

## CHEMISTRY

**Ethyl Silicate Paint  
Is Heat, Fire Resistant**

➤ A COLORLESS liquid mixed with pigments promises new paints which resist heat, retard fire and do not darken with age. The liquid is ethyl silicate, use of which was reported to the American Chemical Society by H. D. Cogan and C. A. Setterstrom of the Mellon Institute of Industrial Research.

The new paints are expected to be particularly useful in decorating and protecting theatrical scenery, industrial fabrics, furnace castings and the walls and chimneys of chemical plants.

Pigments to be used with ethyl silicate include ochre, sienna, chromium oxide, iron oxide, titanium oxide for white and carbon black for black.

Ethyl silicate has previously been used in protecting stone statues and private dwellings from weathering and for increasing the hardness of stone, brick and concrete in building construction.

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## PUBLIC HEALTH

**Cafeterias Have Dirtier  
Dishes than Restaurants**

➤ DISHES ARE NOT washed as clean in cafeterias as in luncheonettes and restaurants with waiter service, Hyman Kleinfeld and Leon Buchbinder of the New York City health department found in a survey of 1,005 New York restaurants.

The quality of washing as measured by the swab rinse test was in general "very poor." The situation is probably as bad in other places as in New York.

More than three times as many cups and glasses washed by machine passed the test for cleanliness as those washed by hand. But only about two-fifths even of the machine-washed passed the test, and almost nine-tenths of the eating places used hand washing methods entirely or in part.

Hand-washed spoons and forks "passed" in as high a percentage as the machine-washed spoons and forks.

Only about 5% of the hand-washed silverware came from establishments that really made a serious attempt to get these utensils properly cleansed. The findings with this small group were about 50% better than those from the remaining 95% of the samples which came from establishments

in which less care is taken.

Another small sample washed by a special silverware machine yielded a passing percentage about twice as good as the general average for machine washing.

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## PSYCHOLOGY

**New Evidence Scores Men  
Better Drivers than Women**

➤ HERE'S NEW evidence in the argument as to whether men are better drivers than women:

Tests conducted by highway safety engineers at the recent Ohio State Fair showed that the men have a quicker reaction time. That is the time it takes after seeing a hazard to apply the brakes.

In tests on more than 1,000 drivers, the engineers found that men had an average reaction time of fifty-seven hundredths of a second, compared with sixty-two hundredths of a second for the women.

Your reaction time increases with age, the tests revealed, but persons under the age of 20 are slower in applying the brakes than those in the 20-29 group. Above the age of 29, the time increased.

The machine used to test the reaction time of drivers was the perception-reaction device designed and built by the division of traffic and safety of the Ohio Department of Highways. A chronoscope measures the time a driver takes to lift his foot off the accelerator and press down the brake pedal of the controls of a standard automobile after a red light is flashed.

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## INVENTION

**Lucite Guides Light  
In Code Translation**

➤ DOT-AND-DASH telegraphic code printed on paper tape can be translated into electrical sending over the wire by a device on which Paul M. Rainey of Martinsville, N. J., has received patent 2,410,104. Instead of shooting light through the tape to a photocell on the other side, with consequent gambling from accidental spots and imperfections on the tape, Mr. Rainey's invention uses reflected light, guiding the reflection from the lamp to the tape, thence to the photocell by means of a V-shaped piece of Lucite. Patent rights are assigned to the Federal Telephone and Radio Corporation.

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**IN SCIENCE**

## PUBLIC HEALTH

**Western, Middle States  
Rank Highest in Health**

➤ THE FAR WEST and the middle states were given top ranking in health over all regions of the United States by Dr. Carl W. Strow, of the Research Council for Economic Security, Chicago, in a report to the American Public Health Association.

The southeast and southwest regions went into the low ranks designated as underprivileged health regions.

Health rankings were made on the basis of infant deaths, tuberculosis death rate, deaths from six infectious and contagious diseases and the death rate in the age group one to 60 years.

Climate, population make-up, public health and medical care facilities, economic resources and culture account for the differences in health ranking.

Equal health opportunities throughout the nation can be provided in two ways: (1) by shifting financial resources within the country; (2) by economic and cultural reconstruction of the underprivileged areas.

"Both should be used," Dr. Strow declared.

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## ELECTRONICS

**Electronic Organ Has  
Tones of 1,333 Pipes**

➤ WARTIME electronics work has produced a new musical instrument which boasts the numerical combinations of a pipe organ with 1,333 pipes. The electronic organ was demonstrated to the Acoustical Society of America.

Named the Connsonata, the new organ produces tones and controls pitch electronically. There are no moving mechanical parts as the instrument produces tones with vacuum tube oscillators.

Developed by C. G. Conn Ltd., Elkhart, Ind., the electronic organ is claimed to be more capable than the conventional pipe organ in interpreting orchestral compositions transcribed for the pipe organ. It has keyboard and pedals similar to the pipe organ.

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# E FIELDS

## BOTANY

### Some Folks Cultivate Hay Fever's Cause, Ragweed

► RAGWEED, the bane of hayfever victims' existence, is actually cultivated in the Dominican Republic and used by the country people there in poultices for sundry aches and pains.

This curious bit of folk medicine is reported in *Science* (Nov. 8) by a father-and-son botanical team, H. A. Allard of Washington, and Howard F. Allard, now doing research on rubber problems, with headquarters at Ciudad Trujillo.

The ragweed cultivated in the Dominican Republic is not the same species as either of the two most common trouble-makers found in this country, though it is closely related. Oddly enough, despite the cultivation of the weed, persons sensitive to ragweed pollen seldom have to sneeze in the island republic. There just isn't enough wild ragweed to count.

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## ICHTHYOLOGY

### Salmon Add New Mystery To Their Migration Habits

► DO SALMON eggs "remember"?

A new angle has been added to the already tangled riddle of salmon migration by the failure of Canadian fisheries men to restock a depleted river, once rich in fish, by planting its headwaters with eggs taken from other waters in the same system. The story is told by Dr. R. E. Foerster, director of the Biological Board of Canada.

Eagle river in British Columbia, once a fishing ground for the high-grade, red-fleshed sockeye salmon, long ago lost its profitable silver horde. In an effort to build it up again, millions of eggs were transplanted from two other sources over more than ten years. The eggs hatched all right, and before the young fish left on their migration to the sea many of them were marked by clipping certain fins.

When the time came for the matured fish to come in from the sea and migrate upstream, the marked individuals were very carefully watched for. But of thousands of marked fish only a few scattering individuals were ever caught and

identified.

They did not turn up in other rivers, either. Dr. Foerster suggests that the fingerlings may have failed to reach the sea, either through capture by other fish or by remaining permanently in a lake that is part of the Eagle river system. There is, however, no proof for this theory. But if the explanation does not hold, no other satisfactory one seems to be at hand.

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## PSYCHOLOGY

### Teachers Can Prevent Mental Breakdowns

► TEACHERS can help to prevent mental breakdowns, Dr. Morton A. Seidenfeld, psychological services director for the National Foundation for Infantile Paralysis, declared.

Most competent teachers can learn to recognize early signs and symptoms of behavior which show the child's mental health needs attention.

Orderliness, politeness, taking part in prescribed activities and freedom from misbehavior, many teachers will be surprised to learn, may be a veneer concealing deep-seated mental disturbances in the child.

To give real mental health help to the children, the teacher must eliminate in herself those attitudes which pay premiums on the child's capacity to conform superficially in the class room.

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## NUTRITION

### Food, Time Needed To Restore Starving

► ALL THE starvation during the war was not in European famine areas and concentration camps. There was a starvation area in Minnesota where 34 men were found suffering from hunger, weakness, anemia, edema, loss of endurance, polyuria, bradycardia and depression.

This was a man-made starvation undertaken in the interests of medical science.

Conclusion of the study reported by Dr. Ancel Keys of the University of Minnesota who directed it: Food and time, not vitamin pills or protein supplements, are what is needed to restore the starving to health. Between 3,000 and 4,000 calories per day and from six months to one year are the amounts of food and time needed.

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## MEDICINE

### Diphtheria Epidemic Need Not Be Feared

► FEAR THAT we are in for a serious diphtheria situation in the United States is dispelled by study of diphtheria epidemic trends, Dr. Gaylord W. Anderson, Mayo professor and director of the University of Minnesota School of Public Health, reported to the American Public Health Association.

The only significant episode in the past five years was the "amazingly high" diphtheria rate reached in certain occupied areas in northwestern Europe. Appearance of new, virulent strains of diphtheria probably had less to do with this than secondary epidemiological factors such as poor sanitation, housing and health facilities.

The rise in diphtheria in the United States during the past two years was probably due to normal periodic fluctuations of the disease. It is now declining rapidly in those parts of the country chiefly responsible for the rise.

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## CHEMISTRY

### U. S. May Apply Mica Substitute as Insulation

► MICA SUBSTITUTE, a German wartime development for use in electrical instruments, may find American applications in the manufacture of high frequency insulation materials for radar and other equipment. It is a synthetic resin.

Manufacture of this material involves making a vinyl resin known as a vinyl carbazole and changing it into a polyvinyl carbazole. A solution of this in tetrahydrofuran can be cast in thin foils. These were used as mica substitutes in condenser dielectrics in Germany.

A report, prepared by Dr. G. M. Kline of the National Bureau of Standards, who studied the method in postwar Germany, has just been issued by the Office of Technical Services, U. S. Department of Commerce.

Orders for the report (*Polyvinyl Carbazole in Germany*: PB-33272; photostat, \$1; microfilm, \$1; 11 pages) should be addressed to the Office of Technical Services, Department of Commerce, Washington 25, D. C., and accompanied by check or money order, payable to the Treasurer of the United States.

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