

micrograms. The physicians compared all birth control pills on the market containing different amounts of estrogen to determine the relationship between the hormone and clotting episodes. From reports of 920 physicians in Britain and 305 in Sweden and Denmark, between 1965 and 1969, they concluded that estrogen is a major factor in thromboembolytic disease.

As a result of the study, the British committee in December advised women there to avoid brands containing more than 50 micrograms of estrogen. In the United States FDA Commissioner Charles C. Edwards and other officials examined the British reports but took no action until the full report was published. Dr. John Jennings, Edwards's aide for medical affairs, said then that the data were not derived from scientifically controlled studies and were severely limited because there was no control group.

But on reviewing the latest report, Dr. Jennings and his boss changed their minds; they now agree that the findings are apparently valid, within the limits of the study, and that the warning ought to be issued.

There is still some uncertainty, however. A complicating factor, says Dr. Edwards, is the role that progestogens play.

Progestogens are also known to produce estrus—the active component of estrogens—but according to Dr. George Langmuire, Medical Director of Planned Parenthood World Population, it is not clear in terms of the study what the relationship is. "Certainly more studies with progestogens are indicated before concrete decisions can be made," he says.

Of the estimated 8.5 million users of oral contraceptives in the United States, about half use the lower-dose, 50-microgram pills. Most others use brands containing up to 60 and 100 micrograms. But women on the sequential program, where estrogen is taken during the menstrual cycle and a combination of estrogen-progestogen taken during the remainder of the period, take pills containing from 80 to 100 micrograms.

Commissioner Edwards cautioned physicians that when prescribing they should take into account the fact that different forms of estrogen have different potencies. Specifically, 50 micrograms of one estrogen, ethinyl estradiol, is equal in potency to 75 or 80 micrograms of mestranol, another estrogen.

Some American brands containing 50 micrograms of estrogen include Ortho-Novum and Norinyl (mestranol) and Norlestrin (ethinyl estradiol). Brands with over 50 micrograms include Enovid, C-Quens and Ovulen (mestranol) and Oracon (thinyl estradiol). □

NASA

## Budgets and clues

The National Aeronautics and Space Administration, absorbed in a time-consuming investigation of the Apollo 13 abort, is also juggling the lowest budget allocations in 17 years (SN: 3/14, p. 264). Last week the agency received a small shot in the arm when the House of Representatives voted 229 to 105 to authorize \$3.6 billion for the 1971 budget.

The House debate, delayed for a week by the abort (SN: 4/25, p. 407), resulted in a cut of only \$30 million from the \$3.63 billion authorization bill submitted to the House by the Science and Astronautics Committee. The cut was in money for the Apollo program and Space Flight Operations Research and Development, but the over-all budget topped President Nixon's request by \$268 million.

Space officials refused to be too optimistic, however. The Senate's Aeronautical and Space Sciences Committee will submit for debate a bill that cuts the \$3.33 billion Nixon request by \$17 million in Research and Program Management and facility construction funds. After Senate action, expected this month, a compromise must be reached between the House and Senate versions, which differ in authorization by \$285 million.

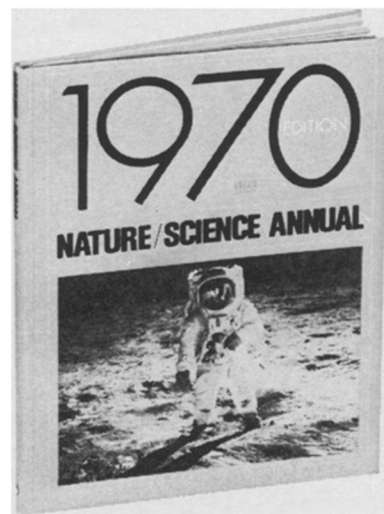
The money struggle has shifted now to the House Appropriations Committee, which allocates—or deletes—the funds for the programs approved in the authorizing legislation.

The boost in funds came at a time when the investigation into the causes of the Apollo 13 accident is making round-the-clock progress. In testimony before the Senate space committee last week, NASA Administrator Dr. Thomas Paine, Rocco Petrone, Apollo program director, and Astronauts James Lovell and John L. Swigert reviewed the events before and after the accident.

**Meteorite impact** has been eliminated as a cause for the oxygen tank eruption. Study of the telemetry data has narrowed the problem down to a component failure within the tank itself. This could have caused the rapid rise in pressure that preceded the explosion.

None of the energy sources—electrical or kinetic—associated with the tank could generate enough heat to account for this rise in pressure, so another energy source must be found. Such a buildup could stem from an electrical short circuit in the system, which would in turn cause the high currents spurts and lead to overheating, pressure rise and subsequent eruption. A short is considered the best bet yet. □

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