

GENERAL SCIENCE

# Outlook for 1951

Much of the world's talents will be devoted in the year to come to secret progress on new methods of destruction. But work on major problems will continue.

By WATSON DAVIS

► THE GREATEST menace to new discovery and development in science is the possibility of the extension of world war during 1951.

Much of the world's talent, brains and ingenuity, in America and other parts of the world, are already devoted to secret progress upon new methods of human destruction and the complex organization that backs up fighting forces. Continued spread of actual warfare and accelerated military preparations will necessarily limit fundamental and basic inquiries into the nature of things such as have led finally to such powerful weapons as the atomic bomb.

During the coming year probing of the

fundamental mystery of how the "heart" nucleus of the atom is put together will be continued. This line of research may lead to new kinds of atomic bombs and useful energy of materials more plentiful than uranium.

Despite this long-range usefulness to defense much of this work may be announced to the scientific world because it does not seem to be immediately applicable to weapon development. From the standpoint of purely military objectives, support of research in theoretical physics, now at the highest level in history, is justified.

The complete secret of the composition of matter can hardly be developed in the coming year. Similarly, the duplication of photosynthesis, the process by which the green plants use sunshine, can hardly be accomplished in the coming year. Fundamental work upon photosynthesis is relatively neglected and yet a way of applying artificially in a factory this mechanism, which only the green leaves now understand might be extremely important in keeping the peace of the world. It might bring great amounts of energy to areas of the world which are fighting primarily because they are hungry, insecure and envious of the nations that have ample energy from coal, oil and gas.

## Foundations for Peace

If wider spread actual fighting can be avoided, there may be some hope in 1951 for building psychological and social foundations for future peace. Billions of dollars have been spent to understand the atom, but fundamental inquiries into the human mind and emotions have been backed with only a few hundreds of thousands of dollars. This would be the work of psychologists, psychiatrists, anthropologists and those who have made a study and practice of government.

In a sense, the whole attempt at keeping the world at peace through the United Nations and in other ways is a cut and try experiment. Scientifically, the difficulty is the impossibility of trying the experiments over. We cannot know what might have happened if something else had been done. Attempting to build a practical science of human behavior, in the broadest possible sense, is long overdue. The imminence of the actuality of war makes it even more urgent.

Creation of an artificial moon for the

earth is a possibility for the future, but one that will hardly be realized in the coming year. Man could, given enough resources, rocket into outer space an object which would travel around the earth in an orbit. This could be used for scientific observations and even eventually for military purposes. For that reason some government may be at work on this project in great secrecy.

These are long term projects and it is perhaps too much to hope that results will come from them during 1951. Here are predictions that can be made with more assurance:

The National Science Foundation will organize itself and begin work, making its first awards during 1951 and developing a national fellowship plan to speed fundamental scientific research.

Whether the persecution of scientists primarily because they have new and often liberal ideas will increase or abate during 1951 is a question.

## International Meeting

From the standpoint of international scientific cooperation, scientists and laymen alike will watch with great interest what happens to the International Astronomical Union meeting scheduled for Leningrad in Soviet Russia in early August of 1951. One of the ironies in the situation is this: If Soviet Russia decides not to admit the astronomers of western nations to its territory, an alternative invitation from U. S. astronomers can hardly be utilized because under the McCarran act Soviet astronomers and many in Iron Curtain and other areas in the world cannot be admitted to the United States.

Regardless of what happens to their meetings politically, astronomers all over the world will continue to study the peaceful heavens. From South Africa the Armagh-Dunsink-Harvard new type reflecting telescope, an instrument resulting from the unusual cooperation of Eire, Northern Ireland and the United States, will give its first results on an investigation of the "hub of the universe." Two giant coronagraphs to keep track of the activity of the sun will be completed for Harvard Observatory's stations on western mountains. The world's largest, 200-inch telescope on Palomar will bring forth new information about the structure of the universe.

Application of radiocarbon dating methods to the earth's recent past will continue to give shocks to anthropologists who will have to adjust radically their ideas of the antiquity of man. As a result, new theories will have to be developed, an activity which because of disturbed world conditions in many cases will substitute for the actual

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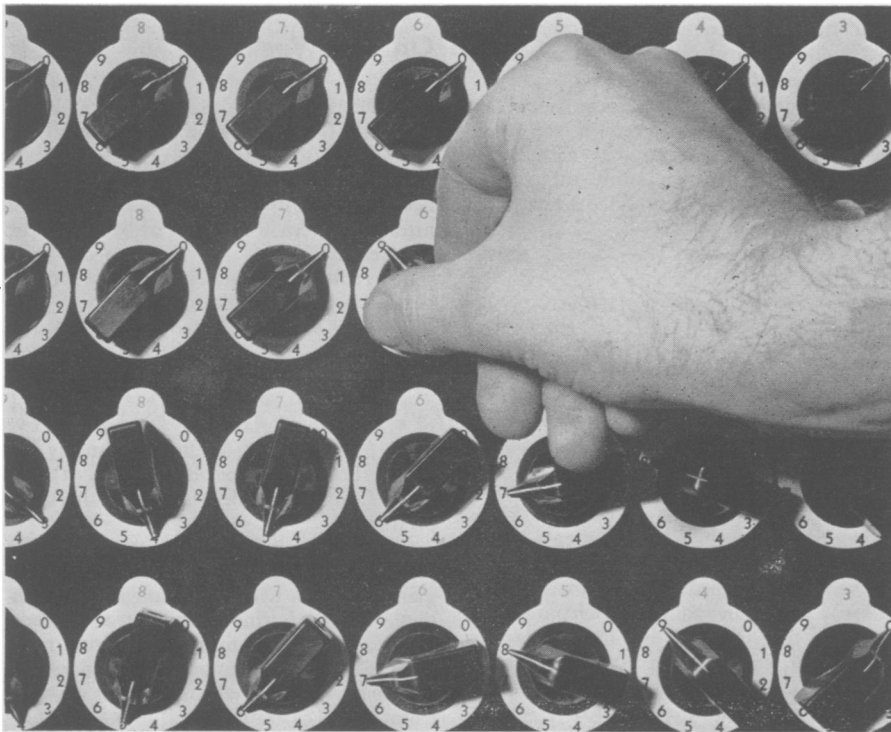
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**TO SOLVE PROBLEMS**—Complex electronic computers, the “mechanical brains” of science, will have problems dialed into them in 1951 which would take battalions of competent mathematicians years to solve.

digging in the field which archaeologists would like to do.

The remarkably successful use of the antibiotic drugs in fighting infectious disease and the use of cortisone and ACTH hormones in treating a large number of disorders will continue to dominate new medical developments during 1951. Some of the new antibiotics isolated and tested during the past few years may get to trials on human patients.

The life of human blood in blood banks may be extended beyond the present 21-day period of useful life, through a new low temperature preservation method of red blood cells.

In agriculture's continuous fight against animal disease there is likely to be an eradication campaign against the serious

disease, hog cholera, through the destruction of diseased animals.

Many of the complex and expensive elec-

### CHECKING UP

*Science Service's forecast for 1950 issued a year ago said that new chemical elements would be discovered. This prediction was fulfilled by the discovery of elements 97 and 98.*

*Another outstanding 1950 development forecast was the use of radioactive carbon in dating archaeological and geological remains, which was one of the outstanding achievements of the year.*

*The discovery of new kinds of mesons, the powerful but brief-lived particles in the hearts of atoms, was predicted. This was fulfilled by work in both the United States and England which revealed two new kinds of such particles.*

*As foreseen, there was continued success in the use of the steroid compounds, cortisone and ACTH, in treating disease.*

*There were also new chemicals for insect control and weed killing developed as also expected.*

*Two major problems, which the forecast of a year ago considered very long shots for 1950 are still unsolved: photosynthesis and the nature of the physical forces within the atom.*

*So far as known, man did not succeed in creating an artificial satellite of the earth, although research leading to it would undoubtedly have been kept secret.*

*Large computing machines did come into more extensive use, but many of those under construction during the year will not really get to work until 1951.*

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tronic computing machines will be completed in 1951. But there will not be a sufficient number of mathematicians available to set up problems and feed them to these electronic brains.

Rocket progress and jet developments will be accelerated, but secrecy may withhold reports.

Congress will need to consider the mathematical problem of reapportioning members of the House of Representatives more

equitably among the states in accordance with the results of the 1950 census, but this will be considered more as a political than as a mathematical matter.

This spring may bring some hope that the man with the lawn mower can avoid his Sunday chore. The year should tell whether chemicals that stunt the growth of grass can be used to produce a neat lawn without clipping.

Science News Letter, January 6, 1951

#### PSYCHIATRY

## Pounding Stilled by Music

➤ THUMP-thump-thump, pounded the patient for hours and hours, lying on the floor of his room at the Topeka State Hospital.

He was a very sick mental patient, so aggressive that two aides resigned because they were afraid of him.

Then music was piped into his room. At first it was primitive music, with a rhythm that matched his pounding. Then the rhythm was gradually changed to something softer and less exciting. The patient changed his rhythm, soon stopped pounding and was able to discuss music with the music therapist. Later, other personnel of the hospital could approach him. Now

he is well enough to have freedom of the grounds.

His case is cited as one example of how music is being used along with other kinds of treatment to help mental patients at the hospital in Topeka, Kans.

The music is piped into treatment rooms and wards over an abandoned telephone system. The type of music is varied according to whether something relaxing or something stimulating seems needed. Records play constantly in a remodeled basement tunnel. The ward doctor can call the telephone operator and ask for one of four kinds of music or no music.

The same system serves as the hospital's fire alarm. In case of fire, the operator could cut out all the music and make announcements over the loudspeakers.

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#### MEDICINE

## Sterilization Urged For Breast Cancer

➤ STERILIZATION of young women with breast cancer was advocated by two doctors reporting at the meeting of the Radiological Society of North America in Chicago. The doctors are Dr. Rieva Rosh and George G. Green of Bellevue Hospital, New York.

Sterilization, they reported, suppresses female hormone action. In the X-ray method they use, it has a favorable general effect on the body and helps to heal and to check the formation of cancers that have spread to the bones.

Pointing to the high death rate from cancer of the breast each year, 12 per 100,000, the New York doctors said that "every effort to increase the salvage of these patients, whether by operation, irradiation, hormone or combination therapy is worth the greatest consideration."

Sex hormone treatment made about half the patients feel better, but improvement that the doctors could see occurred in only about one-fourth of the 40 patients. X-ray treatment combined with male hormone treatment has given the maximum relief in most cases.

Deep X-ray treatment to the pituitary gland in the head was advocated for cancer

## On This Week's Cover

➤ THE photograph on the cover of this week's SCIENCE NEWS LETTER was not taken in Alaska, but in Chile's Valley of the Moon, where it is now midsummer. The heap is not snow but the famous Chilean nitrate, raw material of fertilizer and explosives. Bulldozers and tractor scoops, like snow removal equipment in this country, handle it in wholesale lots.

Science News Letter, January 6, 1951

of the prostate gland in a report by two other scientists, Drs. Walter T. Murphy and Harry Schwippert of Buffalo, N. Y. Object of this is to decrease male hormone production.

In a series of 30 cases of cancer of the prostate treated by X-rays to the pituitary gland together with castration and the synthetic female hormone, stilbestrol, in most cases, a significant number obtained relief from pain and a temporary let-up of the disease beyond that which could be expected from either castration or stilbestrol alone.

Science News Letter, January 6, 1951

#### ENGINEERING

## Oak Ridge Scientists Read by Facsimile

➤ BORROWING from the library with the speed of electricity will soon be commonplace at the Oak Ridge National Laboratories.

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