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COVER: The next U.S. interplanetary mission, to be launched this summer, will visit a host of planets and moons in an ambitious, dual-spacecraft project that could be going on all the way through the 1980s. The numerous appendages jutting out from the Mariner Jupiter-Saturn '77 spacecraft include booms for cameras, magnetometers and nuclear power supplies and the antennas for the first radio telescope flown on an interplanetary spacecraft in 14 years. See p. 10. (Illustration: NASA)

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LETTERS

Sorting for X sperm

In "New Hope for Infertile Couples" (SN: 10/9/76, p. 230) it was stated that Ericsson is not attempting to discriminate against female infants when he uses techniques that cull only the strongest swimmers, resulting, of course, in Y sperm. Why wouldn't it be possible for him to cull on the basis of *longevity in an acid environment* to obtain sperm containing the X chromosome?

While it is known that Y sperm swim faster, is it not also well accepted that the female producing, X sperm can survive up to two times as long in acid?

Beverly L. Battle
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In reference to your article, "New Hope for Infertile Couples," a possible technique for culling X sperm would be to place semen into a slightly harmful substance to sperm (for instance, improper pH). This would select for the larger (and therefore, slower-swimming), sturdier, and longer-lived X sperm over Y sperm. The large majority of surviving sperm would not only be X sperm but the healthiest X sperm.

Judith Federick
Los Angeles, Calif.

(The principal investigator in this work, Ronald J. Ericsson of Gametrics Ltd. in Sausalito, Calif., tells us he does not consider the suggestion made by the two readers to be feasible. "Diasio and Glass (1971)," he says, "published work where human sperm were subjected to media with different pH. Migration through a column at different pH didn't alter the ratio of X to Y sperm."—Ed.)

Stay away from that toxin

Regarding Mr. Atwell's letter (Dec. 4) on the most potent venoms, and his mention of the botulism toxin: while of course this bacterium-produced toxin isn't an animal secretion, it *does* take first prize as a biological poison. Our recent book *Poisons and Toxins*, by Joan Arehart-Treichel, quotes the highly picturesque statement by one authority, Dr. Bruce W. Halstead. Referring to the fact that its minimum lethal dose is 0.00003

micrograms per kilogram of body weight, Dr. Halstead says:

"That is almost equivalent to having a flea on a freight car which is 100 miles long, and when the flea gets on, it derails the entire train. This is the most fantastic poison that is known. It is so toxic that it is almost incomprehensible to anyone."

Edward Lindemann
Science Editor
Holiday House
New York, N.Y.

Viking coverage 'brilliant'

I would like to thank you and SCIENCE NEWS for your perceptive and accurate coverage of NASA's pioneering Viking mission. I thought Jon Eberhart, the SCIENCE NEWS reporter on the scene, did a brilliant job of both covering the Viking mission and interpreting it for the public.

Jon won the highest praise from both the scientists and me. His ability to describe technical and scientific developments accurately and to explain them to the public never fails to amaze me.

The Viking Team thanks SCIENCE NEWS for assigning a person of Jon's caliber to cover our mission.

James S. Martin Jr.
Viking Project Manager
National Aeronautics and
Space Administration
Langley Research Center
Hampton, Va.

Claims on weather modification

We are intrigued by your report (SN: 11/6/76, p. 294) on *Climate and Food*, the result of a study by the National Research Council. The SN description of the report by the Council suggests the practicability of rain augmentation within five years, the suppression of hail within eight years and the mitigation of hurricane damage in ten or so years. Such predictions are as suspect as similar claims in the past which did not materialize. The difficulty is twofold: lack of understanding and complexity of statistical verification. For example, recent literature indicates that certain elements are missing in even our basic understanding of the dynamics of moist convection. This deficiency has resulted in speculation that current seeding practices may actually reduce rain or enhance hail in some circumstances. Finally, assessment of weather modification effects is statistically much more difficult than previously anticipated.

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