AAPG Search and Discover Article #90021 © 2003 GCAGS 53th Annual Convention, Baton Rouge, LA, October 22-24, 2003

BREARD, S.Q., Applied Biostratigraphix, 717 East 8th Street, Houston, Texas 77007 and CALLENDER, A.D., AND NAULT, M.J., Applied Biostratigraphix, 717 East 8th Street, Houston, Texas 77007

Economic Biostratigraphy in the Gulf of Mexico Basin: A Review of Application advances, Limitations and Challenges for the New

Economic biostratigraphy has over 80 years of continuous application history, dating from 1920, within the Gulf Coast / Gulf of Mexico Basin. Three years into a new millennium, it is appropriate to review biostratigraphic application advances, as well as limitations, for this critical exploration tool.

Major advances toward the understanding of subsurface strata include increased use of high-resolution biostratigraphy, especially through integration of foraminiferal and nannofossil datums and events, utilization of local biofacies in correlation, discovery of new bathyal benthic biomarker taxa, and finer subdivision of bathyal paleoenvironments. A timeline of major biostratigraphic advances for the Gulf of Mexico Basin (GOM) is presented.

Failure to recognize limitations can result in erroneous geological interpretations. Therefore, a selected list of limitations with possible implications is presented. Geologic limitations, which can provide insight into geologic processes, include faunal environmental migration, taphonomic factors such as faunal mixing, incomplete taxonomic ranges, rarity of microfaunas in certain downdip settings, and decreased biostratigraphic / paleoenvironmental resolution through time. Drilling, sampling, and logistical problems are also addressed. Manpower limitations, especially critical to the future of petroleum paleontology, include the ageing of the current population of micropaleontologists, disappearance of university training, and reduced industry and academic employment opportunities. Possible solutions and recommendations for improvement are discussed.