

## Separated Twins Become Unlike

Genetics

The old, old question that scientists are always asking about the rival claims of the influences of heredity and environment has received fresh impetus from the discovery of twin sisters who have been separated since infancy. Dr. H. H. Newman of the University of Chicago, who has made a special study of twins, has been searching for years for just such a case, of which only one other instance has hitherto been studied and recorded in scientific literature.

The girls, said Dr. Newman in a report to the *Journal of Heredity*, were born about twenty years ago in the Chelsea district in London. When they were eighteen months old their mother died. One of her twin daughters, whom Dr. Newman designates as O., was adopted by relatives who shortly after moved to Canada. The other twin, called A., was cared for by friends of the family and lived in London until her foster parents died, when she rejoined her sister, at her home in a small town in Ontario. They had

been separated about seventeen years.

The difference between a small Canadian town and a crowded section of London presents as wide a variation in environment, said Dr. Newman, as one is ever likely to find in the case of separated identical twins. If such circumstances are effective in shaping mental and emotional characters it should show up in such a case, he added.

Physically the less favorable conditions of London, particularly during the lean war years, would appear to have had their effect, for the English twin is about nine pounds lighter than her sister though their resemblance, in spite of her thinness, is very marked.

Both twins received a public school education through the equivalent of the grammar grades and both took a two-year business course, finishing at sixteen, and have worked in offices ever since. The mental and intelligence tests administered by Dr. Newman and his assistants showed, however, a wide dif- (Turn to next page)

## NATURE RAMBLINGS

By FRANK THONE

Natural History



Tarantulas

In practically every community, early spring brings its grocery-store tarantula scare. The honest merchant, handling a new bunch of bananas, is frightened out of a month's growth by finding a hairy monster of a spider nestling among the fruit, which, if it is not mashed by a broom or otherwise hopelessly ruined in the subsequent chase, is exhibited to shuddering customers amid terrible tales of the viciousness and venomous nature of the "reptile".

It is a terrible thing to throw cold water on any one's heroism, but the dull, gray truth remains that the tarantula, even the tropical tarantula smuggled in from Central America, is not as bad as her reputation. She cannot jump for surprising distances; her best performance is only inches where the romancers have given her yards. And as a rule she is too stupefied from her sojourn in cold storage to want to do any jumping at all.

Neither is her bite instantaneously fatal, as is frequently believed. So far as authentic records go, it is not fatal at all, except possibly in the case of small children or adults of very delicate constitution. It is unquestionably poisonous and very painful; it may put the victim into the hospital for days, and is almost certain to cause severe nausea and headache.

Only the tarantula very rarely strikes. She can be handled safely if treated gently, and even likes to be stroked. But it is not likely that the average person will want to go that far with the lady.

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London rose rapidly as a community in Roman days and became one of the largest towns of the Roman Empire.

## Watch for Ice Started

Navigation

The annual springtime watch for ice on the North Atlantic, begun in 1914 in order to prevent the repetition of a disaster such as befell the Titanic, is now under way. The two U. S. Coast Guard cutters, Tampa and Modoc, are alternating in the service during March, April, May, June and as much longer as proves necessary.

The object of the ice patrol service, it is announced by the U. S. Navy's Hydrographic Office, is to locate icebergs and field ice nearest to the North Atlantic steamship lanes. The patrol vessel on duty will determine the southerly, westerly and easterly limits of the ice, and keep in touch with these fields as they move southward. Regular radio messages will be sent out daily giving the location of the ice.

Each day at 7:30 p. m., Eastern Standard Time, the patrol vessel sends a report of the ice to the Hydrographic Office, Washington, following it later in the night by supplementary reports if they are needed. This information is then given publicity by means of the Hydrographic Office's daily ice bulletin, and is broadcast twice each day in code from stations at Washington, Boston, New York

and Norfolk. In addition, a ship can secure information about the ice at any time by radio from the patrol vessel itself.

In order to aid the work of the ice patrol the Hydrographic Office has asked that steamships cooperate by reporting to the patrol vessel any icebergs or obstructions that they may sight, and also surface temperatures of the water at intervals of four hours. In this way, it is hoped to locate more accurately the branches of the Labrador current.

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## Egyptians Had Magnifiers

Optics

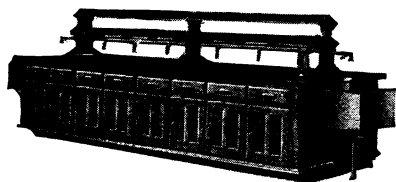
When the eyesight of Egypt's wise men grew feeble from study they used magnifying glasses to make the stone tablets and papyrus rolls easier to read. This is indicated by pieces of round glass from Egypt, one of which, now in the Ashmolean collection, may date back to the first dynasty of Egypt, or about 3500 B. C. That magnifying glasses were known in the famous civilization of Crete, about 1200 B. C., had been shown by two crystal lenses discovered in the Cretan ruins.

*Science News-Letter, March 30, 1929*

## For the Teaching of Chemistry

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## Dawn Man's Brain

*Anthropology*

E. O. JAMES, in *The Beginnings of Man* (Doubleday Doran):

In view of the existence of *Eoanthropus*, with a brain case having a marked similarity to that of *Homo sapiens*, in a period almost certainly anterior to that of the Neanderthal type, it would be illogical to suppose that the apparently intellectually superior Piltdown race was necessarily inferior to its successors in respect of religious emotions. The brain of the "dawn man," though small, comes definitely within the range of variation in size found in modern man. Of course, mere volume of brain is not the only criterion of mental superiority, but, as Elliot Smith has shown, a brain must reach a certain size and weight—950 grammes, or 1,000 c.c. in volume—before it can be the seat of human intelligence. Growth in volume continues till a certain maximum weight is reached; then *development* takes the place of growth, the brain elements entering into more and more complex relations with each other without much increase in size and number.

We now know that it is in the pre-frontal region (*i. e.*, the front part forming the forehead) that the higher mental faculties are centered, and consequently stupidity and dementia follow from the degeneration of this area. In spite of the complexity of the spinal cord, and still more of the medulla and cerebellum, no process confined to these structures involves human consciousness. True conscious physical activity belongs to the fore-brain, and almost entirely to the folded layers of gray matter covering the cerebral hemispheres—the so-called cerebral cortex. In *Pithecanthropus* this region was undeveloped, showing that the creature was of low intelligence, and in the Neanderthals it is not fully developed, having a protuberance as in the brain of the anthropoids. The left frontal lobe in particular, which is associated with the power of speech, is not much developed in the lower part, so that probably the cave men had a limited power of speech. In *Homo sapiens* the inferior or third frontal convolution is expanded so as to reach back to the stem of what is called the fissure of Sylvius, forming the anterior boundary of the stem, this new orbital part of the frontal lobe being associated with the faculty of speech. In Sir Arthur Keith's reconstruction of the Piltdown brain, the third frontal convolution reaches the human

## Separated Twins—Cont'd

ference in intellectual attainments, with O., the Canadian twin, always rating consistently higher. Yet both the family judgment and psychological tests showed that emotionally and temperamentally they were very much alike.

Just the opposite state of affairs obtained in the first pair of twins to be studied scientifically, described about four years ago by Dr. H. J. Muller of the University of Texas. These twins were very similar in their mental ability and showed considerable variation in emotional traits. It would be premature, Dr. Newman pointed out, to base any very final conclusions on the study of just these two cases, that either emotional or intellectual characters are more strongly inherited or influenced by such outside factors as environment and training. He has succeeded in running down four other sets of separated twins and hopes from the study of these additional cases to obtain more conclusive evidence on this important subject.

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standard, and it is even more prominent in Sir Smith Woodward's cast. Therefore, while some of the parts which develop latest in ourselves were defective in *Eoanthropus*, he was nevertheless far removed not only from the "dumb animals," including the gorilla and even *Pithecanthropus*, but also from *Homo Neanderthalensis*.

In view of these somewhat technical anatomical facts, the Piltdown race is seen to be quite definitely human, and if we are compelled to grant the religious emotion to the cave man, it would be illogical to suppose, in the absence of definite evidence to the contrary, that the earlier species, possessing a brain in so many ways like our own, was inferior in this respect. Religion, therefore, was practised in all probability in the Lower Palæolithic, and it may have been part of the original endowment of mankind, though at present we have no positive evidence before the time of the Mousterians.

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An "endless" phonograph record which could be used to record an entire opera or symphony has been produced by a British inventor.

Indian summer is not a season, but is simply a name for any spell of warm autumn weather following a cold snap.