THE TRIASSIC-JURASSIC MASS EXTINCTION

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Generally regarded as one the "big five" mass extinction events of the Phanerozoic, that at the close of the Triassic marks the transition into the true age of the dinosaurs. Recent discoveries over the last decade show that in the continental realm tetrapod diversity was increasing through the Triassic, culminating sometime close to, if not at, the onset of the extinction event. Various non-dinosaurian archosaur groups became remarkably dinosaur-like with both carnivorous and herbivorous forms living side by side with their dinosaurian competitors for millions of years. Several more bizarre and unfamiliar tetrapod groups were diversifying at the same time, with the whole assemblage showing the kind of structural diversity not seen again until the Cretaceous over 55 million years later. There was also geographic diversity, with very different communities in different zonal climate belts, despite the fact a single individual archosaur theoretically could have walked from Brisbane to Vladivostok across the supercontinent. This taxonomic and biogeographic diversity ended at the end of the Triassic, very close in time to the eruption of the largest known flood basalt event, the Central Atlantic Magmatic Province (CAMP), although it is far from clear whether these lavas or some other event, such as an asteroid impact, caused the diversity drop. Whatever the cause, based on sections where paleobiological data can be traced continuously across the boundary, the diversity decline was abrupt. Among continental tetrapods, the decline was catastrophic, with a wipe out of nearly all but currently extant major groups including all potential dinosaur-competitors except crocodylomorphs. Early Jurassic land tetrapod assemblages were thus of very low diversity at the family and higher taxonomic levels, and strangely biased towards carnivores. Included were abundant, and possibly diverse at the species level, large and small theropod dinosaurs with features strongly suggesting piscivory, suggesting that surviving tetrapod communities had largely water-based economies. These were the makers of the familiar brontozoid tracks, such as the famous *Eubrontes* so common in Early Jurassic footprint assemblages. Nonetheless, although these survivors largely founded the modern world, it took tens of millions of years for "normal" looking land-plant-based tetrapod communities to re-evolve, with large herbivores finally becoming common by the close of the Early Jurassic.

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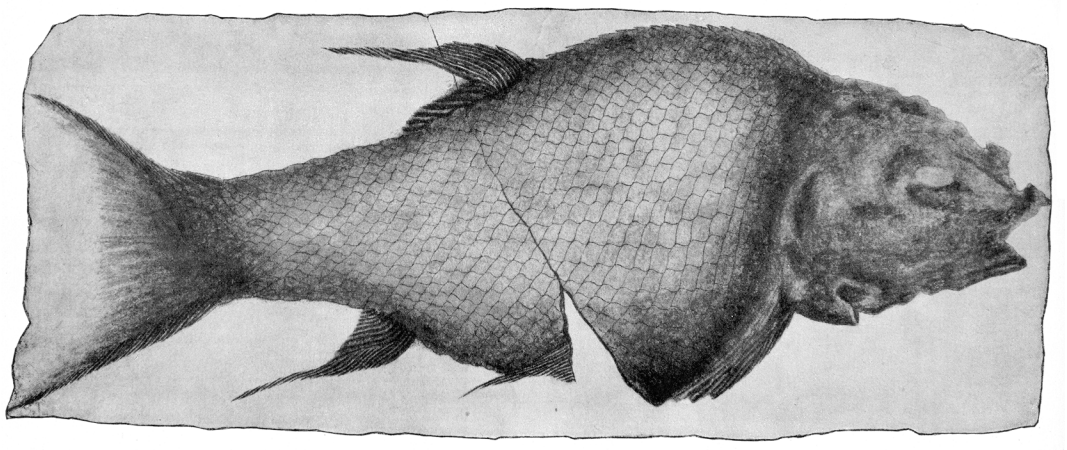

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