

A timely wake-up call as anti-evolutionists publicize their views

SIR — Your Special Report “Anti-evolutionists raise their profile in Europe” (*Nature* **444**, 406–407; 2006) mentions a seminar held in Brussels at the European Parliament on 11 October 2006, as part of a new strategy by supporters of intelligent design (ID) to disseminate anti-evolutionism among the general public of Europe. Two days later, the Catholic Kolbe Center for the Study of Creation and the creationist group Truth in Science published summaries on the Internet. A moderator of the seminar, Maciej Giertych, then published a Correspondence (“Creationism, evolution: nothing has been proved” *Nature* **444**, 265; 2006) claiming that his arguments are entirely scientific and denying any religious component to them. I believe, therefore, that it was a good decision by *Nature* to publish this Correspondence, as a wake-up call to scientists.

The anti-evolution seminar was a series of three public lectures, introduced and moderated by Giertych, who is the retired head of the genetics department of the Polish Academy of Sciences and an honorary member of the Daylight Origins Society, a Catholic creationist organization based in Britain. The seminar was co-organized by Dominique Tassot, director of the Centre d'Etude et de Prospectives sur la Science, an association of 700 Catholic intellectuals who do not accept macroevolution because it is in conflict with their interpretation of the Bible (see *Nature* **439**, 534; 2006).

At the meeting, Giertych pointed out that macroevolution (the gradual appearance of novel body plans as documented in the fossil record) is a “falsified hypothesis” and that there is, from genetics research, no evidence but “only disproof” for Darwin's principle of common descent of all life on Earth. These claims were supplemented by Joseph Mastropaolo, a US aerospace physiologist, who argued that the theory of evolution, after more than 150 years, “still lacked any empirical proof”.

The German civil engineer Hans-Joachim Zillmer told the audience that the fossil record does not provide evidence for gradual macroevolution. Zillmer was announced as an expert in palaeontology and evolution, but he has not, according to the Web of Science, published any paper in the peer-reviewed literature. He is the author of popular books with titles such as *Darwin's Mistake* (Adventures Unlimited Press, 2003) or *Die Evolutionslüge* (*The Evolution Lie* Langen Müller, 2005). In *Darwin's Mistake*, Zillmer asserts that he has found human and dinosaur footprints in fossil-bearing sediments in a riverbed in Texas and concludes that these organisms

lived together. Even creationists no longer claim that these supposed ‘human prints’ are genuine (see *Nature* **323**, 390; 1986). Zillmer's books state that biologists, geologists and the editors of most scientific journals are either misled or fools.

Finally, Guy Berthault told the audience about his research on the rates of sediment depositions, which “did not form slowly over millions of years”, but “have been laid down within very short time periods”. Hence, according to Berthault, most geological data on the age of fossils must be wrong. Giertych's controversial letter is a brief summary of these anti-evolution, pro-ID-lectures.

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Creationist views have no basis in science

SIR — Maciej Giertych signed his Correspondence letter (*Nature* **444**, 265; 2006) as an employee of the Institute of Dendrology, the Polish Academy of Sciences. As the director of the institute, I would like to point out that, although I respect Professor Giertych's rights to express his views, they are not endorsed by our institute. In my opinion, creationism has no basis in science and should not be regarded as scientific.

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Creationists weaken society's trust in scientists

SIR — As a scientist I was surprised, and as a Polish scientist I felt ashamed, to read Maciej Giertych's view published in *Nature* (*Nature* **444**, 265; 2006). I would like to assure you that biologists in Poland do follow current scientific findings and would strongly disagree with several statements made in that letter.

There is no accepted scientific evidence for his most ridiculous claims: exclusively harmful mutations, reduction of genetic information or the coexistence of dinosaurs and humans. The only statements I would agree with are that scientists have to search for explanations of what they see in the world around them, and that they should be critical about both new and well established findings.

Polish politicians' recent denial of the theory of evolution is very dangerous, not only because it goes against the scientific paradigm, but also because it weakens society's trust in scientists and in research. Our protests have gained support even from Polish academics with religious connections,

such as Catholic lecturers in the philosophy of nature. The publication of unsubstantiated claims and incorrect statements in renowned scientific journals gives undeserved support to the creationist movement.

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Claim of bias against critics is refuted by publication

SIR — Maciej Giertych states in Correspondence (*Nature* **444**, 265; 2006): “I believe that, as a result of media bias, there seems to be total ignorance of new scientific evidence against the theory of evolution.” However, he does not refer to one publication in a peer-reviewed scientific journal to support the existence of any such “new scientific evidence”; nor has he himself published any. Until any such publication, the existence of scientific evidence against evolution remains unsubstantiated. Further, where is the bias of which Giertych speaks? The very fact that his letter was published shows that *Nature* has no bias against critics of evolution.

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Pseudoscience should not be published in Nature

SIR — Although we acknowledge the need to allow publication of diverse opinions in the name of free speech, *Nature* has a responsibility, as a leading and widely read science journal, to uphold scientific standards and values. Unfortunately, in Maciej Giertych's Correspondence letter (“Creationism, evolution: nothing has been proved” *Nature* **444**, 265; 2006), *Nature* fell short in this duty, allowing creationist pseudoscientific arguments to be presented as fact, without any supporting evidence.

The arguments used by Giertych are widely used by creationists, and, in their pseudoscientific tradition, evidence that discredits them is constantly ignored. For example, his suggestion that dinosaurs coexisted with humans, presumably based on supposed human footprints found alongside those of dinosaurs in the Glen Rose Formation of Texas (as expounded by Henry M. Morris in *Scientific Creationism* CLP Publishers, 1974) has been refuted: the ‘human’ footprints are now recognized as dinosaurian (R. Hastings *J. Geol. Educ.* **35**, 4–15; 1987). A comprehensive source that scientifically discredits such ‘evidence’ can be found at <http://scienceblogs.com/>

pharyngula/2006/11/nature_publishes_a_crank_lette.php#more.

We worry that Giertych's Correspondence will lend credibility to pseudoscientific efforts to undermine evolutionary theory. Its publication is damaging to *Nature's* reputation and to science itself. We as scientists may be able to see whether a claim is scientifically thorough, but many other people cannot. We urge the editors to insist on the same scientific rigour in Correspondence as in any other section of *Nature*.

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There is no new evidence that undermines evolution

SIR — We are astonished that *Nature* would publish a Correspondence as full of errors as that by Maciej Giertych (*Nature* 444, 265; 2006). For someone with degrees from the universities of Oxford and Toronto, Giertych displays a breathtaking ignorance.

There is no “new scientific evidence against the theory of evolution” as he asserts, but fails to document. This can be verified by consulting any of the recent standard textbooks on the subject. The claim that “microevolution... is a step towards a reduction of genetic information” is nonsense. On the contrary, there is ample evidence for the frequent use of duplications of genes in evolution, many of which have acquired new functions. By any criterion, this represents an increase in the amount of genetic information.

Contrary to Giertych's statements, the temporal ordering of rock layers by stratigraphy, and the extinction of dinosaurs some 65 million years before the existence of humans, are overwhelmingly established facts of geology and palaeontology. His claim that “No positive mutations have ever been demonstrated” is simply false. Disregarding the fact that it is illogical to rule out resistance to antibiotics and herbicides as examples of adaptations, as was done by Giertych, there are literally thousands of cases in which natural selection has been demonstrated in wild populations of animals and plants.

Further, the contemporary literature on molecular evolution is filled with studies that provide evidence for a positive role of natural selection. Physicists do not spend their time debating the correctness of the atomic theory of matter; it is intolerable that biologists should constantly be forced to defend their unifying theory against ill-informed attacks.

Brian Charlesworth and 34 others (names available on request from B.C.)

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Walking with dinosaurs? Not in the real world

SIR — It is to be hoped that Maciej Giertych's comments in Correspondence (*Nature* 444, 265; 2006) will generate a flood of refutations. Staying within my archaeological profession, Giertych's claims that there are data suggesting that “dinosaurs coexisted with humans” or that there was a “major worldwide catastrophe in historical times” are simply false. These are claims regularly made by religious fundamentalists in support of creationism, exposing Giertych's assertion that his objections are scientific.

In support of these claims, some creationists promote known frauds such as the Paluxy River ‘human footprints’ and the ‘dinosaur figurines’ from Acambaro, Mexico, which they misrepresent as modelled from living observations. There are many creationist interpretations of prehistoric rock art that owe more to Hermann Rorschach than to Richard Owen.

Creationists also distort actual science. Mary H. Schweitzer's research on dinosaur tissue preservation has been used for years as ‘proof’ that Earth is a few thousand years old, as I document in “Dino-blood and the Young Earth” and “Dino Blood Redux” (see www.talkorigins.org). Giertych's Correspondence shows us the irrational basis of creationism in the twenty-first century and warns the international scientific community that this delusion is not restricted to American hillbillies.

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Creationists pose political, not scientific, threat

SIR — I was disappointed to see Maciej Giertych's letter “Creationism, evolution: nothing has been proved” (*Nature* 444, 265; 2006) published without any disclaimer or comment by the editors. Even though I am aware that *Nature* asked Giertych to comment on the News story “Polish scientists fight creationism” (*Nature* 443, 890–891; 2006), I can find no justification for publishing pseudoscientific arguments in this first-rate scientific magazine.

The level of scientific illiteracy in those arguments is self-evident and, as such, does not need any further discussion. What needs some comment is Giertych's claim about the scientific inspiration for his criticism of evolutionary science. Contemporary creationists espousing ‘intelligent design’ (ID) are careful to avoid mentioning religion — as was Giertych in his recent public statements. Yet Polish readers can refer to his four articles in *Encyklopedia “Białych Plam”*

(*The Encyclopedia of ‘missing pages’ volumes 4 and 6, PWE, 2000, 2001*). These articles, “Darwin, Charles Robert”, “Darwinism”, “Evolution”, and “Evolutionism”, provide a more extensive version of the arguments presented in his Correspondence, and explicitly refer to religion and ID views.

Reasonable criticism is as fundamental to science as natural selection is to adaptive evolution. But what Giertych calls “new scientific evidence against the theory of evolution” could not be published in any serious peer-reviewed journal. In fact, publishing scientific papers is not a significant goal for creationists in Poland or anywhere else — on the contrary, the goal is to replace evolution with some pseudoscience in school curricula, as reported in the News story “Polish scientists fight creationism” (*Nature* 443, 890–891; 2006). The creationists' movement is dangerous to the general public on political, not scientific, grounds.

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How the word ‘hominid’ evolved to include hominin

SIR — Human evolution has long been a subject that can claim a love of tongue-twisting terminology, which if not properly explained can lead to much confusion. The latest example is the reassessment of the Linnaean description of the relationship between *Homo sapiens* and the other great apes. To better describe the close evolutionary relationship between them, a new sub-family level has been created. The family group ‘hominid’ now contains all of the African apes, not just the species of the human lineage; and the newly created sub-family name ‘hominin’ (with associated sub-families for *Pan* and *Gorilla*) contains all the species of the human evolutionary lineage. The term hominin is now used where hominid was previously, causing much confusion, especially among students and nonspecialists.

Publications have a key role in ensuring that this change and the reasons for it are as clear as possible. Yet journals, including *Nature*, continue to publish papers and features that use the terms hominin and hominid interchangeably. If all in our discipline could agree to the new terminology, journals could ensure that it is used correctly, bringing a small amount of clarity to a subject that so often presents problems of interpretation for the nonspecialist but fascinated public audience.

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