

## GEOLOGY

**Large Deposit of Trona Is Found in Wyoming**

A LARGE bed of trona, important soda-yielding mineral, has been discovered at a depth of about 1600 feet on government land in Sweetwater County, Wyo., it is announced by Dr. W. C. Mendenhall, director of the U. S. Geological Survey. (*Science*, Jan. 5)

The trona layers were found in drill cores of an oil and gas well being put down by a commercial company. In the pure state, trona crystals consist of sodium carbonate, sodium bicarbonate and water. Associated with the trona were small quantities of two exceedingly rare minerals, northupite and pirssonite, which are complex carbonate salts.

Since ample soda mineral beds are already being worked commercially in this country, it is probable that this new deposit will, for the present at least, constitute a reserve rather than an active source of supply.

*Science News Letter, January 20, 1940*

## PSYCHOLOGY

**When to Pet, a Problem Important to Young**

WHEN is petting right and when is it wrong? This is the "love problem" which above all others claims the interest of youngsters in their teens, it was found by Dr. Oliver M. Butterfield, who as a student of young people and parent education, has brought together a large number of discussion groups in camps, churches and similar organizations.

The problems of young people are serious, Dr. Butterfield stresses in his new book, *Love Problems of Adolescence* (Emerson). Often they arise not because of the confusion of the young people themselves, but because of the perplexities of parents who are inconsistent or who fail to appreciate changing times.

Such a parent-made problem is one which puzzles particularly boys and girls of 14 or so. How old must a girl be to go out with a boy? One parent may permit dates at 14. A neighbor may insist that her girl wait until she is 20. What is a daughter to think?

Youngsters are anxious to know how to start friendships and sometimes how to keep them from becoming too serious. They want to make a good impression and not be "dropped."

Serious problems are faced by a "ten-

per cent. fringe" who do not fit in with the social groups about them. They are described by the youngsters as bashful, queer, cynical, egotistical, dominating, sophisticated, dreamy, shy, and man-crazy.

Too often, Dr. Butterfield warns, get-together activities are confined to providing a social occasion with no particular attention to the needs of such individual misfits. They, too, need companions.

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## ICHTHOLOGY—PSYCHOLOGY

**Museum Visitors See Fish's View of Man**

See Front Cover

HAVE you ever wondered how the fisherman looks to that wary fish?

At the pressing of a button, visitors to the American Museum of Natural History in New York are able to see the fish's view. Physical conditions in the stream distort the figure. The man appears with no middle and a head broadened out of all proportion to his rubber-booted legs. The colors are, however, just as we see them, for fish are supposed to have color vision as does man.

The exhibit, shown on the front cover of this week's SCIENCE NEWS LETTER, is one of five demonstrating the vision of various animals.

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## MILITARY SCIENCE

**Pilots Aim Machine Guns By Using Tracer Bullets**

GERMAN fighter pilots may be using tracer bullets instead of the conventional open gun sights as a means of sighting their machine guns.

Royal Air Force pilots report that their adversaries have in their gun magazines between 25% and 100% of the incendiary bullets that leave a trail visible for 300 yards, the range of fighter plane machine guns. This is the first time such a high percentage has been consistently used aloft and can be attributed only with difficulty to the simple desire to set fire to the enemy plane as quickly as possible. Fewer tracers would suffice if the latter were the only purpose in their use.

Tracer bullets are commonly used for spotting a target and aiming at night, but this is believed the first time they have been so used in the air under all conditions. English airmen are critical of the scheme, however, preferring their regular sights.

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**IN SCIEN**

## MEDICINE

**Chemical Remedies Useful In Middle Ear Infections**

THE NEW chemical remedies, sulfanilamide and sulfapyridine, are valuable for treating about 40% of the acute middle ear infections likely otherwise to end in mastoid trouble, Drs. L. Dell Henry and Hugh A. Kuhn, of Hammond, Ind., found in their experience with 468 patients, ranging from three months to 63 years of age.

Reporting these results to the American Laryngological, Rhinological and Otolological Society meeting in Columbia, S. C., Dr. Kuhn warned fellow physicians not to use these chemical remedies without first making tests to learn what kind of germs are causing the ear trouble in each case. Nearly half the patients, he and Dr. Henry found from such tests, had ear infections of a type that could not be helped by either sulfanilamide or sulfapyridine. Since the chemicals are not without danger, Dr. Kuhn said, they should not be used indiscriminately.

Out of the whole group of cases studied, 6.6% developed mastoiditis. The necessity of early investigation and treatment of otitis media (middle ear trouble) is shown by the fact that the patients who had early attention with early surgical opening of the ear drum had a risk of two-thirds less than the ones in whom the condition was allowed to go on until the drum ruptured spontaneously.

*Science News Letter, January 20, 1940*

## PSYCHOLOGY

**Complexities of the World Are in Your Own Mind**

"BOSS KET", Charles F. Kettering of General Motors who has never been known to write a speech, who expresses disdain for too much formal science and who is an engineer's engineer, is in great demand for his impromptu words of inspiration and wisdom. A recent Ketism:

"Most of the complexities in this world are in our minds. The important thing is not to fail the last time you try to do something."

*Science News Letter, January 20, 1940*

# CE FIELDS

## GENERAL SCIENCE

### Inventors Foresaw Bad Use For Airship and Submarine

**T**HE INVENTOR of the first airship—Francesco Lana, in 1670—conceived the greatest objection to his invention to be the inhuman and unconscionable uses to which it might be put by unscrupulous men.

Leonardo da Vinci, whose notebooks show him to be the inventor of the first submarine, about 1500, explained that he did not publish his method of staying under water "on account of the evil nature of men who would practise assassination at the bottom of the seas, by breaking the ships in their lowest parts and sinking them together with the crews who are in them."

These ancient accounts, pertinent in present war days, are recalled by Prof. M. F. Ashley-Montagu of the Hahnemann Medical College in Philadelphia. (*Science*, Dec. 22)

*Science News Letter, January 20, 1940*

## MEDICINE

### Effective Chemical Cures Expected From New Test

**M**ORE successful use of sulfanilamide and related chemicals in curing germ diseases is promised by a new test reported by Prof. E. K. Marshall, Jr., of the Johns Hopkins University, to the Society of American Bacteriologists meeting in New Haven.

The test, which takes advantage of the feeding habits of mice, provides a much-needed method of evaluating chemical remedies on a quantitative basis. It was worked out by Prof. Marshall and associates.

Sulfanilamide, sulfapyridine, or some other chemical remedy is mixed with the food of the mice. Because these animals eat frequently and at regular intervals, there is always some of the chemical in their systems. A constant concentration of the remedy can thus be maintained in the animal's blood and this gives a basis for determining what blood concentration is necessary to cure streptococcus infection, or which of several remedies

is more effective in amounts that give the same concentration in the blood.

From such studies, Prof. Marshall explained, scientists can learn more exactly which remedy to give patients, how large a dose is effective, and how often the dose needs to be repeated. At present, he pointed out, the value of sulfanilamide and related remedies is somewhat hampered by lack of exact information on these points.

The way in which sulfanilamide acts in the body to check the growth of disease germs and thus "cure" the patient might also be determined from such quantitative comparisons with other similar chemicals. This knowledge might lead to more effective chemical remedies.

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## BOTANY

### Disease Resistant Plants Make Own Bacteriophages

**B**ACTERIOPHAGES, those mysterious, self-reproducing organic substances that kill and dissolve bacteria, are manufactured by resistant varieties of plants when attacked by germs that cause disease in non-resistant varieties, Roy C. Thomas of the Ohio Experiment Station at Wooster, Ohio, informed the AAAS meeting.

Mr. Thomas worked with the bacteria of corn wilt and corn varieties resistant to this germ. He found that resistant varieties have in their sap a substance which he called a "lysin," which has a powerful killing effect on the bacteria. In the spots or lesions where the bacteria have attacked and been defeated, specific bacteriophages appear, which are able to act only on the particular strain of bacteria that started the infection.

"It was found that a bacteriophage can be manufactured from any strain of the corn wilt bacteria which does not already contain one," Mr. Thomas reported, "and the phage developed for a culture is highly specific for it."

"Several investigators, during the past 50 years have suggested that the mechanism of resistance to disease is similar in plants and animals. A number of workers have detected the presence, in plants, of lysins which could be destroyed by heating at 56 degrees, yet up to the time of this report no one has offered proof that these lytic factors in plants are in any way associated with the bacteriophage and in this capacity serve as a means of active resistance of plants against disease producing organisms."

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## PHYSIOLOGY

### Blood Supply to Hands Independent of Forearms'

**Y**OU might think that when your hands get cold, for lack of enough blood flowing into them, your forearms would get cold, too, for the same reason. But this is not necessarily the case. Blood flow into hand and forearm is controlled separately for each region, it was shown by researches reported by Dr. Eugene B. Ferris of the University of Cincinnati College of Medicine and Dr. David I. Abramson of the Cincinnati Jewish Hospital.

They found that many stimuli, acting through the central nervous system, will diminish blood flow to the hand but not that to the forearm. They also discovered that stimuli which increase arterial blood pressure often cause a passive increase in blood flow to the forearm but generally cause a decrease in that to the hand.

On the other hand, if you get too warm and there is need for a dissipation of body heat, the blood flow to the hands readily increases, while that to the forearms increases only if the need is great.

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## CONSERVATION

### Germany Counts Game As War Food Resource

**G**AME birds and animals constitute a rationable food resource no less than more conventional kinds of meat. Commenting on game-food possibilities under war-time conditions, the German weekly, *Die Umschau*, gives, as latest official figures for a year's kill: 3,000,000 hares, 1,800,000 rabbits, 2,000,000 partridges, 1,000,000 pheasants, nearly 750,000 deer of various species.

The journal recommends carefully regulated hunting under State direction, with owners' rights in private preserves suspended for the duration of the war. Game thus taken should be used primarily in military hospitals. Steps in this direction have already been taken, by the wild-life authorities of the Reich.

"Undoubtedly the kill of many game species could be easily increased," states *Die Umschau*.

"This is especially the case with rabbits. The raising of domesticated rabbits should also receive renewed attention. Not only can tasty and easily prepared meat be thus obtained, but a valuable raw material for the German fur industry."

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