

Reflections on the First Pan-African Conference on Biochemistry and Molecular Biology

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Introduction

After a couple of years of consultations with leading biochemists/molecular biologists in Africa and from abroad (playing advisory roles), the First Pan-African Conference on Biochemistry and Molecular Biology was finally held for five days on the beautiful grounds of the United Nations Environment Programme (UNEP) headquarters at Gigiri, Nairobi, Kenya from 2nd to 6th September, 1996. The official opening ceremony was presided over by the now deceased Kenyan Minister for Research, Technical Training and Technology, Hon Dr Zachary T Onyonka and was also addressed by the Deputy Director General of UNEP Professor Reuben Olembo, the Director, UNESCO Regional Office for Science and Technology in Africa, Dr Paul Vitta, the Principal, College of Biological and Physical Sciences of the University of Nairobi Professor Frederick Onyango and the Secretary General of the International Union of Biochemistry and Molecular Biology (IUBMB) Professor Horst Kleinkauf. The conference was attended by 300 biochemists and molecular biologists from Africa with sizeable representation from abroad.

Biochemistry and Molecular Biology Research

Today, the subjects of biochemistry and molecular biology are at the centre of research geared towards increased food production, better health, environmental protection and sound industrial development. For example mines are being developed where human subjects are no longer lowered down the shaft to mine gold. Instead genetically modified, microbes are pumped into the mine to break the ore and the slurry pumped out for further processing. Currently, biodiversity is the pass-word in conservation studies. The full understanding of the diversity in the species gene pool falls within the domain of biochemistry and molecular biology. The same argument applies in the search for the cure of the dreaded HIV/AIDS disease as well as understanding and monitoring of the biosafety of genetically modified life-forms. At a different level, body tissues are now being grown in laboratories and gene therapy for genetic diseases is soon becoming a reality.

The World's population is expected to double by the year 2035 if the current rate of population growth is maintained. There is concern for how the food to feed the increased number of mouths is going to be generated. In the sixties and the seventies, the green revolution which became a great success particularly in Asia and that saw countries like India become self-sufficient in food produc-



Figure 1 The UNEP conference centre, Gigiri, Nairobi

tion was due to the massive use of fertilizers. Though there is linear relationship between the amount of fertilizer applied to a plot and the crop yield, this relationship is not infinite. Secondly, fertilizers are now viewed as a major poison to the environment. Increased food production therefore will either have to be achieved through further encroachment on the environment and thus increasing agricultural acreage (the same environment that will be under pressure from the increased population) or finding other solutions. Strides made in recent years in the field of molecular biology and biotechnology hold the key to the solution. Selection of high yielding cultivars, disease resistant strains, use of biofertilizers, biological control of pests and careful genetic modification of plants and animals to improve food yield are all within the realms of biochemistry, molecular biology and biotechnology. This is probably where the future of world food security lies.

Many of the technologies mentioned above are becoming household names—ready solutions to the myriad problems. These technologies will be ready-made and packaged for application in the continent of Africa. The African scientists must arm themselves to cope with these developments if not being part of them.



Figure 2 The delegates at the UNEP conference centre, Gigiri, Nairobi