

Origin of the binomial Linnaeus nomenclature used to name some Old World legume species

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ABSTRACT – The nomenclatural revision that is used to name some old world legume species aims to explain the origin of the Latin and Old Greek words Linnaeus used to denote some of the most ancient and traditional Eurasian grain legume crops, such as pea, lentil, field bean and vetches. The results of this revision establishes a firm link between the Linnaean words used today with their origins in the Proto-Indo-European language and give a wealth of their cognates in the other branches of the Indo-European family. The results found a remarkable level of conservativeness of the words the ancestors of the modern Indo-European nations of Europe used to denote grain legumes a millennium ago, as well as a rich exchange between both Indo-European people and their non-Indo-European neighbors, before they were immortalized by the Linnaean binominal nomenclature.

Keywords: Latin language, Old Greek language, Proto-Indo-European etymology

RESUMO – **Origem da nomenclatura binomial lineana usada para nomear algumas espécies de legumes do velho mundo.** A revisão nomenclatural usada para nomear algumas antigas espécies de legumes do mundo objetiva trazer conhecimento sobre a origem das palavras gregas e latinas usadas por Linnaeus para denotar algumas das culturas de leguminosas para grãos Eurasianos mais antigos e tradicionais, tais como ervilha, lentilha, fava e rvilhaca. O resultado desta revisão estabelece uma conexão firme entre as palavras lineanas usadas hoje com suas origens na língua proto-indo-europeu e fornece uma riqueza de seus cognatos em outros ramos da família indo-européia. Os resultados atestam ainda um nível notável de conservadorismo das palavras que os antepassados das modernas nações indo-européias da Europa usavam para denotar leguminosas há um milênio atrás, bem como, um rico intercâmbio os povos Indo-Europeus e seus vizinhos não-Indo-Europeus, antes que fossem imortalizados pela nomenclatura binominal lineana.

Palavras-chave: etimologia Proto-Indo-Européia, língua latina, língua grega antiga

INTRODUCTION

Grain legumes are one of the most important crops in the global agriculture. They are commonly recognised as an essential part of many cropping systems in diverse environments (Mihailović & Mikić 2010). Like all other members of the family Fabaceae Lindl., grain legumes contribute to the renewal of the soil fertility by living in a symbiosis

with nitrogen-fixating bacteria and are indispensable for the survival of agriculture. Despite the adjective *grain*, most of these species are multi-functional and are used for human consumption and in animal feeding (Mikić *et al.* 2010), as well as in various non-food uses such as green manure, especially esteemed in organic farming (Ćupina *et al.* 2004).

Traditional Eurasian grain legume species originated in Mediterranean, Near Eastern or Central

Asian centres of diversity (Zeven & Zhukovsky 1975). The Mediterranean centre of diversity was the home for most of vetchlings (*Lathyrus* spp.), such as grass pea (*L. sativus* L.) and red vetchling (*L. cicera* L.), as well as to lupins (*Lupinus* spp.) and bitter vetch (*Vicia ervilia* (L.) Willd.) (Zeven & Zhukovsky 1975). The Near Eastern centre of diversity primarily produced species such as chickpea (*Cicer arietinum* L.), lentil (*Lens culinaris* Medik.), pea (*Pisum sativum* L.) and several vetches, most notably common (*Vicia sativa* L.) and Narbonne vetch (*Vicia narbonensis* L.) (Zeven & Zhukovsky 1975). The only economically important grain legume species originating from the Central Asian centre of diversity is field bean (*Vicia faba* L.) (Zeven & Zhukovsky 1975).

The grain legumes, such as chickpea, grass pea, red vetchling, lentil, pea, bitter vetch, field bean and common vetch are counted among the first domesticated plant species in the Old World and thus represent the most ancient crops (Zohary *et al.* 2012). The earliest findings of these grain legume crops are dated between 10,000 and 9,300 years B.P. and are mostly located in Syria (Willcox *et al.* 2008). From there, this most ancient Eurasian grain legume crops distributed in all directions, including post-glacial Europe, where they carried out 'agricultural revolution' together with several species of small grain crops (Ljuština & Mikić 2010).

Together with many other traditional European plant species, the majority of grain legumes originating from the old World were described by Linnaeus and given a binominal taxonomical label each, either from Latin or Old Greek (Linnaeus 1753, Linnaeus 1758). Among the most known examples are the Linnean genera *Arachis*, *Cicer*, *Ervum*, *Orobus*, *Pisum* and *Vicia* and the Linnean species *faba*, cf. *Vicia faba* L., and *lens*, cf. *Ervum lens* L. (Mikić 2012). This research was aimed at searching the sources of the Latin or Old Greek words Linnaeus used to denote the genera and the species of the most ancient Eurasian grain legume crops.

MATERIALS AND METHODS

In order to achieve its goal, this joint ethnobotanical-linguistic study screened all the available printed and electronic etymological dictionaries of diverse Indo-European languages, seeking the roots that could lay under the Latin and Old Greek words that became the scientific names for these several grain legume crops. The modern lexicological wealth of the words denoting them

was not collected due to its extreme extensivity and was used only occasionally to support the obtained results. The borrowings, occurring between the languages of different branches of the Indo-European family, as well as among the Indo-European and non-Indo-European languages, were all recorded as a testimony of rather lively contacts between the peoples of Europe in the past (Mikić-Vragolić *et al.* 2007).

RESULTS AND DISCUSSION

A detailed search of the available etymological, lexicological and ethnobotanical resources resulted in the explained eight words (Table 1). These are six genera, namely *Arachis* L. 1753, *Cicer* L. 1753, *Ervum* L. 1753, *Orobus* L. 1753, *Pisum* L. 1753 and *Vicia* L. 1753 (Index Nominum Genericorum, 2014), and two species, that is, *faba*, cf. *Vicia faba* L. 1753 (Bullock 1960) and *lens*, cf. *Ervum lens* L. 1753 (International Plant Names Index 2014).

Arachis: The word that Linnaeus chose to denote the genus groundnut, in Old Greek had a form of *ἀρακος* and denoted a leguminous plant in general or, more specifically, annual vetchling (*Lathyrus annuus* L.). In its turn, this Old Greek word was derived from the Proto-Indo-European root **arnk(’)-*, *arenko-*, also denoting a leguminous plant (Pokorny 1959, Nikolayev 2007). While this root left no other derivatives related to grain legumes, the Old Greek has been preserved in Modern Greek, where as *αρακάς* denotes pea (Mikić 2011a).

Cicer: The Latin word *cicer*, denoting chickpea, originated from the Proto-Indo-European root **kek-*, **k’ik’-*, *kîkêr-*, denoting pea (Pokorny 1959). There are two other direct descendants of this Proto-Indo-European root, namely the Old Armenian *siseʳn* and the Proto-Hellenic **κικριός*, both denoting chickpea. Only the former remained left a descendant, the Modern Armenian *siser*, also denoting chickpea. It is curious that of all direct and indirect derivatives of the original Proto-Indo-European root it was only the extinct Old Prussian, a Baltic language related to Latvian and Lithuanian, kept both form and meaning, as *kekêrs* (Nikolayev 2007). Among the modern descendants of the Latin *cicer* and its Proto-Indo-European mostly are the words denoting chickpea in modern Romance languages, such as the Italian *cece* or the Valencian *cigro*, or the modern Germanic languages, such as the Danish *kikært* or the Dutch *kikkererwt*, both having the word denoting pea as a suffix and thus being a kind of pleonasm.

Ervum and Orobus: The first of these two words was taken from Latin, with the same unchanged form of *ervum* and denotes bitter vetch. Another one belonged to Old Greek, where it had two forms, namely *όροβος*, also denoted bitter vetch, and *έπέβινθος*, denoting chickpea. It is assumed that the Latin word originated from the Proto-Italic **erouom*, while both old Greek forms descended from the Proto-Hellenic **έροβος* (Nikolayev 2007). Both Latin and old Greek words have their ultimate source in the Proto-Indo-European root **erag^w [h]-*, *ereg^w(h)o-*, *erog^w(h)o-*, denotes equally a kernel of leguminous plant and pea. In the modern Romance languages, the Latin *ervum* has survived in the Asturian and Leonese *arbeyu* or the Portuguese *ervilha*, in all three denoting pea (Mikić 2009). From Greek, the word *όροβος* was borrowed by some neighbouring Balkan languages, such as Serbian with *urov*, denoting bitter vetch (Mikić 2008). Apart from the said Latin and Proto-Hellenic words, the original Proto-Indo-European root had another direct derivative, the Proto-Germanic **arwait-*, **arwīt-*, that, as everyone of its modern descendants, such as the Faroese *ertur* or the Frisian *eart*, means *pea*.

Pisum: This Latin word is a fine example of a descriptive nature of the word denoting specific species, since in many occasions it as an attribute or an action that gives the final word for some plant (Mikić & Stoddard 2009). In this case, the Proto-Indo-European root **pis-*, denoting the verb *to pound*, *to thresh* evolved into the Latin verb *pīnsō*, *-ere*, with the same meaning (Pokorny 1959, Nikolaev 2007) and, in the end, into the noun *pisum* denoting pea. This Latin word is an ultimate source of the words denoting pea in all the modern Romance languages, such as the French *pois* or the Sardinian *pisu*. It was also borrowed into the neighbouring non-Indo-European languages, such as Maltese with *pizella* and the Turkish with *bezelye* (Mikić 2009).

Vicia: The Latin word of the same form proved to have the same descriptive origin like *pisum*. The Proto-Indo-European root **weik-*, **weig-*, meaning *soft*, *pliable* and *to avoid*, first gave the Latin verb *vincīre*, meaning *to bind*, and then the noun *vicia*, denoting vetches and obviously pointing out their well-developed tendrils (Pokorny 1959, Nikolaev 2007). This Latin noun also gave the words denoting a large majority of the species of the genus *Vicia* L. in diverse modern Romance languages, such as Catalan with *veça* or Spanish with *veza*. It was also borrowed by Baltic languages, such as Lithuanian with *vikis*, Celtic languages, such as Breton with

gweg, Germanic languages, such as the German with *wicke*, and Slavic languages, such as Czech with *vikev*. It is noteworthy that the Latin *vicia* was preserved in some non-Indo-European languages, such as Hungarian with *bükköny* (Gombocz 1912) and Turkish with *fiğ* (Nişanyan 2002).

Faba: The Latin word denoting field bean remained preserved in many modern Romance languages, such as Aragonese with *faba* or Sardinian with *fa*, as well as in the Brythonic branch of the Celtic languages, such as Welsh with *ffa*. The Proto-Indo-European root **bhabh-*, *bhabhā*, denoting field bean and being the origin of the Latin *faba*, had several more direct descendants retaining the same meaning. They are the Proto-Albanian **bhakā*, giving the Modern Albanian *bathë*, the Old Prussian *baba*, *babo*, the Proto-Germanic **bab-n-ō*, among others giving the Icelandic *baun*, and Proto-Slavic **bobŭ*, giving the almost pan-Slavic and all-uniform *bob*. The Germanic languages borrowed their words for field bean to the languages of the Goidelic branch of the Celtic languages, such as *poanrey* in Manx (Macbain 1911). The Slavic languages did the same to Romani with *boba*, Romanian with *bob* and Hungarian with *bab* (Mikić 2010), as well as to Finnish with *papu* (Mikić 2011b). The only descendant of the original Proto-Indo-European root that underwent a shift in its meaning is the Old Greek *φακός* that started to denote lentil (Mikić 2010).

Lens: The Proto-Indo-European root **lent-*, **lent-s-* denoted lentil (Pokorny 1959, Nikolaev 2007) is one of the most conservative in both morphology and meaning. The Latin word is only one of its descendants and is responsible for the words denoting this lentil in all modern Romance languages, such as Corsican with *lentichja* or Galician with *lentella*, as well as for the borrowings in Celtic languages such as Irish with *lintile* or Scottish Gaelic with *leantai* (Mikić 2010). Among the other direct derivatives of the Proto-Indo-European root are the Proto-Baltic **leñš-ia-*, giving Modern Latvian *lēca*, the Proto-Germanic **lins-ī(n-)*, surviving in Norwegian as *linse* or Swedish as *lins*, and the Proto-Slavic **lějǰā*, remaining preserved in Bulgarian *leshta* and Serbian *leća* (Vasmer 1953).

CONCLUSIONS

The results of this brief etymological and lexicological analysis of the Linnean words denotes some of the most traditional Eurasian grain legume genera and species and demonstrates that behind their

Latin or Old Greek origin a more ancient substrate exists, in the form of the Proto-Indo-European roots of either identical or similar morphology and meaning. This may be the reason why the binominal nomenclature applied to these species has always been very comprehensive and intelligible even among the non-academic public, especially those belonging to the Romance-speaking population. In the end, the results witness a remarkable level of conservativeness of the words the ancestors of the modern Indo-European nations of Europe used to denote grain legumes, despite the millennia that has passed in between, as well as a rich exchange between both Indo-European peoples and their non-Indo-European neighbours.

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