demonstrated it. The U.S. Forest Service is supporting research to critically evaluate the potential of hypovirulence in *Endothia parasitica* for biocontrol in the United States. This research may or may not confirm the interesting hypothesis of Grente and Berthelay-Sauret, but it should give us a sound basis for that determination.

E. G. KUHLMAN
Forest Sciences Laboratory, U.S. Forest Service, Research Triangle Park, North Carolina 27709

References

1. J. Grente, *C. R. Seances Acad. Agric. Fr.* **51**, 1033 (1965); _____ *C. R. Acad. Sci. Ser. D* **268**, 2347 (1969).
2. J. Grente and S. Berthelay-Sauret, in *Proceedings of the American Chestnut Symposium*, W. L. Macdonald, F. C. Cech, J. Luchok, C. Smith, Eds. (West Virginia University, Morgantown, 1980), pp. 30–37.
3. G. D. Lindberg, *Phytopathology* **49**, 29 (1959); *ibid.* **50**, 457 (1960).
4. B. Castanho and E. E. Butler, *ibid.* **68**, 1505 (1978); *ibid.*, p. 1511; *ibid.*, p. 1515; J. M. Lemaire, B. Jouan, M. Coppenet, B. Perraton, L. Lecorre, *Sci. Agron. Rennes* (1976), p. 63.

Paleontologists and Continental Drift

However alluring the image may be of a bunch of mossback paleontologists being dragged kicking and screaming into acceptance of continental drift by those clever geophysicists, it represents a simplified piece of revisionist history (Research News, 31 Oct., p. 514).

Before Wegener, the father of continental drift theory, paleontologists and biogeographers were faced with a difficult problem in explaining in terms of Darwinian evolution the demonstrably close affinities of living and certain fossil biotas on widely separated continental areas, especially in the Southern Hemisphere. In his classic work *The Origin of Continents and Oceans*, Wegener writes that he only took seriously implications for the coastline fit of South America and Africa after examining paleontological evidence for a former land bridge between the two continents. Paleontological and biogeographic data make up a major portion of the arguments that Wegener marshaled in favor of continental drift, even to the timing and rough sequencing of separation events. His proposal of continental displacements, rather than of the transoceanic land bridges seemingly required by organisms, represented a major simplification of the perplexing evidence of vertebrate paleontology, paleobotany, and biogeography. The villains of this piece turned out to be the geophysicists, who disposed of his theory on grounds of crustal rigidity and the lack of a sufficient motive force.

In the case of the asteroid theory of extinctions, what some paleontologists, including myself, are objecting to is not the possibility of an extraterrestrial impact but to some of the more extreme flash-frying, mass-gassing (*1*), or lights-out (*2*) scenarios attributed to it.

LEO J. HICKEY
Division of Paleobotany, Smithsonian Institution, Washington, D.C. 20560

References and Notes

1. K. Hsü, *Nature (London)* **285**, 201 (1980).
2. L. W. Alvarez, W. Alvarez, F. Asaro, H. V. Michel, *Science* **208**, 1095 (1980).

Communicating Scientific Data

Philip H. Abelson, in a recent editorial (17 Oct., p.255), raises a number of complex issues for both scientists and those who are engaged in the design and planning of the information systems for the future.

As a "data base supplier," BioSciences Information Service, generally known to the scientific community as the publisher of *Biological Abstracts*, has worked actively on the integration of computers into our abstracting and indexing work since the 1950's. As a result, we are now able to provide scientists with "electronic" access to more than 2 million research reports. When it is considered that modern systems have the ability to select within seconds only the most relevant items from this "memory bank," those of us who have labored in conventional libraries during our student and professional lives can well be astonished. When we add the now commonplace situations that allow these systems to function for hundreds of researchers *simultaneously* and (with allowances for time zones) from all five continents, the power of this new information medium is even more remarkable.

Despite the above, we feel that the future of the scientific journal is not so gloomy. In fact, the printed form of *Biological Abstracts* and our other information publications continue to provide the fundamental revenues that make our electronic communication media possible. In those areas of the world not presently benefiting from the electronic form of distribution, the information must be available in more conventional garb. Further, the refereeing process in connection with conventional publication remains an essential value of the scientific documentation system.

H. E. KENNEDY
BioSciences Information Service, Philadelphia, Pennsylvania 19103