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REPORT ON THE ACTIVITIES OF UNESCO
IN THE FIELD OF THE RESEARCH ON THE PRODUCTION
OF EDIBLE PROTEINS ⁺

⁺ Paper prepared for the Sixth Session of the ECOSOC Advisory Committee on the Application of Science and Technology to Development, New York, 17-28 October 1966.

Sixth Session of the Advisory Committee
on the Application of Science and Technology to Development

Point 5 : "Supply of edible protein"

It is evident that the programme of Unesco, in relation to activities directly aimed at the production of edible proteins is rather limited, and mainly connected with basic research. It is also generally understood that the analysis of the protein synthesizing processes in the living cell is of fundamental importance for understanding the laws which underlie the protein production in nature.

Therefore, the contribution to the studies aimed at the elimination of the world shortage of high nutritional proteins made by Unesco consists of assistance to selected topics in basic research in food protein production processes. In the implementation of its programmes in Research in Chemistry, in Cell and Molecular Biology, Research in Microbiology and its support to the International Biological Programme (IBP), Unesco stimulates and coordinates among other projects fundamental research dealing with the production of edible proteins.

In the first programme mentioned above, Unesco in close collaboration with the appropriate organizations, in particular the International Union of Pure and Applied Chemistry (IUPAC), will provide assistance for basic research studies for the production of food proteins. As, for budgetary reasons, this assistance has to be limited to local projects in this field, it will not interfere with or overlap the large projects undertaken by other international organizations.

The programme in Cell and Molecular Biology is carried out in close cooperation with the International Cell Research Organization (ICRO), a non governmental scientific organization, whose formation was initiated by Unesco in 1962 following a recommendation of the 12th General Conference; ICRO has eight working panels composed of leading scientists in the fields of : molecular biology, cell mechanics, morphology, genetics, metabolism, membrane physics, photosynthesis and microbiology.

Unesco/ICRO organizes each year a number of high level international training courses in which theoretical and practical aspects of recent discoveries and techniques in the various disciplines of fundamental cell research are taught.

Basic research related to applied microbiology is supported by Unesco's programme of Research in Microbiology which is carried out in close cooperation with the Panel on microbiology of ICRO and the International Association of Microbiological Societies (IAMS). In close cooperation with the latter organization, preparations are made to hold the second Conference on "Global Impacts of Applied Microbiology" in 1967. (The first Conference was held in Stockholm in 1963). In these conferences, emphasis is laid,

among others, on mass cultivation of microorganisms as sources of proteins, production by micro-organisms of essential amino-acids, production of proteins by micro-organisms thriving on hydrocarbons (petroleum) and food preservation.

It is well-known that the quantity and quality of proteins produced by micro-organisms can be improved considerably by selecting appropriate (genetic) strains. For this purpose, international coordination among the established culture collections of micro-organisms is of basic and utmost importance; Unesco therefore promotes and fosters the activities of the section on Culture Collections of IAMS, which had its first meeting in Unesco Headquarters in July 1966.

In the field of applied microbiology, the work of IAMS on bio-engineering projects specializing in continuous cultivation of edible protein producing micro-organisms and new bio-techniques to measure protein production of natural products in the field, especially in developing tropical and sub-tropical areas, is closely followed by Unesco.

The International Biological Programme has in relation to the production of edible proteins a more ecological approach which may disclose the fundamental relations in ecosystems which govern the production of proteins in various environments.

Unesco sponsors the technical meetings of IBP on secondary production processes of terrestrial, fresh water and marine communities, in which the results of basic studies on edible protein producing plants and animals are exchanged and discussed among experts in these fields.

Moreover, Unesco tries to bring the knowledge gained to the developing countries and promotes basic research in these areas so that local protein sources can be increased in quality and quantity.