -i- here can point to the unification of an earlier *ä/*i alternation. However, outside Kryz we could not find any secure traces of the ablaut *ä/*i.

The PL vowels *e, *o were apparently never part of any ablaut gradations.

1.8.2.3. Final vocalism.

1.8.2.3.1. Auslaut in nominal roots.

The reconstruction of the nominal auslaut in PL is rather complicated and closely connected with morphological problems. In all modern Lezghian languages most nominal roots in the direct stem (nominative stem) end with a consonant. The only exception is the Dübek subdialect of Tabasaran, in which many nominal roots end with a vowel. This is a result of the secondary addition of final vowels after historically tense consonants. In these cases the final vowel always imitates the preceding root vowel.

A comparatively small number of roots with vocalic endings in individual languages (cf. Arch. *dogi,* Tab. *daži,* Ag. *degi* "donkey"; Arch. *maλ:i* "winter pasture", Ag. Tsirkh. *max:i,* Rut. Ikhr. *mexi* "stable", etc.) are explained by the loss of the final -j (cf. its restoration before endings beginning with a vowel: Tab. *daži* "donkey" — erg. *dažiji,* etc.).

In certain cases some languages have a vocalic auslaut, others have a consonantal one. Cf. Lezg. *nisi,* Rut. *nisä,* Tsakh. *nis:e,* Kryz *nisi,* Bud. *nusu* "cheese" vs. Tab., Ag. *nis.* These cases should probably be explained by a *-j / *-∅ variation in PL (j-forms for this root are found in Tsakh. Gelm. *nis:ej,* as well as in the oblique stems: Tsakh. *nis:eji-,* Rut. *nisiji-*). For the root **maλ:ij,* given above, cf. also the form of Ag. Bursh. *max:* "stable" without the final -j. Such cases are rather few, and they do not form any obvious system. We may only suppose the existence of a PL suffix -j (the meaning of which is at present hard to determine), optionally added to some nominal roots.

If we discard such cases, some phenomena that require interpretation still remain. Namely:

1) Tsakhur has a large number of nominal roots, ending with -a (more rarely -e, -ä). In other languages these roots regularly have a consonantal auslaut.

2) Many languages insert vowels between the last consonant of the nominal root and the case/number suffix. The quality of these vowels is often impossible to

predict. This situation is characteristic for Agul, Tabassaran, Rutul, Tsakhur, and, to some extent, also in Archi. Thus, the problem of reconstructing the PL oblique base arises (we certainly do not regard here cases, in which the oblique base is formed in another way — by adding suffixes such as *-t:e-, *-ra-, etc., to the direct base.)

The last vowel of the oblique stem of the noun is interpreted in modern languages as a connecting element between the root and the suffix and is therefore subject to various analogical and phonetic modifications. In Archi, Kryz, Budukh and Udi these processes were so active that all vocalic distinctions in this position became neutralized (Archi has preserved only a few archaic oblique stems, while in most cases the last vowel of the oblique stem is automatically predicted by the root vowel). In Agul, Tabasaran, Lezghi, Rutul and Tsakhur the end of the oblique stem is also subject to rather significant modifications; generally these modifications are caused either by phonological factors (the influence of root vowels), or by morphological factors (analogy, leading to statistical prevalence of a certain vocalic end and resulting in the elimination of other types of oblique stems). Still, after discarding evident innovations, there is a significant number of archaic vocalic oblique stems left in these languages, and they can serve as a basis for reconstructing the PL system.

For PL we reconstruct four types of nominal oblique stems, which apparently should be interpreted as, respectively, *e, *ä, *ɨ and *a-stems. The correspondences are as follows:

PL	Lezg	Rut	Tsakh	Tab	Ag
*-e	-i/-u	-i/-ɨ	-e/-a	-i/-a	-i/-u
*-ä	-e/-a	-ä/-a	-ä(-e)/-a	-i/-u	-i/-a
*-ɨ	-i/-u	-i/-ɨ/-u	-i/-ɨ	-i/-u	-i/-u/-a
*-a	-e/-a	-ä/-a;-ɨ/-i	-e/-a	-a	-a

Comments.

1. In Lezghi there are two basic types of oblique stems: roots with front vowels can form the oblique base in -i or -e, and roots with back vowels — in -u or -a. (There are also stems ending in -ü, but they are only formed from roots with the vowel -ü- or from roots with -e- followed by a labialized consonant: cf. *кür — кürü* "flour", *neχ^{w} — neχü* "spelt", etc. No other vocalic stems can be formed from roots like this; therefore, stems ending with -ü are irrelevant for comparison). Thus, in Lezghi stems in -u and -a are back correlates of front stems ending in -i and -e, respectively.

As we see from the table, the Lezghi -i/-u-stems have developed from PL stems in *-e and *-ɨ (in both cases the back -u, which is represented in central dialects as -ɨ, must be considered secondary, having developed under the influence of the back root vowel); the Lezghi -e/-a-stems have developed from PL stems in *-ä and *-a. Probably, at first *-ä > -e and *-a > -a, and only afterwards synharmonistic variants appeared: -e changed to -a after a back root vowel, and -a changed to -e after a front root vowel.

2. Rutul also has two main types of oblique stems: stems ending in -i/-ɨ/-u and stems in -a/-ä. The distribution of variants inside each of these two types is generally similar to Lezghi, i.e. the choice of front or back vowels usually depends on the character of the root vowel. However, unlike Lezghi, this distribution is somewhat complicated by the fact that the vowel of the oblique stem interacts with the root vowel in a different way, depending on its accent. In addition, the palatality of the final consonant of the root plays a part as well. A detailed examination of the Rutul distribution is, unfortunately, impossible here. It is also important to mention that stems with root ablaut (on which see above) can end only with -ɨ or -i (usually -ɨ if the accent stays on the root, and -i if the accent is shifted) and are therefore irrelevant for external comparison.

Rutul stems in -i/-ɨ/-u, as we see from the table, have developed from PL stems in *-e and *-ɨ — a development very similar to the one described above for Lezghi. Stems in *-ä and in *-a are reflected in Rutul as -a/-ä-stems — also similarly to Lezghi. We must, however, say that *-a-bases yield this reflex only when the accent shifts to the last vowel of the oblique stem; if the accent is preserved on the root, PL *-a-stems are reflected as -i/-ɨ-stems in Rutul. Cf. PL **q̇ʷila-* "cliff, rock" > Rut. *q̇ulá-*, but **p:aIl:a-* "forehead" > Rut. *bǎli-*, etc.

3. Among Tsakhur dialects the most archaic situation is represented in the Gelmets dialect, the data of which we will utilize here (the Tsakhur proper and Mikik dialects reveal substantial innovations). Here there are two main types of oblique stems: in -i/-ɨ and in -e/-a. Unlike Lezghi and Rutul, the front and back variants in Tsakhur are generally distributed depending not on the root vowel, but on the final root consonant (as a rule, with palatal final consonants and -n we observe stems ending with -i and -e, and with non-palatal final consonants — stems with -ɨ and -a, respectively). The Tsakhur -i/-ɨ-stems have developed from PL stems in *-ɨ, and the Tsakhur -e/-a-stems — from PL stems in *-e and *-a. Thus, PL *-e > Tsakh. -e with a secondary variant -a after non-palatal consonants; PL *-ɨ > Tsakh. -ɨ with a secondary variant -i after palatal consonants; PL *-a > Tsakh. -a with a secondary variant -e after palatal consonants. We must also note that if the root contains labialized vowels, the final -ɨ and -a in Tsakhur may change to labialized -u and -o, respectively.

PL *-ä-stems have a specific reflex in Tsakhur. Here the vowel is preserved not only in the oblique stem, but in the direct stem as well. One has therefore to suppose that PL here had a final vowel in the direct stem as well, and that this vowel was preserved in Tsakhur, but lost in all other Lezghian languages. In Tsakhur this vowel is usually reflected as -a (the variant -ä appears after hushing consonants and -j-< *-r-). The fact that PL *-r- changed to -j- here, except after a back -u- (cf. **qI:ora* "hare" > Gelm. *ʁIɨjä*, **cʷ:era* "urine" > Gelm. *zojä*, etc.) tells us that this vowel was pronounced as *-ä after -r- and hushing consonants already in Proto-Tsakhur. In other cases, however, the vowel *-a was pronounced (cf., e.g., the development -l- > -w- in this position: **s:oIla* > Tsakh. *sɨIwa* "fox", etc., as well as the preservation of -r- after a back vowel -u-: *sura* "part", *ṣura* "belt (ornament)" etc. The data of other languages (cf. the front reflex -i in Agul and Tabasaran, as opposed to the single back reflex -a of the PL *-a-stems) obviously favours the reconstruction of *-ä in the oblique stem. Nouns belonging to

this type in PL probably had a final *-a in the direct stem, replaced by *-ä in the oblique one. This reconstruction seems to give a satisfactory explanation to all presented facts.

4. In Tabasaran and Agul the back and front reflexes are, as a rule, complementarily distributed, depending on the root vowel (more seldom this distribution is influenced by the final consonant of the root). A detailed description of inner Agul and Tabasaran distributions would take us too far (it is sufficient to say that virtually every dialect of Agul and Tabasaran has its own rules of distribution, often seriously differing from other dialects). In Agul and Tabasaran the process of the analogical modification of oblique stems was more active than in other Lezghian languages, and is still active even now (in both languages -a-stems are apparently becoming more and more productive, while other types of oblique stems are gradually being eliminated). The procedure of detecting archaic oblique stems in Agul and Tabasaran requires a detailed description, which we are not able to give in the present book.

1.8.2.3.2. Auslaut of adjective and numeral roots.

Adjectives (in other terminology — stative verbs) reveal relevant vocalic distinctions in auslaut in Archi (-∅-stems vs. -a-stems), in the Southern dialect of Tabasaran (-u-stems and -i-stems) and in Tsakhur (-i/-ɨ/-u-stems, with a phonetic distribution of the three variants, vs. -a-stems). In other languages the auslaut of adjectives has been completely or almost completely morphologized and reduced to some single vowel, at present interpreted as an adjective marker.

Among Archi, Tabasaran and Tsakhur we observe the following correspondences, that allow us to reconstruct two types of auslaut of adjective roots (*-ä and *-ɨ) for PL:

PL	Arch	Tab	Tsakh
*-ä	-a	-i	-a
*-ɨ	-∅	-u	-i/-ɨ/-u

In bisyllabic numerals an *-ä-stem is reconstructed for the numeral **menƛ:ä-* "eight" (cf. Arch. *meƛe,* Tab. *mirži-b;* Tsakhur has *moli-lle* instead of **mole-lle,* due to the influence of other numerals). In the numerals "three", "four", "six", "seven", "nine", "ten" we reconstruct an *-ɨ-stem (**λep:ɨ-, *jewqɨ-, *riƛɨ-, *u̯irƛ:ɨ-, *u̯ilčʷɨ-, *u̯içɨ-:* cf. Arch. *λeb, ebq, diλ, wiƛ, uč, wiç;* Tab. *šubu-b, juqu-b, jirxu-b, urgu-b, určʷu-b, jiçu-b;* Tsakh. *xibi-lle, joqu-lle, jixɨ-lle, jigɨ-lle, jiču-lle, jiçɨ-lle*).

We must note that, although adjective auslaut has been unified in all languages except Archi, Tabasaran and Tsakhur, numerals proved to be more conservative. The distinction between -ɨ and -ä-stems is here also preserved in Agul (cf. *xibu-d* 3, *jaqu-d* 4, *jarčʼu-d* 9, *içu-d* 10, but *muja-d* 8) and in Rutul (cf. *xibɨ-d* 3, *juqu-d* 4, *rixɨ-d* 6, *jiwɨ-d* 7, *huču-d* 9, *jiçɨ-d* 10, but *mɨje-d* 8).

In monosyllabic roots **s:a* 1, **qIʷä* 2, **λʷ:e* 5, **q:a* 20 vowels behave as usual. The numeral **waIlš:* "hundred" behaves as a noun; its oblique stem is unknown

(judging by the Tsakhur (Gelm.) genitive *waIš:e-n* it is either an *-a- or an *-e-stem).

1.8.2.3.3. Auslaut of verbal roots.

The distinctions of final vowels in verbal roots are completely neutralized in Tabasaran, most dialects of Agul (except Koshan), Tsakhur, Kryz and Udi. Let us describe the distinctions attested in other languages.

1. Archi.

Here in bisyllabic verbal roots the following types of auslaut exist:

a) -a in infinitive, -a in durative. Cf. *aca-s* "to milk", dur. *aca-r.*

b) -a in infinitive, -u in durative. Cf. *aḳa-s* "to pursue", dur. *arḳu-r.*

c) -i in infinitive and in durative. Cf. *ati-s* "to let", dur. *arti-r.*

A very rare type with the vowel -u in both the infinitive and the durative (*ak:u-s* "to see", dur. *ak:u-r*) is probably a variant of the last type, where -u < *-i as a result of the transfer of labialization from the root consonant (*ak:u-s* < *ak^{w}:i-s*).

In bisyllabic roots of the -n-conjugation vowel distinctions are neutralized (the vowel is reduced in the infinitive before the suffix *-bos, while the durative stem always has an -i-, cf. *asmus* "to measure" < **as(i)n-bos,* dur. *arsin-,* term. *asn-i* < **asn-t:e,* etc.).

Monosyllabic verbal roots (going back to PL roots with *i-) have three types of auslaut as well: in -a (*ca-s* "to praise"), in -o (*ƛo-s* "to give") and in -e (*χ:e-s* "to carry away"). Two verbal roots have a unique final -i: *ḳi-s* "to die", *$χ^{w}$i-s* "to die out" (but in the durative: *ḳa-r, $χ^{w}$a-l*).

In monosyllabic roots of the -r and -n-conjugations, vowel distinctions are neutralized: before the resonant in a non-reduplicated durative form such roots have -a- (with secondary positional modifications, cf. *čar-as* "to roast", dur. *čar,* term. *čere* < **čar-t:e; ƛummus* "to pull" < **ƛan-bos,* dur. *ƛan,* term. *ƛenne* < **ƛan-t:e*); in a reduplicated durative form they have -e- (*χ:ummus* "to weave" < *χ:an-bos, dur. *χ:emχ:in*).

2. Agul (Koshan dialect, Burshag village).

Here verbal roots of the resonantless conjugation distinguish between two basic vocalic types of auslaut: in -a (*ruχa-s* "to be born", *aq:a-s* "to take", *ʔäš:a-s* "to cry", etc.) and in -i (*ürʕi-s* "to freeze", *argi-s* "to return", *aṭi-s* "to dig", etc.). While comparing Agul with other languages one has to consider the following distribution: in Agul all verbs with roots ending in hissing consonants (except a few roots with a back rounded vowel) belong to the -i-conjugation. Cf. *içi-s* "to melt", *at:-azi-s* "to be spilt", *awa-j-s:i-s* "to catch", *q-azi-s* "to push", *açi-s* "to (be) fill(ed)", *k:it:-isi-s* "to be silent", *ici-s* "to roast grain", etc. (but with the vowel -u-: *ʕa-w-za-s* "to get up", *aʕ-za-s* "to stand" (**aʁ-uza-s,* cf. Fite *aʁ-uzas*), *uza-s* "to plough", *uca-s* "to mow").

In verbs of the -n-conjugation in Agul, as in Archi, vocalic distinctions of

final vowels are neutralized (all such roots end in -an, cf. *dalq̇an-as* "to rock", *ilṭan-as* "to bind", *ṭišan-as* "to rub", *ʔülč:an-as* "to wash", etc.).

3. Lezghi.

In Lezghi, except the so-called "regular" type of conjugation (that contains historical compounds of verbal nouns and inflected forms of the verb *iji-z* "to do, to make"), the following types of auslaut occur:

a) -a in the infinitive, -a in the past tense (cf. *g-ata-z, g-ata-na* "to beat"; *čuχ^{w}a-z, čuχ^{w}a-na* "to scratch"). A variant of this type is the type with -e: re$ʁ^{w}$e-z, *re$ʁ^{w}$e-na* "to grind", etc. (the fronting of the vowel happens in the case of PL pharyngealization, as well as near labialized hushing consonants, which yield either velar or hissing reflexes in dialects);

b) -u in the infinitive, -a in the past tense (cf. *aṭu-z, aṭa-na* "to cut", *gu-z, ga-na* "to give", etc.). The fronted correlate of this type is the type -ü/-e (cf. *χü-z,* χ^{w}e-na "to take care of", etc.);

c) -i in the infinitive, -a in the past tense (cf. *g-aṭi-z, g-aṭa-na* "to rot", *eḳi-z, aḳa-na* "to get stuck", etc.). The fronted correlate of this type is the type -i/-e (cf. w-ehi-z, *w-ehe-na* "to throw"; *fi-z, fe-na* "to go", *k-xi-z, k-xe-na* "to write", etc.), though in this case the phonetical causes of the split of these two subtypes are less evident. Still, the distinction between -a and -e in the past tense base hardly reflects any PL differences in this case;

d) -a in the infinitive, -u in the past tense (cf. *ta-z, tu-na* "to leave"; *ak^{w}:a-z, ak:u-na* "to see", etc.). The fronted correlate of this type is unknown to us.

In addition to the above-mentioned types there is a single verb with a stem ending in -u both in the infinitive and in the past tense: *q:-aču-z, q:-aču-na* "to take, to buy" (and the derived verbs — *q:-aχ-ču-z, waχ-ču-z* "to take away").

In the Lezghi masdar nearly all distinctions of final vowels are neutralized. It usually ends in -un in verbs of the types -a/-a, -u/-a, -i/-a, -a/-u. Only a small number of verbs of the fronted types -i/-e, -e/-e have a masdar ending in -in *(k-xin* "to write", *fin* "to go" and some others).

4. Rutul.

Here verbal roots have three types of auslaut:

a) -a in the stem of the present tense and the infinitive (sg. and pl.), -ɨ in the stem of the past tense (sg. and pl.). Cf. *h-aça-s* "to know", dur. *h-aça-r,* term. *h-açɨ-r.* If the root consonant is labialized, there is -u instead of -ɨ (cf. *h-arc^{w}a-s,* term. *h-arcu-r* "to measure" etc.).

b) -e in the stem of the present tense (sg. and pl.) and the infinitive, -i in the stem of the past tense (sg. and pl.). Cf. *j-iχe-s* "to carry", dur. *j-iχe-r,* term. *j-iχi-r.*

c) -a in the stem of the present tense singular, but -e in the stem of the present tense plural, and, respectively, -ɨ (-u in case of labialization) in the stem of the past tense singular, but -i in the stem of the past tense plural. Cf. *s-ata-s* "to leave", dur. sg. *s-a-l-ta-r,* but pl. *s-a-l-te-r;* term. sg. *s-a-l-tɨ-r,* but pl. *s-a-l-ti-r.*

However, after closer examination it appears that the two latter types are complementarily distributed: type b) is observed, if the root has a front first vowel, and type c) — if the root has a back vowel (a, u). Besides, all verbal roots ending with a hushing consonant can only belong to the type b), not a) or c). Thus, Rutul actually has two types of verbal auslaut:

1) -a/-ɨ (independent from the first root vowel);

2) -e/-i, realized in this way only if the root has a first front vowel; otherwise the auslaut -e/-i is preserved in plural forms, but coincides with the type -a/-ɨ in singular forms.

The comparison of auslaut vowels in verbal roots of individual Lezghian languages allows us to reconstruct four types of PL vowels in the last position. They should apparently be interpreted as *-e, *-ä, *-ɨ and *-a (see above, page 170, on the similar four types of nominal oblique stems).

1. Stems in *-e.

The correspondences here appear as follows:

Arch	Ag	Lezg	Rut
-e/-i	-i	-i	-e

Archi has -e in monosyllabic roots (going back to PL roots with initial *i-), but -i in bisyllabic ones. The phonetic reasons for this distribution are evident: the vowel -e has been narrowed (*-e >-i) in a postaccented syllable (most bisyllabic verbal roots in Archi are accented on the first syllable, and in the postaccented position the wide vowels e, o are not observed in Archi, except rare cases when they occur in contracted forms or loanwords). In one case Archi has -i in a monosyllabic root (*ḳi-s* "to die", see below). The reasons for this are unclear (it is not to be excluded that in this root we should reconstruct a unique PL final *-i, but Archi evidence alone is not sufficient for such a solution). A second Archi verb in -i, *χʷi-s* "to die out", unfortunately, has no parallels in the Agul, Lezghi or Rutul languages.

2. Stems in *-ä.

This type of stems yields the following correspondences in descendant languages:

Arch	Ag	Lezg	Rut
-i	-a	inf. -a, past -u	-e

In monosyllabic Archi roots we would also expect a reflex -e (as in the first type), but actually in the single case available we have -a (*χ̣:ʷa-s*, see below). The reconstruction *-ä is dictated, first, by the front character of Archi and Rutul reflexes, second — by the reflex -a- in Lezghi and Agul. The Lezghi past tense in -u in this type (-ɨ in the Akhty dialect), must probably be explained by old ablaut (missing in stems ending with -a). This ablaut, however, is reflected only in Lezghi.

In two cases Archi has an -a-stem instead of the expected -i-stem: PL **ʔaq̇:ä-* > Arch. *aq̇:a-s* (dur. -a-r) "to leave"; PL **ʔaχär-* "to lie, to sleep" > Arch. *aχa-s* (dur. -a-r). The reasons for this irregularity are unclear.

3. Stems in *-ɨ.

These stems reveal the following correspondences:

Arch	Ag	Lezg	Rut
inf. -a/-o, dur. -u/-o	-i	-i/-u	-a

Archi has the reflex -o in monosyllabic roots (PL roots beginning in *i-) and reflexes -a/-u — in bisyllabic ones. It is evident that in the postaccented syllable a narrowing occurred, normal for Archi: (PL *-ɨ) > Arch. -o > -u. In the infinitive stem, the final vowel was apparently changed to -a- by analogy with the more widespread -a-stems. It is interesting that even the original labialization of root consonants regularly disappears in this type, which confirms the fact that the unification of infinitive stems occurred later in Archi than the development *C^{w}ɨ > *C(^{w})o > *-Cu in the postaccented syllable.

In Lezghi the reflex -u is observed if the root consonant was originally labialized, the reflex -i — without such labialization. While explaining the reflex -a in Rutul, we should keep in mind that -ɨ-stems are absent in modern Rutul; the a-conjugation is mixed, forms with -a being typical for the present tense, forms with -ɨ — for the past tense. It is evident that old *-ɨ and *-a-stems in Rutul underwent a secondary redistribution, having merged in a single conjugation type, including both forms in -ɨ and forms in -a.

The normal reflex of *-ɨ in Agul is -i. However, in some roots with a labialized root consonant we observe an irregular reflex -a (but these roots are very few, compared to the number of roots with the regular reflex -i).

4. Stems in *-a.

This type of stems is the most common in PL. Here we see the following correspondences:

Arch	Ag	Lezg	Rut
inf. -a, dur. -a/-u	-a	-a	-a

In Archi, labialization of root consonants in this type is preserved only in monosyllabic roots (that have lost PL *i-). In bisyllabic roots labialization is lost, but is preserved as the vowel -u in the durative (nonlabialized roots have -a in the durative stem). Therefore, roots ending in *-a with a labialized root consonant in Archi are reflected in the same way as roots ending with *-ɨ (see above).

Other languages usually preserve -a-stems without any changes.

1.8.2.3.3.1. Vowel alternations in the end of verbal roots.

The final vowels of verbal roots, as well as the initial ones, could apparently alternate in PL. There is some reasons for reconstructing two main types of ablaut in this position:

1. *-a/*-ɨ ablaut (possibly *-a/*-o, see below).

This type of ablaut was characteristic for *-a-stems. It is directly reflected in Archi. Cf. *aca-s* "to milk", dur. *aca-r,* but term. *acu* < **aco* <**ʔac:ɨ;* thus, the vowel -o < *-ɨ in Archi characterizes the terminative stem of verbs having an -a-stem in other forms. The same ablaut in Rutul serves to differentiate the stem of the present tense from the stem of the past tense (pres. -a, past -ɨ). As we have already shown, the merger of the forms of *-a-stems and *-ɨ-stems (with no ablaut) in the past tense in Rutul led to a general merger of -ɨ and -a-stems (i.e. the vowel -a was generalized in all the forms of the present tense, even in the original *-ɨ-stems).

It is, however, not to be excluded that in this case we should reconstruct not the ablaut *a/*ɨ, but the ablaut *a/*o, cf. -u-forms of -a-stems in Agul: Bursh. *aġa-s* "to make", past ger. *aġu-na,* etc. The Archi and Rutul evidence is ambiguous (*ɨ and *o had merged in these languages).

2. *-ä/*-a ablaut.

This type of ablaut was apparently only characteristic of roots with the first vowel *i (which, as was shown above, could itself alternate with *ä and *o). Forms with *-ä were probably used for the finalis (infinitive) stem, and forms with *-a — for the durative and terminative stems (as well as for the plural forms with -o-). This kind of ablaut is suggested by some evidence from Archi and Rutul. Cf. Arch. *šeI-s* "to start running" (**hišä*) — terminative *šaI* (**hiša*) — durative **hä-r-ša-r,* which served as a base for the formation of a new paradigm heIršaI-s "to run"; similarly *qIe-s* "to go" (**ʔiq:I^{w}ä-*) — term. *qIa* "has come" (**ʔiq:I^{w}a*) durative **[ʔ]ä-r-q:I^{w}a-r,* whence *herqIa-s* "to walk" — terminative (probably, old plural) *oqIa* "went" (**ʔoq:I^{w}a*), etc. (Archi contains a rather large number of such paradigms, irregular from the synchronistic point of view; they are often split into several paradigms, with new forms being built by analogy.

In Rutul we may point out the following cases: *s-uġ^{w}a-* "to sit" with a parallel form *s-iġ^{w}a-s* (*-*iġ^{w}e-*/*-*iġ^{w}a-*), cf. also the plural form *s-ɨ-l-ġIa-r* (< *-*oġIa-* with a pharyngealization of unclear origin; cf. Arch. *ġa atis* "to seat smbd." < **ʔiġ$^{(w)}$a, ġIejġis* "to sit" < **ġIa eġi-s* < **ʔiġI$^{(w)}$a ʔäġ$^{(w)}$ä-s* with a similar pharyngealization in **ʔiġI$^{(w)}$a*); Rut. *k-uč̣^{w}a-s* "to begin" (root *-uč̣^{w}e* < **ʔič̣^{w}ä,* cf. pl. *k-u-l-č̣^{w}e-s*) / *k-äč̣^{w}a-s* (**ʔič̣^{w}ä-*) "id." (root *-äč̣^{w}a-*) — cf. Arch. čṷ-bus "to enter", dur. *čṷ-r* = Rut. *-uč̣^{w}e-,* cf. also imperative *čṷe* (labialization in the latter form is lost in an open syllable), but *ačṷa-s* "to hide", dur. *arčṷu-r* < **ʔä-r-č̣^{w}a-r* = Rut. *-äč̣^{w}a-,* etc.

The situation is somewhat complicated by the fact that durative forms of such *-ä-stems could apparently have parallel auslauts: -a, as well as the normal -ä. Cf., on a par with Archi archaic durative forms *heIršaI-r, herqIa-r,* apparently also archaic duratives *šeIrši-r, heqIi-r* (cf. also with o-: *orqIi-r*), etc. It is most

probable that in PL the ablaut *-ä/*-a was already unproductive and that the grade -a was actively being supplanted by the normal grade -ä (by analogy with the infinitive stem and, perhaps, some other forms as well). All these facts present some difficulties for reconstruction; however, we should once more emphasize that this type of ablaut can be postulated only for verbal roots with the initial *i.

3. Other types of ablaut.

At least for one root we may postulate the ablaut *-e/*-a, similar to the ablaut *-ä/*-a: PL **ʔirχ̌e* "to die", cf. Arch. dur. *ḳa-r,* term. *ḳa* (infin. *ḳi-s*), Rut. pl. stem *-ɨrᵩa* (vs. the normal one — *-iᵩe-*).

Modern languages have also some other types of final vowel alternations (cf. Rut. -e/-i in -e-stems; Lezg. -a/-u in stems going back to PL *-ä-stems and some others), that apparently should not be projected on the PL level (although their origin is not always clear).

1.8.2.3.3.2. On the reflection of final vowels in verbal roots of the Budukh language.

After this section was already complete, we obtained an opportunity to look through the materials on the Budukh verbal system. In Budukh there are conjugation types with the following vowel alternations: -u/-ə, -u/-i, -a/-i, -a/-a, -i/-i, -i/-ə and -u/-u. These types reveal the following correlations with the reconstructed PL types of verbal auslaut:

a) the type -u/-ə goes back to PL *-a-stems (PL ablaut *-o/*-a);

b) the types -u/-i and -a/-i go back to PL *-ä-stems (PL Ablaut *-a/*-ä), the -a/-i type being observed in intransitive verbs, and the -u/-i type in transitive ones. Apparently the -u grade of ablaut is secondary here, borrowed from the 1st type of conjugation.

c) -a/-a and -i/-i types have developed from PL *-e-stems, the -i/-i type being characteristic for intransitive verbs, and the -a/-a type — for transitive ones. This is possibly a result of splitting the -a/-i type, which would be a normal reflex of the PL ablaut *-a/-*-e (for the suggestion of such an ablaut type, see above).

d) types -i/-ə and -u/-u go back to PL *-ɨ-stems, the -u/-u type being phonetically conditioned by labialization of the root consonant. The presence of the grade -ə in Budukh is not quite clear here, because other Lezghian languages do not show any ablaut in this type of stems. This may be an archaism, preserved only in the Budukh language.

Thus, the Budukh system of final vowel alternations in the verb confirms, in general, the reconstruction outlined above and provides us with valuable evidence for reconstructing individual PL verbal roots.

1.8.2.3.4. Accentuation.

We know very little about PL accentuation as of yet. In modern Lezghian languages there is either no accent (as in Kryz and most Tsakhur dialects), or it is extremely

morphologized or phonologized (i.e. the rules of accentuation of the word-form depend on its morphemic and phonemic content — such is the situation in Archi, Agul, Tabasaran and Lezghi). Independent distinctions in the place of accent may be discovered only in Rutul (in nouns; the positioning of accent in the verb is yet unclear), in the Gelmets dialect of Tsakhur, and, possibly, in the Tabasaran verbal system. Archi has a rather strict system of accentuation rules both in verbal and in nominal word-forms; rare deviations (of which the most significant is the unpredictability of accent in bisyllabic nominal roots) are probably archaic.

In the '70s the MSU expeditions have discovered tonal systems in some Lezghian languages (in the Northern dialect of Tabasaran, in Tsakhur, Kryz and Budukh). The number of tones ranges from two to four (two — in Budukh, three — in Kryz, four — in the Northern dialect of Tabasaran and in Tsakhur). It is possible that the afore-mentioned non-standard accent systems in Rutul and in the Gelmets dialect of Tsakhur, as well as accent archaisms in Archi, are reflections of the PL tonal system. Unfortunately, we do not yet possess the systematic tonal records of any Lezghian language except Kryz; therefore we cannot yet talk about the reconstruction of PL tones. We can, however, expect some progress in the nearest future.

1.9. Khinalug.

In spite of the fact that this language is often included in the Lezghian group (see, e.g.,[Talibov 1980]), there are no serious reasons for this; the impression that Khinalug is especially close to Lezghian languages arises apparently because of a rather large number of loanwords from the neighbouring Kryz and Budukh languages (probably from Proto-Shakhdagh as well). Multiple specific phonetic and lexical features of Khinalug (on the development of Khinalug phonemes from PEC, see above) clearly distinguish it from Lezghian languages, as a separate branch of East Caucasian.

In general there is less data on Khinalug than on other North Caucasian languages (in fact only comparatively small lexical lists, given in the works [Kibrik-Kodzasov-Olovyannikova 1972, Kibrik-Kodzasov 1988, 1990]. Therefore, many specific features of Khinalug reflexation are still unclear: there are many gaps in the reflexes of PEC consonants, uncertainties in establishing the behaviour of vowels, the Khinalug reflexation of the verbal root is completely unexamined, the Khinalug prosodic system has not been described. All these problems still expect their investigation.

1.10. From PWC to modern West Caucasian languages.

First we will describe the development from PWC to PAT (ProtoAbkhaz-Tapant or Proto-Abkhaz-Abaza), PAK (Proto-Adyghe-Kabardian) and Ubykh languages, and then give a short characterization of the development from PAT and PAK to modern languages.

1.10.1. Consonantism.

The multitude and extreme complexity of correspondences between the consonants of West Caucasian languages are due to the PWC features of palatalization and labialization, as well as their combination. The interaction of these features (for the most part transferred from following vowels, see above) with local and laryngeal features of consonants creates a very complicated and, at first sight, chaotic system of reflexes. Below, however, we will try to show that this system can be explained.

For PWC we reconstruct the following system of consonants (not including the additional features of palatalization and labialization):

Labials	p	p:	b	ṗ	f			w	m
Pharyngealized labials	pI	p:I	bI	ṗI					mI
Dentals	t	t:	d	ṭ				r	n
Hissing	c	c:	ʒ	ç	s		z		
Hushing	č	č:	ǯ	č̣	š	š:	ž	j	
Laterals	ƛ	ƛ:	Ł	ƛ̣	ɬ	ɬ:	L	l	
Velars	k	k:	g	ḳ	x		ɣ		
Uvulars	q	q:	G	q̇	χ		ʁ		
Pharyngealized uvulars	qI	qI:		q̇I	χI		ʁI		

Pharyngealized consonants in PWC are reconstructed mostly on the basis of Ubykh evidence, and tense ("preruptive") consonants — on basis of the Adygh evidence, though other languages often have specific reflexes of these classes of consonants as well. The tense fricatives š: and ɬ: reveal specific reflexes in Adygh (Shapsug), see below, and in some cases their reflexes differ from the reflexes of respective lax fricatives in other languages as well (Ubykh, PAT). However, in combination with certain quality features, the reflexes of lax and tense fricatives have apparently merged in all WC languages: thus, it is impossible to distinguish PWC *ƛ́ from *ƛ́: (although there is a distinction *ɬ — *ɬ:), or *š from *š: (although *s̆ is opposed to s̆:). It is quite possible that PWC also had distinctions of other tense and lax fricatives (*f-f:, *s-s:, *x-x:, *χ-χ:, *χI-χ:I), but, because of the specific character of Adygh reflexation (the Shapsug dialect preserves only two pairs of opposed fricatives at the present time, š-š: and s̆-s̆:), their reflexes have merged wth each other in all modern West Caucasian languages.

We reconstruct the following correspondences between the subgroups of West Caucasian languages:

PWC	PAT	Ub	PAK
*p	*p	p	*p
*p:	*b	b	*p:
*b	*b	b	*b
*ṗ	*ṗ	ṗ	*ṗ
*f	*f	f	*x(ʷ)
*w	*w	w	*w

PWC	PAT	Ub	PAK
*m	*m	m	*m
*ṕ	*p	t^w	*t
*ṕ:	*b	(d^w~t^w)	*t:
*ḿ	*b	d^w	*d
*ṕ	*ṗ	$ṭ^w$	*ṭ
*p^w	*p	f	*p
*b^w	*f	f	*b
*$ṕ^w$	*ć	t^w	
*$ḿ^w$	*ʒ́	d^w	*d
*$ṕ^w$	*ć	$ṭ^w$	*ṭ
*pI	p	vI	*p
*p:I		bI	*p:
*bI	*b	bI	*b
*ṗI		ṗI	*ṗ
*mI	*m	mI	*m
*t	*t	t	*t
*t:	*d	d	*t:
*d	*d	d	*d
*ṭ	*ṭ	ṭ	*ṭ
*r	*r	d-, r~ʁ	*t:-,r
*n	*n	n	*n
*ŕ	*r	L	*ʒ
*t^w	*t^w	t^w	*t
*$t:^w$	*d(^{w})	t^w	*t:
*d^w	*d^w	d^w	*d
*$ṭ^w$	*$ṭ^w$	$ṭ^w$	*ṭ
*$ć^w$	*t^w		*c
*$ṭ^w$	*$ṭ^w$	$ṭ^w$	*ç
*c	*c	c	*s-,c
*c:	*c	c	*c:
*ʒ	*ʒ	ʒ	*ʒ~z
*ç	*ç	ç	*ç
*s	*s	s	*s
*z	*z	ʒ~z	*z
*ć	*ć	ć	(*s)
*ć:	*ʒ́(?)	ć	*c:
*ʒ́	*ʒ́	ʒ́	*ʒ~z
*ḉ	*ḉ	ḉ	*ç
*ś	*ś	ś	*s
*ź	*z	ʒ́~ź	*z
*c^w	*c^w	c^w	*s^w-
*$c:^w$	*c^w	c^w	*$c:^w$
*$ʒ^w$	*$ʒ^w$		*$ʒ^w$
*$ç^w$	*$ç^w$	$ç^w$	*$ç^w$
*s^w	*s^w	s^w	*s^w
*z^w	*z^w	$ʒ^w$~z^w	*z^w

PWC	PAT	Ub	PAK
*ć^{w}	(*č)		*ć
*ʒ́^{w}	*ǯ~ž	ʒ́	*ʒ́
*ḉ^{w}	*č̣	ḉ	*ḉ
*ś^{w}	*ś	š^{w}	*ś
*ź^{w}	*ʒ́~ź	ž^{w}	*ź
*č	*ć	c	*s
*ǯ	*ʒ́	ʒ	*ʒ~z
*č̣	*ḉ	ç	*ḉ(?)
*š(~*š:)	*ś	s	*s
*ž	*ź	z	*z
*ć	*ć	ć	*ć
*ć:	*ʒ́(~ć)	ć	*ć:
*ʒ́	*ʒ́	ʒ́	*ʒ́~ź
*ḉ	*ḉ	ḉ	*ḉ
*ś	*š(?)	ś	*š
*ś:	*š	ś	*š:
*ź	*ž	ź	*ž
*j	*j	j	*j
*č^{w}	*č	č	*ć
*č:^{w}	*z^{w}	č	*ć:
*ǯ^{w}	*ʒ^{w}~z^{w}	ǯ	*ʒ́~ź
*č̣^{w}	*č̣	č̣	*ḉ
*š^{w}	*s^{w}	š	*š
*š:^{w}	*š	š	*š:
*ž^{w}	*ʒ́(?)	ž	*ž
*ć^{w}	*č	ć	*č
*ć:^{w}	*ǯ~ž	ć	*č:
*ḉ^{w}	*č̣	ḉ	*č̣
*ś^{w}	*š^{w}	š^{w}	*ś
*ś:^{w}	*š	s^{w}	*š:
*ź^{w}	*ž^{w}	ž^{w}	*ź
*ƛ	*x	ś	*ć
*ƛ:	*c	(ć)	*ć:
*Ł	*l	L	*tɬ
*ƛ̣	*x/ç	ḉ	*ḉ
*λ		ś	*ś
*λ:	*x	ś	*ś:
*l	*l	d-,∅~j	*tɬ-,L
*ƛ́	*x́	ś	*ć
*Ł́	*ɣ́	ʁ(~ź)	*ɣ
*ƛ̣́	*ś	ƛ̣	*ƛ̣
*λ́(~λ́:)	*ś	λ	*λ
*Ĺ	*ź	L	*L
*Í	*r-,l~ɣ́	L	*d-

PWC	PAT	Ub	PAK
*ƛʷ	*cʷ	cʷ	*č
*ƛ:ʷ	*cʷ	cʷ	*č:
*Łʷ	*l	w	*ħ
*ƛ̓ʷ	*c̓(ʷ)	c̓(ʷ)	*č̓
*λʷ	*š	sʷ	*x(ʷ)
*λ:ʷ	*š	s(ʷ)	*s̓:
*ƛ́ʷ	*čʷ	f	*x
*ƛ́:ʷ	*žʷ	ʒ́	*c̓:
*Ł́ʷ	*ǯʷ	ʒ	*Ł
*ƛ̓́ʷ	*c̓ʷ	c̓	*č̓
*λ́ʷ(~λ́:ʷ)	*š	šʷ	*x(ʷ)
*Ĺʷ	*ž	žʷ	*ɣ́
*k	*k	ḱ	*ḱ
*g	*g	ǵ	*ǵ
*ḳ	*ḳ	ḳ́	*ḳ́
*x	*x	s̓́	*x
*ɣ	*ɣ	ɣ~ʁ	*ɣ
*ḱ	*ḱ		*ḱ
*ǵ	*ǵ	ǵ	*ǵ
*ḳ́	*ḳ́	ḳ́	*ḳ́
*x́	*x́	ś	*s̓́
*ɣ́	*ɣ́	ź	*ž̓
*kʷ	*kʷ	kʷ	*kʷ
*k:ʷ	*gʷ	gʷ	*k:ʷ
*gʷ	*gʷ	gʷ	*gʷ
*ḳʷ	*ḳʷ	ḳʷ	*ḳʷ
*xʷ	*xʷ	x	*x(ʷ)
*ǵʷ	*gʷ	ǵ	*gʷ
*ḳ́ʷ	*ḳʷ	ḳ́	*ḳ́ʷ
*x́ʷ	*sʷ	x́	*xʷ
*ɣ́ʷ(?)	*zʷ	ʁ́	*ʁʷ
*q	(*ħ)	q	*q-
*q:	*q	q	*q:
*G	*ɣ	ʁ	*ʁ
*q̇	*q̇	q̇	*q:
*χ	*ħ	χ	*χ
*ʁ	*ʕ	ʁ	*ʁ
*q́:	*q	q́	
*Ǵ	*ɣ́	ʁ́	
*q́	*q́	q̇́	*ʔ
*χ́	*ħ	x́	*χ́
*ʁ́	*ʕ	ʁ́	*ʁ
*qʷ	*ħʷ	qʷ	*qʷ-,q:ʷ
*q:ʷ	*qʷ	qʷ	*q:ʷ
*Gʷ	*ɣʷ	ʁʷ	*ʁʷ
*q̇ʷ	*q̇ʷ	q̇ʷ	*q:ʷ

PWC	PAT	Ub	PAK
*χʷ	*ħʷ	χʷ	*χʷ
*ʁʷ	*ʕʷ	*ʁʷ	*ʁʷ
*q́ʷ	*ħ(ʷ)	x́	*qʷ-
*q́:ʷ		q́	*q:ʷ
*Ǵʷ	*ɣ(ʷ)	ʁ́	*ʁʷ
*q̓́ʷ	*ʕʷ(*q̇ʷ?)	q̓́	*ʔʷ
*χ́ʷ	*ħ(ʷ)	χ́	*χʷ
*ʁ́ʷ	*ʕ(ʷ)	ʁ́	*ʁʷ
*q:I	*ʕ		*q:
*q̇I	*ħ(?)	q̇I	*q:
*χI		χI	*χ
*ʁI	*ʕ	ʁI	*ʁ
*q́I	*q	q(I)	*ħ
*q́:I	*ʔ	q̇	*ʔ
*q̓́I	*ħ	q̇	*ʔ
*χ́I	*ħ	χ(I)	*ħ
*ʁ́I	*ʕ	ʁ	*j
*qIʷ	*ħʷ	χIʷ	*qʷ-
*qI:ʷ	*ʕʷ	qI(ʷ)	*q:ʷ
*q̇Iʷ	*q̇ʷ(*qʷ)	q̇Iʷ	*q:ʷ
*χIʷ	*ħʷ	χIʷ	*χʷ
*ʁIʷ	(*ħʷ?)	ʁIʷ	*ʁʷ
*q́Iʷ	*qʷ	χʷ	*ħ
*q́I:ʷ	*ʕʷ	q̇ʷ	*ʔʷ
*q́Iʷ	*ħʷ	q̇ʷ	*ʔʷ
*ʁ́Iʷ	*ʕʷ	w	*ʷ~ʁʷ

Comments.

1. Labial consonants. As we see from the table, labial resonants, the rare fricative *f and labialized pharyngealized consonants do not have any palatalized or labialized correlates. Other consonants have palatalized and labialized variants. While evaluating the given reconstructions one must keep in mind that the labialized dentals are articulated as biphocal explosives (i.e. phonetically = /tṕ, db́, ṭṕ/) in modern Abkhaz and Ubykh, and have a pronounced palatalized character; therefore, the development of the type *ṕ > tʷ (with a possible further delabialization tʷ > t) seems quite possible to us. The reconstruction of the series of "palatalized-labialized" labials is rather hypothetical. One could reconstruct here a series of "palatalized-labialized" dentals as well, but some external correspondences lead us to assume the labial character of original PWC phonemes. In Ubykh and Adygh they give the same reflexes as palatalized labials proper; in PAT we should suppose, at first, the depalatalization of palatalized labials (*ṕ > *p), and afterwards — the delabialization of "palatalized-labialized" with a following affrication (*ṕʷ > *ṕ >ć).

2. Dental consonants. For a specific rare correspondence "PAT *r: Ub. L: PAK *ʒ" we suggest a PWC palatalized *ŕ. The liquids *r and *l (on the latter, see below) are thus the only PWC resonants that have palatalized correlates (correlation in labialization in the system of resonants is altogether absent). An interesting feature

of the dental series is the possible presence there of at least two "palatalized-labialized" consonants (*t́ʷ and *t̩ʷ), while the respective plain palatalized ones are missing. However, it is not to be excluded, that they were present in PWC, but were subject to depalatalization (or, less likely, merged with the reflexes of affricates) in all descendant languages.

3. Hissing consonants. Plain hissing consonants are well preserved in descendant languages (except the fricativization *c > s in PAK and the ʒ-z variation in the place of *ʒ in PAK and in the place of *z in Ubykh). Palatalized hissing consonants are preserved in PAT (though we should note the depalatalization *ź > z) and in Ubykh, but depalatalized in Adyghe. Labialized hissing consonants are generally well preserved in all three subgroups (in modern languages labialized hissing consonants are phonetically articulated as dentolabialized, see below).

The suggested "palatalized-labialized" hissing consonants have specific reflexes in subgroups. In Adygh a consonant shift occurred: after the depalatalization of original palatalized sounds (see above), the delabialization of "palatalized-labialized" hissing sounds apparently happened (*ć^{w}>*ć, *ś^{w}>*ś, etc.). In Ubykh a development of palatalized-labialized hissing sounds into palatalized-labialized hushing ones apparently occurred (*ʒ́^{w}>ǯ^{w}, *ś^{w}>š̌^{w}, etc.), with a following delabialization of affricates (there are no hushing labialized affricates present in modern Ubykh), but with the preservation of labialization in the subsystem of fricatives (it must be noted that the phonemes, transcribed in Ubykh as š^{w}, ž^{w}, according to their descriptions, have an evident — though phonologically insignificant — palatalization, i.e. phonetically they are /š̌^{v}, ž̌^{v}/). A similar development had apparently happened in PAT, i.e. first all palatalized-labialized hissing affricates developed into palatalized-labialized hushing ones; then affricates were simultaneously delabialized and depalatalized — cf. a similar development that occurred much later in some Abaza dialects, where the process (*t̩^{w}) > č̌^{w} > č, *š̌^{w} > š happened (see [Lomtatidze 1976]). As for palatalized-labialized fricatives, they have apparently simply lost their labialization (i.e. the same process as in Adygh languages occurred). As a result, there we have a specific system of correspondences, wherein the original labialization of all regarded consonants is hinted at only by the fricative reflexes š^{w}, ž^{w} in Ubykh. Below we will see that complicated processes of delabialization, accompanied by a shift in other quality characteristics of consonants, are typical for other local series of West Caucasian consonants as well: it was these processes that have caused the extreme complexity of phonetic correspondences, observed among modern WC languages.

4. Hushing consonants. PWC palatalized hushing consonants are comparatively stable in WC languages. They are usually preserved in descendant languages (except the palatalized hushing fricatives *š̌, *š̌:, *ž̌, which have lost palatalization in PAT and in PAK; as we see from the table, the palatalized hushing fricatives of PAT and PAK go back only to PWC lateral or velar consonants).

The matter is more complicated with the reflexes of PWC non-palatalized and "palatalized-labialized" hushing consonants. Here the following situation is observed:

a) there are several rows of correspondences where the PAT palatalized hissing ("hissing-hushing") consonants correspond to Ubykh and PAK

non-palatalized hissing ones. In this case we cannot reconstruct palatalized hissing consonants for PWC, since their place is already occupied (see above: palatalized hissing consonants are reconstructed on the base of the correspondences "PAT, Ub. palatalized hissing: PAK non-palatalized hissing");

b) despite the fact that non-palatalized hushing consonants are present in all three subgroups of West Caucasian languages, the correspondences between them are never uniform; thus, on one side, we have rows of correspondences where the non-palatalized hushing consonants in PAT and Ubykh correspond to palatalized hushing consonants in PAK; on the other side, we have rows of correspondences where non-palatalized hushing consonants in PAT and PAK correspond to palatalized hushing consonants in Ubykh. The parallel fricative rows of correspondences usually reveal traces of original labialization. Thus, the row "PAT *č : Ub. č : PAK *$\check{c}^{\prime}$" is parallel to the row "PAT *s^{w} : Ub. š : PAK *$\check{s}$" (we must keep in mind that the non-palatalized PAK *š is a reflex of an earlier *$\check{s}^{\prime}$, see above); on the other hand, the row "PAT *č : Ub. $\check{c}^{\prime}$: PAK *č" is evidently parallel to the row "PAT *š : Ub. s^{w} : PAK *š:", etc. Here the Abkhaz and Ubykh evidence serves as an argument for reconstructing original labialization in those rows of hushing correspondences, where only non-palatalized (and non-labialized) hushing reflexes are found nowadays.

In our opinion, this situation should be interpreted as follows. The original non-palatalized hushing *č, *č̣, *š, etc., have lost their hushing feature in all three subgroups, changing into non-palatalized hissing consonants in Ubykh and PAK (only the glottalized *č̣, for some unclear reason, has yielded PAK hissing-hushing *ć), and into hissing-hushing consonants in PAT. Here we should note that the so-called "hissing-hushing" consonants in West Caucasian languages have a dual phonological and phonetical nature; on one hand, they occupy the place of palatalized correlates for nonpalatalized hissing consonants (and therefore merge with plain hissing consonants in case of depalatalization). On the other hand, they form a sort of intermediate series between hissing and hushing consonants. Because of the last circumstance, the direct development of non-palatalized hushing into hissing-hushing consonants seems phonetically justified. The fact that, in the regarded rows of correspondences, one must reconstruct hushing consonants, is confirmed by external comparison with East Caucasian languages as well.

After the loss of old non-palatalized hushing consonants their place in PAT, Ubykh and PAK started to be filled by means of delabializing originally labialized consonants. In PAT reflexes of labialized and "palatalized" hushing affricates merged (all of them developed into non-palatalized hushing consonants, except the affricate *$\check{ʒ}^{w}$, that apparently fricativized early and developed similarly to the fricative *$\check{s}^{w}$; the variation z^{w}~$ʒ^{w}$ in the place of *$\check{ʒ}^{w}$ is probably a rather late occurrence). The tense fricatives *š:^{w}, *$\check{s}^{\prime}$:^{w} developed similarly (> PAT *š); however, lax fricatives preserved labialization, though they have been locally shifted (*$\check{s}^{w}$ > s^{w} and *$\check{s}^{\prime w}$, *$\check{ž}^{w}$ > $\check{s}^{w}$, $\check{z}^{w}$). We must note that the latter shift is, in a way, "orthographic": the PAT labialized hushing *$\check{s}^{w}$, *$\check{z}^{w}$, as well as the respective consonants of the modern Bzyb dialect, undoubtedly had been phonetically palatalized (= [$\check{s}^{\prime w}$], [$\check{z}^{\prime w}$]), though they had no non-palatalized correlates. The reflex ʒ in the place of PWC *$\check{z}^{w}$ is unclear (one should expect a *z^{w}).

In Ubykh the labialized hushing affricates were subject to a uniform process of delabialization (*čʷ > č, *čᶴʷ > čᶴ, etc.). Nonpalatalized labialized hushing fricatives developed similarly (*šʷ, *šːʷ > š, *žʷ > ž), but palatalized-labialized hushing fricatives have preserved labialization. Lax *šᶴʷ, *žᶴʷ > šʷ, žʷ (just as in PAT, this rule does not really mean any phonetic change; on the phonetic character of these Ubykh consonants see above, page), but the tense *šᶴːʷ has lost its hushing character and developed into sʷ.

Finally, in PAK the palatalized and non-palatalized labialized hushing consonants seem to have "swapped places" after delabialization. Apparently, there was a whole series of successive processes that led to this result. We can suppose that the palatalized-labialized hushing consonants, as a result of delabialization, first changed into hissing-hushing (traces of this stage are preserved as hissing-hushing fricatives ś, ź in the place of PWC *šᶴʷ, *žᶴʷ). Non-palatalized labialized hushing consonants consequently became the only labialized hushing series and underwent a phonetic palatalization (if there is no phonological distinction in palatalization, the palatalized articulation of hushing consonants is always more typical for Caucasian languages), as a result of which, after delabialization, they merged with the reflexes of palatalized hushing consonants. Only afterwards did the hissing-hushing consonants (except lax fricatives *ś, *ź < *šᶴʷ, *žᶴʷ) were apparantly shifted into the non-palatalized hushing series. Thus, here we also see a phonetic closeness between non-palatalized hushing and hissing-hushing consonants, which was already mentioned above (concerning the development like *č > ć in PAT).

5. Lateral consonants. The reconstruction of lateral consonants in PWC is extremely complicated. PAT has altogether lost laterals as a local series; PAK and Ubykh have only three lateral consonants (ƛ, L and ɮ), whose correspondences with the PAT fricatives šᶴ and žᶴ were already established by N. S. Trubetskoy (see [Trubetskoy 1922]). However, we may show that these series of correspondences are not at all the only ones that reflect PWC lateral consonants.

First, we should note an evident palatalized character of those PWC consonants that were preserved as laterals in PAK and Ubykh (this is already testified to by the palatalized character of the PAT reflexes šᶴ, žᶴ). Therefore, we reconstruct PWC palatalized laterals *ƛ́, *Ĺ, *ɮ́ here.

The presence of laterals in PWC can be also postulated in those series of correspondences where PAT has the lateral reflex l. Therefore, it is comparatively easy to reconstruct the PWC resonants *l and *ĺ (though in some languages and positions we observe the specific reflexes r, d, tħ here; the reflex L in PAK and Ubykh is not surprising, because L is the only voiced lateral phoneme here). However, we have two more series of correspondences (PAT *l: Ub. L: PAK *tħ and PAT *l: Ub. w: PAK *ħ) in which we should reconstruct some PWC lateral affricates (the latter row evidently represents a labialized correlate of the former one, and the labialization of resonants is impossible in PWC). The most natural solution would be to reconstruct the voiced affricates *Ł and *Łʷ, the reflexes of which appear to be rather close to those of the resonant *l.

In addition to the examined corespondences, there is still a rather large number of specific rows of correspondences, in which descendant languages either

have sibilant reflexes (that do not at all fit into the ranks of the rows of correspondences of original hissing and hushing consonants examined above), or mixed reflexes, with front affricates or fricatives of some languages corresponding to velar fricatives in others. The latter circumstance is already a direct hint at the possibility of reconstructing original lateral consonants here (because velar fricatives are typical reflexes of laterals in many East Caucasian languages, see above). The reconstruction of PWC laterals in all of these series is well confirmed by East Caucasian correspondences.

All types of correspondences that are of interest to us here are divided into four types (which is by itself already an argument for the reconstruction of a standard PWC four-way distinction of qualitative features):

1) Correspondences of non-palatalized PAT fricatives (*x) or hissing affricates (*c, *ç) to the Ubykh palatalized hissing consonants ś, ḉ (or to the hushing s̋ in the series PAT *x: Ub. s̋: PAK *č́) and PAK palatalized hushing consonants. Here we reconstruct PWC non-palatalized laterals (since the places of palatalized laterals are already occupied — see above, and because of the nonpalatalized character of PAT reflexes). We should note that PAT has a double reflex (x or ç) of the glottalized *x̣, the former being present if a following hissing consonant is present in the word (i.e. in a dissimilative position), and the latter — in independent position. The phoneme *Ł, reconstructed above, is included in the series of PWC nonpalatalized lateral consonants as well, despite the fact that it has specific reflexes in descendant languages (which is natural for the least stable element of the lateral series — the voiced lateral affricate).

2) Correspondences of the palatalized PAT fricatives s̋ and ž́ to PAK and Ubykh lateral λ, L, x̣́. Here, as we have already pointed out, we reconstruct PWC palatalized laterals. This series should also undoubtedly include the correspondences of PAT palatalized fricatives ɣ́, ɣ̌ to Ubykh s̋, ź(~ʁ) and PAK *č́, *ɣ (i.e. the rows of correspondences "PAT *ɣ́ : Ub. s̋: PAK *č́" and "PAT *ɣ̌ : Ub. ź(~R) : PAK *ɣ"). In the two latter rows it is natural to reconstruct the palatalized PWC affricates *λ́ and *Ł́ (which have also lost their palatal character in PAK and Ubykh).

3) Correspondences, in which PAT and Ubykh reveal labialized hissing consonants, but PAK has hushing reflexes. It is evident that we also should add here the rows of correspondences with nonpalatalized hushing fricative reflexes in PAT, labialized hissing fricative reflexes in Ubykh and either hushing or velar fricative reflexes in PAK. These are most probably reflexes of PWC labialized lateral affricates (*ƛ^{w}, *ƛ:^{w}, *x̣^{w}; *Ł^{w}, as well as the respective non-labialized *Ł, has specific reflexes, see above) and fricatives (*λ^{w}, *λ:^{w}).

4) Correspondences of PAT labialized hushing consonants to different (velar or front) consonants in Ubykh and PAK. There are exactly four such correspondences (by the number of affricates: *λ́^{w}, *λ́:^{w}, *Ł́^{w} and *x̣́^{w}), and we should apparently reconstruct the PWC "palatalized-labialized" lateral affricates here (we must note that in PAT labialized hushing affricates, as well as fricatives, on which see above, had probably been phonetically palatalized). There are also two fricative rows, in which Ubykh š^{w}, ž^{w} correspond to non-palatalized hushing consonants in PAT and to velars in PAK, and in which we reconstruct the lateral fricatives *ĺ^{w} and *ĺ^{w} respectively.

We should once more emphasize that for all the above-examined rows of correspondences quite reliable external PEC data exists, pointing to the fact that all these rows actually reflect original lateral consonants. Without such external data the reconstruction of the PWC system of laterals would certainly be absolutely hypothetical. Let us note that the correspondence of Adygh front affricates to lateral consonants of Daghestan languages was also mentioned in the works of A. I. Abdokov (see [Abdokov 1976, 1983]); these works, however, do not contain a reconstruction of the PWC system of laterals.

We see that the reconstruction of three local affricate series (hissing, hushing and lateral) and a four-way distinction of qualitative features (plain = nonpalatalized, palatalized, labialized and palatalized-labialized consonants) allows us to find a place and to suggest a phonetic interpretation virtually for all — absolutely chaotic at first sight — correspondences between West Caucasian affricates and fricatives.

6. Velar consonants. At the present time the opposition of palatalized and unpalatalized velars exists only in Abkhaz and Abaza, and is reconstructed on their evidence. In Ubykh and PAK all velars underwent a secondary palatalization. The "palatalized-labialized" velars are reconstructed for those rows of correspondences, in which Ubykh has non-labialized (palatalized) velars corresponding to labialized velars in PAT and PAK. The reflexes of the palatalized fricatives *x́, *ɣ́ (preserved in PAT but subject to sibilantization in Ubykh and PAK), as well as of *x́^{w}, *ɣ́^{w} (yielding normal reflexes in Ubykh and PAK, but developing into *s^{w}, z^{w} in PAT) are somewhat specific (though easy to explain).

7. Uvular consonants are best preserved in the Ubykh language (where we should note only the usual processes: weakening of tense uvulars and delabialization of "palatalized-labialized" uvulars, completely similar to the analogical process in the system of velars, see above). We must note that the signs x́ and ʁ́ in Ubykh are somewhat misleading: there is no distinction of velar and uvular palatalized fricatives, and therefore we could write x́, ɣ́ as well as χ́, ʁ́ (thus, the development *χ́ > x́ is pure orthography, not a real change). Among other changes in Ubykh we should also note the fricativization G > ʁ (in combination with all qualitative features) and *q́^{w} > x́.

In PAT we observe a characteristic process of laryngealization *χ, ʁ > ħ,ʕ (in combination with all qualitative features). A similar laryngealization has also occurred here with the lax uvular *q (and its qualitative correlates), obviously, as a sequence of the preceding fricativization *q > *χ. Among other processes that have affected the PAT system, we should mention: 1) the weakening *q:>q; 2) the fricativization *G > ɣ (we must note that, in PAT, uvular and velar fricatives were not opposed, therefore we could write ʁ instead of ɣ). The original palatalization is preserved only by PAT reflexes of the PWC phonemes *Ǵ and *q́; palatalized q́, ħ́ and ʕ́ are missing in PAT, therefore in the place of PWC *q́:, *χ́ and *ʁ́, PAT has non-palatalized reflexes.

In PAK lax q, q^{w} are well represented only in initial position; judging by the available examples, the PWC lax uvular affricates were strengthened in intervocalic position in PAK. Palatalization of uvulars (except the relic fricative χ́; on its

reflexes in Adygh languages, see below) has been lost in PAK. We must note, however, that while the non-palatalized glottalized *q̇, *q̇ʷ lose their glottalization in PAK (> q:, qʷ:), the respective palatalized consonants yield the specific laryngeal reflexes ʔ, ʔʷ. We should note that A. Kuipers ([Kuipers 1963]) reconstructs here PAK *q̇, *q̇ʷ, which does not seem quite legitimate to us (see below).

Uvular pharyngealized consonants are only preserved in Ubykh. In this language pharyngealization was lost only by palatalized pharyngealized consonants, whose presence in PWC can, however, be postulated on basis of specific rows of correspondences, where Ubykh uvular (sometimes preserving their pharyngealization) consonants correspond to PAT and PAK emphatic laryngeals.

In PAT most pharyngealized uvulars developed into emphatic laryngeals; the uvular character was preserved only by PWC *q́I, *q̇I and *q̇́Iʷ. In PAK the pharyngealized uvulars (except the palatalized ones) develop just as their respective non-pharyngealized counterparts. However, the suggested uvular pharyngealized palatalized (as well as palatalized-labialized) consonants have all developed into emphatic laryngeals (we should note the development *ɤ́I > j, *ɤ́Iʷ > w, that had apparently had an intermediate stage ʕ, ʕʷ).

1.10.1.1. Consonant clusters.

Consonant clusters are extremely widespread in modern West Caucasian languages. Historical analysis shows, however, that in most cases these combinations are secondary, arising as a result of vowel reduction. Only in comparatively few cases can we reconstruct real consonant clusters for PWC (mostly on the basis of Ubykh and PAK data; in PAT all the old clusters were probably altogether lost) in the following correspondences:

PWC	PAT	Ub	PAK
*P-C	C	PC	PC
*M-C	m(V)C	mC	C
*T-C	C	TC	TC
*n-C	C	nC	n(V)C
*r-C	C	C	r(V)C
*s-C	C	šC/ś́C	šC/tC

In the latter type of clusters, Ubykh and Adyghe have š preceding a uvular consonant, but ś́ and t respectively preceding other consonants.

All the listed types of clusters are mostly attested in the beginning of PWC roots and have probably historically developed from the sequences *CVC-, where vowel reduction had occurred already on the PWC level. In some cases, however, the initial PWC clusters probably reflect grammatical prefixation (see above, page 85), the traces of which are almost lost in nominal PWC roots. Grammatical prefixation is probably reflected in some other cases as well (e.g., there is a set of roots with the initial sequences PC- or TC- in PAK, but plain C- in Ubykh and in PAT; these cases are difficult to interpret in any other way than the reflection of old prefixation).

In the medial position of PWC non-monosyllabic roots, consonant clusters are extremely rare (on the simplification of old consonant clusters in this position see above, page 63). However, there is one class of cases that should be specially mentioned. In some roots with initial labial consonants there are variations of nasal and non-nasal reflexes in descendant languages. We tentatively reconstruct nasalized vowels here and establish the following rows of correspondences:

PWC	PAT	Ub	PAK
*wṼ-	*w-	w-	n-
*bṼ-	*m-/P-	P-	P-
*p:Ṽ-,*pṼ-,*ṗṼ-	*m-/P-	m-	P-

In many cases like this nasalization probably reflects old lost nasal or liquid medial resonants. However, the reconstruction of nasalization for PWC is rather tentative — first of all, because there are no traces of nasalized vowels after other initial consonants or in monosyllabic structures. The exact phonetic character of this phenomenon in PWC is yet to be investigated.

PAT has the reflex m- usually preceding fricatives and resonants, while a non-nasal reflex is present in other cases. Laryngeal features (voice / voicelessness / glottalization) of the initial labial in PAT, Ubykh and PAK reflexes depend on the following consonant (see below).

1.10.1.2. Variations of laryngeal features of consonants.

In some cases in West Caucasian languages we observe a violation of regular (see above) correspondences of features, such as voice/voicelessness, tenseness/laxness and glottalization. Variations of voice/voicelessness and glottalization are not rare in the development from PNC to PWC (see above); but sometimes such variations are observed as well within West Caucasian languages themselves. Sometimes the reasons for these variations are difficult to establish; in most cases, however, the probable reason is the activity of various assimilative processes.

One of the most typical cases is the violation of correspondences of laryngeal features in structures of the type PVCV, where the first consonant is usually labial, and the second consonant is usually a front one. Most frequent are the following types of correspondences between languages:

PWC	PAT	Ub	PAK
*pVC:V	*p(V)CV	pCV	*p:C:V
*pVC̣V	*p(V)CV	pCV	*ṗC̣V
*pVZV	*p(V)SV	bZV	*bZV
*ṗVZV(?)	*b(V)ZV	ṗC̣V	*bZV

In some other types of roots we may also suppose the activity of various assimilative processes; they all, however, require individual comments.

1.10.2. Vocalism.

West Caucasian languages are known for their poor vocalic systems. For PWC we should apparently also reconstruct a system consisting of two vowels: *ə and *a, preserved in all descendant languages. In Ubykh and in the Adygh languages there is an additional long vowel ā. In the Adygh languages this vowel is evidently secondary: it appears in the first syllable of the word in the place of the short *a in case there is another a in the next syllable (in case of ə in the next syllable there is no lengthening). In Ubykh, ā in the first syllable can also appear only before the vowel a of the second syllable. In the same position, however, we can meet the short a as well, thus the distribution between a and ā is not quite clear here (though it would not be reasonable to reconstruct the opposition *a — *ā for PWC on the basis of Ubykh data alone).

In many cases the PAT, Ubykh and PAK vowels ə and a uniformly correspond to each other. We should mention some particular regularities that seem to modify the reflexes in individual cases:

1) The vowel *ə yields a in PAK and Ubykh in monosyllabic roots that are included in the enklinomena (unaccented) type in PAT; the old *ə is preserved in roots of the orthotonic (accented) type and after labialized consonants;

2) The vowel *a is usually preserved everywhere. Only in the initial syllable *ma- in bisyllabic roots do we observe the development a > ə in Ubykh and in PAT — also only in roots with the initial unaccented (minus) syllable.

The situation with vocalic correspondences is somewhat complicated by the evident presence of the *ə/a ablaut in PWC (in PAT there are clear traces of this ablaut in nominal roots, and in PAK it is very productive in verbal stems). This often leads to a violation of correspondences even between close dialects.

On the prehistory of West Caucasian bivocalism see above (page 73); its development from a richer original system (as a result of transferring qualitative features onto preceding consonants) seems quite clear. This allows us to explain the extreme richness of PWC consonantism as well as the four-way opposition of consonantal qualitative features. However, it is hardly reasonable to reconstruct qualitative oppositions of vowels as late as on the PWC level, as does A. I. Abdokov; we should rather date the process of destruction of qualitative (and quantitative) vocalic oppositions from the period that immediately preceded the division of the PWC unity.

1.10.3. Root structure and prosody.

In PWC, as well as in modern West Caucasian languages, the bulk of roots had the structure (C)CV; longer roots with the structure CVCV or CVCVCV were more rare. The prevalence of monosyllabic roots in PWC is historically explained by the fall of syllables with resonant and laryngeal consonants (see above, page 85).

PWC undoubtedly had a tonal accent structure. In the modern Ubykh and Abkhaz languages the original tonal system has been transformed into a system with a

dynamic mobile accent, wherein the positioning rules are determined by information about the belonging of each syllable of the given word-form to one of the two accent classes (which are respectively marked as "+" and "-" by V. A. Dybo). Both Abkhaz and Ubykh have a rule according to which dynamic accent in the word is placed on the last syllable in the sequence of "plus" syllables, and in the case when the word has no "plus" syllables — on the last syllable in the sequence of "minus" syllables. See the description and an attempt of the reconstruction of the original system (it is suggested that the morphonologic "+" and "-" characteristics reflect PWC tones) in the works [Dybo 1977, 1989].

Some irregularities in accent correspondences between Ubykh and Abkhaz are probably explained by the presence of a third tone in PWC, which cannot be discovered by synchronous morphonological analysis of the Ubykh and Abkhaz systems. While working with speakers of the Tapant dialect of the Abaza language, we discovered that it still preserves tonal oppositions (already lost in Abkhaz), that are, however, already combined with a developed system of dynamic accent. The differences between the Tapant and Abkhaz systems also serve as an argument in favour of reconstructing one more tonal feature in PAT, whose postulation would allow us to explain many cases of irregular Abkhaz-Ubykh accent correspondences. The solution of this problem now depends on a careful field examination of the Abaza data.

In the modern Adygh languages the accent distinctions seem to be absent. However, S. L. Nikolayev was able to reconstruct a distinctive accent in bisyllabic nominal PAK roots, the place of which, in most cases, corresponds to the place of accent in related Abkhaz and Ubykh forms (see below).

The reconstruction of the PWC accent system, we hope, will be completed in the nearest future, after which it will be possible to attempt a comparison of prosodic systems in West Caucasian and East Caucasian languages.

1.10.4. From PAT to the modern Abkhaz and Abaza dialects.

All modern Abkhaz and Abaza dialects are very close to each other, and therefore we will limit ourselves to the briefest information about their comparative phonology (we use the data of the best described systems: the Bzyb and Abzhui dialects of Abkhaz and the Tapant dialect of Abaza).

For PAT we reconstruct the following system of consonants (a similar system — with some minor differences — is suggested in the works of K.V. Lomtatidze, see [Lomtatidze 1976] et al.):

Labials	p	b	ṗ	f		m	w
Dentals	t	d	ṭ			n	r, l
Labialized dentals	t^w	d^w	$ṭ^w$				
Hissing	c	ʒ	ç	s	z		
Hissing-hushing (palatalized)	ć	ʒ́	ḉ	ś	ź		
Labialized hissing	c^w	$ʒ^w$	$ç^w$	s^w	z^w		
Hushing	č	ǯ	ç̌	š	ž		
Palatalized hushing	č́	ǯ́	ç̌́	ś	ź		j
Labialized hushing	$č^w$	$ǯ^w$	$ç̌^w$	$š^w$	$ž^w$		
Velars	k	g	ķ	x	ɣ		
Palatalized velars	ḱ	ǵ	ķ́	ẋ	ɣ́		
Labialized velars	k^w	g^w	$ķ^w$	x^w	$ɣ^w$		
Uvulars	q		q̇				
Palatalized uvulars			q̇́				
Labialized uvulars	q^w		$q̇^w$				
Emphatic laryngeals	ʔ			ħ	ʕ		
Labialized emphatic laryngeals				$ħ^w$	$ʕ^w$		

We establish the following correspondences between modern languages and dialects:

PAT	Bzyb	Abzh	Tap
*p	p	p	p
*b	b	b	b
*ṗ	ṗ	ṗ	ṗ
*f	f	f	f
*w	w	w	w
*m	m	m	m
*t	t	t	t
*d	d	d	d
*ṭ	ṭ	ṭ	ṭ
*r	r	r	r
*l	l	l	l
*n	n	n	n
*t^w	t^w [tp]	t^w [tp]	$č^w$
*d^w	d^w [db]	d^w [db]	$ǯ^w$
*$ṭ^w$	$ṭ^w$ [ṭṗ]	$ṭ^w$ [ṭṗ]	$ç̌^w$
*c	c	c	c
*ʒ	ʒ	ʒ	ʒ
*ç	ç	ç	ç

PAT	Bzyb	Abzh	Tap
*s	s	s	s
*z	z	z	z
*ć	ć	c	c
*ʒ́	ʒ́	ʒ(~z)	ʒ(~z)
*ḉ	ḉ	ç	ç
*ś	ś	s	s
*ź	ź	z	z
*cʷ	ćᵛ	čᵛ	čʷ
*ʒʷ	ʒ́ᵛ	ǯᵛ	ǯʷ
*çʷ	ḉᵛ	čᵛ	čʷ
*sʷ	śᵛ	šᵛ	šʷ
*zʷ	źᵛ	žᵛ	žʷ
*č	č	č	č
*ǯ	ǯ	ǯ	ǯ
*č̣	č̣	č̣	č̣
*š	š	š	š
*ž	ž	ž	ž
*ć̋	ć̋	ć̋	ć̋
*ʒ́̋	ʒ́̋	ʒ́̋	ʒ́̋
*ḉ̋	ḉ̋	ḉ̋	ḉ̋
*ś̋	ś̋	ś̋	ś̋
*ź̋	ź̋	ź̋	ź̋
*j	j	j	j
*čʷ	f	f	c
*ǯʷ	v	v	ʒ
*č̣ʷ	ṗ	ṗ	ç
*šʷ	šᵛ	šᵛ	šʷ
*žʷ	žᵛ	žᵛ	žʷ
*k	k	k	k
*g	g	g	g
*ķ	ķ	ķ	ķ
*x	x	χ	χ
*ɣ	ʁ	ʁ	ʁ
*ḱ	ḱ	ḱ	ḱ
*ǵ	ǵ	ǵ	ǵ
*ķ́	ķ́	ķ́	ķ́
*x́	χ́	χ́	χ́
*ɣ́	ʁ́	ʁ́	ʁ́
*kʷ	kʷ	kʷ	kʷ
*gʷ	gʷ	gʷ	gʷ
*ķʷ	ķʷ	ķʷ	ķʷ
*xʷ	xʷ	χʷ	χʷ
*ɣʷ	ʁʷ	ʁʷ	ʁʷ
*q	χ	χ	q
*q̇	q̇	q̇	q̇

PAT	Bzyb	Abzh	Tap
*q́	q́	q́	q́
*q^{w}	χ^{w}	χ^{w}	q^{w}
*q̇^{w}	q̇^{w}	q̇^{w}	q̇^{w}
*ʔ	q̇	q̇	ʔ
*ħ	ħ	ħ	ħ
*ʕ	∅(ā)	∅(ā)	ʕ
*ħ^{w}	ħ^{w}	ħ^{w}	ħ^{w}
*ʕ^{w}	ʕ^{w}	ʕ^{w}	ʕ^{w}

Comments.

1. Phonemes, that are reconstructed as hissing labialized and hushing labialized, could be interpreted as hissing-hushing labialized and hissing labialized respectively. Historically, however, only the former have developed from hissing labialized consonants (the rare PAT hushing labialized consonants go back only to PWC laterals, see above), and we prefer the interpretation suggested above.

2. PAT had no distinction between velar and uvular fricatives (it has arisen only in the Bzyb dialect as a result of the fricativization q > χ). In modern Abkhaz and Abaza dialects these phonemes have a uvular articulation. This also concerns the Bzyb dialect with its opposition x — χ : the phoneme that we denote as x also has a uvular (or, at least, back velar) place of articulation, and differs from the uvular χ primarily by the character of friction (flat friction slot by x as opposed to round friction slot by χ). In PAT we could also reconstruct uvular rather than velar fricatives; historically, however, these phonemes go back to PWC velars (and laterals, see above), while old uvular fricatives in PAT have undergone laryngealization. Therefore, for PAT we prefer to reconstruct velar fricatives (though it is certainly only one of the possibilities).

3. The PAT voiced laryngeal ʕ disappears in Abkhaz, leaving behind a compensatory lengthening of the vowel (both ə and a give ā in this case). The correlated labialized laryngeal, preserved in Abaza, in Abkhaz is pronounced as a specific "emphatic-palatalized" w (/ẃI/). For the sake of uniformity we denote this specific Abkhaz phoneme as ʕ^{w}, using the same transcription as in Abaza.

As for vowels, we reconstruct the same bivocalic system with the vowels ə and a for PAT, as for PWC in general. In Abkhaz as well as in Abaza there is a rule according to which the vowel ə is dropped in unaccented position (if the accent is being shifted to this unaccented syllable, the vowel ə is restored). As a result of ə-reductions in long words new clusters can arise, consisting of a large number of consonants; the morphonological analysis, however, clearly shows that all such sequences are recent and that in PAT we should reconstruct dropped vowels. Both in Abkhaz and in Abaza there are some contexts in which the unaccented ə does not disappear; however, since such contexts are rather few, and the operating rules are rather complicated, we will not dwell on them here.

In some words Abkhaz dialects have clusters of identical consonants, never divided by ə. This is mostly expressive vocabulary, but it may in principle point to the appearance in Abkhaz of a new class of tense consonants (geminates) (the old PWC tense consonants have been lost in PAT, see above).

As a result of the complete simplification of consonant clusters, the PAT root has acquired the structure CV (or CVCV, more rarely CVCVCV). In modern languages this structure is preserved on the morphonological level, but, as a result of ə-reduction, on the phonological level there are already many roots with new consonant clusters.

For a short characteristics of the Abkhaz accent system see above, page 193; for more detailed information see the works [Дыбо 1977, 1989].

1.10.5. From PAK to modern Adyghe languages.

The PAK reconstruction was made by A. Kuipers (see [Kuipers 1963]; later Soviet works — Балкаров 1970 and Кумахов 1981 — have little added to our knowledge of PAK). There are the following minor differences (suggested by S. L. Nikolayev) between his reconstruction and ours:

1) On the basis of (rare) correspondences "Ad. c̆: Kab. ś" and "Ad. ʒ̆: Kab. ź", we reconstruct the PAK hissing-hushing affricates *ć and *ʒ́, which are parallel to the hissing-hushing fricatives *ś, *ź (the latter two are present in the reconstruction of A. Kuipers, too). Consequently, the correspondence "Ad. ṣ́: Kab. ṣ́" (according to A. Kuipers reflecting PAK *ṣ́) is interpreted by us as the result of a uniform fricativization of the original PAK glottalized hissing-hushing affricate *ć̣.

2) On basis of the correspondence "Ad. ɣ: Kab. ž" (also very rare) we reconstruct a fourth PAK lateral phoneme *Ł (on its origin see above). Consequently, instead of the lateral glottalized fricative *ƛ̣ (according to A. Kuipers) we reconstruct a PAK lateral glottalized affricate *ʎ̣.

3) On basis of the correspondences "Ad. ħ: Kab. χ" and "Ad. ɣ: Kab. ź", we reconstruct two palatalized back fricatives *χ́ and *ɣ́, not present in the reconstruction of A. Kuipers (they are also very rare).

4) Instead of the fricative *ṣʷ, we reconstruct the affricate *c̣ʷ; thus, glottalized fricatives are totally eliminated from the PAK system (their secondary character is also clearly seen in comparison with the evidence of other West Caucasian languages, see above).

5) On the other hand, instead of the glottalized affricate q̇ of A. Kuipers we reconstruct the emphatic laryngeal *ʔ (preserved with the same articulation in modern Adygh languages); as we have seen above, though this laryngeal developed from an earlier uvular consonant, it did not develop directly from *q̇. The fact that this consonant is rendered as q̇ in Ubykh loanwords, is irrelevant in this case (because of the lack of emphatic laryngeals in Ubykh).

6) Instead of the initial h, reconstructed by A. Kuipers on the basis of system considerations, we prefer to reconstruct a zero beginning in PAK.

7) In bisyllabic roots of PAK we reconstruct two possible places of accent with the following development of structures in descendant languages:

PAK	Ad	Kab
*CáCa	CāC	CāCa
*CáCə	CaC	CaC
*CəCa	CəC	CəCa
*CəCə	CəC	CəC
*CaCá	CāCa	CāCa
*CaCə	CaCə	CaC
*CəCá	CəCa	CəCa
*CəCə	CəCə	CəC

In Adyghe (Temirgoy) there is a rule, according to which every unaccented final vowel is reduced; in Kabardian there is a rule according to which every final ə is reduced, but final a is preserved. It is possible that we will be able to reconstruct relevant accent oppositions in monosyllabic morphemes as well (by analysing composita); however, this has not yet been done.

Let us now give a short table of correspondences between the Adyghe languages and dialects (for more detailed information see the works [Kuipers 1963, Kumakhov 1981]). We will give the data of the best described systems (Bzhedug, Temirgoy and Kabardian):

AK	Bzhed	Tem	Kab
*p	p	p	p
*p:	p:	p	b
*b	b	b	b
*ṗ	ṗ	ṗ	ṗ
*w	w	w	w
*m	m	m	m
*t	t	t	t
*t:	t:	t	d
*d	d	d	d
*ṭ	ṭ	ṭ	ṭ
*r	r	r	r
*n	n	n	n
*c	c	c	c
*c:	c:	c	ʒ
*ʒ	ʒ	ʒ	ʒ
*ç	ç	ç	ç
*s	s	s	s
*z	z	z	z
*cʷ	ćʷ	ćʷ	f
*c:ʷ	ć:ʷ	ćʷ	v
*ʒʷ	źʷ	źʷ	v
*çʷ	ṣ́ʷ	ṣ́ʷ	f̣
*sʷ	śʷ	śʷ	f
*zʷ	źʷ	źʷ	v
*ć(ć:)	č̣(č̣:)	č̣	ś
*ʒ́	ǯ	ǯ	ź

AK	Bzhed	Tem	Kab
*ɕ́	ɕ́	ɕ́	ɕ́
*ś	ś	ś	ś
*ź	ź	ź	ź
*č	š	š	š
*č:	č:	č	ž
*ɕ̌	ɕ̌	ɕ̌	ɕ́
*š	š	š	ś
*š:	š:	š	ś
*ž	ž	ž	ź
*ć	ś	ś	š
*ć:	ć:	ć	ž
*ʒ́	ʒ́	ʒ́	ž
*ɕ́	ɕ́	ɕ́	ɕ́
*ś	ś	ś	ś
*ś:	ś:	ś	ś
*ź	ź	ź	ź
*Ł	ɣ	ɣ	ž
*ƛ̣	ƛ̣	ƛ̣	ƛ̣
*ƛ	ƛ	ƛ	ƛ
*L	L	L	L
*ǩ	ć	ć	č
*ǩ:	ć:	ć	ǯ
*ǵ	ʒ́	ʒ́	ǯ
*ɟ́	ɕ́	ɕ́	č̣
*x	x	x	x
*ɣ	ɣ	ɣ	ɣ
*kʷ	kʷ	kʷ	kʷ
*k:ʷ	k:ʷ	kʷ	gʷ
*gʷ	gʷ	gʷ	gʷ
*ɟ̣ʷ	ɟ̣ʷ	ɟ̣ʷ	ɟ̣ʷ
*xʷ	f	f	xʷ
*ɣ́	ɣ	ɣ	ź
*q	q	q-,q:	q
*q:	q:	q:	q̇
*χ	χ	χ	χ
*ʁ	ʁ	ʁ	ʁ
*χ́	ħ	ħ	χ
*qʷ	qʷ	qʷ-,q:ʷ	qʷ
*q:ʷ	q:ʷ	q:ʷ	q̇ʷ
*χʷ	χʷ	χʷ	χʷ
*ʁʷ	ʁʷ	ʁʷ	ʁʷ
*ʔ	ʔ	ʔ	ʔ
*ħ	ħ	ħ	ħ