industry and associated industries have now entered a larger sphere in engineering and fabrication.

However, in regard to the consumption of plastics goods, India stands no comparison to U.S.A. and the Western countries. Indigenous fabrication and production must therefore be stepped up. In U.S.A. the *per capita* consumption was 22 lb., while in U.K. it was 14 lb. In the development plan of U.S.A. they are aiming to increase it further. This only signified the need and importance of tapping the potential field for development of the plastics industry in India. Prof. Thacker mentioned the plastics bridge in Louisiana in U.S.A., and stressed the engineering applications and possibilities of plastics. The importance and need for research development and industrial applications was vital. The demand from industry was great and is bound to increase day by day. Eastern countries like Japan have also advanced a long way in the field of plastics. Scientists, technologists and industrialists are busily engaged here in India in advancing the plastics industry and must needs discuss and solve mutual problems and exchange ideas and views and explore new possibilities and avenues of advancing the cause of plastics. In this respect they have a responsibility and are being helped by various scientific institutions like the national laboratories.

A High Polymer Exhibition was also arranged in connection with the symposium, in which as many as 20 firms participated, besides the Shri Ram Institute for Industrial Research, the Indian Lac Research Institute and the National Chemical Research Laboratory. The exhibits covered products from the field of plastics, rubber and synthetic fibre industries. The exhibits at the National Chemical Laboratory stall included all relevant work on high polymers conducted at the National Chemical Laboratory and descriptive charts were also available as explanatory notes. The Laboratory also organised a world book exhibition which included display of books, journals and other relevant literature on high polymers. Demonstrations such as ballon making, preparation of lac by the Indian method were also included and these evoked keen interest among the assembled guests and delegates.

A 80-page brochure specially brought out on the occasion by the National Chemical Laboratory was distributed free to all the delegates and distinguished guests and others who attended the symposium and visited the exhibition. The brochure, besides containing a few popular articles on development plans, includes abstracts of papers read at the symposium and the list of exhibitors participating in the exhibition.

SIMULATION OF ASTROPHYSICAL PROCESSES IN THE LABORATORY

WINTON H. BOSTICK AND ORRIN A. TWITE, of the University of California Radiation Laboratory, have reported the development of a plasma gun (or plasma source) which can project plasmoids across a magnetic field in a vacuum at speeds up to 10^7 cm. sec. A Taylor-instability jet produced in a plasma supported against gravity by magnetic field may thus be simulated and studied in the laboratory. The track left by the plasmoid in crossing a magnetic field is luminous because of the recombination light of the ions and electrons which have been left behind as 'debris'. The track may thus be photographed.

If a pressure of a few microns of residual gas is used instead of a vacuum of 10^{-5} mm. mercury, the photo-ionization produced in this gas can give rise to currents that produce an electromagnetic brake on the plasmoid. This breaking action not only decelerates the plasmoid but also deflects it into a spiral. The presence of other plasmoids intensifies this process of deceleration and deflexion.

These processes were first documented with time exposure photographs. A more spectacular demonstration of the effects can be obtained with Kerr-cell photographs, using four or two plasma sources firing simultaneously across a magnetic field under varying conditions. The authors suggest that the processes displayed in these photographs are actually related to geometrically similar astrophysical processes, involved in the formation of spiral galaxies, individual stars, barred spirals and binary stars —although the laboratory magnetic fields (4,000 gauss), atom densities, distances and time-scale are very different from those obtaining in the stars. (*Nature*, 1957, **179**, 214.)
