SURGERY

# Surgery Saves Infants

**Surgery to correct malformations in infant intestines has met with success due mainly to early diagnosis and prompt treatment of the condition.**

➤ SURGERY performed right after birth is saving the lives of a large number of infants born with obstructed intestines.

Successful treatment now allows most of the affected infants the prospect of a normal life, reports Dr. David B. Sheldon of the University of California at Los Angeles Medical Center.

These malformations once took the lives of most babies born with them.

The increasing survival rate is due mainly to two factors, Dr. Sheldon points out. One is early diagnosis and the other is prompt treatment. The early diagnosis depends on the type of obstruction and abilities of the doctors attending the births.

As for the promptness of treatment, newborns tolerate surgery better than do babies a few days old. The malformations causing the blockages grow more set and difficult to work with as they become older.

Present day anesthesia methods, treatment with fluids, and antibiotics are increasing the success of early surgery.

Dr. Sheldon believes that anesthesia in the young patients is fully as important as the operation. Since infants are highly susceptible to respiratory complications, a good deal of thought should be given to selection of an anesthetic. It should not interfere much with the intake of oxygen nor stimulate the secretion of mucus in the respiratory tract. The anesthetic most frequently used, according to Dr. Sheldon, is cyclopropane.

Another important factor in this type of surgery is the combination of a large amount of water in the tissues of newborns and the inability of their kidneys to get rid of excess fluids. Tolerance to excessive fluid administration, particularly saline solution, is very limited. Lost blood during operation must be accurately measured and replaced.

Another of the techniques giving babies a new lease on life is the use of a humidified atmosphere rich in oxygen. This tends to prevent the formation of dried mucus plugs that may be caught in the bronchial tubes. And antibiotics help combat infection in the delicate young lungs.

Although many of the small patients with the intestinal problems are born prematurely and often have more than one malformation, their chances for survival are increasing all the time, Dr. Sheldon reports in *California Medicine* (March), official journal of the California Medical Association.

Science News Letter, August 2, 1958

GEOPHYSICS

# Measure Antarctic Ice

**The greatest ice depth recorded, 14,000 feet, has been recorded in Antarctica, which has been found to be covered by an ice sheet that averages 8,000 feet in thickness.**

➤ ANTARCTICA is covered by a sheet of ice that averages 8,000 or more feet in thickness. At one point on the vast white continent United States International Geophysical Year scientists measured a thickness of 14,000 feet, the greatest ice depth ever recorded.

These findings are reported in the *IGY Bulletin* (July) of the National Academy of Sciences by Dr. George P. Woollard of the department of geology, University of Wisconsin, Madison, Wis.

Based on preliminary data gathered by scientists of many nations during the past year, the thickness studies also show that the underlying bedrock surface is quite irregular and that the bedrock material is probably a complex of igneous rocks.

A wide variety of scientific techniques were used to measure ice thickness, including glaciology, seismology, gravity, magnetism, submarine geology, photo-geology and visual observation.

What is beginning to result from this mass attack on the Antarctic's ice thickness is a profile not only of its surface, but of the land and water masses buried thousands of feet under the surface ice.

The Palmer Peninsula, for example, is now thought to extend beneath the ice as an island, separated by a strait from Antarctica proper.

In addition to the profile of the continent, the ice thickness studies promise to provide other scientific data.

It sheds light, Dr. Woollard says, on the glacial history of the Antarctic continent. In a broader sense, it may reveal much of relevance to past and present world climatology.

In a very different area, he states, measurement of the flexure of the earth's crust under its enormous load of ice should yield data on crustal strength.

"There are," Dr. Woollard points out, "practical as well as scientific considerations in studying the thickness of the Antarctic ice cap, as well as the Greenland, Ellesmere Island, Baffin Island, and other ice caps.

"If substantial portions of the Antarctic ice cap should melt, the volume of water released would profoundly influence sea level; some coastal cities might be completely submerged or develop into counterparts of Venice, with canals marking former streets."

In fact, Dr. Woollard says, surveys indicate certain former ice cap centers, such as Canada and Scandinavia, are rapidly rising, and many seaport towns that flourished when Rome was a world power are now marked only by their submerged ruins.

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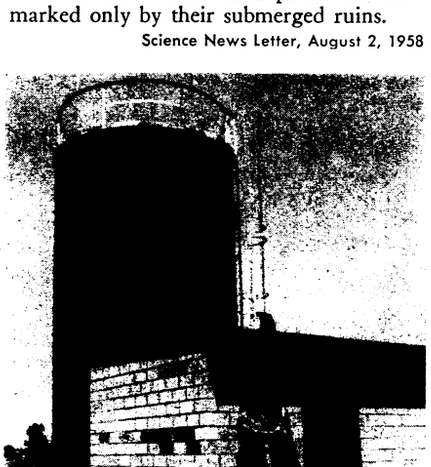

*TEST TOWER — The rain-erosion test tower, recently erected at the B. F. Goodrich Company Research Center, Brecksville, Ohio, is shown here along with the rotor blade.*

TECHNOLOGY

## Rain-Erosion Tower Tests Aircraft Parts

**See Front Cover**

➤ AN AIRCRAFT engine anchored within a reinforced concrete rain-erosion test tower in operation at The B. F. Goodrich Company research center now spins a rotor blade through man-made rainstorms, exposing resistant materials to the impact of raindrops.

At 600 miles an hour, a raindrop becomes a weapon, striking with the muzzle velocity of a bullet fired from a .45-caliber pistol.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows a view from the top of the test tower with the rotor blade installed and ready for a test spin. A technician applies a rubber sample to the leading edge of the blade. A ring of spray nozzles which create raindrops is suspended by pipe from the top of the tower. In a 20-foot fall to the base of the tower, the stream changes to fully developed raindrops of a controlled size.

Erosion-resistant materials are needed for jet-age rubber de-icers and radome covers.

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