

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

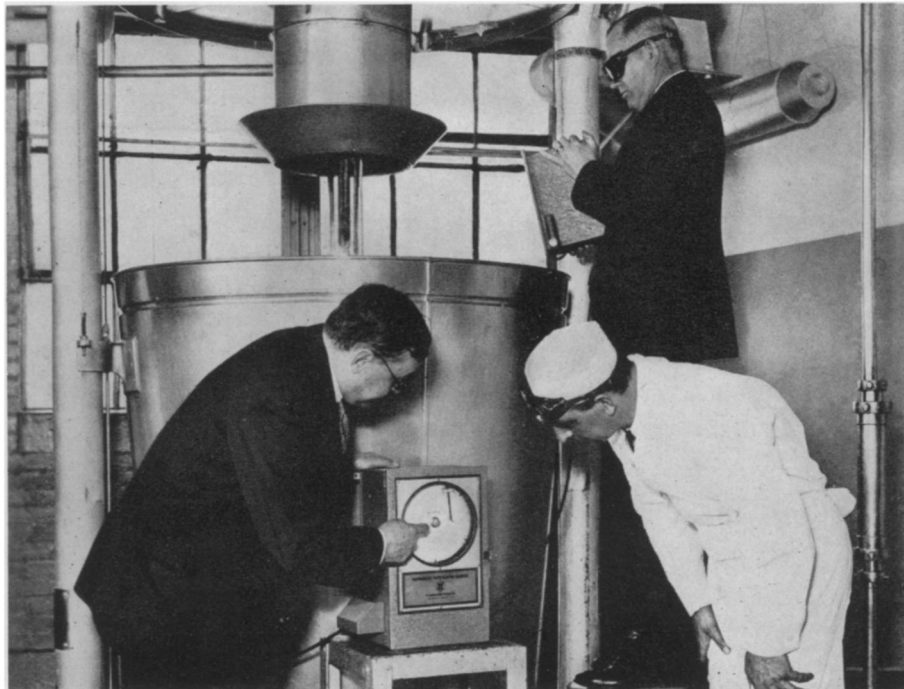
CANADA and the United States are joint owners of a tremendous and efficient air conditioning system—the Great Lakes. How this system works was described by Dr. John Patterson, director of the Canadian Meteorological Service, to the Royal Society of Canada.

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

and to protect them from rickets. The sun's ultraviolet rays will produce the vitamin by acting on the ergosterol of human skin. But in cities and most temperate zone countries the sun cannot be relied on as sole source of this vitamin.

Cod liver oil, well supplied with vitamin D, has been the standard way of giv-

ing it to babies and children. Giving it in a glass of milk, a dish of cereal, a slice of bread or in some other food is much pleasanter and easier. Important, however, are tests like Dr. Rentschler's to make sure every day's allotment of the foods contains the amount of vitamin needed each day.

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MEDICINE

Anti-Beriberi Vitamin Now Used to Treat Diabetes

LARGE amounts of pure crystals of anti-beriberi vitamin B₁ are being given to diabetic patients with "extremely interesting" results. This suggests that this vitamin may become an important part of the treatment of some cases of diabetes.

This new use of the vitamin and new approach to the diabetes problem is announced by R. R. Williams, Robert E. Waterman and John C. Keresztesy of the Bell Telephone Laboratories. (*Science*, June 1). Mr. Williams and his associates developed a chemical method of obtaining the vitamin in pure crystalline form from rice polishings. Its use in diabetes is being tried by Dr. Martin G. Vorhaus of New York, who is scheduled to report further details at the coming meetings of the American Gastro-Enterological Association and the American Medical Association.

Lack of this vitamin has long been known to produce beriberi, a severe nervous disease chiefly confined to the Orient, where the native diet consists too exclusively of highly polished rice or other carbohydrate foods lacking in the vitamin. Disturbance in the way the body handles the carbohydrate foods such as potatoes and sugar is an important feature of diabetes. This disturbance has been ascribed to failure of part of the pancreas to produce enough insulin. Recent studies have indicated that vitamin deficiency might also affect the body's handling of the carbohydrates. Animals deprived of the vitamin develop certain symptoms similar to those found in human diabetes. These findings and the availability of the pure vitamin in relatively large amounts suggested its trial on diabetic patients.

A small amount of the pure vitamin will protect rats from beriberi, Mr. Williams and associates found, but this amount is evidently not sufficient for normal growth or good health. Their find-

ings suggest that a more abundant amount of vitamin B₁ is needed to protect people from a variety of less severe diseases than beriberi even though a small amount in the diet will prevent that disease.

Besides diabetes, Dr. Vorhaus suggests that it should be tried in such conditions as anemia, loss of appetite, loss of tone of the digestive organs, colitis and possibly some disorders of the endocrine glands.

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PSYCHOLOGY

Soviet Parachute Jumper Tells How It Feels to Leap

HOW it feels to jump at night from an airplane, drop in somersaults 11,800 feet keeping an eye on a stopwatch, and then finish the ride with a parachute is told vividly by a Soviet "parachute sport-master," M. Zabelin, in a news report from Tass, the telegraphic agency of the U. S. S. R.

Night jumps are far more pleasant than day jumps, says M. Zabelin:

"I sewed a stop-watch on to my left fur gauntlet, in order to be able to calculate the time of falling and the approximate distance from the earth. I adjusted an electric lamp on my chest.

"The airplane rose upwards. At a height of about 3,000 meters (9,842 feet) we discovered clouds advancing towards us, from the north. This cloudiness lowered our ceiling. All attempts made by the pilot Grek, to rise in such a manner so that the Cheliabinsk lights could still be seen, were futile. We decided to retain orientation and stop at a height of 4,500 meters (14,764 feet).

"The airplane made one more round, the pilot gave the signal to jump. I sat down upon the edge of the narrow cabin, lit my lamp and threw myself over backwards. Immediately upon leaving the air-

plane I set my stopwatch going. I fell involuntarily making somersaults in the air; after getting my body straight these somersaults became less frequent, but continued nearly the whole time while falling. I was obliged to find my bearings exclusively by means of my stopwatch, as the sky was completely covered with clouds.

"When my stopwatch showed 60 seconds I pulled the ring. A strong dynamic blow ensued, as the result of the opening of the parachute. The crosspiece of my spectacles broke while the tightly fastened girth on my legs gave a violent movement upwards.

"After finding the position of the bonfires of the aerodrome, I was able to determine my drift. Then, these lights disappeared and I unexpectedly felt a knock against the earth. Coming to myself after this knock, I found myself in the middle of a forest while my parachute hung on a tree. Far away, beyond the outskirts of the woods, I could see the Cheliabinsk lights and the airplane descending at the airport.

"I fell 3,600 meters (11,811 feet) without opening my parachute and then 900 meters (2,952 feet) with an open parachute."

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PHYSICS

Magnifying Lenses Made A Thousand Years Ago

LENSES of rock crystal, useable as magnifying and burning glasses, were made in the tenth century, a thousand years ago, by a Benedictine monk named Theophilus, reports Dr. Wilhelm Theobald, Berlin engineer. (*Forschungen und Fortschritte*, May 10).

Use of globes filled with water and specially polished emeralds and other jewels for magnification and making fire has been reported from Egyptian and classic antiquity, but not with the certainty and detail of the account written by Theophilus.

This ingenious medieval ecclesiastic left in his manuscript book of curious arts practised by himself a Latin description of the sawing, grinding and polishing of rock crystal blocks to make lenses that differs from modern methods in details but is identical in principle.

Theophilus made more of a point of the "fire-drawing" powers of his lenses than he did of their possibilities as magnifiers; this is perhaps understandable when the difficulty of striking a light with flint, steel and tinder is considered.

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