

## ORNITHOLOGY

**Drought Reduces Ducks  
In the Pacific Flyway**

THE WINTER duck population of the Pacific Flyway is 18% below last year's total because of a four-year drought in the heart of the Canadian "duck factory," the Bureau of Sport Fisheries and Wildlife, Washington, D. C., reported.

Other Pacific Flyway data show that goose populations are down four percent, swans are off 10% and coots are down 17%. The only increase was noted in the black brant, which was up 53%.

A flyway is an established air route of migratory birds. The Pacific Flyway is one of the country's four major flyways. The others are the Central, Mississippi and Atlantic Flyways.

Only Washington and Oregon showed an increase in ducks. The rest of the flyway, which includes Alaska, western Canada, the west coast of Mexico, Nevada, Idaho, California, Arizona and Utah, showed varying declines.

The drought-hit area—Saskatchewan, Alberta and parts of Manitoba—is one of the best waterfowl-producing areas. The intense drought started four years ago and is still continuing, but current reports indicate this year's snow cover in the area is heavier than it has been in the last two or three years. This may mean a break in the drought soon.

A total of 364 state and Federal observers participated in the Pacific Flyway survey. Cars, boats and planes covered more than 30,000 miles in making the inventory.

Science News Letter, March 19, 1960

## MILITARY SCIENCE

**Do Not Waste Scientists  
In Combat, Says Expert**

THE SELECTIVE SERVICE ACT must be revised to conserve the United States' supply of engineers and scientists, a manpower expert reported.

Dr. Sydney B. Ingram of New York, vice-president of the Engineering Manpower Commission of the Engineers Joint Council, said the United States cannot afford to send highly trained engineers and scientists into another Korea.

He would like to see the Selective Service Act revised so that these technically trained person can discharge their duty time in vital work either in or out of the armed services.

At present, draft boards have the policy of passing over scientists and engineers. But Dr. Ingram fears this would not happen if there were an emergency; in fact, scientists and engineers, having been passed up for peacetime draft, might be called up in great numbers because they have not served before.

Dr. Ingram wants the Selective Service Act revised so that:

1. Young scientists get called by the draft just as young men in other fields.

2. If they are already doing vital work they are not exempted but their work is counted as military service.

3. If they are drafted, they get a minimum of basic training and "housekeeping" and are sent, as quickly as possible, into vital military work where their past training can be used to maximum benefit.

Dr. Ingram would further like to see special scientific corps in the Army, Navy and Air Force. He believes these corps might use scientists and engineers to best advantage.

Above all, Dr. Ingram warned, the U. S. must avoid wasting its highly trained personnel in front line combat. This does not mean, he said, never putting them into combat if they are most useful there.

"The important thing, of course," Dr. Ingram said, "is to use highly trained scientific personnel where the need is greatest, whether this involves physical danger or not."

The present Selective Service Act is outmoded, Dr. Ingram said. "Its concept is based on the idea of equal sacrifice, no matter how valuable the individual is to society."

Science News Letter, March 19, 1960

## ASTRONOMY

**Light of New Star Areas  
Not Same in All Space**

AN ASTRONOMER has just found evidence to show that the distribution of brightness among newly formed star areas is not the same in all regions of the universe at all times—contrary to a generally accepted assumption of uniformity.

Dr. D. N. Limber of the University of Chicago's Yerkes Observatory, Williams Bay, Wis., has concluded that the brightness of newly formed star areas is influenced by the density, amount of turbulence among the stars, temperatures and chemical composition of the matter present in a region.

First Dr. Limber figured out the original brightness of well known stars. Results indicated that some of these stars should be more than 20 billion years old. Since this seemed older than could be reasonably expected, Dr. Limber saw as the only other possibility that initial brightness can vary in different parts of a galaxy or from one galaxy to another.

Science News Letter, March 19, 1960

## MINERALOGY

**Smithsonian Is Given  
Rare, Black Diamond**

A BLACK DIAMOND weighing 740 carats and believed to be the largest ever found in French Equatorial Africa has been presented to the Smithsonian Institution, Washington, D. C. Black diamond, also called carbon or carbonado, is an opaque, black, tough and compact variety of diamond and is found primarily in French Equatorial Africa and Brazil. It is the most satisfactory form of diamond for diamond rock drilling. Its relatively limited use is due chiefly to its comparative scarcity. The black diamond gift was made by Diamond Distributors, Inc., and is believed to be the largest mass of black diamond in any museum in the world.

Science News Letter, March 19, 1960

**IN SCIEN**

## MEDICINE

**Appendix on Left Linked  
With Male Sterility**

SOME CASES of sterility in men may be due to an inherited condition which causes the organs of the body to be formed on the right side when they are usually on the left and vice versa.

Visceral transpositions, as the condition is called, means that the appendix, liver and ascending colon are on the left, and the stomach, spleen and descending colon are on the right. This is just the opposite of the usual placement. The heart also works backwards, sending signals from a pacemaker on the left instead of the right.

Studies by Danish scientist E. Arge, reported in *The Lancet*, 1: 412, 1960, showed that in one family tree all the married men had children except those with visceral transposition. Wives of two of these men were past childbearing age, and the husbands would not submit to examination for sterility. However, in the third case, the wife had had two children by a previous marriage and the husband accepted examination.

Tests revealed that fertility of this man was much below normal. Sperm became inactive sooner and live a shorter life than usual: 47% had abnormal head shapes.

There was one case of visceral transposition in one of the women in the family. However, she had one child.

Science News Letter, March 19, 1960

## AERONAUTICS

**Private Pilots to Get  
Device to Tell Location**

EQUIPMENT that will quickly tell a private pilot exactly where he is will soon be available, the Federal Aviation Agency in Washington, D. C., reports.

The lightweight, low-cost equipment will automatically transmit electronic impulses from the plane to the nearest of 250 ground stations (VORTAC units). The unmanned station will respond with a signal.

This signal will be translated by the airborne device to give the pilot his distance from the station. Combined with directional information from the ground units, the distance information will pinpoint a plane's location.

The distance units on the ground are to be ready for use by the end of June. They will be along air routes. If an automatic unit fails, a spare will automatically take over until the first unit is repaired.

Delivery of the first complete unit of distance measuring equipment for private aviation is scheduled for September. Each unit will retail at about \$1,500 and will weigh about 16 pounds.

Science News Letter, March 19, 1960

# CE FIELDS

## OCEANOGRAPHY

### Bed-Cracks in 2 Oceans Found to Be Continuous

DEEP CRACKS in the beds of the Atlantic and Indian Oceans have been found to be continuous formations joined south of the tip of Africa.

The discovery, made by Columbia University's research vessel *Vema*, may help determine the origin of the major surface features of the earth and changes that have taken place in its geological history.

A few years ago, existence of a 45,000-mile undersea crack in the earth's crust was confirmed. It was inferred from topographic and earthquake data that this crack was continuous.

The *Vema*, now on a 12-month scientific cruise that will include circumnavigation of the Antarctic continent, had as a major objective the examination of this crack, or Mid-Ocean Ridge.

Six crossings of the ridge in the Indian Ocean revealed that the crack was continuous and that it followed a world-wide active earthquake zone along its entire length. The crack was also found to be about a mile deep and from one to five miles wide at the bottom and from four to 20 miles wide at the top.

Science News Letter, March 19, 1960

## PUBLIC HEALTH

### Standards Suggested for Cancer Test of Additives

A GROUP of experts has suggested standard tests for food additives that may cause cancer in man.

The Food Protection Committee of the National Academy of Sciences-National Research Council began studying the problem of food additives and cancer in 1956, long before cranberries and chemically fattened chickens came to public attention.

A review of completed tests and a realization of the problems involved prompted the Committee to suggest three long-term tests for evaluating the cancer-producing powers of food additives:

1. Continuous feeding of various levels of the test substance to rats and mice for their normal life spans and to dogs for at least four years.

2. Repeated surface application of various amounts of the test substance to the skin of mice for the normal life span.

3. One large, under-the-skin injection of the test substance in mice and extended observation of the animals.

The Committee's report, "Problems in the Evaluation of Carcinogenic Hazard from Use of Food Additives," which has just been released in Washington, D. C., showed that up to 1953, some 516 compounds had been reported as tumorigens (agents which

cause benign or malignant tumors). Of this number, 40 fell into the "not proved" category.

"Not proved" compounds were so designated because, in many cases, they had been tested only once, the controls were inadequate or the tumor had not been examined to see whether it was cancerous or not.

More than 450 compounds did show acceptable evidence of tumorigenic activity. Almost half of these belong to one chemical structure group, the polycyclic aromatic hydrocarbons.

Various species of laboratory animals react differently to these and other tumorigens. As a result, through no fault of their own, research workers sometimes tested compounds on guinea pigs when a more sensitive and accurate test could have been made on mice.

The Committee's suggestions are designed to help eliminate such mistakes in the future. Included in the report is a discussion of the relative sensitivities of lab animals.

Science News Letter, March 19, 1960

## NUTRITION

### Clue to Low Pellagra Rate For Tortilla Eaters Found

WHY PELLAGRA is rare in countries where tortillas are a basic part of the diet may have been found by three biochemists at the University of Wisconsin.

Rats fed corn treated with alkali grow better than those eating untreated corn, A. E. Harper, B. D. Punekar and Dr. C. A. Elvehjem reported. Because corn used in tortillas is treated with lime in much the same way the biochemists treated the rat corn, it may be that this treatment keeps down the pellagra rate in tortilla-eating areas.

Pellagra is a nutritional disease caused by a lack of niacin, a member of the vitamin-B complex.

Alkali or lime treatment is thought to be sufficient to make some of the bound niacin in the corn available for absorption from the digestive tract.

Science News Letter, March 19, 1960

## PUBLIC HEALTH

### Strontium-90 in Bone Hit Peak in 1959

THE LEVEL of strontium-90 in newly formed bone hit a peak in 1959 and is expected to constantly decline, a Westwood, N. J., scientist reports.

If the amount of strontium-90 in the diet depends on the rate of fallout rather than on the cumulative surface burden, the maximum concentrations in newly formed bone should have been reached in 1959, Dr. Herbert W. Feely of Isotopes, Inc., reports in *Science*, 131:645, 1960.

Therefore, concentrations should decrease rapidly in the next few years if there are no more bomb tests. He bases his conclusions on studies of the rates of release of debris of bomb tests of the U. S., Russia and Great Britain.

Science News Letter, March 19, 1960

## BIOLOGY

### Algae Resist Radiation Better Than Higher Plants

CERTAIN ALGAE have been found to be much more resistant to radiation than higher plants and animals, it is reported.

Dr. M. B. E. Godward of Queen Mary College in London describes radiation experiments with eight different types of algae which were maintained in culture as long as possible after radiation. It has been found that recovery could follow in a matter of days but might need up to five weeks.

In those algae where the chromosomal organization is conventional or large in size, Dr. Godward reports in *Nature*, 185:706, 1960, resistance to radiation seems to be relatively low.

Small chromosomes such as those of *Chlorella*, on the other hand, are almost impossible to kill by radiation. No organism that he knows of has been reported as surviving an experimental dose of radiation as high as the two successive doses of 1,000,000 rads each given *Chlorella*, Dr. Godward reports.

He points out, however, that the marine algae which received considerable radiation from atomic explosions were not killed.

Science News Letter, March 19, 1960

## MEDICINE

### 300-Yr.-Old Tuberculosis Epidemic Approaches End

THE END of a tuberculosis epidemic that has lasted nearly 300 years is being reached, Dr. H. D. Chalke, medical officer of health of the London borough of Camberwell, believes.

*Nature*, Dr. Chalke said, has begun extinction of the disease and now man can speed its end.

Dr. Chalke said the disease had been affecting Western peoples since the 17th century.

For 200 years it burned freely but, early in the 19th century, the conflagration began to die down. It has continued to subside virtually without interruption since then. "Gallop consumption" was faltering before the chemotherapeutic era.

The disease declined steadily when hygiene and sanitation could hardly have been worse and when cholera, typhoid and typhus were prevalent.

"Man seems to be 'coming to terms' with tuberculosis," Dr. Chalke reported. "He may well have done so before in history. The death rate began to diminish long before control schemes were put into operation, 70 years, in fact, before the first anti-tuberculosis dispensary was opened."

In 1680, the state of society and the way of life were predisposed to the sudden flare-up of the disease.

"Today, our contribution can be greater than ever before and it may prove effective in speeding the end." The foundation of future effort, Dr. Chalke said, must be swift elimination of local epidemic sources.

Science News Letter, March 19, 1960