



#### NEW AUSTRIAN RAIL BUS

*This new railroad bus is the latest creation of the Daimler Motor Works in Vienna, Austria. Equipped with rubber tires for easy riding over steel rails, the streamlined, 73 feet long vehicle has a top speed of 93 miles an hour. Its wheels have steel flanges to keep on the track but the whole weight is supported by ordinary pneumatic rubber tires which absorb shocks.*

#### PSYCHOLOGY

## Adopts Alice-in-Wonderland World to Test Vision Theory

**S**PECTACLES with inverting lenses that would turn everything seen upside down and produce right-left reversal were worn continuously for two weeks by Dr. Joseph Peterson, psychologist of George Peabody College for Teachers, in an effort to test out why we see things as we do.

He wanted to know whether his eyes would become accustomed to such an Alice-in-Wonderland world so that objects would appear to him as right side up again, or whether he would have to go through the process of learning how to handle objects and how to move about so as to miss obstacles and touch desired things. Manipulation or other direct contact with objects in the optically artificially environment was found to be necessary as a basis for recognition of the objects.

In normal vision, the images of objects about us are turned upside down on the retina of the eye just as they are on the focusing glass and on the negative of a photographic camera. But we really see

in the brain rather than in the eye. How these images are set right side up again by the perception is something which has long been a puzzle to scientists. Some contend that the organism after practice will correct for this inverted vision. Others have thought that we learn by handling objects which way they are standing and come to interpret our vision in such a way that it fits in with the experience of our other senses.

Dr. Peterson's experiment seems to confirm the latter theory.

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#### PLANT PHYSIOLOGY

### Blanching Celery, Apples Give Off Ethylene Gas

**E**THYLENE gas, widely used to blanch celery, bring the glow of ripe color to the skins of fruit, and otherwise hasten the maturing of garden products, is actually generated by plants in the natural process of maturing for the market.

Such are the indications of researches conducted at the Minnesota Agricultural Experiment Station by R. C. Nelson and R. B. Harvey, and independently at the Low Temperature Research Station at Cambridge University, England.

In their experiments, Nelson and Harvey used young tomato plants as "indicators" for the gas. The response of a tomato plant to ethylene is characteristic. It arches its leaves downward.

These "indicator" tomato plants were put into closed glass vessels. Into similar vessels quantities of a self-blanching variety of celery were introduced. After two hours, the gases from the celery vessels were drawn into the glass prisons of the tomato plants. The leaf-stems of the latter curved downward strongly, showing that a compound with the physiological effects of ethylene was produced by the celery.

In a parallel test, using a non-blanching celery variety, the tomato plants did not respond: no ethylene was being produced.

Similar results were obtained in the Cambridge University experiments, in which the ethylene gas was produced by ripening apples.

Nelson and Harvey call attention to a practical significance of this discovery. When ethylene, best known as a constituent of illuminating gas, first began to be widely used for the treatment of fruits and vegetables, the question was raised whether it might not possibly have harmful effects.

Now, they state, "Since it has been shown to be produced by blanching celery under natural conditions, any fear of artificially using this gas should be removed from the minds of the public."

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#### GENETICS

### Brown Eye Color Found To be Linked With Sex

**I**NHERITANCE of brown eyes is connected with sex, but yellow-eyed persons get their eye color by an entirely different hereditary mechanism, it is indicated by a study of more than 5,000 persons whose eyes were examined by Prof. G. P. Frets, of Rotterdam, Holland.

Brown eyes are much more frequent among women than among men, Prof. Frets reported. (*Eugenical News*, Jan-Feb.). Of the 5,334 persons examined, 514 had plain brown eyes. And 329 of these were women as against 185 brown-eyed men.

The blue-eyed group, those with blue

or blue-gray eyes, contained proportionately more men. This group was larger, 1,062 persons, and 504 of them were men.

The distribution of yellow coloring in the eyes does not seem to follow this scheme of discrimination between the sexes.

Eye color is apparently handed down from parents to children by means of two pairs of hereditary factors. There is one pair of factors for brown color and the absence of brown color which makes for blue eyes. Another pair of factors carries yellow and the absence of yellow. The first of these pairs seems to be linked in some way with sex.

Blue eye color appears to be a racial characteristic which causes the individuals in certain racial groups to have eyes that are blue with a little yellow in them and others with blue eyes. Probably no population has ever existed in which everyone had pure blue eyes, Prof. Frets said.

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#### CLIMATOLOGY

## Great Lakes Act as Giant Air Conditioning System

CANADA and the United States are joint owners of a tremendous and efficient air conditioning system—the Great Lakes. How this system works was described by Dr. John Patterson, director of the Canadian Meteorological Service, to the Royal Society of Canada.

In summer, these huge inland seas act to cool the air and remove excess moisture. In winter they reverse the process: the stored heat they have captured in summer goes back into the cold air, and at the same time they evaporate water to temper winter dryness.

Where in an ordinary drainage basin the amount of water surface is practically negligible when compared to the land area drained, a peculiar feature of the Great Lakes system is that the lakes themselves occupy more than one-third of the entire area from which they derive water. Thus there is a very large amount of evaporation from the water surface, in addition to that from the land, from transpiration of plants, and the many other factors involved.

The average amount of precipitation over the area is about twenty inches per year. Of this, Dr. Patterson and his staff have found that at least nine inches is lost in evaporation, which for the water surface alone this amount would be about three times as great.

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#### METERING THE SUNSHINE

*Scientists are examining the new device for measuring the ultraviolet irradiation that puts the sunshine vitamin D into milk. On the left is Dr. H. C. Rentschler, Westinghouse Research Laboratories, and in the background holding the "electric eye" is Dr. G. C. Supplee, Borden Company.*

#### PHYSIOLOGY

## Find Way to Measure Amount Of Sunshine Vitamin in Milk

PARENTS and physicians alike rejoiced when it became possible to put vitamin D into milk. Milk is in many ways an ideal food for infants and children but it is sadly deficient in the sunshine vitamin, as D is often termed.

Now scientists have gone a step further and found a way to measure the amount of sunshine vitamin in the milk when it is put there by the action of ultraviolet light. This is important. Baby specialists and nutrition experts have recently pointed out that lack of such a measure was one serious drawback to relying on vitamin D-enriched milk as sole source of this vitamin.

The method of measuring the sunshine in milk was developed by Dr. H. C. Rentschler of the Westinghouse Research Laboratories and tested by Dr. G. C. Supplee in the plant of the Borden Company, the dairy that holds the patent on the irradiation process for milk.

Strictly, Dr. Rentschler's newly-announced method does not measure the

actual amount of the vitamin. Instead it measures, by the photo-electric cell, the amount of ultraviolet light playing on the milk during every minute of the irradiation process.

This is all that it is necessary to measure, Dr. Supplee explained, since scientists have known for years the amount of irradiation needed to impregnate the milk with the required amount of vitamin D. The big thing was to find a way of making sure that this required amount of ultraviolet light was reaching the milk constantly during the process, so that every quart of the irradiated milk delivered to a baby's home would contain the actual amount of vitamin D it was supposed to have.

Other ways of putting vitamin D into milk have been found besides the irradiation method, but Dr. Rentschler's new measure is useful only for determining the vitamin D content of irradiated milk.

Babies and children need this vitamin to make them grow strong and healthy