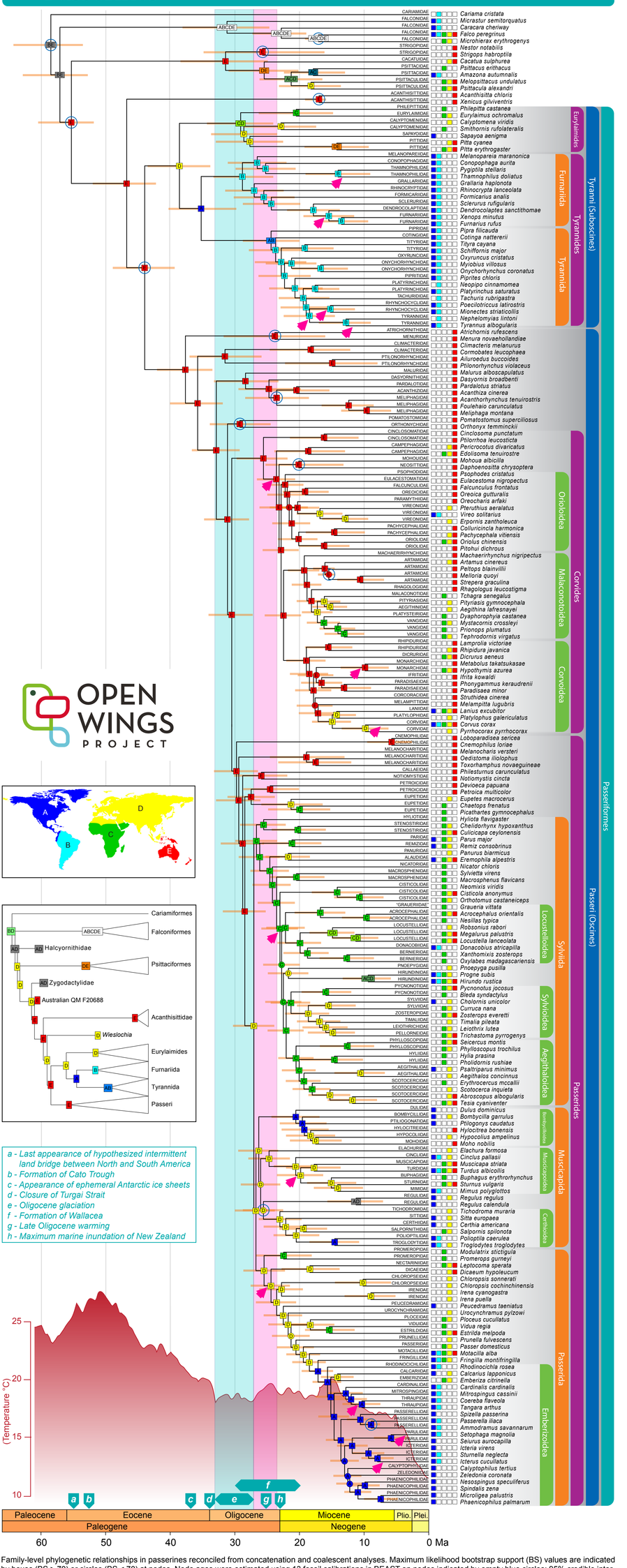
Passerines



Family-level phylogenetic relationships in passerines reconciled from concatenation and coalescent analyses. Maximum likelihood bootstrap support (BS) values are indicated by boxes (BS > 70) or circles (BS < 70) at nodes. Node ages were estimated using 13 fossil calibrations in BEAST on nodes indicated by empty blue circles; 95% credible intervals are shown with orange bars. Ancestral areas were estimated under the DEC + j model using BioGeoBEARS from the distribution of clades represented by each tip (shown by boxes at tips coded according to inset map). Biogeographic reconstructions using fossil taxa (inset tree) yield identical ancestral areas for crown lineages of passerines, suboscines, and oscines. Light blue and pink bars indicate Oligocene glaciation and warming events, respectively. Estimate of Cenozoic global surface temperatures (red curve) taken from Hansen et al. 2013 Philos Trans R Soc A. Branches with strongest support for diversification rate shifts are indicated by pink arrows in their descendant node for internal branches or at the base of the branch for terminal branches. Geological and climatic events are indicated above the timeline with descriptions in inset key.

Citation: Oliveros, C.H., D.J. Field, D.T. Ksepka, F.K. Barker, A. Aleixo, M.J. Andersen, P. Alström, B.W. Benz, E.L. Braun, M.J. Braun, G.A. Bravo, R.T. Brumfield, R.T. Chesser, S. Claramunt, J. Cracraft, A.M. Cuervo, E.P. Derryberry, T.C. Glenn, M.G. Harvey, P.A. Hosner, L. Joseph, R. Kimball, A.L. Mack, C.M. Miskelly, A.T. Peterson, M.B. Robbins, F.H. Sheldon, L.F. Silveira, B.T. Smith, N.D. White, R.G. Moyle, and B.C. Faircloth. 2019. Earth history and the passerine superradiation. 2019. *Proceedings of the National Academy of Sciences* doi:10.1073/pnas.1813206116.