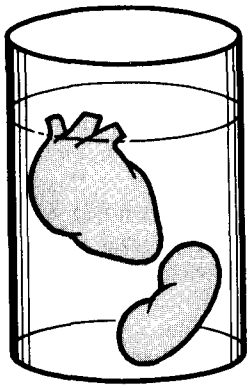

Organs and Tissues

susceptibility to disease. The Philadelphia researchers found a New York patient's sera formed a precipitating antibody with an antigen from an Australian aborigine. Continuing their tests they found the antigen in some patients with Down's syndrome and certain leukemias. In 1966 a patient with Down's syndrome, who had a consistently negative antigen test, turned positive. He developed hepatitis. A lab technician, working on the project, developed initial symptoms of hepatitis. All her previous antigen tests were negative but early in her illness they turned positive. These were the two big breaks in the research.

From further research it has been learned that Australian antigen may be present transiently, before the patient feels ill, or persist, suggesting the existence of "carriers". It is hoped that the antigen test can screen out these "carriers".

The test is performed by taking a Petri dish with agar gel with wells cut into the gel. The center well is filled with the serum from a patient who has developed antibodies to hepatitis. Into six wells radiating an inch from the center well a drop of the onors serum is placed. After 24 hours a positive antigen reaction is noted by a thin white cuticle shaped line between the wells. Because of the shortage of human antigens and the time element involved the test is not practical on a wide scale at this time.

The Australian antigen test has been used many thousands of times in many blood banks and medical centers. If it bears out its early promise, its use as a marker may permit earlier detection and eventually lead to a vaccine. Researchers remain cautious on this aspect because previous leads have been fruitless.

Submitted by
Ed Romanowski

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A die for cutting aortic leaflet valves from Fascia Lata is now available from Electro Medical Systems, Inc., Building No. 43, Denver Technological Center, Englewood, Colorado 80110. The die, designed by Dr. Warren Zeph Lane of Saint Barnabas Hospital in New York, is undergoing clinical trials during 1969 and data from these cases should be forthcoming. Using the unit, autogenous tissue is cut into valve forms having precisely the required size and shape for effective valve repair. Also, edges of the valve forms are entirely smooth and clean cut without ragged edges or other defects. (Circle No. 4)

* * *

"Medtronic News", a new information sheet from Medtronic, Incorporated, 3055 Old Highway Eight, Minneapolis, Minnesota 55418, is currently being circulated. It contains the latest information concerning pacemakers and their application and you can receive it simply by asking to be placed on their mailing list. Also available at this time is a copy of their new patient orientation booklet for the newly paced patient. (Circle No. 5)

The use of glutaraldehyde storage and sterilization solution for valvular grafts has become of great interest. In the preparation of this solution, an essential ingredient to activate the glutaraldehyde is a 1/15th Molar phosphate buffer. This buffer is concocted by dissolving 9.07 grams of monobasic potassium phosphate (KH_2PO_4; molecular weight 136.09) in 800 ml. of distilled water. Using a pH meter, the pH is adjusted to 7.4 with 1 normal sodium hydroxide. With the pH adjusted, distilled water is added to bring the volume to 1000 ml. This phosphate buffer is combined with sufficient glutaraldehyde to yield a 0.65% glutaraldehyde solution.

The advantage of the glutaraldehyde storage media is, possibly, because the five carbon chain has a greater expanse and can form more crosslink than formed by formaldehyde, thus giving a stronger valvular structure.

* *

A new ultra-pure glutaraldehyde packaged in disposable glass ampoules is now offered to overcome the usual variabilities. It is bottled under nitrogen in neutral, prescored glass ampoules as an 8% solution having an unbuffered pH of 7.0. The 8% glutaraldehyde concentration insures good stability and is low enough to prevent polymerization or breakdown into glutaric acid. A detailed data sheet is available from Polysciences, Inc., Warrington, Pennsylvania 18976. (Circle No. 6)

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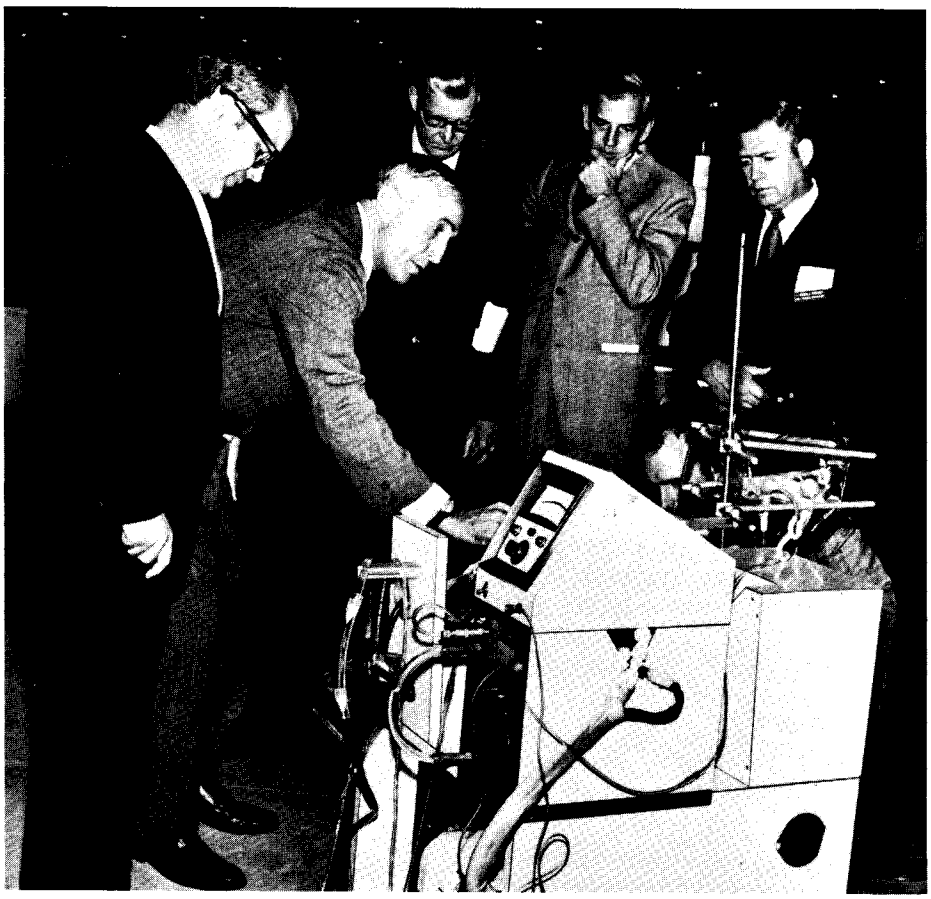
The NAKIB-Toroidal Heart Valve was recently introduced by Don Kuykendall of Washington Scientific Industries, Inc., 13111 Wayzata Blvd., Minnetonka, Minnesota 55343. Both the valve body and the toroid of this low-profile valve are machined from solid blocks of medical grade titanium, eliminating all welds. The portions of the valve which project into the bloodstream are teardrop designed to provide the best possible hemodynamic conditions. Available in four sizes for both mitral and aortic placement, four additional sizes will soon be available. Prior to August 1, Dr. C. Walton Lillehei has clinically implanted thirty of these valves, developed over the past two and a half years with his cooperation and that of his staff. (Circle No. 7)



Minnesota Governor Dedicates New Flo-tronics Plant . . . Dedication and cable cutting ceremonies, attended by Governor Harold LeVander and other state, county, and city officials, were recently held at the newly completed half-million dollar industrial plant and offices in Rochester, Minnesota, of The Waters Company, Division of Flo-Tronics Inc. of Minneapolis. George F. Waters, Chairman of the Board of Flo-Tronics and Chief Executive Officer of The Waters Company (second from left), is shown explaining the intricacies of the firm's new membrane oxygenator used for organ preservation. Looking on from left to right are Robert Withers, President of Industrial Opportunities, Inc. of Rochester; Governor LeVander; Oliver Perry, Executive Vice-President of Minnesota Association of Commerce and Industry, J. Kimball Whitney, Commissioner of Minnesota Department of Economic Development and Thomas Burton, Vice President and General Manager of The Waters Company (partially hidden). The ceremonies marked the official completion of the 50,000 square foot plant housing administrative offices and manufacturing facilities located on a 10 acre site. The firm employs approximately 150 persons manufacturing a line of medical diagnostic and monitoring equipment including a new membrane oxygenator used for organ preservation and whole body perfusion during heart surgery, and cable harnesses and electronic subassemblies for data processing equipment.

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South African heart surgeon Dr. Christian Barnard used slides to show the condition of Dr. Blaiberg's heart as seen at autopsy. The heart of Clive Haupt, healthy when transplated into the chest of Dr. Blaiberg, deteriorated astonishingly during the 593 days in Blaiberg's body.

Its muscular tissue was still in excellent condition, but the arteries which carry blood to the various parts of the heart were so clogged with cholesterol that blood could barely get through. Dr. Blaiberg died from complications arising from inadequate heart action.

Dr. Blaiberg's high cholesterol level of 340, compared to a normal of 150 to 250, does not account for the phenomenon because his heart had coped with high cholesterol levels for 60 years before the transplant.

Five heart transplant surgeons who participated in a panel discussion agreed that the mysterious changes are probably part of the tendency of the body to reject foreign tissue. Dr. Pierre Grondin, of Montreal, stated that the high cholesterol levels in Dr. Blaiberg's heart may prove to be a major discovery and may lead to an entirely new concept of how deposits form and reduce the efficiency of heart action.

* * *

A surgeon described their alternative to transplants. Dr. Rene Favoloro and other surgeons at the Cleveland Clinic have used the saphenous vein-graft technique more than 400 times with a failure rate of less than 6 percent. One end of the vein segment is attached to the aorta while the other end is attached to the coronary artery distal to the area of stenosis or block. Also, there is no rejection problem because the piece of vein comes from the same person.

(Editor's Note: See the article on direct coronary artery surgery in the September 1969 Journal)

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An Emory University surgeon has a novel way of partially solving the blood shortage. Dr. P. N. Symbas states that a person who is bleeding internally after an accident has large quantities of blood in the chest cavity. His procedure is to drain blood from the chest cavity and return it to the veins. The procedure was used as early as 1818 by a German surgeon and was common practice for treating battle casualties during World War I.