ated the lithium fluoride at 90 degrees K.

They tried again at about 4 degrees K. and still found nothing. Finally they applied a magnetic field to see whether bonding by magnetic forces could be induced, and again found nothing.

Dr. Connor believes the effect reported by Drs. Grant and Cobble may be due to capture by atomic nuclei, even though they say thay have ruled it out. It is implausible, he says, that a neutron should avoid capture by a nucleus in a lithium fluoride crystal for long enough to be captured by an electron.

The third negative report comes from Los Alamos Scientific Laboratory, where Drs. Robert Wenzel, George Arnold and John Warren subjected a lithium fluoride crystal at 4 degrees K. to a flux 1,000 times that used by Drs. Grant and Cobble, and found nothing like the flux of trapped neutrons that the Purdue results led them to expect. □

ORAL CONTRACEPTIVES

Minipill in limbo

Birth control pills have been under fire by some segments of the scientific community ever since they were first marketed in 1960. Since then, the antipill faction has grown as researchers have linked the contraceptives to an increased risk of blood clotting, to hypertension, diabetes, neurological disorders and cancer.

Throughout the decade the Food and Drug Administration has monitored these research reports, growing more cautious about unqualified support of the hormone pills. Yet there is no sign it will move to ban them. Indeed, its last official statement, issued in September (SN: 9/13, p. 198) called them safe while urging increased research efforts directed at suspected problems.

Faced with mounting concern and confusion about the safety of birth control drugs in the public mind, Sen. Gaylord Nelson (D-Wis.) is holding hearings to provide a forum for discussion of risks and advantages. His avowed intention is to bring to public notice the controversy surrounding the birth control drugs being consumed regularly by eight million women at one time or another and to encourage physicians to inform their patients of the pills' known and suspected risks.

This week in the wake of the opening of the Nelson hearings, Dr. Charles C. Edwards, the new commissioner of the Food and Drug Administration, wrote to 381,000 doctors and hospital administrators to notify them of the latest data regarding blood clots among women taking oral contraceptives. "In most cases," he said, "a full disclosure of the potential adverse effects of these products would seem advisable."

The connection between the pill and clotting is well documented compared to other possible adverse effects, including cancer. At the Nelson hearings, Dr. Roy Hertz of Rockefeller University testified that birth control pills are to cancer what fertilizers are to weeds. But not every researcher in the field would take so strong a view, even though the combination estrogen-progestin hormone drugs have been shown to produce malignancies in at least five species of laboratory animals.

One alternative to the suspect first generation products now on the market is a low-dose progestinal pill, free of the estrogen that has been accused of being the dangerous member of the combination (SN: 6/7, p. 556). The minipill, which has been in clinical testing for six years, exerts its contraceptive effect by some unclear mechanism, but most certainly it does not block ovulation as the prevalent combination products do. For this reason, it has been hailed as a more sophisticated agent than the combinations, which are something of a sledge-hammer approach to contraception.

The minipill too has its risks, however. One may be cancer. The evidence is circumstantial, less convincing than even the vague ties between the estrogen-progestin pills and malignancy. Nevertheless, in a surprising move, Syntex Laboratories, after consultation with the FDA, has suspended all human trials of its minipill because breast tumors developed in five dogs.

In experiments ranging over 18 months, the animals received large daily doses of chlormadinone acetate —the synthetic progestin—2, 10 and 25 times the daily one-half-milligram dose taken by women. Among the dogs, seven tumors appeared. One was malignant. Four were benign. Researchers are uncertain of the character of the other two.

Explaining the unexpected withdrawal of the progestin-only pill from testing, a spokesman for the Palo Alto, Calif., company said, "These are very conservative times. We felt we had to do this."

Following further animal tests and evaluation of the tumors already identified, the minipill may be restored to tests in women. As a contraceptive, the low-dose drug, taken 365 days a year, is about 97 percent effective—the combinations are 100 percent effective if properly used. To date, the most apparent side effect of the minipill has been breakthrough bleeding, which is more significant for its inconvenience to women than for any medical reason known so far.

Two other drug houses, G. D. Searle & Co., in Chicago and Wyeth Laboratories in Philadelphia, are also investigating low-dose progestin-only contraceptives. Neither company is as far along in its research as is Syntex. All three use synthetic progestins that vary slightly from one another. All three are conducting dog studies for possible cancer-causing effects, at the request of the FDA. Both Searle and Wyeth are continuing their human studies of their minipills. Neither reports either malignant or benign tumors in experimental animals.

Whether dogs are a reliable animal model for studies of contraceptives and their link to cancer is moot. A number of investigators in the field, both in and outside of the drug industry, find the dog a particularly poor species for reproductive studies of any sort because so little is known about the endocrine systems that regulate hormones in these animals.

Rats, rabbits and monkeys are considered more valuable species for studies in this field, but as one scientist said, "The FDA wants dogs regardless. So you give them dogs." Syntex investigators also conducted chlormadinone trials in monkeys but found no evidence of tumors.

Though chlormadinone acetate is not yet marketed as a progestin-only contraceptive in the United States, the synthetic hormone is available in C-Quens, a sequential birth control pill sold by Eli Lilly and Co. of Indianapolis. Women taking their product take estrogen alone for 15 days and a combination tablet of estrogen and two milligrams of chlormadinone acetate for five days. Lilly scientists have observed no breast changes in either women or dogs.

Syntex also is marketing the minipill in England, France and Mexico. Recently, however, the British dropped it from their list of recommended drugs because of its high failure rate and its consistent record of causing intermittent or breakthrough bleeding. □

JETPORT

Everglades reprieve

The possibility of a commercial jetport being located near Everglades National Park in Florida has been part of the running battle between developers and protectors of the environment (SN: 10/4, p. 296). Last week the environmentalists won. Dade County, Fla., agreed to seek an alternate site for the controversial airport.

The existing flight training operations at the present one-runway site will continue temporarily under strict environmental safeguards. □