

From the Editor's Desk

NOBEL PRIZE FOR PHYSIOLOGY AND MEDICINE - 1971

Dr. Earl Wilbur Sutherland Jr. who is Professor of Physiology at the Vanderbilt University Medical School in Nashville, Tenn., U.S.A. has won this year's Nobel Prize "for his discoveries concerning the mechanisms of the action of hormones". The Royal Karolinska Institute in Stockholm, Sweden, which administers the annual Nobel Awards announced: "The mechanisms by which various hormones exert their important functions has until recently been a complete enigma. . . . Because of the work of Dr. Sutherland, we can today understand the general mode of action of many of them".



Earl Wilbur Sutherland, Jr.

Sutherland is the first scientist who demonstrated in 1955 that the glycolytic action of adrenaline is through the activation of enzyme phosphorylase. This explained how the body produces additional energy under stress when adrenaline is released. Later in 1958 he isolated a previously unknown chemical called cyclic adenosine 3',5' monophosphate or cyclic AMP and hypothesised that the hormones do not act directly on their target organs, but they trigger the production of cyclic AMP which in turn regulates the organ functions by increasing or decreasing the rate of their activity. Studies have established for example, that when adrenaline output is increased by fear or anxiety, it is not the adrenaline that speeds up the heart, but

it is the cyclic AMP released by adrenaline which stimulates the cardiac pacemaker. This presence of cyclic AMP as the second messenger or the missing link in long series of biological control mechanisms of varied nature, now it seems, is a universal phenomenon for it has been shown that this chemical is contained practically in every living organism from the isolated virus cells to the cells of that marvellously organized tissue called brain.

The discovery of cyclic AMP is now considered as a major advance in the study of life. Interest has mushroomed to such an extent that today an estimated number of 2000 scientists are currently engaged in research on cyclic AMP. The promise it holds for discovery of new medicines and mechanisms for disease control is so great that almost every major pharmaceutical laboratory in the world is promoting research in one or the other aspect of cyclic AMP. Thus some drugs now in use are believed to alter the levels of cyclic AMP and new drugs may eventually be designed to specifically suppress or enhance the action of cyclic AMP in different tissues thus opening newer vistas for the treatment of various diseases which may include even certain types of cancer.

Dr. Sutherland will be 56 years old on November 19, 1971. The Nobel Prize of Rs. 7,00,000 was declared to be awarded to him on October 15, 1971. This is a marvellous birthday present, but well earned. The whole humanity is proud of him for the ultimate effect of his researches is bound to reach into almost every phase of study of health and disease. Let us all congratulate him, join him in the celebrations, and wish him many many happy returns.

I. J. P. P.

With this issue which is the last one for the current year, the Journal comes back to its regular publication schedule. The editors and my colleagues in the All India Institute of Medical Sciences worked hard to bring the Journal up-to-date. A large number of A.P.P.I. members, the authors, and the referees have also contributed to the Journal's progress. I must, however, specially mention the help and support that the Journal obtained from Sh. N.N. Malik of the Union Printers Cooperative Industrial Society Ltd. This and the previous issues of the Journal would not have come out if his energy, zeal and friendship was not available to us.

S. K. MANCHANDA
Editor