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Language and archeology: some methodological problems. 1. Indo-European and Altaic landscapes

The article is the first part of a larger work that represents an attempt to systematize our ideas on the natural environment and material culture of the Proto-Indo-Europeans. It is based on a more or less complete selection of reconstructed words from the appropriate semantic areas and on their comparison with a similar selection performed for a proto-language of similar time depth, whose speakers evidently inhabited a territory that was not in contact with the Proto-Indo-European one — Proto-Altaic. In this part, only the words that belong to the semantic field of landscape terms are analyzed. The main conclusion is that the hypothesis of a steppe environment is more applicable for the Proto-Altaic population, whereas for Proto-Indo-Europeans a mountainous region seems more appropriate. As for the water bodies, for Proto-Indo-Europeans we should suppose the existence of a sea (or of a very big lake), and for speakers of Proto-Altaic, the existence of very big rivers with season floods.

Keywords: Indo-European homeland, Altaic homeland, *Wörter und Sachen*, semantic reconstruction, proto-lexicon.

In order to reconstruct the phylogenetic tree of a language family, it is essential to understand what the human language is in general, and how the individual languages could be classified as nodes on one phylogenetic tree. Language may be considered a semiotic system that consists of signs and relations between signs, and serves to transmit information within a community; it is independent of individual speakers, and it has the property of changing over time. As a rule, the language sign is a two-sided entity that includes both "semantics" and "text". The link between the semantic side and the textual side is arbitrary, conditioned by the tradition of each individual language. Therefore, any homogeny between the textual sides of the words (morphemes, signs) and the same meanings in two different languages (which is what linguists often observe in practice) needs an explanation. If the homogeny involves large sets of words, random coincidence is statistically unlikely. For this reason, the basic assumption of comparative historical linguistics is that these multiple homogeneous coincidences indicate that any such pair of signs represents two different reflections of one proto-sign.

The matches between the textual sides should not be necessarily exact (literal); most often, two sets of words in two languages can be deduced from a third (hypothetical), "deep", form of the words through the application of regular phonetic rules. These "deep" forms, coupled with their meanings, are considered as proto-signs, which allows for their historic interpretation. Namely, we believe them to have been integral constituents of a proto-language that is reflected in both of the recent languages. But if such a proto-language existed, there must also have been a certain community of speakers that used this proto-language for communication. This raises the question of what kind of people this community included, where it was located and how it functioned.

It is quite reasonable to try and find any facts from other historical disciplines that could verify the existence of such a community. However, in doing that, one should not forget about the basic meaning of the term "Proto-Indo-Europeans" — a hypothetical ethnos that used to speak the reconstructed Proto-Indo-European language, which is pretty much all that we definitively know about it. Consequently, it is the linguistic part of the information that shall get priority in our research by definition.

Since most of human history lies outside the boundaries of historical records, our only possibility of retrieving lost knowledge lies in the comparison of the results of archeological excavations with the data of our linguistic reconstruction. As far as interdisciplinary cooperation is concerned, this comparison involves two types of problems. The first one is that the correlation between any particular archeological culture and any particular protolanguage cannot be established directly: there is no reason to think that the area occupied by this culture was inhabited at the time by speakers of only one language. Consequently, talking about, e.g., an "Indo-European archeological culture", generally makes little sense. The other part, of a more subjective and technical nature, is that, unfortunately, interaction between these two disciplines is often belated, so that the archeologists build their models on fifty-year-old linguistic data, and vice versa.

However, in some cases we can state that the presumable speakers of a particular protolanguage could (or could not) be the subjects of a particular culture or inhabit a particular area. This can be established by analyzing the reconstructed lexical corpus, with a simple assumption: we expect that if a word that defines, e.g., a 'plough', is reconstructible for a protolanguage, then the speakers of this language could talk about ploughs and, therefore, possess them.

Now the reconstruction of the proto-lexicon involves not only the reconstruction of the phonetic shape of the word or stem, but also the reconstruction of the word's meaning(s). When reconstructing the phonological aspects of the lexical entities, we have strict criteria that help us distinguish between genetically conditioned and typologically conditioned features. In the case of semantic reconstruction, these criteria are far more obscure. In general, linguists are guided by vague ideas of semantic similarity; at best, they rely on typologically similar cases of semantic change that are historically attested for different languages. Thus, the reconstruction of the so-called "world picture" for any proto-ethnos often places the researcher on shaky ground. It is clear that such work (traditionally defined as studies in *Wörter und Sachen*) should be more productive if the material were to be organized typologically. But any such typology should be founded on compatible data sets. If we produce a "proto-cultural reconstruction" for, e.g., Indo-European, it does not become more convincing by features that reveal any similarity with the "world picture" of "archaic peoples", regardless of whether we are talking of, e.g., the Bushmen (San), the aboriginal Australians, or "of the Shoshonies and Blackfeet". On the contrary — if we do not see any differentiating features, it is highly probable that what we have before us is not a reconstructed "world picture" that is specific for Proto-Indo-Europeans, but a general set of typologically natural archetypes, constructed in accordance with the personal beliefs of the researcher.

For some years already, we have been working on the reconstruction of Proto-Altaic culture, using the reconstructed Proto-Altaic vocabulary. Now that, with the publication of EDAL, we have at our disposal at least two more or less fully and reliably reconstructed proto-lexicons for two similarly dated proto-languages (6th–5th mill. BC for Proto-Altaic, 5th–4th mill. BC for Proto-Indo-European), it becomes possible to compare these proto-lexicons with particular attention to the semantic areas that are most diagnostic for the proto-homeland and proto-culture of both of these hypothetical ethnic groups.

Of the two, the problem of Indo-European proto-homeland and proto-culture has a long tradition. Today, three hypotheses on the IE proto-homeland are most popular: the Northern Black Sea steppe area (validated in the works of M. Gimbutas and endorsed, among others, by P. Friedrich, D. Q. Adams, J. P. Mallory, D. W. Anthony), the Balkans or Carpatho-Balkan area (validated by a number of Hungarian archeologists and, in Russia, by I. M. Diakonoff, V. A. Safronov), and the Anatolian area (supported by V. V. Ivanov, T. V. Gamkrelidze, C. Renfrew). Since the Proto-Altaic reconstruction is much younger, there is currently but one hypothesis on the Proto-Altaic homeland, suggested by G. Ramstedt and supported by K. H. Menges — one that is in agreement with the very name of this language family.

The basic works that are used below, as concerns the Indo-European side of the study, are Гамкрелидзе & Иванов 1984, Schrader & Nehring, Benveniste 1970, WP (and the database created by S. L. Nikolaev on the basis of this dictionary[1]), Pok., Friedrich 1979, Renfrew 1987, and Adams & Mallory 1997. The main source on Altaic material is EDAL; apart from that source, we also consult some older works on Altaic linguistics, such as the series of papers by Leningrad scholars, led by V. I. Tsintsius, that analyze fragments of the Common Altaic cultural lexicon (published in such series as ОСЛАЯ, ИОЭАЯ, АЭ). Cf. also my own paper А. Дыбо 1997.

Reconstruction of semantic features in a proto-language may be formalized if we consider the variability of the meanings of individual reflexations as a kind of polysemy (analogous to polysemy within one language or one small group of closely related languages), and then work with this polysemy by comparing it with the common ways of semantic derivation that are attested in synchronic semantics.

Naturally, our definition of "proto-lexemes" will be restricted to non-derived words[2] or such derivatives as can be reconstructed for the proto-language and cannot be explained as having been separately derived in some daughter languages after a productive pattern[3].

Reconstruction of lexical items that are relevant for the proto-culture involves a number of problems concerning the semantic description of the so-called "encyclopedically loaded" semantic fields, or "lexics of concrete lexicon". It should be noted that, when working on the entities of an encyclopedically loaded semantic field, the semantic description that is appropriate for historical studies can be obtained if we divide the semantic features that structure the field (or a lexical microsystem within the field) into "functional" ones and "formal" (or "topo-

[1] http://starling.rinet.ru/cgi-bin/response.cgi?root=config&morpho=0&basename=\data\ie\piet&first=1

[2] The types of derived words that may, however, be included in the procedure of semantic reconstruction for substantive entities were defined in А. Дыбо 1996: 29; these include diminutives (diminutive affixes are almost always semantically "empty", working almost exclusively as stem-building morphemes), substantivated adjectives and locative names. Such reflexations can usually be identified with primary names.

[3] For this reason, we do not consider such words from Mallory & Adams 2006 as, e.g., **mḷdho/eh$_a$-* 'clay' (e.g., OE *molde* 'sand, dust, soil' [NE *mould*], Grk *málthē* 'modelling mixture of wax and pith', Skt *mṛd-* 'clay, loam'), since they are derived (by means of heterogeneous suffixes) from the verb **mel-* 'to grind'. The second word from Mallory & Adams 2006 to denote 'clay' (**tkwreh$_1$yot-* > OIr *crē* 'clay', Lat *crēta* 'chalk', Toch A *tukri* and Toch B *kwriye*, both 'clay') is rather a term for pottery material, not for a type of landscape. No PIE landscape term can be seen in the connection between OE *swelle* 'slope, rise in land' and Toch B *ṣale* 'mountain', since, *contra* Mallory & Adams 2006, neither of them can be traced back to PIE **swelno-* 'slope'. The PToch form, according to Adams 651, can be reconstructed in two ways: a) **ṣw'äle* < PIE **swelo-*, probably related to Germanic **swel-* 'to swell', which is proposed as the formative stem for OE *swelle*, but not with the same suffix; b) **s'älwe*, from a putative PIE **selwo-* and connected with Latin *silva* 'forest' (with dialectal *-i-* for *-e-*). The majority of stems, considered below, can be reconstructed as noun stems (often as root nouns) for PIE, and their suffixal extensions in different languages can be interpreted as adjectival or diminutive ones.

graphic") ones. The words whose meaning contains "functional" elements are the basic points of the semantic structure of the field, while their "topographic" capacity and types of regular polysemy define the direction of semantic shifts undergone by other words of the field.

As an example, among the different names for 'dwelling' one often finds two types of names for 'house'. Those with a functional value mean not only 'a certain type of building', but also 'locus of the subject'. These words show a regular polysemy: 'house' — 'the house-dwellers' — 'the family living in the house'. It is clear that such words are basic for the field, generally more frequent and better revealing the tendencies of semantic evolution within their particular semantic field (such as English *house*, Russian *дом*). Other words (such as English *cottage*, Russian *хижина*) serve to denote only specific types of buildings and do not have such polysemy. The main problem in reconstructing the semantics of the "encyclopedically loaded" words is to reconstruct the "topographic" features, since the functional features are generally preserved or can be traced in the evolution of the lexical field, while the "topographic" ones may be simply replaced along with changes in the surrounding environment, so that, in order to trace them, we have to use indirect evidence (e.g., one can suggest the presence of a rectangular type of dwelling if the language had a regular polysemy between 'inner angle' and 'a part of the dwelling').

Another point is that it is important not only to choose the "diagnostic" proto-words that are the most relevant ones for the problems involved, but to consider the full scope of available etymological evidence in all thematic fields, which permits us to compose a complete picture of the lifestyle shared by the speakers of the proto-language.

Below I list an example of a group of "proto-words", prepared for the procedure of semantic reconstruction. This is the comparison of two fragments of Proto-Indo-European and Proto-Altaic systems of landscape terms.[4]

Landscape

Indo-European	Altaic
"Earth as place" — "earth as soil" PIH **dg'hom/*dg'hem* 'earth, soil, territory, earth surface': Hitt. *tēkan* 'territory, soil, earth surface', *dagan, tagan* 'down, to the earth', HLuw *takamia* 'Erde', Luw. *tijammi* id.; OInd. *kṣā́ḥ*, gen. *jmáḥ, kṣmáḥ* 'earth, soil, habitation place', Avesta *zō*, gen. *zəmo*, acc. *ząm*, loc. *zəmi* 'earth, soil, territory'; Grk. χθών, -ονός f. 'earth, soil, country', Slavic **zem-jā́; *zem-ъ* 'earth, soil, country'; Baltic **žem-ijā̃* f. 'earth, soil, country, world'; Latin *hum-us, -ī/-ūs* f. (/m.) 'soil', *humilis* 'low'; Tokhar A *tkaṃ*, B *keṃ* 'soil, country, earth surface'. WP I 662, Pok. 414–416, WH I 654, Buck 16, Kloekhorst 858–862, Adams 192, MA 174. # ? Nostr. **DVG-* 'earth', PA **tˊā́go*, Kart **diq-*, Drav **TūK-* МССНЯ 342, ОСНЯ 1, 220.	**"Earth as place"** PA **nālV* 'earth, country': PT **jalaŋ* 'open treeless place, steppe, glade'; PNM **nalai* 'wide, vast'; PTM **nā* 'earth, dry land, field'; Kor. **nàrá(h)* 'country'. # Nostr.: Dr. **nēl-* 'earth' (DED 2913). PA (East) **miotˊì* 'earth, dry land': Kor. **mut* 'dry land'; PJa. **mita* (~ *-u-*) 'earth'. PA (West) **ńer-(k)a* 'earth, floor': PT **jęr* 'earth as world, earth surface, territorium'; PNM **žirgi* 'litter of grass or leaves; doormat'; PNTM **ńerke* 'earth, world; place under the hearth'. PA **múgda* 'earth; place': PCT **bodun* 'people'; PM **mužǐ* 'territory, province'; PTM **megdī* / **mugdī* 'step precipitous bank'; Kor. **màt(h)* 'place, enclosed place,

[4] For a detailed overview of problems usually encountered in the semantic reconstruction of landscape terms, see Толстой 1969, Невская 1977.

The illustrative external cognates are adduced according to references; if any reference lacks, the comparison originates from the Nostratic database made within the *Tower of Babel* project, mostly by S. A. Starostin, G. S. Starostin, S. L. Nikolaev and me. See http://starling.rinet.ru/cgi-bin/main.cgi?root=config&morpho=0

Indo-European	Altaic
PIH **wedn-/*udn-* ‘earth, soil, territory’: Hitt. *utne-* n. ‘country, village’; Armenian *getin* ‘soil’ Martirosian 2006; Grk. (?) οὖδας, -εος n. ‘soil, earth surface’; ἔδα-φος (**wedn̥-*) n. ‘floor, soil, earth surface’ WP I 254, Buck 17–18, Beekes 373. PIE (Celt-Ital) **tēres-* ‘earth, soil, territory’: Latin *terra* f. ‘earth, soil, country, world’, *terrestris, -e* ‘placed on the earth’, *terrēnus, -a* ‘earthen’; Oskish *teer*[*úm*], *terúm* ‘territorium’, *teras* ‘terrae’; Celtic **tēros-, *tēres-* ? > OIrish *tīr* n. ‘district’; Breton *tir* ‘earth, dry land, soil, country, world’ WP I 737, WH II 636, 694, Pok. 1078–1079 (derived from **ters-* ‘trocknen’). # Nostr **ṭVr’V* ‘earth, dust’, PA **tˊōr’e* ‘soil, dust’, Kart **mṭwe*[*r*]-. PIE **mag(’)h-* ‘earth, soil, place’: OInd. *mahī́* f. ‘world, soil’; Celtic **mag-* > Gallic *Arganto-magus*; OIrish *mag* ‘plain earth, unworked field’; Cymr. *mā* ‘place’ WP II 257, Pok. 709. # Nostr. **magV* ‘earth’, PA **mūgda*, (?) Ur **maɣe*. МССНЯ 342. PIE **tolH-/*telH-/*tl̥H-*(*m*)*on* ‘earth, soil, plain place’: OInd. *talima-* n. ‘building yard)’; Armenian *thaṙ* ‘place, district’, *thaṙar* ‘earthen’; Slavic **tъlo*, Baltic **tal-u-* c. ‘floor, bottom, lower part’ (OLith. *Patulas* ‘Gott des unterirdischen Reiches’, Lith. *tìlės* f. pl. “wooden decking on the bottom of a boat”; OPrus *talus* ‘Fussboden des Zimmers’ V. 207; *Patollus* or *Potollos* ‘Gott des unterirdischen Reiches’); Latin *tellūs,* gen. *-ūris* f. ‘earth, dry land, soil, country, world’; Celtic OIrish *talam,* gen. *talman* ‘soil, earth surface, territory’ WP I 740, Pok. 1061, MA 174. # Nostr. **ṭalV* ‘level ground’, PA **tˊāle* МССНЯ 355.	yard’; PJa. **mátì* ‘street, quarter’. # ? Ur. **mäke* ‘hill’ (МССНЯ 371).
“Bad earth” ? PIE (Eur.) **māk(’)-* ‘sandy soil, marsh’: Germanic **mōx-a-* m. ‘sandy soil’, Celtic **m*[*ā*]*k-ni-* > OIrish *mōin* ‘marsh, peatbog’; OIrish *macha* ‘plain earth’ WP II 226 (“unsicher”). Differently in Pok. 699–700. # Nostr. **mVKV* ‘hill, bank’, Ur. **mäke* МССНЯ 371.	**“Earth as soil” — “bad earth” (“sand”, “marsh”, “salt marsh”)** PA **tˊṓŕe* ‘earth, soil, dust’: PCT **tōř* ‘dust’ (OT *üzä tuman turdı, asra toz turdı* “The fog was hanging above, The dust was rising below”); PNM **tor-tag* ‘soot, flying dust’; PTung **turV* ‘earth as soil, territory, world’; Kor. **tɨ̀rɨ́* ‘field, steppe’, PJa. **tə̀rə* ‘dirt’. PA **si̯áŕi* ‘earth, sand; marsh’: PT **siař* ‘(salt) marsh’; PM **siraɣu* ‘soil, dust’; PTM **siru-* ‘sand’; Kor. **hə̀rk* ‘earth as soil’; PJa. **situ* ‘marshland, fen, swampy soil’. PA **mā́ro* ‘sand, cobble-stone soil, marsh’: PT **bōr* ‘soil, clay, chalk’; PNM **mara-* ‘salt marsh’; PNTung **mar-* ‘moor, marsh’; Kor. **mòr*(*ŋ*)*ái* ‘sand’, *màmə̆rə̆-* ‘coarse, cobble-stone soil’; PJa. **mana-n-kua* ‘sand’. PA (West) **ki̯umo* ‘sand, earth’: PT **Kum* ‘sand’; PM **kumaki* ‘earth as soil; powders’; PTung **küme* ‘seashore, beach; barrow’. PA (West) **ki̯ažurV* ‘sand, salt marsh, earth’: PT **Kaji̯r* ‘sandy, mellow soil; soil; pebble; pebbly; salt marsh’; PM **kužir* ‘salt marsh’; PNTung **kužur-* ‘to cover with ground; to bury’.

Indo-European	Altaic
	PA (West) **tʻapʻo(rV)* ‘earth as soil, dust’: PT **topra-k* ‘earth as soil’; PM **toɣur-* ‘soil; dust’; PTung **tap-* ‘clay; to soil’.
“Sand — pebble” (+ “sandbank, beach”) PIE **k(’)ag(’)hl-* ‘pebble’: Grk. κάχληξ, -ηκος ‘Stein, Kiesel’ m. ‘pebble in river-bed’; Germanic **xagl-a-* m., n. ‘hail’ WP I 338, Pok. 518. PIE (Eur.) ** ǵ’eis-* ‘gravel, sand’: Baltic **žeīs-r-â̂* f., *-a-* c., **žis-r-a-* c. ‘gravel, coarse sand’; Germanic **kís-a-* m., n., **kís-il-a-* m. ‘gravel, sand’ WP I 553, Pok. 356. # Nostr. **ḳwižwV* ‘sand’: Alt. **kiažurV* ‘sand, steppe, earth’ EDAL 693–694; Ur. **kOčV* ‘Sand; sandige Stelle’ UEW 226; Kart. Georg. *ḳenč-* ‘pebble’ (cf. Georg. *kviša*, Svan. *kwiše* ‘sand’ ?); Drav. SDr **kesaṛ-* (**-i-*) ‘mud, mire’ DED 2020. Blažek 1992 135; ND 954, 990a, 1103; A. Dybo 2005. PIE (GA) **k’ork-/*k’ṛk-* ‘pebble’: OInd. *śarkara-* m., *śárkarā* f. ‘pebble, gravel; granulated sugar’; Grk. κϱόκη, κϱοκάλη f. ‘smoothed pebble on a seacoast’ WP I 463, Pok. 615, Buck 51, MA 547.[5] PIH **pē(n)s-* ‘sand, pebble’: Hitt. *passila-* c. ‘pebble’, (?) *passu-*, *pissu-* ‘stone block’; OInd. *pāṁsú-* m., *pāṁsuka-* n. ‘sand, dust’; Avesta *pąsnu-* ‘dust, sand’; Slavic **pēs-ъkъ* ‘sand’ WP II 68, Pok. 824 (deriv. from **pēs-* ‘blasen’; this could explain sporadic nasalisation but is not quite satisfactory from the semantic point of view), Kloekhorst 650, 652, MA 499. ? PIE **psabh-* ‘sand, pebble’: Grk. ψάμμο-ϛ f. (/m.), ψάμμ-η f. ‘sand’, ψῆφο-ϛ f. ‘pebble’; Latin *sabulum, -ī* n. ‘sand, pebble’, *sabulō, -ōnis* m. ‘coarse-grained sand, gravel’ WH II 458. Differently in Pok. 145–146, MA 499. ? PIE **samHdh-* ‘sand’: Armenian *awaz* ‘sand’; Grk. ἄμαθο-ϛ f. ‘sand’; Germanic *samd-a- m., f. ‘sand’ Frisk I 84, Buck 1.215. Differently in Pok. 145–146, MA 499.	**“Sand — pebble” (+ “sandbank, beach”)** PA (East) **žajkʻV* ‘pebble’: PTM **žaxar(a)* ‘pebble’; Kor. **čjàkà-* ‘pebble; mother-of-pearl’. PA **sájV* ‘pebble; shallow place’: PT **saj* ‘ shallow place with pebbles; arroyo with pebbles; wadi; river’; PNM **sajir* ‘river-bed, pebble’; PTung **saj-* ‘sandy mound’; Kor. **sǎi-m* ‘spring, shallow well’; PJa. **sái* ‘sandbank’. PA **ál’i* ‘sand, clay’: PT **aλu* > PCT **ašu* ‘red clay’, PM **ele(r)-sü* ‘sand, pebble’; PTung **al-* ‘dirt; bight’; PJa. **ísá-*, **ísuá* ‘shore, coast’. PA (East) **iŋu* ‘sandbank’: PTM **(x)iŋā* ‘sand or pebble on the riverbank, sandbank; spit’; Kor. **jə̄* ‘reef, rock in a sea’; PJa. **ía* ‘bay’.
“Ore” PIE **woHr-/*owHr-* ‘ore, ore-bearing soil’: OInd. *vālukā-* f. ‘sand’, Germanic **aur-a-* n., m.; **ūr-a-* n. ‘iron sand, ore’ Orel 437; Latin *urium, -ī* n. ‘gob’; Celtic OIrish *ūr* ‘earth, clay’; Tokhar A *wāryāñc*, B *warañce* ‘sand, gold dust’ Adams 578, differently Mayr. EWA 2, 547.	
Many names for different types of stones: [6] PIH **h₂ek(’)h₂-mon,*kā-mon* (< **keh₂-mon-*) ‘stone, rock’: Hitt. *aku-* c. ‘stone’, *akuwant-* ‘stony’; OInd. *áśman-* ‘stone, rock; firmament, cloud’; Avesta *asman-* ‘stone, sky’, OPers. *asman-* ‘sky’, Grk. ἄκμων, — ονος m. ‘an-	**A single name for stone:** PA **tị̊ól’i* ‘stone’: PT **diāl’* ‘stone’; PM **čilaɣu* ‘stone’; PTung **žola* ‘stone’; Kor. **tōrh* ‘stone’; PJa. **(d)ísì* ‘stone’.

[5] According to MA, the argument against the IE origin in this and many other cases is that “there are comparable forms in non-IE languages, so this is probably a substrate word”. Naturally, without any specific hypotheses that speak strongly in favor of borrowing, this argument does not need to be taken into consideration.

[6] See also MA 547–548.

Indo-European	Altaic
vil', Slavic **kāmy*, gen. *-ene*, Baltic **ak-mõ* (**ak-men-es*) 'stone'; Germanic **xam-ar-a-* m.; **xam-al-; *xum-Vl-* 'stone, rock, hammer'; Celtic Gallic *acaunum* 'rock, cliff, lump, block'. WP I 28, Pok. 18–22. The variability of reflexations could be caused by the contamination of two stems, presumably **akmon/r-* 'stone'[7] and **k'em-er/n-* 'sky, cloud' (cf. Hitt. *kammara-* c. 'Wolke, Dunst, Qualm, Rauch' Tischler 472–473, Germ. **xim-in-a-, *xim-il-a-* m., Celt. Gael. *cwmwl*, Bret. *koumoul*, Corn. *comol* 'cloud' — here rather than borrowed < Lat. *cumulus* 'heap' [Differently in Pok.]).	
PIE **glewH-* 'round stone, lump': OInd. *glau-* m. 'round lump'; ? Slavic **gly-b-ā* 'lump'; Germanic **kliuw-an-* m., n., *-ō(n-)* f.; **klunj-a-* n. 'round stone'; Celtic OIrish *glō-snathe, glao-snathe* 'plummet'. WP I 612, Pok. 363 (sub **gel-* 'round').	
? PIE **twr̥d-/*tword-* 'hard stone, quartz; hard as quartz': Grk. σάρδιο-ν n. 'name of a precious stone, jewel', 'Sarder, Karneol'; Slavic **tvъrdъ(jъ)* 'hard'; ? Baltic > Lith. *tvìrta-s* 'fest, stark, hart' (acute because of Winter's law; *-t*-secondarily), Germanic **[ð]wart-* 'quartz' WP I 747 (differently in Фасмер and Pok. 1101, Beekes 1308 (derived from Σάρδεις)).	
? PIE **k'eHil-* 'stone, rock, stone flag': OInd. *śilā́* f. 'stone, rock, cliff'; Armenian *sal* 'stone flag, anvil' WP I 454, Pok. 541–542 (from *k'ē(i)- : k'ō(i)- : k'ə(i)-* 'to sharpen'), Mayr. EWA 2, 640 ("Nicht aufgeklärt"). # Nostr. **ḳElV* 'stone', Kart **ḳl-*, Drav **kaḷ-*.	
PIE **lep-* 'stone, rock': Grk. λέπας n. 'nude rock, cliff', λεπᾶιο- 'rocky, cliffy'; Latin *lapis*, gen. *-idis* m. (/f.) 'stone, jevel' (< **l̥p-ed-s*), Umbric abl. *vapeře* 'throne' WP II 431, WH I 761, Pok. 678, Beekes 848 ("Mediterannean borrowing").	
PIE **Hond-/*Hn̥d-* 'stone, rock': OInd. *ádri-* m. 'stone, rock, mountain'; Celtic **ondes-*: MIrish *ond, onn*, gen. *uinde* 'stone, rock' Pok. 778, Mayr. EWA I 165, MA 547.	
PIE **pels-/*pl̥s-* 'stone, rock': OInd. *pāṣāṇa-* m., *pāṣī* f., *pāṣyà-* n. 'stone, rock'; Iranian Pashto *paršá* 'stone, rock'; Grk. πέλλα f. 'stone'; Germanic **filz-á-* n., **filís-a-; *fulVs-* 'rock'; Celtic **pl̥so-* > OIrish *all*, gen. *alle* 'rock, cliff' Pok. 807, MA 548, Mayr. EWA 2, 125, Beekes 1168 ("Pre-Greek").	
PIE **steh₂i-(n-)* 'stone, pebble': Grk. στία f., στῖον n. 'pebble'; Slavic **stēnā* 'stone, rock, wall'; Germanic **stain-a-* m. 'stone'. WP II 610 f., Pok. 1010–1011 (as deriv. from *stāi-* 'to condense, press together', which is semantically unlikely), Beekes 1405.	
PIE **g'hwerzd-, *g'herzdw-* 'sharp stone, gravel': Avest. *zaršťva-* n. 'stone'; Grk. χέρσος (att. χέρρος) f. 'Festland',	

[7] The rule of regular depalatalization before resonants in Balt. and Slav. (MA 547) does not work, cf. Slav. **ostrъ* < **os-r-*, Balt. **ač-r-u-* id., Lith. *šlãpia-* 'nass, feucht' etc.

Indo-European	Altaic
Slavic **gvъrstā, *gvъrstъ, *žьrstvā, *grъstvā*, Baltic **žwiřždа-* c., *-ia-* c., *-iā-* f. 'gravel'; Latin pl. *herna*, gen. *-ōrum* 'stones, rocks' (**g'hers-no-*; sabin. nach Serv. Aen.) WH I 643, Beekes 1626, Fraenkel 1328, Pok. 445–446 (as deriv. from **g'her-* 'starren', which is semantically unlikely). PIE **leh₁w-* (*lēu-* : *ləu-* Pok.**)** 'stone': Gr. hom. λᾶας, Gen. λᾶος 'Stein' (Ausgleichung von ursprüngl. *λῆϝας; λᾰ̔ϝα[σ]ος n.), att. λᾶας und λᾶς m., Gen. λᾶου usw.; hom. λᾶϊγξ, Pl. λᾰ́ϊγγες f. 'Steinchen' (wohl mit Suffixtausch für *λᾶϊγκ-, vgl. kelt. **līu̯ank-*) [Differently by Beekes 817, MA 547: Myc. *ra-e-ja* 'of stone'and Cypr. *la-o-se* show the lack of ϝ]; κραταίλεως 'hartfelsig' (*-ληϝος); att. λεύω 'steinige' (ἐλεύσθην), λευστήρ 'Steiniger' (aus *ληυσ-, idg. **lēus-*); ablaut. (**ləus-*) λαυστήρ m. 'Steinarbeiter' > 'mühselig, elend, mit Steinen belegter Hausgang'; neben dem -ας-St. ein -αρ-St. *λᾰ̔ϝαρ als Grundlage von att. λαύρα, ion. λαύρη 'in Fels gehauener Weg, Gasse', λαῦρον · μέταλλον ἀργύρου παρὰ Ἀθηναίοις Hes., Berg Name Λαύρεον; Alb. *lerë*, *-a* 'Gestein, Felssturz' (**lău̯ₑrā*), Celt. **līu̯ank-*, < PIE. **lēu̯ank-* 'stone'. WP II 405, Pok. 683, Matasović 242 (**leh₁u-s*, Gen. **lh₁w-os*).	
Flat part of relief: "plain earth" — "uncultivated earth" — "free space"[8] PIE (Eur.) **k(')aito-* 'forest, uncultivated earth, pasture': Germanic **xáiϑ-i-z* f. 'uncultivated earth, pasture' Orel 154; Latin *bū-cētum* '(cow) pasture'; Celtic **kayto-* 'wood'. WP I 328 f, Buck 47, Pok. 521, Matasović 198. PIE (Eur.) **londh-/*lṇdh-* 'free land, heath, steppe': Slavic **lę́da, *lę́do, *lędjā* 'waste ground, clearing overgrown with trees'; Baltic **lind-a-* n. 'valley'; Germanic **land-a-* n.; 'place, field' Orel 235; Celtic **landā* 'open land, pasture, steppe' WP II 438, Pok. 675, Trautmann 157 (from *lendh-* 'Lende; Niere', semantically unlikely), Matasović 232. PIE **wen-/*wn̥-* 'outside, forest, field': OInd. *vána-* n. 'forest, tree'; Avesta *vanā-* 'tree', MPers. *van*, NPers. *bun* 'tree'; Slavic **vъnъ* 'outside'; Germanic **win-jō* f., **wun-jō* f. 'meadow' WP I 258 (differently in Pok. 1146–1147). PIE **ghaw-* 'space around the village, waste land': Arm. *gavarr* 'Landstrich, Gegend'; Grk. χάος, -εος/-ους n. 'unbeschränkter Raum, Luftraum; weite Kluft, Schlund'; 'Chaos'; Germ. **gau-ja-* n., *-jō* f., *-jan-* m. 'country, environment' Orel 128. WP I 465, Pok. 449 (as deriv. from *ĝhēu-* : *ĝhō(u)-* : *ĝhəu-* 'to yawn, gape' which is sem. unlikely). # Nostr. PA **kébà(rV)* 'field, steppe' 749.	**Flat part of relief: hilly steppe. "Plain earth" — "steppe" — "eminence"** PA **kéba(rV)* 'field, steppe': PM **keɣere* 'open field, steppe, waste ground; taiga; wlderness'; PNTung **keber-* 'meadow, tundra, plain earth'; PJa. **kápí* 'a valley between mountains' PA (West) **č'oli* 'steppe': PCT **čöl* 'desert, steppe, plain earth (as opposition to *qol* 'valley' and *dāg* 'mountain'); PNM **čoli-d* 'region dotted with lakelets'; PTM **čulbi-* 'hill, mound'. PA (West) **kʻiə̀re* 'plateau steppe, eminence': PT **Kïr* 'plateau, eminence, hilly steppe, desert; a single mountain; mountain top; plain earth; edge, bank'; PM **kira* 'mountain ridge'; PTung **xiāri-* 'talus, precipice' **"Plain earth" — "open space" — "unpopulated space"** PA **biogo* 'place, open place': PNM **buji-* 'far off, unpopulated (place)'; PTM **biga* 'field, steppe', PJa. **pía* 'room, place; surroundings'. PA **pʻə̀là* 'plain earth': PT **(h)ala-ŋ* 'open place, glade, meadow, plain earth, hills on the plain'; PTM **pāla-n* 'glade, plain place; floor'; Kor. **pàr(h)-* 'fields, meadows'; PJa. **pàrà* 'field, plain earth, steppe'.

[8] PIE **rowə-* 'to open' > 'free space, plain earth': Avesta *ravah-* 'space, room', *ravas-čarāt-* 'free'; Germanic **rūm-a-* m., **raum-a-* m. 'space, room'; Latin *rūs, rūris* 'country, village, field'; Celtic OIrish *rōe, rōi* 'plain field' (**rowesiā*), *rē* 'space, room' (**rēwiā*); Tokhar A, B *ru-* 'to open'. WP II 356 f., WH II 454, Pok. 874 — this is apparently a group of separate derivatives.

Indo-European	Altaic
PIE **pol-/*pel-/*pl̥-* 'field, plain earth': Armenian *hoł* 'soil, earth, field'; Slavic **pol-j-e; *pol-n-īnā* 'field; waste ground'; Germanic **fel-đ-a- n., m.* Orel 97, **ful-đ-ō(n-) f.*, Orel 117 'plain earth, field, pasture', **fal-ōn- f.* (> OSwed *fala* 'Ebene, bes. baumlose; Heide') WP II 61; Pok. 805–807 (together with *pelə-, plā-* 'wide, plain'; but these reflexes have no traces of *-H-). # Nostr. PA **pʹālà* 'field, level ground', Drav. **paḷ-* 'plain, valley'.	PA (West) **tʹāle* 'open place': PM **tala* 'steppe, open place'; PTM **tālgi-* 'far from the shore, open sea; quiet sea surface' # МССНЯ 355 (PIE **telə-*).
PIE **dhon-(w-)* 'plain earth, wild place': Ind. *dhánus-* n., *dhánvan-* m., n. 'desert, arid land'; *dhánu-, dhanū-* f. 'sandbank, sandy shore'; Germ. **đan-jō* f., **đan-ja-* n., etc. 'den, forest dale'; VLat. *danea* 'area'. WP I 853, Pok. 249 (together with *dhen-* 'surface of hand').	
Valley	**Valley**
PIH **Har-* 'valley, vale, dale; grotto; swamp': Hitt. *hari-* c. 'valley'; Armenian *ayr* 'Spelunke, Grotte'; Baltic **ar-mõ̃* (*-men-*) c. 'swamp, marsh'. Tischler 172–173.	PA **goblu* 'valley': PCT **Kōl* 'river valley; ravine'; PM **gowl* 'river, river valley; center'; PManch **gola* 'middle of river bed, valley between mountains'; Kor. **kōr* 'valley'; PJa. **kura* 'deep valley'
PIE **ank(')o-* 'meadow, valley' Grk. *ἄγκος* n. 'Bergschlucht, Felsental'; Germanic **ang-iō* f.; **ang-ia-* n.; **ang-r-a-* m. 'meadow' Orel 19. WP I 60 f, Buck 28.P I 60, Pok. 45–47 (sub *ank-, ang-* 'to bow').	
PIE **dholo-s*: Iranian **dara- / darna-* 'ravine, valley', Celtic **dolā* 'meadow, dale' (Wels *dōl* 'valley, meadow'), Germ. **dal-a-* n., m., **dōl-, *dalj-a-* m., n., **dal-jō(n-)*, ? **dil-jō(n-)* f. (ON *dalr* 'valley', NE *dale*, OHG *tal*, Goth *dals*, Eng *dell* (**dhol-yo-*), Slav. **dolъ* (**dhol-u-*) 'valley, under side', WP I 864, Pok. 245–246, MA 618, ЭСИЯ II 344–345, Beekes 551, Matasović 103.	
PIE **lonko/ā-*: Baltic **lanka* (Lith. *lankà* 'valley, river-meadow', Lett. *lañka* 'low long flatland'), Slavic **lǫka* 'gulf, valley, meadow, marsh', Preromanian (Celt.?) **lankā* 'depression, bed of a river' (< **lonkā*), Tocharian B *lenke* 'valley; cleft'. WP II 435, Trautmann 159, Pok. 676–677, Adams 3043, MA 618.	
Meadow	
PIE (Eur.) **wongh-* 'meadow, field': Baltic **wang-u-* c., **wang-ậ̂* f., **wanĝ-īt-iã̄* 'meadow, field' (OLith. *vanga* 'Acker', Lett. *uôdzīte* 'kleiner Bach; sumpfige Stelle im Wald', OPrus. Wangus 'Dammerau'; Kur. > Lett. *vañga* 'feuchte Wiese mit hohem Gras'); Germanic **wang-a-* m. 'meadow, field' Pok. 1149 (Germ., sub *u̯e-n-gh-* 'to be bent').	
PIE (Celt-Ital) **prāt-* 'meadow, hillock': Lat. *prātum, -ī* n. 'Wiese', Celt. **rāt-* > MIr *rāth, rāith* f. 'Erdwand, Erdbank'; MCymr. *bed-rawt* 'Grabhügel, Grab', Cymr. *beddrod* m. 'Grabhügel, Grab', Bret. *bez-ret* 'Begräbnisplatz, Friedhof'. WH II 358.	
PIE **louk-* 'woodless field, lawn, glade': OInd. *loká-* m. 'free, open space, world, place'; Baltic **lauk-a-* m.	

Indo-European	Altaic
‘field; woodless place in a forest’; Germanic **láux-ō* / **laug-ṓ* f. ‘lawn, glade’; Latin *lūcus, -ī* m. ‘sacred grove’, Oskish *lúvkeí* ‘in lūcō’, ? Tokh. A *lok,* B *lauke* ‘far’ WP II 408, WH I 828; Pok. 687–690 (sub *leuk-* ‘to shine’). PIE **poyHw-ā* ‘meadow’: Grk. att. πόα, ep.-ion. ποίη, dor. ποία ‘Gras, Kraut, Rasenplatz’, aus *ποιϜᾱ́; Balt. **pṓywā* > Lith. *píeva* (1) f. ‘meadow’ WP II 72, Pok. 793–794 (sub *peiə̯(ə)-, pī̆-* ‘fat, milk’), Beekes 1214. # To IE **pōi-*, Nostr **ṗVńV* ‘to graze’ МССНЯ 354, ОСНЯ 3, 106–111.	

If we interpret the variability of the meanings as polysemy within a language family, certain definite differences between Altaic and Indo-European may be observed. Thus, it appears that the type of polysemy that is quite familiar for us (“earth as place” — “earth as soil”) is characteristic of Indo-European languages, but significantly less so for the Altaic languages, where the meaning “earth as soil” is often connected with such meanings as “bad soil”, “marsh”, “sand”, “salt marsh”. On the other hand, the Altaic languages have another series of words meaning “sand”, related to the meanings “pebbles” and “shallow place”, and this word group has an exact semantic analog in the Indo-European languages. While there is only one name for “stone” in the Altaic languages, we find many names for different types of stones in Indo-European (which brings to mind the well-known story about the lack of a general name for “snow” in Eskimo and the diversity of specific names for different types of snow). Almost obligatorily figuring among the meanings related to the sense of “flat place, plain” in various Altaic groups is the meaning “hill, mound, mountain” — something that would be quite atypical of Indo-European languages. Common words meaning “meadow” as a clearing inside a wood exist in PIE but are absent in PA. This means that the ideas of the corresponding landscape objects must have been significantly different for speakers of Proto-Altaic and Proto-Indo-European.

Let us now try to demonstrate, as completely as possible, the sets of landscape terms that are reconstructible for PIE and for PA.

Mountainous terrain

Indo-European	Altaic
Mountains PIE **gʷh₁r- /*gʷh₁or-* ‘mountain’: PIIr **gəri-*, Ind. *girí-* m. ‘mountain’, PIran. **gari-* ‘Berg’, Grk. δειράς, -άδος, kret. δηράς f. ‘Anhöhe, Bergrücken’ (Hes.), δειρά ‘mountain range’ (Pind.) (< **gʷh₁r-ya-*); βορέᾱς ‘Nordwind’ (< **gʷh₁or-*), Alb. *gur* ‘Felsen, Stein’ (**gʷₑri-*); Slav. **gorā* (**gʷər-ā*) ‘mountain > mountain forest’, Balt. **gur-a-* > Lith. *gùra-s* ‘Bergvorsprung’, **gir-ja* ‘forest, tree’ WP I 682, Pok. 477–478, Buck 25, 48, MA 270, Beekes 227, 311, ЭСИЯ III, 191–192. # Nostr. **gʷVrV* ‘mountain, hill’, PA **kʹuri*, Ur **kur₃*, Kart **gora*, Drav **kuṛ-* (**-ḍ-*). Старостин 2007, 804. ? PIE **mon-(ti-)* ‘mountain’: PIran. **mn̥ti-* > Av. *mati* ‘Vorsprung des Gebirgs’, Ital. > Lat *mōns, -tis* m. ‘Berg,	**Cliffs** PA (West) **kadV* ‘rock’: PCT **K(i)aja* ‘rock’; PM **kada* ‘rock’; PTM **kada-* ‘rock’. PA (West) **bajV* ‘rock’: PCT **bAjɨr* ‘hill, foot-hill; outness’; PNM **baji-ča* ‘rock’; PNTung **baj-* ‘rock, cliff’ PA (East) **pʹākʹo* ‘rock, cliff’: PSTung **pākta* ‘hill, mound; precipice; sand bank’; ? PKor **pàhói* ‘rock’; PJa **pəki* ‘steep rock’. **Hills, slopes** PA **túјpè* ‘top of a mountain’: PT **dẹpö* ‘hill, top’; PM **dobu* / **dõbe* ‘hill’; PTM **düj-* (~ **düb-*) ‘shore; mountain top; taiga region’; PJa. **(d)ípà* ‘rock, cliff’.

Indo-European	Altaic
Gebirge', Celt. **monijo-* > OIr *-monid*; Cymr *mynydd*, Corn *meneth*, Bret *menez* 'Berg' WP II 263, Pok. 726 (sub **men-* 'to tower'), MA 270, Matasović 277. PIH **peru-*(*n-*) 'mountain top': Hitt. *peru-na-* (*piruna-*) c. 'Fels' (Friedrich 167), *perunant-* 'rocky', *pirwa-* 'bestimmte Art von Felsen (auch als Gottheiten)' (Friedrich 170); Ind. *párvata-* m., *parvatí-*, *parvatī́* f. 'mountain, hill, rock'; *paru-* m. 'mountain', Av. *paurvatā-* 'mountain'; Tokh. ? A *pāreṃ* 'rock, stone'. MA 547. # Nostr. **pVrV* 'mountain, top', PA **pʹőre* 'top, mountain top', Kart Georg. prialo 'step rock', Drav **par-* 'pebble, gravel'; **pāṛ-* 'rock, stone slab'. PIE (Eur.) **kaln-* 'narrow passage': Slav. **koln-ьcь* 'ravine, narrow passage between mountains'; Lat. *callis, -is* m. 'schmaler Bergpfad, Triftweg, Gebirgstriften'. WP I 356, WH I 140, Pok. 524, ЭССЯ 10, 140. PIE **geHup-*/**gHup-* 'cave, den, mines': Grk. γῡ́πη f. 'den, vulture's nest' (Hes.), Slav. **žúpa* 'salt mine; grave'; Germ. **kuf-ēn-*/**kōf-ēn-* m. 'cove, cave' Orel 222. WP I 555, Фасмер 2, 65–66, Beekes 292 ("European substrate words"). # Nostr **kopʹa* 'hole, empty', PA **kóbú* 'hollow, cavity', Ur **koppa*, Kart **kwab-*. ОСНЯ 1, 232–233, МССНЯ 358. PIH **kolHn-*, **kolHm-* 'top, hill, rock': Hitt. *kalmara-*, Luw. *kalmaha-* 'Berg'; Grk. κολωνός m., κολώνη f. 'Hügel, Anhöhe, Stein-, Grabhügel'; ? κολοφών m. 'Gipfel, Spitze, Höhepunkt' statt *κολαφών auf Grund eines **kolo̯n-bho-s*)'; Balt. **kal̂n-a-* (2) c., **kal̂w-â* (1) f. 'mountain'; Germ. **xall-u-* c., **xull-i-* c.; **xulm-a-* m., *-an-* m. 'stone, rock' Orel 157; Ital. Lat *collis, -is*, abl. *colle*/*collī* m. 'Hügel, Anhöhe'; *columen*, (jünger) *culmen, -inis* n. 'Höhepunkt, Gipfel, First' [Celt. **klukā*: OIr., Ir., Gael. *cloch* 'stone, rock', — non-IE borrowing in Matasović 210]. WP I 433, WH I 197, Pok. 544, Buck 23–24, Beekes 742, MA 270 (as deriv. from **kelh₁-* 'rise, stand'). **Hills, slopes** ? PIE (PGA) **tungʷ-* 'hillock': Ind. *tuṅga-* m. 'elevation, height, mountain'; *tuṅga-* 'prominent, lofty, high' Mayr. KEWA 1, 508 ("Nicht überzeugend erklärt"); Grk. τύμβο-ς m. 'mound, burial mound, grave' Beekes 1517 ("Pre-Greek/Mediterannean word" because of Corcyr. τῡμος). WP I 706. Or Greek = Lat. *tumulus* 'earth-hill', Arm. *tʹumb* 'landfill, earthen wall', Celt. **tumbo-* 'excrescence, hill' (Matasović 394); if so, PIE **tum-bh-*, not related with Ind. See Pok. 1072 (all from **teHw-* 'to swell'). PIE **k*(')*onHm-*/*k*(')*neHm-* 'slope, mountain forest': Grk. κνημό-ς m. 'Berghang, Bergvorspur, Bergwald' Beekes 723; Germ. **xamm-a-* m. 'mountain forest, fenced land' WP I 460, Pok. 613–614.	PA (East) **tìdu* 'elevation': PTM **dīdü* (~ *ǯ-*) 'mountain ridge'; PKor **tùtán* 'hill, elevation'; PJa. **tùtùmí* 'dike'. PA (West) **diőn*(*š*)*e* 'slope, bank': (?) PT **jān* 'side', PNM **denǯi* 'terrace (between the steppe and the river bank)', PTung **dunse* 'dry land, coast; wood, taiga'. PA (East) **anta*(*gV*) 'hill, slope': PTM **antaga* 'slope of a mountain'; PKor **ənt*ə*k*(*h*) 'hill'; PJa. **antuma* 'East' # PIE **ant-* (МССНЯ 354). PA *biòsá-gV* 'woodless mountain slope': CT **basɨg* 'field'; PNTung **bosoga* 'northern slope'; PJa **bàsái* 'early rice'. PA **biuge* 'slope, hill': ? PT > Oghuz **bögür* 'mountain slope'; PNM **böγerüg* 'mountain slopes, hill'; PTung **buga*(*n*) 'hill, mound'; ? PKor **pàhói* 'rock'; PJa **bə* 'hill, hillock'. PA **kʹuri* 'hill, cliff': PCT **Korum* 'rock, cliff, heap of stones'; PNM **kür* 'precipice, rock'; PTM **xurē* 'mountain, rock'; PKor **kòráŋ* 'embankment, boundary'; PJa **kùrùa* 'dike, boundary'. # PIE **gʷer-* (WP 1, 682). PA (West) **sira* 'hill, high mountain': PT **sɨrt* 'mountain ridge'; PNM **siro-* 'rock, high mountain'; PTung **sirk-* 'small hillock, cape'. PA **úkʹè* 'hill': PNM **(h)ukaγa* 'hill'; PTM **(x)uKu-* 'hill'; PJa **bə́ká* 'hill'. PA (West) **i̯ű́ńa* 'pit, ravine': PT **ījn* 'pit, lair'; PNM *oni 'defile, gorge'; PSTung **uńi* 'small river, brook'. **To cross mountains** PA **āl'a* 'to cross (a mountain)': PCT **(i)āλ-* 'to cross (a mountain); to surpass'; PM **alu-* 'on the other side; far away'; PTM **ala-* 'to cross (a mountain); mountain pass'; PJa **asu* 'steep bank, precipice'. # PIE **al-* 'other side' (МССНЯ 372, ОСНЯ 1, 274–275). PA **dāpa* 'to cross (a mountain)': PM **daba-* 'cross (a mountain)'; PTM **dāb-* 'to cross (a river)'; PJa **dàmà* 'mountain'.

Indo-European	Altaic
PIE (Eur.) **sledh-* ‘gentle slope, valley’: Balt. **slẽ̂(d)-n-a-, *sled-n-u-* adj., **slê̂(d)-n-iã̂* f. (2), **slê̂(d)-sn-a-* adj. (1), **sle(d)-sn-a-* adj. ‘flat, low (about a terrain); valley’, Germ. **slađan* (n) ‘valley’. Orel 348; Fraenkel 829. PIE **ro(H)y-n-/w-/k-* ‘elevated stripe of land, sand-bank’: Ind. *reṇú-* m. ‘dust, sand’, Iran. **rai-ka-* ‘sand’ (Mayr. EWA 1, 459); ESlav. **rěnъ* ‘Sandbank’ (Vasm. 3, 470); Balt. **roiw-â̂* f., **rīw-â̂* f., *-iã̂* f. (Lith. *rievà* (4) ‘Riff, Steikluft, Fels, Klippe, Hügel’; Lett. *rīve, rīva* ‘erhöhter Streifen’) Fraenkel 692; Germ. **rai-n-a-z* m., **rai-n-ō(n-)* f. ‘boundary, strip of land, ridge’ Orel 296; Celt. **royno-* ‘route, road, mound’ Matasović 316. WP II 343, Pok. 326–332 (sub **er-* : *or-* : *r-* ‘to move’).	

Water landscape

Indo-European	Altaic
Water-meadows, swamps PIE **selo/es-* ‘water-meadow’: Ind. *sáras-* n. ‘lake, pond, pool’ Mayr. EWA 2, 708; Grk. ἕλος n. ‘feuchte Wiese, sumpfige Niederung, Marschland’, ἕλειος ‘palustris’ Beekes 415; Slav. **selò* n. (b) ‘ploughed field; soil, country’ Фасмер 3, 596, Derksen 444 (but not to Lith. *salà* f. 4 ‘island’ etc.!) WP II 507; Pok. 901; MA 370 (+ Wels *heledd* ‘meadow along the river’ < **sel-iyā*). PIE **pa(H)lw-* ‘clay, mud, morass’: Ind. *palvala-* n. ‘pool, small tank, pond’ Mayr. EWA 2, 104; Grk. πηλός Hes., Dor. παλός m. ‘Lehm, Ton, Schlamm, Kot, Morast’ Beekes 1186 (“without convincing etymology”); Balt. **pal-ia-* f. ‘Sumpf, Moor’ Fraenkel 1, 532; Lat. *palūs,* gen. *-ūdis* f. ‘stehendes Wasser, Sumpf, Pfütze’ WH 2, 243 (Alb. *püł* ‘Wald’ borrowed from Balk.-Rom. **padūlem* < Lat. *palūdem*, Orel AlbD 353). WP II 55, Pok. 798–801 (sub **pelə-* ‘full’) # Nostr. **ṗVlV* ‘wash, flow’, PA **pʹőle* ‘wet, succulent; grass, plant’, Ur. **pülkɜ*. ? PIE **īl-u-* ‘silt’ (rather ‘mud’): Grk. ἰλύς, -ύος f. ‘Schlamm, Kott, Morast’ Beekes 589; Slav. **jíl̓ъ* ‘bog, silt, mud’ Derksen 211 (**jьl̓ъ*); Balt. **îl-u-* (1) adj. > Lett. *īls* ‘very dark’. WP I 163, Pok. 499, MA 370–371. # Nostr. **ńēlV* ‘earth’: PA **nālV* ‘earth, land’; Drav. **ńēl-* ‘earth’ (DED 2913). А. Дыбо 2000. PIE (Eur.) **balH-* ‘marsh’: Slav. **bol-nъ-je* n. (a) ‘low meadow’ Derksen 53; Balt. **bal-â̂* f. ‘Morast’ Fraenkel 1, 30, Germ. **pōl-az* ‘pool’ Falk & Torp 151, Orel 293 (Celt. Ir *poll, pull*; Cymr *pwll* < Germ.?). WP II 176 # Nostr. **palV* ‘swamp, marsh’, PA **biălu* ‘dirt, mud’. МССНЯ 331, ОСНЯ 2, 97–98. PIE (Eur.) **bholHt-om* ‘marsh’: Slav. **bólto* n. (a) ‘swamp’ Derksen 53; Balt. OPrus. **balt-an* ‘marsh’ (in	**Water-meadows, swamps** PA **tʹēŋa* ‘lowland’: PCT **tEŋ* ‘pond’; PTM **tēŋ* ‘lowland; wide lake’; PJa **tànì* ‘valley’. PA (West) **nèkù* ‘lowland, water meadow’: PNM **nigu* ‘water-meadow’; PTM **nek-te* ‘lowland’. PA (East) **mūsV* ‘swamp, pond’: PNTung. **mūsa* ‘grassy marsh’; PKor **mós* ‘pond, swamp’. PA **lepu(-nV)* ‘swamp’: PNM **lobku* ‘marshy ground’; PTM **lebē(n)-* ‘swamp, marsh’; PKor **nɨp(h)* ‘swamp, marsh’; PJa **númà* ‘swamp, marsh’. PA **kutʹi* ‘bog, marsh’: PCT **Küte(re)* ‘bog, marsh’; PTM **kuta* ‘bog, pond’; PJa **kutai* ‘bog, marsh’. PA (West?) **tètʹo* ‘swamp, water pool’: PCT **TAdgun* ‘a big river’; PTM **detu* ‘swamp, mossy meadow’; PJa **də(n)tə* ‘backwater’. PA **sɨ̀pe* ‘swamped ground, swamp vegetation’: PNM **siber* ‘swamped forest’; PTM **sībe* ‘horse-tail, swamped ground where it grows’; PJa **símpà* ‘turf’.

Indo-European	Altaic
toponyms, Топоров 1, 189, Mažiulis 1, 132); {Lett. *Balates kalns* 'Sumpfberg' < Slav.}; Germ. **puld-r* m.: ONord. *poll-r* m. 'runde Bucht, Teich', MDutch *polre, polder* m., f. 'polder; dijk'; Dutch *polder* 'Marschland' (> EFris. *polder* 'Marschland') De Vries 427; Alb. *baltë* f. (< **baltā*, NPl neu.), *Balt.* m. 'swamp' (> Rum. *baltă* 'swamp', Middle Greek βάλτος) Orel AlbD 15–16; near can be Illyr. **balta* 'Sumpf', Lat. *blatea* f., 'Kotklümpchen', ODalm. *balta* 'Sumpfsee'. WP II 176, Pok. 118–120 (mixed). PIE (Eur.) **k(')woin-* 'marsh': Germ. **xwain-ō* 'swampy field' Orel 197, **xwin-* id. Falk & Torp 86; Lat. *caenum, -ī* n. 'Schmutz, Schlamm, Kot, Unflat' WH 1, 132; Celt. OIr. *cōennach* 'Moos' WP I 469, Pok. 628 (sub *k'u̯ei-* 'dirt'). PIE (Eur.) **dhong^{w}-* 'bog, marsh': Balt. **dang-ẫ* f. 'bog, marsh' (> Lett. *dañga* 'kotige Pfütze, weiches morastiges Land', length because of Winter's law); Germ. *đank(w)-ō* f., 'bog' Orel 68. WP I 851, Pok. 247–248 (sub **dhemə-* 'to smoke'). PIE (Eur.) **pan-* 'mud, slush, morass': Balt. **pan-iã̄* f. > OPrus. *pannean* 'Moorbruch' Mažiulis 3, 217; Germ. **fan-ja-n* n. 'fen, marsh, mud' Orel 92; Celt. MIr *an* 'Wasser', *enach* 'swamp'; Gaul *anam* 'paludem'. WP II 5, Pok. 807–808, MA 370–371.	**Island** PA **bù̀kʹe* 'tall island': PCT **bük* 'wood/hill/meadow on the river bank'; PM **buka* 'hillock, canal'; PTM **būKa* 'island'; PKor **puk* 'heaping of earth'; ? PJa **bəka* 'hill'. PA **šiumi* 'island; forest': PCT **simek* 'forest on the river bank'; PTung **šumi* 'foreland, shallow place; tussock'; PKor **sjəm* 'island'; PJa **sìmà* 'island'. # Nostr. **swajmV* 'marsh': Ur. FU **śajm₃* 'Vertiefung, Senkung (mit einem Teich od. Bach)' UEW 457. A. Dybo 2005. PA **siumŋu* 'island, shallow place': PNM **sinaɣa-* 'island; bend of river'; PTung **sumŋī* 'tussock (in a swamp)'; PJa **súná* 'sand'.
Shore PIE **aHperos* 'river bank, sea shore': Grk. ἤπειρος, dor. ἄπειρος f. 'Ufer; Festland'; Germ. **ōferaz, *ōferan* 'bank, shore' Orel 290; Arm. *apʹn* 'shore'. WP I 48, Pok. 53, MA 343. ? PIE (GA) **dhisn-* 'sand-hill, dune': Ind. *dhíṣṇya-* m. 'a heap of earth covered with sand on which the fire is placed' Mayr. KEWA 2, 103, Mayr. EWA 1, 792; Grk. θίς, gen. θῑνός (**dhisn-s, *dhisn-os*, see Sihler 216) m./f. 'Haufen; Sandhaufen (am Meere), Düne, Gestade' Beekes 596 ("Without explanation"). WP I 835 f (differently in Pok.). PIE (Eur.) **dhūn-* 'coast, (dry) land': Balt. **dūn-ia-* c., **dũ̄n-iã̄* f. 'silt' Fraenkel 1, 109; Germ. **đūn-ō* f., **đūn-az* m. 'hill, dune' Orel 80. Pok. 263 (sub **dheu-* 'to blow') # Nostr. **dVwnV* 'shore, land', PA **diőna*.	**Shore** PA **bi̯óro* 'bank, rift': PCM **borgija* 'river rift; hill, mound'; PTM **bir*[*u*]*-kan* 'precipice; mountain'; PKor **pìrá* 'bank'. PA **giru* 'shore; road': PT **Kɨrgak* 'shore, edge'; PTM **giri* 'shore, riverbed'; PKor **kírh* 'road'. PA **pʹire* 'bank, steep bank': PM **her-gi* 'steep bank'; PNTung **piri* 'steep (slope, bank)'; PJa **pi*(*n*)*ti-pa* 'bank'. PA **sapʹi* 'shore': PCT **sep* 'duct, river branch, bay'; PSTung **sapsV* 'bank, shore'; PJa **sìpə̀* 'tide'.
Water, wave PIH **weHr-/uHr-* 'water, moisture': Luv. *wār-* 'water' (*wārsa* is a form of nom.-acc. sg.) Melchert CLL 257; Ind. *varī* f. pl. 'streams, rivers'; *vār, vāri* n. 'water'; Avest. *vairi-* m. 'See'; *vār-* 'Regen', Pers. *bārān* 'rain'; Arm. *gayrr* 'Sumpf, Schlamm'; OPrus *wurs* < **ūras* 'Teich' Mažiulis III 271; Germ. **warōn, *waraz* m. 'liquid, water; sea'; Orel 451; Celt. ? MIr *feraim* 'giesse', *ferad* 'Feuchtigkeit'; Cymr *gweren* 'liquamen'; Tokh. **wär* 'Wasser' (Adams 577). WP I 268, Buck 3, 45, Pok. 80, MA 636. Probably it	**Water, wave** PA **miù̀ri* 'water': PM **mören* 'river'; PTM **mū* 'water'; PKor **mír* 'water'; PJa **mí*(*-n-tú*) 'water'. PA (West) **siuba* 'water': PT **sɨb* 'water'; PM **usu* 'water'. # PIE **sew*(*ə*)-, PK **św-* (МССНЯ 341). PA (East) **lắtʹá* 'wave': PSTung **lāta* 'wave, storm'; PJa **nàntá* 'open sea'. PA (West) **čalu* 'wave, to overflow': PCT > Oghuz **dalga* 'wave'; PM **dolgi-ɣan* 'wave'; PNTung **ǯal-* 'to overflow, to wave'. # PIE **sol-* 'to flow'.

Indo-European	Altaic
should be distinguished from ? PIH **HewH-* 'to be wet': Hitt. *heu-* 'Regen' (Tischler 238); *hu-r-nai-/-ija-* (I), *hu-r-nu-* (I) 'besprengen, befeuchten', Pal. *huwarninai* 'besprengt' (Tischler 305–306); Ind. *avaṭá-, avatá-* m. (**ew-n̥-t-*) 'a hole, vacuity in the ground', *aváni-* f. 'stream, river, bed of a river'; Grk. ἄναυρος 'wasserlos, von Bächen' Balt.: Lith. *jáura*, pl. *–ōs* (1) 'Moorgrund, Sumpfland' Fraenkel 1, 198; Germ. **au-r-a-z* m. 'wet soil; ocean' Orel 29, **ū-r-a-n* n. 'drizzling rain, mist, fog' Orel 437, Lat. *ūrīnārī* 'tauchen unter Wasser', *ūrīnātor* 'Taucher'. WP I 268 f, Buck 37, 45, Pok. 78–81. MA 636 (*iuHr-*, Balt. + Thrak. *iuras* 'name of a river') or MA 539 (Ind. *avata* + Latv. *avuots* 'spring'). PIH **we(n)dh-* 'water, wave'[9] Friedrich 249–250, Adams 511, WP I 252, Pok. 80, MA 636 # Nostr. PA **udV* 'rain', Ur. *wete*, Drav. **jēḏ-* 'water' МССНЯ 334. Or to PA **untu* 'whirlpool, tide'? PIE **weləm-/wl̥Hm-, *wl̥n-* (< **wl̥m-*?) 'wave': Ind. *ūrmí-* m., f. 'wave, billow'; Avest. *varəmi-* 'Woge, Welle'; Slav. **vъlnā*, Balt. **wiln-i-* (2), *-jâ* f. 'wave'; Germ. **walmi-z* 'well; boiling'; **wellō-* f. (< **welna*), **walla-z* m. 'wave' Falk & Torp 269, Orel 444; ? Tokh. B *yolme* 'pond, pool' (Adams 513 with doubts); ? B *lāñe* 'flood' (Adams 547). WP I 298, Pok. 1140–1142, MA 637 (uncertain). ?? PIE **bhang-* 'wave': Ind. *bhaṅga-* m. 'wave' (Mayr. KEWA 2, 461, classic Sanskrit, = *bhaṅgá-* 'das Zerbrechen'; no traces in Turner CDIAL), Balt. **bañg-â* (2) f. > Lith. *bangà* 'Welle, Woge, Regenguss' WP II 149 f ? PIE **k(')ūm-* 'wave': Grk. κῦμα, -ατος n. 'wave, billow' Beekes 848; Germ. **xu̯ū́m-a-n* > ONorse *hūm* n. 'See, Meer' (poet.) n. De Vries 266 (or to *hūm* 'Dunkelkeit'), Holthausen 132; ? Lat. *cumulus, -ī* 'Haufe; Menge; Höhepunkt' (cf. Ov. *cumulus...immānis aquārum*) WH 1, 307. WP I 365, Pok. 592–594 (sub **k'eu̯ə-* 'to swell') # Nostr **kUmV* 'sand, thin snow': PA **kiumo*, Ur. *kum₃* МССНЯ 362.	
To flow PIE (GA) **dg^{w}her-* 'to flow, to flood': Ind. *kṣárati* 'to flow, stream; to melt away, perish', *kṣara-* 'melting away, perishable'; n. (L) 'water'; PIran. **gžar-/xšar-* 'to flow, to pour' ЭСИЯ 3, 295–296; Arm. *jur*, Gen. *jroy* 'Wasser' (**dg^{w}hōro-*); Grk. Att. φθείρω (**φθεριω; Lesb. φθέρρω, Ark. φθήρω), Dor. φθαίρω (*∅*-grade) 'richte zugrunde'; φθορά́ 'Verderben, Vernichtung'; 'Vermischung oder Verreibung der Farben', συμφθείρεσθαι 'zusammenströmen'; see also Beekes 1569–1570. WP I 700, # Nostr **tUKV* 'to flow, pour': PA **tiùke*, Kart. **tkor-* ?	**To flow** PA **iàkʲì* 'to flow; basin': PT **iak-* 'to flow'; PTM **iaKu* 'swamp'; PJa **ìkà-i* 'pond'. PA **giàru* 'wave, stream': PNM **gori-ka* 'small river, rivulet, stream'; PTung **guru-ki* 'reach (of river); whirlpool'; PKor **kjár* 'wave'. PA **ùntu* 'whirlpool': PNM **undu-* 'to burst, whirl (of water); fountain, well'; PTung **onda-* 'to rise (of water); water'; PJa **ùntu* 'whirlpool'. PA **čurka* 'swift stream, current': PNM **dargil* 'rapid current'; PNTung **žurku* 'rapid, swift stream; fairway'; PJa **taki* 'swift current, waterfall'

[9] For a new interpretation of the traditionally reconstructed set of roots **wed-, *wet-, *und-*, see V. Dybo 2002, 413–415, 468.

Indo-European	Altaic
PIE (Eur.) **sol-* ‘to flow > island’: ? Ind. *salilám* ‘Meer, Meerflut’ Mayr. KEWA 3, 448; Balt. **sal-â̂* f. ‘island’, **sal̂-* ‘to flow’ (Lith. *salà* ‘Insel’, dial. *sálti* ‘fliessen’; Lett. *sala* ‘Insel, Holm, eine Höhe im Morast’; OPrus. *salus* ‘Regenbach’ Mažiulis IV 55–56); Lat. *īnsula* f. ‘Insel’. WP II 452, Pok. 899 (sub **sel-* ‘springen’). ? Here maybe as a loanword from an IE language (cf. Georgiev VS), Grk. σάλος m. ‘unruhige Bewegung des Meeren, Wogenschwall; Ankerplatz, Reede’. WP II 454; Pok. 879–880, with irregular *s-;* nach Frisk II, 670, Beekes 1303–1304 vorgriechisches Word; Lat. *salum* (and *salus* Ennius) ‘unruhiger Seegang, hohe See; Meer’ WH 2, 471 (with Germ. as *Wasserschwall* etc.; but this is impossible, because **swa- > sua-* in Latin! If the form of Ennius is primary, it may be a loanword from Greek, thus acc. to Beekes); cf. WP II 454. ? **sel-* (Germ. **śil-ϑ-* > OEngl. *seoloϑ* ‘See’); # Nostr. **calV* ‘wave’: PA **čalu* ‘wave, to overflow’ EDAL 391–392; Drav. **čal-* ‘well, spring’ DED 2367.	PA (West) **orusi* ‘river, to flow’: PT **örs, *örsen* ‘river’; PM **urus-* ‘to flow’. # МССНЯ 341: PIE *Heur- / Hwer-*, PK *ɣwar-*.
PIH? PIE (Eur.)? **ak^{w}-* ‘water (flowing)’: Hitt. ? *akukal*(*la?*)- or *akutal*(*la?*)- ‘Waschbecken’ (Tischler 11–12); Germ. **áxw-ō* ‘river, stream’ f. Orel 5; Lat. *aqua* f. ‘Wasser, Wasserleitung’. WP I 34 f, Buck 29, 35, 42. Pok 23, MA 636 (*$h_{u}ek^{w}eh_{2}$-*) # Nostr. **ʕEḳu* ‘water’, PA **iákʻa* ‘liquid, flow’ or **ukʻu* ‘wet, wash’, Drav. SDr. **āk* ‘swamp’ or **uk-* ‘spill, pour’ МССНЯ 334, 347, ОСНЯ 1, 275–276. [two roots]	
River PIH **Hap-* ‘water, river’: Hitt. *hap*(*a*)- ‘Fluß’, Pal. *hāpnas*, Luw. *hāpinni-* (Tischler 159–160) (MA — to **$h_{2}eb$*(*h*)- ‘river’); InIr. **ap-/*āp-* f. ‘water, river’ ЭСИЯ 1, 311; ? Greek toponyms Ινωπός, Ἀσωπός; Balt. **ap-iā̃* f. > OPrus. *ape* ‘Fluss’, *ap-us* ‘Brunnen’ Mažiulis 1, 86–87, 89–90; Lat. *amnis, -is* m./f. ‘Fluss, Strom, (dicht.) Strömung, Wasser’; Tokh. A, B *āp* ‘water, river’ (Adams 44). WP I 46, Buck 30, Pok. 51–52, MA 636 (*$h_{2}ēp$-* / *$h_{2}ep$-*) # Nostr. **VpV* ‘water’, Ur **üptV* (Redei 83) ‘половодье’, Drav NDr **op-* ‘become wet’. Or ? PIH **hab*(*h*)- ‘river’: ? Hitt. *hap*(*a*)- ‘Fluß’ etc.; Celt. **ab-on* Matasović 24–25 (< PIE **$h_{2}ep$-$h_{3}on$*, so related to PIH **Hap-*), Lat. *amnis* ‘river’. Pok. 1, MA 486, Buck 1.36. ? PIE **dānu-* ‘river’: IIr **dānu-* (Ind. *dā́nu-* n. ‘fluid, drop, dew’, Av *dānu-* f. ‘Fluss, Strom’; Osset. *don* ‘Wasser, Fluss’) ЭСИЯ 3, 450–451; Wels *donwy* ‘a river name’ (**dānew-yos*), Lat < Celt *Dānuvius* ‘a river name’. Pok. 175, MA 486; WP I 763 (< **dā-* ‘to flow’).	**River** PA **āmu* ‘big river, big basin’: ? PCT **umar* ‘big river’; PNM **ama-n* ‘fold, valley’; PTM **āmu-* ‘lake; big river’; PKor **omi* ‘land sink, pool’; PJa **ùmí* ‘sea’. # Cf. Dr. **am* (Tamil *am, ām*) ‘water’ (DED 187). PA (East) **kʻéba* ‘river, bay’: PTung **xebe* ‘bay; lake’; PKor **kái* (< **kabi*) ‘inlet, estuary’; PJa **kápà* ‘river’. PA **iuger’V* ‘river’: PCT **ügür* ‘small river’; PM **üjer* ‘flood, inundation’; PTM **uwgē*(*r*)- ‘wave, stream’; PKor **jàhír* ‘shallow place’; PJa **ùrà* ‘bay, coast’. # ? PU **uwa* МССНЯ 334. PA (West) **ǯiōlu* ‘river bed, stream’: PT **jul* ‘stream, brook, fountain’; PM **ǯilga* ‘river bed, ravine’; PTM **ǯila-* ‘swift (not freezing) river current, ice-hole’.
Spring, well PIH**$g^{w}ela$-* ‘to boil over’: Hitt. *kweluwana-* (*kuluwana-*) ‘Waschbecken’ (Tischler 604); IIr. **gal-/*ǰal-* ‘to drip,	**Spring, well** PA **biujri* ‘well, spring’: PNM **bürü-dü* ‘spring’; PTM **bira* ‘river’; PKor **ù-* ‘well’; PJa **bì* ‘well’.

Indo-European	Altaic
ooze, trickle', Sanskrit *jalá-* n. 'water, any fluid' ЭСИЯ 3, 152–154; Grk. βαλανεῖον n. 'Badstube, warmes Bad' Beekes 195 ("Pre-Greek"); Germ. **kwellan-* 'to gush, to drop' Orel 227. WP I 690, Pok. 471–472 # Nostr **küłä* 'pond', PA **kʹőli*, Ur. **k*[*ä*]*łV*, Drav. **kUḷ-* МССНЯ 352, ОСНЯ 1, 305–306.	PA **biùlò* 'to soak, to gush forth': PCT **bulak* 'spring, well'; PNM **bilka-* 'to issue from the ground, to overflow'; PTM **bilkü-* 'to splash, swash'; PKor **puri-* 'to soak, make wet'; PJa **pùrə* 'bath'. # PIE **bhleu-* (WP 2, 213–214).
PIE **bhrew-eHr/*bhru-Hn-os* (Gen.) 'spring (of water)': Arm. *ałbiur, ałbeur*, gen. *ałber* 'Quelle' Martirosian 32–33 (**bhrewr*); Grk. φρέαρ, -ᾱτος 'well, spring' (**φρῆϝαρ-*, *-ατος*, hom. φρήατα, φρείατα) Beekes 1590 (**bhreh$_1$-ur*); Germ. **brunn-ō*(*n-*) f. 'spring, well' Orel 58. WP II 167, Buck 44, Pok. 144, MA 539 # Nostr., PA **biujri* 'well, spring'.	
? PIE **alm-os* 'spring': OInd. *arma-* 'Brunnen' Mayr. EWA 1, 120, ? Toch. B *ālme* 'spring (of water)', vr̥ddhi Toch B *yolme* 'Teich' (Adams 55–56). MA 539 (**h$_a$elmos, *h$_a$ēlmos*).	
PIE **k(')rosn-* 'stream, spring': Grk. aeol. κράννα, dor., arkad. κράνα, ion. κρήνη ds. (> att.) 'source, fountain'; κρουνός m. 'spring' Beekes 777; Germ. **xraznő* 'tide, wave' Orel 185; Alb. *krúa* 'spring, fountain' Orel AlbD 198 (< **krāna* < **krasna*). WP I 488, Buck 44. MA 539 (**kr̥sneh$_a$, *krosno-/eh$_a$*, only Greek — Germanic) # Nostr. **ḳara* 'flood, spring', PA **kʹara.*	
PIE (Eur.) **bhog-* 'brook, stream': Slav. **bāg-n-o* 'marsh', **Bāgȳ* 'name of a river' Фасмер I, 102, Derksen 33 (not taking into account the Winter's law effect); Germ. **bak-iz* m. 'stream' Orel 33; Celt. **boglā* > MIr *būal* 'fliessendes Wasser'. WP II 187, Pok. 161 (the long vowel in Slav. is due to the Winter's law).	
To move across	**To move across**
PIE **terH-*, **trā-* 'to move across': [Hitt. *tarhu-* 'besiegen, bezwingen, überwinden' is not here according Kloekhorst 835–837]; Ind. *tárati, tiráti, titarti* 'to pass across, cross over'; *tára-* 'carrying across or beyond', m. 'crossing, passage'; *taráṇi-* 'moving forwards, carrying over'; *táras-* n. 'energy, progress; ferry'; *tīrthá-* n. 'Furt, Tränke' (**tr̥̊tho-*);**tūrthá-* in Prākr. *tūha-* 'Ufer', Dard. *tūrt* 'Furt' (> Wakhi *tɨrt* Стеблин 368); Iran. Avest. *tar-* 'hinübererlangen über', prs. *titar-, taraya-*, ptc. *vī-tərəta-*; *tarantá-* m. 'Meer'; OPers *viyatārayāma* 'wir überschritten'; ModPers. *gu-dar* 'ford', Bal. *tarag, tharaɣ* 'umwenden, umkehren' Mayr. EWA 1, 630–632; [Grk. τρᾱνής, τρᾱνός 'klar vernehmlich, deutlich' probably not from here, Beekes 1499]; Lat. *intrāre* 'hineingehen', *extrō, -āre* 'über etwas hinausgehen'. WP I 728, Pok. 1074–1075.	PA **tʹiùge* 'ford, bridge': PNM **tuguj* 'brow, gangway'; PTung **tügde-* 'to cross a bridge; sb. bridge, log'; PJa **tù* 'ford'.
PIE (Eur.) **b*(*h*)*red*(*h*)- 'to wade, to jump over': Slav. **brestī* 'to wade', **brodъ* 'ford'; Balt. **brid-* (*breñd-a-*) 'to wade', **brad-s-l-a-* 'ford'; Alb. **breda* 'to jump, to spring' Orel AlbD 34. Fraenkel 58, Schr-N I 167 #	PA (East) **tʹolV* 'bridge, crossing': PTung **tul-* 'to wade; to cross (a mountain ridge)'; PKor **tǎrì* 'bridge'. PA **ól'a* 'ford, shallow': PNM **(h)olam* 'ford'; PTM **ola-* 'to ford, wade'; PJa **ásá-* 'shallow'. PA **kʹopʹira* 'bridge, crossing': PCT **köpür* 'bridge'; PM **köɣürge* 'bridge'; PTM **xupuru* 'rift (in river); bridge'; PJa **kápárá* 'shallow, sandy place in a river or on its bank'. PA (East) **bétʹa / *pʹéda* 'sea, ford': PTM **pedē-* 'to ford, cross over'; PKor **pàtá, *pàrǎr* 'sea'; PJa **bátá* 'sea; to ford'.

Indo-European	Altaic
Nostr. **bVrdV* 'ford', PA **bét´a/*p´éda*, Kart. **bo(r)d-*, Drav. **paḍ-* МССНЯ 332. ? PIE **telət-* 'bridge, ford': ? Ind. *tīrthá-* n. 'ford' (if not from **terH-* 'to move across'); Balt. **tiĺt-a-s* 'bridge'. Fraenkel 1094 (differently in Pok.), Schr-N I 167, Иллич-Свитыч 1963, 74. PIE (Eur.) **bh^{e}r[e]w-*, **brēw-* 'wooden flooring, decking, bridge': Slav. **brъvъ-no* 'beam, bridge' Derksen 67; Germ. **brṓw-ō*, **bru-g-jōn-* 'bridge' Orel 58; Celt. **brēwā* > Gaul. *briva* 'Brücke'. WP II 207, Pok. , Schr-N I 167. # Nostr.: Ur. **pora* 'raft, float' UEW 395. МССНЯ 332. PIE **pont-/*pent-/*pn̥t-* 'way through obstacles, way through water space': Ind. *pánthā* 'way, path'; *pāthas-* n., *pāthis-* n. 'spot, place; (L.) water'; Avest. *pantō*, instr. *paϑa* 'Pfad, Weg; Raum, Stelle' Mayr. EWA 2, 82; Arm. **fon-i-* > *hun* (i-St.) 'Furt, Weg' Martirosian 422–426; Grk. πόντος m. 'Meer, hohe See', πάτος m. 'Weg, Pfad' Beekes 1221; Slav. **pǭtъ* 'way' Derksen 417, Balt. **pint-*[*i*]- > OPrus. *pintis* 'way, road' Mažiulis 3, 281–282, Иллич-Свитыч 1963, 149; Germ. **fenϑ-anan-* denom. vb. 'to find' Orel 99; Lat. *pons, -tis* m. 'Brücke, Steg, Prügelweg durch Sümpfe, Verdeck, Schiffstabulat' WH II 336; ? Celt. **fanssā* 'trace' > OIr. *ēs* 'Spur' Matasović 121 (< **pnt-teh$_2$*); ? Tokh. B *-pänte* as a putative PIE **pn̥th$_2$-ó-* 'one pertaining to the way' Adams 19. WP II 26; Pok. 808–809; Benveniste 1954.	**Shallow place** PA **niala* 'shallow, shallow place': PCT **jAl-* 'shallow; wave'; PNM **naliɣur* 'pool; overflowed plain'; PTung **niala* 'overflowed place; shallow'; PKor **nə̀rə̀* 'ford; ferry point'. PA **siógu* 'shallow, shallow place': PCT **siɣ* 'shallow'; PM **siɣa-r* 'sediments'; PTung **sigi-n* 'ice-hole'; PJa **sú* 'shallow place, sandbank'. PA **sájV* 'pebble; shallow place': PT **saj* ' shallow place with pebbles; arroyo with pebbles; wadi; river'; PNM **sajir* 'river-bed, pebble'; PTung **saj-* 'sandy mound'; Kor. **sə̆i-m* 'spring, shallow well'; PJa. **sái* 'sandbank'. PA (East) **iŋu* 'sandbank': PTM **(x)iŋā* 'sand or pebble on the riverbank, sandbank; spit'; Kor. **jə̄* 'reef, rock in a sea'; PJa. **ía* 'bay'.
Still water PIE **ag'her-* 'lake': Grk. Ἀχέρων, -οντος 'Fl. der Unterwelt', ἀχερουσία 'marshy waters' (Hes.) Beekes 182; ? Arm. *ezr*, Pl. **ezer-a* (*n.) 'edge, bank' Martirosian 247–249; Slav. **e/ozero, *ezerъ* 'lake' Derksen 148, Trub. 6, 57, 59 (but the suggested connection with Slav. **ězъ* 'dam, fishing basket' is doubtful because of different vowel quantity); Balt. **ežer-an* 'lake' n. Fraenkel 125, Mažiulis 1, 104 (but the suggested connection with Balt. **ež-jẫ, -iã̄* f. 'border' is not obligatory). Pok. 291–292; MA 343 (**h$_1$eg'herom* without Greek and Arm.). ? PIH **woHp-*: **wōp-/*up* 'basin': Hitt. *wappu* 'river bank' Kloekhorst 958 ("no good etymology"); OInd. *vāpī́* 'pond' (Mayr. KEWA III 188: to *váp-* 'to throw, to sow'); OCSl *vapa* 'lake, marsh, pond' Фасм. 1, 125; ? Lith. *ùpė*, Lett. *upe* 'river' (the short *u* is unclair). Pok. 1149, MA 343, 636–637 (uncertain). PIE **lakw-* 'lake, pond': Grk. λάκκος (*λακυος) m. 'Wasserloch, Zisterne; Teich, Grube' Beekes 827 (**l̥kw-*); Slav. **loky* 'pool, swamp, pond' Derksen 284; Balt. **lek-men-iã̄* f., **lak-men-ẫ* f. 'pool' Fraenkel 352–353 (differently); Germ. **lagú-z* 'sea, lake' Orel 231; **láx-ō*, **láx-az* 'sea, pool, swamp' Orel 232; Lat. *lacus*, gen. *-ūs* (/ *-ī*) m. 'jede trogartige Vertiefung, See; Brunnentrog; Kufe;	**Still water** PA **k´ŏli* 'lake, basin': PT **[k]ŏl* 'lake'; PNM **küjil-sü* 'island in a river, shallow place in a river'; PTM **xule-* 'canal, duct; whirlpool'; PKor **kə̀rə̆m* 'lake, big river'. # ? PIE **g^{w}el-* 'quellen, Quelle' (WP 1, 690); PU **k*[*ä*]*ɬV*; Drav **kul a* (МССНЯ 352, ОСНЯ 1, 305–306). PA **najrV* 'lake, river': PM **naɣur* 'lake'; PTM **niāru* 'lake; swamp'; PKor **nāih* 'river'. # ОССНЯ 2, 89. ? PA (West) **ǯàdé* (~ **ǯèdá*) 'pond, pool': PNM **ǯadaɣai* 'pond, pool'; ? PJa *dàntá* 'backwater'.

Indo-European	Altaic
Grube'; *lacūna* f. 'Vertiefung, Senkung; Loch, Grube; Lache, Weiher'; Celt. **loku* 'lake, pool' Matasović 243. WP II 380, Pok. 653, MA 343 (without Balt.). # Nostr.: Ur. **lake* ' bay, low ground' UEW 234, 683. PIE (Eur.) **lām-* 'hollow filled with water': Slav. **lāmъ* 'pit, flooded meadow' ЭССЯ 14, 26, Derksen 268 (to **lomiti* 'to break'); Balt. **lâm-â̂* (1?), **lã̂m-a-* 'hole, den, pit' Fraenkel 385 (to *laminti* etc.; doubtful because of different vowel quantity); Lat. *lāma* f. 'Lache, Morast, Sumpf' WH I 753. WP II 385, Pok. 653–654. # Nostr. **laHm*[*u*] 'swamp', PA **làmò* 'sea, wave', Ur. **lampe* 'pond', Kart. **lam-* 'silt, dampness', Drav. **nam* 'dampness'. МССНЯ 331, ОСНЯ 2, 29–30. PIE **tenHəg-* 'hole under the water': Grk. τέναγος n. 'shallow place' Beekes 1466; Balt. **ting-â̂* > Lett. *tīgas* pl. 'Tiefe zwischen zwei Untiefen'. WP I 724, Pok. 1067, MA 343 (*tenh$_a$g-*/ *tn̥h$_a$g-*). PIE (Eur.) **lindh-* 'reservoir': Germ. **lindō* 'spring, pool, wave' Falk & Torp 244, De Vries 357; Celt. **linda* 'lake' Matasović 239–240. WP II 438, Pok. 675.	
Sea PIE **moHr-*/**mr̥-*/**m$_a$r-* 'sea, lake'[10]: Ind. *mīra-* m. 'the sea, ocean; (L. also) limit, boundary' Mayr. KEWA 2, 644; Iran. Ossetic *mal* < **māri-*, **māryo-* 'deep still water, deep place in a bassin; fig. a giant quantity of fluid' Аб. II 68–69; Slav. **morje* 'sea' Derksen 325; Balt. **mar-i*, **mar-iã̂*, **mar-jâ̂* f. 'sea; harbour' Mažiulis 3, 110; Germ. **mariz*, **marīn* 'sea, lake', **marisk-a-z* m. 'marsh' Orel 261, **mōr-a-z* m., n., **mōr-i-z* 'marsh, lake, sea' Orel 274; Lat. *mare*, *-is* n. 'Meer'; Celt. **mori* 'sea' Matasović 277. WP II 234, Pok. 748, MA 2, 503 (**mori*; + Arm. *mawr* < ? **maru* 'marsh', but see Martirosian 447 — not here). # Nostr. **märä* 'wet', PA *mi̯ù̯ri* 'water', Kart. **mar-*, Drav. **maṛ-* МССНЯ 334, ОСНЯ 2, 60–61. ? PIE **g'wop-* (~ *-bh-*) 'sea': Arm. *cov* 'Meer' Martirosian 141; Germ. **kwa*[*f*]*-a-* > ON *kaf*, OSwed. *kwaf* 'Meerestife' n. De Vries 296 (= *kaf* 'untertauschen'). WP I 637, Pok. 465–466. [PIH **g'rei-* 'to spread' > 'big water surface': Hitt. *karaitt-*/*karett-* c. 'flood, inundation' Kloekhorst 440 (**g'roi-t-* / **g'rei-t-*); Ind. *jráyati* 'stürmt an, läuft an', *jráyas-* n. 'Ungestüm, Lauf, Flußlauf'; Av. *zrayah-*, OPers. *drayah-* 'See, Meer', MPers. *zray*, ModPers. *daryā* 'sea, big river' Mayr. EWA 1, 606. WP I 660, Pok. 401 ("Nur	**To overflow, deep water** PA **dā́la* 'deep place': PT **dāl-* 'to sink' > **dAluj* 'ocean'; PTM **dala*(*n*) 'inundation, stream'; PJa **dara* 'sea bottom, deep place'. PA **t'ə̀le* 'deep water': PCT **tolku-* 'to beat (of waves); wave(s)'; PNM **tülki-n* 'rising water'; PNTung **tōlgu-* 'deep place close to the bank; whirlpool; backwater'; PKor **tór* 'ditch'; PJa **tərə* 'backwater, deep water'. PA **k'ara* 'to overflow, flood': PCT **KAr-* 'to overflow'; **KArïm* 'ditch'; PNM **kargi-* 'overfall, rift'; PTung **xarba* 'shallow place, shoal; shallow; ebb-tide'; PJa **kátà* 'tide, ebb-tide; beach, bay'. PA (West) **t'iā́l'ke* 'to splash, overflow': PCT **d*(*i*)*ālʌ*(*i*)- 'to overflow'; PNM **čalgi-* 'to splash, overflow'; PTung **tilka-* 'to splatter, overflow'. PA **ōk'e* 'deep place, place far from the shore': PT **ə̄kü* 'hole in ice'; PNTung ***(*x*)*uK-t-* 'ice-hole; river rift'; PJa **əki* 'open sea'. PA **lə̀mo* 'basin, wave': PNM **namug* 'marsh, swamp'; PTM **lāmu* 'sea; wave'; PJa **nàmì* 'wave' # PIE **lām-*, PU **Lampe*, PD **namV*, Georg. *lam-* (МССНЯ 331, ОСНЯ 2, 29–30).

[10] Cf. Гамкрелидзе & Иванов 1984 673; the Hittite form *marmara-*, *mammara-* only means 'a type of landscape' (Friedrich 137, Tischler 3, 140–141), so it is not necessarily a reflexation of this root; if so, the more probable proto-meaning is 'sea': European — Indo-Iranian, cf. Sanskrit *mīra-*, *mirā-* 'sea; boundary' (cf. Mayr. II 644), Osset. **mal* < **māri-*, despite Гамкрелидзе & Иванов 1984 673 not 'stagnant water', rather 'deep place in a bassin; a giant quantity of fluid', cf. *mal* of blood etc., see Аб. II 68–69.

Indo-European	Altaic
indoiranisch"). The term for 'big water surface' is, however, not PIH, cf. different affixes in Hitt. and InIr.] [PIE **sal-s* 'salt', **sal-d-* 'salty' > 'sea' in separate IE languages: Arm. *ałt* 'Salz' (i-St.), *ałt* 'salt-mine, salt land' Martirosian 24; Grk. ἅλς, Gen. ἁλός m. 'Salz', f. 'Salzflut, Meer' Beekes 74–75; Slav. **solъ* 'salt', **soldъkъ* 'tasty, sweet' Balt. **sal-i-* 'salt', **sal̂-d-u-* 'sweet' Mažiulis 4, 42–43; Germ. **sal-t-a-n* 'salt', **sal-t-a-z* adj. Orel 316, **sul-t-jō* 'saline, sea-water' Orel 385; Lat. *sāl*, gen. *salis* m. 'salt'; Umbr. acc. *salu* 'salem'; Celt. **salano-* 'salt'; MIr *sál*, gen. *saile* 'Meer' Matasović 319; Tokh. A *sāle*, B *salyiye* 'salt' Adams 678. WP II 452, Pok. 878–879, MA 498 (but variants with the long vowel should be explained by the lengthening in the nominative form of the root stem; see Mažiulis IV 42–43, V. Dybo 2002, 443–444) # Nostr. **salV* 'salt', Ur. **sal₃* (*sala*) 'salt' UEW 750, Drav. **(s)aḷam* 'salt marsh, salty' DED 299]. PIE (Eur.) **k(')ap-n-* 'sea bay, harbour': Germ. **xaƀ-an* n. 'sea; haven' Orel 147 (from **xaƀjanan* 'to hold up'); Celt. Ir. *cúan* (**kapno-*) '(See-)Hafen'. Buck 37, 39, Pok. 527–528 (from PIE **kap-* 'to grab'). # Nostr. **ḳVṗV* 'rift', PA **kʻopʻira* 'rift (in a river), bridge', Ur. **kup₃* 'wave' UEW 676.	**Salt** [PA **čiober'V* 'salt; bitter, acid': PT **dūř* 'salt'; PM **dabusu* 'salt'; PTM **ǯujar-* 'bitter, acid'; PKor **čjər-* 'salty'; PJa **túrá-* 'hard, bitter'. # Dr. **suvar* 'salt, brackishness; salty' (DED 2674)].
Foam PIE **(s)poyHmn-* (or rather **(s)poHymn-*, cf. Balt.; see in detail V. Dybo 2002, 389) 'foam': Ind. *phéna-* m. 'foam' Mayr. EWA 2, 204; Ir. **faina-ka* 'foam' ЭСИЯ III 44; Slav. **pěna* A 'foam' Derksen 397; Balt. **spáin-ia* (1) > **spaĩn-ia* (Hirt's law) 'foam' Fraenkel 1 858, Mažiulis IV 128; Germ. **faim-an* n. 'foam' Orel 90; Lat. *spūma* f. 'Schaum, Gischt' (**spoima*) WH II, 580. WP II 681, Pok. 1001.	**Foam** [PA **kʻópʻi* 'to foam': PT **köp-* 'to foam, to swell'; PM **köɣe-* 'to foam, swell up'; PTM **xapu-* ~ **xopu-* 'foam'; PKor **kàphúm* 'foam']. [PA **ǜjbà* 'foam': PM **ibil-* 'to flow (of milk from the udder at the time of sucking)'; PTM **(x)ōb-* 'to get covered by foam; foam (on water)'; PJa **àwà* 'foam'].

Based on these juxtapositions for a number of proto-lexical microsystems, the following conclusions can be proposed.

The peculiarities of the landscape-related lexicon in both families are as follows. First of all, the steppe must be excluded from the regions potentially inhabited by Proto-Indo-Europeans.[11] Some relatively high mountains with many kinds of rocks and sharp or big stones are present.[12] Some of these mountains are covered by forests. There are words for narrow passages, canyons, precipices, mines and caves, foothills, valleys and dells, meadows in

[11] When I say — more or less arbitrarily — about the "Proto-Altaics" and "Proto-Indo-Europeans", each of these labels surmises a big human community whose members are territorially and culturally related: hypothetic ethnos-speakers of the Proto-Indo-European language, reconstructed for the initial period of its disintegration into separate groups of languages, and, likewise, hypothetic ethnos-speakers of the Proto-Altaic language, reconstructed for the same period. The contrastive list of Proto-Indo-European and Proto-Altaic thesauri in selected thematic areas is still preliminary; conclusive results will be obtained upon systematic application of semantic reconstruction to all the subgroups of related languages.

[12] Cf. the identical conclusion, reached on different grounds by Гамкрелидзе & Иванов 1984.

forests and on the river-banks. The rivers have fords and are definitely smaller than their Proto-Altaic counterparts (there is no semantic variation between “river” and “sea”; nota bene that the only trace of the name of flood is GA; the lower Danube?); cf. here the noticeably weaker function of fish in the Indo-European economy (expressed in a substantially smaller number of terms for fishing tools, fish body parts and fish species — see the example below). But they could have lived near a sea or a big lake with sandy banks[13].

In Proto-Altaic, the landscape was represented by names of not very high mountains, low-pitched slopes, foot-hills (also with rocks and gravel). They had a number of verbs meaning “to cross mountains.” The canyons, valleys and steppes are present, the steppes being of a rather arid and dusty type. There are many terms for small, quick-flowing rivers with shallows and rifts, but we also know words for big rivers as well. The reflexes of those words reveal semantic variation: in some daughter languages they mean “big river”, while in the others the meaning is “sea”. We may talk about islands and floods. Floods, from my point of view, may rather indicate big rivers with seasonal floods. We still do not have a reliable reconstruction with the undisputable meaning of “sea”. The Tungus-Manchu name for sea can be traced back to a common name for wave, while the common Korean and Japanese forms originally meant “ford”. The same development is found, for example, in Ancient Greek, where the corresponding word is historically explained as a development of the original meaning “aquatic way”.

Fishing tools

Indo-European	Altaic
PIE (Eur.) **sait-* ‘rope, cord, cord for catching, net’: Slav. **sětь* ‘snare, net’ Derksen 448; Balt. **saīt-a-* ‘rope, cord’ Fraenkel 756; Lat. *saeta* f. ‘Borste; Angelschnur’. WP II 463, Pok. 891–892 (**sey-* ‘tie’ (but **a* is unclear)). # Nostr. **[š]VṭV* ‘rope, string’: PA **sitʹV* (~ *z-, š*) ‘bands tied to sacrifices’ EDAL 1262; Ur. FW **s/śitV* ‘binden, befestigen’ UEW 762; Kart. Georg. *šit-* ‘woollen thread’; Svan *šṭrān-* ‘twist, twist a rope’ (in ND 2233). A. Dybo 2005.	PA **tʹóbru* ‘catching net’: CT **Tuŭk* ‘trap’; PM **towr* ‘net, cage’; PTung **turku-* ‘to get caught (in a trap, net)’; PKor **tǎràčhí* ‘basket’; PJa **túrí* ‘fishing’.
?? PIH**h₁ekt-* ‘net’: Hitt. *ekt-* ‘hunting net’, Luv. *aggati-* ‘catch-net’ Kloekhorst 235–236 (to OHG *jagōn* ‘to hunt’, PIE **jek-*); Ind. *ákṣu-* ‘net’ Mayr. EWA 1, 42 (to *ákṣi* ‘eye; net’s cell’); Grk. δίκτυον, Myc. *de-ku-tu-* ‘fishing net’ Beekes 335–336 (Pre-Greek). MA 2, 393 (“*d-* as in ‘tear’”).	PA **àgŋa* ‘net’: PCT **āg* ‘net’; PNM **aɣo-ga* ‘leading string in net’; PTung **aŋga* ‘net (for catching fish under ice)’; PJa **àmì* ‘net’, OJa *ama* ‘fisherman’, cf. **àm-* ‘to knit’.
? PIE (GA) **pork’-* ‘fish-net, noose’: Arm. *ors* ‘hunt, catch’ Martirosian 544 (to **york-os* ‘roe’); Grk. πόρκος m. ‘Art Fischernetz’ Beekes 1222. WP II 44 # Cf. PA **pʹŭrVkʹV* ‘rope, lasso’.	PA (West) **nable* ‘net, fish-trap’: PT **jïlïm* ‘fishing net’; PTung **nalba* ‘fish-trap, crib’.
PIE (Eur.) **wadh-* ‘fish net’: Slav. **vodъ; *nevodъ* ‘dragnet’ Фасм. 3, 55–56; Balt. **wad-a-, -u-* . ‘grosses Zugnetz; Flügel eines Zugnetzes’ Fraenkel 1177; Germ.	PA (West) **iuŋi* ‘to weave (nets), net’: PNM **(h)öɣe-si* ‘fishing net’; PTung **inŋi-* ‘to weave net’.
	PA (West) **tʹukV* ‘fishing dam, fishing net’: PT **Tug* ‘dam, fish-trap’; PNM **togsija* ‘bird net, fish net’; PSTung **tuki-* ‘to fish by a stake net in a narrow channel’.
	PA **gòlí* ‘a k. of tool for water-hunting’: PM **gol-mi* ‘net’; PTung **goli* ‘net for big fishes’; PJa **kùrúrí* ‘arrow for shooting sea-birds or for catching fish’.
	PA **bé* ‘bait’: PCT **be-ŋ* ‘bait, bird-seed’; PTM **be* ‘bait’; PJa **bái* ‘bait’.
	PA **īl’bi* ‘fish bait’: PNM **(h)ilbeɣe-sün* ‘fish bait’; PTM **ïlbī* ‘bait; plummet, sinker’; PJa **i(n)sa-r-* ‘to fish’.

[13] Cf. Гамкрелидзе & Иванов 1984: 673–674; they are definitely right that the IE names for ‘sea’ could originally be the names for some big and deep lake, but the existence of names for ‘salt basins’ derived from the IE name for ‘salt’ in a number of IE languages is not necessarily proof of the fact that Proto-Indo-Europeans must have known salt lakes or seas. Cf. the similar conclusion in MA 498.

Indo-European	Altaic
wadiz ~ wadōn* ‘fishing line; dragnet’ Orel 438 WP I 255, Pok. 1, 78. [PIE (Eur.) **rēt-* ‘sieve, net’: Balt. **rẽt-ia-* ‘sieve’, **ret-ūk-a-* ‘thin net’ Fraenkel 724–725; Lat *rēte, -is* n. ‘Fisch-, Jagdnetz’ WP I 142, Pok. 332–333 (sub *erə-* ‘rare’)]. PIE **g(’)rībh-* ‘fisching basket’: Grk. γρῖφος, γρῖπος m. ‘fishing basket’ Beekes 287 (Pre-Greek); Germ. **krib-jōn-*, **krubbōn* ‘crib’ Orel 222. WP I 593, Pok. 385–390 (sub **ger-* ‘to wind’). [PIE (Eur.) **nəd-* ‘fish-net, fishing basket’: Germ. **nat-jan* n. ‘net’ Orel 281–282; Lat. *nassā* (nad-tā* or **nad-sā*) f. ‘Fischreuse, aus Binsen geflochtener Korb mit engem Hals, aus dem die Fische nicht wieder entkommen können’ WH 2, 145, MA 336 (with **ned-* knot). Rather different derivatives from **nōd-* ‘knot’]. [PIE **ankos* ‘hook’, see Pok. 45–46, WP I 60, MA 2, 272, rather is not specialized for PIE as fishing hook].	
On the whole 1 reliable PIE term for fishing net, 1 reliable Eur. term for fishing net, 1 reliable Eur. term for fishing basket, 1 reliable Eur. term for a fishing tool.	On the whole 2 reliable PA terms for fishing net, 2 reliable PA terms for bait, one reliable PA term for a fishing tool; 3 reliable Western Altaic terms for fish traps.

We can also see that a substantial part of landscape environment terms can be reconstructed only for the later stages of PIE. The set of terms that is reconstructed for PIH is hardly telling: PIH **dg’hom/*dg’hem* ‘earth, soil, territory, earth surface’; PIH **wedn-/*udn-* ‘earth, soil, territory’; PIH **pē(n)s-* ‘sand, pebble’; PIH **h₂ek(’)h₂-mon,*kā-mon* (< **keh₂-mon-*) ‘stone, rock’; PIH **Har-* ‘valley, vale, dale; grotto; swamp’; PIH **peru-(n-)* ‘mountain top’; PIH **kolHn-*, **kolHm-* ‘top, hill, rock’; PIH **weHr-/uHr-* ‘water, moisture’; PIH **we(n)dh-* ‘water, wave’; PIH **Hap-* ‘water, river’; PIH**gʷela-* ‘to boil over’; ? PIH **woHp-* ‘basin’. Nonetheless, even in this case we see mountainous terrain entering the picture.

Abbreviations

Alb — Albanian
Arm. — Armenian
Av — Avestan
Bal. — Baluchi
Balt. — Baltic
Bret. — Breton
Celt-Ital — Celto-Italic
Corn. — Cornish
Cymr. — Cymrish
Dard. — Dardic
Drav — Dravidian
ESlav. — East Slavic
Eur. — European
GA — Greek–Aryan
Gael. — Gaelic
Georg — Georgian
Germ. — Germanian
Grk. — Ancient Greek
Ark. — Arkadian
Att. — Attic
Corcyr. — Corcyrean
Dor. — Doric
Ion. — Ionic
Lesb. — Lesbian
Hitt. — Hittite
Ind. — Indian
Iran. — Iranian
Kart — Kartvelian
Kor. — Korean
Kur. — Kursh
Lat — Latin
Lett. — Lettish
Lith. — Lithuanian
Luw. — Luwian
MIr — Middle Irish
MPers. — Middle Persian
Nostr — Nostratic
NPers. — New Persian
ODalm. — Old Dalmatian
OInd. — Old Indian
OIr — Old Irish
OLith. — Old Lithuanian
OPrus — Old Prussian
Osset. — Ossetic
OSwed — Old Swedian
PA — Proto-Altaic
Pal. — Palaic
PCT — Proto-Common Turkic
PIE — Proto-Indo-European
PIH — Proto-Indo-Hittite
PIIr — Proto-Indo-Iranian

PIran — Proto-Iranian
PJa. — Proto-Japanese
PM — Proto-Mongolian
PNM — Proto-North Mongolian
PNTung — Proto-North Tungussic
Prakr. — Prakrit
PSTung — Proto-South Tungussic
PT — Proto-Turkic
PTM — Proto-Tungus-Manchu
PTung — Proto-Tungussic
Rum. — Rumanian
Slav. — Slavic
Tokh — Tokharian
Ur.- Uralic
VLat. — Vulgar Latin

— supposed external relation
[...] — The reconstructed stem does not belong to the considered semantic area

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А. В. Дыбо. Язык и археология: некоторые методологические проблемы. 1. Праиндоевропейская и праалтайская ландшафтная терминология.

Статья представляет собой первую часть работы, в которой проводится попытка систематизировать наши представления о природном окружении и материальной культуре праиндоевропейцев на основании, во-первых, максимально полной выборки реконструированной лексики соответствующих семантических областей, во-вторых, ее сопоставления с такой же выборкой, сделанной для праязыка сходной временной глубины, носители которого явно обитали на территории, не контактной с индоевропейской прародиной — для праалтайского. Здесь представлена лексика, связанная с ландшафтом. Основной вывод заключается в том, что из двух рассмотренных пралексиконов на степное природное окружение указывает скорее праалтайский; праиндоевропейский указывает скорее на горную местность. Что касается водных объектов, для праиндоевропейского окружения следует предполагать наличие моря (или очень большого озера), а для праалтайского — наличие очень больших рек с сезонными разливами.

Ключевые слова: индоевропейская прародина, алтайская прародина, метод слов и вещей, семантическая реконструкция.