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Eponyms have no place in 21st-century biological nomenclature

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We argue that naming species in honour of a specific person is unjustifiable and out of step with equality and representation. Reforming taxonomy to remove eponyms will not be easy but could bring multiple benefits for both conservation and society.

Science is often lauded as the pursuit of objectivity: a field that is meant to stand separate from value or emotion. Yet, sociopolitical influences are infused into the ontology of science itself. In biology, historical and contemporary figures have often been honoured or celebrated by having a species or genus named after them[1,2]. Scientific species names based on real or fictional people are known as eponyms. They provide a fascinating record of the political and cultural milieu of natural historians and taxonomists since the time of Linnaeus. Eponyms typically reflect benefactors, dignitaries, officials, the author's family members and colleagues, or well-known cultural figures (Fig. 1) — a practice that persists today. From a contemporary perspective this is potentially problematic, as many of those honoured are strongly associated with the social ills and negative legacy of imperialism, racism and slavery[3,4]. Moreover, 19th-century and early 20th-century taxonomy was largely dominated by white men who, by and large, honoured other men (funders, colleagues, collectors and so on) of their own nationality, ethnicity, race and social status. For example, a recent study has documented that over 60% of the eponyms given to the flora of New Caledonia have honoured French citizens and that 94% of the eponyms were named after a man[2].

The problematic nature of many eponyms reflects a much wider public discourse, with passionate debates about whether and how we should honour historical figures whose values, actions and/or beliefs are now incompatible with contemporary culture. For example, in South Africa, the highly visible and enduring legacy of the British imperialist Cecil John Rhodes (who also has species named after him[4]) became the focus of a powerful social movement known as 'Rhodes Must Fall'. This movement ignited activists across several South African academic institutions to remove emblems and effigies of Rhodes and other contentious figures who are associated with a legacy of colonialism, racism and other forms of oppression[5]. It also inspired activists in UK[6] and US universities to follow suit, and to expand their protests to include historical figures associated with social ills such as slave ownership (for example, Isaac Royall) and racial segregation (for example, Woodrow Wilson)[7]. More broadly, the past decade has seen the rise of numerous movements — both local and national — that seek to remove contentious memorials altogether[8].

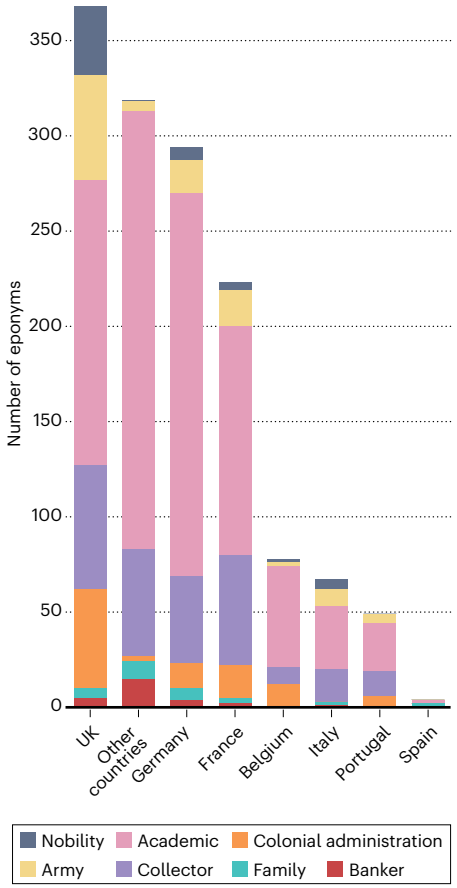

Fig. 1 | Number of eponym species in relation to the commemorated person's profession and/or relation to the describing author. The *y* axis refers to the commemorated person's nationality. Data refer to birds[16], mammals[17], amphibians[18] and reptiles[19] in Africa.

The need to reform taxonomic nomenclature

Attributing eponyms to species extends beyond the act of naming; it attaches the societal value system to which these individuals belong. It stakes a claim as to which knowledge system provides legitimacy to the existence of the species, while simultaneously diminishing the value and knowledge of the species within the context of those who may have interacted with it the most[9]. Inspired by the Rhodes Must Fall movement, Smith and Figueiredo[4] recently proposed that the botanical community should "proactively find solutions to address how to deal with such names and epithets".

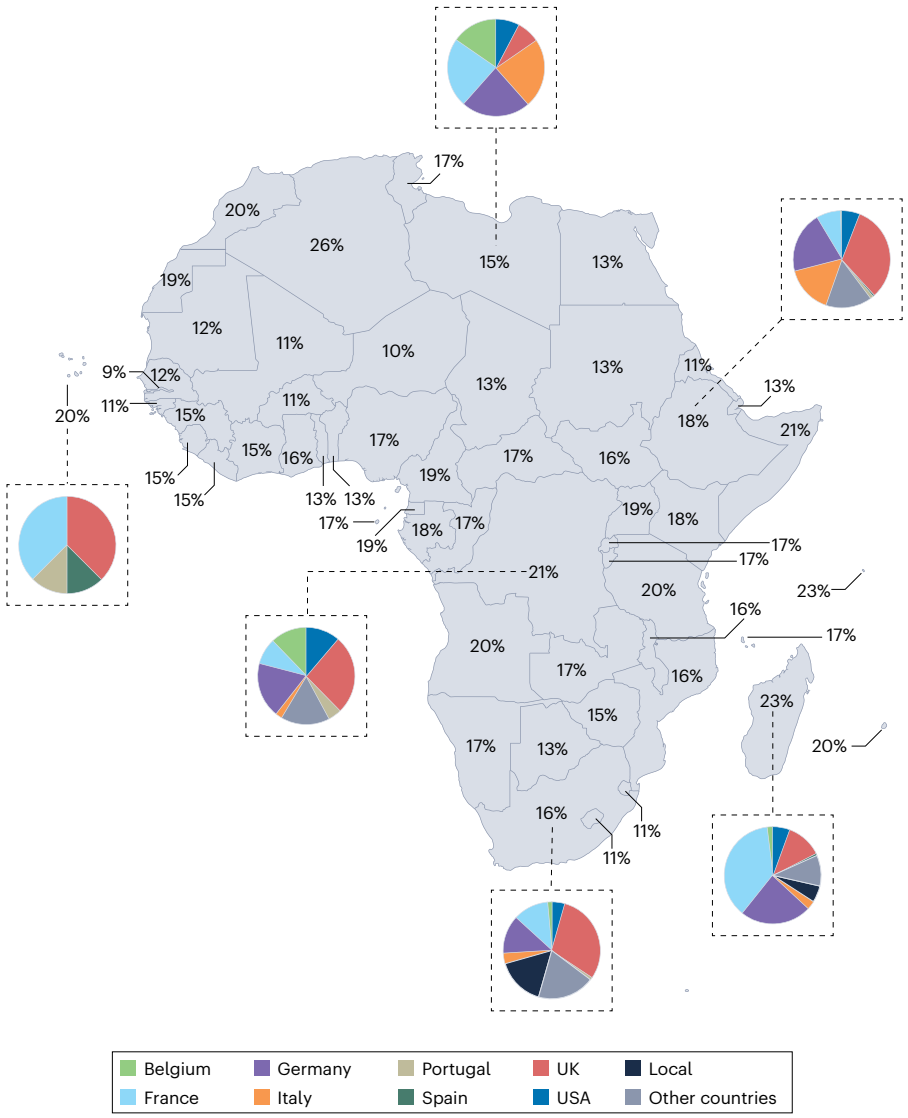

Fig. 2 | Proportions of eponym species in Africa and origins of their names. Percentages are those of eponym species in relation to the total number of species for land vertebrate taxa (amphibians, birds, mammals and reptiles), by African country. Pie charts show the national origins of eponyms for selected countries. Patterns in species eponyms often reflect histories of colonialism and imperialism specific to individual countries (for example, the prevalence of Belgian-derived eponyms in the Democratic Republic of the Congo or of Italian-derived eponyms in Libya).

Their suggestion was not universally welcomed, with critics arguing that it is not the role of science to engage in politically motivated censorship or the 'cleansing' of scientific history[10] and that name stability should be a paramount concern in taxonomy[11]. Furthermore, it is argued that revising names of biological species (which is strongly regulated) and other comprehensive changes would be overly disruptive, requiring an overhaul of the current rules and regulations regarding nomenclature[10,11].

In our opinion, these arguments against reforming biological nomenclature do not stand up to scrutiny. To begin with, the naming of species to celebrate and honour people is unambiguously a political act — whether the desire was to impress a colleague, funder or important dignitary, or to celebrate a family member, friend or collector of the specimen. Given that the scientists describing newly documented species in the 19th and early 20th centuries were predominantly of colonizing European nations[12], those commemorated were almost universally white, male upper-class Europeans. Second, name revisions would not alter scientific history, as the historical name would remain as a synonym and the identity of the individuals who initially described the species would remain unaltered. This is an important point, as eponyms can provide fascinating insights into the history of biological exploration[13]. Third, many biological naming conventions already include recommendations against naming proposals that are considered offensive. However, a name that is considered innocuous by some may be perceived as offensive by others, and names that were once considered inoffensive are not necessarily viewed in the same way in a post-colonial world (Fig. 2 shows the proportion of eponym species in Africa that honour citizens from colonizing nations).

Finally, the technical and administrative barriers to changing a large number of species names — although extremely challenging — should not be considered sufficient reasoning against such a course of action. There are already high-profile calls to reform the global governance of taxonomy that have been prompted by the enormous levels of recent taxonomic change[14], and revision of eponyms adds to this argument.

Any call for exceptional changes in how we name nature requires an exceptional rationale. In this respect, it is important to highlight that taxonomy provides the backbone for the study and conservation of biodiversity[15]. There is already a common perception in many post-colonial nations that ecology and biodiversity conservation are Western constructs that are shaped by and for Europeans and that privilege Western perspectives over others[12]. This perception is undoubtedly reinforced in many countries of the Global South by the existence of numerous species — some of which may be endemic or have local cultural value — that are named in honour of colonizers or people of colonial descent. In Africa alone, 1,565 species of birds, reptiles, amphibians and mammals (which represent a quarter of vertebrate endemics) are eponyms[16–19]. Researchers from former colonies might feel justifiably uncomfortable, resentful or even angry at the constant reminders of imperial and/or political regimes that are reflected in the names of native and endemic species (Fig. 2).

Ongoing shifts in cultural values mean that future generations may interpret the political and personal attitudes of those commemorated as untenable. It is by no means unusual for citizens who were once widely respected to be negatively reappraised by history. Many scientists might have serious reservations about naming new species in honour of contemporary political figures: for example, *Dermophis donaldtrumpi*, a caecilian named after Donald Trump by the Rainforest Trust to draw attention to his policies on climate change. A notable example of the dangers of overtly politicizing biological names is *Anophthalmus hitleri* (a cave beetle named after Adolf Hitler in 1933), which is currently threatened owing to high demand from collectors of Nazi memorabilia[20]. Nevertheless, the beetle has not been renamed by the International Commission on Zoological Nomenclature because the name has not been deemed sufficiently offensive[21].

In short, we believe that naming species in honour of real people is unnecessary and objectively difficult to justify. The Earth's biodiversity is part of a global heritage that should not be trivialized by association with any single human individual, whatever their perceived worth.

Dealing with eponyms

The cultural trend towards greater and more equitable representation in all aspects of human endeavour is unlikely to reverse, which means that many eponyms will remain problematic until action is taken. In light of progressive strides towards more equitable and diverse representation in all aspects of society (including in science)[12], our opinion is that the eponym issue in taxonomy must be urgently addressed.

An obvious action would be to alter nomenclature codes to preclude newly identified species being named after people. However, even this simple action would be difficult to implement in practice. Naming biological organisms is highly formalized and constrained, with strict rules and guidelines. Taxonomy is primarily governed by two branches of the International Union of Biological Sciences (IUBS): the International Commission on Zoological Nomenclature (ICZN) and the International Association for Plant Taxonomy (IAPT). Without a strong consensus among taxonomists (some of whom have liberally created new eponyms), such a proposal is unlikely to be implemented. An alternative to amending the codes is to interpret existing provisions more strictly: namely, Article 25 of the ICZN code, which instructs authors to ensure new names are "chosen with their subsequent users in mind and that, as far as possible, … do not cause offence"[22]. A stricter interpretation of this article could severely limit or even eliminate the creation of new eponyms without a need to rewrite the code.

In the long term (as argued above), removing all valid eponyms from biological nomenclature is the most ethical option, but is probably unfeasible without a large-scale overhaul of taxonomic procedures. For example, one of the key principles of both codes is that the first name validly given to a species is its correct name (known as the principle of priority) — this was the main reason for rejecting a proposal to change the name of *A. hitleri*. More generally, there is very strong resistance among the taxonomic community to alterations of the codes to enable renaming of species on ethical grounds[11]. We believe such resistance to be short-sighted: if taxonomy is to be rebranded to the scientific community as a 'modern, active and important discipline'[23], it needs to be objective while striving to respond to changes in cultural norms.

If these technical, administrative and epistemological barriers could be overcome, the task of renaming eponyms could be given to taxonomists from the biogeographical region of the candidate species. Such a strategy would ensure greater inclusivity and could be positive for taxonomy and conservation, integrating both a symbolic distancing from imperialist roots and a reinvigoration of local and national interests in biodiversity and its cultural value[9]. It may also have the added advantage of promoting interest in taxonomy and associated funding in the Global South where new taxonomists are most needed[24]. Renaming eponyms would also be an important gesture that reinforces the universality of Earth's biological heritage and our obligation to protect it.

Given the vast number of eponyms, such an exercise would have technical and administrative costs (especially for low-income and middle-income countries) and has the potential to sow confusion among the many users of taxonomy[11]. Nevertheless, there are two reasons why widespread changes in nomenclature may be less problematic than feared. First, rapid advances are being made in the development of universal species checklists that are interoperable with biodiversity information systems[25]. Such checklists should reduce the inevitable confusion and uncertainty generated by revising species' names. Second, most conservationists, ecologists and biogeographers are already well accustomed to managing synonyms (a scientific name for a taxon that is different from its valid scientific name), and the publicity associated with a widespread change in taxonomy would mean that most professionals would be aware of the issue. Although the general public is far less likely to use scientific names, eponyms are often incorporated into vernacular language: 'Hitler's beetle' and 'Taylor Swift's millipede'. Renaming eponyms to better connect with local geography and culture[9] could provide wonderful opportunities to highlight the importance of biodiversity conservation and to reinforce the deep links between nature and society.

In conclusion, we believe that naming a biological species after a human was and is never right — regardless of good intentions. Halting the practice of creating new eponyms and renaming currently valid eponyms would, in the long run, be good for taxonomy and for conservation.

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Competing interests

The authors declare no competing interests.