

ANATOMY

Embryonic Deformities

Malformations in unborn babies, caused mainly by a combination of genetic and outside factors, drugs, diseases or poisoning, are studied by Japanese scientists.

➤ A COMBINATION of hereditary, or genetic, and "outside" causes are held responsible for 70% to 80% of malformations in unborn babies, a Japanese anatomist told SCIENCE SERVICE.

Some of the outside causes are drugs, not only thalidomide, but anti-cancer and anti-malarial drugs given in the first three months of pregnancy. Radiology, German measles, lead poisoning and mercury are also associated with malformations.

Dr. Hideo Nishimura of Kyoto University, a visiting scientist at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, reported his studies of 378 human Japanese embryos at the American Association of Anatomists meeting in Washington, D.C. The work in Japan was made possible because of legalized abortion and the cooperation of 30 gynecologists in providing embryos.

"After the war," Dr. Nishimura said, "the problem of the high population, with poverty that can impair the health of the baby, made even the Buddhist priests overcome religious scruples. When a gynecologist believes the fetus is endangered, he consents to perform an abortion and curettage is done, without hospitalization, in the doctor's office."

Before the operation, the mother is interviewed on all possible factors that might affect the health of the infant. This in-

cludes genetics, drugs taken and diseases she may have had during pregnancy.

In a few cases advanced maternal age or bleeding during early pregnancy were associated with abnormal embryos, but positive cause could not be proved. The reasons for heart malformation or dislocation are not definitely known, and Dr. Nishimura plans to continue his studies.

The effect of mercury in wastes thrown into the ocean by an industrial manufacturer of fertilizer was found both in adults and babies, as well as cats, on a beach called Mina-Mata on Kyushu Island, Dr. Nishimura said. The Japanese Government ordered discontinuance by the company, but not until many had suffered such symptoms as those of cerebral palsy. Contaminated shell fish were largely to blame.

Dr. Nishimura is serving on the Japanese committee for testing and safety of drugs, set up recently because of the thalidomide scare in Japan as well as in other countries. He is working at the Jackson Laboratory with Dr. Charles P. Dagg, a teratologist, or specialist in malformations producing monstrosities.

Dr. Nishimura has written a book on Chemistry and the Prevention of Congenital Anomalies, which will be published in the United States by C. C. Thomas.

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TECHNOLOGY

New Method for Taking Pictures Developed

See Front Cover

➤ A NEW METHOD for taking pictures and developing them instantly—by flashing light onto an electrostatically-charged film—has been developed.

The dry-processed pictures are completely grainless and can be developed and "erased" simply by heating the film. The film can then be reused. So fine is the resolution that as many as 144 crystal-sharp pictures can be produced in a space only two inches square.

How large the tip of a common pin appears when superimposed on the image of a 1,000-mesh screen as recorded by the new process developed by the advanced technology laboratories of the General Electric Company, Schenectady, N. Y. is seen on this week's front cover. It would take one million of the tiny squares to occupy one square inch.

Called "photo-plastic recording," the new process permits images to be developed in one-tenth to one-one hundredth of a second. Developing is done with heat alone without the need for any chemical developers whatsoever. Everything needed to produce the picture image is contained within the film itself.

The film can be either sensitive or insensitive to nuclear radiation. It is expected that first application will be for the military.

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GENERAL SCIENCE

Campaign Underway to "Clear" Dr. Oppenheimer

➤ A QUIET CAMPAIGN is being conducted to convince the Government to reverse the 1954 decision revoking the security clearance of Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton, N. J.

The campaign is backed by scientists, lawyers and others interested in seeing justice done, both within the Government and outside. The latest move in the program is sparked by Dr. Oppenheimer's having been selected to receive the Enrico Fermi Award for 1963. This is the highest honor the Atomic Energy Commission, which in 1954 revoked the clearance, can grant.

The new move is to ask members of the Federation of American Scientists, a politically oriented group, to write President Kennedy and AEC Chairman Glenn T. Seaborg expressing not only congratulations on Dr. Oppenheimer's selection but also urging them to act to reverse the security clearance decision.

One method suggested to accomplish this would be to appoint Dr. Oppenheimer as a consultant to the AEC, then grant him a security clearance. Many believe this would help "clear" the name of a highly respected scientist, who, after serving his country ably during and after World War II, became a martyr to the McCarthy era.

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SOCIOLOGY

Advocate Birth Control

➤ BIRTH CONTROL is the answer to the urgent problem of excessive population growth, a National Academy of Sciences panel reported at Washington, D. C.

It is up to science and technology to supply information on "the nature of the reproductive processes," and to provide "simple, acceptable techniques" for controlling them.

Societies must make appropriate birth control techniques "available to all people," the Academy's report on the Growth of World Population states.

Population is growing at a rate that outstrips economic development. Every 35 years the world will double its population if the present rate of growth continues. Underdeveloped countries, in particular, feel the pressure.

All nations want a higher standard of living—enough food, enough jobs, good health, good education. Uncontrolled population growth is a barrier to fulfilling these human goals, the report points out.

With these goals in mind, the National Academy of Sciences recommends the following, high-priority, actions:

1. Increased support of training in professions concerned with population problems.

2. Expansion of research laboratories investigating the aspects of human reproduction.

3. Fostering international cooperation in studies concerned with fertility regulation and family planning.

4. Improvement and enlargement of programs for training family-planning administrators in the United States.

5. Coordination of programs directed toward solving the problem of uncontrolled population growth.

Long-standing social customs and cultural arrangements are barriers to birth control programs, the report points out. Simple techniques that suit the motivational and educational level as well as the cultural requirements of the peoples involved are needed.

The panel on population problems was led by Dr. William D. McElroy of the Johns Hopkins University.

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