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On the spelling of *Antrechinus nordenskjoldi* (Echinodermata: Echinoidea)*

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We dedicate this paper to the memory of Hans G. Hansson

Introduction

The spelling of organism names seems to be a trivial matter. A brief glance at the scientific literature, however, shows that it is far from that. In some cases, delving into these seemingly minor or even unimportant issues of spelling can turn up historical information germane to our science. Apart from simple misspellings and printing errors, differing ideas about the formation of names and the late onset of regulations (ICZN, ICBN) covering the naming and use of names are sources for different spellings. It was not until 1905 that a first internationally accepted version of what we now know as "*the Code*" was published under the name "*Règles internationales de la Nomenclature Zoologique adoptées par les Congrès Internationaux de Zoologie*". *The Code* kept being emended after this first attempt to provide a unified set of rules for the naming and treatment of names and today, for animals, the 4th edition of *the Code* is valid (ICZN 1999).

The availability of such a rigid framework as represented by *the Code* for the correct use of both old and new names does not automatically mean that all names are used correctly today. A common source of error is neglecting to consult the original paper in which a name was first proposed. Thus errors introduced early in scientific literature are often perpetuated. Rectification of such well-ingrained, but wrongly spelled names is desirable on the one hand, but potentially undermines the stability of nomenclature on the other. Here we present a case of an echinoid name widely used in a form differing from the original spelling and the correct use of which proved to be an especially hard "nut to crack". The circumstances of history that caused the confusion are also of interest.

Antrechinus nordenskjoldi (Mortensen, 1905), an extant deep-water echinoid of the group Holasteroida (which includes some of the most bizarre extant echinoid species, see Mooi & David 1996), was originally established as "*Plexechinus Nordenskiöldi*". Although no etymology was given in the original or any subsequent papers, the species was almost undoubtedly named in honour of Otto Nordenskjöld, leader of the Swedish South-Polar Expedition from 1901 to 1903 during which the type

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specimens of *Antrechinus nordenskjoldi* were found (Mortensen 1905).

The differing spelling between the original species name and the name it is presumably formed from is easily explained. According to the information found on a Swedish website dedicated to biographical etymology, it seems that the spelling of the family name changed among the Nordensk(i)jölds (both versions are pronounced the same—[ˌnu:rdenʃœld]): "*Baron Dr. Nils Adolf Erik Nordenskiöld (*18.11.1832, †12.8.1901), Finnish-Swedish geologist (later leader of the Swedish 'Vega' expedition around the NE passage); he was a ship-mate of Malmgren (q.v.) during some arctic expeditions. […] A. Nordenskiöld was uncle (mothers brother) of Dr. Nils Otto Gustaf Nordenskjöld, (*6.12.1869, †2.6.1928), who spelled his family name with the letter j instead of i. He took part in a Danish expedition to E Greenland during 1900 and the larger Antarctic expedition in 1901–03 onboard the Swedish ship 'Antarctic', which cooperated with the simultaneous Antarctic expeditions with the British ship 'Discovery' under Scott and the German ship 'Gauss' under von Drygalski. He had started his academic career in Uppsala as a geologist and geographer, but in 1905 he achieved a professorship in Göteborg (Gothenburg) in geography including commercial geography and ethnography* …" (from the BEMON-Database of the late Hans G. Hansson, available online at: http://www.tmbl.gu.se/libdb/taxon/personetymol/index.htm).

Spelling

The original spelling of *Antrechinus nordenskjoldi* (Mortensen, 1905: p. 242) was "*Plexechinus Nordenskiöldi*" and involves three issues, two of which are obvious and have been treated consistently in most of the subsequent literature mentioning that taxon:

1) According to ICZN Article 32.5.2.5. the first letter of "*Nordenskiöldi*" has to be replaced by a lower case letter (From *the Code*: "*In a species-group name first published with an initial upper-case letter the initial letter must be replaced with a lower-case letter* […]").

2) According to ICZN Article 32.5.2.1. the "ö" of "*Nordenskiöldi*" has to be replaced by "o", as this is not based on a German word (From *the Code*: "*In the case of a diacritic or other mark, the mark concerned is deleted, except that in a name published before 1985 and based upon a German word* […]"). We consider this regulation a bit strange, because in Sweden, like in Germany (as well as in Austria and Switzerland), the correct transcription of "ö" is "oe" rather than "o". Nevertheless, the regulation can be straightforwardly applied in this case.

Theoretically the correct spelling of "*Plexechinus Nordenskiöldi*" would thus be "*Plexechinus nordenskioldi*", yet it did not enter scientific literature in that way. Instead, it was spelled with a "j" (*nordenskjoldi*, *nordenskjöldi,* or *nordenskjoeldi*) in most papers (*e.g.*, Mortensen 1909: 82, 1910: 61, 1936: 235, 1948: 111, 1950a: 120, 1950b: 308; Lambert & Thiéry 1924: 421; Kier 1969: 216; Philip & Foster 1971: 669; Asgaard 1976: 371; Ghiold 1988: 350, Tab. 2; David & Mooi 1990: 76; De Ridder *et al.* 1992: 415; Mooi & David 1993a: 341, 1993b: 69; Mooi & David 1996: 920; Poulin & Féral 1996: 821, Tab. 1; Kasyanov *et al.* 1998: 171; McEdward & Miner 2001: 1160, Tab. A1; Poulin & Féral 2001: 163, Tab. 1; David *et al.* 2005: 154; Ziegler *et al.* 2009: 20; Kroh 2010: 344; Kroh & Smith 2010: 152, Tab. 1; Ziegler *et al.* 2010: 18; Sewell & Hofmann 2011: 738) except for the monograph on Hawaiian echinoids by H.L. Clark (1917: 120). While usage in the literature is thus quite unambiguous, *the Code* is fairly clear that the "j" spelling is an *incorrect subsequent spelling* and thus would have to be rejected.

In Scandinavian languages i and j are often treated as interchangeable letters. In names they are normally not so today, but in former times interchanges were common. It seems that the spelling of the family name changed among the Nordenskjölds (see above). This complicates matters, because it is unclear therefore, if Mortensen's subsequent use of "*nordenskjoldi*" was an *unjustified emendation* (*i.e.*, intentional change) or an *incorrect subsequent spelling* (*i.e.*, unintentional).

Mortensen did not use both the "i" and "j" spellings in the original 1905 paper, nor did he give any reason why he changed the "i" to a "j" in his subsequent publications. We thus looked for signs that he might have done so in other contemporaneous or nearly contemporaneous spellings of the Nordenskjöld family name in prefaces or introductions to try to read his intent. We were unable to identify such indications, however, and although the historical information (see above) circumstantially supports the idea that Mortensen changed his mind about the way the species name should be spelled, intent cannot be unambiguously demonstrated. In every work after his 1905 introduction of the name, Mortensen used the "j" spelling, which seems to underscore his intent. Although consequent use of a subsequent misspelling by the original author is not a criterion for emendation, it does at least circumstantially support the idea that the change was intentional. Most notably, in the "*Monograph of the Echinoidea*", Mortensen (1950a) used the "j" spelling, and even (incorrectly) cited the "j" spelling for his own 1905 paper in the synonymy. Following ICZN regulations, however, "*nordenskjoldi*" thus has to be considered an *incorrect subsequent spelling* (ICZN 4th ed., 1999, Article 33.3.)

Due to the fact that the *incorrect subsequent spelling* with "j" is, however, almost unambiguously accepted in the literature and attributed to the publication of the original spelling (Mortensen 1905), changing the name would result in unnecessary confusion and destabilization of the nomenclature. *The code* provides the tools to prevent this: according to Article 33.3.1. an *incorrect subsequent spelling* can be preserved if it is in prevailing usage and the (incorrect) spelling is deemed to be a correct original spelling (the same is true for an *unjustified emendation*, but here Article 33.2.3.1. applies).

Conclusions

The original spelling of *Antrechinus nordenskjoldi* (Mortensen, 1905) is "*Plexechinus Nordenskiöldi*" and according to *the Code* has to be changed to "*Plexechinus nordenskioldi*". In the scientific literature, however, the name has been consistently spelled with a "j", following Mortensen's own *incorrect subsequent spelling*. To prevent unnecessary confusion and promote stability of nomenclature we here invoke Article 33.3.1. of *the Code* which allows preservation of incorrect subsequent spellings if they are in prevailing usage. The correct spelling of the species thus is: *Antrechinus nordenskjoldi* (Mortensen, 1905).

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