

The Meaning of the Term 'Sibling Species'

An article by Dobzhansky (1972), adapted from a talk given on 30 December 1971 at the AAAS annual meeting in Philadelphia, Pennsylvania, contains the following definition of the term 'sibling species': "Pairs or groups of species that are morphologically indistinguishable, or distinguishable with difficulty, are called sibling species." Reference to Mayr (1942) follows this definition. Subsequent text indicates that the term is used wholly as a morphological concept, as for example when Dobzhansky states "It is remarkable that despite explosive proliferation of drosophilid species in Hawaii, most of them are morphologically distinct, and *sibling species are rare*" (my italics). Such a use of the term is entirely in accord with Mayr's original proposal (1942: 151), where it is stated that the category "does not necessarily include species which are phylogenetically siblings, for example, the members of a superspecies. The term sibling species is arbitrarily limited to species which are as similar as twins or quintuplets. The term is merely a convenient label for a non-infrequent taxonomic situation and has been adapted from the equivalent German and French terms." The further discussion by Mayr (1963: 34 and 1969: 183), with sibling species defined as "morphologically similar or identical populations that are reproductively isolated" is not essentially different, although more definite phyletic implications are introduced.

The proposal and subsequent widespread use of this term is unfortunate because it is a perversion of the meaning of the word 'sibling.' Webster's Third New International Dictionary defines 'sibling' as "one of two or more persons who have the same parents but are not necessarily of the same birth; *sometimes*: one of two or more persons having one common parent (~rivalry)." The word is thus primarily of phylogenetic significance. By extension, any species having a common ancestor are siblings and many of the Hawaiian species

of Drosophilidae may with all propriety be termed sibling species, even though they may be easily distinguished by one or more concise morphological characters. If any species are sister species, they are certainly also sibling species.

In order to obviate the inherent confusion built into the term from its inception, the unavoidable confusion between phylogenetic siblings and those arbitrarily designated as siblings on a purely morphological basis, I would propose here that 'sibling species' in the sense of Mayr and the many later authors who have followed him, including Dobzhansky, be known as *aphanic species*. This is a term that refers to nothing but the non-apparent nature of the species to which it may be applied. It is from the Greek *aphanēs* 'unseen, hidden, unnoticed, inscrutable, secret' and its correlative combining-form *aphan-*, or *aphano-*. The word 'cryptic' has much of the same meaning, but with reference to species it could be taken to mean a species with protective or cryptic coloration. Incidentally, the Webster definition of 'sibling species' is not quite what is meant by the term either phylogenetically or in Mayr's sense: "sibling species *n* [trans of G *geschwisterarten*]: one of two or more physiologic races that are morphologically nearly or completely indistinguishable."

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