

PRINCIPLES OF NOMENCLATURE: WORKSHEET (TEST YOUR KNOWLEDGE)

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Establishing the correct name for a species may entail a lot of literature research and some knowledge of the internationally-agreed rules of scientific nomenclature. The following cases are typical of problems that you might encounter. We offer them so that you can test your knowledge! The answers will be found in the handout. If you wish to discuss them with us, feel free to do so! And beware – some are “trick” questions!

Problem 1

There is a problem with each of the following scientific names – some of the actual names are not available, others are incorrectly written.

Can you spot the errors?

Question: *Cardium costatum indiae orientalis* Chemnitz, 1784

Question: *Arca lacerata* Linnaeus, 1753

Question: *Conus tessulatus* Born 1778

Question: *Turris babylonius* Linnaeus, 1758 (original name: *Murex babylonius* Linnaeus, 1758)

Question: *Conus milne-edwardsi* Jousseaume, 1894

Question: *Terebra Turschi* Bratcher, 1981

Question: *Strombus variabilis* var. *athenius* Duclos, 1844.

Problem 2

Can you explain the meaning of the following underlined words or groups of words?

Question: *Conus neglectus* Pease, 1860, non A. Adams, 1854

Question: *Conus distans* Hwass in Bruguière, 1792

Question: *Cucullaea labiata* [Lightfoot, 1786]

Question: *Turbo* sp. cf. *T. coronatus* Gmelin, 1791

Question: *Arca avellana* Lamarck, 1819, *sensu* Lamy, 1914.

Problem 3

Which of the following authors published malacological works that are now considered unavailable under ICZN rules?

Question: Chemnitz, Martini, Meuschen

Problem 4

Which of the following categories of names are:

Question: (a) not available, (b) not valid?

Question: A *nomen nudum*, a *nomen dubium*, a junior homonym, a subjective synonym.

Problem 5

Cerithium morus Bruguière, 1792, and *Cerithium morus* Lamarck, 1822, were based on different species.

One of these species is now known as *Cerithium bifasciatum* Sowerby, 1855.

Question: Which one had to be renamed and why?

Problem 6

When two names are based on the same type, are they called (a) **subjective** synonyms or (b) **objective** synonyms?

Question: Is the older name a **junior** or **senior** synonym?

Problem 7

You are the first person to discover that *Conus imus* var. *oculus* Smith is actually a valid species.

Question: Can and should you propose calling it *Conus oculus* Smith?

Problem 8

Venus viridis **sp. nov.**, and *Venus albus* **nom. nov.**

Question: One of these is a substitute name for an earlier, but invalid name: which one is it?

Problem 9

You discover that a name is a junior homonym.

Question: what is the most important thing to check before renaming it?

Problem 10

In the malacological literature, superfamily names appear with two different endings: for example, the cowries are sometimes called the “Cypraeacea”, sometimes the “Cypraeoidea”.

Question: Which ending is correct?

Problem 11

The monograph on *Pleurotoma* in Kiener's "Spécies général et iconographie des coquilles vivantes" was published in parts over several years (1839-40), but there is no record of the exact date of publication of each issue.

Question: For the purposes of priority, what date (year and month) must be used for all new names in this work?

Problem 12

Type species of genera

When Swainson (1840) proposed the name *Latiaxis*, he did not use the word "type", but mentioned only one species (*Pyrula mawae* Griffith & Pidgeon, 1834) as an example of his genus.

Question (i): Does this species become the type of *Latiaxis* and if so, what do we call such a method of type designation?

An early (fictitious) author proposed a new genus *Acavia* and listed two species in his genus, *Acavia acavia* and *Acavia oblonga*, without designating a type species.

Question (ii): Which becomes the type species and why?

Problem 13

Type specimens

Which of the following are **primary** (or **name-bearing**) type specimen categories? Holotype, paratype, neotype, topotype.

You are working on two species that are clearly separable by anatomy and by protoconch characters. There are two names available that could apply to either, as their respective holotypes are worn shells, without protoconch!

Question (i): Suggest some ways in which you can resolve the question of names.

To fix the identity of the name *Natica tecta* Anton, 1838, Kilburn (1976) designated a neotype, in the belief that the Anton collection was lost. However, part of the Anton collection was later discovered in the Dresden Museum, and Schniebs (1995) figured the holotype of *Natica tecta*, which was still present.

Question (ii): Can this specimen be regarded as the holotype when a neotype has already been designated?

A species was based on a series of specimens (syntypes) without any holotype being designated. A subsequent writer referred to a particular specimen among this series as "The Type".

Question (iii): How do we interpret his use of this word?

A neotype for *Arca nucleus* Linnaeus, 1758, was designated by Schenck (1935) from a sample in the Linnean collection. Another writer subsequently objected on the grounds that these shells were added after the death of Linnaeus.

Question (iv): Does this make the designation invalid?

Question (iv): If Schenck had designated this shell as a lectotype, what would the position be?

Two new names proposed in the same 19th century book have been shown to be synonyms, but both names have been given priority by different authors. One name is published described on page 3, the other on page 75. One is accompanied by an illustration, the other not.

Question (v): What principle would you use to decide on the senior synonym? (This is a trick question!)

You are investigating the pearl oyster genus *Pinctada* and need to establish the identity of *Pinctada imbricata* Röding, 1798. You look for the original description on p. 167 of the *Museum Boltenianum*, only to find that there is nothing except mention of figures in Chemnitz's *Neues Conchylien Cabinet*, vol. 8, fig. 719 (1785), and Knorr's "*Vergnügen der Augen und des Gemüss*" (1757-72), vol. 2, pl. 25, figs 2-3.

Question (vi): Is Röding's name *P. imbricata* available under ICZN rules?

Question (vi): If his name were available, how would you proceed to investigate its identity? (Röding mentions that Bolten had 4 specimens, which would have been syntypes, but so far no genuine Röding types have ever been located!

Question (vi): Do the specimens figured by Chemnitz and Knorr have any status?.