LETTERS

Although the red pencilfish is listed as critically endangered and threatened by trade, it is not listed in CITES.

PHOTOS (TOP TO BOTTOM): BRUNO CAVIGNAUX/BIOSPHOTO/ALAMY STOCK PHOTO; ISTOCK.COM/2630BEN

Edited by **Jennifer Sills**

Retraction

After an investigation, the University of Cambridge has concluded that there was falsification of research data used in the Report "Human SIRT6 promotes DNA end resection through CtIP deacetylation" (*1*), which was the subject of an Editorial Expression of Concern in September 2018 (*2*). The investigation concluded that the first author, Abderrahmane Kaidi, was responsible for the falsification of the data. In agreement with the recommendation of the investigation, the authors are retracting the Report.

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Criteria for CITES species protection

Unsustainable international wildlife trade is a major conservation concern, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a key tool for regulating it. In their Policy Forum "Long delays in banning trade in threatened species" (15 February, p. 686), E. G. Frank and D. S. Wilcove suggest that when the International Union for Conservation of Nature (IUCN) Red List of Threatened Species identifies a species as threatened, at least in part by international trade, it should be promptly added to CITES. The authors claim that 271 such species warrant inclusion in CITES Appendix I or II, which they characterize as a backlog in need of clearing. We welcome the suggestion for closer interaction between the Red List and amendments to the CITES Appendices. However, the proposed approach of a near-automatic pathway overlooks the independent criteria and processes used for evaluating extinction risk on the Red List and for including species in CITES.

The Red List uses objective categories and criteria with quantitative thresholds (such as population size and trends) and information on known or likely threats (*1*). Conversely, the listing of species under CITES, a legally binding multilateral agreement, is a matter for its 183 parties. CITES uses detailed biological and trade criteria to evaluate proposals for species inclusion in its Appendices, and proposals can only be submitted by parties (*2*). Crucially, species threatened on the Red List that can be linked to international trade may not meet the criteria for inclusion in CITES, particularly when international trade is not a major threat. We agree that new or updated Red List assessments should be shared promptly with the CITES parties, but only subsequent evaluation of species against the CITES listing criteria can determine whether they are added.

Many pangolin species were upgraded to the more urgent CITES rating only after risk from trade had rapidly increased.

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Response

Challender *et al.* argue against a near-automatic pathway from the IUCN Red List to a listing proposal in CITES for species that are threatened with extinction and can be linked to international wildlife trade. They emphasize that the Red List and CITES use different criteria when making their assessments and listing decisions. We respect the fact that the two institutions evaluate species using different criteria, but we nonetheless stand by our recommendation.

A near-automatic pathway will ensure that Red List assessments are not overlooked or neglected. It will be up to CITES to then apply its own set of criteria when drafting the proposal, discussing it, and voting on whether to list the species in Appendix I or II. A determination from CITES that the party members have reviewed the case brought on by the Red List assessment and have decided not to list the species will be important and informative. Absent such a pathway, it is difficult to know whether a given species was assessed informally by CITES and deemed unworthy of protection from trade or whether it was overlooked. The Red List assessment process will also benefit if the CITES party members can convey to IUCN what factors went into their decision not to list a species on either Appendix.

Even if international trade is not the primary threat to an imperiled species, it nonetheless contributes to its endangerment. We think CITES should err on the side of caution and seek to halt even minor amounts of trade for gravely imperiled species. Conservation policy on a global scale, which involves 183 party members, is a complicated challenge. Better use of the Red List assessments can help ensure that species get reviewed when there is a risk they might go extinct in the wild due partly to trade.

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TECHNICAL COMMENT ABSTRACTS

Comment on "Ghost cytometry"

Dino Di Carlo, Fumihito Arai, Keisuke Goda, Tony Jun Huang, Yu-Hwa Lo, Nao Nitta, Yasuyuki Ozeki, Kevin Tsia, Sotaro Uemura, Kenneth K. Y. Wong

Ota *et al.* (Reports, 15 June 2018, p. 1246) report using pseudorandom optical masks and a spatial-temporal transformation to perform blur-free, high–frame rate imaging of cells in flow with a high signal-to-noise ratio. They also claim sorting at rates of 3000 cells per second, based on imaging data. The experiments conducted and results reported in their study are insufficient to support these conclusions.

Full text: dx.doi.org/10.1126/science.aav1429

Response to Comment on "Ghost cytometry"

Sadao Ota, Ryoichi Horisaki, Yoko Kawamura, Masashi Ugawa, Issei Sato, Hiroaki Adachi, Satoko Yamaguchi, Katsuhito Fujiu, Kayo Waki, Hiroyuki Noji

Di Carlo *et al.* comment that our original results were insufficient to prove that the ghost cytometry technique is performing a morphologic analysis of cells in flow. We emphasize that the technique is primarily intended to acquire and classify morphological information of cells in a computationally efficient manner without reconstructing images. We provide additional supporting information, including images reconstructed from the compressive waveforms and a discussion of current and future throughput potentials.

Full text: dx.doi.org/10.1126/science.aav3136

ERRATA

Erratum for the Research Article "Autologous grafting of cryopreserved prepubertal rhesus testis produces sperm and offspring" by A. P. Fayomi *et al*., *Science* 364, eaax4999 (2019). Published online 5 April 2019; 10.1126/science.aax4999

ONLINE BUZZ

B1 B cell progenitors

Two models exist explaining the split between B1 and B2 B cells. In their Report "BCR-dependent lineage plasticity in mature B cells" (15 February, p. 748), R. Graf *et al*. used a transgenic system to support the "selection model," in which a B cell's fate is tied to its particular B cell receptor (BCR). In the eLetter excerpted below, a group of readers note important caveats of this work and argue the case for the alternate "lineage model" of B1 cell ontogeny. Read the full eLetter and add your own at http://science.sciencemag.org/content/363/6428/748/tab-e-letters.

Online response:

We read with interest the manuscript from Graf and colleagues reporting that adult B2 B cells can undergo conversion to B1 B cells. We acknowledge the elegance of the transgenic system used to support this conclusion, but our concern is that a balanced view of the field is not presented, which may lead investigators new to this area to conclude that B1 cells, particularly the $CD5^+$ B1a subpopulation, typically develop from mature B2 cells.

This issue arises because the authors marginalize numerous studies showing that B1 cells arise from committed progenitors by labeling them "controversial." Multiple laboratories have identified surface immunoglobulin negative B1-restricted progenitors whose numbers peak prenatally in normal mice (*1*–*5*).... It is important to emphasize that Graf *et al*. present no data to refute studies showing that B1 cells represent a separate B cell lineage that arises from distinct progenitors. Thus, the results from this elegant paper should not be overinterpreted to support the view that B1 cells typically arise from mature B2 cells.

Eliver Ghosn, Kenneth Dorshkind, Leonore A. Herzenberg, Nichol Holodick, Aaron Kantor, Encarnacion Montecino-Rodriguez, Thomas L. Rothstein, Gregg J. Silverman, Yang Yang, Mervin C. Yoder, Momoko Yoshimoto

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B1 B cell progenitors

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