



Anuário do Instituto de Geociências - UFRJ  
ISSN 0101-9759 Vol. 29 - 1 / 2006

FORAMS 2006

## **Systematics and Evolution of Protists: Fossils, Morphology and Molecules**

A Cushman Symposium in Memory  
of Alfred Loeblich and Hellen Tappan

Chaired by Jere Lipps and Susan T. Goldstein

This symposium brings together experts to discuss the latest in systematic and evolutionary research on various protists, especially foraminifera. Morphology, molecular phylogenetics, stratigraphic analyses of evolutionary trends, cladistic analyses, biogeographic patterns of evolution, life history evolution, and mechanisms of major evolutionary changes (radiations, mass extinctions) as well as other suitable subjects will be considered in a day-long symposium.



FORAMS 2006

## **Helen Tappan and Alfred R. Loeblich, Jr. Micropaleontologists**

Jere H. Lipps

*Museum of Paleontology, University of California, Berkeley, CA 94720, U.S.A.  
jlipps@berkeley.edu*

Helen Tappan (1917-2004) and Alfred R. Loeblich, Jr., (1914-1994) are surely among the greatest micropaleontologists of all time. Their names will stand along with those of the founders of modern micropaleontology: Christian G. Ehrenberg (1795-1876, Germany), Alcide d'Orbigny (1802-1857; France), Henry B. Brady (1835-1891, England), and Joseph A. Cushman (1881-1949, United States). These were great men whose work Loeblich and Tappan admired and built upon. While the others were explorers in the systematics and biostratigraphy of microfossils, foraminifera in particular, Al and Helen were synthesizers as well as systematists par excellence. For this reason, we honor them by dedicating Forams2006 to Al Loeblich's and Helen Tappan's memory.

Although we will never know how successful they might have been separately (but I am sure it would have been substantial), their relationship, cemented by marriage in 1939, was a synergistic one in which the final outcome was certainly greater than their sum separately could ever be. You could see the energy that radiated between them as they worked side by side on their dining room table, Al commonly looking down the microscope and Helen writing notes and text. In the field, they were overwhelming with Al collecting very large sacks full of samples and Helen writing notes and plotting localities. Those were lessons well learned by their students too, for Al impressed us with the need to get enough material so we wouldn't ever have to go back and Helen with the need to document it all very carefully. Of course, none of us could do both things as well as the two of them could do it, so often they would do it all for us too. Helen because of her professorial position at the University of California, Los Angeles, could have students while Al working for Chevron Research Corporation could not. Nevertheless, each student had Al as a major professor too, for their synergism could not be curtailed by mere job boundaries. Helen's students were Al's students. Both thought that their students were

their major contribution and we all benefited from long discussions with them at their home, in the field, in their labs, and especially in seminars where the latest words in micropaleontology were discussed. In later years, Helen and Al did occasionally publish projects separately. Helen's monumental book, *The Paleobiology of Plant Protists*, was backed and encouraged by Al who also helped her with all aspects of it. He was as proud of her work as he was of his own.

In the six decades that they worked, they described many species of microfossils and used them in biostratigraphy. But their chief contributions were books that compiled and interpreted enormous amounts of literature and data. All micropaleontologists know of their 1964 Treatise on Invertebrate Paleontology two volume set that described and reclassified all foraminiferal genera. The Treatise was a very original contribution and in short order it became the discipline-wide reference. It is still one of the most cited works in micropaleontology today. They worked for years in libraries and museums in the United States and Europe. As the original multi-authored book developed, Al and Helen told Ray Moore, the editor of the Treatise, that they would do the entire job themselves. Ray understood the synergism and agreed. The Treatise is a complete record of all foraminiferal genera published to the time the books went to press. No single person could have done this job. Helen worked mainly in the library and on manuscripts while Al mainly examined specimens and illustrations, but together they did the analyses and drew the conclusions. Nearly 25 years later, they returned to a compilation of foraminifera in their *Foraminiferal genera and classification*, published also in two volumes, one on the description and classification of foraminiferal genera and the other devoted to illustrations of each genus. In the Treatise, they assessed each genus and placed some as synonyms, but in the later volumes they accepted each newly and validly described genus based on morphologic differences alone regardless of population variations. They did not want to suppress genera that might in fact be determined to be valid in later studies. Al and Helen knew their works were stepping stones to better understanding of microfossils, not the final word. Al often said, if you don't agree, write it up so everyone knows what you think. They both respected studies well done, but had little use for sloppy or quick work.

Everyone noticed the differences between Al and Helen. Al was loud and critical while Helen was quiet and kind. Both would listen, but Al was their conduit to controversy. Helen never shrugged off controversy and criticism, but her way of dealing with it was to quietly reexamine issues and find a solution, after discussion with Al. Again the synergism of two different styles served them well.

Micropaleontology has been lucky to have had the Loeblich's in its service. There has never been a partnership in the field or in paleontology generally that provided so much basic information and interpretation, or such impetus for further work. All micropaleontologists use their work, and it seems doubtful that the monumental studies they published in book form will ever be repeated.

## References

- Douglas, R.G. 1983. Presentation of the Paleontological Society Medal to Helen Tappan and Alfred R. Loeblich, Jr. *Journal of Paleontology*, 57:608-610.
- Lipps, J.H. 2002. Alcide d'Orbigny and American micropaleontology. *C. R. Palevol.*, 1:461-469.
- Lipps, J.H.; Douglas R.G. & Sliter, W.V. 1983. The Joseph A. Cushman Award for 1982—Alfred R. Loeblich, Jr., and Helen Tappan. *Journal of Foraminiferal Research* 13:151-153.
- Loeblich, Elizabeth 2004. In memorandum: Dr. Helen Nina Tappan Loeblich. *Journal of Foraminiferal Research*, 35:86-89.
- Wicander, R. 1997. Biography of Alfred R. Loeblich, Jr. and Helen Tappan. *Review of Palaeobotany and Palynology*, 98:3-14.
- Wicander, R. 2005. Helen Tappan Loeblich (1917-2004) Memorial. *Journal of Paleontology*, 79:207-208.