

Science on the Air

Science News prints the latest written word of scientific development and noteworthy news. We've set this space aside to inform our readers of programs of scientific interest that are scheduled on television and radio. Check your local listings for exact times. (R) indicates a repeat broadcast.

Jan. 1 (PBS) Nova — "Salmon on the Run" An examination of how business and technology are changing the fishing industry, and the salmon itself.

Jan. 5 (PBS) Newton's Apple—A weekly family science show covers topics from the space shuttle to Beluga whales. Saturdays.

Jan. 6 (PBS) Nature — "Resurrection at Truk Lagoon" (R) Examines the life system in the Truk Lagoon. A former World War II Japanese supply depot was destroyed by the Allied forces, leaving an environment of sunken artifacts which now hosts a colorful variety of underwater plant and animal life.

Jan. 8 (PBS) Nova — "The Garden of Inheritance" Looks at the life, times and work of Gregor Mendel, whose revolutionary scientific experiments in selective breeding made him the Father of Genetics.

Jan. 9 (PBS) Smithsonian World — "A Desk in the Jungle" Marine biologists descend 2,000 feet to an ocean depth where no sunlight can penetrate and the sea is rich in discovery. Also featured is a trek to the Smithsonian's Tropical Research Institute in Panama to observe anthropologist Katie Milton's study of the Howler monkey.

Jan. 10 (PBS) Wild America — "All-American Animals" A look at some of North America's wild creatures found nowhere else on earth, including the pronghorn of the western plains and the scissor-tailed flycatcher of the midwest.

Jan. 13 (PBS) Nature — "Tumbler in the Sky" A look at the African Bateleur eagle's astonishing acrobatics performed during mating and hunting.

Jan. 15 (PBS) Nova — "Edgerton and His Incredible Seeing Machines" Explores the fascinating world of Harold E. Edgerton, inventor and electronics wizard, whose invention of the electronic strobe

has enabled the human eye to see the unseen.

Jan. 17 (PBS) Wild America — "Feathered Jewels" The many species of exquisite, iridescent hummingbird are seen in an extreme slow-motion sequence that reveals all of their beauty.

Jan. 20 (PBS) Nature — "Kinabalu: Summit of Borneo" A visit to the lush mountain forests of Kinabalu, the highest point between the Himalayas and New Guinea. Many of the plants that adorn these forests are found nowhere else in the world; some are living fossils, older than the mountain itself.

Jan. 22 (PBS) Nova — "Global Village" An in-depth look at the consequences of India's attempt to use satellite technology to leapfrog into the era of space communications.

Jan. 24 (PBS) Money from Heaven: A Successful Space Salvage (R) An updated look at NASA's recovery of two wayward satellites by the space shuttle astronauts and the story behind the November 1984 mission.

Jan. 24 (PBS) Wild America — "Ringtailed Rascals" A look at the raccoon, ringtail and coatimundi which combine in a special way the features of several other animals.

Jan. 27 (PBS) Nature — "Plight of the Bumblebee" This film compares the life cycle of the bumblebee to that of a human being, showing the unique and very serious "energy crisis" confronting these insects.

Jan. 29 (PBS) Nova — "Conquest of the Parasites" Examines parasites, parasitic disease and the exciting work currently being done by a new breed of medical researchers working to conquer the world's number one medical problem.

Jan. 31 (PBS) Wild America — "Canyon Creatures" A visit to Monument Valley, the Grand Canyon and the sandstone arches of Utah to learn how these spectacular landscapes exert a powerful influence on the wild creatures that live within their realms.

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On the horizon is yet another form of electron microscope that may effectively bridge the risky chasm between conventional and high-voltage electron microscopy. The new technique may also, on its own, meet at least some of biologists' demands for three-dimensional, highly magnified images of relatively thick slices of the materials they study. The intermediate-voltage electron microscopes (IVEMs), expected to be more convenient and less expensive than high-voltage electron microscopes, soon may affect the popularity of the older technique. But no one is certain whether the IVEM will add to or subtract from the demand for HVEM facilities.

Two companies — one in the Netherlands, the other in Japan — have just begun to manufacture intermediate-voltage electron microscopes. These instruments employ electron beams of 300 to 400 kilovolts, rather than 1 million volts. They can handle specimens thicker than those for conventional electron microscopy, but not as thick as the thickest used in high-voltage electron microscopy.

"It is anticipated that many of the results obtainable at 1 millivolt could also be obtained at these intermediate voltages, with considerable saving in cost and effort," the NIH committee says. In addition to costing only about \$1 million apiece, the intermediate-voltage microscopes will fit in normal laboratory rooms and will not need specially constructed buildings to house them.

The NIH committee recommends that as many as 10 IVEMs be in operation in biomedical research laboratories in the United States within the next three years. According to Stimler, NIH is already considering applications for the purchase of these instruments.

"Maybe they [IVEMs] will take people away from HVEM facilities in the beginning," Ris says, "but then they should bring people to them." The NIH committee agrees that although the intermediate-voltage instruments will be used for some work now done with high-voltage electron microscopy, they are also expected to generate increased interest in high-voltage microscopy.

"The IVEMs can be expected to act as feeders for the HVEMs in those projects where it becomes clear that the full capability or special features of the higher voltage instruments are needed," the committee says.

High-voltage electron microscopy thus is not expected to remain an orphan of biological research. It is finding foster parents in the form of new research directions — especially in neurobiology and in chromosome structure analysis — and in continued financial support. "It's true there is a change of direction," Stimler says. "But people have solved problems with it and are still solving them." □

CABLE NETWORKS

Satellite Program Network

"Medicine Man" — Mon 1 pm; Wed 7 pm; Thurs noon; Sat 11 am, 4 pm.

"The Personal Computer Show" — Tues 6:30 pm; Wed 1:30 pm; Thurs 7:30 pm; Sat 2 pm.

Cable News Network

"Healthweek" — Sat 9:10 am, 2:10 pm; Sun 1:10 am, 4:10 pm.

Lifetime

"Medical Video Clinic" — Sat 9 am; Sun 11 pm.