Histocompatibility Antigens and Tissue Transplantation. L. A. Herzenberg, Ph.D.,* *Palo Alto, Calif.* (BS)

THE REJECTION OF GRAFTS between genetically different individuals has been clearly shown to be due to an immunological response of the host to the grafted tissue. The specific constituents to which this immune response is directed are the histocompatibility or transplantation antigens.

In the mouse, where the existence of genetically homogeneous (highly inbred) strains allows genetic tests to be performed with facility, several independent determinations have shown that at least 15 separate genetic loci control the formation of as many different histocompatibility antigens. One of these, the H-2 locus, plays a pre-eminent role in graft rejection. Others are much weaker and with minimal experimental manipulation, incompatibilities at these loci can be surmounted to give long-lived graft acceptance.

The recent application of serologic methods of assay for the H-2 antigens has allowed some progress to be made in their purification and characterization. These antigens are found in a lipoprotein fraction derived from the bounding membranes of a variety of cells. Some of their chemical and immunologic properties are discussed.

In man, many iso-antigens are known, but which of these play a role and how important a role each plays in transplantation is unknown. A working hypothesis that the cell membrane associated antigens are analogous to H-2 in the mouse and are of prime importance is presented.