

## GENERAL SCIENCE

# AAAS Meeting Highlights

Scientists attending the 120th meeting of the American Association for the Advancement of Science met in nearly 300 sessions at which close to 2,000 papers were presented.

► **HIGHLIGHTS AMONG** the reports to the American Association for the Advancement of Science meeting in Boston included:

Children spend more than 20 hours a week looking at TV in big cities like Chicago, and teachers and parents should work together to make the most of it.—Dr. Paul Witty, Northwestern University.

Educators used to live longer than the general run of the population, but now this extra longevity seems to be disappearing.—Dr. Henry F. Dickenson, Lincoln Memorial University, Harrogate, Tenn.

Fruit flies that crowd into the center of the food in their glass bottle worlds are less resistant to DDT than those that pupate along the edges.—Dr. Robert R. Sokal and Preston E. Hunter of University of Kansas.

Red fluorescent light of high intensity, supplemented with blue, makes tomato plants under artificial illumination produce more, on a dry weight basis.—Dr. Stuart Dunn, University of New Hampshire.

More stomach cancer is found among relatives of persons with stomach cancer than among relatives of those who do not have this disease.—Dr. George W. Hagy, Southwestern Medical School of University of Texas, Dallas.

Scientists are trying to breed rats having hereditary high blood pressure and diabetes similar to the human ailments to aid them in their search for new combatant chemicals and drugs.—F. M. Sturtevant of G. D. Searle and Co.

Creams, including the silicone ones, supposed to protect workers from skin eruptions due to oil used in cutting steel at high speeds, fail to keep these oils from the skin in 20 out of 24 cases.—Dr. George E. Morris, Boston dermatologist.

## Tooth Decay by Diet

Tooth decay, everybody's disease that costs one billion dollars annually in U.S. teeth care, can now be produced experimentally by special diets in rats, hamsters and monkeys.—Dr. Reidar F. Sognaes, Harvard School of Dental Medicine, Boston.

A living tooth cannot decay in the complete absence of bacteria or in the complete absence of food, germ-free tests at the University of Notre Dame demonstrate.—Dr. Frank J. Orland, Zoller Dental Clinic, University of Chicago.

Experiments on 17 generations of rats show that a factor in dental decay is inheritance of a chemical peculiarity of the mouth, persistent presence of *Lactobacillus acidophilus*.—Drs. H. R. Hunt, C. A. Hoppert and Samuel Rosen of Michigan State College.

House mice in crowded pens, as density of their population increases, fight each other, tear up nests and become cannibals, thus limiting population to resources.—Dr. Charles H. Southwick, Hamilton College, Clinton, N. Y.

Man's mental life can be thought of as the manifestation of an organized, self-regulating biological system raised to its highest level.—Prof. Edmund W. Sinnott, Yale University.

To our consternation we are discovering that water, air and light are not alike in abundance. In many places water must undergo expensive handling and treatment before use. For the individual, it is far from free.—Carl G. Paulsen, chief hydraulic engineer, U. S. Geological Survey.

## Elliptical Meteor Orbit

All the fireball meteors that occasionally flash in the sky come from our own solar system and have elliptical orbits like asteroids, rather than hyperbolic like some comets.—Dr. C. C. Wylie of State University of Iowa.

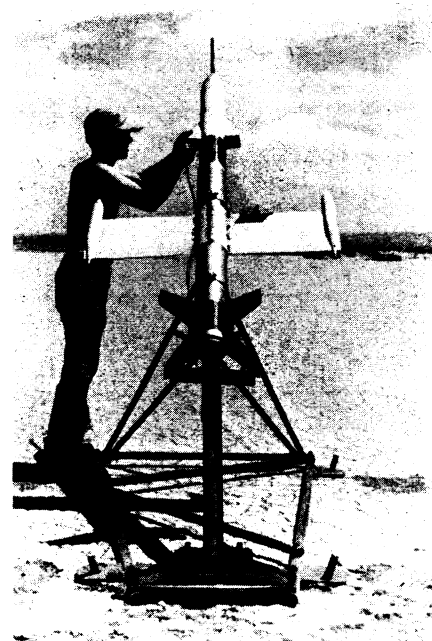
Less than a third of engineering graduates remain in engineering throughout their careers, and those that go into management make the change between the ages of 28 and 32.—Prof. J. Myron Johnson, Stevens Institute of Technology, Hoboken, N. J.

The interaction of so-called natural forces need not predestine tomorrow's cities to unplanned development, but wise and informed planning can rescue communities from the consequences of bad location and spacing of new communities.—Prof. John T. Howard, Massachusetts Institute of Technology.

What is dangerous in levels of atomic radiation for communities must be kept flexible and not written into law, so that such levels can be modified with advancing knowledge.—Dr. Shields Warren, Boston pathologist and AEC consultant.

The single original cell from which all living organisms have arisen could have evolved in a shorter time than previously imagined, since yeast cell experiments show that microscopic cells that have undergone little change in a billion years can be modified and hand on to the next generation an ability to use a food.—Dr. Carl C. Lindgren and David D. Pittman, Southern Illinois University.

Human beings need to be studied as intensively as the new machines with which they perform complex controls in order to create automatic factories and other devices.—Dr. Gilbert K. Krulee, Tufts College, Medford, Mass.



**DESIGN TESTS**—This rocket-driven device provides supersonic testing of scale models of wing designs for future aircraft. The model wing is mounted on a five-inch high-velocity combat rocket, and electronic instruments packed in the 74-inch rocket laboratory radio back to the ground reports on the wing's characteristics at speeds about twice supersonic.

New welding techniques, which generate from 15 to 30 times more dangerous ultraviolet and infrared rays, may possibly bring on skin cancer if ordinary protective clothing for welders is faulty.—Dr. Robert C. Thompson, General Electric Company.

Although America has poured over 2.5 trillion dollars into highways and vehicles, little has been spent to determine why man reacts as he does as a driver; to cut highway fatalities, science should re-evaluate the highway program in terms of human capacity, spur new and better driver education in schools, and rewrite laws to fit human capacities.—Paul H. Blaisdell of the Association of Casualty and Surety Companies.

That color plays a role in the society of ducks was shown when ducklings caged with a red decoy and ducklings caged with a blue decoy later showed tolerance to live birds of the same respective colors; there was fighting and avoidance when ducks of "unfamiliar" colors were placed in the cages.—John V. Quaranta of Marymount College, N. Y.

Although significant genetic differences were found in past studies of blood groups, scientists were unable to differentiate between such groups as Finns and Arabs, or

Russians and Negroes; current studies of Europeans, Africans, Asiatics, Australian aborigines and Pacific Island inhabitants, however, are revealing striking racial differences in the gene frequencies of almost all blood group systems.—Philip Levine of Ortho Research Foundation.

“Social physics,” which can serve business executives, legislators, lawyers and public relations counselors, needs to be explored more thoroughly to help the “human engineer” solve some of the industrial problems that arise from day to day.—G. Edward Pendray of Pendray and Co.

Science News Letter, January 9, 1954

## CYTOLOGY

## Developing Brain Cell Nucleus Not Determined

► THE NUCLEUS of a cell that is developing into brain or bone in a frog embryo is capable of participating in the formation of all other body tissues, Drs. Thomas J. King and Robert Briggs, Institute for Cancer Research and Lankenau Hospital Research Institute, Philadelphia, reported at the American Association for the Advancement of Science meeting in Boston.

Drs. King and Briggs took the nucleus from cells that had partially differentiated and planted them in an undifferentiated egg cell without a nucleus. The experiment showed that the nucleus from the older cell can join with the egg to form a complete embryo.

The cell nucleus through the gastrula stage of embryological development is still unlimited in its potentialities. This shows that the basic changes in the cells as differentiation progresses do not involve the nucleus, the scientists pointed out.

Science News Letter, January 9, 1954

## ICHTHYOLOGY

## Fish School “Swims” in Rock 350,000,000 Years

► A SCHOOL of 350,000,000-year-old fish, of previously unknown type, has recently been discovered in a rock formation near Oslo, Norway.

Completely intact, with heads, eyes, tails and fins clearly outlined in the rock, the 40 fossilized specimens were identified as belonging to a group known as cephalaspids, one of the earliest vertebrate types.

The discovery was made in the district of Ringerike, about 30 miles north of Oslo, by Dr. Robert Denisen of the Chicago Museum of Natural History, and Profs. Leif Stormer and Anatol Heintz of the Paleontological Museum in Oslo.

Other rare specimens of primitive fishes, sea scorpions and crustaceans, discovered in the same district in 1911, have been collected in the Oslo Paleontological Museum. One of the sea scorpions is over 31 inches long.

Science News Letter, January 9, 1954

## GENERAL SCIENCE

# Research Business Costly

► IT COSTS American industry about \$2,500,000,000 a year to give you more deadly insect killers, more efficient cars, more rugged electric mixers and more sensitive fever thermometers.

Add to this amount another \$1,250,000,000. This is the bill covering the development of better airplanes for your son in the Air Force, or a bullet-proof vest for your boy in the Army, or better lifeboats for your sailor son and his buddies, or a safer landing craft for your teen-aged Leatherneck.

In short, research in this country is big business. It cost \$3,750,000,000 just to keep America clicking in 1952. During that year, about 96,000 research engineers and scientists labored over test tubes, slide rules, blueprints and calculations to produce the gizmos, machines and instruments that help make this country what it is.

These figures and findings, the latest available, have been compiled by the U. S. Department of Labor in a 106-page report, “Scientific Research and Development in American Industry.” The figures come from questionnaires returned by 2,000 companies. They represent an estimated 85% of America’s full research potential.

Turnover in the research ranks became a matter of “grave concern” as the Korean War created a different kind of military conflict: a need for young men in the armed services and, at the same time, a need for more researchers to carry out defense developments.

Yet in spite of the Korean War, the military services took only three men out of each 100 research workers employed, on the average. About 13 others per 100 researchers either quit, retired, were laid off, were fired or died.

However, at the beginning of 1952, the number of young men in industrial research who were subject to military duty jumped to an average of 25 out of each 100 researchers. About 19 of these men were members of the reserves or National Guard. The other six were classified 1A or 2A.

Industry has considered getting the utmost from its research workers by supplying them with a staff of technicians to twirl knobs, take hourly readings and run series of long, routine tests.

About 143,000 supporting workers were helping the 96,000 research scientists and engineers. This averages about 1.5 technicians to each scientist. Some companies gave each of their research scientists a staff of nine technicians.

The size of the supporting staff “has become a matter of great interest and importance in research management,” the report states. This sort of organization helped America over an industrial hump during World War II when skilled men were at a premium.

A crew of non-skilled labor, for instance,

went down the airplane assembly line and “set up” for a welder. Another crew cleaned up behind him. Thus the welder’s specialized skill was used to its fullest extent. The welder did not have to waste his valuable time attending to details that are not essential to his job.

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