

## PHYSIOLOGY

**Vitamin Discovery May Be Approach to Youth Quest**

**A** VITAMIN discovery that may be an approach to man's eternal quest for continued youth has been made at the University of California.

Gray hair has been darkened and other signs of premature old age reversed by feeding concentrates of the vitamin, which is an unidentified member of the vitamin B family found in yeast, rice bran and liver. But the results, reported by Drs. Agnes Fay Morgan and Helen Davison Simms (*Science*, June 16) were obtained on rats, a black guinea pig and two young Boston bull pups.

In response to an inquiry, Dr. Morgan said no human application of the discovery yet has been made. She also expressed the hope that the public would not write to her because she has already been "deluged sufficiently" with requests for the vitamin.

Asked whether this unknown factor in yeast provided the end of Ponce de Leon's search for the Fountain of Youth, Dr. Morgan replied:

"Being a Californian I have nothing to do with Ponce de Leon."

The premature aging that resulted when the animals were deprived of the vitamin is due to the effect of the vitamin lack on the adrenal glands, Dr. Morgan's latest studies indicate. The vital cortex of these glands showed wasting and shrinkage at post mortem examination of rats that had lacked the vitamin in their diet.

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## ANTHROPOLOGY

**Liberty Called Greatest Of Greek Inventions**

**T**HE greatest thing the Greeks ever did was to invent liberty.

This is the conviction of Dr. Walter Woodburn Hyde, University of Pennsylvania professor of Greek and ancient history.

All the beautiful temples and statues and literature that the Greeks left as a heritage to the world can't compare in importance with that gift of putting freedom into life, for individuals.

Before the Greeks, all the great civilizations — Assyria, Egypt, Babylonia, even Persia—scarcely gave their people an inch of personal freedom, Dr. Hyde declares in an analysis of the world's first venture in liberty, reported in the *Scientific Monthly*. Searching history, he

cannot find that Oriental states ever gave the idea a chance to grow, and the Greeks looked down on Orientals as servile and unmanly for that very reason.

A long list of modern ways and means of carrying out the liberty idea can be traced straight to Greece. Prof. Hyde includes these: democracy, representation, political parties and clubs, senates, committees, legislation, constitution, the ballot, impeachment, popular courts.

Greeks not only had liberty; they were first to theorize about it, he also finds. "They created the science and theory of politics."

But where and how was freedom invented? Nobody knows. Dr. Hyde discounts the old answer: that the geography of Greece stimulated the people to a variety of independent culture phases, and prevented their being molded into a uniform, rigid empire. Greeks, he thinks, would have evolved the same genius outside the Balkans. And if mountains and seas are so potent, why have not modern Greeks responded with great creative achievements?

Liberty had already been "invented" apparently when the council of Greek chiefs met outside the walls of Troy. Prof. Hyde suspects that ancestors of the historic Greeks brought the germ of the liberty idea with them when they migrated from the grasslands of the Danube.

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## MEDICINE

**Sulfanilamide May Prove Cure For Typhoid Fever**

**S**ULFANILAMIDE and sulfapyridine, already hailed far and wide as successful remedies for pneumonia, streptococcus infections, gonorrhoea and other diseases, may prove equally effective as remedies for typhoid fever.

Good results with the chemical remedies in seven severe cases of typhoid fever are reported by Drs. E. H. R. Harries, Robert Swyer and Noel Thompson, of the North Eastern Hospital, London.

Most striking result, they report, was obtained in the case of a man who had "walking" typhoid and for whom any experienced doctor would have predicted a long and perilous illness. Within 10 days after entering the hospital he was in the recovery or convalescent stage. This patient was given both sulfapyridine and a serum, and the doctors suggest that this combination is probably the thing to use for treating other cases.

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**IN SCIENCE**

## ENTOMOLOGY

**War on Grasshoppers Succeeding, Bureau Reports**

**T**HE DEPARTMENT of Agriculture's poisoned-bait war on crop destroying grasshopper hordes is succeeding generally throughout the country, Lee A. Strong, chief of the Bureau of Entomology and Plant Quarantine reported.

A bran and sawdust bait mixed with deadly arsenic has been killing as high as 90 per cent of the young 'hoppers in many sections of the country, Mr. Strong said in his weekly progress report.

Control operations are complete in the southern infested portion of the Texas panhandle and New Mexico and the war in Colorado will shortly end in victory for the embattled Department of Agriculture experts and farmers.

With the exception of areas in four counties, Custer, Roosevelt, Prairie and Garfield, rains in Montana have held 'hoppers to the ground as well as promised crops good enough to revive the farmers' interest in doing everything possible to save their plantings. Crops in the infested areas of the four counties have been almost completely destroyed, however.

The Federal government is also active in Nebraska and South Dakota in control operations, Mr. Strong's report showed.

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## ENGINEERING

**New Patent Shows Navy's Method of Detecting Flaws**

**T**HE U. S. Navy's way of detecting hidden flaws in airplane propellers and other metal castings was disclosed by the issuing of patent No. 2,162,710 to Dr. Ross Gunn, scientist of the Naval Research Laboratory.

Induced electric currents, known as eddy currents, are set up in the metal castings. The pattern of their magnetic fields changes characteristically when an unseeable flaw occurs in the metal.

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After inhaling hydrogen gas, an individual's voice is temporarily so high pitched that it sounds almost falsetto.

# E FIELDS

## PHYSICS

### Make Radioactive Iron With Half Life of 10 Years

ONE of the longest lived of all artificially radioactive elements was discovered at the radiation laboratory of the University of California by Drs. J. J. Livingood, now at Harvard, and G. T. Seaborg of the chemistry department.

The new element, made radioactive by bombardment with the charged ions of deuterium atoms, is an isotope of iron having a half life of more than 10 years.

As described by the scientists in the *Physical Review*, its radioactivity declines by half its original intensity in a ten-year period. After another ten years it will be reduced again by half and so on.

Also reported to the physicists' journal by Dr. W. F. Libby, also at the University of California, is the discovery that the natural splitting of uranium and thorium, if it occurs at all, is a very long-lived process with a half life of more than  $1 \times 10^{14}$  years or one followed by 14 ciphers, (100,000,000,000,000).

This result will relieve the minds of geologists who have been determining the age of the earth by noting the natural radioactivity of uranium and its disintegration into its other elements that eventually end up by being lead.

With the recent discovery that uranium and thorium could be split into two medium weight elements in the laboratory by bombardment with neutrons, immediately the accuracy of the previous work on the age of the earth was thrown into doubt. Dr. Libby's finding will do much to nullify these fears.

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## ARCHAEOLOGY

### Ancient Egyptian Scripts Found on Crocodile Mummies

QUANTITIES of Egyptian writings, salvaged from their second-hand role as wrapping paper around crocodile mummies, have safely reached the University of California.

For 38 years, these mummy wrappings and other papyri forming a collection of more than 1,000 Egyptian writings have

been en route to the University. At Oxford University and the British Museum, where the collection stopped-over, British scientists have been studying the documents. They are pronounced extremely valuable, shedding light on the transition period of Egyptian history, reigns of the later Ptolemaic Pharaohs, and early centuries of Roman rule. They are mainly written in Greek, the business and social language of Egypt in centuries shortly before and after the time of Christ.

The "crocodile" papyri in the collection were found in an amusing accident, when an expedition headed by Dr. George A. Reisner, then of the University of California, was excavating at Tebtunis, in 1899-1900. A workman became exasperated at finding more and more mummified crocodiles, when the archaeologists hoped for better things. Angrily, he threw down one crocodile and to his amazement it broke revealing a stuffing of the much-sought papyrus manuscripts of old Egypt.

Unwrapping crocodiles became the expedition's most engrossing business for the next few days, and out of several thousand animals about two per cent. were wrapped or stuffed with writings. Poor condition of many of the papyrus sheets has been one cause of delay in the British research on them.

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## ENGINEERING

### 5,000-Horsepower Engines Predicted By Engineer

HUGE engines, with 24 cylinders and more, developing up to 5,000 horsepower as compared with the 2400 horsepower of which the largest American engine and currently the world's largest is capable, were predicted as a development of aviation during the next five or ten years in response to military needs, by F. R. Banks, technical manager of the Associated Ethyl Company, Limited, of London, before the World Automotive Engineering Congress.

They will employ banks of cylinders arranged in X- or H-formation, or radially mounted banks, all liquid-cooled in place of the air-cooling which is still widely used, Mr. Banks asserted.

Improved fuels, larger cylinders, higher engine speeds than are now common and other changes in present practice will make such aerial monsters possible, he said.

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About 70 of the national forests in 20 states have winter sports facilities.

## POPULATION

### Cities Dwindling Because Parenthood Lacks Prestige

AMERICAN cities, long accustomed to a "Watch Takoma Grow" outlook of boom expansion are now faced with a decline in growth amounting to a fourth of their population in a single generation.

If the cities in the world of tomorrow are not to be marked with empty echoing streets and vacated skyscrapers where now millions throng, it will only be because of migrations from other regions or nations where children still flourish.

The present decline in population growth in the United States is due, not to any biological decline in fertility among moderns, nor to economic factors, as such, but to the powerful influence of our social atmosphere, declares Dr. Warren S. Thompson, population expert of the Scripps Foundation for Research in Population Problems.

You hear people say "we cannot afford more children." But it is not the very poor who feel that way. It is the relatively well-to-do.

"What it really means," says Dr. Thompson, "is that if we have more children we cannot travel as we would like to, we cannot live in as good a house as we want to, we cannot drive as good a car as our neighbors, we cannot go out (theater, bridge, etc.) as much as our friends, I shall not be able to go with my husband as frequently as otherwise, etc.

"In other words the whole scheme of life and scale of values we have come to regard as valid has no place in it for the three or four children needed to maintain numbers."

Most of the women of America fall far short of those three or four children in their families. Almost 30 per cent., estimates Dr. Thompson, have no children, 18 per cent. have only one child and another 18 per cent. have only two children.

Before men and women will want large families, it will be necessary for the social environment to change so that "there is no handicapping economic or social discrimination between those who want to contribute to community life by raising families of the proper size as well as through their own work and those who are interested in making their contribution only through their own work."

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