

MICROBIOLOGICAL ASSAYS

UNDER the auspices of the National Collection of Types Cultures, India, and the Society of Fermentation Technologists, a symposium on the "microbiological assay of amino acids, vitamins and other growth factors" was held on Saturday, the 17th December 1949, at the Indian Institute of Science, Bangalore. Dr. N. N. De, Assistant Professor of Pharmacology, presided on the occasion. The isolation and characterisation of micro-organisms from various sources and the factors which influence the choice of these organisms for purposes of assay, were described in considerable detail. The importance and need of a continued search for new and better organisms which, (1) can utilise bound forms of growth factors; (2) can be employed for the assay of "strategically important" peptides; (3) are more specific to the given constituent and less susceptible to interfering substances associated with natural extracts; and (4) are characterised by a higher stability and reproducibility of performance were stressed during the discussion.

A paper on the preparation of samples for assay discussed the relative merits of acids, alkalies and enzymes as hydrolysing agents. It was pointed out during discussion that the enzymatic hydrolysis of samples should

be studied in greater detail to avoid the serious shortcomings of acid and alkali hydrolysates. In a paper on analytical methods employed, it was pointed out that counting of cells of the test organism in a drop of the assay medium can be adapted for estimating ultra-micro quantities of growth factors. An interesting and valuable paper explained the use of treated protein hydrolysates (a paper appearing elsewhere in this issue) as a substitute for mixtures of pure and expensive amino acids, now difficult to get. A description of the paper-strip chromatography technique to check the freedom of the treated casein hydrolysates from particular amino acids, was given. It was shown that the method is highly sensitive and is capable of establishing microbiological standards of purity. Following a paper on the "use of test organisms in the discovery of new factors", detailed papers on the organisms available for assay of amino acids and vitamins in the National Collection of Type Cultures, India (sponsored by the Council of Scientific and Industrial Research), were presented. The last paper dealt with the assay of trace elements and minor growth factors.

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TRIPS TO THE MOON BY 1960*

NEWSPAPERS of late have been full of contemplated trips to the moon. One scientist at Frankfurt, Germany, Dr. Heinz Gartmann, has been quoted as saying, "All we need now is the chance—and the financial aid—to put our theories into practice." It is stated that half the battle, the completion of basic theoretical calculations for the design of the moon rocket, has been won.

On this side of the ocean considerable publicity has come to members of the Canadian Rocket Society at Toronto. Captain E. J. Evans Fox, visiting New York, displayed a blueprint for a 200-foot-long craft driven by nuclear fission with tripod takeoff and landing equipment. He plans the moon as only a stopover point, and revives the economical year and a half Mars-Venus tour that was long ago designated the Hohmann Round Trip (see *Rockets*, Willy Ley, 1944). Captain Fox does not worry about the water and oxygen supply for his passengers, indicating that processes are already in use for the re-

covery of both of these from the products of combustion. And as for food, he says there is room for tons of it. We tend to be skeptical; but Boris Dyke, Vice-President of the Canadian Rocket Society, comes into the limelight with more data and even a prediction. In charge of the planning, he is quoted as saying that 1960 is not only a plausible date but the one toward which they are working for their trip to the moon.

While the most time-saving trip would require only 15 hours, plans are for a four-days-each-way trip in an elliptical orbit which would require less fuel by taking advantage of natural gravitational fields. The 1,000 ton ship would itself cost only about five million dollars; but Dyke estimates that hundreds of millions of dollars will first have to be spent on preliminary research and trials.

* By courtesy of *Sky and Telescope*, 1949, 9, 10.