and found that it is often possible to produce a finite disturbance of definite amplitude resulting in distorted mean flow. These considerations are useful in determining the instability of laminar boundary layers, especially in high speed flow. The joint paper of E. A. Eichelbrenner and R. Michel on the phenomena of transition in three dimensions was the next to be presented in the fourth sitting. H. Bergh gave a method for visualizing periodic boundary layer phenomena. This method could be useful for determining more detailed experimental information about periodic boundary layers.

In the fifth sitting S. Ostrach, H. Schuh, S. A. Schaaf and L. Talbot, and M. Lunc presented their papers on thermal boundary layers and boundary layers in a rarefied gas. Ostrach studied the problem of forced and natural-convection fully developed laminar flow between two parallel planes oriented in the direction of the body force. The problem has its applications in the fields of jet propulsion, nuclear power and hypersonic flight.

The sixth sitting was occupied by papers on the interaction between shock waves and boundary layers. G. E. Gadd surveyed the occurrence and nature of the interaction. H. Mirrels described the wall boundary layer behind a moving shock wave.

The concluding day was devoted to unsteady and three-dimensional boundary layers. The seventh sitting opened with a paper by F. K. Moore on the separation of unsteady boundary layer. The problem could be split into two parts:

(*i*) A boundary layer which has a fixed separation point in the *quasi*-steady approximation; and

(*ii*) A steady boundary layer over a moving wall.

The separation point has been defined where velocity and shear vanish simultaneously. Obviously, if the wall is moving, this point cannot be at the wall. The paper was followed by L. N. Persen on the applications of integral transforms to non-stationary boundary layers. W. Wuest presented his paper on periodic boundary layers.

The contributors for the last session were R. Timman, K. Oswatitsch, I. Tani, and O. Wehrmann and R. Wille. The subjects included three-dimensional boundary layers, and experimental investigation of flow separation over a step.

B. R. Seth.

NOBEL PRIZE FOR CHEMISTRY

THE Nobel Prize for Chemistry has been awarded to Sir Alexander Todd, F.R.S., Professor of Organic Chemistry, University of Cambridge, for his contributions to the chemistry of nucleotides. The term nucleotide was originally confined to the phosphates of the N-glycosides of certain purines and pyrimidines known as nucleosides which are obtained by hydrolytic breakdown of the nucleic acids. Its scope has now widened and includes not only the phosphates but also the polyphosphates of N-glycosides of a variety of heterocyclic bases and it embraces also the nucleic acids or polynucleotides. Phosphorylated derivatives of riboflavin though fall outside the scope of the above definition are commonly included because of their close relationship to the main body of natural nucleotides. Professor Todd and his colleagues have been engaged in chemical investigations of nucleotides for the past fifteen years and have made outstanding contributions to the elucidation of the structure and synthesis of these biologically very important chemical substances.

Employing methods of organic chemistry mainly along two lines, one concerned with the structure of nucleic acids and the other with the complex nucleotide derivatives which exercise coenzyme function in many biological systems, they have developed new methods of synthesis which would be flexible in operation and mild enough, not to damage sensitive molecules such as those of the nucleotides.

In the Bakerian Lecture to the Royal Society delivered on 17th June 1954, Prof. Todd under the title, "The Chemistry of the Nucleotides" presents a survey of the subject. Professor Todd has a multitude of other honours to his credit and the award of the Nobel Prize comes fittingly, in recognition of his monumental work in the above field of organic chemistry.