

hepatitis by injection of pooled normal gamma globulin have led to conflicting results (42). A current national study involving a number of centers with carefully planned protocols (including controls) may help to settle this question.

### Conclusion

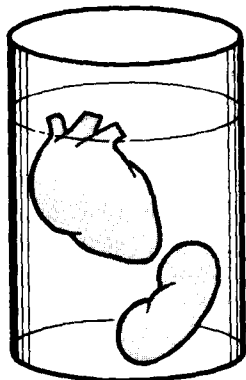
Many of the important complications of open heart surgery are hematologic. A large proportion of these are related to the massive amounts of donor blood generally transfused. Every effort should be made to minimize the amount of donor blood utilized during these procedures.

Presented at the annual meeting of the American Society of Extracorporeal Technicians, San Francisco, California, June 13, 1968.

Aided by a Research Grant (HE-05652) from the National Heart Institute, National Institutes of Health.

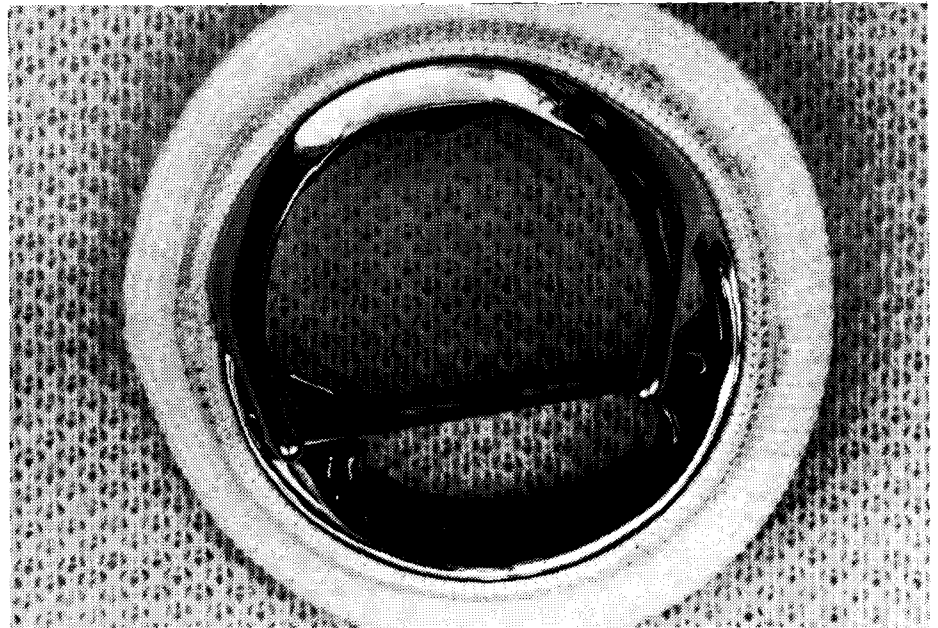
### References

29. Jackson, D. P., J. R. Krevans and C. L. Conley: Nature of Hemorrhagic Disorder Following Hemolytic Transfusion Reactions in Man. *Blood* 12: 834, 1957.
30. Lee, W. H., Jr., D. Krumhaar, E. W. Fonkalsrud, O. A. Schjeide and J. V. Maloney, Jr.: Denaturation of Plasma Proteins as a Cause of Morbidity and Death after Intracardiac Operations. *Surgery* 50: 29, 1961.
31. Wilson, J. D. and H. F. Taswell: Auto-transfusion: Historical Review and Preliminary Report on a New Method. *Mayo Clinic Proc.* 43: 26, 1968.
32. Hill, J. D., M. J. Aguilar, A. Baranco, P. De Lanerolle and F. Gerbode: Neuropathological Manifestations of Cardiac Surgery. *Ann. Thoracic Surg.* 7: 409, 1969.
33. Swank, R. L. and G. A. Porter: Disappearance of Microemboli Transfused into Patients during Cardiopulmonary Bypass. *Transfusion* 3: 192, 1963.
34. Perkins, H. A., D. Day and E. Hill: An Immunologic Basis for Massive Loss of Red Blood Cells after Open Heart Surgery. *Proc. Internat. Cong. Blood Transf.* 9: 97, 1964.
35. Perkins, H. A.: Isoantibodies Following Open Heart Surgery. *Proc. Internat. Cong. Blood Trans.* 1: 831, 1968.
36. Pretty, H. M., H. H. Fudenberg, H. A. Perkins and F. Gerbode: Anti-Gamma Globulin Antibodies after Open Heart Surgery. *Blood* 32: 205, 1968.
37. Vyas, G. N., L. Holmdahl, H. A. Perkins, and H. H. Fudenberg: Serologic Specificity of Human Anti-IgA and its Significance in Transfusion. *Blood*, in press.
38. Vyas, G. N., H. A. Perkins and H. H. Fudenberg: Anaphylactoid Transfusion Reactions Associated with Anti-IgA. *Lancet* 2: 312, 1968.
39. Kreel, I., L. I. Zaroff, J. W. Canter, I. Krasna and I. D. Baranofsky: Syndrome Following Total Body Perfusion. *Surg. Gyn. Obstet.* 11: 317, 1960.
40. Embil, J. A., D. F. Folkins, E. V. Haldane and C. E. Van Rooyen: Cytomegalovirus Infection Following Extracorporeal Circulation in Children. *Lancet* 2: 1151, 1968.
41. Rubinson, R. M., P. Holland, P. J. Schmidt and A. G. Morrow: Serum Hepatitis after Open Heart Operations. *J. Thor. Cardiovasc. Surg.* 50: 575, 1965.
42. Holland, P. V., R. M. Rubinson, A. G. Morrow and P. J. Schmidt: Gamma-Globulin in the Prophylaxis of Posttransfusion Hepatitis. *J.A.M.A.* 196: 471, 1966.



## Organs and Tissues

LTI Carbon, known commercially as Pyrolite, a product of Gulf General Atomic, Inc., may be the greatest material for prosthetic heart valves since Dr. Albert Starr first popped a Silastic ball into a bird-cage. Its full name is Low-Temperature Isotropic carbon and recent studies by Bokros, Gott, et al. reached some interesting conclusions. Pyrolite-coated surfaces that had been polished and from which all absorbed gases had been removed were found to be significantly thromboresistant by virtue of their basic physical and chemical properties. The two prosthetic heart valves that have been recently made available in limited clinical trials are the DeBakey aortic valve with a Pyrolite-coated ball and the Lillehei-Kaster tilting disc valve with a Pyrolite disc.



Clinical trials have been initiated utilizing the Kaster-Lillehei pivoting disc prosthesis with the Pyrolite disc. Manufactured by Washington Scientific Industries, Inc., the valve will be available for both aortic and mitral place-

ment in six sizes from 14 to 25 mm. internal orifice diameter. For more information concerning this prosthesis, circle Number 37 on the Reader Service Card.

A recent merger has made the entire line of Surgitool's valvular prosthetics available from your Artificial Organs specialist from Travenol Laboratories. A member of this line is the DeBakey Aortic prosthesis with the Pyrolite coated ball occluder. This ball will withstand a crushing force in excess of

300 pounds and have been hydro-statically tested to 15,000 psi without failure. The Pyrolite coating wears at the rate of 0.00004 inches per year giving it a wear life of about 500 years. For data on this interesting medical engineering concept, circle Number 36 on the Reader Service Card.