

Crisis in Systematics

James H. Oliver, Jr.'s Policy Forum "Crisis in biosystematics of arthropods" (20 May, p. 967) would have the scientific community do the right deed for the wrong reason. Systematics is not simply the identification of specimens, it is the reconstruction of evolutionary history; and it should be supported not just because it has practical applications (which it does) but because it is a fundamental scientific discipline.

Systematics is important because all living things are the product of history, and we can understand little about the diversity of organisms without knowledge of their history—the phylogenetic knowledge provided by systematics (1). One might just as well try to understand the current political conflicts in Central America or the Middle East without understanding the history of the people of those areas.

Oliver correctly deplores the placement of major systematics collections in "maintenance storage," and we further deplore the disposal of other collections (2) and the retreat of university biology departments into nonevolutionary disciplines. Many of the biological "laws" that such disciplines discover may be bounded by clade and place, and only systematic research—research on evolutionary history—can discover those bounds.

Other recent calls for the support of systematics (3) have also emphasized its practi-

cal and cataloging aspects. We agree strongly that systematics is insufficiently supported, but we fear that these arguments based exclusively on "usefulness" will backfire in the long run. Systematics will not attract the brightest students—the true innovators of theory and practice—if it is portrayed as an identification service. Systematics must command attention because of the intellectual challenge it represents, in and of itself, as the study of evolutionary history.

ROBERT J. O'HARA

DAVID R. MADDISON

Museum of Comparative Zoology,

Harvard University,

Cambridge, MA 02138

PETER F. STEVENS

Curator, Arnold Arboretum and Gray

Herbarium, Harvard University Herbaria,

22 Divinity Avenue,

Cambridge, MA 02138

REFERENCES AND NOTES

1. For examples of the importance of phylogenetic knowledge to other disciplines, see J.A. Coddington, *Cladistics* **4**, 3 (1988); J. Felsenstein, *Am. Nat.* **124**, 1 (1985); W.L. Fink, *Paleobiology* **8**, 254 (1982); G.V. Lauder, *ibid.* **7**, 430 (1981).
2. C. Holden, *Science* **228**, 38 (1985); F.A. Jenkins, Jr., E.L. Simons, M.C. McKenna, P.D. Gingerich, *ibid.* **229**, 330 (1985).

3. M. Kosztarab, *ibid.* **223**, 443 (1984); M.S. Strauss, *ibid.* **239**, 714 (1988) (emphasizes technology); M. Sun, *ibid.* **237**, 967 (1987); E.O. Wilson, *ibid.* **230**, 1227 (1985).
4. We thank G.C. Mayer and E.E. Williams for their comments.