

Late Jurassic and Cretaceous palynomorph assemblages were recovered from the Macomia, Pemba, and Mifume formations from the onshore Rovuma Basin, northern Mozambique. These assemblages provide new evidence for an Aptian–Albian age for the Macomia Formation and the upper member of Pemba Formation, and confirm that these two stratigraphic units are coeval and laterally continuous. The lower member of the Pemba Formation contains Kimmeridgian–Tithonian palynomorphs, thus documenting for the first time the existence of Upper Jurassic strata north of Nacala in the onshore Rovuma Basin. The rich and diverse dinoflagellate cyst assemblage recovered from the Mifume Formation is of late Campanian age. This indicates an early Late Cretaceous hiatus between the sandstones of Pemba Formation, and the marls of the overlying Mifume Formation. The hiatus corresponds to a break in sedimentation prior to a rapid, global marine transgression, recognised in the Rovuma and Mozambique basins, during the middle Campanian, associated with the onset of Gondwana fragmentation. Earlier, Late Jurassic faulting produced local half-grabens filled with continental debris, for example the N'Gapa Formation of northern Mozambique.