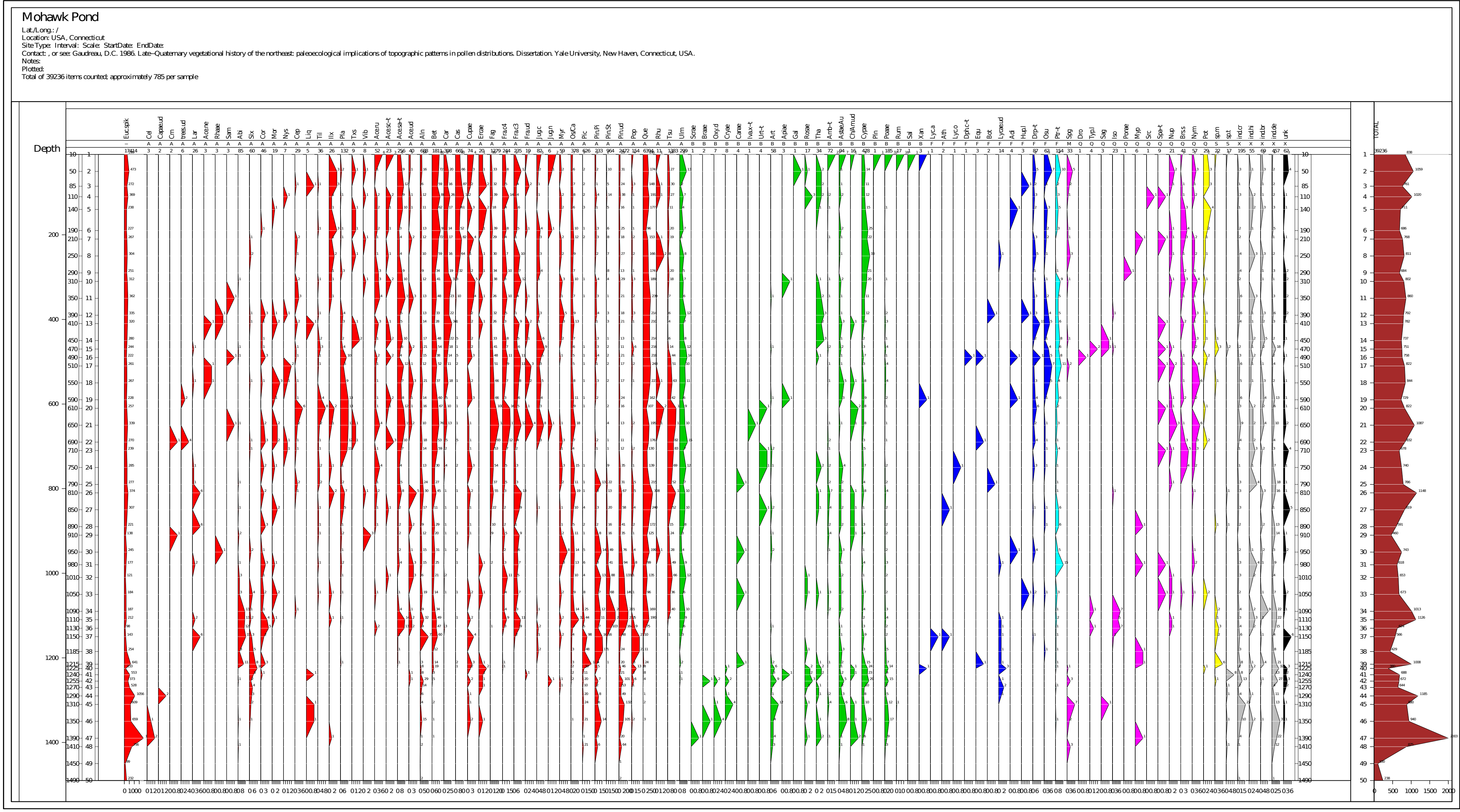
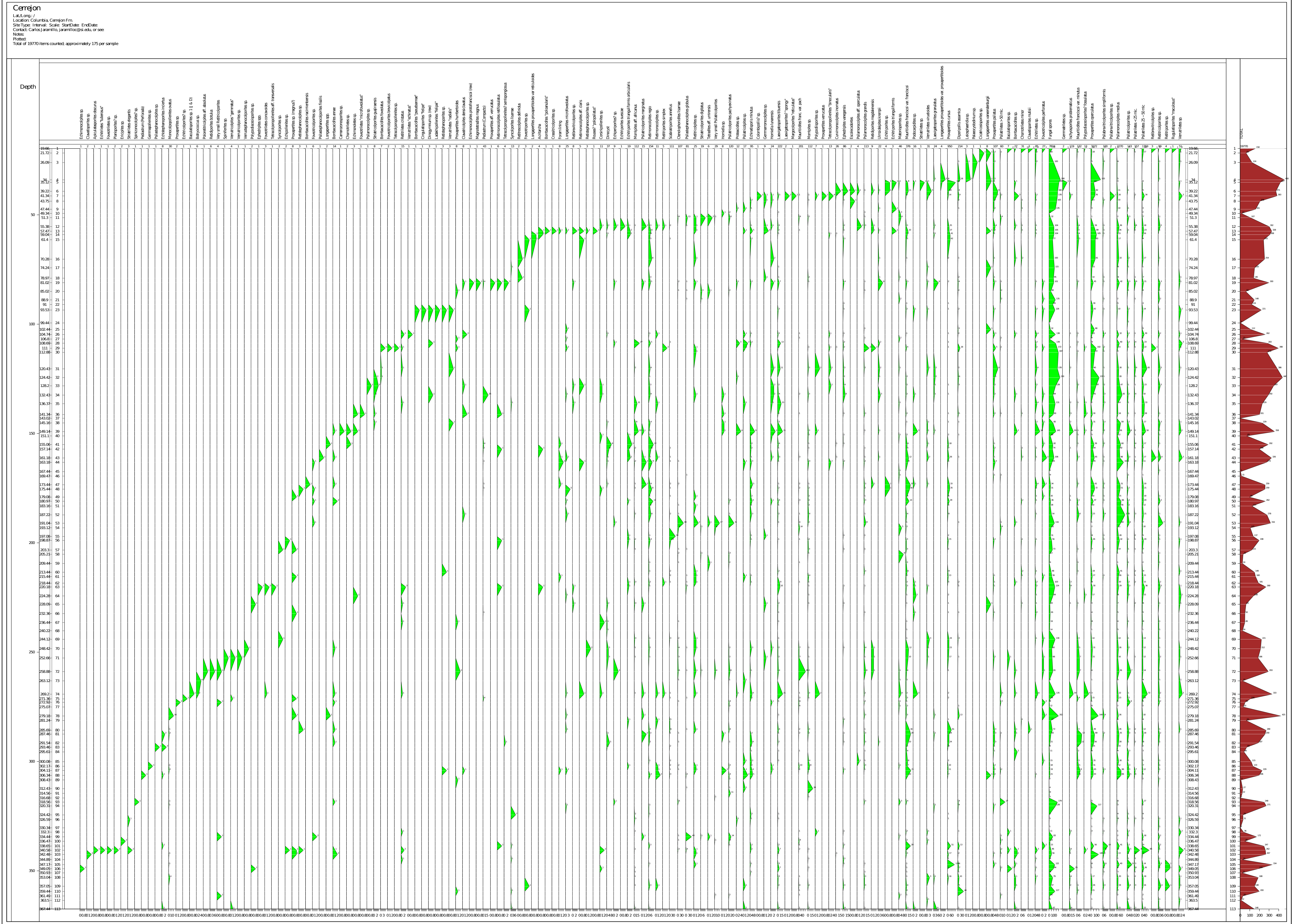


stratigraph: <http://cran.r-project.org/web/packages/stratigraph/index.html> an open-source framework for analyzing stratigraphically distributed data

W. A. Green, National Museum of Natural History P.O. Box 37012, MRC 121, Smithsonian Institution, Washington D.C., 20013-7012. <vagreen@bricol.net>
C. Jaramillo, Smithsonian Tropical Research Institute, Center for Tropical Paleocology and Archaeology, Unit 0948 APO AA 34002.

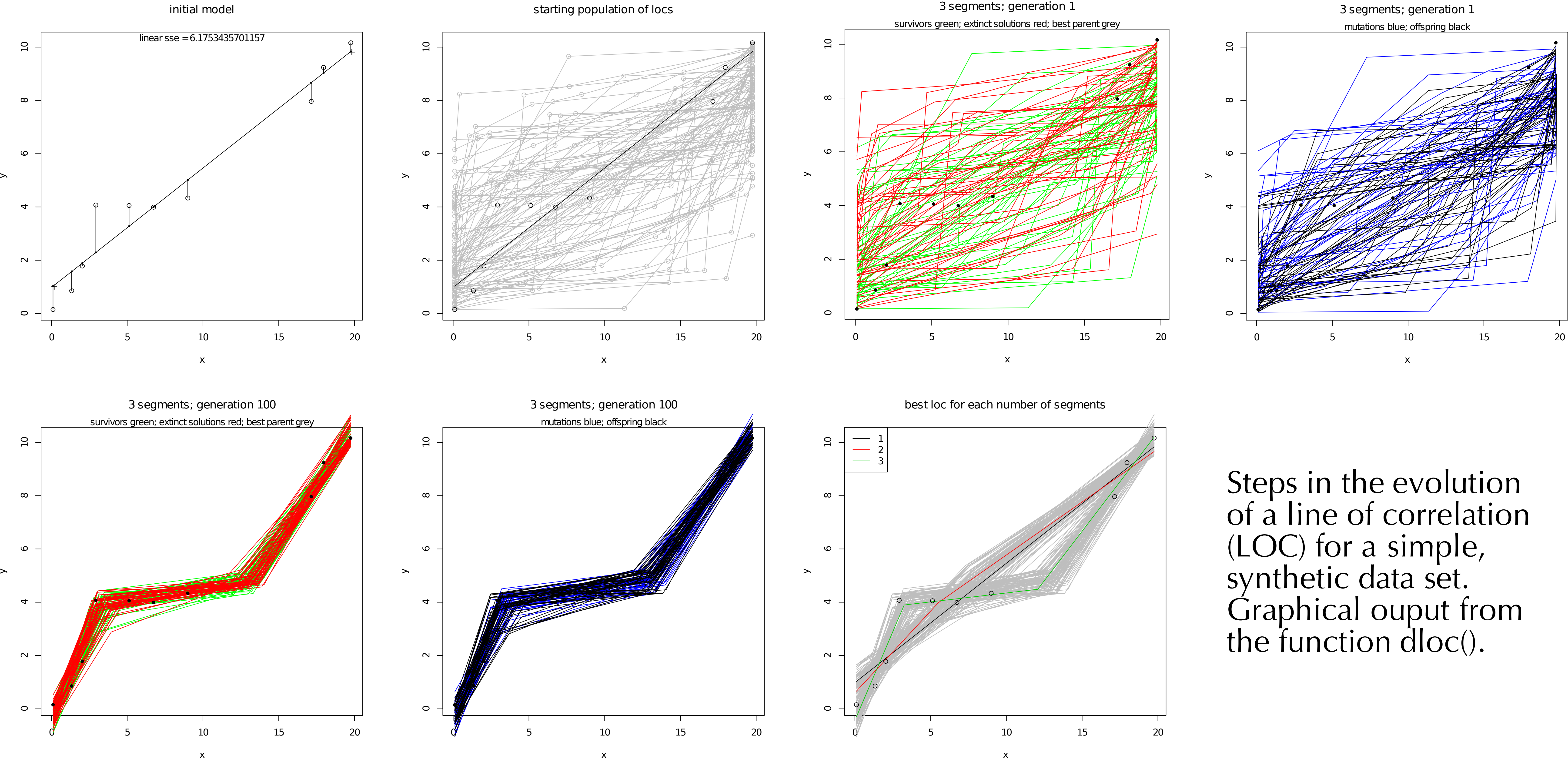
Data from stratigraphic paleontology and community paleoecology are scale-dependent, and in real-life situations always 'noisy': dates or times, taxonomic identifications, and locations are often approximate or incorrect. Identifying a geological or biological signal through such statistical noise constitutes exploratory data analysis: often more art than science. stratigraph is a framework for handling such data. It is distributed as a package in the R graphics/statistics language; it currently consists of a data structure, input/output functions, example data, and analytical functions for plotting pollen diagrams and correlating stratigraphic sections. Unlike menu-driven compiled software which often does not provide the generality or flexibility needed to tune analyses to particular data sets, stratigraph is intended to show the advantages of interactive data analysis via open-source, community-supported scripting in a high-level programming language.

Plotting Pollen Diagrams



Examples of pollen diagrams from the Cretaceous Cerrejon Formation of Colombia (above) and Quaternary sediments from Mohawk Pond, Connecticut (left). Plotted with the function `plot.strat.column()`.

An Evolutionary Algorithm for Stratigraphic Correlation



Steps in the evolution of a line of correlation (LOC) for a simple, synthetic data set. Graphical output from the function `dloc()`.