

and more marked interruption of the alpha rhythm, (2) its complete disappearance, (3) large random waves, (4) random waves plus bursts of 14-per-second waves.

One subject who fell asleep while trying to carry out a set of instructions as he lay on the couch was awakened by the slamming of a door. Just before he became evidently awake his normal "alpha" brain-rhythms reappeared on the record. For at least this type of person, the experimenters stated, they have become able easily to distinguish the states of sleep.

### Breathing While Reading

Did you ever try to talk or sing with your head inside a bucket?

That is what volunteers did in the psychological laboratory of Prof. Walter R. Miles of Yale University.

The subjects' heads were not exactly in a bucket, but in a roomy metal helmet with a closely-fitting but comfortable thin rubber collar around the neck, so that their breathing rates could be measured.

Contrary to what might be expected, the persons tested breathed more rapidly when they were resting than when they were reading aloud or singing. The less frequent breathing during such activities, however, tended to be deeper, and there was a larger storage of reserve air. The reserve is restored to normal level when the resting phase is resumed.

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### PHOTOGRAPHY-NUTRITION

## Obtain Rare Photograph Of Vitamin B<sub>1</sub> Crystals

See Front Cover

**D**ID you ever see a vitamin? Of course, they don't really look like the alphabet letters in soup, but did you picture them in your mind as anything like the one shown on the cover of this week's SCIENCE NEWS LETTER?

In that rare photograph is shown vitamin B<sub>1</sub>, the one found in whole cereals, green vegetables, fruit, milk and yeast, lack of which causes nervous and intestinal malfunctions, loss of appetite and weight.

The picture was taken by Professors W. A. Hynes and Leo Yanowski, of Fordham University's chemistry department. It was taken with a two-minute exposure by reflected light at a magnification of 20 diameters.

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### GENERAL SCIENCE

# Chimpanzee Is New Ally In Attack on Drug Problem

## Philosophical Society Hears Reports Also on Why Chinese Are Calm; New Findings on Heredity

**D**RUG addiction is not limited to human beings. Sub-human animals can become "dope fiends," too, Drs. Robert M. Yerkes and S. D. Spragg of Yale University reported before the meeting of the American Philosophical Society at Philadelphia.

Drs. Yerkes and Spragg first trained a number of chimpanzees to submit, wholly voluntarily, to hypodermic injections and a number of physical manipulations. Measurements of physical and psychological reactions in the undrugged, pre-addiction stage were then made.

After this, the apes were given injections of morphine, and its effects on their bodily and mental reactions checked against those of their normal state.

One of the animals became a real addict. It would seek the drug injection before it was offered, and if given the choice between food and the needle, would choose the latter.

"It is believed," Dr. Yerkes stated, "that this is the first instance to be reported in which a pronounced desire for morphine, indicated by striving for the injection, has been convincingly demonstrated in an infrahuman animal."

### Placid Races

Chinese calm, the placidity of the women of India, is partly a matter of lower life fires, of a slower burning of food into energy, Dr. Francis G. Benedict of the Carnegie Institution of Washington reported.

Studies on representative members of various races, quite literally "ranged through the world from China to Peru," have been made by physiologists trained in the study technique developed in Dr. Benedict's laboratories in Boston. A collation of their results shows that metabolism, or production of body-energy, is to a large extent a matter of race.

Oriental races in general, it was found, have a metabolism rate lower than that of Caucasians in the United States. The South Indian women of Madras have a very much lower rate—17 per cent. below the Caucasian prediction standards

—and this is further depressed about ten per cent. during deep sleep.

A striking exception to the generally low metabolism rate in the Orient was found in 24 men of the Miao race in Szechuan, in interior China. These individuals showed a metabolism rate 16 per cent. higher than the Caucasian prediction standards. Yet their pulse rate was decidedly slow—55 beats per minute as compared with an average of 75 for Caucasians.

High metabolism rates prevail for American Indians of the Maya and Chilean regions, other investigators found.

### Predestination in Noses

Babies' noses are merely comic to most persons, but to Dr. Charles B. Davenport, formerly director of the Carnegie Institution's Department of Genetics, they already bear signs of the ultimate fate of the infant's face. He reported to the meeting his measurements of many hundreds of infantile noses, and their subsequent developments.

Noses are pretty much predestined to the shapes they will finally have, even before we are born, Dr. Davenport indicated. Like everything else about us, their fate is ruled by hereditary units, the genes.

Where the gene complex of two noses is the same, as in identical twins, the result is practical identity of the nose form. Differences in genes, by family or race, will show up in characteristic family or race noses.

In some infants the eventual shape of the nose is foreshadowed pretty plainly at birth. In others, however, there are differences in rate of growth of different parts that bring about very marked changes as the child grows up.

### Riddle in Heredity

Like does not always beget like, Prof. George H. Shull, veteran Princeton University geneticist, has found in his breeding experiments with the widely distributed little wild plant known as shepherd's purse. He reported a genetical riddle to the Philosophical Society.

A yellow-green plant appeared among