

Epigyne or epigynum: what is correct?

Как правильно: epigyne или epigynum?

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КЛЮЧЕВЫЕ СЛОВА: Aranei, epiandrus, epiandrum, epigaster, epigastrum, паук, терминология, этимология.

ABSTRACT. Etymology of three terms used in spider morphology (epigyne, epigaster and epiandrus), and their spelling are discussed. The term “epigyne” was first introduced by Savigny & Audouin in 1826, but not by Walckenaer in 1837, as previously thought.

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РЕЗЮМЕ. Дана этимология трёх терминов, используемых в арахнологической терминологии: epigyne, epigaster и epiandrus. Обсуждаются их разные варианты написания. Установлено, что термин epigyne был впервые предложен Savigny & Audouin в 1826, а не Валкенаером [Walckenaer, 1837] как считалось ранее.

Introduction

In editing, reviewing, and writing numerous taxonomic papers on spiders, I found several instances in which the same anatomical term in English was used with a different ending, e.g.: epigyne vs. epigynum, epigaster vs. epigastrum, and even spermatheca vs. spermathecum. The word “epigyne” is used as an English word (plural, epigynes), while “epigynum” predominately is used as a Latin word (plural, epigyne). Both versions are commonly used.

The main trigger for this contribution was the demand of the editors in several taxonomic journals for uniformity and for using exclusively the “epigynum” as a Latin word.

To understand the origin of the abovementioned terms and their usage, I have attempted to search all major literature sources since Clerck [1757] to find the first usage and the author of specific terms, with their original meaning. The terminology of the female copulatory organs was discussed by Engelhardt [1909]. The history of study of both the male palp and the female epigyne is given in brief in Blauvelt [1936], and in

more detail in Gering [1953]. Since Gering’s survey [1953], none of the modern textbooks (e.g. Dippenaar-Schoeman, Jocqué, 1997; Deeleman-Reinhold, 2001; Ubick *et al.*, 2005; Jocqué, Dippenaar-Schoeman, 2006) or papers that cover spider morphology address the etymology of the copulatory organ structures. Furthermore, while examining the history of the terminology, I realized that there are no data on who first used certain terms, such as vulva, spermatheca, epigyne, and endogyne. The goals of this paper were to determine: (1) who were the first authors to introduce the term “epigyne/epigynum”, and (2) what is the correct spelling of this term, as well as two other terms: “epiandrus” and “epigaster”.

Methods

All major publications dealing with spiders since Clerck [1757] were searched. Most of publications were found in the WSC [2021], and some in the Biodiversity Heritage Library (<https://www.biodiversitylibrary.org/>). While discussing modern usage of the terms, I tried to refer first of all to well-known authorities in arachnology.

Discussion

Epigyne vs epigynum

ETYMOLOGY: from Greek words “epi-” (above) and “gyne” (female, or female sexual organ). Gender feminine both in Latin and Greek.

In the survey of history of terminology used for spider copulatory organs Gering [1953: 36] thought that this term (spelled in Gering as “epigynum”) was first invented by Walckenaer [1837]. However, I found that it was used first used by Savigny & Audouin [1826: 6] in French as: “l’*épigyne*, organe prévulvaire”. Walckenaer [1837: 88–89] was aware of the term and mentioned that he “prefers the term oviduct instead of the earlier proposed term epigyne”. This term has been

used in Latin, French, German, and English texts. Tullgren [1946] used “epigyn” in Swedish. It appears that in all European languages, “epigyne” is considered a word of a native vocabulary rather than a Latinized Greek word. In English texts, European authors consider this term an English word and pluralize it as “epigyne”.

The same term spelled as “epigynum” likely was first used by the Austro-Hungarian arachnologist Herman [1868] in a German text. It is unclear if Herman considered it a German or Latin word. Next, “epigynum” was used by Emerton [1875], and all North American arachnologists until recently have followed this spelling, considering it to be a Latin word (i.e., plural “epigyne”). Currently, “epigynum” is used by almost all North and South American authors, and a few European, Asian, and African authors. Today, some authors are also using “epigynum” as an American English word and pluralize it as “epigynums” [Dondale *et al.*, 2003; Gordh, Headrick, 2011; Meriam Webster, 2019]. Some authors, for example Ramírez [2014] and Ramírez *et al.* [2019] are using in the same text both “epigynum” and “epigyne” as well as “female genitalia, ventral”. “Epigynum” is used as both a noun and an adjective, whereas the English adjective form of “epigyne” is “epigynal” (e.g., epigynum lobes and epigynal lobes).

It seems that Emerton was not keen in Latin, and thought that all terms should be in the neuter gender, while both Latin and Greek are gender sensitive. Indeed “epigynum” can be used as a word of the American English vocabulary (plural epigynums); however, it is against the rules to change Latin grammar arbitrarily.

Epiandrus vs epiandrum

ETYMOLOGY: from Greek “epi-” (above) and “andrus” (male), the gender is masculine.

This term refers to the ventral part of male abdomen where gonopore is located.

I have not searched for the origins of this term, but it seems that the word “epiandrum” was invented by someone who was not good in Latin grammar and transformed masculine gender to the neuter. “Epiandrum” is suggested by the ‘Spider Anatomy Ontology’ (http://purl.obolibrary.org/obo/SPD_0000030). It is also commonly used in mite morphology. Like with “epigynum”, this term can be used as a word of English vocabulary, but not as Latin.

Epigaster vs epigastrum

ETYMOLOGY: from Greek “epi-” (above) and “gaster”, the gender is feminine (although in botany most genera ending in “-gaster” are masculine, according to their epithets [<http://www.mobot.org/mobot/lat-indict/keyDetail.aspx?keyWord=gaster>]).

This term refers in arachnids to the ventral part of abdomen lying anteriorly from epigastric furrow. It has two incorrect emendations: “epigastrum” [Zyuzin, 1993; Marusik, 2017; Zonstein, Marusik, 2017] or “epigas-

trium” [Goloboff, 1995], both of the neuter gender. Both “epigastrum” and “epigastrium” are also used in medicine and entomology. If to use this word as Latin, the correct spelling should be epigaster.

Conclusions

My general suggestions are to use words that are shorter and treat them as English rather than Latin words. In case if an author prefers to treat popular terms as Latin words, they should strictly follow rules of Latin grammar.

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