

# Scientific Advances of a Decade

By JOSEPH L. MYLER

Washington—UPI—The 1950s gave us the H-bomb and the first photograph of the far side of the moon.

It gave us the Salk polio vaccine and the first nuclear power plants and ships.

It produced the hypersonic airplane and the intercontinental ballistic missile.

With ionizing radiation it opened new windows on the atom and the living cell. With rocket and radio astronomy it opened new windows on the universe.

The military engendered and pre-empted many of the fruits of science in the sixth decade of the 20th century.

But during the International Geophysical Year, this same decade saw scientists of 66 nations on both sides of the Iron Curtain peacefully engaged in the greatest cooperative venture ever undertaken to wrest new knowledge from the earth and its corner of space.

## First Satellites

Under the auspices of the IGY and its successor program, International Geophysical Cooperation-1959, launched the first artificial satellites, the first sun rockets, the first space probe to curve behind the moon and take a picture of its erstwhile hidden side.

While space scientists were looking up, earth scientists were looking down—toward the planet's unknown insides.

These scientists, the geophysicists, conceived and expect to carry out a grand scheme to drill through the earth's crust to its mantle, a region more mysterious than the surface of the moon.

While astronomers were striving to decipher the riddle of the universe, other scientists were hunting clues to the riddle of life.

Biologists began to understand the structure of the giant molecules which are the bricks of living matter.

They appeared to be on the verge of creating in their laboratories something possessing, as one of them said, "many of the attributes of life."

One branch of science by nuclear transmutation changed the basic nature of atoms and created new ones. Another created synthetically the basic stuff of genes and viruses and proteins.

## Could Control Evolution

The geneticists learned enough about the hereditary mechanisms of life to proclaim that man could—if he would—control his own evolution henceforth.

Biochemists discovered means of controlling plant growth and learned how to transform many inedible and once-wasted materials into nutritious food. They learned more about how green plants use solar energy to turn air and water into living tissue.

The decade ended in dispute over whether food production could keep pace with human reproduction.

The brain still defied complete understanding. But the mind gave up some of its secrets. A chemical cause was proposed for some kinds of insanity.

Antibiotics conferred a mixed blessing. They whipped some diseases but lessened man's resistance to some others.

Cancer was not conquered. But the discovery that some kinds of cancer are caused by viruses was one of the decade's great accomplishments.

A controversy, still not settled, developed over whether cigarette smoking causes lung cancer. Tranquilizers were put on the market to calm man's jangled nerves. Injec-

tions of Salk anti-polio vaccine became nearly as common a place as vaccinations against smallpox.

The attack on diseases of the heart advanced on many fronts. New life-saving surgical techniques were developed. Drugs were found to control high blood pressure. Rheumatic heart disease "is in a rapid decline," according to the National Heart Institute.

In related fields, scientists held out the promise of replacing damaged or diseased organs with healthy spare parts from living or recently dead persons.

## Calculation Doubled

New astronomical discoveries doubled the previously calculated size and age of the universe. The new science of radio astronomy proved the existence of spiral arms of stars in our galaxy and found a corona at the galaxy's heart which emits powerful radio signals.

Radio astronomy also discovered colliding galaxies deep in space. It found evidence that some other galaxies may be dividing, like giant amoebas.

With a 600-foot radio telescope being built by the Nav-

## Thornton Rules on Shock Treatments

Salem—UPI—A parent's objections to the administering of "shock treatment" to a minor patient at the Oregon State hospital would not prevent the hospital superintendent from prescribing such treatment, according to Attorney General Robert Y. Thornton.

Thornton said that the laws giving the Board authority to transfer inmates from one institution to another "when-ever, in the judgment of the board, the welfare of the inmate and the efficient administration of state institutions require the transfer."

The specific case involved an inmate from LaLaren school who was transferred to the state hospital. The boy's family objected to the therapy program of the hospital.

Research laboratory in West Virginia, astronomers expect to peer nearly 20 times as far into space as they can with the 200-inch optical telescope at Mt. Palomar in California.

IGY rockets with ultra violet eyes have provided a never before seen picture of the sun and the night sky. They discovered in the sun's corona the origin of solar X-rays.

## Missing Airman May Have Died In Tree Branches

Coos Bay—UPI—An airman whose body was never found following a plane crash near here 14 years ago may have perished while caught by his parachute in the top branches of a giant Douglas fir tree.

Air Force authorities who came here to check when the chute was found by loggers in a rugged timbered area 45 miles east of here, said the chute may have belonged to Sgt. Robert T. W. Neal of Los Angeles.

Neal was aboard an Army plane that crashed in 1945 in the area. Of the 12 men aboard, two died and nine parachuted to safety. The 12th man, Neal, was never found.

Heading for McChord Stenciled on the chute were the words: Sedalia Air Force Base.

The plane that crashed was heading for McChord Air Force Base near Tacoma, Wash.

Other markings and numbers found on the chute are being checked through Air Force records.

Investigating officers said that all but one of the buckles in the chute were still buckled, indicating that Neal may have died while dangling high over the ground and was eaten by birds.

The Air Force investigating officers said they will continue their search for clues when logs in the area are removed.

Scientists designed satellite observations which may reveal existence of other worlds swinging around other suns.

From what they have learned of the solar system and the universe in the past decade, scientists now generally believe that living things on a par with human beings inhabit hundreds of millions of other planets.

In the meantime, the primitive first artificial satellites have changed man's notion of the form of his earth—it is slightly pear-shaped—and have revealed and measured zones of intense radiation high in the earth's magnetic field.

## Seeks Bomb Control

Power-hungry man struggled stubbornly to make electricity economically with atomic energy and to find ways of controlling H-bomb reactions for power. He continued his search for means of harnessing the sun's rays for heat and energy. He foresaw atom-powered craft plying interplanetary space by the end of the new decade.

Scientists came up with several different devices for converting heat directly into electricity without any of the moving parts which plague and add to the cost of conventional and atomic power plants.

These so-called thermoelectric machines are not as yet very efficient. But they face an assured future as providers of auxiliary power for satellites and space probes and electricity for automatic weather stations.

At the end of the decade not the sky but the atom and the cell and the depths of the universe marked the limits of man's curious probing.

## FUEL SUPPLY

Harrisburg—There is enough recoverable coal in Pennsylvania to last 250 years.

Lumber is actually becoming a synthetic product, frequently being made from chips and scraps pressed together, and the now old-fashioned plywood is being supplanted by a wide variety of "densified woods" produced under great heat and pressure and with the use of synthetic resin binders.

# Bird Watchers Spot 79 Species During Annual Holiday Count

Fifteen area bird watchers travelling in five parties battled the fog Tuesday to find 79 species of birds on the annual Christmas bird count.

This is only five less than the 84 species found last year in good weather. Four fifths of the area covered (a 15-mile diameter circle centering south of Camp White) was shrouded in fog the whole day. Only the parties visiting Roxy Ann and Gardner reservoir got out of the fog.

In spite of the difficult weather 11 species were found this year that were not recorded last year including the goshawk, barn owl, pygmy owl, pileated woodpecker, crow, mountain chickadee, red-breasted nuthatch, wren-

tit, mountain bluebird, and jay, 31; common crow, 3; black-capped chickadee, 25; mountain chickadee, 4; plain titmouse, 11; common bushtit, 6; white-breasted nuthatch, 3; red-breasted nuthatch, 1; brown creeper, 4; wren-tit, 2; dipper, 1; Bewick's wren, 10; long-billed marsh wren, 1; robin, 80; hermit thrush, 4; western bluebird, 186; mountain bluebird, 1; Townsend's solitaire, 3; golden-crowned

lark, 3; Steller's jay, 18; scrub jay, 31; common crow, 3; black-capped chickadee, 25; mountain chickadee, 4; plain titmouse, 11; common bushtit, 6; white-breasted nuthatch, 3; red-breasted nuthatch, 1; brown creeper, 4; wren-tit, 2; dipper, 1; Bewick's wren, 10; long-billed marsh wren, 1; robin, 80; hermit thrush, 4; western bluebird, 186; mountain bluebird, 1; Townsend's solitaire, 3; golden-crowned

## City Class Rate Juggling Refused

Salem—UPI—Public Utility Commissioner Jonel C. Hill has reaffirmed PUC policy of refusing to permit juggling of city class rate zone scheduled to meet competitive situations arising out of movement of business to fringe areas.

Hill denied an application of the Oregon Draymen and Warehousemen's Association for proposed rates which would apply between zones 1 and 8 in Portland. They would have covered transportation of freight arriving by boat and which the association said "must of necessity be cartaged from the docks to carriers' warehouses and to newly-relocated grocers in the Milwaukie area."

Hill said the application would have had the effect of "deceptively redesigning" the type of rate to be utilized.

## Source of Funds Told by Thornton

Salem—UPI—The State Emergency Board is the place to go for expense money as far as members of the Traffic Court Rules Committee are concerned, according to Attorney General Robert Y. Thornton.

Thornton said the 1959 Legislature created the committee and provided that members be compensated for expenses, but failed to appropriate any funds.

The attorney general, who is himself a member of the committee, said this fell in the category of an "unforeseen circumstance" that meets the requisites for an emergency fund allocation.

Chairman of the committee is Circuit Judge A. T. Goodwin, Eugene.

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