LRF KANYAKUMARI

MUSLIM ARTS COLLEGE

Thiruvithancode, Kanyakumari, Tamilnadu, India.

LEMURIA RESEARCH FORUM

FIRST INTERNATIONAL CONFERENCE

CERTIFICATE

This is to certify that Dr/Mr/Mrs/Ms Dr. T. KALA RANI
of Asst. Prof., DEPARTMENT OF HISTORY,
MUSLIM ARTS COLLEGE *participated in the 1st International Conference of Lemuria Research Forum on "Revelations of Submerged Continent" held at MUSLIM ARTS COLLEGE, Thiruvithancode, on 13-10-2021 and presented a paper entitled.* ISBN 978-81-908060-9-1
"EVOLUTION OF LIFE IN THE PANGEA."

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ISBN : 978-81-908060-9-1

PROCEEDINGS OF THE LEMURIA RESEARCH FORUM, KANYAKUMARI

MUSLIM ARTS COLLEGE, THIRUVITHANCODE

Conference Proceedings

(Multi disciplinary)

Kalarani

FIRST INTERNATIONAL CONFERENCE OF LRF - 2021

Theme:**REVELATIONS OF SUBMERGED CONTINENT**

முழ்கிய கண்டத்தின் வெளிப்பாடுகள்

Date: 13-10-2021

LEMURIA RESEARCH FORUM – KANYAKUMARI

MUSLIM ARTS COLLEGE, THIRUVITHANCODE

Pin – 629174, Tamil Nadu, India.

ISBN : 978-81-908060-9-1

EVOLUTION OF LIFE IN THE PANGEA

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Abstract:

The concept that the continent once formed a contiguous landmass was hypothesized by, with corroborating evidence. Pangea existed as a super continent for 160 million years ago. Pangea is only the recent supersontinent identified in the geologic record the reconstruction of continents prior to the breakup of Pangea. From about 280-230 million years ago (Late Paleozoic era until the late Triassic), the continent we now known as north south America, and Europe. They all existed as a single continent called pangea. Pangea first began to be forn apart when a three-pronged fissure grew between Africa, South America, and North America. Rifting began as magma welled up through the weakness in the crust, creating a volcanic rift zone. Volcanic eruptions spewed ash and volcanic debris across the landscape as these servered continent-sized fragments of Pangea continents gradually grew to form a new ocean basin, the Atlandic. The rift zion known as the mid-Atlantic ridge continued to provide the raw volcanic materials for the expanding ocean basin.

Introduction:

The name "Pangaea/Pangea" is derived from Ancient Greek *pan* and *Gaia* (Γαῖα, "Mother Earth, land"). The concept that the continents once formed a contiguous land mass was hypothesised by, with corroborating evidence, Alfred Wegener, the originator of the scientific theory of continental drift, in his 1912 publication *The Origin of Continents* (*Die Entstehung der Kontinente*). He expanded upon his hypothesis in his 1915 book *The Origin of Continents and Oceans* (*Die Entstehung der Kontinente und Ozeane*), in which he postulated that, before breaking up and drifting to their present locations, all the continents had formed a single supercontinent that he called the "*Urkontinent*".

Pangea appearance:

The name "Pangea" occurs in the 1920 edition of *Die Entstehung der Kontinente und Ozeane*, but only once, when Wegener refers to the ancient supercontinent as "the Pangaea of the Carboniferous". Wegener used the Germanized form "Pangea," but the name entered German and English scientific literature (in 1922[12] and 1926, respectively) in the Latinized form "Pangaea" (of the Greek "Pangaia"), especially due to a symposium of the American Association of Petroleum Geologists in November 1926.

Pangaea Supercontinent:

Pangaea is only the most recent supercontinent identified in the geologic record. The forming of supercontinents and their breaking up appears to have been cyclical through Earth's history. There may have been several others before Pangaea.

Paleontology:

Paleomagnetic measurements help geologists determine the latitude and orientation of ancient continental blocks, and newer techniques may help determine longitudes. Paleontology helps determine ancient climates, confirming latitude estimates from paleomagnetic measurements, and the distribution of ancient forms of life provides clues on which continental blocks were close to each other at particular geological moments. However, reconstructions of continents prior to the breakup of Pangea, including the ones in this section, remain partially speculative, and different reconstructions will differ in some details.

Evolution of Life:

Pangaea existed as a supercontinent for 160 million years, from its assembly around 335 million years ago (Early Carboniferous) to its breakup 175 million years ago (Middle Jurassic). During this interval, important developments in the evolution of life took place.

The seas of the Early Carboniferous were dominated by rugose corals, brachiopods, bryozoans, sharks, and the first bony fish. Life on land was dominated by lycopsid forests inhabited by insects and other arthropods and the first tetrapods. By the time Pangaea broke up, in the Middle Jurassic, the seas swarmed with molluscs (particularly ammonites), ichthyosaurs , sharks and rays, and the first ray-finned bony fishes, while life on land was dominated by forests of cycads and conifers in which dinosaurs flourished and in which the first true mammals had appeared.

The evolution of life in this interval of time reflected conditions created by the assembly of Pangaea. The assembly of most of the continental

crust into one landmass reduced the extent of sea coasts. Increased erosion from uplifted continental crust increased the importance of floodplain and delta environments relative to shallow marine environments. Continental assembly and uplift also meant an increasingly arid climate over much of the surface of the Earth. This favored the evolution of amniotes and seed plants, whose eggs and seeds were better adapted to dry climates. The early drying trend was most pronounced in western Pangaea, which became an epicenter for the evolution and geographical spread of amniotes.

Climate changes:

Coal swamps are typically a feature of perpetually wet regions close to the equator. The assembly of Pangaea disrupted the intertropical convergence zone and created an extreme monsoon climate that reduced the deposition of coal to its lowest level in the last 300 million years. During the Permian, coal deposition was largely restricted to the North and South China microcontinents, which were among the few areas of continental crust that had not joined with Pangaea. The extremes of climate conditions in the interior of Pangaea are reflected in bone growth patterns of pareiasaurs and in the growth patterns in gymnosperm forests.

The lack of oceanic barriers is thought to have favored *cosmopolitanism*, in which species show a wide geographical distribution. Cosmopolitanism was also driven by mass extinctions, including the Permian–Triassic extinction event, the most severe in the fossil record, and also the Triassic–Jurassic extinction event. These events resulted in *disaster fauna* showing little diversity and high cosmopolitanism. These include *Lystrosaurus*, which opportunistically spread to every corner of Pangaea following the Permian-Triassic extinction event. On the other hand, there is evidence that many Pangaean species were *provincial*, with a limited geographical range, in spite of the lack of geographical barriers. This may be due to the strong variations in climate by latitude and season produced by the extreme monsoon climate. For example, cold-adapted pteridosperms (early seed plants) of Gondwana were blocked from spreading throughout Pangaea by the warming climate, and northern pteridosperms ended up dominating Gondwana in the Triassic.

Mass extinctions

The tectonics and geography of Pangaea may have worsened the Permian-Triassic extinction event or other extinctions. For example, the reduced area of continental shelf environments may have left marine species vulnerable to extinction. However, no evidence for a species-area effect has been found in more recent and better characterized portions of the geologic record. Another possibility is that reduced sea-floor spreading associated with the formation of Pangaea, and the resulting cooling and subsidence of oceanic crust, may have reduced the number of islands that could have served as refugia for marine species. Species diversity may have already been reduced prior to mass extinction events due to mingling of species possible when formerly separate continents were merged. However, there is strong evidence that climate barriers continued to separate ecological communities in different parts of Pangaea. The eruptions of the Emeishan Traps may have eliminated South China, one of the few continental areas not merged with Pangaea, as a refugium.

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LEMURIA RESEARCH FORUM KANYAKUMARI

VISION AND MISSION

Over a past few decades, explorers have found traces of the lost continents submerged deep in waters that once witness to legendary epics and religious books. But, recently they found evidence of a huge landmass submerged towards the South of today's Indian Peninsula , the region extended from Kanyakumari in the North, to the Far West Madagascar and nearing the East coast of Australia. Scientists have agreed on backing claims, on how humans evolved from Africa and migrated to the rest of the world, based on the evidence gathered.

It is believed that around the last leg of ice age, earth's temperature was on rise, causing the large glaciers to melt, and thus the sea level rose. According to Oceanographic Researchers, sea levels around the Indian peninsula have been a stark rise over 100 meters, in past 14,500 years and Dravidian peninsula was engulfed into waters. A huge mass around sunken into sea, splitting Lemuria into 49 territories, and a few years the entire Lemuria or Kumari Kandam got submerged in the Indian Ocean.

Lemuria Research Forum is basically committed to promoting quality research towards the submerged continent among the scholars, faculties and fresher's in higher education institutions. Also, LRF will relentlessly take forward the research of sunken continents and reveal the facts about them to the coming generations.

Dr.C. Amose

General secretary- LRF

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