

## **GENESIS, GEOLOGY AND MICROMORPHOLOGY OF THE LATERITE SOILS OF INDIA**

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Kerala state, India has got a unique place in the science of geology because it is in Kerala at a place known as Angadipuram that laterite soils were identified for the first time in the world by F.H. Buchanan in 1800 A D. It occurs mainly as a cap on the summit of basaltic hills and plateaus of the highlands of the Decan, Rajasthan and Madhya pradesh. To study the genesis, geology and micromorphology of the laterite soils of India, Kerala state was selected as the study site since Kerala is considered as the type locality of laterite. Fifteen sites were located where laterite soils predominate. Pedons were dug to a depth of 2m at each location and genetic horizon samples were collected in addition to parent material and hard laterite blocks for various physico-chemical, mineralogical and micromorphological analysis. Studies showed that these soils are originally derived from clays by desilisification. It is a kind of vesicular, clayey structure composed essentially of a mixture of the hydrated oxides of aluminium and iron with often a small percentage of other oxides, chief among them are manganese and titanium oxides. Laterisation indices studied include bulk density, organic matter, silt/clay ratio, active iron ratio, molar ratios of iron, aluminium and silicon and laterite number. Studies showed the necessity of maintaining a ground cover to control the process which is considered as a handicap to agricultural development. Micromorphological studies revealed that rather than a crystalline phase, the continuity of crystallinity is required for the soft material to harden irreversibly.