

MEDICINE

Rate Pain in Childbirth

A new method, called dolorimetry, measures painfulness by comparing the spontaneous pain with that induced on the person's skin by heat rays.

► HOW painless is the so-called "natural" method of childbirth? Is the woman who screams, groans and cries having more real pain than the one who sweats out her labor in comparative silence? Do the pains actually become more intense as labor goes on, or does the mother feel worse because she is getting tired, anxious and sometimes angry or hostile?

Answers to these and other questions on childbirth pain and methods for relieving it are coming from a new technic developed by Dr. James D. Hardy and associates of the Russell Sage Institute of Pathology, the New York Hospital and Cornell University Medical College.

First a laboratory method of measuring painfulness, called dolorimetry, was worked out. Now Dr. Hardy with Dr. Carl T. Javert has applied it to the study of childbirth pain in 13 normal young women. This is the first application of the method to clinical problems, such as pain in childbirth or pain in various diseases.

The method of measuring painfulness, dolorimetry, consists essentially in comparing the intensity of a spontaneous pain, such as labor pain, with that induced on the person's skin by heat rays. The painfulness is measured in units called "dols." Both words, dolorimetry and a dol, come from the Latin word for pain, dolor.

The top of the dol scale is reached at about 10 and one-half dols. At this point increasing the intensity of the heat rays can cause no further increase in pain that a person can perceive, or notice. One dol is about one-tenth of this maximal pain intensity.

The heat that produces nine dols of pain may be great enough to cause second degree burns. The bottom of the scale is the amount of heat stimulus that causes a just perceptible "prick."

In the studies of the 13 women in labor, the heat stimulus was given to the back of the hand for three seconds immediately following a contraction, or labor pain. The woman then reported whether the pain on her hand was more or less intense than that of the uterine contraction. If it was more intense, the heat stimulus was decreased and another test made. If the first heat stimulus pain was less intense than the labor pain, the heat stimulus was increased for a second test. By this bracketing method, it was possible to find quickly the stimulus which was of about the same intensity as the labor pain, or contraction.

During the first quarter of the first stage of labor the few measurements made showed the pains to be of mild intensity averaging

not more than two dols. In the second quarter of the first stage the pain was moderate, averaging between three and five dols. During the third quarter the pain averaged between five and seven dols. This, the doctors state, is "a severe pain." At this point most patients asked for relief. Whenever the patient asked for something to relieve the pain it was given to her and the pain studies were stopped.

In the last quarter of the first stage, pain was between seven and 10 dols.

The second stage of labor was characterized by the most severe pains, 10 and one-half dols accompanying the "bearing down." After delivery the pains in the fourth stage were again of mild intensity. Measurements were made on two patients in the second stage and two in the fourth. None were made in the third stage during which the baby was delivered.

The findings in the study bear out the impressions doctors have had regarding the psychological factors affecting the behavior of patients in labor. Drs. Hardy and Javert state in their report to the JOURNAL OF CLINICAL INVESTIGATION. (Jan.)

One patient cried and complained with vigor from the start, though her pain measurements indicated only two to four dols. Another patient gave little evidence of her pain. But she had had children before and her labor was short. This may have accounted for her restraint in the face of pains measured at eight to 10 dols. She showed less signs of pain at eight dols than other patients with longer labors at four dols.

The 13 women in the study volunteered readily, either out of curiosity or because of a desire to be of service. All of them were ready to stand any reasonable discomfort if it would help ease the suffering of future patients. Of the 13, nine were private patients with a definite interest in the investigation because they were former nurses or wives of physicians or professional men.

Science News Letter, March 12, 1949

AERONAUTICS

B-50 Bomber Is Flown Non-Stop Around World

► "LUCKY Lady II," the Air Force B-50 bomber which was flown non-stop around the world in 94 hours, might have gone around more than eight times, if it had merely equalled the endurance record for non-stop flight.

The endurance record was set in 1935 by Fred and Al Key, in a much less imposing craft than the new B-50. Instead of going around the world, the Key brothers set



AROUND THE WORLD IN 94 HOURS—"Lucky Lady II", the Boeing B-50 (lower) is shown being refueled in flight by the B-29 during training mission over Arizona prior to the round-the-world non-stop flight which ended March 2 after 94 hours of continuous flying.

their record flying over Meridian, Miss. They took off on June 1, 1935, and landed July 4.

This 34-day flight was not a scientific or military test. It was a stunt, tops among such endurance flights made at the time.

Secrecy cost the "Lucky Lady II" a formal world record on its non-stop flight.

The flight is not a record, formally in the more or less official eyes of the world governing body for sporting aviation, the Federation Aeronautique Internationale. The first non-stop round-world flight did not meet the rules set up for globe-circling flights.

C. S. Logdson, director of the contest division of the FAI's U. S. representative, the National Aeronautic Association, explained that he had tried. One of the few persons

outside of the Air Force who knew of the flight, Mr. Logdson some weeks ago asked Air Force officials to plan the venture according to the "Hoyle" of aviation, the FAI's rules.

This would have involved some changes in the route. It would also have required certified observers at several points to witness the flight. Air Force officials balked because it would have been letting too many people know about the planned flight, Mr. Logdson said.

The rules call for check-ins at New York, San Francisco, Karachi, (Pakistan) Tokyo and any one of London, Paris, Berlin or Rome.

But, Mr. Logdson admitted, no one ever has followed these rules, so there is no formal FAI record for circling the globe.

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for the additional cost of preparing the isotopes in compounds.

Other phases of the Atomic Energy Commission's cancer-fighting program include support of selected research projects, facilities at Commission installations for use of short-lived isotopes which cannot be shipped to laboratories at a distance and continuing investigation of cancer among survivors at Hiroshima and Nagasaki.

Distribution of isotopes is administered by the Commission's Isotopes Division at Oak Ridge.

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MEDICINE

Isotopes Without Charge

➤ RADIOACTIVE varieties, or isotopes, of chemical elements, which can be used to help unlock some of the deadly secrets of cancer will go to qualified scientists without charge henceforth.

This policy for encouraging cancer research was announced by the U. S. Atomic Energy Commission. All but three of the more than 50 radioactive isotopes now available to scientists from the atomic furnace at Oak Ridge, Tenn., had previously been sold to scientists at prices based on production costs.

The new rule applies only to scientists doing three types of research, all related directly to investigation and treatment of cancer. These are: cancer experiments with animals; studies of basic cellular metabolism of cancer cells; and evaluations of therapeutic uses of radioactive isotopes. Scientists working in other fields will still have to pay the list prices for the isotopes.

Among the isotopes now being made

available without charge to cancer researchers is the promising variety of the element cobalt with an atomic weight of 60. Cobalt 60 is expected to be an effective substitute for rare and expensive radium in cancer treatment.

The Commission said that \$450,000 has been set aside to cover the cost of the new cancer-aid isotope program in its first year. Scientists who qualify for the free isotopes will pay a \$10 handling charge and shipping costs, but there will be no charge for the isotopes.

To be eligible, a researcher must be associated with an institution with facilities for radioactive research, must have the approval of local superiors and must be a physician experienced in radioactive research or working with experienced physicians to make clinical studies.

Chemical compounds with radioactive isotopes in them will be made up for cancer investigations, but scientists will be charged

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