THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

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International Commission on Zoological Nomenclature,
c/o The Natural History Museum,
Cromwell Road,
London, SW7 5BD, U.K. (Tel. 071-938 9387)

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Notices

(a) *Invitation to comment.* The Commission is authorised to vote on applications published in the *Bulletin of Zoological Nomenclature* six months after their publication, but this period is normally extended to enable comments to be submitted. Any zoologist who wishes to comment on any of the applications is invited to send his contribution to the Executive Secretary of the Commission as quickly as possible.

(b) *Invitation to contribute general articles.* At present the *Bulletin* comprises mainly applications concerning names of particular animals or groups of animals, resulting comments and the Commission's eventual rulings (Opinions). Proposed amendments to the Code are also published for discussion.

Articles or notes of a more general nature are actively welcomed provided that they raise nomenclatural issues, although they may well deal with taxonomic matters for illustrative purposes. It should be the aim of such contributions to interest an audience wider than some small group of specialists.

(c) *Receipt of new applications.* The following new applications have been received since going to press for volume 47, part 1 (published on 27 March 1990):

(1) *Pliocercus* Cope, 1860 (Reptilia, Serpentes): proposed conservation, and *P. elapoides* Cope, 1860: proposed conservation of the specific name. (Case 2752). H.M. Smith, K.L. Williams, V. Wallach & D. Chiszar.

(2) *Cycloceras* McCoy, 1844 (Mollusca, Nautiloidea): proposed designation of *C. laevigatum* McCoy, 1844 as the type species, and proposed designation of a neotype for *C. laevigatum*. (Case 2753). K. Histon.

(3) *Scoparipes* Signoret, 1879 (Insecta, Heteroptera): proposed confirmation of *Cydnus latipes* Westwood, 1837 as the type species. (Case 2754). J.A. Lis.

(4) *Eurymela bicincta* Erichson, 1842 (currently *Eurymeloides bicincta*; Insecta, Homoptera): proposed conservation and designation of a neotype. (Case 2755). M.M. Stevens & M.J. Fletcher.

(5) *Proagoderus* Lansberge, 1883 (Insecta, Coleoptera): proposed conservation. (Case 2756). C. Palestrini.

(6) *Rhinapion* Beguin-Billecocq, 1905 (Insecta, Coleoptera): proposed conservation. (Case 2757). M.A. Alonso-Zarazaga & M. Wanat.

(7) *Buprestis* Linnaeus, 1758 (Insecta, Coleoptera): proposed confirmation of *B. octoguttata* Linnaeus, 1758 as the type species. (Case 2758). G.H. Nelson & W.F. Barr.

(8) *Goniosoma conspersum* Perty, December 1833 (currently *Mitobates conspersus*; Arachnida, Opiliones): proposed precedence over *Mitobates triangulus* Sundevall, April 1833. (Case 2759). A.B. Kury.

(9) *Rhipidocystis* Jaekel, 1900 (Echinodermata, Eocrinoidea): proposed designation of *R. baltica* Jaekel, 1900 as the type species. (Case 2760). S.V. Rozhnov.

(10) *Chrysops atlanticus* Pechuman, 1949 (Insecta, Diptera): proposed precedence over *C. canifrons* Walker, 1848. (Case 2761). J.E. Chainey.

(11) *Griffithides* Portlock, 1843 (Trilobita): proposed conservation of *G. longiceps* Portlock, 1843 as the type species. (Case 2762). G. Hahn.

(12) *Coccinella undecimnotata* Schneider, 1792 (currently *Hippodamia (Semiadalia) umdecimnotata*; Insecta, Coleoptera): proposed conservation of the specific name. (Case 2763). R.D. Pope.

(13) *Acrolocha* Thomson, 1858 (Insecta, Coleoptera): proposed conservation. (Case 2764). M.K. Thayer.

(14) *Phyllodoce* Lamarck, 1818 (Annelida, Polychaeta): proposed conservation. (Case 2765). F. Pleijel.

(15) *Conus fulmen* Reeve, 1843 and *C. berghausi* Michelotti, 1847 (Mollusca, Gastropoda): proposed precedence over *C. modestus* Sowerby, 1833 and *C. demissus* Philippi, 1836 respectively. (Case 2766). A.J. Kohn.

(16) *Drosophila hydei* Sturtevant, 1921 (Insecta, Diptera): proposed conservation of the specific name. (Case 2767). C.R. Vilela & G. Bächli.

(d) *Rulings of the Commission.* Each Opinion, Declaration or Direction published in the *Bulletin* constitutes an official ruling of the International Commission on Zoological Nomenclature, by virtue of the votes recorded, and comes into force on the day of publication of the *Bulletin*.

Call for nominations for new members of the International Commission on Zoological Nomenclature

The following members of the Commission reach the end of their terms of service at the close of the XXIV General Assembly of the International Union of Biological Sciences to be held in Amsterdam in September 1991: Dr H. G. Cogger (Australia, Herpetology); Prof Dr O. Kraus (Fed. Rep. Germany, Arachnology); Dr M. Mroczkowski (Poland, Coleoptera); Dr W. D. L. Ride (Australia, Mammalia). A further vacancy arises from the resignation of Dr G. C. Gruchy (Canada, Ichthyology).

The addresses and specialist fields of the present members of the Commission may be found in the *Bulletin of Zoological Nomenclature*, **47**(1) (March 1990). Under Article 3*b* of the Commission's Constitution a member whose term of service has terminated is not eligible for immediate re-election unless the Council of the Commission has decided to the contrary.

The Commission now invites nominations, by any person or institution, of candidates for membership. Article 2*b* of the Constitution prescribes that:

> 'The members of the Commission shall be eminent scientists, irrespective of nationality, with a distinguished record in any branch of zoology, who are known to have an interest in zoological nomenclature'.

(It should be noted that 'zoology' here includes the applied biological sciences (medicine, agriculture, etc.) which use zoological names).

Nominations made since September 1987 will be reconsidered automatically and need not be repeated. Additional nominations, giving the date of birth, nationality and

qualifications (by the criteria mentioned above) of each candidate should be sent by 1 June 1991 to: *The Executive Secretary, International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.*

Official Lists and Indexes of Names and Works in Zoology — Supplement

The Official Lists and Indexes of Names and Works in Zoology was published in 1987. This book gives details of all the names and works on which the Commission has ruled since it was set up in 1895, up to 1985. There are about 9,900 entries.

In the three years 1986–1988, 544 names and three works were added to the Official Lists and Official Indexes. A supplement has been prepared giving these additional entries, together with some amendments to entries in the 1987 volume. This supplement was circulated with Vol. 46, Part 1 of the *Bulletin of Zoological Nomenclature*. Copies can be obtained without charge from either of the following addresses, from which the *Official Lists and Indexes* can be ordered at the price shown (postage included). Payment should accompany orders.

The International Trust for Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. Price £60 or $110

or

The American Association for Zoological Nomenclature, c/o NHB Stop 163, National Museum of Natural History, Washington, D.C. 20560, U.S.A. Price $110 ($100 to members of A.A.Z.N.).

The International Code of Zoological Nomenclature

The Third Edition (published 1985) supersedes all earlier versions and incorporates many changes.

Copies may be ordered from the International Trust for Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. Price £19 or $35 (postage included) or from the American Association for Zoological Nomenclature, c/o NHB Stop 163, National Museum of Natural History, Washington, D.C. 20560 U.S.A. Price $35 ($32 to members of A.A.Z.N.). Payment should accompany orders.

Bully for *Brontosaurus*

A minor victory snatched from the jaws of taxonomic triviality

by Stephen Jay Gould

This article by Dr Gould originally appeared in *Natural History*, February 1990, pp. 16–24, published by the American Museum of Natural History, New York. It is reproduced here by permission. Offprints can be obtained from the Commission Secretariat.

Question: What do Catherine the Great, Attila the Hun, and Bozo the Clown have in common? Answer: They all have the same middle name.

Question: What do San Marino, Tannu Tuva, and Monaco have in common? Answer: They all realized that they could print pretty pieces of perforated paper, call them stamps, and sell them at remarkable prices to philatelists throughout the world (did these items ever bear any relationship to postage or utility? Does anyone own a canceled stamp from Tannu Tuva?). Some differences, however, must be admitted. Although San Marino (a tiny principality within Italy) and Tannu Tuva (a former state adjacent to Mongolia but now annexed to the Soviet Union) may rely on stamps for a significant fraction of their GNP, Monaco, as we all know, has another considerable source of outside income — the casino of Monte Carlo (nurtured by all the hype and elegance of the Grimaldis — Prince Rainier, Grace Kelly, and all that).

So completely do we identify Monaco with Monte Carlo that we can scarcely imagine any other activity, particularly something productive, taking place in this little land of fantasy and fractured finances.

Nonetheless, people are born, work, and die in Monaco. And this tiny nation boasts, among other amenities, a fine station for oceanographic research. This combination of science and hostelry makes Monaco an excellent place for large professional meetings. In 1913, Monaco hosted the International Zoological Congress, the largest of all meetings within my clan. This 1913 gathering adopted the important Article 79, or 'plenary powers decision', stating that 'when stability of nomenclature is threatened in an individual case, the strict application of the Code may under specified conditions be suspended by the International Commission on Zoological Nomenclature'.

Now I will not blame any reader for puzzlement over the last paragraph. The topic — rules for giving scientific names to organisms — is easy enough to infer. But why should we be concerned with such legalistic arcana? Bear with me. We shall detour around the coils of *Boa constrictor,* meet the International Code of Zoological Nomenclature head-on, and finally arrive at a hot issue now generating much passion and acrimony at the heart of our greatest contemporary fad. You may deny all concern for rules of taxonomy, our last domain of active Latin (now that Catholicism has embraced the vernacular), but millions of Americans are now het up about the proper name of *Brontosaurus,* the canonical dinosaur. And you can't grasp the name of the beast without engaging the beastly rules of naming.

Nonprofessionals often bridle at the complex Latin titles used by naturalists as official designations for organisms. Latin is a historical legacy from the foundation of modern taxonomy in the mid-eighteenth century — a precomputer age when

Romespeak was the only language shared by scientists throughout the world. The names may seem cumbersome, now that most of us pass our youthful years before a television set, rather than declaiming *hic-haec-hoc* and *amo-amas-amat*. But the principle is sound. Effective communication demands that organisms have official names, uniformly recognized in all countries, while a world of changing concepts and increasing knowledge requires that rules of naming foster maximal stability and minimal disruption.

New species are discovered every day; old names must often change as we correct past errors and add new information. If every change of concept demanded a redesignation of all names and a reordering of all categories, natural history would devolve into chaos. Our communications would fail as species, the basic units of all our discourse, would have no recognized labels. All past literature would be a tangle of changing designations, and we could not read without a concordance longer than the twenty volumes of the *Oxford English Dictionary*.

The rules for naming animals are codified in the *International Code of Zoological Nomenclature*,* as adopted and continually revised by the International Union of Biological Sciences (plant people have a different code based on similar principles). The latest edition (1985) is bound in bright red and runs to 338 pages. I will not attempt to summarize the contents, but only state the primary goal: to promote maximal stability as new knowledge demands revision.

Consider the most prevalent problem demanding a solution in the service of stability: when a single species has been given two or more names, how do we decide which to validate and which to reject? This common situation can arise for several reasons: two scientists, each unaware of the other's work, may name the same animal; or a single scientist, mistaking a variable species for two or more separate entities, may give more than one name to members of the same species. A simple and commonsensical approach might attempt to resolve all such disputes with a principle of priority — let the oldest name prevail. In practice, such 'obvious' solutions rarely work. The history of taxonomy since Linnaeus has featured three sequential approaches to this classical problem.

1. *Appropriateness.* Modern nomenclature dates from the publication, in 1758, of the tenth edition of Linnaeus's *Systema Naturae*. In principle, Linnaeus endorsed the rule of priority. In practice, he and most of his immediate successors commonly changed names for reasons, often idiosyncratic, of supposed 'appropriateness'. If the literal Latin of an original name ceased to be an accurate descriptor, new names were often given. (For example, a species originally named *floridensis* to denote a restricted geographic domain might be renamed *americanus* if it later spread throughout the country.)

Some unscrupulous taxonomists used appropriateness as a thinly veiled tactic to place their own stamp upon species by raiding rather than by scientific effort. A profession supposedly dedicated to expanding knowledge about things began to founder into a quagmire of arguments about names. In the light of such human foibles, appropriateness could not work as a primary criterion for taxonomic names.

*Copies of the *Code* can be obtained from I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. Price £19 or US$35, or from The American Association for Zoological Nomenclature, c/o NHB Stop 163, National Museum of Natural History, Washington, D.C. 20560, U.S.A. Price US$35 (US$32 to members of A.A.Z.N.).

2. *Priority*. The near anarchy of appropriateness provoked a chorus of demands for reform and codification. The British Association for the Advancement of Science finally appointed a committee to formulate a set of official rules for nomenclature. The Strickland Committee, obedient to the age-old principle that periods of permissiveness lead to stretches of law 'n order (before the cycle swings round again), reported in 1842 with a 'strict construction' that must have brought joy to all Robert Borks of the day. Priority in publication shall be absolutely and uncompromisingly enforced. No ifs, ands, buts, quibbles, or exceptions.

This decision may have ended the anarchy of capricious change, but it introduced another impediment, perhaps even worse, based on the exaltation of incompetence. When new species are introduced by respected scientists, in widely read publications with clear descriptions and good illustrations, people take notice and the names pass into general use. But when Ignatz Doofus publishes a new name with a crummy drawing and a few lines of telegraphic and muddled description in the *Proceedings of the Philomathematical Society of Pfennighalbpfennig* (circulation 533), it passes into well-deserved oblivion. Unfortunately, under the Strickland Code of strict priority, Herr Doofus's name, if published first, becomes the official moniker of the species — so long as Doofus didn't break any rule in writing his report. The competence and usefulness of his work has no bearing on the decision. The resultant situation is perversely curious. What other field defines its major activity by the work of the least skilled? As Charles Michener, our greatest taxonomist of bees, once wrote: 'In other sciences the work of incompetents is merely ignored; in taxonomy, because of priority, it is preserved.'

If the Sterling/Doofus ratio were high, priority might pose few problems in practice. Unfortunately, those 'Philomathematical Societies' once formed a veritable army, issuing cannonade after cannonade of publications filled with new names destined for oblivion but technically constituted in correct form. Since every profession has its petty legalists, its boosters of tidiness and procedure over content, natural history sank into a mire of unproductive pedantry that, in Ernst Mayr's words, 'deflected taxonomists from biological research into bibliographic archeology'. Legions of technocrats delighted in searching obscure and forgotten publications for an earlier name that could displace some long-accepted and stable usage. Acrimonious arguments proliferated, for Doofus's inadequate descriptions rarely permitted an unambiguous identification of his earlier name with any well-defined species. Thus, a rule introduced to establish stability against capricious change for appropriateness sowed even greater disruption by forcing the abandonment of accepted names for forgotten predecessors.

3. *Plenary Powers*. The abuses of Herr Doofus and his ilk induced a virtual rebellion among natural historians. A poll of Scandinavian zoologists, taken in 1911, yielded 2 in favor and 120 opposed to strict priority. All intelligent administrators know that the key to a humane and successful bureaucracy lies in creative use of the word *ordinarily*. Strict rules of procedure are ordinarily inviolable — unless a damned good reason for disobedience arises, and then flexibility permits humane and rational exceptions. The Plenary Powers Rule, adopted in Monaco in 1913 to stem the revolt against strict priority, is a codification of the estimable principle of ordinarily. It provided, as quoted early in this essay, that the first designation shall prevail, unless a later name has been so widely accepted that its suppression in favor of a forgotten predecessor would sow confusion and instability.

Such exceptions to strict priority cannot be asserted by individuals but must be officially granted by the International Commission on Zoological Nomenclature, acting under its plenary powers. The procedure is somewhat cumbersome and demands a certain investment of time and paper work, but the plenary powers rule has served us well and has finally achieved stability by locating the fulcrum between strict priority and proper exception. To suppress an earlier name under the plenary powers, a taxonomist must submit a formal application and justification to the International Commission (a body of some thirty professional zoologists). The Commission then publishes the case, invites commentary from taxonomists throughout the world, considers the initial appeal with all elicited support and rebuttal, and makes a decision by majority vote.

The system has worked well, as two cases may illustrate. The protozoan species *Tetrahymena pyriforme* has long been a staple for biological research, particularly on the physiology of single-celled organisms. John Corliss counted more than 1,500 papers published over a twenty-seven-year span — all using this name. However, at least ten technically valid names, entirely forgotten and unused, predate the first publication of *Tetrahymena*. No purpose would be served by resurrecting any of these earlier designations and suppressing the universally accepted *Tetrahymena*. Corliss's petition to the Commission was accepted without protest, and *Tetrahymena* has been officially accepted under the plenary powers.

One of my favorite names recently had a much closer brush with official extinction. The generic names of many animals are the same as their common designation: the gorilla is *Gorilla*; the rat, *Rattus*. But I know only one case of a vernacular name identical with both generic *and* specific parts of the technical Latin. The boa constrictor is (but almost wasn't) *Boa constrictor*, and it would be a damned shame if we lost this lovely consonance. Nevertheless, in 1976, *Boa constrictor* barely survived one of the closest contests ever brought before the Commission, as thirteen members voted to suppress this grand name in favor of *Boa canina*, while fifteen noble nays stood firm and saved the day. The details are numerous and not relevant to this essay. Briefly, in the founding document of 1758, Linnaeus placed nine species in his genus *Boa*, including *canina* and *constrictor*. As later zoologists divided Linnaeus's overly broad concept of *Boa* into several genera, a key question inevitably arose: which of Linnaeus's original species should become the 'type' (or name bearer) of the restricted version of *Boa*, and which should be assigned to other genera. Many professional herpetologists had accepted *canina* as the best name bearer (and assigned *constrictor* to another genus); but a world of both technical and common usage from text books to zoo labels to horror films recognized *Boa constrictor*. The Commission narrowly opted, in a tight squeeze (sorry, I couldn't resist that one), for the name we all know and love. Ernst Mayr, in casting his decisive vote, cited the virtue of stability in validating common usage — the basis for the plenary powers decision in the first place:

> I think here is clearly a case where stability is best served by following usage in the general zoological literature. I have asked numerous zoologists 'what species does the genus *Boa* call to your mind?' and they all said immediately '*constrictor*'. . . . Making *constrictor* the type of *Boa* will remove all ambiguity from the literature.

These debates often strike non-professionals as a bit ridiculous — a sign, perhaps, that taxonomy is more wordplay than science. After all, science studies the external

world (through the dark glass of our prejudices and perceptions to be sure). Questions of first publication versus common usage have nothing to do with the animals 'out there', but only with human conventions for naming. But this is the point, not the problem. These are debates about names, not things — and the arbitrary criteria of human decision making, not boundaries imposed by the external world, apply to our resolutions. The aim of these debates (although not always, alas, the outcome) is to cut through the verbiage, reach a stable and practical decision, and move on to the world of things.

Which leads, via a segue of some admitted roughness, back to philately. The United States government, jumping on the greatest bandwagon since the hula hoop, has just issued four striking stamps bearing pictures of dinosaurs — and labeled, *Tyrannosaurus, Stegosaurus, Pteranodon,* and *Brontosaurus.*

Thrusting itself, with all the zeal of a convert, into the heart of commercial hype, the U.S. Post Office seems committed to shedding its image for stodginess in one fell, crass swoop. Its small brochure, announcing October as 'national stamp collecting month', manages to sponsor a contest, establish a tie-in both with T-shirts and a videocassette for *The Land Before Time,* and offer a dinosaur 'discovery kit' (a $9.95 value for just $3.95; 'valid while supplies last. Better hurry!'). You will, in this context, probably not be surprised to learn that the stamps were officially launched on 1 October 1989, in Orlando, Florida, at Disney World.

Amidst this maelstrom of marketing, the Post Office has also engendered quite a brouhaha about the supposed subject of one stamp — a debate given such prominence in the press that much of the public (at least judging from my voluminous mail) now thinks that an issue of great scientific importance has been raised to the detriment and shame of an institution otherwise making a worthy step to modernity. (We must leave this question for another time, but I confess great uneasiness about such approbation. I appreciate the argument that T-shirts and videos heighten awareness and expose aspects of science to millions of kids otherwise unreached. I understand why many will accept the forceful spigot of hype, accompanied by the watering-down of content — all in the interest of extending contact. But the argument works only if, having made contact, we can then woo these kids to a deeper intellectual interest and commitment. Unfortunately, we are often all too ready to compromise. We hear the blandishments: dumb it down; hype it up. But go too far and there is no turning back; you lose your own soul by dripping degrees. The space for wooing disappears down the maw of commercialism. Too many wise people, from Shakespeare to my grandmother, have said that dignity is the only bit of our being that cannot be put up for sale.)

This growing controversy has even reached the august editorial pages of the *New York Times* (11 October 1989), and their description serves as a fine epitome of the supposed mess:

> The Postal Service has taken heavy flak for mislabeling its new 25-cent dinosaur stamp, a drawing of a pair of dinosaurs captioned *'Brontosaurus'*. Furious purists point out that the 'brontosaurus' is now properly called 'apatosaurus'. They accuse the stamp's authors of fostering scientific illiteracy, and want the stamps recalled.

Brontosaurus versus *Apatosaurus*. Which is right? How important is this issue? How does it rank amidst a host of other controversies surrounding this and other dinosaurs: what head belongs on this dinosaur (whether it be called *Brontosaurus* or *Apatosaurus*);