

## PUBLIC HEALTH

# Present Sleeping Sickness Differs From Early Outbreaks

Rages in Summer Instead of Cool Weather, Attacks Older Persons Rather Than Young And Displays New Symptoms

**T**HE ST. LOUIS sleeping sickness outbreak differs in several respects from those of past years. It came in high summer, whereas previous outbreaks occurred in winter or early spring. It is attacking middle-aged and old persons for the most part; in earlier epidemics the young have been the chief victims. Furthermore, the symptoms by which a physician may recognize the disease show some differences from those of previously recorded cases.

These points are brought out in detail in a statement which has been sent to all state, city and local health officers in the country by the U. S. Public Health Service. The statement, which was written by Dr. James P. Leake, who is senior representative of the Public Health Service in the afflicted St. Louis area, is in part as follows:

"From August 7 to 25, inclusive, there were reported in the metropolitan area of St. Louis 213 cases of epidemic encephalitis with 28 deaths, a case fatality of 13 per cent. so far. It is apparent that the incidence for this outbreak will reach at least 30 per one hundred thousand population. Some of the cases date back to the latter part of July for their onset. Cases of apparently the same inception have been reported from other cities in Missouri and neighboring States, but it is to be remembered that so-called epidemic or lethargic encephalitis, and encephalitis not otherwise designated, have a yearly incidence throughout the entire United States similar in magnitude to poliomyelitis as judged from mortality statistics, usually without the marked seasonal and yearly fluctuation of poliomyelitis.

"Cases of lethargic encephalitis occur yearly in St. Louis, the heaviest preceding incidence having been in 1919, 1924, and 1932. Relatively fewer epidemics of this disease have been reported in the United States than in other parts of the world, the disease in the United States being apparently sporadic or endemic. Such outbreaks as have occurred in this country have been, as is

usual elsewhere, in winter or early spring. Preliminary data on age incidence show 19 per cent. of the cases among the 25 per cent. of the population which is under 15 years of age, with 10 per cent. case fatality in this age group. The incidence in this age group is about equally divided between those under and those over 10 years, and all 3 of the deaths in the group were in the former sub-division. Twenty-one per cent. of the cases have been in the age group 15 to 34 years, which comprise 35 per cent. of the total population, and there has been only 3 per cent. case fatality in this age group. Thirty per cent. of the cases have been among the 27 per cent. of the population which is 35 to 54 years old with 20 per cent. case fatality. Another 30 per cent. of the cases have been among those over 55 years old, who comprise only 13 per cent. of the population, and the case fatality in this oldest age group has been 30 per cent. In this respect also, as in seasonal occurrence, this outbreak differs from ordinary epidemic encephalitis, in which the maximum incidence tends to be in youth and the early adult years.

"There have been about 83 male cases to each 100 female, while among the total population concerned there are 96 males to each 100 females. The excess in females has been in the ages over 35 years. (Turn to Page 172)

## ETHNOLOGY

## Arabs Credit Elijah With Changing Melons to Stones

**C**HANGING melons to stones as a stroke of poetic justice against surly and stingy farmers is the miracle credited to the prophet Elijah by Palestinian Arabs to account for the round hollow boulders, some of them broken open to show the seed-like crystals lining their interiors, that litter the fields in the neighborhood of Mt. Carmel.

The legend of Elijah's melons has been dug out of the mass of native

folklore by Dr. Ephraim Ha-Reubeni of the Hebrew University in Jerusalem. It relates that once when the prophet and his disciples were walking along the highway in the noonday heat, Elijah asked some farmers if they might not have a few of the melons with which their fields are filled.

"Those are not melons, they are stones," replied a surly farmer.

"Let it be as you have said!" responded the prophet.

And the melons have been stones to this day.

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## BIOLOGY

## Life Checks Downhill Course of Energy

**L**IVING matter distinguishes itself from non-living matter most fundamentally in its ability to check the downhill course of energy, from higher forms to lower, toward a final dead level when there will be no energy differential at all in the universe and hence nothing happening at all. Entropy is what scientists have called this downhill rush of energy. Life arrests entropy, dams up the course of energy and makes use of it for its own ends, while the non-living is passive and helpless before it.

With this essential difference between living and non-living, Sir Frederick Gowland Hopkins, president of the Royal Society, introduced his presi-



ELIJAH'S MELONS

A "melon" is shown in its natural imbedded position at the top of the picture. The size of these peculiar boulders is indicated by comparison with the matchbox in the lower left corner.

### From Page 163

"The symptomatology of the cases has differed somewhat from most other outbreaks of epidemic encephalitis in that disturbances of the motor functions of the eye are unusual, instead of being usual, and there is a more uniform and moderate meningeal involvement, with corresponding increase in the cell count on spinal puncture. The clinical picture is that of a general febrile disturbance, often with gastro-intestinal symptoms such as vomiting, constipation, or diarrhea; evidences of cerebral involvement—an apathetic or immobile facial expression, usually somnolence, stupor, coma or delirium;—usually a moderately stiff neck, with headache, which is often the first and most pronounced symptom, and other pains, as of the abdomen or legs; tremor and catatonic semi-rigidity are common in the more severe cases. Tendon reflexes, such as those of the elbow, knee, ankle, and superficial reflexes such as those elicited by stroking the abdomen tend to be irregularly diminished or absent, and to vary from day to day. Not infrequently the plantar reflex is extensor, the toes coming up on stroking the outer side of the sole instead of bending down. There may or may not be a Kernig sign. Some patients are very restless and have to be restrained. Irregular paralyses may occur, and hemiplegia, usually transient, is not uncommon."

#### More Workers

Four research workers from the U. S. Army Medical Corps have joined the scientists of the U. S. Public Health Service in the St. Louis encephalitis area. They are: Maj. James S. Simmons, Maj. Virgil H. Cornell, Sgt. George F. Luitpold and Sgt. Jesse F. Rhoads. These four men have had long ex-

perience in the study of insect-borne diseases, and will concentrate their attack on the question of the possibility that the present outbreak of encephalitis is being carried by mosquitoes or other insects.

*Science News Letter, September 9, 1933*

### From Page 167

riddle as the whole discovery of the brewing art itself. However, it is a relatively complicated process, and not all the makers of beer in the primitive world knew about it. The others had another way of changing their starchy grains into sugar.

You will doubtless remember that your physiology teacher, back in school, told you that if you chewed a piece of soda cracker long enough it would begin to taste sweet. Perhaps you tried the trick, and found that it worked.

That is the other way of changing starch into sugar: by means of the ferment or enzyme found in human saliva. And that is the way around the malting problem used by many of the brewers of the world outside the Egyptian-European area. The same technique was used and still is used in the preparation of the saké of Japan and the other Asian rice wines, the chicha of tropical America and the millet beer of central Africa. The women chew at least a part of the grain and then spit it into the fermenting-jars. It sounds messy to us; but it works, and the drinkers of those countries don't mind it. It all depends on what you're used to.

Fermented drinks constituted the "wine card" of almost all peoples at the beginning of the modern era, which Dr. Cooper reckons as of about the date of Columbus' first voyage. At that time very few peoples knew anything about

distillation and the preparation of the strong liquors that have constituted the real crux of the "drink problem" in our own day. Even in Europe, where distillation has reached its maximum, strongly alcoholic beverages were still as good as unknown a century after Columbus. We think of Falstaff as a classic souse, yet he did his toping on wine. There was no whiskey, no brandy, no rum, no cognac, on the long bill he cursed so heartily over.

But not long afterwards, in the days of the Stuart Kings, men were getting drunk on stuff they called "aqua vitae"—a name still surviving in the French *eau de vie* and the Swedish *akvavit*. The same misnamed "water of life" is said to be the basis of the somewhat corrupted Erse word "whisky."

How distillation got to Europe, even as modernly as it did, nobody knows for certain. The art is credited to the Arab alchemists of the later middle ages.

The name *alcohol* is of course Arabic, but it meant originally the fine black powder with which the ladies of the harem darkened their eyelashes, not the liquid used by unbelievers as a foundation for blacking whole eyes. Only by derivation has it been transferred to the limpid but dangerous fluid now too well known to the western world.

But it is unlikely that the Arabs invented distillation. They really invented very little of their own, even in their palmiest days, though they were always very apt pupils of other and older cultures. Much of their alchemy seems to have come from China, and Dr. Cooper believes he has found evidence that the Chinese alchemists knew how to make strong distilled liquors centuries before the art found its way to the Occident.

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### Front Cover Picture

The laboratory has yielded a photograph of striking beauty showing Dr. Joseph Slepian and Leon R. Ludwig, Westinghouse engineers, examining a product of their research.

They have developed a new method of controlling mercury arc devices which is said to be more positive and many times faster in action than methods now used. The arc can be started 60 times a second at any point on the voltage wave, and, since there is no grid to be protected from heating but merely a carbon-dum-pencil dipping in the mercury pool, large currents can be controlled as easily as small ones.

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