The Visionary: Prof. Carl R. Woese

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To see what is not visible and imagine what does not seem to exist are the prime abilities of The Visionary. To visualize evolution in the absence of clear cut evidences and prove that it exists, needs a man with a VISION. Microbes existed much before their discovery by Prof. Robert Hooke and Prof. Antonie van Leeuwenhoek. It is the discoveries of these great scientists, which represent the roots of Microbiology. Morphological and biochemical features have been studied in great details to distinguish closely related microbes and assign them to different taxonomic classes. Prof. Carl R. Woese, a man with a strong vision, shook off the dogmas of biology and created the third domain in evolutionary biology based on the highly conserved gene: the 16S rRNA (*rrs*). This gave a new dimension to the tree of life: the advent of Archaea. The publication of landmark articles in 1977 from the group of Prof. Woese, revolutionized the way microbes could be classified. The microbial taxonomy took a trajectory, which few could imagine. Bacterial phylogeny and taxonomy based on *rrs* gene has outgrown all other potential candidates. The Ribosomal Database Project (RDP) Release 1.0 was initiated with the deposition of 472 *rrs* sequences in 1992. The magnitude of the popularity of RDP can be gauged from the fact that it has grown at a massive rate, such that there are more than 2.6 million *rrs* gene sequence entries

(RDP Release 10, Update 31:: December 7, 2012:: has 2,639,157 entries). Since these submissions are made by scientists from around the world, it reflects that the followers of Prof. Carl R. Woese are spread all over the globe. The new breed of microbiologists turned molecular biologists has arrived on the runway with their contributions to genomics and metagenomics. We, the Indian followers of Modern Biology are trying to board a plane, which is already halfway through the runway. We have the consolation that almost all laboratories in India have access to gene sequencing facilities. On the other front of complete genome sequencing and its annotation, Indian microbiologists seemed to have missed the air bus, which took off more than 18 years ago; when the first completely sequenced genome of *Haemophilus influenzae* was made public. We have been waiting and watching the announcements of completely sequenced genomes, whose number is swelling to 5 digits. It seems most of us did not know, what precisely shall we pursue? For long, we have been thinking a lot but not acting enough. The big question is: Are we too late? Shall we quit? Or shall we act? The truth is, we must get charged up before we are charged out. We need to follow: Quitters never win and winners never quit. Well, we have our own breed of courageous winners, who took up the challenge and demonstrated their strength. From the fraternity of AMI, Dr. Rup Lal, Univ. of Delhi, Dr. Rakesh Sharma, CSIR-IGIB, Dr. H. J. Purohit, CSIR-NEERI, Prof. P. Phale, IIT Mumbai, Dr. S. Shivaji, CSIR-CCMB, have all joined the race of microbial Genome Announcements. A few others are still thinking and perhaps going to complete the task and contribute more microbial genomes. A glimpse of Indian followers of Prof. Carl R. Woese is presented in the two papers in this issue of INJM 53(3), which follow this Editorial: (i) Prakash et al, Carl Woese: from Biophysics to Evolutionary Microbiology and (ii) Bhushan et al. Development of Genomic Tools for the Identification of Certain

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Pseudomonas up to Species Level. We at AMI are all geared up for the 54th Annual Conference on “Frontier Discoveries and Innovations in Microbiology and its Interdisciplinary

Relevance”. We hope it will spring up a few more innovative ideas, especially from the Indian followers of Prof. Carl R. Woese.