OBSTETRICS

Dome Reduces Labor Pain

➤ A DECOMPRESSION DOME for relaxing the abdominal wall and reducing pain during the first stage of labor has been developed. It is being well received by patients.

The dome looks something like an iron lung, but it has no back and extends only from mid-chest to mid-hip. In practice, the patients sit at an angle of 55 degrees, leaning against a rigid backboard. When a contraction occurs, she switches on the vacuum pump, which is an ordinary domestic-type vacuum cleaner connected to the dome by a hose.

The theory behind the dome's action is that the uterus is shaped like an elongated sac in the resting stage. During a contraction, the uterus tends to become spherical and rises forward. A tense abdominal wall will resist these changes, and the contracting uterus must use some of its energy to overcome this resistance. This action may be part of the cause of pain.

By creating a vacuum and lifting the abdominal wall away from the uterus, the pain is reduced, either slightly or considerably, and the uterus is free to sustain a stronger and more forceful contraction.

The Canadian team that developed the dome believes that in many cases the process of labor is considerably speeded up. Among the 46 women who used this method, the average time spent in decompression was about three hours for first childbirth, and about two hours for those who had previously borne at least one child. About half of the 46 were given sedation and "many of these could have managed without it," the researchers report in the Canadian Medical Association Journal, 83:1192, 1960.

The new dome is an improvement on a decompression suit developed last year by Prof. O. S. Heyns of Witwatersrand University, Johannesburg, South Africa. The dome does not immobilize the legs, leaves the birth canal accessible to examination, has a trap door in the top whereby the fetal heartbeat can be checked, and reduces the feeling of pressure on the chest—an oppressive sensation inherent in the suit model.

The researchers who developed the dome are Drs. Louis J. Quinn, R. A. McKeown, T. Moore and H. P. Dorr, all of St. Mary's Hospital in Montreal.

• Science News Letter, 78:438 December 31, 1960

PSYCHOLOGY

Mamma What Moves First

➤ A STUDY of what makes a chick love its mother indicates that the answer may be the chick's attraction to a conspicuous object.

For years psychologists have wondered how a chick knows its own mother and what makes him want to follow her. The theory that the chick would follow the first object that moved, be it mother hen or a cardboard box, was proposed and tested. Sure enough, when the hen was put out of sight and a box was pulled back and forth in view of the newly hatched chicks, they became attached to the box and preferred it to their own mother.

Then another psychology research group dug a little deeper and found that chicks preferred a motionless object illuminated by a flickering light to the same object illuminated by a steady light. This indicated, they believed, that retinal flicker was not only a necessary but an irreducible condition of "imprinting," as this type of attraction development is called.

Prof. Philip Howard Gray of Montana State College's department of psychology disagrees. His experiments showed that chicks three to five days old preferred the only object familiar to them. Some were shown only a black motionless circle on a gray background; others saw only a black triangle under the same conditions. In neither case did the light flicker.

When confronted with both the circle and the triangle, the familiar object was chosen. This indicates that "probably anything that will make an object stand out in the chick's visual environment will be a factor in imprinting."

"Motion would thus be a factor," Prof. Gray reports in Science, 132:1834, 1960, "but it is not an irreducible condition, and neither is retinal flicker."

• Science News Letter, 78:438 December 31, 1960

GENERAL SCIENCE

President's Adviser

➤ THE RESPONSIBILITIES of the President's science adviser must be expanded so that the President can effectively use new scientific ideas to help achieve national objectives.

By placing more emphasis on the development of the social sciences and devising a long-range program of scientific research, the President's Special Assistant for Science and Technology can contribute greatly to the attainment of national objectives.

This recommendation was one of several urged in a new report, "The Presidential Staff," by the National Planning Association in Washington, D. C. The report stressed strengthening the role of the presidential staff so that it can help the President meet the "challenge of the times."

It recommended that the science adviser be an "overseer" to all research activities conducted by and for the Government. He should initiate scientific studies reflecting the needs of the President, and stimulate interest in sciences largely ignored, such as the field of human behavior.

With most Government funds being spent on the concentrated research on missiles, weapons and nuclear energy, the social sciences have been largely neglected. Since political problems are both political and psychological, more must be learned about human behavior.

• Science News Letter, 78:438 December 31, 1960

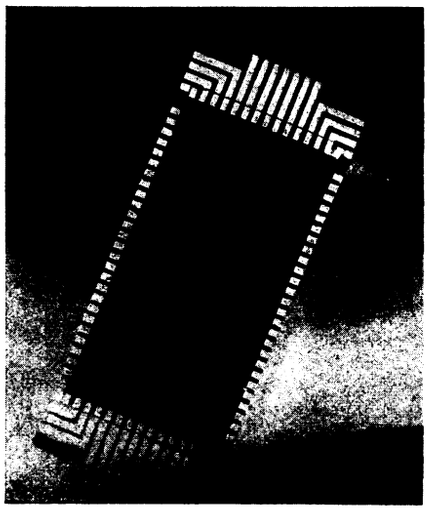
TECHNOLOGY

Film Memory Plane For Storing Information

➤ A DEVICE, the size of a postage stamp, for storing information has been developed and duplicated for the first time by automatic control techniques by scientists at International Business Machines Corp.

The device, a "cryogenic thin film memory plane," consists of a 19-layer "sandwich" that can store 40 different bits of information in cells or compartments. These information cells can be searched simultaneously for quick access to stored information.

• Science News Letter, 78:438 December 31, 1960



FILM MEMORY PLANE

ROCKETS AND MISSILES

Discoverer Satellites XVIII and XIX Launched

➤ THE GOLD-PLATED CAPSULE of Discoverer XVIII, sent aloft with biological specimens, was retrieved by plane near Hawaii after traveling 48 times around the earth. Besides testing the effects of radiation on human tissue, the satellite also carried equipment to be tested for reconnaissance satellites.

A Discoverer XIX satellite, 25 feet long, was launched Dec. 20 to measure the infrared radiation of the earth's atmosphere.

• Science News Letter, 78:438 December 31, 1960