

## Twenty-first century clouds over Indo-European homelands

This paper presents the respondent's general comments to some of the papers of the seminar on the "Indo-European Homeland and Migrations: Linguistics, Archeology and DNA" (Moscow, 12 September, 2012). It briefly examines three homeland models (Neolithic Anatolia, Near Eastern and Pontic-Caspian) in terms of their ability to address the issues of Indo-European phylogeny (the separation of Anatolian from the rest of the Indo-European languages) and the dispersal of agricultural terms across the Indo-European world.

*Keywords:* Indo-European homeland, Indo-European phylogeny, Indo-European agriculture.

In 1900 William Thomson, originally from Belfast and better known as Lord Kelvin, delivered a famous lecture titled 'Nineteenth-Century Clouds over the Dynamical Theory of Heat and Light' in which he identified two 'dark clouds' that hung over the then clear skies of physics: the failure of science to recover evidence for the aether and its inability to explain black-body radiation. I had already thought of employing this to structure my own comments before I received the abstracts for this symposium. So I was delighted to see that in the very beginning of T. Gamkrelidze and V. Ivanov's paper that they allude to the Anatolian god *Ni-pá-s* which they suggest is cognate with Sanskrit *nábhás*, Greek *néphos*, etc, i.e., 'cloud'. We are met here at a symposium to honour the work of Nikolai Merpert whose own research on the Pontic-Caspian steppe contributed so much to discussions of the origins and dispersal of the Indo-European languages (Merpert 1961; 1965; 1974). A number of the papers delivered at this symposium concern the Indo-European homeland problem and the particular role the Pontic-Caspian steppe may have played within our understanding of the dispersal of the Indo-European languages. For this reason I think it is appropriate that, like my far more eminent Belfast predecessor, I deal with what I perceive to be some of the 'clouds' that obscure any of the solutions to the Indo-European homeland problem. And to clarify how serious I think the issues are, I emphasize that I have in mind a dark Russian *туча* and not a white fluffy *облако*. Like Lord Kelvin I will limit my discussion to two clouds although if I wanted to prolong the metaphor in earnest I could obscure the skies with as much toxic aerial obstruction as we might associate with the atmosphere of Venus.

The speakers at this symposium can generally be seen to support one of the following three 'solutions' to the Indo-European homeland problem:

1. The Anatolian Neolithic model. This has been most popularized in the works of Colin Renfrew (1987). It sets Indo-European origins to the Anatolian Neolithic and argues that the spread of the Indo-European languages was part and parcel of the spread of agriculture through Europe in a demographic "wave of advance". Since its original presentation it has been modified a number of times to deal with some of the more serious criticism directed towards it. The revised model (Renfrew 1999) still argues for a movement of farming populations from Anatolia into the Aegean and Balkans extending through central Europe along the Danube drainage (the Linearbandkeramik) and also around the western part of the Black Sea where it carried agriculture and Indo-European languages to the steppelands. The northern

and Atlantic peripheries of Europe are regarded not so much areas of migrant colonization as areas of local acculturation to the new economy. The spread of Indo-European languages into Central and Southern Asia was explained originally by way of two alternative models: a Plan A that saw the Neolithic economy spread eastward from Anatolia towards India (thus the Indus Civilization might be regarded as Indo-European) or Plan B that explained the Indo-Iranians in terms of a much later migration of Bronze Age peoples from the Asiatic steppelands southwards into the territory of southern Central Asia and the Indus. Renfrew eventually abandoned Plan A for Plan B, however, a recent and much publicized solution to the homeland problem by Bouckaert *et al* (2012), and partly supported by Paul Heggarty at this symposium, appears to argue for a variation of Renfrew's original Plan A, i.e., a homeland set in Anatolia at the beginning of the Neolithic (7th millennium BCE) with essentially symmetrical expansions both west into Europe and east into Asia, although these are not necessarily tied to the initial expansion of farming.

2. The Near Eastern model. The major proponents of this model are the linguists Tamaz Gamkrelidze and Vyacheslav Ivanov (1984) who have been provided with detailed archaeological support by Stanislav Grigoriev (1999; 2002). Here the homeland is set south of the Caucasus, and Indo-European expansions are set somewhat later than presented in the Anatolian Neolithic model (the spread of farming is not a critical element of the Near East model). A distinctive feature of this model is that the ancient European languages (Balto-Slavic, Germanic, Celtic, Italic) are all derived from a Bronze Age migration east of the Caspian through Central Asia. This in effect has created the notion of a secondary homeland located north of the Black and Caspian seas. Another possible variation of this model may be seen in Leonid Sverchkov's (2012) recent book on Tokharian and, more generally, Indo-European origins in Central Asia.

3. The Pontic-Caspian model. This homeland model, developed in a large number of publications by Marija Gimbutas (e.g., 1991, 351–401) and most recently and extensively argued by David Anthony (2007), locates the homeland in the steppe and forest-steppe regions between the Dnieper and the Volga during the period *c* 4500–3000 BCE.

While there are numerous issues raised by all potential solutions, I wish to simply illustrate two of the problems, one primarily linguistic and the other archaeological, that constitute 'clouds' over any of the solutions.

### Cloud 1: Linguistic Phylogeny

One of the primary tests of the validity of any model of Indo-European origins is whether a solution can account for the phylogeny of the Indo-European languages (Mallory 1997a, 103). In general, archaeologists have been given almost a free hand here because of the lack of agreement among linguists as to the precise shape of the Indo-European family tree and how it should be modeled in space and time. While Indo-Iranian may certainly be seen as a valid subgrouping and Balto-Slavic is certainly a concept embraced by the overwhelming majority of linguists, Graeco-Armenian or Italo-Celtic are areas of considerable debate. So also are some of the broader constructs such as Graeco-Indo-Iranian (with or without Armenian). The position of Tokharian with respect to any other language is similarly a major battleground between those who see it as an orphan, peripheral to the rest of Indo-European, and those who wish to associate it with any number of European (Greek to Germanic) branches. But by and large linguists are agreed on the relative position of one branch: Anatolian was the first language to separate,

either within the framework of Proto-Indo-European or as the co-ordinate half of Indo-Hittite. The essential argument as it is normally presented is that Anatolian lacks a considerable number of features that would characterize Brugmanian Proto-Indo-European (aorist, perfect, subjunctive, optative, etc.; Fortson 2004, 155) and, therefore, its links with an earlier continuum must have been severed before Proto-Indo-European (or the rest of the Indo-European languages) developed in common. This can essentially be explained in one of two ways:

1. The ancestors of the Anatolian languages migrated from the homeland of the proto-language before it developed common Indo-European features. In this model, Anatolian would have preserved an archaic structure while the ancestors of the rest of the Indo-European languages still remained together and evolved later stages of Proto-Indo-European.

2. The ancestors of the Indo-European languages migrated from the homeland of the proto-language. Here it is Proto-Indo-European that moves off to innovate while, presumably, Anatolian was left in the homeland to preserve its archaisms.

Obviously we could complicate matters further by proposing a homeland from which both the ancestors of Anatolian and (Proto-)Indo-European migrated in different directions but this would hardly be likely and it would have little bearing on the following discussion.

If we apply this test to the three homeland models, we can see how each attempts to satisfy this requirement.

*Pontic-Caspian.* In this model the linguistic ancestors of Anatolian are seen to depart earliest from a homeland north of the Black Sea where they pass through the Balkans (Mallory 1989: 241; Anthony 2007: 259) and, by the beginning of the Bronze Age (depending on which archaeological scenario one wishes to invoke) they enter Anatolia to settle and eventually dominate local non-Indo-European populations such as the Hatti. Later, within the Pontic-Caspian homeland, Brugmanian or mature Proto-Indo-European develops. Subsequent migrations carry ancestors of most of the European languages into central and northern Europe while ultimately the linguistic ancestors of the Greeks and Indo-Iranians disperse both west and east during the Bronze Age. These later migrations would also include the ancestors of the Phrygians and Armenians, two other language groups that occupied Anatolia but cannot be regarded as ‘Anatolian’ in the linguistic sense. Whatever the archaeological merits of this argument, this homeland does account for the division between Anatolian and the other Indo-European languages.

*Near Eastern.* Although the supporters of this theory may differ in detail, they are at pains to provide a model that allows Anatolian to develop independently of the rest of the Indo-European languages who can evolve together. For example, in Grigoriev’s model, the ancestors of the Anatolians move from Anatolia into the Balkans while there are subsequent linguistic developments in eastern Anatolia that can account for the shared development of the other IE languages (Grigoriev 2002: 354–357, 412–415). Later, Anatolian relocates back to Anatolia during the Bronze Age while the ancestors of the Greeks (at least some of them) may have made their way through the Caucasus and into the Balkans. Thus this model also meets the minimal requirement of explaining the first element of Indo-European phylogeny, the separation of Anatolian from the rest of Indo-European although the subsequent movements of the other IE languages appear far more complicated than those proposed in the Pontic-Caspian model.

*Anatolian Neolithic.* In Renfrew’s (1999) revised model (Plan B), Anatolian remains within the homeland while the rest of the Indo-European languages disperse into Europe which would again permit Proto-Indo-European to evolve separately from Anatolian and Phrygian

and Armenian could later ‘return’ to Anatolia. As for the Asian languages, this model is not significantly different from the Pontic-Caspian model. This model then also provides a possible spatial solution to the initial break-up of Indo-European.

On the other hand, the recent hypothesis of Bouckaert *et al* (2012) deals with the split between Anatolian and the other Indo-European languages in a very different way. It appears to situate the homeland (and Proto-Anatolian) in Anatolia. With Anatolian emerging in the centre, the European Indo-Europeans (ancestors of Greek, Latin, etc) disperse *westwards* into Europe through the Aegean and Balkans and the Asiatic Indo-Europeans (Indo-Iranians) move *eastwards* towards the Indus, i.e. there is a symmetrical ‘big bang’ from a homeland identical to the later historical seats of the Anatolian languages. It seems to me that there is no attempt whatsoever to deal with the division between Anatolian and the other Indo-European languages that, according to the authors’ own chronology, arise millennia later. Particularly noticeable is that this model appears to situate the ancestors of Greek in Greece to the west of Proto-Anatolian and the ancestors of Indo-Iranian far to the east of Anatolian thus preventing both branches from sharing the 2500 years of common development that is required by this model’s own chronology and phylogeny. How is one to explain parallel linguistic innovations both to the east and west of the region assigned to proto-Anatolian? The statisticians who devised this model seem to require some form of mutual contact at a distance, one of the stranger aspects of quantum theory that Einstein once dismissed as *Spukhaftige Fernwirkung*.

It is difficult to see how one can resolve this problem without either revising the model so that all the rest of the Indo-European languages are ejected in a single direction from Anatolia or creating a complexity of movements within Anatolia. The first solution is indeed the one that Renfrew adopted in his revision that appears to be contradicted by the Bouckaert model; the second solution is more difficult to imagine as the time depth involved would appear to anchor the model with the spread of agriculture to Greece in the 7<sup>th</sup> millennium BCE (and hence force the ancestors of the Indo-Iranians into the same process if they must evolve along with the Proto-Greeks?) or disassociate the Greek movements from the Neolithic to a later period (the Bronze Age?) which will still require one to somehow connect their putative development with the Proto-Indo-Iranians. One might try to employ Robert Drews’ (1988) ingenious chariot model with the spread of Greeks and Indo-Iranians set to c 1600 BCE and linked to chariot warfare but this would bring Bouckaert’s entire chronology of the Indo-European languages into total disarray. In short, this is the one model that does not seem to address the only feature of Indo-European phylogeny that has near universal support.

There is naturally an alternative view of Anatolian that does not support its relatively great antiquity but rather explains its absence of features found in other IE languages as ‘losses’. As these are generally explained by losses occasioned by the impact of a non-IE substrate on Anatolian within Anatolia itself, this alternative model can hardly support the notion that the Indo-European homeland was within Anatolia.

While I have concentrated on a single element of the Indo-European family tree, the absence of a fully fleshed out and agreed phylogeny is a serious detriment to evaluating the various homeland models. The interface between the evidence of comparative linguistics and the (pre)historical sciences of archaeology or ancient DNA analysis is already fragile enough. The one way in which the linguistic evidence should be able to converse with that of archaeology is in its ability to provide some broad structural patterning of the evolution of the different Indo-European branches against which the various archaeological solutions might be ‘tested’. Without a commonly agreed phylogeny we will always lack an essential key to evaluating the competing hypotheses.

## Cloud 2: Agriculture

The second cloud involves lexical-cultural data that can be ground-proofed with the evidence of archaeology. All models cited above acknowledge that the Proto-Indo-Europeans possessed an economy based on domesticated livestock and domestic cereals. Earlier models such as those developed in detail by Wilhelm Brandenstein (1936) that suggested a marked dichotomy between arable Europeans and pastoral Indo-Iranians (or Tokharians) cannot really be sustained (Mallory 1997b) and despite a considerable number of differences there is still a substantial amount of shared agricultural vocabulary between European and Asian languages (Table 1 and 2). While the lists of cognates can certainly be criticized in certain specifics and they may well be an over-optimistic summary, I fear that there would still be a sufficient assemblage of words to indicate that both Europeans and Asiatic Indo-Europeans shared inherited words for both livestock and arable agriculture (if someone can prove they did not, this would make things easier for many of the homeland models). Thus, any solution to the homeland problem must be able to explain how we can recover cognate terms associated with farming from Ireland to India. We can again see how each model deals with this requirement.

Table 1: Words for domestic fauna found in at least one European and one Asiatic (Indo-Iranian, Tokharian) language.

<i>*gʷóu-</i> ‘cow’	<i>*h₂ówis</i> ‘sheep’	<i>*bʰuǵo-</i> ‘he-goat’
<i>*(h₁)eǵʰ-</i> ‘cow’	<i>*wóh₁én-</i> ‘lamb’	<i>*h₄eǵó-</i> ‘he-goat’
<i>*woǵeh₄-</i> ‘cow’	<i>*moisó-</i> ‘sheep, fleece’	<i>*sus</i> ‘pig’
<i>*uk(w)sen-</i> ‘ox’	<i>*aiǵ-</i> ‘goat’	<i>*pórko-</i> ‘piglet’

Table 2: Words associated with agriculture found in at least one European and one Asiatic language.<sup>1</sup>

<i>*ses(i)ós</i> ‘± grain’	<i>*meiǵʰ-</i> ‘± grain’	<i>*seh₁-</i> ‘sow’
<i>*yéwos</i> ‘± grain, ?barley, ?wheat’	<i>*h₂ekstí-</i> ‘awn’	<i>*wers-</i> ‘thresh’
<i>*ǵrh₄nóm</i> ‘± grain’	<i>*h₂éreh₂-</i> ‘weed/ rye’	<i>*pelo/eh₂-</i> ‘chaff’
<i>*ǵʰresdʰi-</i> ‘± grain, ?barley’	<i>*álu-</i> ‘esculent root’	<i>*melh₂-</i> ‘grind’
<i>*bʰars</i> ‘± grain, ?barley’	<i>*keres-</i> ‘millet’	<i>*peis-</i> ‘grind’
<i>*dʰoh₂néh₂-</i> ‘± grain’	<i>*pano-</i> ‘millet’	<i>*h₂el-</i> ‘grind’
<i>*drh₂weh₂-</i> ‘± grain’	<i>*kāpos</i> ‘field’	<i>*srpo/eh₂-</i> ‘sickle’
<i>*h₂ed-</i> ‘± grain’	<i>*h₂érh₃ye/o-</i> ‘plough’	<i>*gʷréh₄won</i> ‘quern’
<i>*h₂elbʰit-</i> ‘± grain, ?barley’	<i>*gʰel-</i> ‘plough’, <i>*h₃ekéteh₄-</i> ‘harrow’	

### Anatolian Neolithic

Renfrew’s Plan B which involves the spread of agriculture from Anatolia to Europe and then around the Pontic-Caspian to the eastern steppes and south into Iran and India can theoretically explain the distribution of the inherited agricultural lexicon although its transmission from the Balkans to the European steppelands is extremely problematic (Mallory in press:a). If one accepts a transmission to the steppelands, then Renfrew’s theory in so far as the Indo-

<sup>1</sup> The list of cereals is based on that published in Mallory 1997b and on the unpublished manuscript of Václav Blažek’s ‘On Indo-European “barley”’ which the author generously permitted me to see.

Iranians and Tokharians are concerned is essentially the same as that of the Pontic-Caspian model and will share the same deficiencies of the steppe model (see below).

The model of Bouckaert *et al* (2012), if we ignore for the moment the problem of the phylogeny of Indo-European, appears at first glance to be the simplest way to explain spatially why Indo-Iranians shared the same names for livestock and arable agriculture as Europeans, i.e., arable agriculture was carried both east and west from a single Anatolian centre. It is when we look deeper that problems begin to arise. If the time depth of their solution is accepted, then we can presume that the first expansion of the Indo-European languages was associated with the initial spread of agriculture. The likely primary source for this would be eastern Anatolia/north Syria from which it probably expanded westwards across Anatolia (Mallory 2009). The problem with respect to the agrarian vocabulary arises when one considers its eastern expansion as, according to the authors of this model, the later dates for the emergence of the various sub-branches, including Indo-Iranian, occurs so much later that it is “unlikely that agriculture serves as the sole driver of language expansion”. Even if one did not accept the chronology of their model, one could argue on other grounds that the eastern expansion of Indo-European from Anatolia should be set later than the initial spread of agriculture. If, for example, the Indo-Iranians were to be associated with the earliest appearance of agriculture in their respective territories, then one might expect Iranian to derive from either a source in the Zagros or south-Central Asia (Jeitun?) while the early Neolithic site of Mehrgarh in Baluchistan is certainly more proximate to the Indus than any other. It is difficult to imagine that all these Neolithic ‘hearths’ shared the same language (Eastern Anatolia and Mehrgarh are situated nearly 2500 km apart!). Moreover, as we move south or east from the Anatolian/north Syrian source of agriculture we pass through regions that were, at least in historical times, occupied by speakers of Hurrian, Semitic, Sumerian and Elamite, all non-Indo-European languages. It seems very plausible that the entire region between eastern Anatolia and the Indus was occupied by non-Indo-European language families during the earlier Neolithic. Therefore, at least two of the sources of agriculture could be independent of one another linguistically thus rendering it nearly impossible to see how the eastern source could have spoken the same language as those stemming from Anatolia. And if the Indo-Aryans took their vocabulary from the region of their occupation and the Iranians did the same, then how could both have shared a common line of development as Indo-Iranian languages? In sum, even with an Anatolian origin we would be left with a model that requires that the Iranians, Indo-Aryans or all the Indo-Iranians to be explained by some form of major language shift. This is indeed the problem for both the Near Eastern and the Pontic-Caspian models and, following the logic of this analysis, the Bouckaert model appears to be in the same boat. All of these models apparently require the Indo-European languages (including their attendant agricultural vocabulary) to be superimposed/adopted by at least several major complex societies of Central Asia and the Indus. If one accepts this conclusion then a significant portion of the Indo-European world cannot be explained by agricultural expansions, even among those who support an early Neolithic homeland in Anatolia. And if one is forced to accept language shift over a series of complex societies in Asia, how can one argue that only the spread of agriculture could explain language shift among less complex societies in Europe? In any event, all three models require some form of major language shift despite there being no credible archaeological evidence to demonstrate, through elite dominance or any other mechanism, the type of language shift required to explain, for example, the arrival and dominance of the Indo-Aryans in India.

It might be noted that while the Bouckaert model does not appear to be able to associate Indo-Iranian expansions with the initial spread of agriculture into southern Asia, such a

model does at least provide an uncontested line of a cultures practicing arable agriculture from the homeland to Iran and the Indus. The Near Eastern model, of course, can also claim the same for connecting the homeland with Iran and the Indus although it is encumbered by a logically very difficult explanation of the languages of most of Europe (see below). But all theories must still explain why relatively advanced agrarian societies in greater Iran and India abandoned their own languages for those of later Neolithic or Bronze Age Indo-Iranian intruders.

### **Near Eastern and Pontic-Caspian models (including Renfrew's Plan B)**

The critical issue for these models is that while any and all of them could explain the distribution of domestic animal names, there are serious problems involved with the spread of arable agriculture. As Anthony remarks in this symposium, there is really no serious evidence for arable agriculture (domestic cereals) east of the Dnieper until after c 2000 BCE (see also Ryabogina & Ivanov 2011; Mallory, in press:a). This means that there is also no evidence for domestic cereals in the Asiatic steppe until the Late Bronze Age (Andronovo etc). From the perspective of the Pontic-Caspian model, the ancestors of the Indo-Iranians and Tokharians should not cross the Ural before c 2000 BCE at the very earliest. Hypotheses linking the Tokharians to earlier eastward steppe expansions associated with the Afanasievo or Okunevo cultures of the Yenisei or Altai (Mallory and Mair 2000) become very difficult if not impossible to sustain (as long as there is no evidence of arable agriculture in these cultures) as Tokharian retains elements of the Indo-European agricultural vocabulary. Of course, it should be emphasized that sites of the Afanasievo and Okunevo cultures are overwhelmingly burials that hardly provide the context in which one expects to recover the remains of domestic cereals; moreover, there is no evidence that any of these sites have been excavated in such a way that the recovery of seeds is likely. On the other hand, domestic cereals have been recovered from the site of Begash in the Jungghar mountains at dates of c 2300 BCE (Frachetti 2012) although this site is not connected (so far as we know) with the steppe trajectory of sites (Afanasievo, Okunevo).

If this were not bad enough, it is also difficult to map the agricultural vocabulary across a Pontic-Caspian homeland within Europe itself. Main elements of the scheme suggested by Nikolai Merpert in 1977 still appear to be valid in current models of the evolution of steppe cultures involving an east (Volga-Ural) to west (Dnieper) cultural trajectory but if there was little or no agriculture east of the Dnieper, then how can we describe the eastern archaeological cultures of the Don (Repin), Volga (Khvalynsk) or the entire Don-Ural region (Yamnaya) as Indo-European if they lacked arable agriculture? That the steppe populations exploited wild plants such as *Chenopodium* and *Amaranthus* is well known and while this might explain the ambivalence of some of the cereal names to reflect a specific cereal type (rather than just 'grain') we would still need to explain why the semantic variance among cognate words is largely confined to 'wheat', 'barley' and 'millet' as if at least one of these was the original referent (and not some wild grain). All of the above problems would also be inherent in Renfrew's revised version of the Anatolian homeland model that requires the eastern Indo-Europeans (Indo-Iranians, Tokharians) to pass through the Pontic-Caspian steppe.

Conversely, the Near Eastern model, that requires the ancestors of the 'ancient European' languages to wander through Central Asia, cannot place the 'Europeans' *north* of south Central Asia before c 2000 BCE at the earliest. This is going to render the Indo-Europeanization of most of Europe a far more recent phenomenon than most would expect or accept. It would detach the Indo-Europeanization of central and northern Europe from such cultures as the

Corded Ware horizon that in almost every way imaginable would appear to be archaeologically, spatially and culturally a part of the Indo-European world. More importantly, it creates a ‘bottle-neck’ for the Northwest (?) Indo-European languages dated to about 1500 BCE where they all should have passed from east to west across the Pontic-Caspian and on into Europe. To propose a common secondary home and time depth for Balto-Slavic, Germanic, Celtic and Italic so late leaves hardly any time at all to explain the phylogeny of the European languages and how they arrived in their historical seats. If supporters of this model sought an escape route from the situation they seem to have created for themselves, one might possibly propose the route north through the Caucasus to explain not only Iranians (at Sintashta in Grigoriev’s account) but the rest of the Europeans. However, this is hardly without problems as well as one must also explain how the ancestors of most of the European languages managed to pass through the Caucasus without leaving a trail of European languages.

If there are any lessons to be learned, it is that every model of Indo-European origins can be found to reveal serious deficiencies as we increase our scrutiny. One is reminded of Daniel Kahneman’s observation:

“It is the consistency of the information that matters for a good story, not its completeness. Indeed, you will often find that knowing little makes it easier to fit everything you know into a coherent pattern” (Kahneman 2011, 87).

The problem here, of course, is that over time we have come to know more and more and that our earlier, simpler and more alluring narratives of Indo-European origins and dispersals are all falling victim to our increasing knowledge. We have obviously moved on from the time when Nikolai Merpert first published his analyses of the role of the steppelands within the context of the Indo-European homeland but it is evident that we still have a very long way to go.

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Дж. П. Мэллори. Индоевропейская прародина: тень на плетень в XXI веке.

Статья представляет собой обобщающий комментарий к некоторым докладам на заседании «Проблемы прародины индоевропейцев» (Москва, 12 сентября 2012 г.). Автор рассматривает три гипотезы о локализации индоевропейской прародины (неолитическая Анатолия, Древний Ближний Восток и причерноморские степи), оценивая, насколько они соответствуют как генеалогическому дереву индоевропейской семьи (раннее отделение анатолийской группы), так и распределению земледельческой терминологии по индоевропейским языкам.

**Ключевые слова:** индоевропейская прародина, генеалогическая классификация индоевропейской языковой семьи, земледелие индоевропейцев.

