

states that are otherwise unobtainable could be made, and their study may yield important basic chemical information, Dr. Siegbahn thinks.

Finally there is the prospect of very intense beams of X-rays through the use of synchrotron radiation. Synchrotron radiation is X-rays emitted by charged particles as they go around in circular accelerators. To accelerator men it is a nuisance since it robs their particles of energy, but to photoelectron-spectroscopy men it may be a boon. Cooperative experiments between Uppsala and Bonn Universities are about to begin using the electron synchrotron at Bonn. Dr. Siegbahn is hopeful for them. □

VETERINARIANS CALL IT HUMANE

The slaughter of the seals

The annual slaughter of the northern fur seal has become one of the more visible targets of wildlife conservationists in the past year. Last week, on the eve of House hearings on legislation to ban the killing of ocean mammals, the Commerce Department and its National Oceanic and Atmospheric Administration called a press conference to release a report of veterinarians declaring that the harvest is humanely and efficiently conducted.

Each year, from April through November, some 1.3 million seals migrate to the Pribilof Islands of Alaska to breed. There, many of the animals are rounded up, driven to a killing area, stunned with clubs, slaughtered and skinned. Critics charge, among other things, that the methods of herding and killing are unnecessarily cruel, that females and pups are often killed, that seals are sometimes skinned while still alive, and that excessive numbers (between 40,000 and 50,000 a year) are killed, so that the herd is in danger of extinction.

The six veterinarians, led by Dr. C. Roger Smith of Ohio State University, spent a week in July observing the harvest, at the invitation of the Commerce Department. At the skinning area, the seals are divided into groups of about six, stunned with a long wooden club and killed by opening the thorax with a knife and either puncturing the heart or severing the blood vessels associated with the heart and lungs. The method of stunning, says Dr. Smith, is efficient and effective, requiring minimal accuracy to produce unconsciousness. Almost all the animals, the report says, are rendered instantly and completely unconscious by a single blow, and experience no pain when killed. Dr. Smith calls the sealing operations comparable to the slaughter of beef cattle. Much of the criticism of the seal harvesting methods, he says, results



Friends of Animals, Inc.

Pribilof seal harvest: Terming it "humane" called a "perversion of language."

more from human predispositions than from actual cruelty to the seals. He agrees the slaughter is aesthetically unappealing.

The panel recommends that, though present methods "cannot be criticized from the standpoints of humaneness and efficiency," a method equally humane and more aesthetically acceptable should be sought. It says plans should be completed to shorten and improve the drive pathway and more care should be taken to ensure that the presence of visitors to the site does not interfere with the efficiency or skill of the harvesters.

Dr. Robert M. White, the NOAA administrator, said all the recommendations would be carried out as quickly as possible.

Secretary of Commerce Maurice H. Stans said he hoped the report would "put to rest once and for all false rumors of brutality and poor conservation practices being circulated by a few vocal critics."

A number of questions remain, however. Though Commerce spokesmen emphasized that "as a rule" only bachelor male seals are killed, they admit that females were killed between 1956 and 1968 to reduce the size of the herd, and that as a consequence seal pups also died. According to a report prepared by the Department of the Interior, 13,335 females were killed in the Pribilof Islands in 1968. Further, one spokesman said females may be killed in the future. These killings are intended to keep the herd at an optimum level, which the Department of Commerce says is between 1.3 million and 1.8 million. But there is some dispute about whether this is indeed the optimum size. The Committee for Humane Legislation, a New York-based lobbying group, says at least one authority places the number as high as 5 million.

The most obvious question is whether harvesters might have been on their good behavior while under the eyes of the panelists. Questioned on this point, Dr. Smith said only that it was impossible for him to say. Other Pribilof visitors, however, have returned with somewhat different reports. Alice

Herrington, president of Friends of Animals, had noted at a previous kill that it often took several blows to stun a seal. She has said the use of the term humane in the panel's statement is "a perversion of language and reality."

The release of the panel report coincided with the beginning of hearings by the House Subcommittee on Fisheries and Wildlife on bills to ban the killing of ocean mammals. The most controversial bill, introduced by Rep. David H. Pryor (D-Ark.), would prohibit the killing of ocean mammals such as seals, whales, porpoises and otters in United States waters and on U.S. land, or by U.S. citizens anywhere. Last Thursday, however, Pryor told the subcommittee he was removing a provision that would have banned the Pribilof harvest. Under the present treaty, Japan and Canada have agreed not to hunt seals at sea in return for a share of the U.S. seal harvest. There had been some concern that if the U.S. harvest were ended, the other nations would resume unrestricted hunting of seals. Pryor said he would substitute a provision that would permit the State Department to try to negotiate a new treaty banning the killing of seals altogether, or failing that, to renew the present treaty. □

SOVIET MOON PROBE

Luna 18 fails

The Soviet Union's Luna 18 made an unsuccessful landing near the moon's Mare Fecunditatis last week. Launched Sept. 2, the craft was to land "in a high-altitude terrain, which is of great scientific interest," Tass said. "Measurements show that the moon landing of the station in these difficult topographical conditions [on Sept. 11] was unlucky," the report continued.

The specific purpose of the mission was not announced, but Western observers had speculated that Luna 18 would probably perform a task similar to that of Luna 16—scoop up moon soil and return it to earth. Lunokhod I, the Russians' automatic station, is still in operation. □