

## PSYCHIATRY

## Facilities Are Meager For Discharged NPs

► THE DISCHARGED soldier who needs treatment for shattered nerves or mental illness may not be able to find it, a survey made by the National Committee for Mental Hygiene reveals.

There are 25 states without a single community clinic and "vast areas" in other states where no psychiatric help is available, it was found. Of all the established hospitals and clinics in the entire country, only 139 certified their preparedness to treat mental casualties.

Although the veteran is entitled to treatment, the Veterans Administration can't provide it when neither clinics nor psychiatrists are available, the Committee reports.

"The number of Veterans Administration neuropsychiatric hospitals is at present limited to 30," the Committee states. "They offer hospitalization to all who need it but there is overcrowding. The most serious deficiency, however, occurs in connection with outpatient treatment. Because many of these hospitals are located near large cities the outpatient treatment which they have to offer is impossible for men who live in the country.

"Besides, the Veterans Administration cannot furnish or find anything like adequate outpatient clinic facilities for all those discharges who do not need to be hospitalized but do require psychiatric treatment.

"This lack of outpatient care is very serious. Both in the interest of the veteran and in the interest of the citizenry at large, psychiatric care should be available throughout the country; this would necessitate increasing the present number of psychiatrists by at least 10,000 together with the necessary auxiliary staffs."

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## PLANT PHYSIOLOGY

## Colchicine in Small Doses Speeds Plant Growth

► COLCHICINE, the "evolution chemical" that has been used to originate new species of plants by multiplying the heredity-bearing chromosomes of old ones, also has the power of greatly speeding up plant growth when used in weaker concentration, Prof. Earl E. Newcomer of the University of North Carolina states. (*Science*, June 29).

Prof. Newcomer used colchicine in a four-tenths of one per cent solution. He placed one drop of this per day on the

growing points of young oak and chestnut trees, hazel bushes and other plants. In some cases the treatment produced unfavorable results, even death, but in 16 seedlings of the species named he found that growth went on at double the usual rate.

In previous researches by two Chinese researchers, T. Loo and Y. Tang, a speeding-up of seed germination in corn, rice, wheat, cabbage and mungo bean had been reported.

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## PALEONTOLOGY

## Fossil Mites Found in Marble Desk Pen Base

► TWO FOSSIL mites, eight-legged creatures related to spiders, have been found embedded in the polished stone of desk pen bases made of onyx-marble from a quarry in Arizona. They represent an entirely new group of arachnids, states Prof. Alexander Petrunkevitch, Yale University paleontologist, who has made a close study of them.

The two specimens are quite small: over-all body length is approximately one-eighth of an inch, which is also the length of the longest leg. They are remarkably well preserved; the bristles with which they were covered and the tiny claws at the ends of the legs are clearly visible under low powers of the microscope.

The onyx in which the specimens are embedded was formed out of lime-charged water in a cave of relatively recent geologic date, classified as Cenozoic by geologists. The dead mites were apparently washed in and left behind in the thickening calcite slush as the water slowly evaporated. Finally it hardened to solid, dark-brown stone, holding them fast.

The two pen-bases were sent to Prof. Petrunkevitch by J. W. Fisher, president of the company that owns the quarry. One of them has been returned to him; the other, which holds the type specimen, is retained in the Peabody Museum.

Because certain details of the leg formation suggest that the mites may in life have progressed with a kicking movement, the new genus has been given the generic name *Calcitro*, which is a Latin word meaning "kicker". The second or specific name is *fisheri*, in honor of Mr. Fisher, the original finder of the specimens.

Detailed description of the new fossil species is published in *American Journal of Science* (June).

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# IN SCIEN

## ASTRONOMY

## Venus Mistaken for Jap Balloon by Observers

► THE PLANET Venus, which is bright enough to be seen in daylight, was mistaken by lookouts for Jap balloons, a number of which have been reaching the Pacific Coast.

Inmates at San Quentin Prison, where regular watches are kept for the enemy balloons, reported recently that a Jap balloon could be seen very high and nearly overhead, though slightly south of the prison, states Leavitt Baker, Jr., deputy in charge of identification, communication and records. Several days later at about the same time a balloon was again reported in approximately the same position.

Upon contacting the Lick Observatory, Mr. Baker learned that the planet Venus was in the exact position indicated, and, though it had reached its maximum brightness late in May, was still visible to the naked eye in full daylight. Checking with the Interceptor Command, he learned that hundreds of reports had been received throughout the area for balloons in this position.

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## ELECTRONICS

## Super-Tool Measures Infinitesimal Movements

► AN ELECTRICAL instrument, so sensitive that it can measure movements, or changes in position, as small as one-tenth of a millionth of an inch, has been developed at the Battelle Memorial Institute. It is a new super-tool for scientists to measure the position of either slowly or rapidly moving objects without touching the object itself. Its first practical application was in measuring the errors in high-precision lathe spindles used in machining aircraft motor parts.

The instrument is also the heart of an apparatus for measuring and recording the changes in crystal structure when steel is heated rapidly, as in electric welding. Other possible, but as yet undeveloped, uses of this electrical micrometer are as a meter to indicate the power output of airplane engines in flight, and as a means of measuring roughness and hardness of metallic surfaces.

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# CE FIELDS

## CERAMICS

### Plants in Glass Pot Feed on the Glass Itself

► GROWING plants in glass flower pots will feed on the walls of the pots themselves if they are made of a new nutrient glass fertilizer. The glass will supply all the necessary food elements except nitrogen, organic matter and water.

This use is suggested by A. E. Badger and R. H. Bray of the department of ceramics engineering of the University of Illinois as one of the results of work carried out on the solubility of fused mixtures of rock phosphate, potassium carbonate, and silica.

Should proper solubilities be obtainable with the more complex mixtures, these scientists state, and costs be competitive with present fertilizers, glass fertilizers may offer interesting advantages. The ease with which glass can be manipulated, the scientists say, suggests many commercial adaptations for soilless growth experiments as well as ordinary applications for soil enrichment.

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## NAVIGATION

### Location of Submerged Sub Found by Observing Sun

► THE GEOGRAPHIC position of a submarine can be determined when it is 60 feet under water by observing the sun through the periscope.

In a submarine submerged off the Yucatan peninsula, Paul R. Frank took measurements of the sun as it crossed the meridian and found his position exactly. This is one of the first times a "fix" has ever been obtained from a submarine while submerged, he states in the United States Naval Institute Proceedings.

Navigators on submarines conducting submerged patrol near the equator might find useful the ability to obtain the position of the ship without surfacing, believes Mr. Frank, biographical information on whom must be kept secret for security reasons.

It would even be possible for the position of a submerged submarine to be secured not only near the ecliptic, but for all the Pacific submarine patrol areas, with an error of only about two miles,

he states.

The sun was almost directly overhead at the time Mr. Frank determined his submerged position. Azimuth readings were taken at half-minute intervals from 10 minutes before until 10 minutes after local noon. From these data were found points on the earth's surface directly beneath the sun and only 150 miles away. The point of intersection of these lines accurately indicated the position of the ship, Mr. Frank reported.

Since the submarine was proceeding at slowest submerged speed, the movement of the ship was disregarded. The only difficulty encountered occurred when the ship slightly changed its position in relation to the horizon during one stage of the observations. But since the sun was so nearly overhead, a slight change in the angle of the ship caused a considerable and immediately apparent error in the bearings.

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## AERONAUTICS

### First Jet-Propelled Plane Is Now a Museum Piece

► AMERICA'S first jet-propelled airplane is now a museum piece, on display to the public at the Smithsonian Institution in Washington, D. C. It is the experimental plane built by Bell Aircraft Corporation for the Army Air Forces, and is the first jet-propelled plane constructed and flown in the United States.

No longer needed in the military service, because many additional jet-propelled planes have been built, it was transferred to the Smithsonian by the War Department to take its place in the Institution's historical collection of famous aircraft.

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## HERPETOLOGY

### Six Grass Snakes Arrive In U. S. from England

► SIX GRASS snakes have arrived at the Philadelphia Zoo from England. Although the grass snake resembles our own garter snakes, it is actually a water snake which differs from its American relatives by laying eggs instead of producing its young alive.

The coming of these snakes, shipped from the Regent's Park Zoo in London, marks the resumption of trading between the two institutions. A shipment of birds and mammals, now being readied at the zoo, will soon be sent to the London institution.

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## CHEMISTRY

### Eggs Kept in Water Glass Should Also Be Cool

► EGGS ARE scarce, and are expected to become scarcer. Persons who own chickens, or have any other means of acquiring surplus eggs, and who intend putting them up in water-glass, a time-honored method of preserving eggs, are advised not to depend on this method alone, but to keep them well refrigerated also, by Prof. G. O. Hall of Cornell University, who has just concluded a series of experiments in this field.

Eggs of uniform quality were placed in water glass and held for six months. One lot was kept at temperatures of 34 to 36 degrees Fahrenheit, another at 55 to 58 degrees, and a third at ordinary room temperature.

The eggs held at 34 to 36 degrees rivaled fresh eggs in all respects except flavor and odor. Of 189 eggs candled, 178 were of A grade quality or better. Appearance of these eggs on breaking the shells was satisfactory.

Of 239 eggs held from 55 to 58 degrees, 173 had to be classed inedible, according to recognized market classifications, because of stuck yolks.

In eggs held at room temperature (40 to 90 degrees, F.) none graded higher than B, and 142 of 187 were graded inedible because of stuck yolks. When broken, these eggs had little or no thick white and the yolks were very flat. It was difficult to break the eggs without mixing yolk and white, Prof. Hall reports.

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## CHEMISTRY

### Dinitrates Improve Diesel Fuel Ignition

► IMPROVING the ignition qualities of Diesel fuels by the addition of what might be called mild-mannered cousins of TNT is the at first slightly startling proposal that won patent 2,378,466 for Dr. George O. Curme, Jr., chemist in the laboratories of the Carbide and Carbon Chemicals Corporation.

TNT, nitroglycerin and other high explosives are trinitrates of carbon-containing compounds. To pep up the often sluggish ignition of diesel oils, Dr. Curme adds small percentages of the dinitrates of either polyethylene glycol or polypropylene glycol. These dinitrates are chemically somewhat similar to trinitrates, but are less temperamental in their behavior.

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