

A GLOTTOCHRONOLOGICAL ANALYSIS

of

LATVIAN AND RUSSIAN

by

GUIDO STRAUME

B.A., The University of British Columbia, 1965

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department

of

Slavonic Studies

Division of Linguistics

We accept this thesis as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

August, 1967

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Slavonics/Linguistics

The University of British Columbia
Vancouver 8, Canada

Date August 30, 1967.

ABSTRACT¹

Glottochronology is a branch of linguistics which attempts to provide dates for a historical relationship between languages, as well as to establish degrees of lexical relationship. In much the same way as carbon 14 dating provides dates for archaeological finds, glottochronological analysis is a technique utilized to estimate linguistic prehistory.

The hypothesis that a proto Balto-Slavonic language has existed in prehistoric times is tested in this paper. This test is based on the cognate count, which reflects the cognation, in percentages, of corresponding lexical forms in both languages. The validity of the results obtained in the cognate count is dependent on the method of determination of cognation. Therefore, only an extremely rigorous approach, in the comparison of corresponding forms in Latvian and Russian, can be accepted as a reasonably valid method of determining true cognation.

The corpus of the cognate count consists of 207 items in either language. Each item is formed by corresponding free morphemes in both Latvian and Russian, and is designated as either a positive or a negative item, depending on the cognation of the corresponding forms. The results of the cognate

¹All acknowledgements of indebtedness to sources are to be found in the text.

count are then processed according to the accepted glottochronological methods.

According to the results obtained, it was concluded that the hypothesis, claiming a proto Balto-Slavonic language, had to be rejected due to insufficient evidence for such a language. It also appeared that a substantial increase in sample size could furnish this type of investigation with more reliable results. The conclusions reached indicate that the determination of a genetic relationship between languages, with the aid of the glottochronological technique, tends to be inconclusive. It appears that glottochronological analysis is a valuable method for use in the determination of degrees of relationship between languages.

The results obtained from this type of analysis should be utilized in correlation to results obtained by other disciplines in an endeavour to reconstruct prehistory, as dates obtained via this technique should be viewed as not absolute but rather as relative measurements.

C O N T E N T S

	Page
Glottochronological Perspectives	1
Cognate Count:	
A. Criterion	17
B. Methodology	18
C. Procedure	22
D. Word Lists	26
E. Summary of Symbols, Abbreviations and Transliterations	30
F. First Word List	36
G. Second Word List	78
Glottochronological Analysis	126
A. Sample I considered	128
B. Sample II considered	139
C. Evaluation	144
D. Conclusions	154
Lexicon:	
Summary of the Cognate Count	161
Latvian-English Vocabulary	169
Russian-English Vocabulary	173
Bibliography	178

In acknowledgment of the attention,
guidance and inspiration afforded me by
Dr. J. O. St. Clair-Sobell, of the Department
of Slavonic Studies.

I also wish to thank Dr. R. J. Gregg,
of the Department of Classics, Division of
Linguistics, for his cooperation and encourage-
ment, and Prof. V. Revutsky, of the Department
of Slavonic Studies, for his assistance in my
research work.

To the memory of

MORRIS SWADESH.

GLOTTOCHRONOLOGICAL PERSPECTIVES

The main purpose of glottochronological techniques is to endeavour to clarify the linguistic prehistory of any given language or language group. The word 'prehistory' designates, in this paper, "that part of the past for which written records are lacking, in contrast, therefore, with what is best called recorded history".¹ It is reasonable to assume that a certain number of lexical forms reflect historically old morphemes, which could be treated as historical evidence, much as in archaeology artifacts are utilized to determine the probable prehistory of any given people or society. There are two basic concepts in glottochronology upon which all calculations are based.²

The first concept establishes the framework for a basic vocabulary, which is taken to be quite uniform, and consequently, less subject to change over a relatively long period of time.³ This concept implies the exclusion of all possible socio-cultural lexical items from the basic vocabulary, as they may or may not represent borrowed forms. Therefore, basic vocabulary is

¹Charles F. Hockett, A Course in Modern Linguistics, The Macmillan Co., New York, 1960, p. 461.

²The description and procedural pattern in glottochronology, in this paper, are based, to a considerable degree, on Miss Gudschinsky's article: Sarah C. Gudschinsky, The ABC's of Lexicostatistics (Glottochronology), Word, vol. 12 (August, 1956), pp. 175-210.

³Morris Swadesh, Diffusional Cumulation and Archaic Residue as Historical Explanations, Southwestern Journal of Anthropology, University of New Mexico Press, Albuquerque, N.M., vol. 7, p. 13.

assumed to include only historically old and autochthonous forms, viz., non-borrowed or 'native' forms.

The second concept is based on the assumption that certain vocabulary items are retained in any given language over a reasonably long period of time. This phenomenon is designated as a retention rate and it is said to be quite constant. The rate of loss of vocabulary items is a corollary of the retention rate, and, therefore, also approximately constant in all languages.

The two concepts are inter-dependent as they both refer to basic vocabulary. Furthermore, basic vocabulary is assumed to be in juxtaposition with general vocabulary (on the basis of the first concept), e.g., the general vocabulary is said to be less uniform, consequently it is more subject to borrowing and change. It follows that, in glottochronology, we deal with a specific part of vocabulary upon which our analysis is dependent.

The main procedure of glottochronology is based on the comparison of the basic vocabularies of two or more languages. This comparison is usually designated as the cognate count, for it yields a certain number of cognates and non-cognates. It is obvious that caution has to be exercised in determining cognation and only a rigorous approach in comparing corresponding forms will furnish an investigator with a reasonably accurate cognate count.¹

¹Morris Swadesh, Mosan I: A Problem of Remote Common Origin, I.J. of A.L., vol. 19, p. 40: "For the purposes of a study . . . aimed at establishing remote common origin, great caution is necessary to avoid being misled by loan similarities."

It also follows that an attempt should be made to avoid any possible bias in selecting forms, as well as in comparing them, e.g.:

If, for example, in a list of 200 comparisons there is only one cognate (.5%) the estimated time depth is 12.2 millenia [sic], but if there are two cognates (1%) the time depth is 10.6 millenia. This is a difference of sixteen centuries dependent on the recognition of a single cognate. 1

Of course, the above example represents an extreme case; however, it does emphasize the necessity of avoiding any possible bias in every decision, to avoid skewing of the estimates of probable time depths. It should also be noted that the results obtained in a glottochronological analysis do not represent absolute concepts in time but only approximations in time which are relative to the probable common origin of both languages in question, for:

Language involves physical, psychological, historical factors, in short, natural and human factors in a very complex interrelation. We succeed easily in adjusting the first (viz., natural factors) to constant schemes, but the second (viz., human factors) are unforeseeable and unsteady and elude any exact, mathematical calculation. 2

As already noted, the loss of vocabulary is a corollary of the retention of certain lexical items which is designated

¹Gudschinsky, ABC's, ibid. (meaning p. 204).

²Louigi Heilmann's Comments, cited in Knut Bergsland and Hans Vogt, On the Validity of Glottochronology. Current Anthropology, vol. 3, No. 2 (April, 1962), p. 135.

as a retention rate. The retention rate is expressed in percentages, and in this paper it will be viewed as 80.5% of retainment of the original vocabulary after a millennium of separation, to wit, independent development of both languages.¹ Conversely, this rate implies also a vocabulary loss of 19.5% of original lexical items over the same time period. It should be noted that a considerable controversy exists regarding the concept of the retention rate being constant.² For the purposes of this work, the above retention rate appeared to be quite adequate and reasonable, and it was thought that any comparison of both languages which also involved the changes of the retention rate, e.g., calculating time depths in accordance with different retention rates, would be beyond the limited scope of this paper. Suffice it to say that a language and its history are eminently more difficult to study and to equate with external elements,

¹Robert B. Lees, The Basis of Glottochronology, Language, Linguistic Society of America, 1953, vol. 29, p. 117.

²Knut Bergsland and Hans Vogt, On the Validity of Glottochronology. Current Anthropology, vol. 3, No. 2 (April, 1962), pp. 115-129, and Comments, pp. 129-152. They criticize the concept that a retention rate is constant for all languages and conclude that this concept is false, for the retention rate varies considerably between languages, even of the same family, e.g., the retention rate for the English with a given sample size of 200 items is 67.8%, whereas the corresponding figure for Modern Icelandic is 97.3%. It should be noted that these different retention rates were obtained for languages whose recorded histories predate considerably anything the Slavic speech community has and, of course, the Baltic group has no recorded history which could even compare with the Slavic.

such as other languages, than the study of most complicated mathematical problems. This is generally accepted as axiomatic, for any language is connected with such variables as preferences, drifts, psychological and other basically immeasurable human factors. A further complication in this paper arises due to the fact that we are attempting to establish the prehistory of the two languages, e.g., the possibility of the existence of a proto Balto-Slavonic language. Thus, any diachronic connection between these two speech groups, even in the optimum case, will reflect only a hypothetical situation, for a time depth involving anything in excess of a millennium. The reason for this is that recorded history in the case of the Slavonic languages is approximately 1,000 years old, beginning with the first writs in the Church Slavonic, whereas the Baltic languages first appeared in print only 300 years ago, commencing, in the Latvian, with the translation of the Lord's Prayer in the Chronicle of Simon Grunau,¹ and other translations of a religious nature, mostly translated by members of the German clergy. In view of the extenuating circumstances regarding the recorded histories of the two languages in question, and particularly the Latvian, perhaps Hymes' observation, pertaining to the concept that the retention rate is constant, might be viewed as a useful guide for the application of the retention rate (viz., 80.5%) in this paper:

¹Jānis Andrupis and Vitauts Kalve, Latvian Literature, M. Goppers, Stockholm, 1954, p. 49ff.

In my opinion, were 5,000 years of Assyro-Babylonian to confirm the retention rate, this would be evidence of great importance; it would be important if it did not confirm the rate. Meanwhile, use of the method to determine time depths of greater than 2,000 years remains an extrapolation for which no direct confirmation exists. ¹

Thus, a conclusion can be reached that glottochronology is a study of the history (more precisely - an estimate of the pre-history) of languages based on the loss of vocabulary. However, there are certain other considerations connected with the loss in vocabulary, such as replacement of lost lexical items and reborrowing of lost autochthonous vocabulary items.

The vocabulary of any language is normally that part of speech which is subject to most change, for many internal as well as external factors might influence it, such as slang, interaction of dialects, certain preferences for innovations, as well as sociological and cultural changes, technological advances, influences of adstratum and superstratum speech communities. It is exceedingly difficult to measure or to predict accurately most of the above-mentioned causes for vocabulary change. This difficulty then predetermines that the results obtained via the glottochronological method will, admittedly, contain a certain

¹Dell H. Hymes, Lexicostatistics So Far, Current Anthropology, vol. 1 (January, 1960), p. 14. Hymes offers his opinion, in this instance, to Hjelmslev's suggestion that a check of the retention rate in a single case would prove little if anything.

degree of error in the estimates of 'true depths'. Therefore, results obtained in glottochronology should be viewed only as approximations in time.

The hypothesis tested in this paper formulates the existence of a proto Balto-Slavonic language, e.g., both languages represent modern reflexes of a common parent language. Indubitably, both languages belong to the I-E linguistic stock and the hypothesis postulates that the Baltic and the Slavonic speech communities shared a common language (viz., proto Balto-Slavonic) after they separated from the proto I-E language. The status of this Balto-Slavonic parent language is assumed to have been similar to the one allotted to the Latin language in relation to its modern reflexes - the Romance languages. This hypothesis will be assumed to be correct in this paper and an attempt will be made to prove its validity.

This hypothesis has caused a considerable controversy in linguistic circles ever since the publication of Antoine Meillet's work "Dialectes indo-européens" in 1908. In this work the author challenges the hypothesis that Baltic and Slavonic languages depict the modern reflexes of a common language, which hitherto had been held as correct, i.e., in his view these two languages do not represent modern reflexes of a parent language but depict independent but parallel developments directly from the proto I-E language. Thus, he dismisses, to a greater or lesser degree, the possible existence of a Balto-Slavonic parent language, and, consequently, any type of diachronic Balto-Slavonic

linguistic unity. The modern approach to this hypothesis generally appears to be one based on caution and inconclusiveness, except for some linguists who either support or deny the validity of this hypothesis.¹ As already noted, this hypothesis will be treated as true in this work. Unfortunately, the scope and framework of this paper are too limited for discussion of

¹Oswald Szemerényi, The Problem of Balto-Slav [sic] Unity. A Critical Survey. Kratylos, Otto Harrassowitz, Wiesbaden, 1957, vol. 1, pp. 97-123. This article represents a strong support for a Balto-Slavonic unity and favours the acceptance of our hypothesis as true. A. Senn holds the opposite view, i.e., he rejects the hypothesis, as depicted in several of his publications, notably A. Senn, On the Degree of Kinship between Slavic and Baltic, The Slavonic and Eastern European Review, 1941, vol. 20, pp. 251-264. However, it should be noted that either point of view, in my estimation, is based on certain assumptions which could be used with relative facility to negate either the acceptance or dismissal of this hypothesis, i.e., the evidence presented by both proponents is quite inconclusive, for, in this case, structural considerations alone will not suffice. The more moderate view is represented by Walter Porzig, Die Gliederung des Indogermanischen Sprachgebiets, Carl Winter, Heidelberg, 1954, pp. 139-140:

Im baltisch-slavischem Raum stellt sich eine ähnliche Frage wie im italienischen, nämlich die nach dem Alter der unverkennbaren Berührungen der beiden Sprachen. . . . Die beiden Sprachzweige waren, soweit unsere Kenntnis reicht, immer benachbart. Daher stammen die meisten der ihnen ausschliesslich eigenen Neuerungen, die fast alle Wortbildung und Wortschatz betreffen. Auf dem Gebiet der Lautlehre und der Flexion haben sie überhaupt kaum welche durchgeführt. Es fragt sich nun, ob auch schon die Dialektgebiete, aus denen ihr idg. Erbe stammt, benachbart waren. Unmittelbare Anzeichen dafür sind wenig vorhanden.

The very thorough study of Stang's about the Slavic and Baltic verbal systems could be viewed as a moderate view regarding this hypothesis, e.g., Chr. S. Stang, Das Slavische und Baltische Verbum, Oslo, 1942, p. 274: "Die Zusammenstellung [sic] der hier angeführten Tatsachen zeigt, dass in früherer nachher. Zeit das balt. und slav. Verbalssystem einander sehr nahe gestanden haben." This work could also be viewed as conservative, for the conclusions in it are reached on the basis of the verbal systems alone.

every probable linguistic influence, interaction and propensity of response within the contact areas formed by both languages. However, it should be emphasized that, in order to obtain reliable results concerning such a controversial topic as Balto-Slavonic unity, proper and quite extensive consideration would have to be given also to the adjacent speech communities, to wit, Germanic and Finnic. That is to say that these two language families should be considered at least as forces for a possible adstratum influence, as it were. It is generally acknowledged that Baltic and Finnic linguistic contacts are of considerable antiquity. However, caution should be exercised when estimating the degree of convergence of these two linguistic groups, for highly dubious and even erroneous conclusions might be reached as to their interrelationship.¹ The Germanic (particularly the Scandinavian) and the Baltic speech communities have been in reasonably close linguistic contact for at least 1,100 years.² Thus, it is reasonable to assume that these contacts left not only some political and cultural but also linguistic traces. It should also be noted that the German language has represented

¹Herman Hirt, Die Indogermanen, Karl J. Trübner, Strassburg, 1905, vol. 1, p. 125: "Da wir nun die Letten in einem Gebiet finden, das ursprünglich wohl von finnischen Stämmen besetzt war, so beruht diese starke Veränderung des Lettischen vermutlich darauf, dass finnische Völker litauisch gelernt haben." Perhaps then, conclusions of this nature motivated Meillet to challenge even the accepted hypothesis of Balto-Slavonic unity.

²Arnolds Spekke, History of Latvia, M. Goppers, Stockholm, 1957, p. 77: "The second phase in the Germanic advance towards the east was that of the Northmen [Sic] which began to take effect from the 9th century onward . . ."

a superstratum position in the Baltic area during the past 700 years, the last 200 of which have been shared, in the Latvian case, with the Russian.¹

In addition to the above facts, which cannot be dismissed while considering our hypothesis (even if their evaluation involves extra-linguistic elements), it seems to be obvious that we are dealing with a speech community, in the Baltic case, which, to a greater or lesser extent, is multilingual, similar, for instance, to the case of the Dutch.² In the Baltic area, multilingualism would seem to be the result of the fact that Latvian was in a substratum position until the 1920's. Therefore, it is axiomatic that Vildomec offers the following observations:

In the summer term of 1946 the Dutch and the Baltic students in the International College, Elsinore, Denmark, seemed to be the most willing to use L^e's among the fourteen nationalities represented, the former having the most solid practical mastery of languages, the latter learning remarkably quickly by mere listening and talking. 3

¹The Lithuanian case is slightly different from the Latvian, for historically it reflects closer association with the Polish than either German or Russian.

²For the purposes of this paper, any consideration of fluency of polyglots is assumed to be unimportant.

³Verboj Vildomec, Multilingualism, A. W. Sythoff, Leyden, The Netherlands, 1963, p. 42. L^e = foreign language (langue étrangère). It should be noted that the Dutch students displayed a high degree of practical ability in using foreign languages, because of their well established pedagogic system, which has an established history of 'language orientation' for various reasons and predates any facility that could have been available to the Baltic students by a minimum of 75 years. Nevertheless, Vildomec's observations can be substantiated, for it is generally known that the services of Baltic interpreters have been utilized

In view of the above considerations, it appears that any estimate of the Baltic linguistic prehistory, especially in comparison to the Slavonic language group, will foster some controversy. Unfortunately, an analysis, based on linguistic evidence alone, would be far from satisfactory,¹ as the highly complicated nature of the Baltic area demands at least some extra-linguistic considerations in order to avoid any skewing of our results. This is the price of considering the hypothesis at all, for purely linguistic analyses have obviously caused considerable controversies about this 'sensitive' linguistic area. Therefore, the method of glottochronological analysis seems to be the most promising in dealing with this hypothesis. It is also thought that the results of this analysis in correlation to those obtained from purely linguistic (viz., structural) analyses

quite extensively by both the Germanic and the Slavonic speech communities. Perhaps, we have to recognize some 'inate ability' of the Balts, as Vildomec so vividly points out.

¹Perhaps, the following could be mentioned as an example of a linguistic investigation based on extra-linguistic considerations: Robert L. Oswalt, Russian Loanwords in Southwestern Pomo, I.J. of A.L., 1958, vol. 24, pp. 245-247. This interesting, but unfortunately short, article describes Russian loan forms in the Southwestern Pomo language. The reason for this research was based on the fact that the Russians occupied Fort Ross, located in the middle of Pomo territory, as it were, for about 29 years (1811 - 1840). The fieldwork resulted in determining 12 Russian loan forms in the Pomo language, e.g., *kyška* "cat", *loška* "spoon", *misuk* "sack", *sinitca* "wheat", *kulucitca* "wild mustard", *molokko* "milk", *kafey* "coffee", *cāyu* "tea", *časka* "dishes", *yāpalka* "apple", *cūki* "socks". The Central Pomo language, which is spoken in the north of S.W. Pomo, contains at least two of the above 12 forms, e.g., *loška*, *cāyu*, and also *pārus* "canvas" which is to be found only in their speech group. The investigators also searched for possible Aleut loan forms, as it was learned that the Russians had many Aleut hunters with them. One such form was positively identified in S.W. Pomo, e.g., *kalikak* "letter, book", which probably is connected with Russian *kniga*, *ibid*.

might provide a calmer atmosphere, as it were, for future tests of the hypothesis.¹

As already noted, the results of the glottochronological analysis depend on the basic word list or cognate count. It follows then that any possible bias in selecting corresponding forms in either language must be avoided. The same principle, of course, has to be employed when estimating cognation between forms. To supply depth to the decision-making process of cognation, extensive background of possible external connections is given in the cognate count. This background could also be considered as quite helpful in removing any possible bias in the estimation of cognates. The unbiased approach has to be stressed in this case as the analysis involves a comparison of two languages whose prehistory appears to be quite controversial.

In addition to the complicated character of the Balto-Slavonic problem, the question of linguistic convergence of unrelated linguistic stocks, as well as any possible reverberations of such convergence, has to be constantly borne in mind when considering modern reflexes of a proto I-E language. Even the character of proto I-E is considered by some sources to be a linguistic blend, as it were, e.g., Coon summarizes the views of C. C. Uhlenbeck and A. Nehring:

¹This paper is restricted to glottochronological considerations only.

Linguistically, Indo-European is probably a relatively recent phenomenon, which arose after animals had been tamed and plants cultivated. The latest researches find it to be a derivative of an initially mixed language, whose principle elements were Uralic, called element A, and some undesig-nated element B which was probably one of the eastern Mediterranean or Caucasian languages. 1

A type of further linguistic blend could be observed within the language families of the I-E linguistic stock, e.g., the Germanic family of languages, the proto language of which is viewed by Hall as a 'creolized' language:

These developments [sic, the great shift in the consonant pattern, significant vocalic alternation] seem to show the same kind of brusque restructuring that we find in pidgin and creolized languages. Furthermore, Germanic has lost many of the words characteristic of Indo-European, and uses in their stead a number of words of unknown, but presumably non-Indo-European, origin, such as wife, hand, leg. On the basis of these phenomena, it has been suggested that Proto-Germanic may well have originated as a pidginized variety of Indo-European, which arose along the amber trade route from the Mediterranean to the Baltic in the first millennium, B.C., and which then became creolized, replacing the native languages of the tribes around the lower Baltic. 2

¹Carleton Stevens Coon, The Races of Europe, The Macmillan Co., New York, 1939, p. 178. Anthropologically, this view could be substantiated with relative facility, cf. plate 9, Fig's. 4 and 5 for obvious anthropometric connection between an Irishman from Leitrim and a Finn from Vasa, Finland. Also other plates appear to be quite revealing and could be extremely useful in dismissing some of the 'popular' concepts about the Slavic people, notably the one fostered by predominantly western peoples which depicts the Slavs in popular parlance as 'the Asiatic hordes from the east'.

²Robert A. Hall, Jr., Introductory Linguistics, Chilton Books, Philadelphia/New York, 1964, p. 386.

The cognate count, in this paper, reflects a basic vocabulary as conceived by glottochronologists generally. It is felt, however, that an increase of the total number of items is desirable in order to obtain more reliable results statistically. The concept of basic vocabulary, as well as the size of it, is similar in this paper to Hockett's views on this subject:

By the basic lexicon is meant a semantically-defined stock of forms which we can be sure will be found in every human language - names of body-parts, of natural objects and processes, and so on. For purposes of statistical treatment it is desirable for the basic lexicon to be as large as possible. ¹

Any increase in the basic vocabulary would have to follow the general outline mentioned above, though with a proviso that the percentages of the form-classes of any increased sample correspond approximately to those of the generally accepted basic vocabulary. This stipulation is thought to be important in order to maintain a balance between different form-classes, as a further substantial increase in basic vocabulary, e.g., upwards of 1,000 forms, would tend to approximate any 'basic language' or a language in miniature. The percentages of form-classes reflected in the basic vocabulary are:

nounal class	=	39%
verbal class	=	28.5%

¹Charles F. Hockett, Linguistic Time Perspective and its Anthropological Uses, I.J. of A.L., 1953, vol. 19, p. 148.

adjectival class	=	18.5%
other	=	14% ¹

As already noted, the basic vocabulary is thought to exclude all probable cultural borrowings. Whenever a dubious form is encountered, the probability of it being a loan form is indicated within the presentation of the cognate count, i.e., if there is sufficient evidence to justify this indication. This method is utilized in order to avoid any possible biased decision as to the origin of these forms, for "cultural borrowing of speech-forms is ordinarily mutual; it is one-sided only to the extent that one nation has more to give than the other."²

It should also be noted that, in order to achieve more reliable results pertaining to the prehistory of languages, the results of a glottochronological study should be correlated to the results not only of a structural but also of a toponymical and an onomatological research.³ Onomastics, particularly in Latvian, might provide certain directional indicators for future courses of investigation as, for instance, it has been quite useful in suggesting links between the Illyrian and the Sicel.⁴

¹E.g., other than the above form-classes, including function words; cf. also List of Abbreviations preceding the first word list.

²Leonard Bloomfield, Language, Holt, Rinehart & Winston, New York, 1964, p. 461.

³The following forms could be of particular interest in a toponymical study, e.g., Indra, Indrāni, Dagda, Alsunga, Dignāja, Eduole, Piduoie, Ranka et al., and in an onomatological study, e.g., Rutulis, Meldrups, Luobe, Indāns, Alks, Barkans, Lama, Aviks, Dardzans, Annus, et al. The afore-mentioned forms are in active usage in Latvian, but all have lost any semantic value.

⁴L. R. Palmer, The Latin Language, Faber & Faber, London,

Also the investigation of eponyms has aided in the clarification of certain toponyms in Latin, and Palmer shows this to be the case:

Thus Remus, the eponymous ancestor of the Etruscan remne, stands revealed as Etruscan no less than the name of the city to which history denied his name. It should be emphasized that there are no linguistic parallels which would support the view that Remus is formed from Roma by 'false analogy'. ¹

In any field of science, no single approach can guarantee an absolutely adequate and complete cognition of reality, i.e., every method in research, by its very nature, disregards certain aspects of reality. It follows that it is of great importance not to rely on any one method in a serious scholarly investigation, and establishment of contact with other disciplines, which must be solicited for aid in any vigorous programme of linguistic investigation, is desirable in order to obtain a higher degree of accuracy for the results of such an investigation. Glottochronological perspectives offer such cooperation between different disciplines and, as it is a branch of linguistics, it also widens the scope of linguistic investigations.

1966, p. 43: "The onomatological evidence, suggesting links with Illyrian (e.g. the -nt- of Agrigentum, . . .)".

¹Palmer, *ibid.* (meaning p. 47).

COGNATE COUNTCRITERION:

The cognate count involves comparing the corresponding morphemes in both languages and determining how many of the pairs of morphemes are cognate. There is, in comparative linguistics, a well-known postulate according to which any true cognates in two or more modern languages are said to be the modern reflexes of some corresponding form in a parent language. This language can be either demonstrable or hypothetical, depending on the availability of documentation for such a language.

The group of modern Romance languages is said to be derived from the vernacular of Latin, for which there is ample documentary evidence.¹ Consequently, the parent language of this group, i.e., the vernacular of Latin, is said to be demonstrable.

There is no documentary evidence for a parent language of the Balto-Slavonic group of languages, and, therefore, this proto-language is said to be a hypothetical one.

¹W. D. Elcock, The Romance Languages, Faber & Faber, London, 1964, p. 21. "It is the special privilege of Romance philologists that they are not compelled to rely entirely upon reconstruction. Apart from the massive testimony of Latin literature, various direct sources of information concerning the nature of the spoken language are available for scrutiny."

Generally, a method of reconstruction is used to depict a hypothetical parent or proto-language. This method of reconstruction of a proto-language is implemented via a comparison, with the aid of which the probable forms of morphemes in the hypothetical proto-language are constructed. The basic assumption of this method is that, while the phonemes of the proto-language undergo different developments in different languages, their development, nevertheless, is quite consistent in a given linguistic environment within each of those languages. Thus, it could be postulated that a pair of phonemes in modern reflexes, e.g., in Latvian and Russian, may differ synchronically in their physical appearance, as it were, yet, diachronically they may represent the same phoneme.

METHODOLOGY:

When comparing the two languages in question, we shall consider only those free morphemes as cognate which are true cognates. Further, we shall consider two corresponding morphemes as true cognates if they are similar in form and identical in meaning. The concept of similarity in this case will be based on the criterion that the same pair of phonemes (or phoneme clusters), within a specific linguistic environment or in a given position within the morphemes, will occur in many other pairs of morphemes in either the same linguistic environment or in the same position within corresponding morphemes.

Thus, it can be stated that the meaning of any given pair of free morphemes will be held as a constant and their respective forms will be treated as predictable variables.¹ In order to avoid the counting of any possible deceptive or false cognates as true cognates, we shall recognize only those pairs of free morphemes as cognate which meet the above criterion of true cognates.

Any given pair of true cognates shall be designated as being in 'complete agreement'. Any given pair of forms, which do not conform to the criterion for true cognation, will be viewed as true non-cognates and will be designated as forms with 'no agreements'.

Most of the forms compared in the cognate count conform to the above criterion. However, to avoid any possible error, while applying the criterion for true cognation to some of the borderline forms, a third group of forms is established, e.g., probable cognates and probable non-cognates. The concept of probable cognation is based on the decision-making process which involved a specific allotment in percentages to

¹Thus, meaning is postulated as the core for comparison. This same criterion is also applicable to all the forms given which depict outside reflexes, i.e., reflexes without the Baltic and Slavonic speech communities. These forms have been listed to illustrate possible influences as well as probable connections with other speech groups of the I-E language family, as it were, residing on the European sub-continental land mass.

the following components of probable cognation: meaning 35%, form 35%, and other factors 30%; the latter including such considerations as possible diachronic background, adstratum and superstratum influences and other available evidence, including extra-linguistic.

Thus, it could be stated that the criterion for probable cognation is based on the total in percentages achieved by comparing any two borderline forms. Those pairs of borderline forms which furnish a total of no less than 65% of agreement are considered to be probable cognates, whereas all the other pairs of borderline forms are considered to be probable non-cognates.

The constant of the criterion for probable cognation is 'meaning', i.e., every pair of probable cognates have to furnish a total agreement in meaning or 35%, and the variable component of this criterion is represented by 'form', with no less than 15% agreement, while the remaining percentage could consist of other factors.

A further method of designation is established to facilitate orientation when comparing borderline forms, e.g., partial agreement and some agreement, which represent forms with obscure background and forms with some inconsistency of form or lack of specific details, respectively.

Thus, the following combinations exist:

- i) true cognates are in
 - a) complete agreement
 - b) some agreement
- ii) true non-cognates depict
 - a) no agreements
 - b) some agreement
- iii) probable cognates reflect
 - a) some agreement
 - b) partial agreement
- iv) probable non-cognates depict
 - a) some agreement
 - b) partial agreement

To elucidate the application of this criterion for probable cognation, let us randomly select items 24:110 and 82:143. In the case of the first item, e.g., skaitīt :: sčitat', the first pair of phonemes agree phonologically, and because the Russian s- has a morphological foundation, the above agreement could be considered as only a partial agreement. This pair of forms is considered as probable cognates, for it totals more than the necessary percentages to establish a probable cognation, i.e., total agreement in meaning or 35%, no less than 25% agreement in form and 20% in background connections; thus, it furnishes 80% of agreement which is 15% above

the requirement for probable cognation. In the case of the second item, e.g., iekš :: v/vo, the general background of this pair is hypothetical and quite obscure; therefore, it is classified as being in partial agreement. This pair of forms is considered to be probable cognates as it totals a minimum agreement of 65%, e.g., 35% in meaning, 15% in form (via the prefix-element) and 15% in background connections.

PROCEDURE:

The cognate count depicts two alphabetical word lists with a total of 207 independent items.¹ The cognate count is based on a binary system, i.e., any given pair of forms have to be either cognate or non-cognate; thus, a pair of forms designated as cognate could be either true cognates or probable cognates (also in partial or some agreement). Any given item, representing a true cognation, is designated with a plus-sign flanked by virgules, and any given item, depicting a probable cognation, is indicated by a plus-sign in parentheses.² Items reflecting true non-cognation or probable non-cognation are designated in the same way, but with a minus-sign. It should be

¹E.g., each item represents three free morphemes in each of the following languages: English, Latvian and Russian. The first list consists of 100 items and the second list 107 items.

²Cf. also list of Arbitrary Signs and Symbols.

noted that any given pair of forms, reflecting obviously reciprocal borrowing, is viewed as non-cognate, without any consideration being given to their existing or apparent agreement. Thus, it could be stated that all the non-autochthonous forms, insofar as their autochthony could be established, are excluded from the comparison.

In the event that either language does not possess two autonomous forms for two different concepts, the same form is repeated and it is treated as a free morph in each case, with, of course, corresponding cross-references as to its dichotomy of meaning.¹ The comparison is weighed considerably toward the synchronic aspect, e.g., to avoid any unnecessary complication,² and also to facilitate any general application of this method to any given pair or group of languages.

The general, as well as specific, background given in each item is furnished to facilitate comparisons with other related languages, if need be. This information is also treated as an essential part of the comparison for establishing a basis for future work in this field, as well as for

¹There were no 'events' encountered wherein both languages in question did not possess an autonomous morph for any given concept.

²E.g., an attempt was made to avoid the dependence on hypothetical forms, e.g., *forms, either for comparison or general background, as much as it was possible, with one exception, cf. item 186:197.

emphasizing a possibility for universality in this branch of comparative linguistics.

It should be noted also that most of the examples, depicting phonological correspondences between Latvian and Russian, are drawn from within the corpus of the cognate count, whenever it is possible, thus avoiding the employment of out-sized lexicon and discouraging any probable complication.

Each item begins with a capital letter designating the form class to which belong the corresponding forms in the comparison, as follows:

- N = the nounal class.
- V = the verbal class.
- A = the adjectival class.
- O = other forms, i.e., numerals,
pronominals, adverbs and
function words.

The next element of the item represents the designation of cognation or non-cognation, as already outlined. Each item is also preceded by two numerical notations which are separated by a colon, e.g., the first number designates the alphabetical position of any given item within the total word list, i.e., the '200 item' list, and the second number depicts its alphabetical position in each of the two '100 word' lists

- iii) 199:207 = a) 199th item in the second sample,
b) 107th item in the second word list.
- iv) - :55 = a) 55th item in the first sample,
b) 55th item in the first word list,
c) this item is excluded from the
second sample.

While comparing two corresponding forms, only the base morphs are considered to be significant elements, i.e., the simplest permissible forms of the free morphs. Thus, the imperfective aspect of the Russian verb is used throughout in preference to that of the perfective, without, of course, any distortion of the corresponding meaning. The same criterion is also applied to the prefixed nominal forms, as well as suffixed reflexive verbal forms.

WORD LISTS:

In general application of glottochronology, two basic word lists are recognized which are utilized to implement the cognate count. In this paper, both lists are used. The first list, with 100 items, was outlined by J. A. Rea.¹ Rea's word list was considered in its entirety with one

¹J. A. Rea, Concerning the Validity of Lexicostatistics, International Journal of American Linguistics, vol. 24, 1958, p. 148.

exception, e.g., Rea's item (No. 89) denoting "person" is replaced by "human" (item 76:42) as opposed to "animal", for "person" appears to be a socio-cultural borrowing in most of the I-E languages (from Latin *persona* "character, mask worn by an actor").

The second list, with 200 items was devised by M. Swadesh.¹ Two items of the Swadesh word list are modified, e.g., his item denoting "rotten" is changed to "to rot", i.e., from the adjectival class to the verbal one, and his item denoting "to play" is substituted with "to plough". The first change is based on the fact that the Russian and, particularly, the Latvian languages have a definite verbal orientation, as it were, and the second change is based on the assumption that the choice of this form, in Swadesh's list, was probably influenced by its frequent utilization in English,² whereas the comparison in this paper is between two basically agriculturally orientated speech communities, as they still are to a greater

¹Morris Swadesh, Towards Greater Accuracy in Lexicostatistic Dating, I.J. of A.L., vol. 21, 1955, pp 132-137.

²Helen S. Eaton, Word Frequency Dictionary, Dover Publications, N.Y., 1961, cf. Sec. 1,19, also Index p. 244. Miss Eaton lists the verbal form of "play" in the first 500 most frequently used concepts in English. Unfortunately, there were no frequency dictionaries available pertaining to either of the languages compared, although a frequency dictionary of Russian appears to have been published by the University of Tartu, Estonia, cf. Papp, F., Mathematical Linguistics in the Soviet Union, Mouton & Co., The Hague, The Netherlands, 1966, fn. p. 71.

or lesser extent at present. Therefore, the usage of the verbal form "to plough" is envisaged as an adequate replacement for "to play". It should also be noted that either form, i.e., "to play" or "to plough" would not influence the cognate count, for either form conforms to the criterion of non-cognition.

Every form in either language is verified with the aid of the available dictionaries. The English forms reflect corresponding forms in Latvian and Russian which are chosen at random, for they could be classed as 'natural responses' to the English forms.¹ In the event that any deviation from this concept of 'natural responses' does occur, the explanation for the choice of a substitute form is given within the framework of each item. Each item is treated as an independent unit and care is taken to avoid any possible bias, either in the selection of the corresponding forms in the languages compared or in establishing connections between any of the languages or speech communities.² Thus, it must be emphasized that the concept of

¹Sarah C. Gudschinsky, The ABC's of Lexicostatistics, Word, The Linguistic Circle of New York, vol. 12 (August, 1956) p. 179, cited from M. Swadesh, Diffusional Cumulation and Archaic Residue as Historical Explanations, Southwestern Journal of Anthropology, University of New Mexico Press, Albuquerque, N. M., vol. 7, p. 13. Miss Gudschinsky speaks about "most common conversational equivalent" as being the corresponding word of any language to the English form. The equivalent in this paper to Miss Gudschinsky's above-mentioned term is a 'natural response' form.

²Gudschinsky, *ibid.*: "If there is an equal choice of two or more expressions, one should be chosen purely at random (by flipping a coin if necessary) to avoid any bias in the direction

'natural responses' is thought to be sufficient criterion to establish randomness in the selection of Latvian and Russian forms. It is also thought that the rigorous approach in the actual comparison of the forms of the two languages in question would eliminate any dubitable forms.

of choosing known cognates, . . .". It should be noted that there were no major problems encountered in choosing cognates for this paper. The criterion for establishing true cognation appeared to be sufficiently rigid to avoid "coin flipping". Also, the concept of 'natural responses' and the avoidance of forms with 'peripheral' meanings was helpful in establishing the corresponding forms. However, Miss. Gudschinsky's method is quite acceptable (though, whenever possible, should be avoided) when comparison is made between lesser known languages than Latvian and Russian, e.g., her comparison was between the Amerindian languages of Ixcatec and Mazatec.

LIST OF ARBITRARY SIGNS AND SYMBOLS¹
USED IN THE COGNATE COUNT

- + = cognation.
- = non-cognation.
- /+ / = true cognation.
- /- / = true non-cognation.
- (+) = probable cognation.
- (-) = probable non-cognation.
- : = is to; also opposition.
- :: = corresponds to, the correspondence with.
- / = alternates with.
- < = derived from.
- > = the source of.²
- * = a hypothetical form.
- (j) = semi consonant; cf. item 37:23, etc.
- (e), (o) = historical semi-vowels in Slavonic;
 semi-vowels, for instance in Bulgarian;
 cf. also item 12:6
- (n) = always follows a vowel to indicate its nasality,
 e.g., Lithuanian karna(n) (item 8:3)

¹This list contains only those signs and symbols which are of a specific nature or were arbitrarily chosen for this paper.

²The symbols < , > are indicators of derivation generally, thus A < B could be read: A is derived from B or B is the source of A.

ABBREVIATIONS USED IN THE COGNATE COUNT

A. Reference works:¹

Bern.: Berneker, E., Slavisches Etymologisches Wörterbuch, Heidelberg, 1924, 2 vols.

Buck: Buck, C. D., A Dictionary of Selected Synonyms, Chicago/London, 1965.

Endz.: Endzelīns, J., Latviešu Valodas Gramatika, Rīgā, 1951.

Fr.: Fraenkel, E., Litauisches Etymologisches Wörterbuch, Heidelberg, 1962 and 1965, 2 vols.

Pr.: Preobrazhensky, A. G., Ētimologičeskij Slovar' Russkogo Jazyka, N. Y./London, 1964.

Vasm.: Vasmer, M., Russisches Etymologisches Wörterbuch, Heidelberg, 1953-1958, 3 vols.

B. Languages:

Alb.: Albanian.

B.Russ.: Belorussian.

Arab.: Arabic.

Bulg.: Bulgarian.

Arm.: Armenian.

Ch.Slav.: Church-Slavonic

Balt.: Baltic.

Cz.: Czech.

¹The reference works listed here are in an abbreviated form; for more detailed data, cf. bibliography.

Eng.: English.	Mod.: Modern, e.g.,
Finn.: Finnish.	Modern Russian.
Germ.: German/Germanic.	Norw.: Norwegian.
Goth.: Gothic.	O.: Old, e.g.,
Gr.: Greek.	Old High German,
Hung.: Hungarian.	Old Prussian.
Karel.: Karelian.	Pol.: Polish.
Lat.: Latin.	Russ.: Russian.
Latv.: Latvian.	S.Cr.: Serbo-Croatian.
Lith.: Lithuanian.	Slav.: Slavonic.
Mid.: Middle, e.g.,	Swed.: Swedish.
Middle English,	Turk.: Turkish.
Middle Low German.	Ukr.: Ukrainian.

C. Other abbreviations:

A = adjectival form class.

dial. = dialect/dialectal.

ib. = ibidem, used to indicate that a given form is located in the same semantic area as the preceding one, e.g., Russ. nos "nose"; Lith. nosis, ibid; Germ. Nase, ib.

N = nounal form class.

O = other form classes than adjectival, nounal, verbal.

V = verbal form class.

TRANSLITERATIONS

A. Russian orthography:

А = a	П = p
Б = b	Р = r
В = v	С = s
Г = g	Т = t
Д = d	У = u
Е = e	Ф = f
Ё = jo	Х = x, i.e., 'h'
Ж = ž	Ц = c
З = z	Ч = č
И = i	Ш = š
Й = j	Щ = šč
К = k	Ы = y
Л = l	Ь = ' (soft sign)
М = m	Э = e
Н = n	Ю = ju
О = o	Я = ja

The above transliteration of the Russian alphabet is 'orthographically orientated'.¹ The aim of this method

¹It should be noted that the diacritic mark which usually denotes palatalization, e.g., apostrophe or ', represents, in this paper, only the orthographic 'soft sign'. The reason for this rather unorthodox approach in representation of palatalization was to avoid too extensive usage of diacritic marking, thus eliminating overcrowding of the tops of letter symbols. Furthermore, it is generally understood that palatalization in Russian is organic and is represented by the palatal vowels of 'i, e'.

could be viewed as twofold: i) to facilitate the comprehension of the Russian orthographical characters and their approximate phonetic representation, and, ii) to facilitate the comparison of the languages in question, as Latvian orthography is considered to be, phonetically, a very close representation of the vernacular, i.e., Latvian possesses no orthographical 'lags' as compared to, for instance, Modern English.

B. Latvian orthography:

The following prescribed diacritic notations are to be found in Latvian in this paper:

, denotes the palatal series of consonants, e.g.,

ļ, ņ, ķ.

˘ denotes the shibilant and palatal affricate series, e.g., š, ž and č, dž, respectively.

ˉ denotes lengthening of vowels, e.g., i : ī, e : ē, etc.

The voiced alveolar affricate is represented by a digraph 'dz' and the devoiced by the grapheme 'c'.

The orthographic 'o' is represented in this paper by

'uo', for it is realized phonetically as a true diphthong.

C. Other orthographies:

The Albanian and Armenian forms are transposed from the 'Russian etymological dictionary' by Vasmer, and, for purposes of verification in the case of Armenian, the 'I-E

Languages of the U.S.S.R.' is utilized.¹

An attempt is also made to represent the remaining languages in their prescribed official orthographies, except for intonational patterns and accent notation. A consistent accent notation is employed only in Russian, and the diacritic mark [^], or circumflex, is used pertaining to only one Latvian form, e.g., in item 25:111. It reflects the rising-falling intonation which formerly was rising only.

¹V. V. Vinogradov, ed. et al., Jazyki Narodov S.S.S.R., Nauka, Moscow, 1966, vol. I (meaning I-E languages), pp. 564-565, also passim.

FIRST WORD LIST

- A/+ /1:1 all - viss - ves', complete agreement, cognates.
 Latv. -i- corresponds to Russ. -e- as in items
 70:40, 122:160. Further connections are: Lith,
 visas and O.Pruss. wissa-, ibid.
- N(+)4:2 ashes - pelni - pépel', partial agreement, cognates.
 The Russ. could be viewed as a reduplicated form,
 however, details are not very clear in this instance;
 thus the base morphs are equal, i.e., pel- = -pel'.
 Other cognates are to be found in O.Pruss. pelanne,
 Lith. pelenai, ibid; also cf. Gr. páln "dust", Lat.
 pollen "fine flour, meal", pulvis "dust".
- N/- /8:3 bark - miza - korá, no agreements, non-cognates.
 Latv. seems to be connected with O.Pruss. mensā
 "flesh" (Latv. miesa, ibid), Russ. mjáso, ib., Goth.
 mimz, ib., Alb. miš, ib., mizu "membrane". Perhaps,
 the Latv. pair of miesa "flesh": miza "bark, peel"
 should be viewed as a phonological alternation to
 avoid a homonymic clash, then the base morph, e.g.,
 Pruss. mēns-, designating "flesh" could be viewed
 as the basis for the above Latv. forms. Russ. is
 cognate with Lith. karna(n) "the inner bark of the
 linden (lime) tree", kerti "to shed skin, fur";
 cf. also Lat. corium (corius) "hide, thick skin".

- N/-/10:4 belly - vēders - brjũxo, no agreements, non-cog.
 Latv. is cognate with Lith. vēderas "gizzard, maw, also craw", O.Pruss. weders "belly"; cf. also Lat. venter, ventris "belly". Russ. seems to be cognate with O.Norse briósk "gristle", Goth. brusts "breast", Irish brū "belly, stomach, womb"; cf. also Germ. Brausche "bruise"; Vasm. I, 131; Buck 252-255; Bern. I, 95-96.
- A/-/11:5 big - liels - bol'šoj, no agreements, non-cognates.
 Latv. is cognate with Lith. lielis "fit, good (appropriate), etc.". Russ. is, perhaps, connected with Low Germ. pal, pall "stiff, tense, firm"; cf. also Lat. débilis "weak", i.e., dē-bilis "without gall, also not strong"; Vasm. I, 105; Buck 879-880; Bern. I, 72.
- N(+)/12:6 bird - putns - ptīca, partial agreement, cognates.
 Historically, this pair is cognate. Lith. pute "hen" seems to point to put- as the base morph, with Russ. reflecting the historical lapse of the half-vowel (o) within the base morph. Russ. consists of pt+ic+a (< O.Russ. pt+ok+a < *p(o)t+(o)k+a, with adj. *p(o)t+(e)sk(o) and O.Bulg. p(o)t+ic+a "young bird"). This development is quite similar to Lith. put+e "hen" > put+yt+is "young bird"; cf. also Lat. putus "a boy" > putillus "a small boy" and putilla

"a young bird". Further connections are Lith. pautas "egg, testicle", Latv. pauts "testicle".

V/+/13:7 bite - kuost - kusát', complete agreement, cognates. Latv. -uo- :: Russ. -u- as in puods "pot" :: pud "Russ. weight unit (40 Russ. lbs.)", puoga "button" :: púgovica/púgovka, ibid (cognition of this pair is not certain), buoga "rocky, bush covered island in the field" :: buga "low river bank, bushes in river's overflow area", thus this correspondence is quite rare and is confined mostly to morphemes in marginal usage. Further connections are Lith. ka(n)sti, ibid, kandis "a bite, sting".

A/-/14:8 black - melns - čjórnyj, no agreements, non-cog. Latv. is cognate with Lith. mėlynas "blue", O.Pruss. melne "a blue spot", Gr. melanos "black" and seems to be connected with Russ. malína "raspberry, also in dial. for blackberry (brambleberry)" with further connections in Lat. mulles "reddish", Lith. molis "clay", Latv. māls, ibid. Russ. is cognate with O.Pruss. kirsnan "black", Lith. keršas "skew-bald", kerše "spotted cow", karšis "bream"; for Latv. cf. Vasm. II, 91, and for Russ. Vasm. III, 327.

N/-/15:9 blood - asins - krov', no agreements, non-cognates. The Latv. base morph as- suggests a connection

between *asmens* "blade", *asns* "a sprout, also a blade of grass", *asnis* "thistle", *ass* "sharp" and the above form for blood. This development appears to be quite similar to Lat. *acer* "sharp, esp. of tools", *acidus* "sharp, esp. in taste, acidy", *aciēs* "edge, keenness", *acinus* "a berry, esp. grape", *acūmen* "the sharp point of anything" < *acuo* "to sharpen to a point" > *acus* "a bodkin, needle", with *ac-* as the base morph for all the aforementioned variants. However, Lat. possesses two different forms for "blood" *sanguis*, O.Lat. *sanguen* (> *saniēs* "corrupted blood, thus also venom") as the basic descriptive form, and *cruor* for "flowing blood, esp. from a wound". This points to a certain inconsistency of Lat. and suggests, perhaps, that "blood or bleeding" was connected with some tabu concept; particularly in view of the fact that for "to bleed" Lat. found it necessary to utilize an indirect verbal form, e.g., *effundere* "to pour forth, gush" or a whole phrase, e.g., *sanguinem dare* "to give blood". Russ. is connected with the latter Lat. form, e.g., *cruor*, Lith. *kraujas*, O.Pruss. *krawian*, Irish *crū*, O.Norse *hrar* "raw, uncooked".¹

¹The O.Norse form links up with Lat. *cruor*, as the latter is connected with Lat. *crūdus* which designates "bleeding" as well as "raw, uncooked".

N/-/17:10 bone - kauls - kost', some agreement, non-cognates.

Latv. is cognate with Lith. kaulas, ibid, Gr.

kaulos "stalk", Lat. caulis, ibid. Russ. seems to

be cognate with Lat. costa "rib"; Vasm. I, 643;

Buck 207; Pr. I, 368.

N(+) -:11 breast - krūtis - qrud', partial agreement, cognates.

This pair presents a similar problem to the one in item 41:118, e.g., the initial velar phonemes clash (devoiced :: voiced) and the syllabic crest contains the correspondence of \bar{u} :: u (vocalic lengthening in Latv. has a distinctive morphophonemic status).

Furthermore, this pair presents another complication, for the final phonemes of the base morphs also clash, e.g., -t- :: -d' or a devoiced dental plosive :: voiced palatalized dent. plos. (palatalization in Russ. has a distinctive morphophonemic status).

Thus, of the four pairs of phonemes within the base morphs, only one pair, e.g., the liquids r :: r show complete agreement.¹ Latv. is cognate with Lith. krūtis, ibid, Irish cruit "hump" (Latv. krute "a hump in a meadow or a field").² Russ. appears

¹The following etymological works did not consider this pair to be either connected or cognate: Vasm. I, 312; Buck 247-249; Pr.I,162; Bern. I, 356 suggests a possible connection between them, utilizing Latv. krute "hump" and Lat. grandis "elevated" as a basis.

²The Latv. verbal form krūties "to chin oneself, i.e., to chest oneself" corresponds regularly to Russ. kryt' "to cover", as būt "to be" :: byt', ibid.

to be cognate with Lat. *grandis* "great, elevated".¹

V/-/19:12 burn - degt - gorét', no agreements, non-cognates.
 Latv. is cognate with Lith. *degti*, *ibid*, and
 probably with Russ. *žěč'* which is the transitive
 form of *gorét'* (the Latv. trans. form is *dedzināt*).
 Russ. is cognate with Lith. *gareti* "to evaporate,
 dehydrate", *garas* "steam", Latv. *gars*, "spirit,
 mind; also steam in sauna-bath"; Vasm. I, 295,
 412-413.

N/-/ -:13 claw - ķetna - kógot', no agreements, non-cognates.²
 This Latv. form does not seem to offer any cognation
 with either other Balt. forms or any Slav. or Germ.
 ones. The initial palatal phoneme might suggest a
 borrowing, similar to Latv. *ķilis* "sprat", *ķilavas*
 "canned sprats" < probably Est. *kilu*, Finn. *kilo*,
ibid > Russ. *kíl'ka*, *ib.*; *ķeksis* "a punt-pole, scoop
 for fishing" < probably Finn. *keksi* "a boat hook".
 Russ. is probably connected with O.High Germ. *hako*
 "hook" (> Mod. Germ. *Haken*).

¹This pair was viewed as probable cognates, however, due to the limited scope of this paper, it would be prohibitive to delve into the probable background of any one pair of forms. It should also be noted that the above Russ. form represents either a semantic shift or a direct borrowing.

²The Latv. synonyms *ķepa*, *peka* have slightly different connotations from the above form, e.g., the above form usually designates "a claw, paw of wild animals", *ķepa* "a paw of animals generally" and *peka* "a paw generally, but also (via a semantic

N/-/21:14 cloud - mākuonis - ōblako, no agreements, non-cog.
 Latv. form is derived from mākt "to oppress, intrude upon, depress" and seems to be cognate with Lith. makone "slough, pool; also mudhole or puddle"; also makoti "to trample in or down mud, dirt". Further connections are Lith. makėti "to enter a swamp" (Latv. maknīt "to go through a swamp"), probably also Russ. móknut' "to become wet", Lat. mācerāre "to soften, esp. by soaking". Russ. is a Ch.Slav. loanword, e.g., ōblako < volóč' "to drag, pull" (Mod. Russ. voločít' "to drag") < *ob-volk(o) "to drag, draw over or around". Thus Russ. is connected with Latv. vilkt "to pull" (item 113:155), Lith. vilkti, *ibid*, via the Ch.Slav. form volóč', *ib.*; cf. also Lat. vello, velli (also vulsi, volsi) vulsum (volsum), vellere "to pull, pluck, twitch" > vulsus "plucked, beardless".

A/-/22:15 cold - auksts - xolódnyj, no agreements, non-cog.
 Latv. seems to be connected with Lith. aukštas "high" (Latv. augsts), austi "to grow cool", Arm. oic "cold". Russ. seems to be cognate with Goth. kalds and, if a dichotomy for the initial phoneme can be postulated, e.g., *kh- or *k-, then the Slav. and Germ. speech communities have the former

shift) awkward foot or footing of children".

The above Russ. form was used as an analogous form to nógot' "human nail(s)".

as a basis and the Balt. the latter one, e.g., k- as in modern reflexes of Lith. šaltas "cold", Latv. salts "chilly".¹

V/-/23:16 come - nākt - prixodīt', no agreements, non-cog. Latv. appears to be cognate with Lith. nokti "to mature", pranokti "to overtake". Russ. consists of the prefix pri- "at, by" and -xodīt' "to go". The Russ. base morph seems to be cognate with the one which designates "sitting", i.e., *sed-, as in item 136:74. The change of *s- > x- is considered as a morphemically conditioned alternation determined by the prefix pri-, as stated by Vasmer (Vasm. III, 253).

V/+/27:17 die - mirt - umirāt', complete agreement, cognates. Russ. form consists of prefix u- and base morph -mir- < O.Russ. meret' (perf. aspect in Mod. Russ. ymerét').² Further cognations are Lith. mirti,

¹The suggestion made, during several discussions pertaining to the above Latv. form, about a possible semantic connection between auksts "cold" and augsts "high" has to be dismissed as unsatisfactory, for the latter is definitely < augt "to grow" (Lith. augti, ibid), also similar pairs, e.g., salts "chilly" and saldus "sweet" defy any semantic connections. However, it should be noted that Lat. has a similar development to Latv., e.g., augere "to grow" > augustus "elevated, high; also holy, consecrated". Perhaps, the above Latv. form points to an independent semantic shift, which might have been based on some tabu concept or general nonacceptance of "gold", e.g., Lith. auksas, O.Pruss. ausis, Lat. aurum, but Latv. zelts (Russ. zóloto), Lith. zeltas "golden". Also, proverbs equate auksts with zelts "cold with gold".

²This infers the correspondence of Latv. -i- :: O.Russ. -e-

ibid; cf. also Lat. deponent verbal form morior,
mori, ib.

N/-/30:18 dog - suns - sobáka, some agreement, non-cognates.
Latv. is cognate with Lith. šuo, ibid, O.Pruss.
sunis, ib. and is probably connected with Russ.
suká "a bitch"; cf. also Lat. canis "dog", Goth.
hunds, ibid, Arm. šun, ib. Russ. reflects an East-
Slavonic development with some dialectal usage in
Pol., e.g., Ukr. sobáka, B.Russ. sobāka, Pol.
dial. sobaka. This Russ. form is probably con-
nected with Ir. spāka "a hound".

V/-/31:19 drink - dzert - pit', no agreements, non-cognates.
Latv. is cognate with Lith. gerti, ibid, and seems
to be cognate with Russ. žrat' "to devour (in Germ.
fressen)". Russ. represents a Pan-Slav. develop-
ment, e.g., Pol. pić, Ukr. pýty, Cz. piti, S.Cr.
piti. It is cognate with Alb. pi "I drink", Lat.
bibō, ibid (< *pibo), Irish ibim, ib. (for loss of
initial p- in Irish cf. item 43:119). Further con-
nections, via vowel gradation, are Lith. puota
"a drinking bout, also a wedding feast", O.Pruss.

within the base morphs and would not appear to be consistent with
the discussion of item 44:120. However, certain 'historically
old' forms reflect this correspondence, e.g., Latv. mir- ::
O.Russ. mer- "to die" as Latv. pir- (mais) :: Russ. pér- (vyj)
"first (ordinal)"; cf. also items 1:1, 70:40, 122:160.

form poieiti "drink! (imperative pl.)", Lat. potio
 "a drinking action, also a drink, draught" (< pōtare
 "to drink"); cf. also Vasm. II, 362.

A/+ /32:20 dry - sauss - suxóĵ, complete agreement, cognates.

The base morphs saus- :: sux-, as in item 35:21.

Further cognations are Lith. sausas, ibid, O.Pruss.
 sausai; cf. also O.Eng. sēar "barren, withered".

N/+ /35:21 ear - auss - úxo, complete agreement, cognates. The

base morphs correspond to each other as in item

32:20. Further cognations are Lith. ausis, ibid,

O.Pruss. acc. pl. āusins, ib., Lat auris, ib.,

auscultāre (i.e., aus+cultāre) "to pay attention to,
 listen carefully, to listen in secret".

N/+ /36:22 earth - zeme - zemljā, complete agreement, cognates.

The equality of the base morphs might be suspect to
 borrowing, however, the very wide usage of the base
 morph zem- in Balt. seems to have blocked any ap-
 preciable phonological change, e.g., Lith. žemė,
 ibid, O.Pruss. semme, ib., Lith. žemas "lowly",
 Latv. zems "low", Lith. žemiau "under", Latv. zem,
 ibid, etc.;¹ cf. also Lat. humus "ground, earth,

¹The base morph zem-/žem- appears to have a very wide appli-
 cation in Balt. languages in comparison with Russ. Thus Latv.
 features some 70 dictionary entries, including several toponymic
 forms, and Lith. upwards of 100 forms, whereas Russ. (using a
 comparable Russ. dictionary) lists only about 30 forms, of which
 the majority consist of endocentric compounds with relatively
 recent formation.

soil" humilis "low, humble".

V/+/37:23 eat - - ēst - (j)est', complete agreement, cognates.

The Russ. prothetic jod- element is a historical phenomenon having occurred during the Ch.Slav. period, i.e., prior to 1100 A.D. There are several forms in Mod.Russ. which appear as direct reflexes of this phenomenon, e.g., (j)el' :: Latv. egle, Lith. eglė, O.Pruss. addle "fir"; (j)est'¹ :: Lith. esti, est; Lat. est (Goth. ist) "is (3rd pers. sg. of "to be")". Further cognations are Lith. ēsti, ibid; O.Pruss. īst, ib.; Lat. edo, ēdi or ēsum, edere or esse :: Latv. ēd "he, she eats", Germ. essen "to eat".

N/-/38:24 egg - uola - jajcó, no agreements, non-cognates.

Latv. is cognate with Lith. uola "whetstone", which seems to be connected with velti "to roll, rotate, trundle"; also in Latv. velt, ibid; Lat. volvere "to turn". Thus Latv. uolis "pebble" and the above form are connected (via vocalization of v > u) with the verbal form for "to roll". This Russ. form also has a prothetic jod- element, as in item 37:23, and it is a diminutive extension of the base morph

¹This is the only reflex form of the present tense paradigm which is still in active use in Mod.Russ. The other paradigmatic forms also had the prothetic jod- element, e.g., (j)esm' :: Latv. esmu, Lith. esmi, O.Pruss. asmai "I am"; (j)esi :: esi, essei "thou art", Latv. and Lith. having identical forms.

-aj-, e.g., jajcô = j+[aj)+(ic)+o]. The Russ. base morph is cognate with Germ. das Ei, ibid, Dutch ei(n), ib.; cf. also Mid.Eng. ey, ib. Further connections are O.Norse egg; Lat. ovum (neuter), ib. > Italian uova, Rumanian uo; cf. also Lat. avis "bird".

N/-/39:25 eye - acs - glaz, no agreements, non-cognates. Latv. is cognate with Lith. akis, ibid, O.Pruss. ackis, ib., O.Russ. óko (pl. form óči);¹ cf. also Lat. oculus, ib., Goth. augo > Germ. Auge, ib. Russ. is connected with Pol. głaz "stone, rock, touchstone"; cf. also O.High Germ. glas "amber, glass".²

N/-/42:26 fat - tauki - žir, no agreements, non-cognates. Latv. is cognate with Lith. taukas "a piece of fat", taukai "grease", O.Pruss. taukis "dripping, lard (in Germ. Schmalz)", O.Russ. tuk "fat, grease", from whence came the vestigial form of túki (pluralia tantum) "mineral fertilizers" in Mod. Russ.³ Further connections are Lith. tukti "to

¹The form oči represents a relic of the old dual. As a vestigial form, it is still used poetically and in a few moribund forms, notably ockí "eye-glasses".

²The form glaz could also designate "a playing marble, i.e., a small glass ball"; in this semantic area, it might be connected with Ch.Slav. glezno "knuckle; but the pl. form may also designate dice"; cf. also Latv. gleznuot "to paint, e.g., a painting", Lith. gleznoti, also glezoti "to smear, soil, stain".

³There is also a vestigial adjectival form in Mod.Russ., e.g., túcnyj "fat obese".

become fat" (Latv. *tūkt* "to swell"), Russ. *tyt'* "to grow fat", Latv. *tukns* "corpulent"; cf. also Germ. *Talg* "tallow" (Latv. *tauki* "fat, grease, also tallow"). Russ. reflects a Pan-Slav. development with a considerable semantic shift in various languages, e.g., Pol. *żer* "pasture, food; prey", Ukr. *žyr* "fat, fodder; a beech-nut", Cz. *žir* "acorns, fodder", S.Cr. *žir* "acorns", Bulg. *žir* "fat, bacon". Perhaps, this form is related to Russ. *žit'* "to live", if the following 'proportion' is acceptable: *žir* "fat" :: *žit'* "to live" as *pir* "a feast, banquet" :: *pit'* "to drink";¹ cf. also Arm. *gēr* "fat, fruitful".

N/-/45:27 feather - spalva² - peró, no agreements, non-cog.
 Latv. is cognate with Lith. *spalva* "colour". Further probable connections are Latv. *spilva* "cotton-grass, any sedge-like plant; also a casing" > *spilvens* "pillow, cushion"; cf. also Lith. *spaliai*, Latv. *spaļi* "flax-husks", Lat. *spolium* "the skin or hide stripped from an animal".

N/+ /48:28 fire - uguns - ogón', complete agreement, cognates.
 The correspondence of Latv. -u- :: Russ. -o- is not

¹All four forms are from Mod.Russ. and this 'proportion' was suggested by J. Endzelīns, *Vasm.* I, 425.

²This form also designates "hair of quadrupeds".

a common phenomenon and is explained as a vowel gradation in Latv., e.g., -o- was reduced to -u- due to the shift of stress to the initial syllable. The Lith. form *agnus* "rapid, fiery" would also attest to the above explanation. Further connections are Lith. *ugnis*, *ibid*, Lat. *ignis*, *ib.*

N/-/49:29 fish - zivs - rýba, no agreements, non-cognates. Latv. is cognate with Lith. *žuvis*, *ibid*, and Ch.Slav. **z(o)v'* which might have receded as a taboo-form; cf. also O.Pruss. *suckis*, *ibid*, Arm. *jukn*, *ib.*; Latv. *zutis* "eel (dial. also fish)", Russ. *zvenó* "a link"; Vasm. I, 445; II, 554; Buck 184. Russ. is generally connected with O.High Germ. *ruppe* "eelpout"; Vasm. II, 554; Pr. II, 228-229.

V(+)/54:30 fly - liduot - letát', partial agreement, cognate. Latv. -i- :: Russ. -e- as in items 70:40, 122:160, however, the correspondence of Latv. -d- :: Russ. -t- is difficult to substantiate as a common occurrence due to lack of evidence.¹ Latv. is cognate with Lith. *lydėti* "to accompany". Russ. form is cognate with Lith. *lėkti* "to fly", Latv. *lēkt* "to jump", *lēkāt* "to hop (around)", as the first pers.

¹This pair was viewed as probable cognates, for, of the three pairs of elements within the base morphs, two showed agreement, though Vasmer did not list this pair as cognates; Vasm. II, 35.

sg. of the perf. aspectual form *letēt'*, e.g., *lečū* reflects its cognation with the above Balt. forms, (Latv. *lecu* "I jump").

- N/-/56:31 foot - pēda - noḡá¹, no agreements, non-cognates. Latv. is cognate with Lith. *pēda*, *ibid*, Lat. *pēs*, *pedis*, *ib.*, Goth. *fōtus* > Germ. *Fuss*, *ib.*² Russ. is cognate with O.Pruss. *nage* "foot", Lith. *naga* "hoof", Latv. *nagas* "both hands, hands and feet" (now in marginal usage only), *nags* "nail", Lith. *nagas*, *ibid*, Germ. *Nagel*, *ib.* Further connection is Lat. *unguis* "finger and toe nails".
- A/+/-:32 full - pilns - polnyj, complete agreement, cognates. The correspondence of Latv. *-i-* :: Russ. *-o-* is not a common phenomenon.³ Further connections are Lith. *pilnas*, *ibid*, O.Pruss. *pilnan*, *ib.* (acc. sg.), Germ. *voll*, *ib.*; cf. also Lat. *plēnus*.

¹The synonym *stupnġā* "foot, short step" is a seldom used vestigial form, and it also would be classed as a non-cognate.

²Apparently Russ. used to have a reflex of this form, as the Mod.Russ. form *pēsij* "pedestrian" (a vestigial adjectival form) would indicate; cf. also Lith. *pėksčias*, *ibid*, and for Latv. *peka* "paw, foot" cf. footnote to item -:13.

³E.g., it should be as in *viss* :: *ves'* "all" (item 1:1, etc.). It seems that the instability of the syllabic 'l' in *pl- conditioned the variety of reflexes in different speech communities, e.g., depending on the point of articulation of the 'l' phoneme. Thus, the more retracted variety is reflected in Russ. *pol-* and the more advanced one in Latv. *pil-*; cf. also fn. 2 in item 159:83.

- V/+/60:33 give - duot - davāt', complete agreement, cognates.
The perfective aspectual form dat' reflects a true cognation, for the base morphs duo- :: da- as a historical phenomenon, e.g., Latv. uo :: Ch.Slav. a.¹ Further connections are Lith. duoti, ibid, Lat. dare, ib.; cf. also Latv. dāvāt "to donate", Lith. dovana "a donation", Latv. dāvana "a present, donation".
- A/-/61:34 good - labs - xoróšij², no agreements, non-cog.
Latv. is cognate with Lith. labas "good, well".³ Further connections are Latv. labība "grain", labietis "a well-born, rich (well-off) man", O.Pruss. labs "good", Lith. lobis "possessions, riches". Russ. seems to be connected with Ukr. choróšyj, ibid, B.Russ. charašýcca "to boast, brag". Thus this Russ. form seems to be confined strictly to the East-Slav. speech community. Further background of this form is quite vague; cf. Vasm. III, 264-265.
- A/+/63:35 green - zaļš - zeljónyj, complete agreement, cognates.
Latv. -a- :: Russ. -e- as in item 187:97. Further

¹J. Endzelīns, Latviešu Valodas Gramatika, Latv. Valsts Izdevniecība, Rīga, 1951, p. 58: "La. uo atbilst... sensl. a..." (Latv. uo corresponds to... Ch.Slav. a...).

²The Pan-Slav. form for "good" dobr- also appears in Russ., but it has experienced a semantic narrowing, e.g., it designates "kind".

³It appears mostly in compounds or such expressions as labas rytas "good morning".

connections are Lith. žalias, ibid, O.Pruss.
saligan, ib.; cf. also item 62:131.

- N/-/65:36 hair - mati - vólos, no agreements, non-cognates.
The background of the Latv. form is obscure, e.g.,
it is connected with the verbal form mest "to throw"
(met "he, she throws") and the semantic link is
suggested as "an arrangement of one's hair in a
particular way".¹ Russ. seems to be connected with
Lith. valas "horse tail-hair"; cf. also Lat. vellus
"shorn wool, a fleece".
- N/+ /66:37 hand - ruoka - ruká, complete agreement, cognates.
Latv. -uo- :: Russ. -u- as in item 13:7. Further
connections are Lith. ranka, ibid, O.Pruss. rancko,
ib., Lith. rinkti "to gather, pick as berries".
- N/+ /68:38 head - galva - golová, complete agreement, cognates.
Latv. -a- :: Russ. -o- as in items -:41, 106:61,
133:167. Further connections are Lith. galva, ibid,
O.Pruss. gallū, galwan (acc. sg.), ib.; Russ. gólyj
"bare, naked".
- V/-/69:39 hear - dzirdēt - slýšat', no agreements, non-cog.
Latv. is cognate with Lith. girdėti, ibid. Russ.
is cognate with Latv. klausīt "to obey, listen",

¹This explanation is offered in Buck, p. 204. Another example, of a similar derivational process, i.e., vowel gradation, could be mentioned, e.g., lekt "to jump": lakta "perch, hen-roost".

Lith. klausyti, *ibid*, O.Pruss. klausiton "to pay attention", O.High Germ. hlosen "to listen, obey";¹ for the historical cognation of Latv. and Russ. forms cf. Vasm. II, 666-667.

N/+ /70:40 heart - sirds - sērdce, complete agreement, cog.
Latv. -i- :: Russ. -e- as in items 1:1, 122:160.
Russ. is a diminutive extension, e.g., sērdce
 < *s(e)rd(e)+-ko-. Further connections are Lith.
širdis, *ibid*, O.Pruss. seyr. *ib.*, Arm. sirt, *ib.*,
Goth. hairto, *ib.*, Lat. cor, cordis, *ib.*

N/+ / -:41 horn - rags - rog, complete agreement, cognates.
Latv. -a- :: Russ. -o- as in items 68:38, 106:61,
133:167. Further connections are Lith. ragas, *ibid*,
O.Pruss. ragis, *ib.*

N/- /76:42 human - cilvēks - člověk, non cognates, for it is
a cultural borrowing from Ch.Slav. into Latv.²

O(+)79:43 I - es - ja, partial agreement, cognates. Latv. is
cognate with Lith. aš, O.Pruss. es, also as, Arm.

¹Russ. slýšat' "to hear" is connected with slúšat' "to listen, hearken" as Germ. horen "to hear" is with horchen "to obey, hearken".

²This form is generally viewed as an endocentric compound, e.g., celo+vek. The first morph seems to be connected with celjad' "menials" (Lith. kiltis "relatives", Latv. cilts "tribe, clan", Irish cland "generation, descendants"). The second one is compared with Lith. vaikas "boy", Latv. dial. vaiks "servant boy", O.Pruss. vaix "menial".

es. Russ. is cognate with Proto-Slav. *az, O.Cz. jaz, O.Bulg. az, also jaz and it generally depicts a Pan-Slavonic development. However, the general background for the lapse of -z is quite obscure; Vasm. III, 475-476; Pr. Append. 130-131.

V/-/83:44 kill - kaut - ubivát', no agreements, non-cognate. Latv. is cognate with Lith. kauti "to smash, also forge, hammer", Russ. kovát' "to forge, hammer", Germ. hauen "to hew, beat, etc." (< O.High Germ. houwan "to hew"); cf. also Lat. cūdere "to beat, pound", Irish cuad "to strike, battle". Russ. is an extended form of bit' "to hit" (cf. item 73:36), e.g., u+bi+va+t'.

N(+) -:45 knee - celis - koléno, partial agreement, cognates.¹ This pair seems to be cognate, as Lith. kelis, kelys, kelėno "knee" seems to be connected with the Russ. form, and Lith. kelis :: Latv. celis, as Lith. kelti "to build" :: Latv. celt "build".²

V/+/84:46 know - zināt - znat', complete agreement, cognate. The Russ. form is consistent with other Slav. forms,

¹Vasmer did not consider this pair as either connected or cognate (Vasm. I, 598). The problem is created by the phonological inconsistency of the Russ. form, for the Mod.Russ. reflex should have a palato-alveolar affricate initially instead of the velar, e.g., c- not k-. Therefore, he connects Latv. celis with Russ. čeljad' "menials", Vasm. III, 314.

²cf. also item 50:123 pertaining to affrication of the velars in Latv.

for they all show the absence of the -i- phoneme in the base morph, which historically corresponded to Ch.Slav. half-vowel (e) and lapsed via syncope. Further connections are Lith. žinoti, *ibid*, O.Pruss. ersinnat "to recognize, perceive"; cf. also Lat. ignotus "unknown", Germ. sinnen "to ponder, muse".

N/-/87:47 leaf - lapa - list, some agreement, non-cognates. Latv. is cognate with Lith. lapas, *ibid*, and it seems to be connected with Russ. lepén' "a little piece; rag, tatter", for Slovene lépen = "leaf".¹ Russ. reflects a Pan-Slav. development, e.g., Pol. list, Ukr. lyst, Cz. list, S.Cr. list, Bulg. list, and it seems to be connected with Lith. laiškas "letter, i.e., a leaf of writing", Latv. laiska "leaf of a flax-stalk",² probably also Latv. laiksne "water-lily" and O.Pruss. lāiskas "beech".

V/-/90:48 lie - gulēt - ležāt', no agreements, non-cognates. Latv. is cognate with Lith. gulėti "to lie, recline".³ Russ. is cognate with Germ. liegen "to

¹Russ. lápa "paw" does not seem to be connected with this Latv. form but rather with Lith. lopa "claw of a bear/dog", Latv. lāpa "a 'flat' foot".

²Also Latv. laisks "indolent, lazy" should be noted here, though any connection between it and the above Russ. form is dubious.

³Russ. guljāt' "to stroll, live slovenly, stray" might be connected with this Latv. form, though the exact phonological correspondence of both forms would make them suspect to borrowing; also a probable semantic shift.

lie" < O.High Germ. ligan; cf. also Lat. lectus
 "a bed, couch", Irish lige "a bed, also grave".
 Vasm. II, 26.

N/-/92:49 liver - akna - péčen', no agreements, non-cognates.

Latv. is cognate with Lith. jaknos/jeknos, ibid,
 and is probably connected with Russ. ikrá "roe"
 (Latv. ikri, ibid, Lith. ikrai, ib., Irish iuchair
 "spawn"); cf. also Lat. iecur "liver". Russ.
 reflects an East-Slavonic development with some
 West-Slav. connections, e.g., Ukr. pečinka, B.Russ.
 pečinka, Pol. pieczeń "roast", Cz. pečenka, ibid,
 and it seems to be connected with peč' "to bake".¹

A/-/93:50 long - garš - dlínnyj, no agreements, non-cognates.

Latv. is cognate with Lith. gargaras "long-legged
 horse", gingaras "a long-legged man"; Buck 882.²
 Russ. seems to reflect an alternation between "long
 in space", i.e., the above form, and "long in time",
 e.g., dlínnyj : dólgiy < Ch.Slav. *d(e)l- :
 *d(e)lg(o), whereas in Balt. a different development
 occurred, e.g., Latv. utilizes different base
 morphs: gar- "long in space" and ilg- "long in

¹Lith. appears to have a similar semantic extension, e.g.,
 kepti "to bake, fry" with kepenys "liver, also prepared liver" as
 its extension.

²Also Russ. gorá "mountain" (item 99:56) and Latv. preposi-
 tions gar "along, over, about" and garam "past, by" might be
 connected with this Latv. form.

time", but in Lith. this semantic dichotomy merged into one form: ilg- "long in time and space".

- N/-/94:51 louse - uts - voš', no agreements, non-cognates.
Latv. is cognate with Lith. utė/utėlė, ibid. Russ. seems to be connected with the reduplicated Lith. form vievesa "animal louse" < *veivesa;¹ cf. also Latv. usna "thistle", Lith. usnis, ibid.
- N/-/95:52 man - vīrietis - mužčina, no agreements, non-cog.
Latv. is an extended form < vīr-s "husband, also man", which is cognate with Lith. vyras "male", Lat. vir "man, a male person". Russ. is an extension < muž "spouse, husband". It represents a Pan-Slav. development, e.g., Pol. ma(n)ż, Ukr. muž, Cz. muž, S.Cr. muž; cf. also Lith. žmogus "human", amžius "age, a long time", Latv. mūžs ibid, O.Pruss. amsis "people; also eternal".
- A/-/96:53 many - daudzi - mnogie, no agreements, non-cog.
Latv. is cognate with Lith. daug, ibid; cf. also Russ. dúžij "strong, powerful", Germ. taugen "to be of worth or value", Tugend "virtue". Russ. is

¹The reconstructed form can be attested to by the existence of an old Finn. loanword vaive "a small cattle-louse".

The Slovene form us does suggest a connection with Latv. us-na "thistle", however, the vocalic divergence of this form in the various Slav. languages might attribute this Slovene form to a mere local phonological development: Pol. wesz, Ukr. voś, Cz. ves, S.Cr. vas.

connected with Goth. manags "many, quite a few",
O.Irish menicc "copious", Lith. minia "a crowd";
Vasm. II, 143.

- N/-/97:54 meat - gaļa - mīsa, no agreements, non-cognates.
Latv. is probably connected with Russ. gólyj
"naked, bare", as the Latv. form might have design-
ated "raw meat", or it is <Latv. gals "end, but
also a piece", as in Lat. carō "meat, flesh", also
designated "portion"; Buck 364. Russ. is cognate
with Latv. miesa "human flesh",¹ O.Pruss. mensā
"flesh, meat", Arm. mis, ibid; cf. also item 8:3.
- N/-/ -:55 moon - mēness - lūna - no agreements, non-cognates.
Latv. is cognate with Lith. mėnulis, ibid, O.Pruss.
menins, ib., Russ. mėsjac "month, also moon", Lat.
mēnsis "month", (Latv. mėnesis); for further connec-
tions cf. Vasm. II, 125. Russ. is connected (via
semantic suggestion) with the verbal form lunīt'
"to shine weakly, throw a very pale light", and it
seems to link up with luč "ray, a beam of light".
Further connections are O.Pruss. lauxnos (pl. form)
"stars (collectively), heavenly bodies", Lat. lūna
"moon", probably also lux "light"; cf. also Vasm.
II, 69; Pr. I, 477-478; Buck 54-55.

¹The Lith. form for "flesh, human flesh" is mėsa, which
probably is a socio-cultural borrowing because of its inconsis-
tent phonological form, e.g., the absence of any nasalization.

- N/-/99:56 mountain - kalns - qorá, no agreements, non-cog.
 Latv. is cognate with Lith. kalnas, Lat. collis
 "hill", probably also with O.Norse holmr "a small
 island" and Russ. čeló "brow, forehead (in Mod.Russ.
 poet. only)".¹ Russ. is cognate with O.Pruss.
 garian "tree", Lith. giria "forest", probably also
 with Alb. gur "rock"; cf. also item 93:50.
- N/-/100:57 mouth - mute - rot, no agreements, non-cognates.
 Latv. seems to be connected with mutulis "a bubble,
 gush", cf. Germ. Mund "mouth", probably also Lat.
 mūtus "mute", mūtire "to mutter, mumble, murmur".
 Russ. represents a Pan-Slav. form (except Pol.,
 e.g., usta "mouth"), however, in most of the other
 Slav. languages, this form carries a different
 semantic value, e.g., Ukr. rot "mouth, also the
 opening of a basket-like fish trap", Cz. ret "lip,
 also dial. for mouth", S.Cr. řt "point, mountain
 top", Bulg. rot "a hillock", O.Russ. r(o)t(o) "a
 sharp point, beak". Russ. seems to be connected
 with ryt' "to dig" (item 28:113) and probably also
 with Latv. rutulis "a round piece of wood"; cf.
 Vasm. II, 539.

¹The connection between the Latv. form and Russ. čeló could be postulated according to the semantic extension that both suggest "a protrusion, elevation".

- N/-/101:58 name - vārds - ģimja, no agreements, non-cognates.
 Latv. is cognate with Lith. vardas, ibid, Goth.
 waurd "word" > Germ. Wort, ibid, Lat. verbum, ib.,
 probably also Russ. rota "oath, vow", vrát' "to
 prevaricate". Russ. is cognate with O.Pruss.
 emmens, ibid, Alb. emen, ib., Arm. anuor, ib.,
 Goth. namō, ib., Lat. nōmen, ib.
- N/-/104:59 neck - kakls - šēja, no agreements, non-cognates.
 Latv. is cognate with Lith. kaklas, ibid, also Lat.
 collum, ib., Germ. Hals, ib. Russ. reflects a
 Pan-Slav. development, e.g., Pol. szyja, Ukr.
 šýja, Cz. šije, S.Cr. šija, Bulg. šija. Further
 connections are obscure, however, Lat. sinus
 "curve, fold", Alb. ši(n) "nape", Latv. seja "face,
 features",¹ also Lith. šėmis "the colour(s) of
 fauna" could be mentioned.
- A/-/105:60 new - jauns - nōvyj, no agreements, non-cognates.
 Latv. is cognate with Lith. jaunas, ibid, O.Russ.
 júnyj, ib.,² Lat. iūnior, also iuvenis "youthful,
 young". Russ. is cognate with Lith. naujas "new",
 O.Pruss. nauns, ibid, Lat. novus, ib., Gr. néos,

¹Latv. seja "face" is usually considered to be connected with Russ. sijat' "to glow, shine", however, it might represent a semantic shift, though the irregular correspondence of Russ. š- :: Latv. s- seems to block this connection.

²Mod.Russ. also has several reflexes of this base morph, e.g., júnost' "youth", júnoseskij "youthful", etc.

ib., Arm. nor, ib.

N/+/106:61 night - nakts - noč', complete agreement, cognates.
 Latv. -a- :: Russ. -o- as in items -:41, 68:38,
 133:167. The Russ. final phoneme in the base morph,
 i.e., the unvoiced palato-alveolar affricate -č-,
 corresponds to Latv. 'velar-dental' plosive cluster
 -kt- as shown in item 54:30, e.g., as Russ. letét'
 "to fly" is shown to be connected with Latv. lekt
 "to jump". Further connections are Lith. naktis,
 ibid, O.Pruss. naktin (acc. sg.), ib., Lat. nox, ib.

N/-/107:62 nose - deguns - nos, no agreements, non-cognates.
 Latv. might be connected with the verbal form degt
 "to burn" (item 19:12) with derivatives of deguts
 "birch-tar" : darva as a general designation of
 "tar", and the above form of deguns;¹ cf. Russ.
 djogot' "tar, formerly also birch-tar", Lith.
 degutas "birch-tar" : derva designates "tar gener-
 ally", i.e., both Balt. languages show a similarity
 of opposition between "tar" and "birch-tar". Russ.
 is cognate with Lith. nosis, ibid, Latv. nāss
 "nostril", Germ. Nase "nose", Lat. nāris "nostril",
 nāsus "nose".

¹The connection of burning and tar, also preparation of tar,
 is associated with strong odour, thus, perhaps, a semantic shift
 from either the natural phenomenon or social activity to the
 sense of smell could be assumed.

0/+/108:63 not - ne - net, complete agreement, cognates.

Further connections are Lith. ne, ibid, Lat. ne- (as in nego < ne āio = "to say no" : to say yes" = āio), nescire "not to know, to be ignorant of" (i.e., ne-+scire), etc.;¹ Goth. ni, ibid.

0/-/110:64 one - viens - odín, no agreements, non-cognates.

Latv. is cognate with Lith. vienas, ibid; cf. also O.Pruss. ains, ib., Lat. ūnus, ib., Russ. inój "few" (item 46:121). Russ. reflects a Pan-Slav. development, e.g., Pol. jeden, Ukr. odýn, Cz. jeden, S.Cr. jedan, Bulg. edín. This form is probably a reflex of a historical compounding, e.g., *ed+in(o) with *ed- representing a particle designating definiteness and *-in(o) being the historical base morph for inój "few, also the other one(s)". A similar development appears in the Russ. form (j)edvá "only, hardly, just" < *ed+va, where va designated in O.Russ. "you two, both of you";² cf. also Germ. etwas "some, few", etwa "nearly, about",

¹The Balt. and Slav. speech communities also utilize ne- as a prefix of negation, however, Russ. reflects a dichotomy of particles, e.g., ne/ne- and ni- = Lat. nī.

²Another form should be noted, e.g., -va, which was used enclitically in O.Russ. with pronouns; if the second element is considered to be -va, then (j)ed- could be viewed as a reflex of a demonstrative pronoun *do-/*di- as reflected in O.Pruss. din "him" (acc. sg.), dins "them" (acc. pl.), and -va would be cognate with Lith. vos "just, only". However, this linkage seems to be less clear than the one with va "both of you"; Vasm. I, 391.

Lat. ecce "behold, lo!" as connected with ecquis (ec+quis) "is there any that, does anyone? Vasm. I, 391; II, 255.

N/-/115:65 rain - lietus - dožd', no agreements, non-cognates. Latv. is cognate with Lith. lietus, *ibid.* Further connections are Lith. lieti "to pour" (Latv. liet), Latv. līt "to rain, pour out", Lith. lyti "to rain", O.Pruss. pralieiton "poured out", islīuns "outpour", Russ. lit' "to pour"; cf. also Alb. l'ise "brook". Russ. reflects a Pan-Slav. development, e.g., Pol. deszcz, Ukr. doždž, Cz. dešť, S.Cr. dažd. Russ. seems to be connected with Norw. dusk-regn and Swed. regn-dusk "fine rain, drizzle", also Norw. dysja "misty rain", also the possibility of *dus-djus "bad weather or cloudy sky" (*dus- = Goth. tuz- as a proclitic particle designating "bad"); however, general background for this form is quite obscure; cf. Vasm. I, 357, Buck 68, Pr. I, 187-188.

A/-/116:66 red - sarkans - krásnyj, no agreements, non-cog. Latv. is an extended form < sarkt "to blush, redden", from whence stems also sarks "reddish", sārts "reddened, as face, cheeks", sarkis "sorrel (colour); a roan", etc. It is cognate with Lith. sarkanas "rosy", sartas "foxy-red"; cf. also Russ. soróga "roach, i.e., red-eyed fish", probably

sorobalína or sorbalína "red Brambleberry" as well. Russ. reflects a Pan-Slav. form, e.g., Pol. krasny "red, nice", Ukr. krásnyj "nice, beautiful", Cz. krasny "nice, shiny, reddish", S.Cr. krásni "nice, splendid". Thus Russ. depicts a semantic shift, e.g., general Slav. "nice" > Russ. "red". Historically, it is an extended form < krasá "beauty, charms" as it still is in poetic use in Mod.Russ. Russ. krásá seems to be connected with O.Norse hros "fame, praise", hrósa "to boast, brag", probably also Latv. karsts "hot, red-hot", Lith. karštis "heat"; Latv. karsēt "to heat up", though general background of this form is quite obscure.¹ Vasm. I, 656-657, Pr. I, 377-378.

N/-/120:67 road - ceļš - doróga, no agreements, non-cognates. Latv. is cognate with Lith. kelias, ibid, as Latv. celis "knee" :: Lith. kelis, ibid (item -:45). Russ. is connected with the verbal form djórgat' "to pull; unravel", which is cognate with Latv. dragāt "to drag, pull; smash, damage; proceed in a reckless fashion along a road", Lith. dirginti "to disturb, tease; flush as game", cf. also Germ.

¹Latv. krāsa "colour", krāsns "oven", Lith. krósnis, ibid, do not seem to be connected with this Russ. form, and, due to their exact phonological correspondence, any connection would have to be viewed as a borrowing.

zerren "to pull, drag; tease, worry".

- N/-/121:68 root - sakne - kōren', no agreements, non-cognates.
Latv. is cognate with Lith. šaknis, ibid. Russ. seems to be cognate (via vowel gradation) with Lith. keras "bush, shrub, rhizome", Latv. cers "bush, shrub", O.Pruss. kirno "shrub", Lith. kerėti "to root"; cf. Vasm. I, 625.
- A/-/ -:69 round - apaļš - krúglyj, no agreements, non-cog.
Latv. is cognate with Lith. apvalus, ibid, also with Russ. vóbla "roach" (nautical).¹ Russ. is derived < krug "circle", which reflects a Pan-Slav. development, e.g., Pol. kra(n)g, Ukr. kruh, S.Cr. krug. It seems to be connected with O.Norse hringr "ring", Vasm. I, 670.
- N/-/126:70 sand - smilts - pesók, no agreements, non-cognates.
Latv. is cognate with Lith. smiltis "fine sand", smėlys "sand".² Russ. reflects a Pan-Slav. development, e.g., Pol. piasek, Ukr. písók, Cz. pisek, S.Cr. pijesak. This form seems to be connected with Arm. posi "sand", though other connections for

¹The connection between Russ. vóbla and Latv. apaļš, viz., Lith. apvalus, is postulated upon the relationship of vobla to Russ. val "a roller, wave" (via vowel gradation), the latter being cognate with Latv. velt "to roll"; cf. Vasm. I, 211.

²Probably the Latv. form is connected with the verbal form smelt "to scoop; ladle". Morphophonemically, the suggestion that *smel-/mel- (the basis for malt "to grind") is also quite dubious, for it would tend to exclude the form smalks "fine, refined"; cf. Buck 23.

this form are quite obscure. Vasm. II, 347, Buck 22-23, Pr. II, 49-50.

V/-/127:71 say - sacīt - skazāt', no agreements, non-cognates.

Latv. is cognate with Lith. sakýti, *ibid*, Russ. sok "plaintiff; also scout, spy", Germ. sagen "to say", perhaps also Ch.Slav. sočiti "to point out". Russ. form is an extension < -kazāt' "to show, point out", e.g., s+kazāt', thus this form represents not only an aspectual extension, but also a semantic shift, i.e., "to point" > "to relate". The basic form -kazāt' is a general Pan-Slav. development with some semantic differentiations,¹ e.g., Pol. kazać "to preach, order", Ukr. kazáty "to say, speak, point, order", Cz. kázati "to show, order", S.Cr. kázati "to say". For further connections cf. Vasm. I, 503; Pr. I, 282.

V/-/130:72 see - redzēt - vīdet', no agreements, non-cognates.

Latv. is cognate with Lith. regēti. Russ. is cognate with Lith. pavydėti "to envy", veizdėti "to watch", O.Pruss. widdai "saw", Lat. vidēre "to see".

N/+ /131:73 seed - sēkla - sēmja, some agreement, cognates.

Latv. is cognate with Lith. sēkla, *ibid*. Russ. is

¹In Mod.Russ. -kazāt' exists only as a thematic form, i.e., as: +(-kazāt')₊.

cognate with Lith. *sēmens* "linseed", *sēmenys* "sowing seeds",¹ O.Pruss. *semen* "seed", Lat. *sēmen* "seed, succession", Germ. *Same* "seed". The basis for this pair is considered to be the verbal form for "to sow", e.g., Latv. *sēt* and Russ. *séjat'*, thus the base morphs Latv. *sē-* :: Russ. *sé-* are in agreement.

V/+/136:74 sit - sēdēt - sidēt', complete agreement, cognates. Further connections are Lith. *sēdėti*, *ibid*, Goth. *sitan*, *ib.*, Lat. *sedere*, *ib.*

N/-/137:75 skin - āda - kóža, no agreements, non-cognates. Latv. is cognate with Lith. *oda*, *ibid*. Russ. depicts a Pan-Slav. development, e.g., Pol., Ukr., S.Cr., Bulg. *koža*, Cz. *ku(o)že*, which seem to be connected with *kozá* "goat", e.g., originally *kóža* designated "goat-skin" (as *kóža* < *kozá* "goat").

V/-/139:76 sleep - gulēt - spat', no agreements, non-cognates. Latv. form coincides with "to lie", cf. item 90:48. Russ. is cognate with O.Eng. *svefan*, *ibid*, O.Norse *sofa*, *ib.*, Lat. *sōpire* "to put to sleep", probably also O.Norse *sófa* "slay!", cf. Vasm. II, 706.

¹Lith. *sēmenys* appears as a loanword in Finn., e.g., Lith. *sēmenys* > Finn. *siemen* "seed"; Vasm. II, 609.

- A/-/140:77 small - mazz - malyj, some agreement, non-cognates.
 Latv. is cognate with Lith. mažas, ibid, O.Pruss. massais "the lesser one", also probably with Russ. mizíñec "the little finger or toe". Russ. is cognate with Lat. malus "bad", Goth. smals "small, scanty", Germ. schmal "narrow, thin, scanty". The agreement of the first two phonemes in the base morphs might be considered as coincidental, similar to item -:11. Further connections of Russ. form are quite dubious; cf. Buck 881; Vasm. II, 92; Pr. I, 505-506.
- N/+/142:78 smoke - dūmi - dym, complete agreement, cognates.
 Latv. -ū- :: Russ. -y- as with the pair: Latv. būt "to be" :: Russ. byt', ibid. Further connections are Lith. dūmai, ibid, O.Pruss. dumis, ib.; cf. also Lat. fūmus, ibid, O.High Germ. toum "haze".
- V(+)151:79 stand - stāvēt - stojāt', partial agreement, cog.
 Latv. is cognate with Lith. stovėti, ibid, Russ. stávit' "to place, put", Goth. stojan "to align", Germ. stauen "to stow away", cf. also Lat. restaurāre "to rebuild", instaurāre "to set up, establish".¹

¹Vasmer did not list this pair as cognates, though the connection between them was indicated (Vasm. III, 1, 21).

Russ. is cognate with Latv. stāt(ies) "to align (oneself)",¹ Lith. stoti, ibid, Lat. statuere "to cause to stand, place, etc.", O.High Germ. stân/stên, ibid > Germ. stehen, ib., cf. also O.Pruss. postāt "to become", i.e., po+(stāt) "to achieve a stand". Thus it could be concluded that this pair has the same base morph, but with reversed variant forms to express transitivity vs. intransitivity, e.g., Latv. intransitive form stāvēt :: Russ. intransitive form stoját' and Latv. transitive form stāt(ies) :: Russ. transitive form stávit'.²

N/+/152:80 star - zvaigzne - zvezdá, complete agreement, cog. Latv. -ai- :: Russ. -e- regularly (cf. footnote to item 44:120). Lith. žvaigžde, ibid, would indicate the possibility of an O.Slav. form *gvezda, with Pol. gwiazda as a modern reflex of it. As a further step, it could be postulated that, for all the Slav. forms, the basis was a Proto-Slav. form *gvaigzdā and by an incontinentuous regressive assimilation < *žvaigzda, the latter representing a

¹Latv. transitive verbal form stāt(ies) has several variants, e.g., stādināt "to arrange, set up", stādīt "to place, put; plant".

²Also Latv. forms: stāvs "figure, erect body" and stātis "standing position", stāja "stand", stats "frame for placing sheaves erectly", stāds "plant" correspond historically to the Russ. form stat' "body, frame, figure", though the Latv. forms have been derived from 'different' verbal forms, both intransitive and transitive.

hypothetical Proto-Balt.-Slav. form; cf. Vasm. I, 447. Further connections are O.Pruss. *svāigstan* "light, shine", Latv. *zvaigāļa* "a cow with a star-like forehead marking", *žvygulys* "shimmer", Latv. *zaiguo* "to shimmer".

N(-):154:81 stone - akmens - kámen', partial agreement, non-cog.

The Russ. form constitutes one of the 'problem' forms, for it differs from the Latv. one in one feature only, i.e., a probable metathesis. However, the exact phonological correspondence between the two forms makes either one an immediate suspect to borrowing. The Slav. speech community has uniform reflexes of this form, e.g., Pol. *kamién*, Ukr. *kámiń*, Cz. *kamen*, S.Cr. *kami*, Bulg. *kámen*, which reflects a Pan-Slav. development. The Baltic forms are equally uniform, e.g., Latv. *akmens*, Lith. *akmuo*, *akmens*, and O.Pruss. *ackons* "awn" (=Latv. *akuots*, Lith. *akuotas*), as the only recorded form. Thus both speech areas are extremely rigid as far as the phonology of this particular form is concerned. In view of the fact that the base morphs *ak-* and *as-* (for *as-* development cf. item 15:9) have been historically very productive, within the Balt. speech area, then the postulate for a coexistence of several hypothetical forms for "stone, stone implements, etc." appears to be quite valid,

e.g., *kamen- > Slav. 'kámen-' forms, *akmen- > Balt. 'ak-' forms and *akmen- > Balt. 'as-/aš-' forms. Thus Russ. is cognate with O.Saxon hamar "hammer", O.Norse hamarr, for it shows complete agreement with these forms (r/n alternation is a common phenomenon within the neuter gender in O.Norse), cf. Vasm. I, 514.

N/+/157:82 sun - saule - sólnce, complete agreement, cognates. Russ. represents an extended diminutive form, which was derived in a manner similar to the one in item 70:40. Further connections are Lith. saule, ibid, O.Pruss. saule, ib., Goth. sauil, ib., Lat. sōl, ib.; for further connections cf. Vasm. II, 690.

V(+)159:83 swim - peldēt - plāvat', partial agreement, cog.¹ Latv. base morph peld-/plud- "to float" (item 51:124), and /plūs- "to flow" (item 52:125) and all forms are connected semantically, to wit, with activity involving water. The Russ. form designates "to float" also and, as shown in item 51:124, it is cognate with Latv. pluduot, ibid. As peldēt is a morphophonemic alternant of pluduot, then it

¹Vasmer did not list Latv. peldēt in connection with the Russ. form plāvat'. The Russ. form was considered to be cognate with Lith. plauti only, as shown in item 51:124, probably due to irregular phonological correspondences between Latv. and Russ. reflexes, e.g., plu-/plū-/pel- :: pla-/ply-; cf. Vasm. II, 364, 377.

follows that the above Latv. and Russ. forms are cognate.¹ Further connections are (via semantic extension) Latv. pildīt "to fill, pour", Lith. pildyti "to fill up", pilti "to pour" and Latv. pilēt "to drip".

N/-/160:84 tail - aste - xvost, no agreements, non-cognates. Latv. might be connected with astri "horse hair", Lith. ašutas, ibid, also Latv. ass "sharp", Russ. ost' "awn, any sharp point";² cf. also Gr. osteon "bone" and Lith. astanka "remainder". Russ. reflects a Pan-Slav. development with widely diversified semantic designations for this form, e.g., Pol. chvost "tail, tail end", chwoszczka "shave grass or horse-tail grass", Ukr. chvist "tail", Cz. chvost "trail(ing)", S.Cr. host "vine-stalk", Bulg. chvošč "horse-tail grass". This form is usually connected with Arm. xost "grass, lawn, meadow"; also O.High Germ. questa "tassel, tuft"> Germ. Quaste, ibid, cf. Vasm. III, 237-238.

¹Other examples of this type of alternation are Latv. pelni "ashes"/plene "a thin layer of ashes", pilns "full"/plene "crowd, multitude; a matted piece of wool or hair, i.e., as hair full of dirt, etc."

²Generally this Russ. form is viewed as related to Lith. akstis "wooden spit", Latv. dial. aksts "barley, i.e., sharp-awned grain"; cf. Vasm. II, 288.

- 0/+/161:85 that - tas - tot, complete agreement, cognates.
 Russ. reflects a reduplicated form, e.g., to+to as in Ukr. totó. Latv. -a- :: Russ. -o- as in items -:41, 68:38, 106:61, 133:167. A further connection is Lith. tas, *ibid.*
- 0/-/167:86 this - šis - ėtot, no agreements, non-cognates.
 Latv. is cognate with Lith. šis, *ibid.*, O.Pruss. schis, *ib.*, O.Russ. sej "this" which is still in marginal use in Mod.Russ.;¹ cf. also Lat. cis "on this side". Russ. represents an extended form of tot (item 161:85), e.g., proclitic directional particle ė(<e)+tot.
- 0/+/168:87 thou - tu - ty, complete agreement, cognates.
 Phonetically Russ. -y in ty is a "center-vowel" between the cardinal vowels i and u, with Slav. languages fluctuating horizontally and from a frontal point of articulation (Bulg. ti) to a more retracted point (Russ. ty) and the Balt. group vertically, as it were, between the cardinal vowel u (Latv., Lith. tu) and mid-vowel o (O.Pruss. tou, to, also tu).

¹Russ. sej is an extended form < s(e) "this", via a definite adjectival desinence. O.Russ. s(e) was a demonstrative pronoun of the first degree, as it were; cf. item 67:133 and also Vasm. II, 602.

N/-/172:88 tongue - mēle - jazýk, no agreements, non-cognates.
 Latv. might be connected with the verbal forms
 melst "to gossip", Lith. melsti "to speak enthusiastically, also pray", meluoti "to lie" (Latv. meluot), however, general background for this form is quite obscure; cf. Buck 230.¹ Russ. seems to be connected with O.Pruss. insuwis, ibid, Lith. liežuvis, ib. < liežti "to lick" (but a different development in Latv. laizīt "to lick" > laiža "a sweet-tooth"); also O.Lat. lingua "tongue" + lingere "to lick" = Lat. lingua "tongue"; for further connections cf. Vasm. III, 485.

N/+/173:89 tooth - zuobs - zub, complete agreement, cognates.
 Latv. -uo- :: Russ. -u- as in items 13:7, 66:37.
 Further connections are Lith. žambas "any pointed object, a sharp corner, etc.", žambis "a wooden plough, i.e., a pointed one", also O.High Germ. kamb "comb".

N/-/174:90 tree - kuoks - dērevo, no agreements, non-cognates.
 Latv. seems to be connected with Gr. kokkos "berry,

¹The Russ. forms molít' "to entreat, supplicate" > molít'sja "to pray" could probably offer another connection, whereby the correspondence of the base morphs would be as in item -:45, e.g., mēl- :: mol- as cel- :: kol-, though this correspondence is rather vague due to Latv. -ē- :: Russ. -o-.

grain" > Lat. *coccum* "the berry of the scarlet oak";¹ probably also Lith. *kaukas* "bump, lump, also a boil", Lith. dial. *kuokas* "stick, cudgel", O.Russ. *kúka* "fist". Russ. is cognate with Lith. *derva* "pine kindling", O.Eng. *teru* "tar"; cf. also Lith., Latv. *darva* "tar".

Q/+/176:91 two - divi - dva, complete agreement, cognates.

The base morphs correspond to each other, similar to those in item 84:46, e.g., *div-* :: *dv-* as *zin-* :: *zn-*. Further connections are Lith. *du*, O.Pruss. *dwai*, Goth. *twai*, Alb. *dü*.

V/-/178:92 walk - iet - xodít', no agreements, non-cognates.

Latv. is cognate with Russ. *idít'/ittí*, which is the basis for the formation of the determined form of the imperfective aspect as well as the perfective aspect of the non-determined form *xodít'*. Further connections are Lith. *eiti* "to go", O.Pruss. *ēisei* "thou walkest", *ēit* "go!" (imper. pl.). For the background of the Russ. form cf. item 23:16.

A/-/179:93 warm - silts - tjoþlyj, no agreements, non-cognates.

Latv. is cognate with Lith. *šiltas*, *ibid*, probably

¹A probable tabu concept for "tree" in Latv. could be postulated as a reason for the semantic shift "berry, i.e., fruit > tree", as some trees, notably oak, also groves and copses, were considered 'holy' before the advent of the Christian era, to wit, before 1200 A.D.

also Lat. *calēre* "to be warm, hot". Russ. seems to be connected with an O.Pruss. toponymic form Tappelauken "Warmfield", Lat. *tepēre* "to be lukewarm; cf. also Vasm. III, 94-95.

N/+/181:94 water - ūdens - vodá, some agreement, cognates. Latv. is cognate with Lith. *vanduo*, *vandens*, *ibid*, North.Lith. *unduo*, *ib.*, O.Pruss. *wundan*, *unds*, *ib.* Further connections are Goth. *watō*, *ib.*, Alb. *uj*, *ib.*, Lat. *unda* "water, esp. water in motion". The Lith. form combines the phonological features of both forms, as it were, and shows them to be cognate. The dental nasal 'n' in Lith. and Lat. forms seems to be intrusive, i.e., not organic and relatively late in appearance; cf. Vasm. I, 212.

O/-/182:95 we - mēs - my, complete agreement, cognates. The correspondence of Latv. *-ē-* :: Russ. *-y* is unusual, though the Russ. form could be, perhaps, clarified as an analogical change due to *-y* in *vy* "you" (Latv. *jūs*). Further connections are Lith. *mēs* "we", O.Pruss. *mes*, *ib.*, Arm. *mek*, *ib.*; cf. also Vasm. II, 183.

O/-/184:96 what - kas - kto, no agreements, non-cognates. Latv. is cognate with Lith. *kas* "what/who", Russ. *kto* "who" (item 188:98), Lat. *quī* "what", O.High Germ. *hwaz*, *ibid*. Historically Russ. is a com-

pounded form, e.g., *č(e) "which" (=Lat. quid) + *t(o) (the neuter form of the demonstrative pronoun "this", cf. fn. to item 67:133). A further connection is Lat. quis; cf. also Vasm. III, 348.

A/+/187:97 white - balts - bēlyj, complete agreement, cognates. Latv. -a- :: Russ. -e- as in item 63:35. Further connections are Lith. baltas "white", Latv. bāls "pale", Lith. balas, ibid, Latv. balināt "to bleach".

0/+/188:98 who - kas - kto, complete agreement, cognates. Russ. represents a compound form, e.g., k(o)+to, wherein the first part is cognate with Latv. kas "who", Lith. kas, ibid, and the second part is the same form as represented in item 184:96; cf. also this item for further connections.

N/-/195:99 woman - sieviete - žēnščina, no agreements, non-cog. Latv. is an extension < sieva "wife"; the latter seems to be cognate with O.High Germ., O.Eng. hīwa "wife". Russ. is an extended form < žená "wife"; the latter form seems to be cognate with O.Pruss. genno "wife", Lith. žmona, ibid < žmogus "human, person".

A/+/200:100 yellow - dzeltēns - žjóltyj, complete agreement, cog. Further connections are Lith. geltas, geltonas, ibid, O.Pruss. gelatynan, ib., Germ. gelb, ib.; for affrication of velars for Latv. cf. item -:45.

SECOND WORD LIST

- 0/-/2:101 and - un - i, no agreements, non-cognates. Latv. form seems to be a borrowing from Germ. und. Russ. form might be connected with either Latv. ir (3rd pers. sg./pl. of "to be"), or ir "also" in reiterative formations where 'ir' functions as a connective for several items of the same word category. In Latgallian, an East-Latv. dialect, 'ir' either has lapsed into 'i' by apocope or has been borrowed from the Slavs, who have historically represented not only an adstratum but also a strong superstratum influence.
- N/-/3:102 animal - kustuo¹nis - žīvotno(j)e, no agreements, non-cognates. Latv. is derived from kustēt "to move" and Russ. from žit' "to live", cf. item 91:148.
- 0/-/5:103 at - pie - u, no agreements, non-cognates. Latv. seems to be cognate either with Lith. prie "at" (prie lango vs. Latv. pie luoga "at the window") or apie "around" (Latv. ap), also Lith. pas "to" (as a directional as well as a positional preposition). Russ. might be cognate with the now obsolete Latv. prefix au- "with, from", as it is still utilized in some vestigial forms and expressions,

¹The above form is used in preference to dzīvnieks, ibid, for the latter was calqued according to the above Russ. pattern,

e.g., *aumanis* "someone with good sense, also high intellect" (*au+manis* from *maņa* "sense, intellect etc."; *aumaļām* "in or with streams, i.e., without bounds", as in *plūst aumaļām* "to flow in streams, i.e., out of control" (*au+maļām* from *mala* "side, boundary").

- N/-/6:104 back - mugura - spīna, no agreements, non-cognates.
 Latv. is cognate with Lith. *nugara*, the latter form might be cognate with Ch.Slav. *nu-* "down" + *gora* "mountain", thus it meant, firstly, "mountain ridge" (Buck 212). This explanation seems to be based on the existence of several variants for the basic form *mugura*, e.g., *mugurs*, *mugara*. The difference of the initial nasals between the two Balt. languages could be, perhaps, explained as a combinative change initiated by fronting of the phoneme *n-* (as in Lith.) to *m-* (as in Latv.) due to anticipation of the following phoneme *-u-*, which requires at least some lip rounding. Russ. might be a borrowing from Lat. *spīna* "spine" via O.Pol. *spina* "backbone", however, there might also exist a connection with Latv. *spina* "a twig, switch of any deciduous tree", cf. Lat. *spīna* "thorn, needle".

- A/-/7:105 bad - slikts - ploxój, no agreements, non-cognates.

e.g., *dzīvnīeks* < *dzīve* "life".

Latv. seems to be a borrowing from Balt.Germ.

"Schlichte", which also appears in Pol. via semantic shift, e.g., szlichta "weaver's glue"; cf. also Germ. schlecht "bad" :: Latv. slikts "bad". Russ. seems to represent an E/W-Slav. form, e.g., Pol. płochy "shy, fickle", Cz. plochý "flat", Ukr. płochýj "humble, submissive, tacit". Russ. pláxa "executioner's block" is connected with it, to wit, by vowel gradation; cf. Latv. plats "wide, broad", i.e., item 189:198, also Germ. flach "flat".

0/-/9:106 because - juo - íbo¹, no agreements, non-cognates. Latv. is cognate with i) Lith. conj. jus "so much, the more", and ii) perhaps, with the inst. sg. form juo of the personal pronoun jis "he"; cf. also Germ. je(...desto) "so much the" + comparative. Russ. consists of i+bo "and" (item 2:101) + "then" (archaic form). The latter form is cognate with O.Pruss. be "and"; cf. also Lith. juoba "unless, the more".

V/-/16:107 blow - pūst - dut', no agreements, non-cognates. Latv. is cognate with Lith. pūsti, ibid, and Russ. púxnut' "to swell"; cf. also Lat. pustula "blister". Russ. might be connected with Lith. dumti "to blow",

¹This Russ. form is used in preference to the 'more recent' one potomúcto; also neither form would influence the cognate count.

O.Pruss. dumsle "bladder" (Latv. pūslis); cf. also Germ. Dampf "steam".

V/-/18:108 breathe - elpuot - dyšāt', no agreements, non-cog. Latv. is cognate with Lith. alpti "to faint, fall into a swoon", alpus "breathless, fainted" (Latv. elpa "breath"); cf. also Lith. alsa "weariness, exhaustion" (Latv. elsa "a gasp", elsas "sobs", elsuot "to pant", etc.). Russ. is cognate with Latv. dusēt "to repose, rest", dusa "slumber" Lith. dusinti "to gasp for breath, pant"; cf. also O.Norse dusa "to assume a motionless state", Germ. duseln "to daydream, doze".

N/-/20:109 child - bērns - rebjónok, no agreements, non-cog. Latv. is cognate with Lith. bernas "servant, lad, fellow"; cf. also O.High Germ. barn, O.Eng. bearn, Swed., Norw. barn; further Latv. form, via vowel gradation, bārenis "orphan", cf. Russ. bárin "gentlemen", though this Russ. form represents a contraction < bojárin "boyar(d), a noble" :: páren' "young man, fellow" < párobok "lad", Vasm. I, 56; II, 316, 317. Russ. is cognate with Lat orbus "childless, orphaned, bereft", with the Russ. form representing i) a metathesis, e.g., *orb-> *rob-, and ii) a regressive assimilation, e.g., *rob-> *reb- < *orbe(n); cf. also Germ. der Erbe "an heir, successor". Further connections could be

found in forms *rab* "slave", *robét'* "to be timid, humble oneself".

V(+)24:110 count - skaitīt - sčitát', partial agreement, cog.

Only the first and the last elements of the base morphs agree, e.g., *s-*, *-t-*; however, the initial Russ. phoneme *s-* functions as a morphological element in this instance, to wit, it indicates the perfective aspect, with a specialized meaning, of the form *čitát'* "to read" < *čest'* which originally designated "to count, pay, decipher a script" (in Mod.Russ. it designates "to honour"). If the form *čest'* is accepted as the basic one, then the above pair is cognate, for *-ai-* corresponds to *-e-* as in item 152:80, etc.

V(-)25:111 cut - griêzt - rezát', some agreement, non-cognates.

The syllabic crests in this pair of forms seem to correspond, e.g., *-ie-* :: *-e-* as in items 26:112, 86:145, 145:174; however, according to the available sources, there seems to be a lack of evidence for any lapse of velars in the corresponding Slav. forms, viz., in the initial position and in front of the liquids. Latv. is cognate with Lith. *griežti* "to cut around", and it is further related to the form *griezt* "to turn, turn about or around, wring" (item 175:192) which carries a level intonation as opposed to *griêzt* (with a rising-falling one,

formerly a rising one) of this item. Russ. is cognate with Lith. *režti* "to cut, rip, rend". Thus Lith. possesses both forms, to wit, with and without the initial velar, whereas in Latv. both forms have a velar initially, and a distinctive intonational pattern is used to avoid a homonymic clash, whereas Russ. possesses only the above velarless form, as it were.

N/+/26:112 day - diena - den', complete agreement, cognates. The syllabic crest of Latv. corresponds regularly with that of the Russ., i.e., -ie- :: -e-, as in items 25:111, 86:145, 145:174, and in such 'often-used' forms as siens "hay" :: *séno*, *ibid.*

V(-)28:113 dig - rakt - ryt', some agreement, non-cognates. Latv. is cognate with Lith. *rakti* "to peck, pick". Russ. is cognate with Latv. *raut*, Lith. *rauti* "to tear, rend"; cf. also Russ. *rak* "crayfish, freshwater lobster" in reference to the above Latv. form.

A/-/29:114 dirty - netīrs - grjáznyj, no agreements, non-cog. Latv. is the negated form of "clean", i.e., it consists of *ne+tīrs* "unclean, dirty". Latv. base morph -*tīrs* is cognate with Lith. *tyrus* "clean air, water, etc."; cf. also Irish *tīrim* "dry", for Latv. *tīrīt* "to clean" could also designate "drying". Russ. is derived from the verbal form *grjáznut'*

"to sink into mud, to be stuck in the mud, dirt" with a Mod.Russ. reflex of grjaznīt'/zagrjaznīt' "to soil, dirty". The verbal form is cognate with the intr. verbal form of Latv. grimt (grimst "he/she sinks"), Lith grimsti "to sink" and with the tr. form of Latv. gremdēt "to sink, lower".

A/-/33:115 dull - truls¹ - tupóĵ, no agreements, non-cognates.

Latv. might be connected with the verbal form trunēt "to rot, crumble", Lith trūneti "to rot". Russ. seems to be cognate with Lith. tampyti "to stretch" and tempti "to pull out, stretch out"; cf. also Lat. tempus "time; temple (anat.)", Germ stumpf "blunt, dull, stumpy".

N(+)34:116 dust - puteklis - pyl', partial agreement, cognates.

Cognation for this pair of forms is based on the fact that there are two variants of the same base morph. The concept of verbal transitivity and intransitivity seems to underlie the aforementioned dichotomy of the base morph in Latv., e.g., tr. verbal base morph pūs- "to blow" (item 16:107) alternates with intr. verb. base morph put-(uot) "to foam" (puta "foam") :: Russ. pyx-(át') "to breathe heavily, puff, start fire by blowing" alternates

¹This Latv. form was used in preference to neass "non-sharp" to avoid duplication of item 133:167.

with púx-(nut') "to swell" (pux "a down feather" :: Latv. pūka "fluff, loose downs"); thus the ultimate base morphs in Latv. pū-/pu :: Russ. py-/pu-, with Mod.Russ. reflexes of imp. pýxat'/perf. pyxnút' "to emit heat", pyxtét' "to puff, pant" and púxnut' "to swell", Vasm. II, 470, 473, 475.

V/-/40:117 fall - krist - pádat', no agreements, non-cognates. Latv. is probably connected with Lith kresti "to shake, shake loose, etc.". Russ. is probably connected with Latv. pēda "foot", if Russ. pod "hearth(stone), also bottom" is viewed as < pádat'. A further connection could be established via its perfective aspect past', which points to cognation with Lat. persum "to the ground, bottom", Vasm. II, 330.

A(+)41:118 far - tāls - dal'nyj, partial agreement, cognates. Latv. is cognate with Lith. tolus "distant, remote, far"; it is probably cognate with Russ. dal' "distance" (now a vestigial form), from whence was derived the above Russ. adjectival form. However, the correspondence of Latv. -ā- :: Russ. -a- is not a common phenomenon, though it does appear in item 98:149; neither is the voiceless :: voiced feature, i.e., initially at least.

N/-/43:119 father - tēvs¹ - otéc, some agreement, non-cognates.

Latv. is cognate with Lith. tēvas and it would seem to be connected with the Lat. base morph denoting "God". Russ. form consists of the base morph ot- + dim. suff. -ec-(< -ek-); ot- seems to be connected with Goth. atta. It should be noted that O.Irish athir depicts the lapse of the initial bilabial plosive p- as represented in Lat. pater, similar to O.Irish -iasc :: Lat. piscis "fish".

V/+/44:120 fear - baidīties - bojāt'sja, some agreement, cog.

Latv. is a reflexive verbal form < baidīt "to frighten" which is cognate with Lith. baidyti, ibid. Further variants of the base morph bai- are: Latv. bailes, Lith. baile "fear"; Latv. baiss, baigs, baismīgs "fearful", Lith. baisus, baisingas, ibid; Latv. baisma "horror", Lith. baime, ibid, etc. Thus the base morph for fear seems to be bai-², and all other forms seem to be derived

¹The above Latv. form has also a synonym form tētis, which is cognate with Lith. tētis, but does not seem to be connected with the above Russ. form.

²This suggests that Latv. ai :: Russ. o which cannot be readily substantiated, for only one example could be found to illustrate this correspondence, e.g. aita (cf. O.Irish oī) "sheep" :: овца, ibid; however, the Latv. form avs "ewe" seems to be more closely related to this Russ. form than the former aita. Usually, the correspondence of Latv. ai to Russ. e is more predominant, e.g., Latv. maisīt "to mix" :: Russ. mesāt', ibid; mainīt "to change" :: menjāt', ib.; raisīt "to loosen, untie" (cf. Germ. reissen) :: resāt' (perf. aspect resit') "to solve, conclude", etc. In view of the above, and the fact that the base morph should be baid- (baidas/baidījas/baidīsies "he fears/

from it with different vocalic adjustments, e.g., Latv. *biedēt* "to threaten", *bijāt(-ies)* "to be awed", *bīties* "to be afraid". The Russ. form is probably connected with one of the latter variants of *bai-*, or it might represent a purely Pan-Slav. variant, as other Slav. forms are: Pol. *baćsie(n)*, Cz. *batise*, Ukr. *bojatyśa*, S.Cr. *bòjatise*. A further connection could be established via the Russ. nominal form *bes* "demon, satan" :: Lith. *baisas*, *ibid*; cf. also Lat. *foedus* "abominable, horrible".

A/-/46:121 few - *dažs* - *inójs*, no agreements, non-cognates. Latv. is cognate with Lith. *dažnas* "frequent, not one but many, several". Russ. is connected with Lith. *ynas* "the real one, true one, etc.", and also via vowel gradation with O.Pruss. *ains* "one", consequently with Latv. *viens*, Lith. *vienas*, *ibid*; cf. also Lat. *ūnus* "one".

V/-/47:122 fight - *cīnīties* - *borót'sja*, no agreements, non-cog. Latv. might be connected via its nominal form *cīņa* "action, struggle, fight", with (via semantic extension) Lith. *kine* "an elevated location in a swamp", cf. also Latv. *cieņa* "honour, regard" and its verbal form *cienīt*, *ibid*. Russ. is cognate with

feared/will fear"), it could be stated that Latv. *baid-* :: Russ. *bed-*, the Russ. form designating "misfortune" which is also cognate with Latv. *bēda* "trouble".

Latv. *bārt*, Lith. *barti* "to scold, flog"; Latv. *-ā-* :: Russ. *-o-* as in item 125:163.

0/+/50:123 five - pieci - pjat', complete agreement, cognates. Latv. *-ie-* :: Lith. *-en-* (*penki* "five") as *liekt* "to bend" :: *lenkti*, *ibid.* Latv. *-c-* is the result of a historical process of affrication with corresponding reflexes of palatalization in Russ. and no phonological change in Lith., e.g., *pieci - pjat'* - *penki* "five". Russ. form *ljáka* "a sway-back dog" probably shows the correspondence of Balt. *-ie-/ -en-* with Russ. *-ja-*, for this Russ. form seems to be connected with Latv. *liekt*, Lith. *lenkti* "to bend"; Vasm. II, 82.

V/+/51:124 float - pluduot¹ - plávat', some agreement, cog. Historically, this pair is cognate. Latv. is cognate with Lith. *plūdis* "float" (cf. Latv. *plūdi* "flood") and Russ. is cognate with Lith. *plauti* "to wash, rinse", Latv. *plaust* "to wet, moisten". This fluctuation of meaning, between these diachronically cognate forms, is similar to O.Eng. *lafian* > *lave* "to wash, bathe; wash or flow along or against", wherein both meanings are combined.

¹There is also a tr. verbal form in Latv. *pludināt* < intr. *pluduot*.

The Russ. is actually an innovated imp. verbal form < *plávit'* "to float" with a decay of meaning in Mod. Russ., e.g., "to melt".

- V/-/52:125 flow - plūst - teč', no agreement, non-cognates.
 Latv. is cognate with Lith. plūsti "to flow".
 Russ. is cognate with Latv. tecēt "to trickle, leak", Lith. tekėti "to flow".
- N/-/53:126 flower - zieds¹ - cvetók, no agreement, non-cog.
 Latv. is cognate with Lith. žiedas, ibid, < žydeti, Latv. ziedēt "to bloom". Russ. is probably connected with Latv. kvitēt "to shimmer" and the tr. verbal form kvitināt.
- N/-/55:127 fog - migla - tuman, no agreements, non-cognates.
 Latv. is cognate with Lith. migla, ibid, and Russ. mglá "haze". Russ. seems to be connected with Kirgiz tuman "fog, darkness"; cf. also Latv. tumsa, Lith. tamsa "darkness".
- O/+ /57:128 four - četri - četýre, complete agreement, cog.;
 cf. also Lith. keturi, ibid.
- V/-/58:129 freeze - salt - mǰorznut', no agreements, non-cog.
 Latv. is cognate with Lith. šalti, ibid, and seems to be connected with Russ. sálo "tallow, suet; also sludge, thin ice". Russ. seems to be cognate with Alb. mardem, ibid, marde "goose pimples"; Vasm. II, 121.

¹The above form was used in preference to puķe "flower", for the latter is an obvious loan < Livonian (Finn.) puķķ, ibid; however, cf. also Latv. buķete "bouquet, nosegay".

N/-/59:130 fruit - auglis - plod¹, no agreements, non-cog.
 Latv. form < augt "to grow" and it is cognate with
 Lith. augti "to grow". Russ. represents a Pan-
 Slav. form, e.g., Pol. plod, Ukr. plid (as Ukr.
 kin' :: Russ. kon' "horse"), Cz. plod, S.Cr. plod.
 This form seems to be connected with Ch.Slav.
 plodovítýj "fruitful"; Vasm. II, 373; Pr. II, 75.

N/-/62:131 grass - zāle - travá, no agreements, non-cognates.
 Latv. is cognate with Lith. žole, ibid, O.Pruss.
 sālin, ib., Russ. zeljónyj "green" (item 63:35).
 A further connection seems to be via Latv. zelt
 "to thrive, flourish, become green"; cf. also Lat.
 helvus "honey-yellow" and the further possibility
 of a connection with gilvus "pale-yellow". Russ.
 represents a Pan-Slav. form, e.g., Pol. trawa,
 Ukr. travá, Cz. trava, S.Cr. tráva, Bulg. trevá
 (with vowel gradation, e.g., a : e). The basis
 for this form seems to be Ch.Slav. truti "to
 expend, use up" with further derivation of natruti
 "to feed" and also further semantic extension in
 Bulg. tróva "to poison", Pol. truć, truje(n),
 ibid :: Latv. zāles (pluralia tantum) "medicine",

¹The more widely utilized Russ. form frukt, ibid, was
 avoided, for it is an obvious loan from Lat. fructus via Pol.
 frukt, ib., Vasm. III, 219.

zālūt "to cure, heal", but the expression zālūt ēdienu designates "to poison", literally "to add 'medicine' to a meal".

N/-/64:132 guts - zarna¹ - kiškā, no agreements, non-cognates. Latv. is cognate with Lith. žarna "gut". This form is probably connected with zars "branch; also extension"; cf. also Lat. hernius and Germ. Darm, ibid. Russ. is cognate with Pol. kiszka, ibid, Ukr. kýška "gut, sausage", Arm. kušt "maw, also womb"; Vasm. I, 564; Pr. I, 310.

O/-/67:133 he - viņš - on, no agreements, non-cognates. Latv. appears to be connected with the cardinal viens "one" (item 110:64); cf. also Ukr. vin, ibid, though probably this form is connected with the directional particle von "there, over there, in the distance!". Russ. seems to be connected with Lith. anas "that, the far one".² The oblique cases of this Russ. pronoun are cognate with the base morph of the now obsolete relative pron. iže/jáže/ (j)éže "which (in three genders)", viz., je-; the

¹The Latv. form iekšas (pluralia tantum) "bowels, insides" < iekša "inside" was not used, to avoid duplication of item 82:143.

²Historically, O.Russ. (about 1100 - 1700 A.D.) still recognized three degrees of distance and for each degree used a distinct dem. pron., e.g., i) s(e) "this" when the object in question was near the speaker and the interlocutor; ii) t(o) "that" when the object was away from the speaker but near the interlocutor; iii) on(o) "yon" when the object was away from

latter is cognate with Lith. jis/ji "he/she"; cf. also Lat. demonstrative pron. is/ea/id "he/she/it; this or that person or thing", Goth. is "he, that one", Germ. jener "that, the distant one" and item 46:121, e.g., Russ. inój "few".

- A/-/171:134 heavy - smags - tjažjolyj, no agreements, non-cog. Latv. is cognate with Lith. smagus "heavy, pert. to a blow, frost", probably also with Ch.Slav. smagát' "to whip". Russ. seems to be cognate with Lith. tingėti "to be idle, be a burden"; cf. also Norw., Swed. tung "heavy". The Russ. verbal form tjanút' "to pull" (item 113:155) and its vulgate form tjagát' seem to be connected with the above form; Vasm. III, 167; Pr. Append. 32-34.

- O/-/72:135 here - šeit¹ - tut, no agreements, non-cognate. Latv. might be connected with Lith. štai "hither" also čia "here", though the latter form points to an original k+i. Probably it is a curtailed form of šeitan "in this place, here", as še-šeit-šeitan :: te-*teit-teitan "in that place, there"

both. The last form gave Mod.Russ. sg. and pl. forms in all genders for the third person personal pronoun, e.g., on, oná, onó, oní.

¹This is one of the 'problem' forms in Latv., cf. Endz. 1091.

It should also be noted that this is the only form in standard Latv. which shows the diphthong ei following the unvoiced shibilant, except for seims < Russ. séjma "sail", probably < Karel. seimi or Finn. seimi "tow-rope, boat-hawser".

(še, te represent the sg. loc. of šis "this", tas "that", cf. items 161:85, 167:86). As further probable connections, Latv. synonym šite "here-about",¹ Latv. dial. forms šie, šei, šī "where" :: the literary form kur (O.Pruss. quei) "where" could be mentioned. Russ. seems to reflect a Pan-Slav. development, e.g., Pol. tu, Ukr. tut, Cz. tu "here", tuto "there", S.Cr. tu "there", Bulg. tú-ka "hither". The basis for this form is Com.Slav. alternation of *tu with *tuto (perhaps similar to kto and čto forms, cf. items 184:96, 188:98), as the Russ. dial. form tuto, as well as other Slav. forms, would indicate. The O.Pruss. tēnti "now" should also be mentioned as it designates immediacy in time.

V/-/73:136 hit - sist - bit', no agreements, non-cognates. Latv. base morph (e.g., sit "he/she hits") seems to be connected with Lith. suduoti "to strike". Russ. represents an Inter-Slavonic development, e.g., Pol. bić, Ukr. býty, Cz. biti, S.Cr. biti; cf. also O.Irish benim, Mid.Eng. bete, Mod.Eng. beat.

¹Perhaps this synonym points to a former system of distance differentiation (cf. Russ. in item 67:133), e.g., sis, šitas, tas "this, that, yon". The form of seit < site is quite probable, for the alternation of i with ei occurs in dial. forms and the final -e in site could have lapsed by apocope; cf. Endz. 523 for i > ei.

V/-/74:137 hold - turēt - deržāt', some agreement, non-cognate.
 Latv. is cognate with Lith. turėti "to hold in possession, own", and appears to be connected with Russ. tvorít' "to create, make".¹ Russ. represents a Pan-Slav. development, e.g., Pol. dzierzyć, Ukr. deržáty, Cz. držeti, S.Cr. držati; cf. also Lith. diržti "to become viscous", dirginti, dirgyti "to arrange, align", Latv. derdzēt "to be quarrelsome", dergt(ies) "to be loathsome".

O(-)75:138 how - kā² - kak, some agreement, non-cognates.
 Latv. appears to be the gen. sg. of kas "what, who", this it seems to be cognate with Russ. kto "who", cf. item 188:98. Russ. is a curtailment of kakój "which one"; the latter represents a Pan-Slav. development, e.g., Pol. kaki, Cz. kako, S.Cr. kako, Bulg. káko, kak; cf. also Lith koks "of which kind", Irish cāch "each", Latv. kāds, Lat. quālis "of which kind"; Vasm. I, 506; Buck 920-921.

V/-/77:139 hunt - medīt - oxótit'sja, no agreements, non-cog.
 Latv. seems to be connected with Lith. medžioti, ibid; cf. also Latv. mednis "grouse, mountain

¹Latv. form tvārstīt "to seize, also to grope for" seems to be connected with this Russ. form (cf. also tvert "to grab"), since Latv. duris or durvis is generally thought to be cognate with Russ. dver', as Latv. dvars "roadway within the gates" is cognate with Russ. dvor "court".

²This is one of the 'problem' forms in Latv., cf. Endz. 1090.

cock", medus "honey". Russ. seems to represent an E/W-Slav. development, e.g., Pol. ochota "longing, inclination", Ukr. ochóta "pleasure, gaiety; hunt", Cz. ochota "joy". This form seems to be connected with the verbal form xotét' "to want, desire" and, perhaps, due to a tabu concept for hunting in this speech area, has replaced the original form with oxóta "joy, passion, hunt", i.e., the semantic shift started with "to want" > "desire", > "joy, gaiety" > "hunt; to hunt"; cf. Vasm. II, 294.

N/-/78:140 husband - vīrs - muž, no agreements, non-cognates. Latv. is cognate with Lith. vyras, ibid, Lat. vir "a male". Russ. reflects a Pan-Slav. development; for its connections and Slav. reflexes cf. Vasm. II, 169-170 and also item 95:52.

N/+80:141 ice - ledus - lĵod, complete agreement, cognates. The Latv. base morph led- :: Russ. base morph lĵod- as Latv. med-(+us) "honey" :: Russ. mĵod-, ibid. Further connections are Lith. ledus "ice", O.Pruss. ladis, ibid; probably also Irish ladg "snow" as in Vasm. II, 25.

O/-/81:142 if - ja¹ - (j)ėšli, no agreements, non-cognates.

¹Latv. ja was used in preference to vai, for the latter has several designations, e.g., "or, whether, also if (in optative or passive constructions)".

Latv. is cognate with Lith. *jei*, *ibid.* Historically, the Russ. consists of the third pers. sg. form of "to be" (cf. item 37:23) and the emphatic particle *li*, e.g., *(j)ěst'+li*= Mod.Russ. *(j)ěsli*, with a complete lapse of the palatalized dental plosive *t'* in Mod.Russ.¹ Originally, this Russ. form designated "if being the case, that ..." which consequently narrowed down to "if".

O(+)82:143 *in - iekš - v/vo*, partial agreement, cognates. Latv. represents a contracted form < *iekša* "inside" and seems to be connected with Lith. *i(n)kišti* "to shove (in), thrust, insert", also Lith. *ĩ(n)* "in". Russ. appears to be connected with the Latv. prefix *ie-* "in, into (as in *ieiet* = *ie-+iet* 'to go in, i.e., enter')" and O.Pruss. *en* "in". Historically, the Russ. forms for "in, into" were represented by *v*, *vo*, which were used both as prepositions and prefixes and *vn-* functioning as a prefix only,² whereas in Latv. *iekš* functions as a preposition only and *ie-* as a prefix.³ Thus it could be stated that the above

¹Probably due to a phonetic simplification based on economy, e.g., a complication of alveolar-dental fricative, palato-alveolar plosive and palato-alveolar lateral, once the morpheme suture between the base morph, as it were, and the function word lapsed and the 'least important' palato-alveolar element, i.e., the dental, was dropped.

²The *v*, *vo* forms function similarly in Mod.Russ., and the *vn-* form is considered to be moribund and appears only in a few vestigial forms.

³Even in Mod. Latv. the usage of prepositions is quite re-

forms are probable cognates, for the diphthongal element in Latv. *iekš* seems to be functioning as a prefix, e.g., *iekš* < *iekša* "inside" = *ie-*+(*kša*). Furthermore, the O.Russ. prefix is still preserved in some vestigial forms, e.g., *vnimát'* "to pay attention (<O.Russ. *v(o)n-*+*imati* "to take in"), overhear" which is morphologically cognate with Latv. *ie-*+*ņemt*/*+jemt* "to take in, capture". Further connections are Lat. *in* "in, into", Irish *in-*, *ibid*, Goth. *in*, *ib*.

N/+85:144 lake - ezers - ózero, complete agreement, cognates. Latv. *e-* :: Russ. *o-* via qualitative vowel gradation, e.g., *elkuons* "elbow" :: Russ. *lókot'*, *ibid*, with the Russ. form reflecting a metathesis whereby the historical initial phoneme *o-* was transposed with *-l-*.¹ Further connections are Lith. *ėžeras*, *ibid*, O.Pruss. *assaran*, *ib*.

V/+86:145 laugh - smiet(ies) - smeját'sja, complete agreement, cognates. The Latv. verbal paradigm shows complete agreement with the Russ. form, e.g., *smeju(os)* :: *smejús'* "I laugh"; cf. also items 26:112, 145:174. Further connections are Latv.

stricted and the avoidance of their application is obvious.

¹There are a few other examples of this type of metathesis, e.g., involving the liquids *l-*, *r-* and the following vowel: O.Russ. *ralo* "a plough" :: Latv. *arkls*, *ibid*, Russ. *lakát'* "to lap, swill, originally to starve" :: Latv. *alkt* "to thirst, crave".

smaidīt "to smile", smīdināt "to invoke laughter", smīnēt "to sneer", also Mid.Eng. smilen "to smile"; cf. Vasm. II, 673-674.

A/-/88:146 left (side) - kreiss - lévyj, no agreements, non-cognates. Latv. seems to be connected with Lith. kreivas "crooked" (Latv. kreilis "a left-handed person, also clumsy"), probably also with Russ. krivój "oblique, crooked".¹ Russ. is cognate with Lat. laevus "left; also silly, unpropitious", and is probably connected with Lith. išlaivoti "to make a bend, curve".

N/-/89:147 leg - kāja - nogā, no agreements, non-cognates. Latv. is cognate with Lith. koja, ibid. Further background is obscure; cf. Buck 242. Russ. is cognate with Latv. nags "nail", cf. also item 56:31.

V/+/91:148 live - dzīvuot - žīt', some agreement, cognates. Latv. absolute base morph dzī- :: Russ. ži- as dzī-+(sla) "artery, vein" :: ži-+(la), ibid. The Latv. verbal form dzīt "to drive, goad, prod" depicts the absolute base morph dzī-, from whence the adjectival form dzīvs "lively" (Lith. gyvas)

¹Any connection with this Russ. form is obscure, due to the Russ. loanword krievs "Russian" (kriviči "an East-Slav. tribe in the North") into Latv., but kriēvs designates "crooked, distorted", Lith. krivis "a sly person".

is derived and serves as a basis for the above verbal form, e.g., $dzīt > dzīvs > dzīvuot$. Thus the Latv. and Russ. forms could be viewed as true cognates. Further connections are Lith. *gyti* "to drive", O.Pruss. *gijwans* "alive" (acc. pl. form) Lat. *vīvus* "living, alive".

N/+/97:149 mother - mātē - mat', complete agreement, cognates. Latv. -ā- :: Russ. -a- as in item 41:118. Further connections are Lith. *mótyna*, *ibid*, O.Pruss. *mūti*, *ib.*, Lith. *mótē*, *moters* "female spouse", Lat. *māter*, *mātris* "mother", Irish *māthir*, *ibid*, O.High Germ. *muoter*, *ib.*, etc.¹

A/-/102:150 narrow - šaurs - ūzkij, no agreements, non-cog. Latv. is cognate with Lith. *siauras*, *ibid.*² Russ. is probably connected with Lith. *ankštas* "cramped", Lat. *angustus* "narrow, cramped". Further connections are Goth. *aggwus* "narrow", Arm. *anjuk*, *ibid*.

¹E.g., this form appears to be a general I-E development, with the exception of Alb. *nāna* < probably Turk. *anne*, which does not seem to have affected other speech areas in Europe or adjacent to it, e.g., Hung. *az anya*, Finn. *aiti*, Est. *ema*, Arab. *el-omm*; but Georgian has *deda* "mother" : *mama* "father", i.e., it seems to depict a reversed phonological development to any expected I-E one.

²Vasmer mentions *šura* "vaging" (in Pskov, Tver regions) as a probable connection with Latv. *saurs*. However, despite the acceptable phonological correspondence of Latv. -aur- :: Russ. -ur- within the base morphs, the exact correspondence of the initial phonemes indicates a strong possibility of Russ. dial. borrowing, notably in the contact-region of Pskov.

A/-/103:151 near - tuvs - blízkiĵ, no agreements, non-cognates.

Latv. seems to be connected with O.Pruss. tawischan "the nearest" (acc. sg.), Lith tuvi "at once"; though the etymological background of this form is quite obscure, cf. Buck 868.¹ Russ. seems to be connected with Latv. blaizīt "to squeeze", bliezt "to smash", cf. Lith. blyžoti "to lie still, pertaining to an extremely sick person, animal", also Lat. flīgere "to beat down".

A/-/109:152 old - vecs - staryĵ, no agreements, non-cognates.

Latv. is cognate with Lith. vetuŝis "ancient", Lat. vetus "old, ancient", Russ. vétxiĵ "decrepit, ramshackle". Russ. seems to be connected with Lith. storas "thick, strong", also O.Norse storr "huge, powerful".

A/-/111:153 other - uotrs - drugóĵ, no agreements, non-cog.

Latv. is cognate with Lith. antaras "second" (an ordinal), O.Pruss. antars, *ibid*,² probably Russ.

¹Perhaps a connection between tavs "yours" and the above form could be suggested, as there exists a certain semantic overlap in most of the derived forms, e.g., tavs > taveĵais "one of your kind, e.g., a closely related person, also kin generally" : tuvs > tuveĵais "anything, anybody close at hand", tuvākais (= comp. degree) "neighbour, kin", tuvinieks "close relative, kinsman".

²Latv. "second" (ordinal) is represented by otrais, i.e., otrs with a definite adjectival desinence. This is a similar development to the ordinal pirmais "first", though in this case the form with the indef. adj. desinence, pirms, has become semantically as well as morphologically moribund, e.g., pirmais "first" : pirms "before" - an indeclinable adverbial form.

vtoróĵ, ib., though any connection between this Russ. form and the Latv. one seems to be quite vague, cf. Vasm. I, 237. Russ. seems to represent a general Pan-Slav. development, e.g., Pol. drugi "other, also second", Ukr. druhyj, ibid, Cz. druhý, ib., S.Cr. drugi, ib., Bulg. drúgi "other". Historically, the Russ. form is an adjectival extension < drug "friend"; the latter is cognate with Latv. draugs, ibid, Lith. draugas, ib., also O.Norse poet. form draugr "man"; cf. Vasm. I, 373.

V/-/112:154 plough - art - paxát', no agreements, non-cognates. Latv. is cognate with Lith. arti, ibid, Lat. arare, ib., O.Russ. orát', ib. (extinct in Mod.Russ.),¹ Pol. orać, ib. Russ. seems to be cognate with Cz. pachati "to be active, do, make", however, further background seems to be quite obscure; cf. also Vasm. II, 326, Buck 496, where the late Ch.Slav. form pachati "to shake, fan" is given as a probable connection.

V/-/113:155 pull - vilkt - tjanút', no agreements, non-cog. For the connections and background of the Latv. form cf. item 21:14. Russ. reflects a Pan-Slav. development based on the concept of "to stretch" =

¹The homophonous dial. Russ. form orát' "to yell" is considered to be connected with Lat. orāre "to speak", Arm. uranam "I deny", cf. Vasm. II, 274.

tjagát', e.g., Pol. *cia(n)gna(n)ć* "to pull", Ukr. *t'aháty* "to pull, drag", Cz. *tahati/tahnouti* "to pull oneself, stretch oneself", Slovene *teg* "a pull", *tégniti* "to stretch oneself", S.Cr. *natégnuti* "to draw on, pull on". Further probable connections are O.High Germ. *dîhsala* "wagon-shaft", Lat. *tēmo*, *ibid*; cf. Vasm. III, 166.

V/-/114:156 push - grūst¹ - tolkat', no agreements, non-cog. Latv. is cognate with Lith. *grūsti*, *ibid*. Russ. is connected with *tolóc'* "to pound, trample" which is connected with Lith. *tilkts* "to be calm"; cf. also Vasm. III, 116-117.

A/-/117:157 right (correct) - pareizs - prāvil'nyj, no agreements, non-cognates. Latv. appears to be connected with the Lith. form *pareižiui* "in succession, running". This Latv. form might also be connected with the prepositional phrase: *pa reizei* "once in a while (literally: for times)". Russ. is an extended form < *právo* "justice, rights"; the latter is represented in Latv. *prāva* "court session, proceedings, etc.", Lith. *prova*, *ibid*, as Russ. loan-words; cf. Vasm. II, 423.

¹This Latv. form was used in preference to *stumt* "to shove", for the normal response to "to push" and *tolkat'* would be *grūst*, and neither form, e.g., neither *stumt* nor *grūst*, would have influenced the cognate count as both are true non-cognates.

A/-/118:158 right (side) - labais - právyj, no agreements, non-cognates. The Latv. form is analogous to labs "good, well" (with an indefinite adjectival desinence). For further connections cf. item 61:34, e.g., "good" - labs. Russ. is connected with právo "justice, rights" as in item 117:157. The Russ. form právo appears to be related to Lat. prōbus "good, fine", O.Norse framr "progressing", cf. Vasm. II, 424.

N/-/119:159 river - upe - reká, no agreements, non-cognates. Latv. is cognate with Lith. upe and is probably connected with Ch.Slav. (Russ. only) vapa "lake, puddle",¹ consequently with O.Pruss. wupjan "cloud". Russ. represents a Pan-Slav. development, e.g., Pol. rzeka, Ukr. riká, Cz. řeka, S.Cr. rijeka, Bulg. reká. It might be connected with the Latv. verbal form ritēt "to roll, to flow by (as time), flow (as tears)" > (div)ritenis "(bi)cycle", Lith. ritineti "to ride", ritinis "a circle", cf. also Lat. rīvus "brook".

N/+/122:160 rope - virve - verjovka, complete agreement, cog. Latv. -i- :: Russ. -e- as in items 1:1, 70:40.

¹This connection could be viewed as a similar development to the one in item 181:94, e.g., ūdens "water" :: vodá, ibid, consequently with O.Pruss. wundan representing a combining form, as it were.

Further connections are Latv. verbal form *vērt* "to open; string; thread", Lith. *verti* "to thread", *virve* "rope, string", O.Pruss. *wirbe*, *ibid.*

V/-/123:161 *rot - pūt - gnit'*, no agreements, non-cognates. Latv. is cognate with Lith. *pūti*, *ibid.* Russ. represents a Pan-Slav. development, e.g., Pol. *gnić*, Cz. *hniti*, Ukr. *hnýty*, S.Cr. *gnjiti*, Bulg. *gnǎj(o)*. Further probable connections are Latv. *gnīde* "rough, scabby skin", O.High Germ. *gnītan* "to rub away, grind down", O.Eng. *gnīdan* "rub, smear; to crumble away in pieces".

V/-/124:162 *rub - berzēt - terēt'*, no agreements, non-cognates. Latv. is an extension of *berzt* "to scrub"; the latter form is probably connected with Russ. *boroná* "a harrow", consequently O.High Germ. *borōn* "to bore". Russ. seems to be connected with Latv. *trīt* "to sharpen", *trīties* "to rub oneself against something", Lith. *trinti* "to rub", *tirti* "to explore", Lat. *terere* "to rub".

N/+/125:163 *salt - sāls - sol'*, complete agreement, cognates. Latv. *-ā-* :: Russ. *-o-* as in *kārba* "box" :: *kórob* "bast-box, bast-basket", also as in item 47:122 pertaining to the background of *borót'sja* "to fight". Further connections are O.Pruss. *sal*,¹

¹This O.Pruss. form is considered as a probable Slav. loanword, cf. Vasm. II, 693.

Lith. s^olymas "Saltlake" (a toponym), Lat. sāl,
Goth. salt, Arm. ał.

V/-/128:164 scratch - kasīt - carápat', no agreements, non-cog.
Latv. is cognate with Lith. kasyti, *ibid*, and it is
probably connected with Russ. kosá "plait, braid".
Russ. is a relatively new verbal form and it is
probably connected with the interjectional phrase:
cap - caráp! "quick - quick, grab it!", with the
verbal form cápat' "to snatch, seize, grab" as the
initial element and the second part depicting a
phonetic innovation medially. The verbal form
cápat' seems to represent a Pan-Slav. development
with some semantic diversification, e.g., Pol.
capać "to walk clumsily", Ukr. cápaty "to grab,
snatch", Cz. capati "to waddle; splash", Slovene
cápa "paw", Slovak capat' "to seize quickly"; cf.
Vasm. III, 282; Pr. Append. 42-43.

N/-/129:165 sea - jūra - móre, no agreements, non-cognates.
Latv. is cognate with Lith. jura, *ibid*, jaura
"swamp, marsh", jaurus "boggy".¹ Russ. is cognate
with Latv. mare "lagoon, tombolo (a small bay pro-
tected by a bay-mouth bar)", Lith. marios "lagoon,

¹The Russ. dial. form (Upper Dvinsk region) júrmola "a low
lying land-mass", as listed by Vasmer (cf. Vasm. III, 472-473),
seems to be a direct borrowing from Balt. sources, for both
elements of the compound correspond to Latv. jūrmala "sea-side",
which is also a toponym.

also a small sea of sorts", O.Pruss. mary "lagoon",
Goth. marei "sea", Irish muir, ibid, Lat. mare, ib.

V/-/132:166 sew - šūt - šit', complete agreement, cognates.

Latv. -ū- :: Russ. -i- as būt "to be :: byt'", ibid,
(Russ. i/y are in allophonic distribution only).

A(+)133:167 sharp - ass - ostryj, partial agreement, cognates.

Latv. a- :: Russ. o- as in items 68:38, 106:61,
185:196 and initially as abi, abas "both" :: óba,
óbe, ibid. However, the last phoneme in the Russ.
base morph presents a difficulty, Latv. as- ::
Russ. ost-, due to lack of evidence which would
show the presence of this -t- phoneme in the Latv.
base morph (unless Latv. astri "horse hair" could
be viewed as a 'combining' form). Perhaps Lith.
aštrus "sharp" could also be viewed as a combining
form, as it were; for further connections of the
Latv. form cf. item 15:9. Russ. appears to be con-
nected also with Lat. ācer "sharp", Arm. asełn
"needle".¹

¹This pair was viewed as probable cognates, though Vasmer did not list it as such, for two of the three phonemes in the base morphs showed complete agreement and the semantic linkage was considered to be sufficient evidence for cognation. Another - morphologically analogous - Latv. form ass/ase "axle" (Lith. asis) shows a regular correspondence to the Russ. os', ibid; thus, perhaps, a lapse of -t- in the Latv. base morph did occur, for it might be assumed that it existed to avoid a homonymic clash, e.g., as- "axle" : *ast(r)- "sharp" (the dial. form of astras in Vasm. II, 288 is not convincing, for it is obviously a result of Lith. influence). A like vacillation within similar linguistic environment should be noted here: Latv.

A/-/134:168 short - īss - korótkij, no agreements, non-cognates.
 Latv. might be connected with Lith. dial. forms
 ysas/iusas "short", as well as Latv. ass "sharp",
 though general background for this form is quite
 obscure. Russ. seems to be connected with Lith.
 kartus "bitter", Irish cert "small"; cf. also Lat.
 curtus "shortened, mutilated" and Germ. kurz
 "short".

V/-/135:169 sing - dziedāt - pet', no agreements, non-cognates.
 Latv. is cognate with Lith. giedoti, ibid, also
 gydyti "to heal, cure", Latv. dziedēt, ibid,
 O.Russ. gajati "to crow" might be connected with
 it. Russ. represents a Pan-Slav. development, e.g.,
 Pol. piąć, Ukr. pǐjaty, Cz. pětí, S.Cr. pjevati.
 Any outside connections with this form seem to be
 quite obscure; cf. Vasm. II, 422; Buck 1249.

N/+ /138:170 sky - debess - nébo, some agreement, cognates.
 Latv. seems to represent a phoneme substitution in
 the case of the initial phoneme, e.g., d- for n-.
 This substitution probably occurred due to Lith.
 influence, as in Lith. debesis designates "cloud"
 and Lith. dangus designates "sky, also heaven".
 Furthermore, the Russ. plural paradigm exposes the

straume "stream", Lith. sriaumė/dial. straumuo "stream" :: Russ.
 strúmen' "brook"; Latv. strauts "brook" but Lith. srautas/strautas,
 Latv. straujš "rapid" but Lith. sraujus/sraunus.

entire morpheme, e.g., *nebesá*, which is in complete agreement with the Latv. form. Further connections are Lat. *nebula* "vapour, fog, mist", O.High Germ. *nebul* "fog" > Germ. *Nebel*, *ibid*; cf. also Vasm. II, 205.

- V/-/141:171 smell - uost - njúxat', no agreements, non-cognates. Latv. is cognate with Lith. *uosti*, *ibid*, and Arm. *hot* "smell", O.Russ. *jadoxa* "sage, researcher (i.e., 'a sniffer')" (extinct in Mod.Russ.). The general background for this Russ. form is quite obscure, though it seems to represent a Pan-Slav. development with some semantic variations, e.g., Pol. *niuchać* "to snuff tobacco", Ukr. *ńuchaty* "to smell", Cz. *čě-nichati* "to smell, to snoop about", S.Cr. *njušiti* "to smell", *njuškati* "to snoop about, track"; cf. also Vasm. II, 234; Pr. I, 623; Buck 1022-1025.¹

- A/+/143:172 smooth - gluds - gládkiĵ, some agreement, cognates. The syllabic crest in this pair of base morphs is similar to the one in item 51:124, consequently these forms have to be viewed as cognate. Russ. is

¹The Russ. thematic verbal form - *uxát'* "to smell" is generally viewed as the basis for the above form with the *n-* reflecting a vestigial prepositional element, i.e., it is a reverse development from Eng. an apron (i.e., the indefinite article and noun) < Mid. Eng. a napron < O.Fr. *naperon*, (dim. of *nape* < Lat. *mappa* "napkin") and a similar development to the 'peripheral form' of "a newt" < O.Eng. *efete*; Mid.Eng. an ewt taken as a newt, due to a muddy transition, reinforced by Sprachbild pronunciation, as it were.

cognate with Lith. glodus "smooth", which shows regular correspondence within the base morphs. Latv. base morph seems to be quite productive and, similar to item 51:124, depicts a certain morpho-phonemic alternation, e.g., glu+/glau+ as in gludināt "to press, iron", glaudīt "to caress", Lith. glausti, ibid. Thus, this alternation within the base morph establishes a definite cognation with the Russ. form. Further connections are Lith. glaudus "to lie flat", glaudoti "to fit closely".

N/-/144:173 snake - čūska¹ - zmeja, no agreements, non-cognates.

Latv. is probably a distorted onomatopoetic form based on čūkslājs (< čūkstēt) "an unstable, stewing type of morass". Russ. represents a Pan-Slav. development, e.g., Pol. żmija, Ukr. zmija, Cz. zmijs, S.Cr. zmija. This form might be a general Slav. euphemism, which has replaced an original form due to a tabu concept, and seems to be connected with zemlja "land, earth, soil", perhaps depicting an animal which crawls on the earth; cf. Vasm. I, 457-458.

¹This Latv. form was used in preference to zalktis "grass snake, also a non-venomous snake" (Lith. zalktis), uodze "adder, also a venomous snake" (Lith. angis), for it is generic in its semantic designation.

- N/+/145:174 snow - sniegs - sneg, complete agreement, cognates.
 Latv. -ie- :: Russ. -e- as in items 25:111, 86:145.
 Further connections are Lith. sniegas, ibid,
 O.Pruss. snaigis, ib., Lith. snaigala "snowflake",
 Goth. snaiws, ib., Lat. nix, nivis, ib. and the
 corresponding verbal forms of these languages.
- O/-/146:175 some - drusku - néskol'ko, no agreements, non-cog.
 Latv. is connected with the nominal form of druska
 "crumb" < druskāt "to break up", and is cognate
 with Lith. druska "salt", druzgėti "to break up in
 small pieces", druzgas "piece of crockery", drauzs
 "dandruff", probably also Russ. druzg "twigs, dry
 branches", Goth. draú(h)snos "crumb, morsel".
 Russ. represents a negated form of the interroga-
 tive pronoun skól'ko "how much?".¹ It is cognate
 with Lith. keli "how many, some", kōl "until,
 while", also Lat. quālis "of what sort?".
- V/+/147:176 spit - splaut - plevát', complete agreement, cog.
 All Slav. forms are represented uniformly, without
 the initial s- phoneme, as opposed to the Balt.
 ones which possess it, e.g., Pol. pluć, Ukr.

¹As the Lith. and Lat. forms reflect, originally the Russ. form was also without 'the prothetic' s- which is actually the preposition s < s(o) "approximately"; also, the original form emerges in other Slav. languages, e.g., Bulg. kólko "how much", etc.; cf. Vasm. II, 643.

pl'uváty, S.Cr. pljuvati, etc., as opposed to the Balt. forms of Lith. spiauti and Latv. splaut. The expected correspondence of Latv. -au- :: Russ. -u-, e.g., as in ļaudis "people" :: lǰúdi, ibid, appears in the verbal paradigm, e.g., ja pljujú "I spit" and in the infinitive forms of other Slav. languages. Further connections are Goth. speiwan, ibid, Lat. spuere, ib.

- V(-)148:177 split - šķelt - kolót', partial agreement, non-cog. Both forms have the lateral -l- in common and the Latv. -e- phoneme could correspond to the Russ. -o- as in item -:45. However, a Latv. devoiced palato-alveolar fricative followed by a devoiced palatal plosive before palatal vowels usually corresponds to either a Russ. dev. pal.-alv. fricative followed by a dev. pal.-alv. affricate or only the dev. pal.-affricate, e.g., Latv. šķ- :: Russ. šč-/č- as in šķēps "lance" :: ščap "a fop, dandy"; šķiets "weaver's reed" :: ščit "a shield"; or šķērs "oblique" :: čérez "through". Therefore, a true cognate to the above Latv. form would appear to be Russ. ščel' "cleft, chink, crack", also Lith. skélti "to split". Russ. seems to be connected with Latv. kalt "to forge", kalts "chisel", Lith. kalti "to forge", perhaps also Latv. kult "to thresh", Lith. kulti, ibid, O.Pruss. preicalis

"anvil", kalopeilis "chopping knife".¹

- V/-/149:178 squeeze - spiest - davít', no agreements, non-cog.
 Latv. is cognate with Lith. spiesti "to swarm, concentrate", spausti "to squeeze, press". Russ. reflects a Pan-Slav. development, e.g., Pol. dawić, Ukr. davýty, Cz. daviti, S.Cr. dáviti. Its general background is quite obscure; probably it is connected with O.Norse deyja "to die", O.High Germ. touwen, ibid, Goth. diwan, ib.; cf. also Vasm. I, 326.
- V/-/150:179 stab - durt - vonzát'², no agreements, non-cognates.
 Latv. is cognate with Lith. durti, ibid, and it might be connected with O.Russ. udýrit' "to deliver a blow". Russ. appears to be cognate with Pol. nizać "to sting, stab, thread", though its general background is quite obscure. Probably it is connected with nož "knife" (Latv. nazis).
- N/-/153:180 stick - kūja³ - pálka, no agreements, non-cognates.
 Latv. is cognate with Lith. kújis "hammer", kúja "stilt", probably also Lith. kūgis "stack, hay-

¹Vasmer also indicates a probable connection between the Latv. and Russ. forms, but does not list this pair as cognate.

²This form was used in preference to zakolót' which is an extension of kolót' in item 148:177.

³The Latv. form nūja "stick" has an uncertain etymological background, and neither form is cognate with Russ. pálka; therefore Latv. kūja was utilized.

stack", O.Pruss. kugis, ibid, Russ. kij "billiard-cue". Russ. reflects a Pan-Slav. development with some semantic deviation, e.g., Pol. pała "club", Ukr. páłka "stick, piece of fire-wood", Cz. palice "cudgel", S.Cr. palica "stick", Bulg. pálica "stick". However, general etymological background for this form is quite vague. It might be connected with pálica "a battle-cudgel of sorts" in Russ. folklore, or it could also represent a borrowing from O.High Germ. pfâl "stake, pole" < Lat. pālus "stake"; cf. also Vasm. II, 306.

A/-/155:181 straight - taisns - prjamój, no agreements, non-cog. Latv. seems to be a derived form < taisīt "to make, prepare", Lith. taisyti, ibid. Further connections are Lith. tiesa "truth" (via vowel gradation), Latv. tiesa "truth, court, justice", Lith. tiesus "direct", Latv. tiešs, ibid, probably also O.Russ. téšit' "to quieten, comfort" > in Mod.Russ. "to amuse, entertain", thus also tíxij "quiet, peaceful" as a derived form from téšit'. Russ. represents a Pan-Slav. development with quite wide semantic differentiation, e.g., Pol. uprzejmy "polite", Ukr. prámýj "straight", Cz. přímo, ibid, S.Cr. prema "opposite", Slovak prima "polite, kind, affable". Further connections are quite obscure; perhaps it is connected with O.Norse framr "good,

decent", Goth. fram "industrious, keen", cf. also Vasm. II, 455.

- V(+)/156:182 suck - sūkt - sosát', partial agreement, cognates. The correspondence of Lat. -ū-:: Russ. -o- is quite irregular. The general Slav. development is phonologically quite consistent, e.g., Pol. ssac̑, Ukr. ssáty, Cz. ssáti, Slovene s(ē)sati, S.Cr. sati, except for Russ. which might have the closest connection in O.Bulg. s(o)sati. Further connections are Lat. sūgere, ibid, sūcus "juice, sap", O.Norse súga "to suck", O.High Germ. sūgan, ibid, Germ. saugen, ib. Thus Latv. reflects the oldest of the two base morphs, e.g., sūk-, and Russ. represents an independent development, as it were.¹

- V(-)/158:183 swell - pampt - pūxnut', no agreements, non-cog. Latv. is cognate with Lith. pampti, ibid. Further connections are Lith. pumpa "knob" (Latv. pumpa), Lith. pumpuras "bud" (Latv. pumpurs), probably also Russ. pup "navel", Lat. pampīnus "a vine-tendril or vine-leaf". Russ. is cognate with Latv. pūst "to blow" (item 16:107), Lith. pūsti, ibid. A further probable connection is Norw. føyse "to swell up".

¹This pair of forms was viewed as probable cognates as the above evidence appeared to be sufficient to establish cognation, for Russ. might also reflect velarization of the last element in the base morph (similar to Latv. in this case); cf. item 16:107, pūst "to blow" :: Russ. pūxnut' "to swell".

O/-/162:184 there - tur¹ - tam, some agreement, non-cognates.

Latv. is probably patterned by analogy after kas : kur "who : where", consequently tas : tur "that : there". Russ. reflects a Pan-Slav. development, e.g., Pol., Ukr., Cz., Bulg., tam; S.Cr. tamo "there, thereto". It appears to be distantly related to the demonstrative pronoun tot "that", cf. Vasm. III, 74 and item 161:85.²

O/-/163:185 they - viqi - oni, no agreements, non-cognates.

Latv. and Russ. forms are the corresponding plural reflexes of "he", thus, for their background and connections, cf. item 67:133.

A/-/164:186 thick - resns³ - tólstyj, no agreements, non-cog.

Latv. is cognate with Lith. rėsnas "strong, capable", though both Balt. forms could be Russ. loan-words, due to their exact phonological correspondence to O.Russ. resnój "strong, copious". Russ. is connected with Lith. tulžti "to become soft, swell", Latv. tulzt "to swell", tulzna "blister".

A+/165:187 thin - tievs - tonkij, some agreement, cognates.

¹This is one of the 'problem' forms in Latv., cf. Endz. 1091.

²This pair was viewed as non-cognates, for their respective backgrounds were quite obscure and the initial t- phoneme could be attributed to coincidence. Also Vasmer did not list this pair either as cognates or connected forms, cf. Vasm. III, 74.

³The Latv. form biezs "dense" should be also viewed as non-cognate with the above Russ. form.

Lith. seems to provide a 'combining' form, e.g., te(n)vas, ibid (for Latv. -ie- :: Lith. -e(n)-/-en-, cf. item 50:123). Some of the other Slav. forms provide a link with the Lith. form, notably Cz. tenký and Pol. cienki, but Russ. represents an independent development which is reflected also in other East-Slav. forms, e.g., Ukr. tónkyj, O.Russ. t(o)n(o)k(o) and Bulg. t(o)n(o)k. Thus Russ., perhaps, developed by incontiguous regressive assimilation from *t(e)n(o)k(o) > O.Russ. form > Mod.Russ. In view of the above evidence, this pair of morphs are cognate. Further connections are Lat. tenuis "thin, slender", O.High Germ. dunni "thin"; cf. also Vasm. III, 119.

V/-/166:188 think - duomāt - dumat', non-cognates. This is a Goth. loanword into Latv., probably via Slav. sources, e.g., Goth. dōmjān "to judge" > Russ. and Latv.; cf. Vasm. I, 380; Buck 1203; Bern. I, 237, and for some slightly different clarifications Pr. I, 202.

O/+/169:189 three - trīs - tri, complete agreement, cognates. The base morph for this pair is a general I-E development,¹ with Arm. erek(h) as an exception.

¹E.g., in other speech communities, adjacent to the I-E area, other base morphs for "three" are used: Finn. kolme, Est. kolm, Hung. három, Turk. üç, Arab. talāteh, Georgian sami.

V/-/170:190 throw - mest - brošāt', no agreements, non-cognate.

Latv. is cognate with Lith. mesti, *ibid*, Russ. metát' "to toss, fling", Lith. mėtyti "to pitch" (Latv. mētāt "to toss about"). The background of the Russ. form is quite obscure. It seems to be cognate with Ukr. brošýty "to discard", Slovene bršati "to streak, stripe". Further connections are Lith. brūkšmis/brūkšnis "a stripe, striation", probably also Latv. brukt "to peel off", Lith. braukti "to wipe, stroke", Latv. braucīt, *ibid*.

V/-/171:191 tie - siet - vjazát', no agreements, non-cognates.

Latv. is cognate with Lith. siētas, saītas "string" (Latv. saite "any band, ribbon"), O.Pruss. -saytan "belt", also probably Russ. set' "net". Further connections are Lat. saevus "bristle, stiff hair", O.High Germ. seid "string", Germ. Saite, *ibid*. Russ. represents a Pan-Slav. development, e.g., Pol. wia(n)zać, Ukr. vjazáty, Cz. vazati, S.Cr. vézati. Further probable connections are Goth. windan "to wind, twine", Cz. vaz "nape", O.Pruss. winsus "neck", Arm. viz, *ibid*.

V/-/175:192 turn - griezt - vertēt', no agreements, non-cog.

Latv. is similar to griēzt "to cut" (cf. item 25:111). The intonational pattern is also kept in derived forms, e.g., grieziens "a turn" (continuous or level intonation) : griēziens "a cut,

section" (rising and falling intonation). Russ. is cognate with Latv. *vērst* "to point, also turn oneself or someone, twist", Lith. *vērsti*, *ibid*, O.Pruss. *wīrst* "he becomes", wartint "to twist". Further connections are Lith. *virsti* "to become, also to roll about", Goth. *wairthan* "to become", Lat. *vertere* "to turn, turn around"; cf. Vasm. I, 190.

V/-/177:193 vomit - vemt - rvāt', no agreements, non-cognates. Latv. is cognate with Lith. *vemti*, *ibid*, Lat. *vomere*. Russ. reflects a Pan-Slav. development with some semantic differentiation, e.g., Pol. *rwać*, Ukr. (i)*rváty*, Cz. *rvati* "to tear, stretch", Slovene *rvati* "to rip out, pluck", S.Cr. *rvati se* "to grapple". Further connections are Latv. *ravēt* "to weed", Lith. *ravėti*, *ibid*, probably also Lat. *ruere* "to rip out, dig or grub up (the ground)"; cf. Vasm. II, 499.

V/-/180:194 wash - mazgāt - myt', no agreements, non-cognates. Latv. is cognate with Lith. *mazgoti*, *ibid*. Further connections are Lith. *mazgas* "a knot" (Latv. *mazgs* "a node"), probably also Lith. *mazgýti* "to knit" and consequently O.Russ. *mazgár'* "spider", O.Norse *mo(n)skvi* "a mesh, knot, noose", O.High Germ. *masca* "a mesh, net".¹ Russ. seems to be connected with

¹A further connection between Russ. *mozg* "brain" and Latv.

Lith. *maudyti* "to battle someone", O.Pruss.

aumûsnan "a wash" (acc. sg.), Latv. dial. *maut*

"to dive, swim under-water", probably also Irish

mûn "urine", Mid.Low Germ. *mûten* "to wash the

face"; cf. Vasm. II, 185.

A/-/183:195 wet - slapjš - mókryj, no agreements, non-cognates.

Latv. is cognate with Lith. *šlapias*, *ibid.* Russ.

reflects a Pan-Slav. development, e.g., Pol. *mokry*,

Ukr. *mókryj*, Cz. *mokrý*, S.Cr. *mokar*. Further

probable connections are Lith. *makonė* "puddle,

mud-hole", consequently Irish *mōin* "swamp, moor";

for further possible connections via the Latv. form

mākuonis "cloud" cf. item 21:14, also Vasm. II,

148.

O(+)/185:196 when - kad - kogdá, partial agreement, cognates.

Latv. -a- :: Russ. -o- as in items -:41, 68:38,

106:61, 133:167, 161:85. The explanation for the

'intrusive' velar -g- in Russ. is, perhaps, fur-

nished by the obvious phonological variations in

different Slav. forms, e.g., Pol. *gdy*, also *kiedy*

"when, ever", Cz. *kda*, also *kehdy*, S.Cr. *kada*,

Bulg. *kogá* "when" respectively. Thus, it could be

mazgāt "to wash" is quite vague and would have to be dismissed as a supposition. However, it should be noted that numerous 'brain dishes' are prepared in the Balt. littoral and some of the aspic dishes are considered to be the finest delicacies. Moreover these dishes involve complicated preparational work, including several washing and cleaning procedures.

postulated diachronically that the above Russ. form represents a sort of combining form, as in Pol. *kiedy* < O.Pol. *kiegdy*, and the Bulg. *kogá* represents one variant whereas the S.Cr. *kada* (also North.Russ. dial. *kadá*) the other variant, and the Russ. form a 'combining' variant, which reflects the voiced velar as well as the voiced dental. Phonologically, it might be postulated that the 'velar' variant of Bulg. *kogá* is, perhaps, a result of a partial progressive incontiguous assimilation, e.g., **k(o)dá* > *kogá*. All further connections do point to a form with an intervocalic dental -d-, as in Lith. *kada*, O.Pruss. *kaden/kadden*, Lith. *kadangi*.¹

Q(+):186:197 where - kur - gde, partial agreement, cognates.

According to the available etymological works, this pair was viewed as cognate.² Further connections are Alb. *ku*, *ibid*, Lith. *kur*, *ib*.

¹There might also exist another possibility, which would be based on a certain extra-linguistic consideration, e.g., the concept of a literary standard, as it were. This 'standard' could have been the carrier of the above Bulg. form *kogá* and influenced the vernacular, particularly of the E/W Slav. speech communities. Of course, it could also be argued that Russ. *kogdá* represents a 'contact' form which reflects the combination of Balt. *kad/kada* and Slav. *koga*, if the latter could be considered as the original Slav. form. However, the above contention would dismiss the probability that Russ. *kogdá* is actually a haplological form of **kogo goda* "which year", cf. Vasm. I, 587; Pr. I, 328.

²E.g., the Russ. *gde* was viewed as being connected with Latv. *kur* via Vedic *kū* "where", also O.Indic *kúha*, cf. Vasm. I, 264.

A/-/189:198 wide - plats - širokij, no agreements, non-cog.

Latv. is cognate with Lith. platus, ibid, Gr. platús, ib. Further connections are Lith. plasti "to widen" (Latv. -plēst- "to spread out, widen", probably also O.Russ. plata "kerchief" > (Mod.Russ. platók "shawl, kerchief"), Germ. platt "flat, spread out".¹ Russ. represents a Pan-Slav. development, e.g., Pol. szeroki, Ukr. šyrokyj, Cz. -siroký, S.Cr. širok. Its general background is quite obscure, as is also its base form šir' "expanse, width", which does not seem to possess any probable connections (with the exception of Goth. skeirs "clear", cf. Vasm. III, 401).²

N/-/190:199 wife - sieva - žena, no agreements, non-cognates.

Both Latv. and Russ. forms were compared in item 195:99, e.g., as the base forms for "woman". Also Lat. cīvis "citizen" could be considered as an additional connection for Latv. sieva.

N/+/191:200 wind - vējš - véter, some agreement, cognates. The

initial pairs of phonemes agree in this instance, e.g., Latv. vē- :: Russ. ve-. The Latv. form is cognate with Russ. véjat' "to blow, winnow", which

¹The Russ. form sploš' "fully, everywhere" might also serve as a further connection, which would have to be established via Latv. plass "expansive, extant", the latter being connected with the above Latv. form.

²The Latv. form šaurs "narrow" (item 102:150) might represent a further connection, though the correspondence of Latv. -au- :: Russ. -i- is unusual and cannot be substantiated.

reflects true cognation with the Latv. base morph. The Russ. form is cognate with Latv. *vētra* "storm", as it reflects the Russ. base morph *vēt-*. Further connections are Lith. *vejas* "wind", *vētra* "storm", O.Pruss. *wetro* "wind", Goth. *waian* "to blow", probably also Latv. *vētīt* "to winnow", Lith. *vėtyti*, *ibid*, Lat. *ventus* "wind".

N/-/192:201 wing - spārn̄s - kryl̄o, no agreements, non-cognates. Latv. is cognate with Lith. *sparnas*. It might be further connected with Russ. *páparot* "fern", Lith. *papartis*, *ibid*, Latv. *paparde/paparkste*, *ib.*, also Russ. *peró* "feather". The connection between "fern" and "wing" is based on the Gr. example of *pteris* "fern" : *pteron* "wing". Russ. appears to be connected with Latv. *skriet* "to run", Lith. *skrieti* "to fly, move rapidly", *skristi* "to glide around", also Germ. *schreiten* "to walk, step, march"; cf. Vasm. II, 313 (for Latv.) and Vasm. I, 672-673 (for Russ.).

V/-/193:202 wipe - slaucīt - utirát', no agreements, non-cog. Latv. is connected with Lith. *šluostyti*, *ibid*, perhaps also with the Latv. form *slaukt* "to milk". Russ. is connected with *terét'* "to rub" (cf. item 124:162), as the perfective aspect of the latter form, *uterét'*, would indicate (via vowel gradation *e* : *i*).

O/-/194:203 with - ar - s(o), no agreements, non-cognates.

Latv. is probably a curtailed form < arī "also" (-ī lapsed by apocope). Russ. is cognate with the Lith. prefix sa(n)- as in sandora "agreement, peace", i.e., sa(n)-+dora "with morals, honesty", Latv. prefix suo-, ibid (now extinct, as in suovārdis "namesake", i.e., suo-+vārdis "with name (person)", O.Pruss. prefix san-, ib., preposition sen, ib., O.Norse sam-, ib., Lat. similis "similar"; cf. Vasm. II, 564, and for Latv. Fr. I, 15.

N/-/196:204 woods - mežs - les, no agreements, non-cognates.

Latv. is cognate with Lith. medžias, ibid, Russ. meža "border, limit, edge", which reflects a probable semantic shift,¹ though the exact phonological correspondence of both forms, i.e. Latv. and Russ., makes them suspect to borrowing. Further connections are Lith. medis "tree", O.Pruss. median, ibid, probably also Lat. medius "middle", Irish mide, ibid, Goth. midjis "located in the middle", Arm. meġ "middle". Russ. represents a Pan-Slav. development, e.g., Pol. las, Ukr. lis, Cz. les, S.Cr. lijes, Bulg. lēs. Further connections are O.Eng. læs "meadow", Mid.Eng. leswe/

¹However, a similar semantic alternation between "a border" and "forest" could be observed in O.Swed., e.g., mark "border/forest", cf. Vasm. II, 112.

lēse, ibid, probably also Latv. liess "meager, extremely thin", though further background is quite obscure for the Russ. form; cf. Vasm. II, 33.

N/-/197:205 worm - tārps - červ', no agreements, non-cognates. Latv. seems to be connected with Lith. tarpa "growth, development" (Latv. tārpa "capability"), tarpti "to gain, benefit", thus also probably with Russ. toropít' "to hurry" < tórop "haste". Russ. reflects a Pan-Slav. development with some semantic variations, e.g., Pol. czerw "maggot, grub", Ukr. červ "worm", Cz. červ "worm, maggot", S.Cr. cr̃v "worm, Bulg. červej "worm". This Russ. form seems to be connected with O.Russ. čěrmnyj "crimson-red" and in the vernacular čerjómnyj "red-haired"; thus probably also with Lith. kirmis "worm", Latv. cirmis "midge, also small worm", cērme "maw-worm", Irish cruim "worm", Alb. krimb, ib., though the voiced labio-dental fricative -v- in the Russ. base morph presents certain difficulties, as none of the other connections seem to reflect it, cf. Vasm. III, 317, 318, 325; Pr. App. 63-64, and for Latv. Vasm. III, 125-126.

O(-)197:206 ye - jús - vy, partial agreement, non-cognates. Latv. is cognate with Lith. jus, O.Pruss. ious. Further connections are Goth. jus, ibid, Eng. you. Russ. reflects a Pan-Slav. development, e.g., Pol.

wy, Ukr. vy, O.Cz. vy, S.Cr. vî, Bulg. vi/vîje.

Perhaps, the Slav. forms have been influenced by an oblique case of the hypothetical Proto-I-E form *iūs/*(j)ūs (nom. pl.), as reflected in Lat. vōs "you", O.Pruss. wans, ibid (acc. pl.),¹ cf. Vasm. I, 238, Pr. I, 102-103.

N/-/199:207 year - gads - god, non-cognates. It is a Russ. loanword into Latv., as Lith. metai "year" would indicate. Russ. is probably connected with Latv. gādīgs "heedful" or gadīt(ies) "to chance, also happen", gādāt "to care, supply". Further probable connections are Germ. gätlich "tolerable", Goth. gadilings "relative", O.Friesian gada "to unite", Mid.Low Germ. gaden "to please", consequently (via a vowel gradation in Balt.) with Latv. guods "honour", Lith. guōdas, ibid, though these Balt. forms are generally considered to be connected with Russ. gadāt' "to advise", cf. Vasm. I, 283-284; 250 (for Balt. guods/guōdas).

¹This pair was considered to be probable non-cognates, for their general background appeared to be quite obscure and their phonological correspondence vague, e.g., only Latv. -ū- :: Russ. -y- as a regular correspondence (būt "to be" :: byt', ibid). It should also be noted that the O.Pruss. form wans could not be considered to be a 'combining' form, for it reflects an oblique case and the general Slav. development was too uniform to offer any connections with the Balt. forms.

GLOTTOCHRONOLOGICAL ANALYSIS

The entire procedure of glottochronological analysis is based on the results of the cognate count. The methodology employed hereafter will follow the ordinary statistical procedures, which will involve the treatment of collected data from the cognate count. Therefore, it is reasonable to state that the actual decision-making process in our analysis rests with the determination of cognation between any given pair of corresponding forms,¹ which have already been designated as items.

These items represent the smallest possible units, from the analytical point of view, as they represent the members which form the next largest unit, e.g., the sample. Thus, the following sequence depicts the formational process of a sample in this paper:

<u>Latv. - Russ.;</u>	<u>item;</u>	<u>sample.</u>
form - form	/+/; /-;/ (+); (-)	I = 100(+/-) or II = 200(+/-)

The concept of the item is based, in this paper, on the determination of cognation for a specific pair of forms in both Latvian and Russian. The decision of either cognation or non-

¹It should be emphasized again that the entire analysis depends on the cognate count, for only a very rigorous approach in the selection, as well as the determination, of cognates will yield reasonable results, to wit, it will aid in the avoidance of possible errors in judgement on the investigator's part.

cognition is represented by a symbol, e.g., either '+' or '-'. This symbol unifies the forms involved and also serves as a 'representative' of the newly created unit - the item. Thus, we can consider item or items, generally, for they are entirely autonomous units. We can also distinguish between '+' and '-' items, and their designation is purely arbitrary, e.g., they could be associated with any type of notation. Furthermore, we can also distinguish between different types of '+' items or between different types of '-' items, e.g., /+/ : (+), /-/ : (-). Thus it is evident that any given item is autonomous, for an apposition of the type '/+/ : (-)' is also possible, though not practical for our purposes as we are not concerned with the behaviour of individual items but with the significance of their total.

The criterion for this significance is based on the binary system, which is implemented by either '+' or '-' symbols, viz., either presence or absence of cognition. Consequently, all items should be viewed as significant, not only independently but also within the framework of the binary system. This system furnishes us with the criterion for significance of the item totals, e.g., it produces a certain number of '-' and '+' items and it is actually these totals with which we shall concern ourselves.

It has already been noted that the cognate count contains two samples, each of a different sample size, e.g.,

sample I, consisting of 100 items, and sample II, consisting of 200 items. Each of the samples also represents an independent unit and will be viewed as such. Each sample contains a certain number of '+' and '-' items or cognates and non-cognates. We shall concern ourselves with the totals of these items within each sample, and sample I will be considered first.

Sample I considered:

A total of 100 pairs of forms in Latvian and Russian were compared in sample I. This total consists of the following items:

$$100 = +39 + (-61) = 31/+ + 8(+) + 60/- + (-).$$

Thus, the final count of sample I represents 39 cognates and 61 non-cognates. A more conservative estimate probably would claim only 31 cognates and 69 non-cognates, for eight of the cognates were probable cognates, and a more rigorous approach in the estimation of their cognation might have classified them as non-cognates, or at least as probable non-cognates. On the other hand, an investigation based on less background information, as well as less acquaintance with both languages, probably would have yielded 40 cognates and 60 non-cognates (item 154:81 could have been classed as at least a probable cognate). Therefore, the merit of a detailed study of the background connections, as well as the cognation, of forms appears to be obvious, for, even in the case of a possible cognation, the registering

of a probable non-cognate as a probable cognate would skew the final results of our computations.

It is generally known that all calculations of glottochronological analysis are implicit in the formula:¹

$$t = \frac{\log c}{2 \log r} \quad \text{or} \quad t = \frac{\log c}{2 \log r} (10^3); \quad (1)$$

whereby the time depth in millennia is represented by the 't' formula, and, by multiplying the result of this formula by 10^3 , we obtain the time depth in years. In this formula 'c' stands for the percentage of cognates expressed as a portion of the sample size, and 'r' represents a ratio of cognates retained after a millennium of separation. This ratio is often referred to as a retention rate, which is taken to be a constant rate of retention of cognates, expressed in percentages, over a period of 1,000 years. The retention rate was postulated to be at .8048, rounded off to .805 or 80.5%,² which is the value that

¹R. B. Lees, The Basis of Glottochronology, Language, Linguistic Society of America, 1953, vol. 29, p. 117. Lees designated this formula as the dating equation:

$$t = \frac{\log F_3}{2 \log k},$$

with F_3 representing a fraction of cognates in relation to the total of cognates, and k representing a constant of retention during a given time period, e.g., 1,000 years. For the development of this equation cf. pp. 115-117, viz., beginning with "1. Rate Equations".

²Lees, *ibid.* (meaning p. 119).

will be used in this paper. The following is a rewrite of the above formula which incorporates the constant component, e.g., the retention rate:

$$t = \frac{\log c}{2 \log .805} = \frac{\log c}{2 (.217)} = \frac{\log c}{.434}^1$$

The next step involves calculating the value of 'c',² which reflects cognation expressed in percentages, e.g.,

As sample I represents a sample size of 100 items, and the cognate count yielded 39 cognates, then

$$c = \frac{39}{100} = .39.$$

The final step involves completing our formula as follows:

$$t = \frac{\log c}{.434} = \frac{\log .39}{.434} = \frac{.942}{.434} = \underline{\underline{2.17}};$$

or

$$t = .217(10^3) = \underline{\underline{2,170.}}$$

¹H. Arkin and R. R. Colton, Tables for Statisticians, Barnes and Noble, New York, 1966, p. 104, was used for natural logarithm values. The actual value of a mantissa for any given logarithm was not utilized, for either '+' or '-' values appeared to be insignificant for our estimates, to wit, log. 805 is located halfway between 9.777 and 9.789; thus the mantissa for log. 805 is 9.783 - 10,000 and -.217 only was viewed as significant.

²The symbol 'c' will be used in this paper as opposed to 'C' utilized by Swadesh, Gudschinsky, Rea, et al.

Thus we can say that on the strength of the sample size of 100 items, which yielded a 39% cognation, Latvian and Russian share a time depth of 2.17 millennia or 2,170 years.

The significance of this calculation could be expressed in several ways:

i) Latvian and Russian have been existing as separate languages for an estimated 2,170 years;

ii) Latvian and Russian began to drift apart about 200 B.C., using 1967 as a base year and rounding off to the nearest decade.

iii) Latvian and Russian, after having been separated for 2,170 years, still possess 39% cognation out of a sample size of 100 forms.

However, it should be noted that we are dealing with relative values and not absolute ones and, therefore, it would be quite erroneous to accept the year 200 B.C. as some definite point fixed in time (or a point estimate) when the separation of the two languages began. The time depth of 2,170 years should be viewed, even in optimum considerations, only as a time-span which supplies us (to some degree of accuracy) with at least an approximation in time when both languages could have existed as a homogeneous linguistic unit. Of course, the entire estimate depends on the accuracy of our sampling procedure and the consequent results. Therefore, it is reasonable to state that a certain amount of error has to be associated with our cognate count.

The probability of error in statistical analysis is associated with problems of estimation. Despite the most careful sampling methods utilized, there always exists a certain probability for erroneous decisions. To estimate the probability of our error (assuming that any change/changes in the word list have occurred randomly), we shall employ a type of measurement called the standard deviation. This measurement is used to establish the limits of our error, as it were, at a certain confidence level and enables us to state that, for instance, Latvian and Russian represented a single language 2,170 years ago, with the upper limit being +270 years and the lower one -270 years. The general confidence level for the standard deviation or standard error is 68% or simply - 7/10, although other levels can also be employed.¹

The standard error is computed according to the following formula:

$$s = \sqrt{\frac{c(1-c)}{n}}^2 \quad (2)$$

¹Gudschinsky, ABC's, Word, p. 202 (meaning #38).

²Lees, The Basis, Language, p. 124 (meaning formula 11) cf. also J. E. Freund and F. J. Williams, Modern Business Statistics, Prentice-Hall, Englewood Cliffs, N.J., 1959, p. 201. In this work our 'c' is represented by a 'p' or a proportion of a sample from a population, which is precisely what our symbol 'c' represents.

It should be noted also that, generally, the standard deviation is denoted by the Greek letter symbol sigma; however, in this paper sigma will be replaced by 's'.

where 'c' represents the same value as in the first formula and 'n' represents our sample size, e.g., 100 items. Our next move is to fill in the formula, e.g.,

as $s = \sqrt{x} :: s^2 = x$, then it follows that

$$s^2 = \frac{c(1-c)}{n} = \frac{.39(1-.39)}{100} = \frac{.39(.61)}{100} = \frac{.2379}{100} =$$

.002379;

solving for s^2 :

$$s = \sqrt{.002379} = .04877 = .049.^1$$

The figure .049 depicts a standard error of the proportion of 'cognates at 7/10 confidence level. This error is added to the percentage of cognates, i.e., 'c', to correct it, as it were, and we obtain the corrected cognation in percentages:

$$\begin{aligned} C &= c + s = \\ .39 + .049 &= \underline{\underline{.439}}. \end{aligned} \tag{3}$$

This corrected 'c' will be designated with the capital 'C' and is utilized in formula (1) to obtain the corrected time depth, e.g., formula (1):

¹Cf. fn. 2 to p. 132: Freund and Williams, *ibid.*, pp. 511-517 (meaning tables of square roots). As .002379 lies between .00237 and .00238, the square root of .002379 is .04877 or between .0486826 and .0487852 using a method of interpolation.

$$T = \frac{\log C}{2 \log r} = \frac{\log .439}{.434} = \frac{.823}{.434} = 1.896 = 1.9;$$

or

$$T = 1.9(10^3) = 1,900.^1$$

Thus the corrected time depth is 1.9 millennia or 1,900 years.

In order to establish the extent or limits of the error, we subtract the corrected time depth from the original one:

$$2,170 - 1,900 = 270 \text{ years.}$$

and it follows that the upper limit of our error in the original estimate of the time depth is $2,170 + 270$ years, and the lower limit $2,170 - 270$ years, with the range of error being 540 years about the original time depth at 7/10 confidence level.

The significance of this corrected time depth could be expressed in several ways:

i) Latvian and Russian have been existing as separate languages for $2,170 \pm 270$ years;

ii) Latvian and Russian began to drift apart between the years 470 B.C. and 70 A.D.;

iii) Latvian and Russian shared a common language between 1,900 and 2,440 years ago;

¹The corrected time depth will be designated with the capital letter 'T'.

iv) The above information is correct at 7/10 confidence level, insofar as it is based on a sample size of 100 forms, and any vocabulary change is said to be random in either of the languages.

The cognate count yielded various combinations of cognates and non-cognates (cf. p. 128). As already noted, a more conservative estimate would have yielded only 31 cognates, i.e., 8 less than the above estimate, for the latter included the following probable cognates: items 4:2, 12:6, -:11, 54:30, 79:43, -:45, 151:79, 159:83. This new amount of cognates, i.e., 31, is utilized in the formula (1) to arrive at a time depth which would be based on the most conservative estimate of cognates.

We proceed as before, e.g.,

$$1. \quad c = \frac{31}{100} = .31 \text{ or } 31\% \text{ of cognates.}$$

$$2. \quad (1) \quad t = \frac{\log .31}{2 \log .805} = \frac{1.171}{.434} = 2.698 = 2.7;$$

or

$$t = 2.7 (10^3) = 2,700.$$

Thus, a more conservative estimate would show that both languages have existed as separate entities for about 2,700 years.

We proceed to calculate the standard error at 7/10 confidence level:

$$3. \quad (2) \quad s^2 = \frac{.31 (1-.31)}{100} = \frac{.31 (.69)}{100} = \frac{.2139}{100} = .002139;$$

solving for s^2 :

$$s = \sqrt{.002139} = .046251 = .046;$$

$$4. \quad (3) \quad \text{Thus } C = .31 + .046 = \underline{.356}.$$

We calculate the corrected time depth:

$$5. \quad T = \frac{\log C}{.434} = \frac{\log .356}{.434} = \frac{1.033}{.434} = \underline{2.38};$$

or

$$T = 2.38 (10^3) = \underline{2,380}.$$

We then establish the limits of standard error at 7/10 confidence level:

$$6. \quad 2,700 - 2,380 = \underline{320}.$$

Thus, we can state that the most conservative estimate of the cognate count would establish the separation of the languages in question as having begun between 3,020 and 2,380 years ago, and that the range of error, at 7/10 confidence level, is 640 years about the year 2,700 with a given sample size of 100 items.

Next we shall consider the optimum case, whereby the cognate count will include any probable non-cognates, e.g.,

item 154:81. Consequently, we have a total of 40 cognates and estimate the time depth as follows:

$$1. \quad c = \frac{40}{100} = .4 \text{ or } 40\%.$$

$$2. \quad (1) \quad t = \frac{\log .4}{.434} = \frac{.916}{.434} = 2.11$$

or

$$t = 2.11 (10^3) = 2,110;$$

Thus the optimum estimate would indicate that these languages have existed as separate linguistic units for about 2,110 years.

To calculate a probable error, we proceed as previously, e.g.,

$$3. \quad (2) \quad s^2 = \frac{.4(1-.4)}{100} = \frac{.24}{100} = .0024;$$

and solving for s^2 :

$$s = .048989 = \underline{\underline{.049}};$$

thus the corrected 'c' is

$$4. \quad (3) \quad C = .4 + .049 = \underline{\underline{.449}}.$$

The corrected time depth becomes:

$$5. \quad T = \frac{\log .449}{.434} = \frac{.801}{.434} = 1.8456 = 1.85;$$

or

$$T = 1.85 (10^3) = 1,850.$$

To estimate the limits of our error:

$$6. \quad 2,110 - 1,850 = 260.$$

We can conclude that the optimum case of the cognate count would date the beginning of separation for the two languages at $2,110 \pm 260$ years or between the years 400 B.C. and 120 A.D. approximately,¹ and the range of error is 520 years at 7/10 confidence level.

¹E.g., the estimates in years have been rounded off to the nearest decade.

Sample II considered:

As stated on p. 128, each sample is viewed as an autonomous unit; therefore, sample II will be treated as such, although it is actually an extension of sample I except for 7 items. The 7 items are N/-/ -:13; N/-/ -:55; A/-/ -:69; A/+/ -:32; N/+/ -:41; N(+) -:11; N(+) -:45, and they represent the items which were omitted from sample I and replaced by different items. The following are their totals by categories:

$$7 = +4 + (-3) = 2/+ + 2(+) + 3/-.$$

Sample II consists of 200 items and the cognate count obtained is as follows:

$$200 = +79 + (-121) = 65/+ + 14(+) + 115/- + 6(-). \quad = \quad \times$$

Thus, sample II yielded a total of 79 cognates and 121 non-cognates and we shall consider this total first, i.e., we shall proceed in our calculations as previously when computing the time depth for various possible cognate counts in sample I. We begin with the calculation of percentage of cognation:

$$1. \quad c = \frac{79}{200} = .395 \text{ or } 39.5\%;$$

solving for the time depth, we obtain:

$$2. \quad (1) \quad t = \frac{\log .395}{.434} = \frac{.929}{.434} = 2.14;$$

or

$$t = 2.14 (10^3) = 2,140.$$

Thus, we can state that, given a sample size of 200 items, the two languages are estimated to have been a homogeneous language 2,140 years ago, and that they began to drift apart about 170 B.C.

To establish the standard error, we proceed as before:

$$3. \quad (2) \quad s^2 = \frac{.395(1-.395)}{200} = \frac{.395(.605)}{200} = \frac{.238975}{200} = .001194875;$$

and solving for s^2 :

$$s = \sqrt{.001194875} = .0345685 = .035;$$

thus the corrected 'c' is:

$$4. \quad (3) \quad C = .395 + .035 = \underline{\underline{.43}};$$

and the corrected time depth becomes:

$$5. \quad (1) \quad T = \frac{\log .43}{.434} = \frac{.844}{.434} = 1.944 = 1.94;$$

or

$$T = 1,940.$$

To estimate the limits of error:

$$6. \quad 2,140 - 1,940 = 200.$$

We can say that the range of our error is 400 years, at 7/10 confidence level, with a given sample size of 200 items, and that the two languages began separating $2,140 \pm 200$ years ago, which would date this separation at between 370 B.C. and 30 A.D.

Now we proceed to consider the most conservative estimate, e.g., that both languages possess only 65 cognates, viz., 14 less than the previous estimate, for the latter included the following probable cognates:

items 4:2, 12:6, 24:110, 34:116, 41:118, 54:30,
79:43, 82:143, 133:167, 151:79, 156:182,
159:83, 185:196, 186:197.

The new cognate count, i.e., 65, is worked through the same procedure again:

$$1. \quad c = \frac{65}{200} = .325 \text{ or } 32.5\%;$$

$$2. \quad (1) \quad t = \frac{\log .325}{.434} = \frac{1.124}{.434} = 2.59;$$

or

$$t = 2,590.$$

We can state that our estimate of 2,590 years depicts the time span of separation of the languages in question.

To correct our probable error:

$$3. \quad (2) \quad s^2 = \frac{.325(.675)}{200} = \frac{.219375}{200} = .00109688;$$

$$\text{and} \quad s = .03312 = .033.$$

Obtaining corrected percentage of cognates:

$$4. \quad (3) \quad C = .325 + .033 = .358;$$

and the corrected time depth:

$$5. \quad (1) \quad T = \frac{1.028}{.434} = 2.368 = 2.37;$$

or

$$T = 2,370.$$

To estimate the extent of our error at 7/10 confidence level:

$$6. \quad 2,590 - 2,370 = 220.$$

We conclude that the most conservative estimate would date the separation of these languages at 2,590 \pm 210 years ago, with a sample size of 200 items at 70% confidence level.

Next, we consider the optimum cognate count, e.g., 85, which includes 6 probable non-cognates. These are: items 25:111, 28:113, 75:138, 148:177, 154:81, 198:206, and we proceed through our calculations as before:

$$1. \quad c = \frac{85}{200} = .425 \text{ or } 42.5\%;$$

$$2. \quad (1) \quad t = \frac{.856}{.434} = 1.97;$$

or

$$t = 1,970;$$

$$3. \quad (2) \quad s^2 = \frac{.425(.575)}{200} = \frac{.244375}{200} = .001221875;$$

$$\text{and} \quad s = .0349559 = .035;$$

$$4. \quad (3) \quad C = .425 + .035 = .46.$$

To find the corrected time depth:

$$5. \quad (1) \quad T = \frac{.777}{.434} = 1.79;$$

or

$$T = 1,790.$$

Obtaining the extent of error:

$$6. \quad 1,970 - 1,790 = 180.$$

Thus, we can state that the optimum estimate would consider Latvian and Russian as having been a single linguistic unit 1,970 \pm 180 years ago, with a given sample size of 200 vocabulary items and the range of error in the percentage of cognates being 360 years at a 70% confidence level. The date of their separation could be postulated as having occurred between 180 B.C. and 180 A.D.

Evaluation:

The statistical manipulation of both samples has supplied us with certain data. We shall proceed to gather this information into some concise form to enable us to evaluate its significance.

As each sample yielded various cognate counts, due to the consideration of probable cognates and probable non-cognates, we processed every sample exactly three times. Thus, each sample was considered in the light of the most conservative estimate of cognation, as an independent case of the optimum estimate, and according to the cognate count, which included all positive items, regardless of their probability of cognation.

The most conservative case was thought to be important to consider, as an example of true cognation. The optimum case was considered because any probable non-cognate could be classified as at least a probable cognate by an investigator who either was unacquainted with both languages or to whom the material for a thorough study of these languages was unavailable. Consequently, this case would involve the least accurate cognate count. Furthermore, this classification would also depend on the rigidity of criterion for cognation, for, besides true cognates, the optimum case also includes probable cognates and probable non-cognates. The third instance was considered to be a sort of median between both of the above cases. The following list represents a recapitulation of the results obtained in computations of both samples.

observations about the probable past existence of Latvian and Russian as a single homogeneous language. Firstly, with a given sample size of 100 vocabulary items, we can state that these languages existed as a single linguistic unit as late as 140 B.C., and probably were in reasonably close contact up to 120 A.D. They seem to have begun to separate at about 1,050 B.C. Secondly, with a given sample size of 200 vocabulary items, we can note that the two languages existed as a homogeneous unit still around the beginning of the Christian era and seem to have been in close contact as late as 180 A.D. The separation could have begun about 840 B.C.

Of course, the above observations are of a general nature and they should be treated as such, for any calculation involving confidence limits is simultaneously suspect to vagueness. It should also be noted that the same statement could be made about any problem of estimation. The most important element in dealing with problems of estimation is the treatment and digestion of data. The results obtained should be viewed as directional indicators, as it were, and not as point estimates, unless, of course, there is some other material at hand to substantiate the obtained results. However, a definite observation can be made from the results obtained in our calculations; for instance, the difference in estimated time depths between the sample sizes is 30 years in the median case:

Sample I: 200 B.C. \pm 270 years,

Sample II: 170 B.C. \pm 200 years.

This seems to indicate that larger sample sizes than 100 and 200 vocabulary items are desirable in this type of comparison.

The above data appears to be skewed, to wit, it seems to be asymmetric. This skewness is said to be negative if the tail of its distribution is to the left, and it would seem that our distribution is skewed to the left, viz., the difference between the most conservative time depth and the next one, e.g., median time depth, is 530 years for sample I and 450 for sample II, whereas the difference between the median case and the optimum is only 60 years for sample I and 170 years for sample II. The differences in time depth are as follows:

estimates in years:

cases:	i	ii	iii
sample I:	530	60	
sample II:	450	170	

The above skewness is depicted on an imaginary abscissa of the cognate count; therefore, the entire question of skewness is dependent upon the number of cognates involved in each case. It follows, then, that the negative skewness of our distribution for the 3 test cases of each sample is connected with the number of cognates utilized. The differences between the numbers of cognates utilized are as follows:

No. of cognates:

cases:	i	ii	iii
sample I:	8	1	
sample II:	14	6	

Thus, the skewing can be explained in terms of cognate numbers used in each case. It should also be noted that, as we increase our sample size, the differences between the three test cases seem to decrease, e.g., in sample I the difference is 530 - 60, but in sample II it is 450 - 170, though this tendency toward a central kurtosis is also caused by a smaller difference between cognate numbers employed. The central tendency of peakedness probably would become more pronounced if the sample size were enlarged, as the number of probable cognates, as well as probable non-cognates, would also increase. It follows that an increase in sample size could probably eliminate skewing. About corrections in skewing of results obtained in a glotto-chronological analysis of Amerindian dialects in Mexico, Miss S. Gudschinsky has the following to suggest:

This skewing, however, can be partly corrected in terms of the phonological data, which gives the truer picture of the historical sequence in which the dialects of the area were differentiated. ¹

We have already utilized phonological data quite extensively

¹Sarah C. Gudschinsky, Lexico-statistical Skewing from Dialect Borrowing, I.J. of A.L., vol. 21, 1955, p. 149.

while considering the cognate count, and, as our skewing appears to be based on the cognate number considered in each case, the increase in sample size seems to be the only solution to correct the skewing. Perhaps the skewing of the time depth, as caused by the most conservative case, depicts exactly the opposite of what is assumed, e.g., as the conservative estimate is based on true cognation only, then the 'border-line' items, which form the other two test cases, might reflect some other phenomenon, such as reborrowing. Unfortunately, there is no measurement available for this phenomenon, as it would seem that, in order to consider reborrowing of lexical items, e.g., to calculate a coefficient reflecting both the loss and the reborrowing rate of the same lexical items, a detailed study of the contact areas between both languages would have to be undertaken.

This type of study could reveal a sub-system or sub-systems of forms which would not fit the general phonemic pattern of either language and, therefore, could indicate a certain propensity to borrow and, consequently, to reborrow some of the lost forms. Particular attention would have to be devoted to the tendency in dialects of the contact area to absorb outside forms, as it were.

It is obvious that our calculations involve a certain 'bias of time', for the usage of time in approximations tends to blur the concept of time as a dimension. Generally, time is viewed not only as a dimension coordinated with space

but also as a measurement of duration, i.e., it is measurable and dimensional. Therefore, the utilization of time in our analysis, in my opinion, seems to be quite appropriate. To substantiate this view, let us consider another situation, about which we know that quantitative changes give rise to qualitative differences. It is indubitably accepted that the difference between wood alcohol and grain alcohol is a qualitative expression of a quantitative difference in the proportions of carbon and hydrogen. Conversely, the quantitative difference, as expressed by a certain period of time, will give rise to a qualitative difference, particularly in those speech communities which do not share the same geographical coordinates, although they may have been in close contact or even members of the same linguistic unit some time ago. Our attempts in this analysis centre around the possible estimate of the time depth involved in the separation of the two languages in question. It is possible to measure the qualitative difference, as it were, of both languages, as any randomly selected 'native-informant' of either language will supply the necessary data to establish the difference between the two languages. It follows then that only 'time' remains as the unknown factor in our analysis, and 'time' can be measured, and, consequently, approximated, for even the most precise measurement represents, in fact, an approximation only of an ideal or a proto-type.

However, to avoid any possible bias of time, it has

been suggested to estimate the time depth in dips.¹ These dips are measurements which express "degrees of lexical relationship" between languages.² The dip is calculated according to the following formula:

$$\text{for time in millennia} \quad d = 14 \frac{\log c}{2 \log r} ; \quad (4)$$

or

$$\text{for time in years} \quad d = .014 \frac{\log c}{2 \log r} .$$

This formula is identical to formula (1), except for the coefficient designating the dip, e.g., 14 or .014.

To convert our previous results of time depth estimates to dips, we proceed as follows:

to consider the first case of sample I, as listed on page 145, we multiply the computed time depth with the coefficient of the dip and obtain

$$d = 2,700 (.014) = 37.8 \text{ dips.}$$

We also proceed to estimate the limit of error in dips at 7/10 confidence level:

$$1d = 320 (.014) = 4.5 \text{ dips}$$

¹Gudschinsky, *ibid.* (meaning p. 141): "The term dip is derived from 'degree of relationship' as 'bit' is derived from 'binary digit'."

²Loc. cit.

Thus, we can express the lexical relationship of these languages in dips, and state that the time depth of $2,700 \pm 320$ years may be expressed as 37.8 ± 4.5 dips reflecting the lexical relationship of the two languages.

The following summary depicts both samples, each divided into three cases, as on page 145. The notation 'ld' designates the limits of error at 70% confidence level, and 'dd' - the difference between consecutive dips:

Sample I:

<u>cases</u>	<u>dips</u>	<u>dd</u>	<u>ld</u>
i)	d = 37.8		± 4.5
ii)	d = 30.4	7.4	± 3.8
iii)	d = 29.5	.9	± 3.6

Sample II:

i)	d = 36.3		± 3.1
ii)	d = 30.0	6.3	± 2.8
iii)	d = 27.6	2.4	± 2.5

The lexical relationship depicted by the dips is similar to that reflected by time depths in years. Perhaps the evaluation in dips is more obvious at a glance, as it deals with simpler numerical notations. The significance of dips could be expressed in the following way, e.g., in the optimum case of sample II:

the lexical relationship of Latvian and Russian is 27.6 ± 2.5 dips at 70% confidence level.

It would seem, in my view, that the evaluation processes expressed in dips contribute very little to the glottochronological analysis, if anything, save for the less complicated numerical expressions of the dips which may facilitate the manipulation and presentation of the data gathered in the cognate count.

A certain type of classification has been suggested by M. Swadesh, which is based on the divergence in centuries of linguistic units, calculated according to the corresponding percentages in cognation between these units (including dialects).¹ Thus, according to this classification, two cases of each sample in our analysis would correspond to the category of family, to wit, the median and optimum cases, as their estimated divergences in these cases are between 5 - 25 centuries. The estimate of divergence of the most conservative case in both samples would correspond to the category of stock, as it depicts divergence of more than 25 centuries.² This classification represents a general relationship of the two languages and could be considered as a reasonable estimate of their probable connections.

¹Morris Swadesh, Perspectives and Problems of Amerindian Comparative Linguistics, Word, vol. 10, 1954, p. 325ff.

²Cf. p. 145 for time depths of all cases in both samples.

Conclusions:

The results of our calculations have reflected the possibility of divergence of both languages as having begun about 1,050 B.C. in the most conservative estimate of sample I, and 840 B.C. in the same case of sample II. This depicts a difference of 2 centuries. It would appear to be desirable to increase the sample size to a larger amount, e.g., 1,000 items. This might reveal a further difference between the 'extreme' case in sample I and the most conservative case of the enlarged sample. If the difference between these points, as it were, were to increase substantially, i.e., 4 to 5 times, then the above classification of both languages as members of the same family would hold true. The extensive background information given in the cognate count indicates that many forms in the two languages possess numerous secondary connections. Therefore, it could be concluded that they have experienced quite a close linguistic relationship.

The problem confronting an investigator, regarding the relationship of these two languages, is connected with the general acceptance that both languages belong to the same family, as it were. In my opinion, it is the difference that is significant and not the similarity.¹ Therefore, a decision

¹A. L. Kroeber and C. D. Chrétien, Quantitative Classification of Indo-European Languages, Language, vol. 13, 1937, pp.

has to be reached as to whether this difference between Latvian and Russian is one of kind or of degree. Our investigation indicates that the difference between the two languages is one of kind, not of degree. This postulate would have to be accepted as correct, for our analysis is based on the assumption that both languages historically represented a single linguistic unit, and any linguistic difference represented by them is said to be due to their separation, e.g., different geographical location, for a certain period of time. If the opposite were true, i.e., the difference between them were one of degree and not of kind, then we would have to accept a certain convergence of these languages after a period of separation; for the historical records would indicate not only an adjacent geographical location of the two languages, during the past 1,000 years, but also quite active social intercourse between them. This convergence then might lead us to suspect reciprocal borrowing, consequently reborrowing, particularly in the case of the Latvian; for it is accepted axiomatically that the Balts, viz., Latvians, preceded any Slavic group, in migration, to their present geographical locations.

83-103. This extensive work is based on 74 selected I-E elements, which, of course, excludes any possibility of randomness. The high coefficient of .92 for the Baltic-Slavonic group (p. 95) would have to be explained as being due to the lack of randomness in the selection of elements, and also due to several inconsistencies in scoring positively when the negative is true, e.g., element 70; also element 49, the latter reflecting a 'border-line' element. The high coefficient of Baltic-Slavic reflects comparisons based on similarities or rather expected, viz., hypothetical, common features ascribed to the I-E stock.

Therefore, this separation, from a family, as it were, might have influenced Latvian to reborrow lost forms from the following Slavic speech groups, i.e., later arrivals. Unfortunately, there is no measurement for reborrowing. The propensity of the Latvian to borrow does not appear to be very high, particularly from other language stocks. Considering that it has been in contact with the Finnic speech community for no less than 2,000 years, this low propensity appears to be confirmed by the fact that only 400 Finnic loanwords can be found in Latvian, including dialects in contact areas.¹ Of these, only some 80 forms are employed in the prescribed Latvian dialect (or standard speech). It should be noted that a Finnic speech community, to wit, Livonian, was completely absorbed by the Latvians, and, therefore, the above-mentioned loanwords might have been absorbed incidentally rather than appropriated directly.

From the above, it is also evident that Finnic linguistic units have existed as adstratum speech groups in relation to the Baltic group, yet any reciprocal borrowing appears to be on a relatively low scale. Insofar as reciprocal

¹Valdis J. Zeps, Territorial Patterns of Finnic Loanwords in Latvian, Ural-Altaische Jahrbücher, Otto Harrassowitz, Wiesbaden, vol. 34: 1-2, (July) 1962, pp. 20-25. It should also be noted that some of the Finnic loanwords, as listed by the author, cannot be accepted even as probable loan-forms, e.g., *avuots* "spring".

borrowing of the Latvian and the Russian can be determined, it does not appear to have occurred on any significant level, though there is a fairly significant number of suspect loan-forms in both languages, as described in the cognate count, whenever applicable. Thus, it could be stated that reborrowing might have occurred in the Latvian case, because there is no definite measurement for it and reborrowed forms would be obscured by the fact that both languages belong to the I-E stock and any correlation between borrowed and reborrowed forms is beyond the present state of knowledge. According to this analysis, it follows that the difference between the two languages tends to be one of kind rather than one of degree. Even if the Latvian were as 'starved' for 'parent' forms as might be imagined, after at least 2,000 years of separation from a proto Balto-Slavonic language, it would depict a closer lexical relationship than $42.5\% \pm 5\%$ cognation,¹ especially when considering the geographical proximity of the two languages for the past 1,000 years, and the substratum status of the Latvian during the last 300 years.

Thus, it could be concluded that the degree of

¹This percentage represents the optimum case of sample II, i.e., it includes probable cognates and non-cognates; thus the total of '+' items considered was 85 and of these 20 were 'border-line' items. The very high percentage of these items, in relation to the total of 85, e.g., 23.5%, might indicate either an extensive semantic shift, perhaps caused by a linguistic drift or chronologically late borrowing.

genetic relationship between these languages, obtained via the glottochronological method, is rather obscure, because the utilization of a sample size of up to 200 lexical items appears to be inadequate to establish their respective descents. Accordingly, we will have to dismiss the probability of the existence of a proto Balto-Slavonic language and state that we reserve our decision with regard to their genetic relationship, with a given sample size of only 200 items.¹

Historically, the appearance of the Baltic speech groups, in the Baltic littoral, could be estimated at around 2,000 B.C. or slightly earlier, as M. Gimbutas estimates the beginning of extensive amber trade around 1,600 B.C.² These estimates, based on archaeological finds seem to differ from those obtained in our analysis, the difference being about a millennium between the most conservative case of sample I and Miss Gimbutas' estimate. This difference is rather disturbing, even though migration is depicted as a continuous process which may last for a considerable period of time. This discrepancy of 1,000 years may point to some factor which has not

¹Tentative tests with larger sample sizes revealed certain incongruities, e.g., after the first 600 forms were compared, the percentage of cognation seemed to decline at an accelerated rate, and a sample size of 1,000 items revealed only 14% of true cognation.

²Marija Gimbutas, The Balts, Thames and Hudson, London, 1963, p. 56.

been taken into consideration in the cognate count. Perhaps the cognate count represents some weighted average, about the weight of which we are not aware. It should also be noted that the present location of the western part of the Russian speech community coincides with the former eastern extent of the Baltic speech areas; thus a considerable amount of morphological absorption could have occurred. This appears to be a similar phenomenon to that of the appearance of the Livonian forms in Latvian, as discussed previously.

Recent studies of toponymic forms of the western part of Russia indicate a substantial number of forms of definite Baltic origin,¹ which would substantiate the above contention regarding the eastern extent of the former Baltic speech area. However, toponymic evidence is not yet universally accepted as a definite indication for a geographical

¹V. N. Toporov, Lingvističeskij Analiz Gidronimov Verxnegogo Podneprovija, Nauka, Moscow, 1962. In this work, Toporov contends that even some small river names could be traced to Baltic origin and that some relatively independent dialect units of Baltic speech still existed as late as the beginning of the second millennium B.C. (e.g., p. 173); cf. also V. N. Toporov Neskol'ko Illirijsko-Baltijskix paralelej iz oblasti toponomastiki. Problemy indoevropskogo jazykoznanija, Nauka, Moscow, 1964, pp. 52-58. This article depicts several informative parallels between Baltic and Illyrian toponyms, thus indicating a definite connection between these two areas, although their geographical distance is considerable by European standards, e.g., over 900 miles.

location of a linguistic unit.¹ Consequently, we have to rely on glottochronological estimates and correlate our results to those of other social sciences, e.g., archaeology and anthropology. Glottochronological analysis (if implemented with rigorous care and its results evaluated with caution) can be of value as a method of estimating prehistoric linguistic relationships for those languages whose written records are of relatively late date.

¹W. J. Entwistle and W. A. Morison, Russian and the Slavonic Languages, Faber & Faber, London, 1964, p. 181: "If the evidence of river-names were pressed too hard it would leave the Slavs no original foothold in the world!".

LEXICON

SUMMARY OF THE COGNATE COUNT

A /+/ 1	:1	all - viss - ves'
O /-/ 2	:101	and - un - i
N /-/ 3	:102	animal - kustuonis - žīvotņe
N (+) 4	:2	ashes - pelni - pépel'
O /-/ 5	:103	at - pie - u
N /-/ 6	:104	back - mugura - spiná
A /-/ 7	:105	bad - slikts - ploxójs
N /-/ 8	:3	bark - miza - korá
O /-/ 9	:106	because - juo - íbo
N /-/ 10	:4	belly - vēders - brjúxo
A /-/ 11	:5	big - liels - bol'sšójs
N (+) 12	:6	bird - putns - ptíca
V /+/ 13	:7	bite - kuost - kusát'
A /-/ 14	:8	black - melns - čjórnyj
N /-/ 15	:9	blood - asins - krov'
V /-/ 16	:107	blow - pūst - dut'
N /-/ 17	:10	bone - kauls - kost'
N (+) -	:11	breast - krūtis - grud'
V /-/ 18	:108	breathe - elpuot - dyšát'
V /-/ 19	:12	burn - degt - gorét'
N /-/ 20	:109	child - bērns - rebjónok
N /-/ -	:13	claw - ķetna - kógot'
N /-/ 21	:14	cloud - mākuonis - óblako

A /-/ 22 :15	cold - auksts - xolódnyj
V /-/ 23 :16	come - nākt - prixodīt'
V (+) 24 :110	count - skaitīt - sčitát'
V (-) 25 :111	cut - griēzt - rezát'
N /+/ 26 :112	day - diena - den'
V /+/ 27 :17	die - mirt - umirát'
V (-) 28 :113	dig - rakt - ryt'
A /-/ 29 :114	dirty - netīrs - grjáznyj
N /-/ 30 :18	dog - suns - sobáka
V /-/ 31 :19	drink - dzert - pit'
A /+/ 32 :20	dry - sauss - suxój
A /-/ 33 :115	dull - truls - tupój
N (+) 34 :116	dust - puteklis - pyl'
N /+/ 35 :21	ear - auss - úxo
N /+/ 36 :22	earth - zeme - zemljá
V /+/ 37 :23	eat - ēst - (j)est'
N /-/ 38 :24	egg - uola - jajcó
N /-/ 39 :25	eye - acs - glaz
V /-/ 40 :117	fall - krist - pádat'
A (+) 41 :118	far - tāls - dál'nyj
A /-/ 42 :26	fat - tauki - žir
N /-/ 43 :119	father - tēvs - otéc
V /+/ 44 :120	fear - baidīties - boját'sja
N /-/ 45 :27	feather - spalva - peró
A /-/ 46 :121	few - dažs - inój

V /-/ 47 :122	fight - cīnīties - borót'sja
N /+/ 48 :28	fire - uguns - ogón'
N /-/ 49 :29	fish - zivs - rýba
O /+/ 50 :123	five - pieci - pjat'
V /+/ 51 :124	float - plūduot - plávat'
V /-/ 52 :125	flow - plūst - teč'
N /-/ 53 :126	flower - zieds - cvetók
V (+) 54 :30	fly - liduot - letát'
N /-/ 55 :127	fog - migla - tumán
N /-/ 56 :31	foot - pēda - nogá
O /+/ 57 :128	four - četri - četýre
V /-/ 58 :129	freeze - salt - mǰórznut'
N /-/ 59 :130	fruit - auglis - plod
A /+/ - :32	full - pilns - pólnyj
V /+/ 60 :33	give - duot - davát'
A /-/ 61 :34	good - labs - xoróšij
N /-/ 62 :131	grass - zāle - travá
A /+/ 63 :35	green - zaļš - zeljónyj
N /-/ 64 :132	guts - zarna - kišká
N /-/ 65 :36	hair - mati - vólos
N /+/ 66 :37	hand - ruoka - ruká
O /-/ 67 :133	he - viņš - on
N /+/ 68 :38	head - galva - golová
V /-/ 69 :39	hear - dzirdēt - slýšat'
N /+/ 70 :40	heart - sirds - sérdce
A /-/ 71 :134	heavy - smags - tjažjóljy

O /-/ 72 :135	here - šeit - tut
N /+/ - :41	horn - rags - rog
V /-/ 73 :136	hit - sist - bit'
V /-/ 74 :137	hold - turēt - deržāt'
O (-) 75 :138	how - kā - kak
N /-/ 76 :42	human - cilvēks - cilvēk
V /-/ 77 :139	hunt - medīt - oxótīt'sja
N /-/ 78 :140	husband - vīrs - muž
O (+) 79 :43	I - es - ja
N /+/ 80 :141	ice - ledus - lĳod
O /-/ 81 :142	if - ja - (j)ēšli
O (+) 82 :143	in - iekš - v(o)
V /-/ 83 :44	kill - kaut - ubivāt'
N (+) - :45	knee - celis - kolēno
V /+/ 84 :46	know - zināt - znāt'
N /+/ 85 :144	lake - ezers - ōzero
V /+/ 86 :145	laugh - smiet - smeĳāt'sja
N /-/ 87 :47	leaf - lapa - list
A /-/ 88 :146	left - kreiss - lēvyj
N /-/ 89 :147	leg - kāja - nogā
V /-/ 90 :48	lie - gulēt - ležāt'
V /+/ 91 :148	live - dzīvuot - žīt'
N /-/ 92 :49	liver - akna - péčen'
A /-/ 93 :50	long - garš - dlínnyj
N /-/ 94 :51	louse - uts - voš'

N /-/ 95 :52	man - vīrietis - mužčina
A /-/ 96 :53	many - daudzi - mnogie
N /-/ 97 :54	meat - gaļa - mīsa
N /-/ - :55	moon - mēness - luna
N /+/ 98 :149	mother - māte - mat'
N /-/ 99 :56	mountain - kalns - gorā
N /-/ 100:57	mouth - mute - rot
N /-/ 101:58	name - vārds - imja
A /-/ 102:150	narrow - šaurs - ūzkij
A /-/ 103:151	near - tuvs - blīzkij
N /-/ 104:59	neck - kakls - šēja
A /-/ 105:60	new - jauns - nōvyj
N /+/ 106:61	night - nakts - noč'
N /-/ 107:62	nose - deguns - nos
O /+/ 108:63	not - ne - net
A /-/ 109:152	old - vecs - stāryj
O /-/ 110:64	one - viens - odin
A /-/ 111:153	other - otrs - drugoj
V /-/ 112:154	plough - art - paxāt'
V /-/ 113:155	pull - vilkt - tjanūt'
V /-/ 114:156	push - grūst - tolkat'
N /-/ 115:65	rain - lietus - dožd'
A /-/ 116:66	red - sarkans - krásnyj
A /-/ 117:157	right - pareizs - prāvil'nyj
A /-/ 118:158	right - labais - prāvyj

N /-/ 119:159	river - upe - reká
N /-/ 120:67	road - ceļš - doróga
N /-/ 121:68	root - sakne - kóren'
N /+/ 122:160	rope - virve - verjávka
V /-/ 123:161	rot - pūt - gnit'
A /-/ - :69	round - apaļš - krúglyj
V /-/ 124:162	rub - berzēt - terét'
N /+/ 125:163	salt - sāls - sol'
N /-/ 126:70	sand - smilts - písók
V /-/ 127:71	say - sacīt - skazát'
V /-/ 128:164	scratch - kasīt - carápat'
N /-/ 129:165	sea - jūra - móre
V /-/ 130:72	see - redzēt - vídit'
N /+/ 131:73	seed - sēkla - sémja
V /+/ 132:166	sew - šūt - šit'
A (+) 133:167	sharp - ass - óstryj
A /-/ 134:168	short - īss - korótkij
V /-/ 135:169	sing - dziedāt - pet'
V /+/ 136:74	sit - sēdēt - sidét'
N /-/ 137:75	skin - āda - kóža
N /+/ 138:170	sky - debess - nébo
V /-/ 139:76	sleep - gulēt - spat'
A /-/ 140:77	small-mazs - mályj
V /-/ 141:171	smell - uost - njúxat'
N /+/ 142:78	smoke - dūmi - dym
A /+/ 143:172	smooth - gluds - gládkij

N /-/ 144:173	snake - čūska - zmeja
N /+/ 145:174	snow - sniegs - sneg
O /-/ 146:175	some - drusku - nēskol'ko
V /+/ 147:176	spit - splaut - plīvāt'
V (-) 148:177	split - šķelt - kolót'
V /-/ 149:178	squeeze - spiest - dāvīt'
V /-/ 150:179	stab - durt - vonzāt'
V (+) 151:79	stand - stāvēt - stojāt'
N /+/ 152:80	star - zvaigzne - zvezda
N /-/ 153:180	stick - kūja - pālka
N (-) 154:81	stone - akmens - kámen'
A /-/ 155:181	straight - taisns - prjamój
V (+) 156:182	suck - sūkt - sosāt'
N /+/ 157:82	sun - saule - sólnce
V /-/ 158:183	swell - pampt - puxnūt'
V (+) 159:83	swim - peldēt - plāvat'
N /-/ 160:84	tail - aste - xvost
O /+/ 161:85	that - tas - tot
O /-/ 162:184	there - tur - tam
O /-/ 163:185	they - viņi - oní
A /-/ 164:186	thick - resns - tólstyj
A /+/ 165:187	thin - tievs - tónkij
V /-/ 166:188	think - duomāt - dumat'
O /-/ 167:86	this - šis - ętot
O /+/ 168:87	thou - tu - ty
O /+/ 169:189	three - trīs - tri

V /-/ 170:190	throw - mest - brošát'
V /-/ 171:191	tie - siet - vjazát'
N /-/ 172:88	tongue - mēle - jazýk
N /+/ 173:89	tooth - zuobs - zub
N /-/ 174:90	tree - kuoks - dērevo
V /-/ 175:192	turn - griezť - vertět'
O /+/ 176:91	two - divi - dva
V /-/ 177:193	vomit - vemt - rvat'
V /-/ 178:92	walk - iet - xodít'
A /-/ 179:93	warm - silts - tjóplyj
V /-/ 180:194	wash - mazgāt - myt'
N /+/ 181:94	water - ūdens - vodá
O /-/ 182:95	we - mēs - my
A /-/ 183:195	wet - slapjš - mókryj
O /-/ 184:96	what - kas - što
O (+) 185:196	when - kad - kogdá
O (+) 186:197	where - kur - gde
A /+/ 187:97	white - balts - bėlyj
O /+/ 188:98	who - kas - kto
A /-/ 189:198	wide - plats - širókij
N /-/ 190:199	wife - sieva - žená
N /+/ 191:200	wind - vējš - vėter
N /-/ 192:201	wing - spārnš - kryló
V /-/ 193:202	wipe - slaucīt - utirát'
O /-/ 194:203	with - ar - s(o)
N /-/ 195:99	woman - sieviete - žėnsčina

N /-/ 196:204	woods - mežš - les
N /-/ 197:205	worm - tārps - červ'
O (-) 198:206	ye - jūs - vy
N /-/ 199:207	year - gads - god
A /+/ 200:100	yellow - dzeltēns - žjóltyj

LATVIAN-ENGLISH VOCABULARY

acs - eye	cilvēks - human
āda - skin	cīnīties - fight
akmens - stone	četri - four
akna - liver	čūska - snake
apaļš - round	
ar - with	daudzi - many
art - plough	dažs - few
asins - blood	debess - sky
ass - sharp	degt - burn
aste - tail	deguns - nose
auglis - fruit	diena - day
auksts - cold	divi - two
auss - ear	drusku - some
balts - white	dūmi - smoke
baidīties - fear	duomāt - think
bērns - child	duot - give
berzēt - rub	durt - stab
celis - knee	dzeltēns - yellow
ceļš - road	dzert - drink

dziedāt - sing

dzirdēt - hear

dzīvot - live

elpuot - breathe

es - I

ēst - eat

ezers - lake

gads - year

gaļa - meat

galva - head

garš - long

gluds - smooth

griezt - cut

griezt - turn

grūst - push

gulēt - lie

gulēt - sleep

iekš - in

iet - walk

īss - short

ja - if

jauna^s - new

juo - because

jūra - sea

jūs - ye

kā - how

kad - when

kāja - leg

kakls - neck

kalns - mountain

kas - what

kas - who

kasīt - scratch

kauls - bone

kaut - kill

kreiss - left

krist - fall

krūtis - breast

kūja - stick

kuoks - tree

kuost - bite

kur - where

kustuonis - animal

ķetna - claw

labais - right

labs - good

lapa - leaf

ledus - ice

liduot - fly

liels - big

lietus - rain

mākuonis - cloud
 māte - mother
 mati - hair
 mazgāt - wash
 maza - small
 medīt - hunt
 mēle - tongue
 melns - black
 mēness - moon
 mēs - we
 mest - throw
 mežs - woods
 migla - fog
 mirt - die
 miza - bark
 mugura - back
 mute - mouth

 nākt - come
 nakts - night
 ne - not
 netīrs - dirty

 pampt - swell
 pareizs - right
 pēda - foot
 peldēt - swim
 pelni - ashes
 pie - at

pieci - five
 pilns - full
 plats - wide
 pludnot - float
 plūst - flow
 pūst - blow
 pūt - rot
 puteklis - dust
 putns - bird

 rags - horn
 rakt - dig
 redzēt - see
 resns - thick
 ruoka - hand

 sacīt - say
 sakne - root
 sāls - salt
 salt - freeze
 sarkans - red
 saule - sun
 sauss - dry
 sēdēt - sit
 sēkla - seed
 siet - tie
 sieva - wife
 sieviete - woman
 silts - warm

sirds - heart
 sist - hit
 skaitīt - count
 slapjš - wet
 slaucīt - wipe
 slikts - bad
 smags - heavy
 smiet - laugh
 smilts - sand
 sniegs - snow
 spalva - feather
 spārns - wing
 spiest - squeeze
 spļaut - spit
 stāvēt - stand
 sūkt - suck
 suns - dog

 šaurs - narrow
 šeit - here
 šis - this
 šķelt - split
 šūt - sew

 taisns - straight
 tāls - far
 tārps - worm
 tas - that
 tauki - fat

tēvs - father
 tievs - thin
 trīs - three
 truls - dull
 tu - thou
 tur - there
 turēt - hold
 tuvs - near

 ūdens - water
 uguns - fire
 un - and
 uola - egg
 uost - smell
 uotrs - other
 upe - river
 uts - louse

 vārds - name
 vecs - old
 vēders - belly
 vējš - wind
 vemt - vomit
 viens - one
 vilkt - pull
 viņi - they
 viņš - he
 vīrietis - man
 vīrs - husband

virve - rope

viss - all

zāle - grass

zaļš - green

zarna - guts

zeme - earth

zieds - flower

zināt - know

zivs - fish

zuobs - tooth

zvaigzne - star

RUSSIAN-ENGLISH VOCABULARY

bélyj - white

blízkij - near

bit' - hit

boját'sja - fear

bol'sój - big

borót'sja - fight

brjúxo - belly

brosát' - throw

carápat' - scratch

cvetók - flower

čelovék - human

červ' - worm

četýre - four

čjórnyj - black

čto - what

dál'nyj - far

davát' - give

davít' - squeeze

den' - day

dérevo - tree

deržát' - hold

dlínnyj - long

doróga - road

dožd' - rain

drugój - other

dumat' - think

dut' - blow

dva - two

dym - smoke

dyšát' - breathe

(j)ěsli - if

(j)est' - eat

ětot - this

gde - where

gládkij - smooth

glaz - eye
 gnit' - rot
 god - year
 golová - head
 gorá - mountain
 gorét' - burn
 grjáznyj - dirty
 grud' - breast

 i - and
 íbo - because
 ímja - name
 inój - few

 ja - I
 jajcó - egg
 jazýk - tongue

 kak - how
 kámen' - stone
 kišká - guts
 kogdá - when
 kógot' - claw
 koléno - knee
 kolót' - split
 korá - bark
 kóren' - root
 korótkij - short
 kost' - bone

kóža - skin
 krásnyj - red
 krov' - blood
 krúglyj - round
 kryló - wing
 kto - who
 kusát' - bite

 les - woods
 letát' - fly
 lévyj - left
 ležát' - lie
 list - leaf
 ljod - ice
 luná - moon

 mályj - small
 mat' - mother
 mjáso - meat
 mjórznut' - freeze
 mnógie - many
 mókryj - wet
 móre - sea
 muž - husband
 mužčina - man
 my - we
 myt' - wash
 nébo - sky

néskol'ko - some
 net - not
 njúxat' - smell
 noč' - night
 nogá - leg
 nogá - foot
 nos - nose
 nóvyj - new

 óblako - cloud
 odín - one
 ogón' - fire
 on - he
 oni - they
 óstryj - sharp
 otéc - father
 oxótit'sja - hunt
 ózero - lake

 pádat' - fall
 pálka - stick
 paxát' - plough
 péčen' - liver
 pépel' - ashes
 peró - feather
 pet' - sing
 písók - sand
 pit' - drink
 pjat' - five

plávat' - float
 plávat' - swim
 plivát' - spit
 plod - fruit
 plojój - bad
 pólnyj - full
 právil'nyj - right
 právyj - right
 prixodít' - come
 prjamój - straight
 ptíca - bird
 puxnúť - swell
 pyl' - dust

 rebjónok - child
 reká - river
 rezát' - cut
 rog - horn
 rot - mouth
 ruká - hand
 rvat' - vomit
 rýba - fish
 ryt' - dig

 sčitát' - count
 sémja - seed
 sérdce - heart
 sidét' - sit
 skazát' - say

slýšat' - hear
 smeját'sja - laugh
 sneg - snow
 s(o) - with
 sobáka - dog
 sol' - salt
 sólnce - sun
 sosát' - suck
 spat' - sleep
 spiná - back
 stáryj - old
 stoját' - stand
 suxój - dry

 šěja - neck
 širókij - wide
 šit' - sew

 tam - there
 teč' - flow
 terét' - rub
 tjanút' - pull
 tjažjólýj - heavy
 tjóplyj - warm
 tolkat' - push
 tólstyj - thick
 tónkij - thin
 tot - that

travá - grass
 tri - three
 tumán - fog
 tupój - dull
 tut - here
 ty - thou

 u - at
 ubivát' - kill
 umirát' - die
 utirát' - wipe
 úxo - ear
 úzkij - narrow

 verjóvka - rope
 vertét' - turn
 ves' - all
 vétér - wind
 vídit' - see
 vjazát' - tie
 v(o) - in
 vodá - water
 vólos - hair
 vonzát' - stab
 voš' - louse
 vy - ye

 xodít' - walk
 xolódnyj - cold

xoróšij - good

xvost - tail

zeljónyj - green

zemljá - earth

zmejá - snake

znat' - know

zub - tooth

zvezdá - star

žená - wife

žensčina - woman

žir - fat

žit' - live

živótnoe - animal

žjóltyj - yellow

BIBLIOGRAPHYBOOKS

1. Alekse(j)ev, M. P., ed. and others, Problemy Sravnitel'noj Filologii, Moscow/Leningrad, 1964.
2. Andrupis, J. and Kalve, V., Latvian Literature, Stockholm, M. Goppers, 1954.
3. Bergmane, A., Grabis, R., Lepika, M., ed. and others, Mūsdienu Latviešu Literārās Valodas Gramatika, 2 vols., Rīga, 1959; Vol. I (meaning 'Phonetics and Morphology').
4. Bloomfield, L., Language, New York, Holt, Rinehart and Winston, 1964 (copyright 1933).
5. Brandenstein, W., Frühgeschichte und Sprachwissenschaft, Vienna, Gerold & Co., 1948.
6. Carroll, J. B., The Study of Language, Cambridge, Mass., Harvard University Press, 1963.
7. Coon, C. S., The Races of Europe, New York, The Macmillan Co., 1939.
8. De Bray, R. G. A., Guide to the Slavonic Languages, London, J. M. Dent & Sons, 1963.
9. De Saussure, F., Course in General Linguistics, New York, Philosophical Library, 1959.

10. Dinneen, F. P., An Introduction to General Linguistics, New York, Holt, Rinehart and Winston, 1967.
11. Drexel, A., Die Sprachen der Erde, Zürich, Akademie Verlag, 1954; Vol. I (meaning 'I-E and Semito-Hamitic Languages').
12. Elcock, W. D., The Romance Languages, London, Faber and Faber, 1964.
13. Endzelīns, J., Altpreussische Grammatik, Rīga, Latvju Grāmata, 1944.
14. -----, Latviešu Valodas Gramatika, Rīga, 1951.
15. Entwistle, W. J. and Morison, W. A., Russian and the Slavonic Languages, London, Faber and Faber, 1964.
16. Fries, C. C., Linguistics (The Study of Language), New York, Holt, Rinehart and Winston, 1964.
17. Freund, J. E. and Williams, F. J., Modern Business Statistics, Englewood Cliffs, N. J., Prentice-Hall, 1959.
18. Giles, P., A Short Manual of Comparative Philology, London, Macmillan & Co., 2nd ed., 1901.
19. Gimbutas, M., The Balts, London, Thames and Hudson, 1963.
20. Gleason, H. A., Jr., An Introduction to Descriptive Linguistics, New York, Holt, Rinehart and Winston, 1966.

21. Greenberg, J. N., ed., Universals of Language, Cambridge, Mass., The M.I.T. Press, 1966.
22. Guiraud, P., Problèmes et Méthodes de la Statistique Linguistique, Dordrecht, Holland, D. Reidel Co., 1959.
23. Hall, R. A., Jr., Introductory Linguistics, Philadelphia/New York, Chilton Books, 1964.
24. Herdan, G., Language as Choice and Chance, Groningen, Holland, P. Noordhoff N. V., 1956.
25. Hirt, H., Die Indogermanen, Strassburg, Karl J. Trübner, 1905, Vol. I.
26. Hockett, C. F., A Course in Modern Linguistics, New York, The Macmillan Co., 1963.
27. Jain, R. Ch., The Most Ancient Āryan Society, Sri Ganganagar, Rajasthan, India, Institute of Bhāratalogical Research, 1964.
28. Jespersen, O., Language, London, George Allen & Unwin, 1964 (copyright 1922).
29. Lehmann, W. P., Historical Linguistics: An Introduction, New York, Holt, Rinehart and Winston, 1964.
30. Martinet, A., Elements of General Linguistics, trans. Elisabeth Palmer, London, Faber and Faber, 1966.
31. Matthews, W. K., The Structure and Development of Russian, Cambridge University Press, 1953.

32. Meehl, P. E., Clinical vs. Statistical Prediction,
Minneapolis, University of Minnesota Press, 1963.
33. Palmer, L. R., An Introduction to Modern Linguistics,
London, Macmillan & Co., 1936.
34. ----- , The Latin Language, London, Faber and
Faber, 1966.
35. Papp, F., Mathematical Linguistics in the Soviet Union,
The Hague, Mouton & Co., 1966.
36. Porzig, W., Die Gliederung des Indogermanischen Sprach-
gebiets, Heidelberg, Carl Winter, 1954.
37. Priebisch, R. and Collinson, W. E., The German Language,
London, Faber and Faber, 1962.
38. Robins, R. H., General Linguistics, London, Longmans,
1965.
39. Ross, A. S. C., Etymology, London, Andre Deutsch, 1962.
40. Shevelov, G. Y., A Prehistory of Slavic, New York, Columbia
University Press, 1965.
41. Sommerfelt, A., Diachronic and Synchronic Aspects of
Language, 'S-Gravenhage, Holland, Mouton & Co., 1962.
42. Spekke, A., History of Latvia, Stockholm, M. Goppers, 1957.
43. Stang, C. S., Das Slavische und Baltische Verbum, Oslo,
1942.

44. Sturtevant, E. H., An Introduction to Linguistic Science, New Haven, Conn., Yale University Press, 1966 (copyright 1933).
45. ----- , Linguistic Change, Chicago, The University of Chicago Press, Phoenix Books, 1965 (copyright 1917).
46. Trautmann, R., Die Slavischen Völker und Sprachen, Leipzig, Otto Harrassowitz, 1948.
47. Toporov, V. N., Lingvističeskij Analiz Gidronimov Verxnego Podneprovija, Moscow, 1962.
48. Van Wijk, N., Die Baltischen und Slavischen Akzent- und Intonationssysteme, 'S-Gravenhage, Holland, Mouton & Co., 1958.
49. Vildomec, V., Multilingualism, Leyden, Holland, A. W. Sythoff, 1963.
50. Vinogradov, V. V., ed. and others, Jazyki Narodov SSSR, 5 vols., Moscow, 1966; Vol. I (meaning I-E languages).
51. Weinreich, U., Languages in Contact, New York, Columbia University Press, 1953.

DICTIONARIES

52. Aitzetmüller, R. and Sadnik, L., Handwörterbuch zu den Altkirchenslavischen Texten, The Hague, Mouton & Co., 1955.

53. Avis, W. S., Drysdale, P. D., Gregg, R. J. and others, The Senior Dictionary, Toronto, W. J. Gage, 1967.
54. Baravykas, V., Anglu(n) - Lietuviu(n) Kalbu(n) Žodynas (English - Lithuanian Dictionary), Vilnius, Lithuania, 1961.
55. Berneker, E., Slavisches Etymologisches Wörterbuch, 2 vols., Heidelberg, Carl Winter, 1924; Vol. I (meaning 'A - L' only).
56. Betteridge, H. T., ed., Cassell's New German Dictionary, London, Cassell & Co., 3rd ed., 1960.
57. Bielfeldt, H. H., Rückläufiges Wörterbuch der Russischen Sprache der Gegenwart, Berlin, Akademie - Verlag, 2nd ed., 1965.
58. Buck, C. D., A Dictionary of Selected Synonyms in the Principal Indo-European Languages, Chicago, University of Chicago Press, 2nd ed., 1965.
59. Daum, E. and Schenk, W., Die Russischen Verben, München, Max Hueber, 1965.
60. Dravnieks, J., Angliski - Latviskā Vārdnīca (English - Latvian Dictionary), Stockholm, 3rd ed., 1966.
61. Eaton, H. S., An English - French - German - Spanish Word Frequency Dictionary, New York, Dover Publications, 1961 (copyright 1940).
62. Fraenkel, E., Litauisches Etymologisches Wörterbuch, 2 vols., Heidelberg, Carl Winter; Vol. I, 1962, Vol. II, 1965.

63. Gūtmanis, A., ed. and others, Latviešu - Krievu Vārdnīca Skolām (Latvian - Russian Dictionary for Schools), Rīga, 1956.
64. Loja, J. V., Russko - Latyšskij Slovar', Moscow, 1951.
65. Lyall, A., A Guide to 25 Languages of Europe, London, Sidgwick and Jackson, 3rd ed., 1966.
66. Müller, V. K., English - Russian Dictionary, New York, Dutton & Co., 6th ed., 1959.
67. Ouseg, H. L., International Dictionary in 21 Languages, New York, Philosophical Library, 1962.
68. Ozoliņš, E., Svešvārdū Vārdnīca (Dictionary of foreign terms), Eutin, Holstein, Germany, A. Ozolins, 1958.
69. -----, Vāciski - Latviskā Vārdnīca (German - Latvian Dictionary), Eutin, Holstein, Germany, A. Ozolins, 1964.
70. Ožegov, S. I., Slovar' Russkogo Jazyka, Moscow, 1963.
71. Preobrazhensky, A. G., Ētimologičeskij Slovar' Russkogo Jazyka, 2 vols. and Appendix, New York, Columbia University Press, 2nd ed., 1964 (copyright 1910-1914).
72. Raxmanova, I. V., Nemecko - Russkij Slovar', Moscow, 1956.
73. Sereiskis, B., Lietuviškai - Rusiškai Žodynas (Lithuanian - Russian Dictionary), Kaunas, Lithuania, A. Lapinas and G. Volfas, 1933.

74. Simpson, D. P., Cassell's New Latin Dictionary, London, Cassell & Co., 2nd ed., 1962.
75. Smirnitsky, A. I., Russian - English Dictionary, New York, E. P. Dutton & Co., 6th ed., 1959.
76. Stanisławski, J., English - Polish and Polish - English Dictionary, New York, Roy Publishers, 1964.
77. Turkina, E., Angliski - Latviskā Vārdnīca, Copenhagen, Imanta, 1956.
78. -----, Latvian - English Dictionary, New York, Saphrograph Co., 1964.
79. Vasmer, M., Russisches Etymologisches Wörterbuch, 3 vols., Heidelberg, Carl Winter; Vol. I, 1953; Vol. II, 1955; Vol. III, 1958.
80. Webster, N., Twentieth Century Dictionary (Unabridged), New York, Publishers Guild, 1939.
81. Wolkonsky, C. A. and Poltoratzky, M. A., Handbook of Russian Roots, New York, Columbia University Press, 2nd ed., 1964.

MONOGRAPHS

82. Allunāns, H., Kurzer Leitfaden zum Erlernen der Lettischen Sprache, Jelgava (Mitau), Latvia, H. Allunan, 1888.
83. Arkin, H. and Colton, R. R., Tables for Statisticians, New York, Barnes & Noble, 1963.

84. Bidwell, C. E., Slavic Historical Phonology in Tabular Form, The Hague, Mouton & Co., 1963.
85. Dieth, E. and Orton, H., A Questionnaire for a Linguistic Atlas of England, Leeds Philosophical and Literary Society, 1952.
86. Fraenkel, E., Die Baltischen Sprachen, Heidelberg, Carl Winter, 1950.
87. Sandbach, E., Die Indogermanischen Zweisilbigen Schweren Basen und das Baltische (Litauische) Präteritum, Heidelberg, Carl Winter, 1930.
88. Trubetzkoy, N., The Common Slavic Element in Russian Culture, New York, Columbia University Press, 2nd ed., 1950.

ARTICLES

89. Altshuler, N., Linguistic Forms as Symbols of People. International Journal of American Linguistics, vol. 22 (1956), pp. 106-112.
90. Bergsland, K. and Vogt, H., On the Validity of Glotto-chronology. Current Anthropology, vol. 3, No. 2 (April, 1962), pp. 115-153.
91. Bloomfield, L., A Set of Postulates for the Science of Language. Language, vol. 2 (1926), pp. 153-164.
92. Chrétien, C. D., The Mathematical Models of Glotto-chronology. Language, vol. 38, No. 1 (January - March, 1962), pp. 11-37.

93. de Groot, A. W., Classification of Word-Groups. Lingua, Amsterdam, North-Holland Co., vol. 6, No. 2 (January, 1957), pp. 113-157.
94. Fairbanks, G. H., A Note on Glottochronology, I.J. of A.L., vol. 21 (1955), pp. 116-120.
95. Fries, C. C., Meaning and Linguistic Analysis. Language, vol. 30, No. 1 - Part 1 (January - March, 1954), pp. 57-68.
96. Fries, C. C. and Pike, K. L., Coexistent Phonemic Systems. Language, vol. 25 (1949), pp. 29-50.
97. Greenberg, J. H., Language and Evolution. Evolution and Anthropology: A Centennial Appraisal, Meggers, B. J., ed., The Anthropological Society of Washington, 1959, pp. 61-75.
98. Grinaveckis, V., Dve Zametki po Litovskoj Dialektologii. Problemy Indoevropskogo Jazykoznanija, Toporov, V.N., ed., Moscow, 1964, pp. 70-78.
99. Gudschinsky, S. C., Lexico-Statistical Skewing from Dialect Borrowing. I.J. of A.L., vol. 21 (1955), pp. 138-149.
100. -----, The ABC's of Lexicostatistics (Glottochronology), Word, vol. 12 (August, 1956), pp. 175-210.
101. -----, Three Disturbing Questions Concerning Lexicostatistics. I.J. of A.L., vol. 22 (1956), pp. 212-213.
102. Gumperz, J. J., On the Ethnology of Linguistic Change. Sociolinguistics, Bright, Wm., ed., The Hague, Mouton & Co., 1966, pp. 27-48.

103. Hockett, C. F., Linguistic Time-Perspective and its Anthropological Uses. I.J. of A.L., vol. 19 (1953), pp. 146-152.
104. Hoenigswald, H. M., Sound Change and Linguistic Structure. Language, vol. 22, No. 2 (April - June, 1946), pp. 138-143.
105. Hoijer, H., Anthropological Linguistics. Trends in European and American Linguistics 1930 - 1960, Mohrmann, C., ed. and others, Utrecht, Holland, Spectrum Publishers, 1963, pp. 110-125.
106. -----, Lexicostatistics: A Critique. Language, vol. 32, No. 1 (January - March, 1956), pp. 49-60.
107. Hymes, D. H., Functions of Speech: An Evolutionary Approach. Anthropology and Education, Gruber, F. C., ed., University of Pennsylvania Press, 1961, pp. 55-83.
108. -----, Genetic Classification: Retrospect and Prospect. Anthropological Linguistics, vol. 1 (February, 1959), pp. 50-66.
109. -----, Lexicostatistics So Far. Current Anthropology, vol. 1 (January, 1960), pp. 3-44.
110. Joes, M., Semology: A Linguistic Theory of Meaning. Studies in Linguistics, vol. 13, Nos. 3-4 (1958), pp. 53-70.
111. Kelley, G., The Status of Hindi as a Lingua Franca. Sociolinguistics, Bright, Wm., ed., The Hague, Mouton & Co., 1966, pp. 299-308.

112. Kroeber, A. L., Romance History and Glottochronology.
Language, vol. 34, No. 4 (1958), pp. 454-457.
113. Kroeber, A. L. and Chrétien, C. D., Quantitative Classification of Indo-European Languages. Language, vol. 13 (1937), pp. 83-103.
114. Lees, R. B., The Basis of Glottochronology. Language, vol. 29, No. 2 (1953), pp. 113-127.
115. McDavid, R. I., Jr., Dialect Differences and Social Differences in an Urban Society. Sociolinguistics, Bright, Wm., ed., The Hague, Mouton & Co., 1966, pp. 72-83.
116. Malkiel, Y., Etymology and General Linguistics. Word, vol. 18, Nos. 1-2 (April - August, 1962), pp. 198-219.
117. Mažjulis, V., Zametki po Prusskoj Ėtimologii. Problemy Indoevropskogo Jazykoznanija, Toporov, V. N., ed., Moscow, 1964, pp. 66-69.
118. Mills, C. W., Situated Actions and Vocabularies of Motive. American Sociological Review, vol. 5 (December, 1940), pp. 904-913.
119. Nida, E. A., The Identification of Morphemes. Language, vol. 24 (1948), pp. 414-441.
120. Oswalt, R. L., Russian Loanwords in Southwestern Pomo. I.J. of A.L., vol. 24 (1958), pp. 245-247.
121. Plath, W., Mathematical Linguistics. Trends in European and American Linguistics 1930 - 1960, Mohrmann, C., ed. and others, Utrecht, Holland, Spectrum Publishers, 1963, pp. 21-58.

122. Raun, A., Über die Sogennante Lexikostatistische Methode oder Glottochronologie und Ihre Anwendung auf das Finnisch - Ugrische und Türkische. Ural - Altaische Jahrbücher, Wiesbaden, Otto Harrassowitz, vol. 28 (1956), pp. 151-154.
123. Rea, J. A., Concerning the Validity of Lexicostatistics. I.J. of A.L., vol. 24 (1958), pp. 145-150.
124. Sabaljauskas, A., Iz Istorii Terminologii Životnovodstva v Baltijskix Jazykax. Problemy Indoevropskogo Jazykoznanija, Toporov, V. N., ed., Moscow, 1964, pp. 59-65.
125. Salzmann, Z., The Problem of Lexical Acculturation, I.J. of A.L., vol. 20 (1954), pp. 137-139.
126. Sapir, E., Language and Environment. The American Anthropologist, vol. 14 (1912), pp. 226-242.
127. Scherer, A., Der Stand der Indogermanischen Sprachwissenschaft. Trends in European and American Linguistics 1930 - 1960, Mohrmann, C., ed. and others, Utrecht, Holland, Spectrum Publishers, 1963, pp. 225-239.
128. Schofield, A., Jr. and Whatmough, J., Comparative and Historical Linguistics in America. Trends in European and American Linguistics 1930 - 1960, Mohrmann, C., ed. and others, Utrecht, Holland, Spectrum Publishers, 1963, pp. 58-81.
129. Senn, A., On the Degree of Kinship between Slavic and Baltic. The Slavonic and East European Review, Menasha, Wisc., vol. 20 (1941), pp. 251-265.

130. Senn, A., The Historical Development of the Lithuanian Vocabulary. Reprinted from the Quarterly Bulletin of the Polish Institute of Arts and Sciences in America, July, 1943.
131. Sudnik, J. M., Zametki o Litovsko - Belorusskom Dvujazyčii (na Materiale Govora Gervjat). Problemy Indoevropejskogo Jazykoznanija, Toporov, V. N., ed., Moscow, 1964, pp. 79-87.
132. Swadesh, M., Comment on Hockett's Critique. I.J. of A.L., vol. 19 (1953), pp. 152-153.
133. -----, Diffusional Cumulation and Archaic Residue as Historical Explanations. Southwestern Journal of Anthropology, vol. 7 (Spring, 1951), pp. 1-21.
134. -----, Linguistics as an Instrument of Prehistory. Southwestern Journal of Anthropology, vol. 15 (1959), pp. 20-35.
135. -----, Mosan I: A Problem of Remote Common Origin. I.J. of A.L., vol. 19 (1953), pp. 26-44.
136. -----, Perspectives and Problems of Amerindian Comparative Linguistics. Word, vol. 10 (1954), pp. 306-332.
137. -----, Towards Greater Accuracy in Lexicostatistic Dating. I.J. of A.L., vol. 21 (1955), pp. 121-137.
138. Szemerényi, O., The Problem of Balto-Slav Unity. (A Critical Survey). Kratylos, Wiesbaden, Otto Harrassowitz, vol. 1 (1957), pp. 97-123.

139. Toporov, V. N., Issledovanija po Baltijskoj Ėtimologii
(1957 - 1961). Ėtimologija, Trubačev, O. N., ed.
and others, Moscow, 1963, pp. 250-261.

140. -----, Neskol'ko Illirijsko - Baltijskix
Parallelej iz Oblasti Toponomastiki. Problemy Indo-
evropejskogo Jazykoznanija, Toporov, V. N., ed.,
Moscow, 1964, pp. 52-58.

141. -----, Zametki po Indoevropskoj Ėtimologii.
Ėtimologija, Trubačev, O. N., ed. and others, Moscow,
1963, pp. 187-190.

142. Trubetzkoy, N. S., Grundzüge der Phonologie. Travaux du
Cercle Linguistique de Prague, Prague, 1939, No. 7.

143. Varbot, Ž. Ž., O Slovoobrazovatel'nom Analize v Ėtimo-
logičeskix Issledovanijax. Ėtimologija, Trubačev, O. N.,
ed. and others, Moscow, 1963, pp. 194-212.

144. Voegelin, C. F. and Harris, Z. S., The Scope of Linguistics.
The American Anthropologist, vol. 49 (1947), pp. 588-
600.

145. Zeps, V. J., Territorial Patterns of Finnic Loanwords in
Latvian. Ural - Altaische Jahrbücher, Wiesbaden,
Otto Harrassowitz, vol. 34, Nos. 1-2 (July, 1962),
pp. 20-25.