

e2 Fossil classification < binominal >

The cartoon shows a blackboard with “A B C D E F G “ written large across it. The teacher stands with chalk in hand, having just been interrupted by a little child who is saying: “Thank goodness that’s all of them? I was just beginning to loose interest.”¹

A hierarchal classification of organisms is into Kingdom at the highest (and most easily distinguished) level and species at the lowest. The same scheme is applied to fossils. However, a species as a group of individuals that can interbreed and have fertile offspring is a criterion (due to Ray) that cannot be applied to fossil organisms. Nevertheless, what is also true of a living species is that its offspring population ages to become statistically identical in all measurable parameters to the parent population. This latter criterion is used to distinguish species of fossils. For practical purposes, it does not matter that the subdivision of fossil organisms is artificial. For intuitive reasons, it is customary to classify fossils by comparing them, with reservations, to living forms.

The rule for naming a species is to give each a binominal name that consists of an exclusive generic name for its globally distinctive characteristics and a trivial name for its individualistic or its local variant recognition. For example: *Homo sapiens* is the scientific name for living human beings globally recognized as like ourselves (*homo* = self) and being, we flatter ourselves, wise (*sapiens*) and *Homo neanderthalensis* is the scientific name for a group of extinct humans first described from skull fragments found in 1856 at Feldhofer Cave in Germany’s Neander Valley.

The rule is also that the binominal name is Latin or is latinized. It can be, otherwise, freely indicative of what ever the namer chooses ² such as: locale of occurrence, life style, significance, insignificance, to honor an individual, a discoverer, as for example: *Lupus occidentalis* (northern timber wolf), *Turdus migratorius* (American robin), *Canus familiaris* (a domestic dog), and *Latimeria chalumnae* (**Figure e2.1**) to honor Miss Marjorie Courtenay-Latimer (1907-2004),³ curator of a natural-history museum in the small South African town of East London, who, alerted by Hendrick Goosen, captain of the trawler *Nerine*, to come see before it rotted, which, as it was, she had its skin stuffed for display before she could show it to ichthyologist James Leonard Brierley Smith (1897-1968), who formally described it,⁴ and the locale of the capture this, a strange 5 foot long, 127 pound, oily, lobe-finned fish, in a shark gill-net off Chalumna River mouth, in 1938.⁵

The consistent use of Latin to name organisms is economical because there are millions of species to be named and the name for each is not redundantly multiplied by the number of languages in print. For similar reasons, root words of Latin are combined, or of Greek are combined (following the medical tradition), to name the parts of organism. This achieves precision in any language. A glossary to the terms used, in a scholarly text in the readers language, can then be consulted. Here being pedantic is preferable to folksiness. As James F. O’Gorman has said in his *A B C of Architecture*, “No analysis of a building is possible unless you have the right vocabulary. ‘That thing sticking out of the roof’ won’t do. If it’s a chimney, call it that.”⁶ In the same vein, what good is a cookbook that in a recipe calls for a bay leaf ? when for this there is *Laurus nobilis* (leaves are glossy, dark green), the sweet bay of the Mediterranean, indispensable in Mediterranean cooking and beginning 4000 years ago the perfumed leafy branches of which were twined into the crowns of the victorious, and *Umbellularia californica* (leaves are a dull sage color), commonly called *California laurel* and *Oregon myrtle*, which intensely pungent leaves when used in cooking can deliver a resinous, rather oily flavor.⁷

Note: By convention, the binominal name is written *italicized* and the genus name only is *Capitalized*. A genus name is accorded priority and is not used a second time once it has been applied to a species or a group of closely related species. The species name may not be used, correctly, in isolation (that is without being appended to a genus name). The binominal designation, nevertheless, allows for the species name to be used more than once. □