

# Nanobacteria in clouds could spread disease, scientists claim

## *'Micro-organisms could also prompt rainfall'*

Micro-organisms in clouds could play a crucial role in the spread of disease and in the formation of rain drops, scientists have claimed.

The radical theories about nanobacteria – micro-organisms considerably smaller than ordinary bacteria - in clouds are published in two recent articles in the Journal of Proteome Research by Dr Andrei P. Sommer of the University of Ulm, Germany, and Professor Chandra Wickramasinghe of Cardiff University, UK.

They say nanobacteria are now accepted as being widely prevalent in the terrestrial environment and that their evidence is compelling for the existence of these nano-organisms, even in the stratosphere. In humans, nanobacteria have now been identified on four continents, they add.

Dr Sommer and Professor Wickramasinghe further suggest that nanobacteria's involvement in several serious diseases such as the formation kidney stones, heart disease, and HIV is also slowly being recognised by the scientific community.

"Experiments have shown that nanobacteria are excreted from the body in urine and their dispersal from the ground into the atmosphere and stratosphere appears to be inevitable," said Dr Sommer.

The scientists argue that their occurrence in clouds could play a crucial role in the global dispersal of infective agents, and might also play a prominent role in the nucleation of cloud drops.

"This happens because nanobacteria, lifted from the ground by winds, could transit between the high humidity region of the clouds and the relatively dry inter-cloud regions, leading to oscillations between a dormant state and one of activation," explained Professor Wickramasinghe. "Remnants of a sticky protein (slime) coating nanobacteria makes them act as extremely efficient cloud condensation nuclei, with a tendency to aggregate to clusters upon contact."

Their work corroborates the findings of Ruprecht Jaenicke, of the Institute for Atmospheric Physics at Mainz University, Germany, on bioaerosols (airborne contaminants) and proteins in the atmosphere reported in New Scientist (31 March) and Science (1 April). The contribution of nanobacteria to pathogenic bioaerosols, in the view of the authors, must overwhelm all other types of biological particles in the atmosphere.

Source: Cardiff University

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