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RESEARCH ARTICLE

The correct authorship of Arthropoda—A reappraisal

Carlos A. Martínez-Muñoz[1,2]

Abstract

The scientific name Arthropoda has been repeatedly cited with various incorrect authorship data. This unsatisfactory situation was reviewed in 2013 and the "correct citation" was affirmed to be "Arthropoda von Siebold, 1848" based on the available evidence. Here, the review of historical literature is expanded with additional sources from the Biodiversity Heritage Library. The Greek compound noun "Arthropoda" was used as a scientific name at the rank of class already in 1843, containing the subclasses Crustacea, Arachnoidea, and Insecta. Additionally, the French morphological term "arthropodes" has been used in Zoology since at least 1832. The new citation of the name is proposed as "Arthropoda Gravenhorst, 1843".

Keywords: anatomy, Arthropoda, Dumortier, Gravenhorst, nomenclature, von Siebold.

Zusammenfassung

Der wissenschaftliche Name Arthropoda wurde wiederholt mit verschiedenen falschen Urheberangaben zitiert. Die unbefriedigende Situation wurde 2013 überprüft und die „korrekte Zitierung" auf der Grundlage der verfügbaren Literatur mit „Arthropoda von Siebold, 1848" bestätigt. Hier wird die Recherche historischer Literatur um zusätzliche Quellen aus der Biodiversity Heritage Library erweitert. Das griechische zusammengesetzte Substantiv „Arthropoda" wurde bereits 1843 als wissenschaftlicher Name im Rang einer Klasse verwendet, der die Unterklassen Crustacea, Arachnoidea und Insecta enthielt. Darüber hinaus wird der französische morphologische Begriff „arthropodes" in der Zoologie seit mindestens 1832 verwendet. Die neue Zitation des Namens wird als „Arthropoda Gravenhorst, 1843" vorgeschlagen.

Introduction

"*Much that once was is lost, for none now live who remember it.*" (Lady Galadriel)

For over two centuries, taxonomists have conferred great importance to the standardization of the scientific names of organisms and their corresponding authorship, which is represented in the form of author and year microcitations. More recently, biodiversity informaticians have also started researching and recording the correct authorship of scientific names, which underpins tasks as diverse as data linking, data aggregation, and information extraction, which are essential to biodiversity informatics workflows.

For some years now, I have been noticing unexpected inconsistencies in the authorship of names in the higher classification of the subphylum Myriapoda Latreille, 1797. Until now, those inconsistencies had been restricted to the publication year. For example, Myriapoda Latreille is often given with the year 1802 in most databases except for Myriatrix (The Fellegship of the Rings 2020 onwards), while the year of other names such as Geophilomorpha Pocock, 1896 and Pauropoda Lubbock, 1868 has already been corrected in print (see Martínez-Muñoz & Perez-Gelabert 2018: 77 and Martínez-Muñoz & Bu 2021: 599, respectively). In this paper, I revise both the accepted author and year for a scientific name in everyday use: the speciose phylum Arthropoda, comprising organisms as diverse as myriapods, chelicerates, and crustaceans (including insects).

Hegna et al. (2013) recently reviewed the authorship and date of the phylum Arthropoda. In that work, they set the author and year citation of the name as "Arthropoda von Siebold, 1848". The authors disregarded citations of "von Siebold, 1845", as they could not find supporting evidence. Below, I provide evidence of the authorship "von Siebold, 1845" being the earliest by that author, and point out an even earlier usage of the name by another author.

First, a nomenclatural clarification. Hegna et al. (2013: 72) wrote: "The ICZN does not govern higher taxonomic categories, so our criteria for identifying the correct author & date are simply the first usage of the word 'Arthropoda'." That is correct to some extent. The International Code of Zoological Nomenclature (ICZN 1999) does not fully regulate the names of taxa above the family group and provides no rules for use below the rank of subspecies. However, as stated in Article 1.2.2, Articles 1–4, 7–10, 11.1–11.3, 14, 27, 28, and 32.5.2.5 do regulate names of taxa at ranks above the family group. Those articles

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include rules on first publication and criteria of availability, which by context relate to publication dates (Article 21) and author (Article 50). Worth of special mention, even if it is not the case for Arthropoda, Article 14 states that anonymous authorship of names published after 1950 does not confer availability in the sense of the Code. Thereby, Article 14 implies that recent taxa above the family group do need to bear authors and dates.

Second, a "deep roots" clarification. Hegna et al. (2013: 71) wrote: "The confusion over the correct author & date of 'Arthropoda' has deep roots". They then referred to the arthropod volume of the "Treatise on Invertebrate Paleontology" (Størmer 1959) and to the arthropod volume of the "Traité de Zoologie" ("Grassé 1968") as sources of mis-citations of authorship and date of Arthropoda, but did not clarify which mis-citations those were. Størmer (1959: 3, 4) presented the name as "Arthropoda Siebold & Stannius, 1845". I was not able to verify the reference "Grassé (1968)", but I checked Grassé (1949) or, more accurately, Vandel in Grassé (1949), who wrote "Arthropoda, Siebold et Stannius 1845" on the title page of his section "Embranchement des Arthropodes", and again the same author and year while writing "Arthropodes" on page 79.

I concur with Hegna et al. (2013) hat the Arthropoda author and year confusion has deep roots, but my agreement is based on different sources and the "correct author & date" are definitely not the same. The oldest mis-citation of the author and date of Arthropoda known to me is by Robert Edmond Grant (1861: 42) as "Arthropoda, *Gegenb.*", a reference to the German anatomist Carl Gegenbaur and his book "Grundzüge der vergleichenden Anatomie". Gegenbaur (1859: 193, footnote) used the name Arthropoda and preferred to retain it while considering whether it had to be changed. Five years later, Adolph Gerstaecker (1866) published the first issue (Lieferung) of the "Fünfter Band Gliederfüssler (Arthropoda)" in Bronn's "Klassen und Ordnungen des Thier-Reichs", where he mis-cited the authorship of Arthropoda. Most curiously, what I now refer to as a mis-citation by Gerstaecker (1866: 1, 7) is precisely the "correct citation" proposed by Hegna et al. (2013): Arthropoda von Siebold, 1848.

Other authors of the time (1847–1849)

A third clarification is on several sources from the period 1847–1849, which could have led Hegna et al. (2013) to assume the publication year of 1847 and a different author for Arthropoda. The following references reflect the early adoption of the German term "Arthropoden" by zoologists Rudolph Leuckart[1] and Heinrich Frey: Leuckart in Frey & Leuckart (1847a: 273, 284, 285, 289, 407), Frey & Leuckart (1847b: 37, 113, 115, 116, 119), Frey (1848: 87, 96), Leuckart (1848a: 25), Leuckart (1848b; about 60 times in 43 pages), Leuckart [A.] (1849: 247), Leuckart (1849a: 206), and Leuckart (1849b: 341).

It could be argued whether these mentions of "Arthropoden" may or may not be considered a direct reference to Arthropoda. As a German noun, Arthropoden is written with a capital A, and the application of the term may not be explicit but rather implicit from the context. Nevertheless, these mentions serve to highlight adoption and diffusion of the term, and they are consistent with mentions of other definite scientific names in use at the time, such as "Tardigraden". Moreover, Wagner & Leuckart (1847–1849: 490) wrote in English for Todd's "The cyclopedia of anatomy and physiology" and explicitly mentioned Arthropoda, as did Leuckart (1848b: 77) in his essay on zoological classification.

It is worth mentioning that the comparative anatomy textbooks by von Siebold & Stannius (1845–1848) and by Frey & Leuckart (1847a) influenced Eduard Oskar Schmidt (see Schmidt 1849: vi). In his own textbook, Schmidt (1849) used the word "Arthropoden" about 30 times, as far as can be ascertained from uncorrected OCRed text alone. His use of the word should be regarded as equivalent to the use of Arthropoda by von Siebold, as there is explicit continuity between the two. In general, the context at that time reveals that the German term for referring to Arthropoda was "Gelenkfüßler", while Arthropoden stood for a Germanised scientific version of the Greek term and an exact synonym of it.

[1] There is a mismatch in the preferred spelling of Leuckart's first name between Wikipedia ("Rudolf") and Wikidata ("Rudolph"). From the eight publications authored or co-authored by Leuckart and cited here, seven title pages and one signature page were analysed. Those pages provided four different name text strings: "Rud. Leuckart" (4), "Rudolph Leuckart" (2), "Adolph Leuckart" (1), and "Rudolf Leuckart" (1). Of the four text strings usable for analysing the -olph versus -olf name ending, three supported -olph, either as Rudolph or Adolph, and just one supported -olf, as Rudolf. Therefore, the Wikidata spelling is preferred in this work. The reference for "Adolph" [A.] Leuckart is considered a misspelling of Rudolph Leuckart, but it is preserved as printed to highlight complexities regarding authorship and disambiguation of people's names. The spelling "Dr. Rudolf Leuckart" is mentioned by Leuckart (1848b: title page). Leuckart was also referred as "J. Leuckardt, M.D. Göttingen" by Todd (1847–1849: v, list of contributors) and as "Leuckhardt" by Todd (1847–1849: unnumbered page vii, table of contents). Fortunately, the involved article is signed by Wagner & Leuckart (1847–1849: 508) as "Rud. Wagner and Rud. Leuckart", which helps with disambiguation in that particular case. The text above and the respective references were redacted according to the printed forename initials, e.g., mentioning either "Leuckart R" or "Leuckart A".

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Latreille

A fourth clarification is on the combination of words "Arthropoda Latreille, 1829". That combination was addressed by Hegna et al. (2013: 71), but until now its oldest source is not recorded. I also did not search for it extensively, but some of the literature I reviewed was helpful in pointing in the right direction. For example, Leuckart (1848b: 77) stated the correspondence between "Die grosse Abtheilung der Arthropoden oder Gliederfüssler" and "Condylop(od)a Latr.". Also, Gerstaecker (1866: 1) discussed the correspondence between Condylopes / Condylopa / Condylopoda Latreille, 1825 and Arthropoda von Siebold, 1848. These actions may have been two of many leading to confusion when later authors attempted to credit Latreille's priority on the taxonomic circumscription of Condylopa through conferring him the authorship of the subsequent scientific name Arthropoda. The former "Arthropoda Latreille, 1829" authorship in Wikipedia mentioned by Hegna et al. (2013: 71) is now displayed as "Arthropoda von Siebold, 1848" in the scientific classification section of the taxonomy infobox (taxobox) of the arthropod Wikipedia article (Wikipedia Contributors 2022).

A fifth clarification is on a recommendation by Hegna et al. (2013: 72) referring to Condylopoda Latreille, 1802. The recommendation is: "Though Latreille's term is older than 'Arthropoda', as it has not been used in over one hundred years, we recommend that it be abandoned, in favor of its much more widely used junior subjective synonym (viz. 'Arthropoda')." First, a term that has not been used in one hundred years cannot be "abandoned", as it is so already. Second, even if we speak of some higher rank names in terms of senior and junior synonyms, it should be noted that Article 23 of the Code, on the Principle of Priority, does not apply to names above the family group. Therefore, a recommendation to abandon a higher rank junior synonym in favour of a senior synonym which is not in current use is beyond the scope of the Code. If similar recommendations are made in the future, it should be clear that they are rather about standardizing scientific name usage than about Code-compliance.

Von Siebold and Stannius

A sixth clarification is on the existence of a part of the "Lehrbuch der vergleichenden Anatomie" by von Siebold published in 1845, previous to what Hegna et al. (2013) assumed to be the first usage (and first definition) of Arthropoda by von Siebold (1848b: 4). Hegna et al. (2013: 72–73) wrote: "…von Siebold (1848) does not refer to any previous author or publication with regard to his term 'Arthropoda'." On page 72, the authors also discussed what they considered evidence of the delayed publication of the first part in 1848: "As indicated on both the title page and at the end of the foreword ("Vorrede", p. VIII), this 'first volume' was published after the so-called "second", in 1848, and was composed by von Siebold alone."

Regrettably, the evidence of delayed publication is misleading. Von Siebold did refer to a previous publication date, even if in an obscure way. In the same Vorrede (preface) cited by Hegna et al. (2013), von Siebold (1848b: vii) wrote: "Da die Ausarbeitung des vorliegenden Lehrbuchs bereits im Jahre 1845 begonnen, aber die Vollendung desselben (…) von meiner Seite verzögert wurde…". As will be shown below, this textbook elaboration (Ausarbeitung) not only meant writing but also the publication of instalments of the textbook.

Hegna et al. (2013) also overlooked other publications by von Siebold in which he clearly stated the publication of a part of the Lehrbuch in 1845. Von Siebold (1849: 270) wrote: "In dem im Jahre 1845 herausgegebenen ersten Hefte meines Lehrbuchs der vergleichenden Anatomie der wirbellosen Thiere…". Von Siebold (1850: 353, footnote 1) wrote: "C. Th. V. Siebold: Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere. Berlin 1848. Das erste Heft, die Protozoen, Zoophyten und Vermes enthaltend, ist im Jahre 1845 erschienen". Von Siebold (1884: 316), followed by Ehlers (1885: xxviii), refers to the "Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere" as being issued in three Lieferungen (instalments). In this context, Lieferung has the same meaning than "Heft" as used by von Siebold (1849, 1850) and Oken (1846) (see below). The first, second, and third instalments appeared in 1845, 1847, and 1848, respectively. Therefore, contrary to the order of publication assumed by Hegna et al. (2013), the order is: Erster Theil – 1. Lieferung (von Siebold 1845), Zweiter Theil (Stannius 1846), Erster Theil – 2. Lieferung (von Siebold 1847), and Erster Theil – 3. Lieferung (von Siebold 1848a), along with the publication of the complete "Erster Theil" by von Siebold with a title page for "1848" instead of the correct "1845–1848" and including the "Vorrede" written in 1848. No digital copies of von Siebold's instalments (1845, 1847, 1848a) were found online and no information about the number of pages of each instalment is available except for the first, as discussed below.

An independent reference on the publication date of the first instalment is documented in the journal "Isis", edited by Lorenz Oken, which was circulating at the time. Oken (1846: 160) reviewed the book by von Siebold (1845) in Isis, volume for 1846 (unnumbered, here considered volume 39), Heft 2 (number 2). No resource on the exact publication date of Isis numbers is known to me, but the existence of 12 numbers per year, some of them apparently issued together, points at an irregular "monthly" edition. Therefore, volume 39, number 2 would correspond to February 1846.

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Oken (1846: 160) sufficiently described the contents and extent of von Siebold's first Lieferung. The book is said to be printed in octavo and to have 192 pages. The number of pages given by Oken is consistent with octavo printing, as it corresponds with 12 signatures of 16 pages (eight leaves) each. Oken (1846: 160) presented a summary of von Siebold's (1845) classification of invertebrates. The groups dealt with in the 1845 edition range from the "Infusorien" to the "Räderthiere", thus corresponding to the complete 1848 edition up to page 185. The fifth and last group bears the name Arthropoda and is composed of classes 13 to 15, Crustacea, Arachnida, and Insecta, just as in the 1848 edition. The extent, content, and classification of the invertebrates mentioned by Oken (1846) constitute direct evidence that the introductory section ("Eintheilung der wirbellosen Thiere") was already part of the 1845 edition, as it is part of the 1848 edition (pages 3–4).

It is noteworthy that the existence of von Siebold (1845) got lost in time, despite having so many citations, quite a few of them authoritative, like the ones mentioned above. That is also the case of the first to fourth editions of "Zoological names. A list of phyla, classes, and orders, prepared for section F, American Association for the Advancement of Science", edited by Arthur Sperry Pearse (1936, 1947, 1948, 1949) in broad consultation with other specialists. The first, second, and fourth editions can be accessed through the Biodiversity Heritage Library. They are all mentioned in the References section of this work as Pearse (1936, 1947, 1949) with their individual "BHL item" URL rather than with the collective DOI they received. All editions were in demand and, except for the second, were all widely distributed. In the second edition, Pearse (1947) wrote that there was continual demand for the list and that it had been out of print for several years. Pearse (1948), quoted here from Pearse (1949), wrote that "The second edition of this list was so full of errors that it was never sent to the general biological public." Pearse's authoritative "Zoological names" is likely to have influenced the use of "Phylum Arthropoda Siebold & Stannius, 1845" in publications from 1936 to the present, like the recent works assessed by Hegna et al. (2013: 71).

In summary, the publication date of Arthropoda, whenever associated with von Siebold as an author, should be given not as 1848 as assumed by Hegna et al. (2013) but as 1845, as correctly recorded by Pearse (1936, 1947, 1949) and Štys & Zrzavý (1994: 267, 272). The year also corresponds to that mentioned by Størmer (1959) and Vandel in Grassé (1949: 77).

Gravenhorst (1843, 1845)

Until here, it would seem that the correct authorship for Arthropoda is von Siebold, 1845. However, the fact is that the name "Class Arthropoda, Gelenkfüßler" was used in print in both 1843 and 1845 by someone else: Dr. Johann Ludwig Christian Gravenhorst, at that time professor of Natural History at the University of Breslau, now University of Wrocław, Poland.

The book "Vergleichende Zoologie" by Gravenhorst (1843) bears two precise dates undersigned by the author. One date is found in the section "Einleitung und Vorwort" (introduction and foreword), page xx as "den 14. November 1842". The second precise date appears on the unnumbered page vi as "den 1. Januar 1843", in the dedication of the book to Dr. Wilhelm Hermann Georg Remer.

Gravenhorst (1843) used the scientific name Arthropoda in the "Erste Uebersicht. Klassen der Thiere", the first foldout of the book. The foldout is inserted in between the section Einleitung und Vorwort, page xx and page 1 of the main text. The "Erste Uebersicht" (first overview) features a typical dichotomous key where the couplets orderly resolve to the animal taxa at the rank of class. The first couplet is I–II, where step II corresponds to the "Animalia evertebrata Cuv. Fehlwirbelthiere". The path to "(Insecta L.) — Arthropoda, Gelenkfüßler. Achte Klasse" is rather short, being just the step II.A. Both the words Insecta and Arthropoda appear in a typeface distinct from the rest of the text, consistent with the usage of "Latin" names (= scientific names) stated by Gravenhorst (1843: xvi).

Only two major classifications are referred to in the key via their author abbreviations: Carolus Linnaeus (L.) and Georges Cuvier (Cuv.). The diagnosis for Arthropoda in step II.A, separating it from Vermes in step II.B, is "Mit gegliederten Bewegungsorganen" (with articulated movement organs). From the section "Einleitung und Vorwort", page xv, it is clear that Gravenhorst wrote diagnoses in the sense that we use them today, based on distinguishing characters that he considered necessary and sufficient. Nevertheless, I should here point out that Article 1.2.2 of the Code (ICZN 1999) does not refer to Article 12 (on the availability of names published before 1931) among those regulating names of taxa at ranks above the family group. Therefore, to be nomenclaturally available, the name Arthropoda does not need to be associated with a description, definition, or indication. Whichever mention of Arthropoda is presumed to be the oldest can be assumed as the one conferring availability to the name, as long as the other relevant criteria for availability are met.

Invertebrates are addressed first in Gravenhorst's book, each chapter (corresponding to a class) preceded by a foldout with a key to the "Ordnungen" (orders) and sometimes "Zünfte" (guilds). The "Achte Klasse Arthropoda, Gelenkfüßler" chapter starts on page 161, but because of the group being so diverse, there is no Uebersicht foldout mentioning Arthropoda but rather three foldouts keying out its component taxa. The foldouts are inserted as

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follows: the "Fünfte Uebersicht. Ordnungen und Zünfte der Vielfüßler" between pages 160 and 161, the "Sechste Uebersicht. Ordnungen der Spinnenthiere" between pages 162 and 163, and the "Siebente Uebersicht. Ordnungen der Insekten" between pages 164 and 165.

On page 161, Arthropoda appears with a different typeface than in the rest of the text, even in the chapter's headline. Arthropoda is divided into three "Unterklassen" (subclasses), which are diagnosed based on the number of legs, while the existence of exceptions is recorded: "1. Crustacea, Vielfüßler, haben mehr als acht Beine" (have more than eight legs), "2. Arachnoidea, Spinnenthiere, haben acht Beine" (have eight legs), and "3. Insecta, Insekten, Kerfe, haben sechs Beine" (have six legs). Here is to be noticed how the scientific name Insecta Linnaeus mentioned in the Erste Uebersicht, step II.A was reused by Gravenhorst but with a narrower taxonomic circumscription, therefore making his taxonomic treatments of Arthropoda and Insecta non-synonymous.

Further, the name Arthropoda is also indexed in the "Namen-Register", page 651, in the distinctive typeface used for scientific names. With all the information presented here on Gravenhorst (1843, Erste Uebersicht, 161, 651), including classification, ranks, and diagnoses, it is straightforward to affirm that he used Arthropoda as a scientific name. On the other hand, Gravenhorst (1843: xix) admittedly and intentionally did not include bibliographic references in his book, which now makes it very difficult, if not impossible, to trace his source for Arthropoda.

"Achte Klasse Arthropoda, Gelenkfüßler" is again used by Gravenhorst (1845: 35) in the second part of his "Vergleichende Zoologie", which appeared under the title "Das Thierreich nach den Verwandtschaften und Uebergängen in den Klassen und Ordnungen desselben". Gravenhorst (1845: 87, 144) also mentioned the class as only "Achte Klasse Gelenkfüßler". Like in 1843, no bibliographic references were included. On the contrary, one of the strengths of the "Lehrbuch der vergleichenden Anatomie" by von Siebold (1848b) is that he did cite his sources, though I found no reference to Gravenhorst (1843, 1845).

Dumortier (1832)

The earliest usage of the word "Arthropoda" in any form seems to be that by Dr. Barthélemy Charles Dumortier[2]. Dumortier submitted his work "Recherches sur la structure comparée et le développement des animaux et des végétaux" to the Academia Leopoldina in 1829, when he was already a member of the Royal Academy of Sciences of Brussels. On 3 August 1832, he became member of the Academia Leopoldina, a title which appears on the title page of his published work. Dumortier (1832a: 282, footnote) mentioned the French word "arthropodes" as part of an anatomical classification: "…si l'on prenait pour point de départ les articulations des membres, on aurait les divisions suivantes*:* anarthropodes, arthropodes, exarthropodes et endarthropodes.". On the same page, including the footnote, the word "arthropodes" is directly linked to three other equivalent terms: "exosquelettés", "exostés", and "exorachidés". Only two of those four terms were used as scientific names by Dumortier (1832a: 306) in his Animalia classification, where he grouped Crustacea, Arachnidea, and Insecta under the synonym terms "Exosceleta vel Exostea" (Exosceleta or Exostea). Therefore, two more names can be added to the list of senior synonyms of Arthropoda: Exosceleta Dumortier, 1832 and Exostea Dumortier, 1832. These names are not to displace Arthropoda, as they are not in use and the Principle of Priority does not apply to names above the family group.

Unsurprisingly, there is a geographical connection between Dumortier and Gravenhorst: as stated in the previous section, Gravenhorst was professor in Breslau and the journal "Nova acta physico-medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum", where the work by Dumortier (1832a) appeared, was printed in Breslau by the same printers as Gravenhorst's (1843, 1845) "Vergleichende Zoologie": "Graß, Barth und Comp.". The "Nova acta" being such an important publication and Gravenhorst having physical access to it make it highly likely that Gravenhorst read the work by Dumortier and noticed the latter's use of "arthropodes".

The work by Dumortier (1832a) was incorporated by Reverend Leonard Jenyns into his "Report on the recent progress and present state of Zoology", which he presented at the Fourth Meeting of the British Association for the Advancement of Science, held in Edinburgh in 1834. In his report, published the following year, Jenyns (1835: 152) briefly discussed the work by Dumortier (1832a) and mentioned Exosceleta. The Fourth Meeting was the largest gathering of the Association until then, with circa 1,300 tickets issued (Anonymous 1835: ix), and surely a significant number of attendees joined the communications of the Section of Zoology and heard the Report by Reverend Jenyns. That, combined with the later publication of the report, may have served to garner diffusion of its contents.

Perhaps tired of waiting since 1829, Dumortier presented his "Recherches" at the meeting of the Royal Academy of Sciences of Brussels on 5 March 1831, and they were ordered to be printed (Anonymous 1831: xiv). The

[2] The Academia Leopoldina membership of Dumortier is recorded in the "Nova acta" for 1832, page x as "Dr. D. C. Dumortier", thus representing an incorrect spelling of his name. The name is correctly presented as "B. C. Dumortier" on p. vii and on the title page of his "Recherches".

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"Recherches" finally got published, as Dumortier (1832b), in the "Nouveaux mémoires" of the Academy. The pages in Dumortier (1832b: 75, 139) correspond to those in Dumortier (1832a: 282, 306). This second print should have facilitated additional diffusion of his classification and terminology among Belgian scholars and beyond. The "Nouveaux mémoires" were part of the exchange with other societies and academies in France, London, Berlin, Turin, Stockholm, Saint Petersburg, Copenhagen, Lisbon, Edinburgh, Philadelphia, and Geneva (Quetelet 1833: 66).

Conclusion

Here, I set the scientific name citation of author and oldest known date of the scientific name Arthropoda to Arthropoda Gravenhorst, 1843. This supersedes the author and date "von Siebold, 1848" given by Hegna et al. (2013). Nevertheless, as evidenced by the section above, this may not be the last word on this topic. I have extensively used the full-text and scientific name searches in the Biodiversity Heritage Library, but I encourage further research as old literature continues to be scanned and added to that useful database.

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