that can be induced by shear stresses alone, acting at temperatures below the glass-transition temperature of the polymer. It assumes the shear stress field can promote single bonds in the polymer backbone to higher energy conformations, thus increasing configurational entropy above the critical value for glass formation.

H. P. Schreiber, Canadian Industries Ltd., discussed simple models that predict polymer fractionation during extrusion of a polymer through a capillary, with low-molecular-weight material tending to collect near the wall. This theory was apparently verified by experimental measurements on polyethylene. Shertzer and Metzner and Bird gave data on moderately concentrated polymer solutions, showing that the Weissenberg normal-stress conjecture is not valid.

The extent that viscous heating could explain non-Newtonian behavior was questioned by J. G. Brodnyan. He showed that non-Newtonian effects in many cases can occur before viscous heating can be of any significance. In the following paper, however, I. J. Gruntfest indicated he still believes viscous heating is important in explaining non-linear effects in some cases. In other papers, successful application of the Tobolsky-Eyring rate theory to stress relaxation in metals was reported by J. F. and N. K. Wilson, and A. S. Cakmak presented his solution to the problem of an airplane landing on visco-elastic earth.

Lawrence E. Nielsen of Monsanto Company, who described the meeting to PHYSICS TODAY, says "rheologists in different fields still do not speak the same language. Some effort is still required if there is to be a unified language in rheology. My other impression is that there has been a diffusion of continuum mechanics. Many of the leaders in this field, such as Coleman, Ericksen, and Truesdell, gave no papers this year. Their places have been taken by academic engineers, such as Bogue, Denn, Wissler, Bird, and Valanis. It seems probable that within the next few years there will be a major attempt to apply nonlinear continuum mechanics to industrial problems."

Jobs in biophysics

The Biophysical Society, which offers a free placement service throughout the year, will operate such a service at its tenth annual meeting in Boston on Feb. 23-25. Interested parties can get information and registration forms from Dr. Irving Gray, Department of Biology, Georgetown University, Washington, D. C. 20007.

Michelson award to Alvarez

Case Institute of Technology has presented its third annual Albert Michelson Award to Luis Alvarez, professor of physics at the University of California in Berkeley. The $5000 honorarium and silver plaque were given to Alvarez "for the discovery of significant properties of cosmic rays, neutrons, isotopes, and nuclear transformations; for leading in the development of quantitative tools for nuclear physics; and for pioneering in radar and aircraft-landing systems."

ALVAREZ

Alvarez is a native of San Francisco who grew up in the midwest and won his PhD in physics from the University of Chicago in 1936. Early in his scientific career he worked in optics and cosmic rays and was associated with Arthur Compton in the discovery of the positively charged nature of most cosmic rays. Turning to nuclear physics, he gave the first experimental demonstration of orbital-electron capture by nuclei, was the first to measure the magnetic moment of the neutron and participated in the discovery of ^{3}H and ^{3}He. During World War II he worked at Massachusetts Institute of Technology on radar and was responsible for GCA (ground controlled approach) blind landing system for aircraft. As a member of the Berkeley faculty after the war, he directed design and construction of the 40-ft proton accelerator and more recently has concentrated his efforts on development of hydrogen bubble chambers at the Lawrence Radiation Laboratory. A fellow of the American Physical Society, Alvarez has been honored previously with the Collier Trophy, the Einstein Medal, and the National Medal of Science.

ASA underwater sound medal

Frederick V. Hunt of Harvard University has been awarded the 1965 Pioneers of Underwater Acoustics Medal. The honor, conferred by the Acoustical Society of America in odd-numbered years for contributions to underwater acoustics, was given to Dr. Hunt during the Society's recent fall meeting in St. Louis.

Dr. Hunt's major contributions to underwater sound began with formation in 1941 of Harvard's Underwater Sound Laboratory. As the lab's organizer and director, he was directly responsible for conception and development of many new techniques, such as scanning sonar and the acoustic homing torpedo, used with deadly effect against German U-boats. During the postwar period he has worked in many diverse areas of acoustical research. Among these are propagation in boundary layers, speed of sound in water under high pressures, and finite-amplitude acoustics, as well as application of correlation techniques to acoustic receiving systems and the phonograph-stylus wear problem.

Born in Barnesville, Ohio, Dr. Hunt did his undergraduate studies at Ohio State University and his graduate work at Harvard, receiving his physics doctorate in 1934. He has remained a Harvard faculty member ever since and presently holds two university chairs, Gordon McKay Professor of Applied Physics and Rumford Professor of Physics.

An Acoustical Society fellow, he served as Society president in 1951 and has been active in its councils and committees. Dr. Hunt is also one of the original members of the National Academy of Sciences Committee on Undersea Warfare and has served on the Acoustical Standards Board.