River linking: More a bane

Biyani and Gupta[1] have unfoundedly been critical by referring to the views of critics on 'interlinking of rivers' as 'misgivings generated by vested interests'. Unfortunately, the profound knowledge and opinion of dedicated scientists over core issues regarding any problem are often sidelined by the policy makers. Such actions may have proved detrimental to the very economy of the country. Even after 55 years of independence, information on certain basic field data about estimates of agricultural potential, irrigation potential created, current status of rainwater conservation measures and scope for further such measures that can be implemented for each micro watershed of the entire drainage system of the country, is not adequately available. The available water resources at local and regional levels are not judiciously conserved and utilized. This being the case, proposals such as those to capture the Himalayan water-flow and diverting it up to river Cauvery by spending crores of rupees do not make any sense. The canal irrigation, if brought at such mega levels by overlooking the highly variable climatic, geomorphological, geological, soil and other related conditions of the country, is bound to result in the conversion of fertile and potential agricultural land into a perpetual non-productive, water-logged, saline insipid barren land. Advocates of interlinking of rivers should have a clear perception of the possible damages that may be caused to the very agricultural economy of the entire country. The views expressed by B. P. Radhakrishna in a booklet entitled *Interlinking of Rivers: Bane or Boon*, published by the Geological Society of India that has a wide circulation must be an eye-opener to all such advocates of interlinking of rivers.

1. Biyani, A. K. and Gupta, S. K., *Curr. Sci.*, 2004, **87**, 277–278.

K. C. SUBHASH CHANDRA

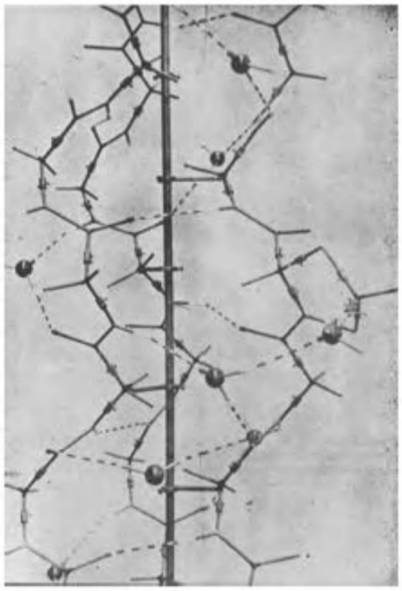
No. 78, 5th A Main, 4th Cross,
RPC Layout,
Vijayanagar, II Stage,
Bangalore 560 040, India
e-mail: kadursubhash@yahoo.co.in

Fifty years of the triple helix collagen

7 August 2004 marked the golden jubilee of independent India's finest contribution to the world of science in the form of 'triple helix collagen'. The decoder of the molecular architecture of collagen, G. N. Ramachandran's pre-eminence needs to be re-established by the Indian scientific community. The work on collagen is undoubtedly the most important in the basic sciences in independent India.

Ramachandran and his associate Gopinath Kartha unravelled the structure of collagen, which had been eluding the best of minds for quite a long time. Their work on collagen appeared in *Nature* on 7 August 1954.

Collagen is an insoluble and the most abundant protein of connective tissue such as skin, bone and tendon. The X-ray diffraction pattern of collagen is difficult to interpret. But against all odds, Ramachandran came up with the three-stranded, coiled-coil helical model of collagen. The elucidation of the structure of collagen is a far greater achievement than the decoding of DNA by Watson and Crick, as their work relied on available details and much progress had already been made in the area during the discovery.



Photograph of the triple-helical collagen structure, built in G. N. Ramachandran's laboratory (*Curr. Sci.*, 1990, **59**, 847).

But, the work on collagen by Ramachandran was original, as during that time even the sequence of the collagen protein was not known, making it difficult to visualize the structure using models. The structure of DNA is no longer the same as what Watson and Crick proposed in 1953. Despite the long-standing acrimonious controversy over the details of the structure, the Ramachandran model has stood the test of the time.

The structure of collagen has paved the way for gaining further insights into the chemistry of leather. Great strides forward have been made in the field of leather since the elucidation of the collagen structure. The auditorium at the Central Leather Research Institute is aptly named 'Triple Helix' in memory of the great scientist and his contribution. Ramachandran and triple helix will serve as a source of inspiration to a whole range of physicists, biologists, leather technologists and chemists and to the entire Indian scientific community.

R. GANESH

Department of Environmental Technology,
Central Leather Research Institute,
Chennai 600 020, India
e-mail: sairganesh@yahoo.com