

# Contraceptive Advances

Scientific research on birth control and human reproduction is leading to new possibilities for effective family planning

➤ A BIRTH CONTROL pill that can be taken the "morning-after" or anytime during the six days after sexual intercourse was reported at a meeting of the American Fertility Society in Chicago.

Not yet approved for human use by the U.S. Food and Drug Administration, the compound, called ORF-3858, is a carboxylic acid derivative that has proved effective in the rabbit, monkey and in a limited trial on women. The compound prevents implantation of the ovum, which occurs in the womb on the sixth to seventh day after intercourse. After the egg is implanted the pills are not effective.

Two physicians from the Yale University School of Medicine reported experimental tests. Drs. John McL. Morris and Gertrude van Wagenen of the departments of obstetrics and gynecology reviewed six years of research on possible post-intercourse contraceptives carried on under grants from the Population Council of New York.

The successful tests on ORF-3858 and certain estrogens, or female hormones, were conducted by Dr. van Wagenen in her famous primate colony of rhesus monkeys. The similarity of the menstrual cycle of the rhesus monkey to that of the human female makes any data concerning mating and pregnancy in this animal of significant interest.

Because ORF-3858 does not yet have FDA approval, initial trials in women were carried out with diethylstilbestrol, which has more estrogenic side effects than the new compound. These trials involved victims of rape and a small number of volunteers.

The Ortho Research Foundation of Raritan, N.J., developed ORF-3858 following the Yale tests.

• *Science News*, 89:392 May 21, 1966

## Three-Month Protection

➤ A CONTRACEPTIVE injection whose effects last three months has been successfully tested for a year on 274 women, it was reported in Denver, Colo.

No pregnancies occurred in any of the women during that period, though a sizable number experienced prolonged bleeding or spotting, Dr. Edwin R. Zartman, medical director of the Planned Parenthood Committee of Columbus, Ohio, told doctors attending the American Association of Planned Parenthood Physicians meeting.

The contraceptive drug is called Depo-Provera (medroxyprogesterone

acetate), developed experimentally by the Upjohn Company. Its main component is the female sex hormone, progesterone, used in at least one oral contraceptive on the market. Most oral contraceptives use estrogen, another main female hormone. However, for prolonged contraceptive effect by injection, progesterone is considered the more promising of the two.

Dr. Zartman said the overall average bleeding was only four to seven days every three-month period, a perfectly acceptable amount. But when broken down by individuals, the bleeding rate was highly variable.

Some women did not bleed at all; others bled for up to 65 days. About 25% to 48% of the patients experienced bleeding and/or spotting in excess of 10 consecutive days.

No patient discontinued the experiment for this reason, however, Dr. Zartman noted.

He said the eventual goal is to test 500 women with Depo-Provera.

If a yearly injection for contraception is ever to be developed it will probably use progesterone. There is as yet no evidence that the effect can last that long in humans.

Another method that already works on animals is a yearly injection with antibodies. By injecting sperm into monkeys, antibodies against that particular sperm can be developed—the normal method of developing antibiotic drugs. Then when a sample of the monkey's blood is injected into another animal, an immunity develops. This method, though it works, is considered less reliable than a hormone injection which would prevent ovulation.

Dr. Elizabeth Connell of New York Medical College's Metropolitan Hospital reported still another new birth control pill called chlormadinone acetate.

Its mode of preventing pregnancy, although not fully determined, may be rendering the cervical mucus hostile to sperm without affecting the hormonal system of the woman.

Each woman was told to begin treatment by taking her first tablet on the third day of the menstrual cycle. Thereafter, she was to take one tablet daily without stopping.

The Family Planning Clinic of the hospital has observed 312 women closely for a total of 1,858 cycles. Three patients, or one percent of the group, became pregnant—one of them due to failure to follow directions.

• *Science News*, 89:392 May 21, 1966

## Smokers Show Decreased Toxemia in Pregnancy

➤ SMOKING may not be so bad for expectant mothers and their babies after all, a surprising report to the meeting of the American College of Obstetricians and Gynecologists in Chicago revealed.

There was significantly less pre-eclampsia, a toxic condition of pregnancy in which there is increased blood pressure, kidney damage and edema preceding convulsions, in a comparative group of smokers and nonsmokers involving 48,505 Navy mothers.

Although the finding was purely statistical and without explanation, the researchers said there was possibly a "protective" effect of smoking on toxemia.

Infants born to mothers who smoked weighed less and the incidence of prematurity was greater in this and other studies, but the clinical importance of these findings was lessened since there was no increase in the number of deaths near the time of birth.

The incidence of kidney inflammation called pyelonephritis was statistically increased among the smoking group, as was premature separation of the placenta, but the increase was less than one percent. Premature rupture of the membranes was likewise without explanation in the smoking mothers, but the spontaneous rupture could account in part for the increased prematurity, the investigators said.

Reporting the study were Dr. Paul B. Underwood and Kelvin F. Kesler of the U.S. Naval Hospital, National Naval Medical Center, Bethesda, Md., Dr. John M. O'Lane of the U.S. Test Station, China Lake, Calif., and Dr. Dwight A. Callagan, executive officer, U.S. Naval Hospital, Great Lakes, Ill.

• *Science News*, 89:392 May 21, 1966

## Stockholm to Start Bloodless Brain Surgery

➤ BLOODLESS brain operations will be made possible in Stockholm at the beginning of 1967 through installation of a \$150,000 linear accelerator in the Karolinska Hospital.

This hospital is reported to be the first in the world to have a proton knife for routine clinical use in brain surgery. The technique was developed by Prof. Lars Leksell at the hospital.

The method permits severance of nerve paths and other operations in the brain without surgical incision, and is particularly suitable in cases of shaking palsy, or Parkinson's disease, as well as in some mental disorders.

• *Science News*, 89:392 May 21, 1966