

Phanerozoic Paleogeographic Revisions Suggested by Climatic and Biogeographic Information

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Our compilation of climatically sensitive data (evaporites, calcretes, tillites, dropstones, glendonites, coals, bauxite, kaolin, laterites, etc.), Cambrian through Miocene, permits us to recognize climatic belts for 26 time intervals. When added to certain biogeographic information this permits us to substantially revise paleogeographies, particularly those of the earlier and middle Paleozoic. We have to date accumulated over 7,000 data points derived from about 4,000 references and other sources.

From the Cambrian through the Middle Devonian our data is compatible with the continents all being in the Southern Hemisphere, except for the low northern latitude Siberian Platform. Beginning in the later Devonian Laurentia, Baltica, and adhering continents, begin to move northwards. By the Mississippian much of Laurentia and Baltica are in the Northern Hemisphere. In the Pennsylvanian, Permian and post-Paleozoic our reconstructions do not differ substantially from those suggested by many others. A number of changes have been made in the varied East Asian blocks and terranes to be in concord with our biogeographic and climatic information. Laurentia in the Cambrian is situated with its southern, Ouachita margin, including the adjacent Precordilleran Terrane of western Argentina, adjacent to west-central South America. Beginning in the Middle Ordovician Laurentia begins to move east relative to western South America, until by the Early Devonian it reaches approximately its present position to the north of Colombia and Venezuela. Most of Mexico, south of the Mojave-Sonora Megashear is envisioned as an integral part of South America through the Silurian.

After substantially more climatic and biogeographic information are gathered we anticipate still more paleogeographic changes, but not of a major character.