

New DNA evidence overturns population migration theory in Island Southeast Asia

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Malaysian Borneo is part of Island Southeast Asia

An international research team has discovered new DNA evidence to overturn conventional theories that suggest that the present-day populations of Island Southeast Asia (covering the Philippines, Indonesia and Malaysian Borneo) came from Taiwan 4,000 years ago.

The researchers show that population dispersals came earlier, from within the region, and probably resulted from flooding.

The conventional theory, or the 'out of Taiwan' model, suggests that the

current day populations of Island Southeast Asia (ISEA) originate in a Neolithic expansion from Taiwan, driven by rice agriculturalists about 4,000 years ago. This theory was contested 10 years ago by Oxford University scientist, Dr Stephen Oppenheimer, in his book *Eden in the East: The Drowned Continent of Southeast Asia*, when he suggested the migrations came from within ISEA and resulted from flooding in the region.

This latest study, led by Leeds University and published in this month's *Molecular Biology and Evolution*, shows that a substantial fraction of the mitochondrial DNA lines (inherited by female descendants) have been evolving within ISEA for a much longer period, some since modern humans arrived about 50,000 years ago. The DNA lineages show population dispersals at the same time as sea level rises and also show migrations into Taiwan, east out to New Guinea and the Pacific, and west to the Southeast Asian mainland – within the last 10,000 years.

Study co-author Dr Oppenheimer, from the Oxford University School of Anthropology, said: 'One of my main predictions in the book was that three major floods following the Ice Age forced the inhabitants to escape in boats and flee to less flood-prone regions. By examining mitochondrial DNA from their descendants in Southeast Asia and the Pacific, we now have strong evidence to support the flooding theory and this is possibly why Southeast Asia has a richer store of flood myths, more than any other region in the world.'

Dr Oppenheimer's book, based on multidisciplinary evidence, writes about the effects of the drowning of a huge ancient continent called 'Sundaland' (that extended the Asian landmass as far as Borneo and Java). This happened during the period 15,000 to 7,000 years ago following the last Ice Age. He outlines how rising sea levels in three massive pulses caused flooding and the submergence of the Sunda Continent, creating the Java and South China Seas and the thousands of

islands that make up Indonesia and the Philippines today.

Martin Richards, the first Professor of Archaeogenetics at Leeds University, who led the interdisciplinary research team, said: ‘I think the study results are going to be a big surprise for many archaeologists and linguists, on whose studies conventional migration theories are based. These population expansions had nothing to do with agriculture, but were most likely to have been driven by climate change, in particular global warming and the resulting sea-level rises at the end of the Ice Age between 15,000 to 7,000 years ago.’

Source: Oxford University

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