

## PSYCHOLOGY

**It Takes Higher Current To Cause Pain in Some**

► THE COMPLAINT of the Charles Dickens character that, "I feel it more than other folks," may have some basis in scientific fact, after all.

Tests of 15 college women revealed that they differ greatly in sensitivity to pain and that the same individual may vary considerably from day to day.

The experiment, conducted by Dr. Lyle H. Lanier, of Vassar's department of psychology, determined the smallest electric current that would cause pain when applied to different areas of the skin on the forearms and foreheads of the girls.

The range of these smallest painful currents was from 2.25 to 65 microamperes, Dr. Lanier reports in the current issue of *Science*. And on one test the pain threshold was 300% greater than the average.

The findings in this experiment are at variance with those previously reported by other investigators who used heat as the method of producing pain.

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## PHYSIOLOGY

**Speck of Muscle Tells of Hidden Hunger**

► IN THE future, when the doctor wants to know whether a patient's tired feeling, irritability and other vague symptoms of illness are due to the early stages of hidden hunger for vitamins, he may punch out with a needle a pinhead sized speck of muscle for a chemical test of its vitamin content.

Such a test, scientifically termed a micro muscle biopsy, can be used to determine whether or not a person is well nourished with respect to vitamin B<sub>1</sub> (thiamin), and probably also other vitamins, Dr. Mildred H. Carleen, Dr. Norman Weissman, Dr. Philip S. Owen and Dr. Joseph W. Ferrebee, of the Harvard School of Dental Medicine, report in the current issue of *Science*.

A person's state of nourishment depends not only on the food he eats but also on how his body uses the food and how much of the vitamins get into muscles and other body tissues where they are needed to help along vital processes.

A severe degree of thiamin deficiency or a complete lack of this vitamin leads to polyneuritis or beriberi which can be diagnosed from the symptoms. Mild de-

grees of thiamin or other vitamin lack, however, lead to illness that is difficult to diagnose because the symptoms are not so characteristic and clear-cut. It is not easy, either, to determine the vitamin requirements for good health, that is, the normal vitamin requirements.

Tests of the vitamin content of the blood and body wastes now in use are only an indirect measure of a person's nutritional status. Before they can be used critically, the Harvard scientists point out, it is necessary to know, for example, how much of a given vitamin there is in the muscles and other body tissues when the amount in the blood is at a certain level.

The micro muscle biopsy will give such information and therefore help not only in diagnosing slight degree of vitamin deficiency but in determining just how many in the population are suffering from mild degrees of hidden hunger.

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## POPULATION

**Equality in Sex Ratio Predicted for After War**

► AFTER THE WAR the numbers of men and women in the country will be practically equal and the West will no longer be a happy hunting ground for maiden ladies seeking husbands. This prediction is suggested by a report from Metropolitan Life Insurance Company statisticians.

The peak sex ratio of 1,060 males to every 1,000 females was reached in 1910, following a decade of the "greatest voluntary movement of population the world has probably ever seen," the statisticians point out. Since then the ratio of men to women has been steadily dropping. In 1940 it was 1,007 males to every 1,000 females.

Since then (1940), there have been important changes arising from the war conditions. Many areas have suffered a loss of population to newly expanding industrial centers. All areas have undergone a withdrawal of men for military service. What the future will bring in the distribution of men and women within the country is very uncertain, for so much depends upon the needs of the Army for men and the demands of our war industries for workers.

In any event, the outlook is that our postwar society may be constituted of practically equal numbers of men and women, and without such marked variations in different parts of the country as were found in the past.

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**IN SCIEN**

## BOTANY

**Colchicine Has Effect On Colchicum Cells**

► COLCHICUM, the plant that produces colchicine, is not immune to the effects of its own drug, experiments by Dr. Ivor Cornman of the University of Michigan indicate.

Since colchicine produces the sudden evolutionary changes in plants that have made it famous in recent years by a partial checking of cell division, giving new cells two or more times the normal number of heredity-bearing chromosomes, Dr. Cornman made his tests simply on cell division in root tips of two species of Colchicum. Weak colchicine solutions had no effect, but when the strength was stepped up to 2.5, 5 and 10% the cell-division process was seen first to be hindered, then blocked altogether.

Since there is always colchicine in the tissues of Colchicum, the question naturally arises, how can cell division go on at all? Why doesn't the plant make itself extinct with its own poison? Dr. Cornman doesn't undertake to answer that one. He merely remarks that the immunity must be found somewhere else in the plant's mechanism of cell division.

Details of the research are reported in the *Botanical Gazette*.

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## PHYSIOLOGY

**Deafness Is Sometimes Due to Allergy**

► HEARING CAN be improved or restored in some hard of hearing patients by allergic treatment, Dr. Hugh H. Kuhn, of Hammond, Ind., told the Fifth Annual Forum on Allergy at Cleveland. Not all deafened patients can be helped. In some cases, however, characterized by variation in the degree and time of hearing loss—patients, for example, who hear better on some days and worse on others—the cause may be an unsuspected allergy which causes a swelling of part of the hearing mechanism with consequent loss of some hearing.

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# CE FIELDS

## NUTRITION

### Cooking Peas with Soda May Be O.K. After All

► **COOKING PEAS** with soda (sodium bicarbonate) to keep their bright green color, a custom long frowned upon by nutritionists, may be o.k. after all, it appears.

Nutritionists objected to the soda on the ground that it destroyed some of the vitamin B<sub>1</sub> (thiamin) in the peas. Dr. Harry J. Deuel, Jr., Dr. Cornelia Johnston, Dr. Louise Schauer, and Dr. Sam Rapaport, of the University of Southern California Medical School, have tested the matter by cooking fresh peas and two kinds of frozen peas with and without soda in the cooking water. (*Science*, Jan. 8.)

The experiments show, they report, that there is no greater destruction of the thiamin remaining in the intact pea after cooking with soda than when water alone is used. There is, however, somewhat more destruction of the thiamin that is leached out of the pea during the cooking. The loss amounts to 8.3% in the frozen peas and 3.6% in the fresh peas cooked with soda.

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## GEOLOGY

### Gas Now Wasted Could Be Obtained from Coal Seams

► **FUEL SHORTAGE** in the Northeast could be alleviated by the use of natural gas found in the coal seams in the Eastern coal mining fields. The gas is now wasted, but could be saved and used through a new development on horizontal drilling, declares Leo Ranney, mining engineer and president of the Ranney Oil Mining Company.

Vertical holes have been drilled into the coal seams, but seldom produce enough gas to be of commercial use. The gas exists absorbed in the coal and not in pockets as found in connection with oil deposits. It is therefore necessary to drill along the horizontal seams. This can be done by drilling out like the spokes of a wheel from a central shaft,

or drilling a series of parallel holes from a tunnel.

The holes should be from 2,000 to 5,000 feet in length and cased only for the first 400 feet. The parallel holes may be 800 feet apart. A vacuum is applied to the cased ends and the gas is drawn out of the coal.

Mr. Ranney's studies lead him to believe that there are now 500,000,000 cubic feet of gas wasted each day. He is convinced that it can be gathered and distributed and sold in competition with other gas for household use at a satisfactory profit.

Not only would the salvage of this gas be a profitable business venture, but also it would save the lives of many miners each year. The gas is the well known methane, or fire-damp, which when mixed with air is highly explosive. Approximately 275 men lost their lives in 1940 in major mine explosions in the United States. Used in the home for heating and cooking, methane is as safe as any gas.

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## MEDICINE

### Chronic Sinus Sufferers Relieved by Sulfa Drug

► **RECOVERY FROM** chronic sinus trouble can be achieved in between three and four weeks on the average by local treatment with sulfathiazole, Dr. Roland F. Marx, eye, ear, nose and throat specialist, announced as a result of studies at the University of California Medical School.

Almost three-fourths, 70%, of the patients with maxillary sinusitis were relieved, though their symptoms had persisted on the average for 10 months. The maxillary sinuses, also called the antra, are the ones in the cheek bones.

No undesirable effects either generally or locally were noted. The results were so encouraging that Dr. Marx suggests a trial of sulfathiazole treatment before resorting to surgery in such cases.

The sulfathiazole is dropped directly into the involved sinuses. Most practical method of giving it is in a lubricating base slowly soluble in water. When given in this way, traces of the sulfathiazole powder were recovered from the antrum as long as two weeks after instillation.

Failure of the treatment in less than one-third of the cases seemed due, Dr. Marx reported, to the presence of abundant chronic inflammatory tissue lining the antrum which the drug apparently did not get through.

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## CHEMISTRY

### Soybeans Used in Production Of Laminated Board

► **SOYBEANS ARE** used to produce laminated board, valuable in aircraft and other war industries, in a new method announced by Dr. George H. Brother of the Regional Soybean Industrial Products Laboratory, U. S. Department of Agriculture, in a publication of the American Chemical Society.

Sheets of unsized kraft paper or other fibrous material are soaked with a solution of soybean protein. After drying, stacks of these plastic sheets are united into laminated board by heat and pressure. This method promises to augment the nation's limited supply of high-priority phenolic resin now being used.

Low water-resistance of the resultant board created a problem. Single sheets of the more waterproof phenolic resin placed on the top and bottom of the stack of soybean sheets before pressing, was the solution.

Production of laminated board has been speeded by the new process, Dr. Brother declares, since pressing time for phenolic resin board is about five times as great as when soybean-protein-phenolic material is used.

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## INVENTION

### Change in Patent System Would Hamper Progress

► **PUBLIC MISUNDERSTANDING** of the patent monopoly and the part patents play in encouraging invention and the prompt disclosure of discoveries is jeopardizing the patent system, Dr. Robert E. Wilson, president of the Pan American Petroleum and Transport Company, New York, asserted in an address following the presentation to him of the 1943 Perkin Medal of the American Section of the Society of Chemical Industry.

Secrecy, an alternative to our present system, would retard the nation's progress in both science and industry, the speaker warned.

"Ill-considered legislation may be adopted," Dr. Wilson declared, "which would hamper all research, prevent the prompt and free exchange of information, destroy the market of the independent inventor, and discourage the continuance of American industrial research, of which we are so justly proud."

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