

GENERAL SCIENCE

Science Forecast for 1966

Danger of food shortage will become apparent next year, Medicare will go into effect, slow acting viruses possible sclerosis cause, space program continues.

By WATSON DAVIS

► DURING 1966 apprehension will probably grow that instead of worrisome food surpluses, the world and the United States will need to grow more rather than less food in the coming years.

A continual rise in world population is creating more mouths to feed, and the amount of food that is being grown currently will not be sufficient to prevent shortages which may threaten or create famine in the most populated and least developed areas like China, India and Latin America.

There will be serious consideration of a reversal of our agricultural program. The drive will be to increase food production rather than limit it. This is imminent because some of the surpluses built up over the last two decades are being used to prevent hunger in other parts of the world. A minimum food surplus is needed to provide an "ever normal granary" against an always possible reduction of crops due to drought and other disasters.

Better varieties of food plants, control of insect pests, and greater utilization of land available, including use of fertilizer, will be accented during the year, probably in a broad Federal program and international action.

Population Control

Along with greater agricultural production, there will be intensive efforts to bring about population control by education and the application of birth control methods in all parts of the world, using relatively new devices such as intrauterine loops that allow families to have children when and if they wish them.

Medical research will be intensified on drug resistance and on new drugs that could meet the challenge posed by new, resistant forms of bacterial and protozoal infections. Work also will expand on viral chemotherapeutic agents needed to control a number of infections at the onset of illness.

Reports could be forthcoming on the possible role of slow-acting viruses on chronic degenerative neurological diseases in man, such as multiple sclerosis and amyotrophic lateral sclerosis. Both multiple sclerosis and muscular dystrophy could be found closely related to a virus-caused disease "scrapie," in sheep or to a disease in mink.

Efforts to learn more about German measles, or rubella infection, will be intensified. A good start may be made toward an effective vaccine against this disease that causes abnormal babies when women contract it in the early months of pregnancy.

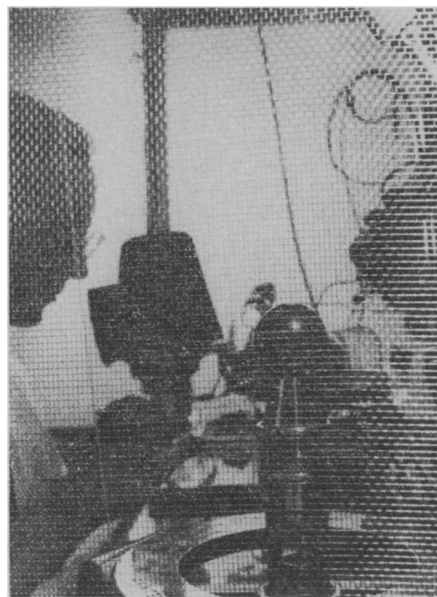
There will be efforts to find ways of controlling some of the more serious parasitic infections, such as schistosomiasis and filariasis, which cause a vast amount of debilitating disease in many areas of the world.

Medicare, coming into operation at mid-year, will bring better medical attention to many over 65. The new and improved services will be accompanied by some changes in the organization of medical practice, but physicians and hospitals will soon readjust to the new situation.

In the agricultural field, a painless and harmless method for using super-cold for branding livestock is expected to be put into use.

Continued exploration of the mechanisms of heredity and the chemical constitution of living matter will bring us closer to understanding and perhaps exerting some control over live processes.

The most precise picture yet of the earth's size and shape will be given in a report from the Smithsonian Astrophysical Observatory, made possible in large part by satellite geodesy.



DuPont

THE ELECTRICAL activity of isolated nerve cells is being measured by Dr. Richard Yates, biochemist at Du Pont's Central Research, who is seeking ways to enhance learning and memory transfer. The Faraday cage surrounding the test apparatus insulates against stray electrical energy. The research will continue into the next year, at least.

New information about visitors from outer space that flash into the solar system will come from the 1965 Comet Ikeya-Seki, observed with new devices and instruments developed for space exploration.

The study of water on a global scale, being conducted in the international hydrological decade, will bring new information, some of which may be useful in connection with local weather conditions and climatic variations, such as the drought, which has lasted for several years in northeastern United States. There will be legislation aimed at better and wider coordination of water resources studies, development and management.

Volcano Prediction

Geological studies directed to the prediction of volcanic eruptions and earthquakes will progress. Part of this research has been stimulated by the worldwide distribution of seismographs needed to detect man-made earth vibrations resulting from atomic explosions.

The earthquake areas of California, Nevada and Alaska provide a natural laboratory for the development of earthquake prediction.

A site will be chosen by the U.S. Atomic Energy Commission during the year for the 200-billion-electron-volt accelerator, and funds may be authorized for a start of the construction, which will cost \$350 million.

The gigantic linear accelerator at Stanford University can be expected to begin operations at a level of 20 billion electron volts.

Greater use of the heat of fluorescent lighting as a primary source of building heating will be advanced, with architects planning such lighting to provide for both illumination and warmth for future major buildings.

Advance in Telescopes

The world's first large fused quartz mirror, 151-inch diameter, for Kitt Peak National Observatory, near Tucson, Ariz., will be cast, which will be an advance in telescope making because quartz is less sensitive than glass to temperature changes.

There will be progress in attempts to modify the weather locally to bring needed rain, abort storms and change atmospheric conditions for special purposes such as sports competitions and other public events. There will be growing attention to the legal, political and social consequences of the new development.

Archaeologists will continue to explore the civilizations of the ancient peoples of the past, particularly in the Near East, East Africa and Middle America.

The exploration of space will continue during the year with three or four Gemini shots, numbers 8 through 10 or 11, preparatory to the attack on the moon by human astronauts about four years from