

BIOGEOGRAPHY OF A MIDDLE-LATE DEVONIAN FISH FAUNA FROM VENEZUELA, AND EVIDENCE FOR GONDWANA-LAURENTIA CONTACT

1YOUNG, G. C., 2MOODY, J. M., and 3CASAS, J. E. 1Dept. Geology, A. N. U. Canberra, 2Maracaibo; 3Caracas, Venezuela

A new fossil fish fauna from the Sierra de Perija, western Venezuela, provides the first Devonian record from South America of several major groups of early jawed fishes (antiarch and phyllolepid placoderms, sarcopterygians and lungfishes). These were widely distributed on most other continents, but apparently lacking in poorly known Early-Middle Devonian fish faunas of West Gondwana (South America and southern Africa), which are dominated by chondrichthyans and acanthodians. Invertebrates and plants in the Venezuelan sequence closely resemble those of eastern North America, but some endemic elements in the fish fauna indicate Gondwana affinities. A new antiarch genus includes a species previously known only from Victoria Land, Antarctica. The phyllolepid occurrence extends the range of this apparently nonmarine group across Paleozoic Gondwana; its age is consistent with a model of biotic dispersal between Gondwana and Euramerica at or near the Frasnian-Famennian (F-F) Boundary. A narrow marine barrier separating northern and southern landmasses is indicated, in contrast to the wide equatorial ocean for the Late Devonian postulated from paleomagnetic data. Reconstructions showing contact between Laurentia and Gondwana before the Late Devonian are also contradicted by the evidence of the chondrichthyan-acanthodian dominated West Gondwanan assemblages, which apparently represent a vertebrate equivalent of the Malvinokaffric Province defined by cool-temperate to cold invertebrate faunas.