SCIENCE ON TV

SCIENCE NEWS prints the latest written word of scientific developments and noteworthy news. We've set this space aside to inform our readers of programs of scientific interest that are scheduled on television. Check your local listings for exact times.

NOVA (PBS)

• November 6 — **"All Part of the Game"** concludes a two-part look at science and sports. The focus is on a new medical specialty — sports medicine — that promises to prevent or cure many sports-related problems.

• November 13 — **"The Case of the Ancient Astronauts"** is a repeat examining the theories of Erich von Daniken, who wrote the best-seller *Chariots of the Gods.* The program examines earthbound explanations of von Daniken's theories as well as the larger question of why such theories achieve relatively broad, uncritical popularity.

• November 20 — **"India: Machinery of Hope"** looks at the gap between the "two Indias": an urban society as modern and technologically advanced as almost any in the world, and rural India, where millions live by the same tools and rhythms as in centuries past. India has recently begun to test an alternative to centralized modernization — an approach that is at once radically modern and surprisingly traditional.

Connections (PBS)

• November 4 — **"Thunder in the Sky"** takes a look at the changes in energy sources since the 13th century — when a colder climate, coupled with a wood shortage, forced the development of alternative methods of providing warmth.

• November 11 — **"The Long Chain"** examines a variety of materials whose discovery altered the course of history.

• November 18 — **"Eat, Drink and Be Merry"** takes an unusual look at the development of modern-day rocketry — tracing it back to the 1476 invasion of Switzerland by Charles the Bold.

• November 25 — **"Countdown"** reconstructs the birth of television and scrutinizes its major role in daily life.

World (PBS)

• November 13 — **"The Real War in Space"** looks at the technology of space research and weapons development.

• November 5 — (PBS) **"Okavango"** examines the effort being made to reconcile the conflicting needs of human and wildlife.

• November 26 — (PBS) **"The Predators"** is a documentary on the plight of predators in North America.

BOOKS

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BOOKS TO WHET YOUR APPETITE FOR CHINA

A BAREFOOT DOCTOR'S MANUAL—The Revolutionary Health Committee of Hunan Province, Translated by Titus Yu — Cloudburst Pr (Madrona), rev. ed., 1977, 372 p., drawings, paper, $8.95. This manual was published in China in 1970 to supply the barefoot doctors with a basic guide to their work in serving China's rural population.

CHEMISTRY AND CHEMICAL ENGINEERING IN THE PEOPLE'S REPUBLIC OF CHINA: A Trip Report of the U.S. Delegation in Pure and Applied Chemistry—John D. Baldeschwieler, Ed. — Am Chemical, 1979, 266 p., illus., $15, paper, $9.50. A description of the research in chemistry and chemical engineering observed by this 12-member delegation of chemists, headed by Glenn T. Seaborg, who spent three weeks in the People's Republic of China in May and June of 1978.

CHINESE FAMILY AND KINSHIP — Hugh D.R. Baker — Columbia U Pr, 1979, 243 p., $17.50. Provides an account of the principles of family and kinship organization long established in Chinese society and examines how these principles have changed in contemporary China.

CHINESE HERBAL MEDICINE: Ancient Art and Modern Science — Richard Hyatt — Schocken, 1978, 160 p., $12.95. An overview of Chinese herbal medicine with a detailed presentation of many of the formulae and crude drugs that comprise the Chinese pharmacopoeia.

SPEAKING OF CHINESE — Raymond and Margaret Scrogin Chang — Norton, 1978, 197 p., illus., $10.95. A fascinating description and cultural history of the language of China for anyone who wants to know something of Chinese without learning to speak or write it. Includes a bibliography of books for the general reader that covers the Chinese language as it relates to art and literature.

explains, the conquering of polio without a polio vaccine was based on a slow accumulation of knowledge about polio viruses from the early 1900s to 1955. The conquering of tuberculosis was similarly based on a slow accumulation of knowledge about the tuberculosis bacillus, Thomas points out.

Progress in fighting the chronic disease, authorities tend to agree, also depends on the availability of technology necessary to conduct basic research related to the diseases. For instance, as Sidman points out, basic research necessary for central nerve regeneration could be advanced if engineers designed an instrument that makes a lesion in animals' spinal cords that approximates human spinal cord injuries. At present neuroscientists are unable to damage animal cords in a way that comes close to human cord injuries. Neuroscientists also need a computer graphics technique for three-dimensional visualization and measurement of nerve fibers under the microscope. And finally, Sidman says, neuroscientists need a multi-recording system to "listen" to groups of nerve cells instead of to individual nerve cells. (Researchers at the NINDS, Tower reports, are now developing such a technique.)

However, once basic knowledge relating to the chronic diseases has been sufficiently advanced, authorities tend to concur, scientists' efforts to conquer the chronic diseases can become more targeted, and infusions of money at this point are more likely to pay practical dividends than if they are given prematurely. The question of when researchers should switch from basic research to goal-oriented research is tough to answer, though. For example, Richard Rettig, a senior social scientist at the Rand Corp., polled 150 neuroscientists about their views on central nerve regeneration research. Most of those who replied felt that more fundamental neuronal research is needed before scientists are ready to try to regenerate central nerves. Thomas, in contrast, believes that "it is time for a crash program" in central nerve regeneration.

But even when scientists are ready to shift to goal-oriented research in order to combat the chronic diseases, they can never be sure of the outcome. For instance, according to Upton, one of the most exciting recent advances in cancer research has been the identification of specific gene products made by animal viruses — products that viruses may use to switch normal cells into cancer cells. "Never before," he says, "has it been possible to identify particular chemical signals that cause malignant growth. This advance in molecular virology is a very important development." But whether the research will help conquer human cancer remains to be seen, since no human cancer, with the possible exception of Burkitt's lymphoma, has been definitely shown to be caused by a virus. □