

GENERAL SCIENCE

1953 Science Forecast

Technology for war will dominate science for coming year. Fresh water from sea is important project. New medical quests foreseen. Science probing into nature of life itself.

By WATSON DAVIS

► THE MAJOR emphasis in science and technology in 1953 will continue to be upon machines and methods of military usefulness in order to make our nation stronger. Fear of further communist aggression will control our intellectual as well as our industrial future, even if further actual attacks do not occur.

Hidden by military security, new air weapons that will outmode both the pursuit plane and bomber are being developed. Human pilots are on the way to becoming obsolete, while the possibility of delivering an atomic or hydrogen bomb anywhere on earth from anywhere else is approaching reality.

During coming months we shall probably hear more about these aerial weapons, but the ultra-speedy jets and intercontinental bombers will hardly be replaced within the coming year or even several years.

The true intercontinental guided missile will some day actually exist. It will be capable of delivering with accuracy to any point on the earth's surface an atomic bomb of great destruction, and its speed and altitude will make it most difficult to intercept.

Such an aerial weapon rationally should be a great incentive to world peace, but the emotions and distorted minds of aggressive men do not seem to be susceptible to being guided into the paths of peace as surely as weapons are developed.

Test More Atom Weapons

More hydrogen or fusion super-bombs will be tested in 1953, and an atomic bomb will be fired from the new atomic cannon. Power from the atom for military purposes will not be actually applied, and the use of atomic power in any major way will still be for the future at the end of the year.

Our atomic energy program will continue to expand, with new facilities for making and processing atomic materials. More use for the radioactive debris of fissionable material from the atomic reactors will be found, with consequent benefit to medicine and industry.

To support our essentially military technology, more and more scientific and technical personnel will be needed, and the present and future manpower shortage in science and engineering will continue a matter of concern.

The search for methods of capturing the sun's energy more effectively than conventional agriculture will continue, although

this field will not be given a fraction of the support that it should have. There may, nevertheless, come the great discovery that will allow science and industry to beat the green leaf at its own game—artificial or industrial photosynthesis.

Water is one of the most precious natural resources in many areas and its shortage urges onward to practicality the desalting of the ocean to obtain fresh water by methods that can be afforded financially. Demonstration plants may operate in 1953.

In much the same way that yellow fever has been conquered potentially by a practical vaccine, polio research may bring a successful vaccine so that little children will not be paralyzed by this disease.

For cancer the same kind of progress is not likely, but there are non-poisonous chemicals that are being tried in various laboratories and their effects may yield new and promising paths of attack.

The exploration of the universe, with instruments and astronomical intellects, will continue. Radio waves from distant parts of space will bring to the new radio telescopes additional evidence of stars, clouds

and phenomena that would forever remain hidden to conventional light-capturing telescopes.

As human knowledge of the cosmos expands, its dimensions change and new light is thrown on our place in the vast order of things. Look for some new dimensioning of the space.

Through the application of the numerical computers or "brains" that operate electronically, there may come some improvements in forecasting the weather, which is now done by human analysis and synthesis of a spread of observational information. Tests will be made in 1953 to see whether masses of world-wide figures can be fed into the computers to produce results as reliable as the synoptic forecasts of today.

Self-Programming Computers

Systems under which electronic computers will "learn" to set themselves up, or "program" themselves, before starting a computation, will be developed. This will take a big load off the mathematicians supervising the machines.

Applications of transistors to communication and other electronics fields will continue, with development continuing. High temperature rectifiers and transistors made from silicon and silicon alloys will come into wide use. Our telephones, TV and radio sets, radar and everything else electronic will benefit from this wide new field.

The chemical configurations of molecules that make up the fundamental but still complex building blocks of living substances,



FUTURE PLANE'S SHAPE—The airplanes and rockets of the future, in the ranges beyond the speed of sound, will have the general configuration of this research craft, the Convair XF-92A delta wing research interceptor.