SCIENCE NEWS

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RABIES

SPORADIC epidemics of rabies still flare up from time to time in different parts of the country in spite of the advances science has made to protect both man and beast from this justly dreaded disease.

All people who have been bitten by a dog suspected of rabies should, under the advice of their physician, undergo the preventive treatment first developed about 40 years ago by the great French scientist, Louis Pasteur. A wire sent by the neighborhood pharmacist to one of the big drug firms will bring the preventive serum which is injected under the skin of the exposed individual. Several injections are necessary, the number depending on the particular type of serum used. The virus introduced by the bite of the rabid animal travels along the spinal cord slowly and produces the characteristic symptoms only after it reaches and accumulates in the central nervous system. The purpose of the successive injections of the serum is to render the central nervous system immune before the virus can reach this vital tissue.

According to Dr. J. S. Buckley, of the Bureau of Animal Industry of the U. S. Department of Agriculture, governmental experiments are in progress, to determine the efficacy of the inoculation of dogs as a means of preventing epidemics among the canine population. Dog inoculation has been practiced in New England and some of the eastern states with varying success and has been done extensively in Japan where only one death in over 30,000 inoculated dogs was reported. Variation in results is due, experts believe, to difference in virulence or "strength" of the filtrable virus that causes the disease.

Rabies has been known since the earliest times and the pages of the history of medicine are crowded with accounts of extraordinary remedies used by people from ancient down to modern times to ward off the horrors of its final stages. As far back as the Roman era, however, cautery was recommended to remove the poison of the infective bite and cautery with nitric acid is even now a standard practice as an immediate prophylactic measure.

Before the days of Pasteur, death almost inevitably resulted from rabies, but reports from the health department of New York City show that in a period of eleven years over five thousand cases treated by this method showed a mortality of under one per cent.

THE METRIC SYSTEM

LEGISLATION to bring about the use of the metric system of weights and measures in the United States will probably be given further hearings before the Senate Committee on Commerce during the present short session of the congress.

Witnesses in favor of the United States following the example of most foreign countries and adopting the metric system were heard by the committee last week. Local opponents of the change were also heard, but, to give out-of-town objectors a chance to express their views, further sessions will be held, probably shortly after Christmas. One senate joint resolution under consideration calls for an investigation of the metric system by the Bureau of Standards, to determine whether the system would be generally useful to the United States. The other resolution provides that "The United States Department of Commerce is authorized to establish commodity quality units for general use in merchandising after 1935, standardizing the yard to the meter, the quart to the liter, the pound to five hundred grams decimally divided."

The new system would not necessarily mean that people in this country must get used to dealing in terms of meters and liters. In explaining the proposed change, Aubrey Drury, director of the All-American Standards Council, states that our present yard, increased about 10 per cent., makes a meter, but it can be called a world yard. One pound made about 10 per cent. heavier equals 500 grams, or a world pound. And our liquid quart made five per cent. larger becomes a liter, or, if we prefer, a world quart.

This increase in the size of our measures would do away with confusion, rather than add to it, Mr. Drury believes, because of the fact that articles in this country are now measured out by four different sizes of pints, quarts and gallons. Three kinds of ounces and pounds are in use. While a bushel in one state is short measure in another state where different measures are used it is considered quite lawful and acceptable.

Mr. Drury maintains that the cost of making the change to metric standards would be much less than has been estimated by some opponents of the measure. The resolution affects only standards used in buying and selling. Manufacturers would continue to use whatever measure they desired in production.

"In other countries where the change has been made, manufacturers gradually adopted the new system when it suited their interests to do so," he states. "The transition was successfully made in many other great industrial countries without extensive scrapping of machinery and industrial interests have never protested in any of the metric countries nor expressed a desire to return to the obsolete weights and measures."

STUDY OF THE HIGHER APES

THE first real understanding of the mind and personality of a gorilla has been obtained by Dr. Robert M. Yerkes, professor of psychology at Yale University. For six weeks, Congo, a five-year-old mountain gorilla, worked at problems set by Dr. Yerkes. Results of the experiments, just published, show that popular ideas about the African mountain gorilla as a fierce and savage beast are no more accurate than would be our ideas about any other creature that we had met only when it was fighting desperately for its life.

Dr. Yerkes's report states that he never saw this child ape in a rage. Her social relations with him and with other human beings of her acquaintance were entirely

agreeable. In tests of the gorilla's ability, Congo was confronted with bananas, sweet potato and other attractive food, which she could get by learning to use a stick or by pulling a rope in a certain way. In those tests she proved slower mentally than the alert and lively chimpanzee and often she might reasonably have flown into a rage when she failed again and again to master the situation and reach the prize. But the little gorilla would stick at the task, showing patience and judgment far superior to other types of ape that Dr. Yerkes has studied.

The psychologist concludes that, if Congo displays a fair assortment of gorilla emotions and reactions, these apes are placid, rather stoical and slow to solve certain problems, but they are, perhaps, the most intelligent of the higher apes.

The three commonest ape traits, curiosity, destructiveness and imitativeness, seem little developed in Congo. She showed surprisingly little interest in objects of her new world and had no curiosity about sticks or other new things placed within reach, Dr. Yerkes found.

As for imitativeness, Dr. Yerkes writes, "I can truthfully say that I never saw her ape me or any other person."

"If Congo is relatively impulsive, destructive, curious, imitative, she has deceived or misled me amazingly," he adds. "Her behavior has filled my mind with the impression that she is too much aloof from her environment, too little adventurous, or, in the scientific sense, inquiring, to readily and quickly discover solutions of novel problems and adapt herself to extraordinary environmental demands. If this be true, one can understand why the gorilla should be a disappearing race and perhaps also why so little relatively is known about its mental traits and so little sympathy exists between man and gorilla.

"Just because the chimpanzee is much fuller of curiosity and more imitative than the gorilla, it has, I suspect, outstripped its gigantic fellow-ape in the race for anthropoid supremacy."

The test situations were designed to show the extent of the gorilla's adaptivity and understanding. If a desired object could not be touched would she try to make a tool out of a stick? Or would she another time make use of boxes, piling them up to make a ladder? How long would it take her to learn that a banana in a milk bottle could be had at once by turning the bottle upside down? Most of the 20 problems were solved eventually by Congo, Dr. Yerkes says, some by random trial and the selection of a profitable line of action, others by observation of the essential features in the situation and immediate adaptation.

INDIAN MOUNDS IN ILLINOIS

INDIAN graves yielding hundreds of skeletons, besides great quantities of ancient pottery, weapons, ornaments and utensils, have been discovered in a group of mounds known as the "Fisher mounds" near Joliet, Ill., by George Langford, of Joliet, Ill. Authorities on American anthropology regard this as one of the outstanding archeological developments of recent times in this country.

The finds are regarded as of especial significance partly because three, or possibly four, distinct civilizations are represented in successive layers of burials, a very rare occurrence in American archeology; and partly because one of the layers suggests the possible location of the earlier home of the Iroquoian group of Indians, who played a very important part in the history of Colonial settlement and the wars that led to American independence.

A number of years ago Mr. Langford had made a few preliminary examinations of parts of the mound group, but decided to let them alone for the time being. Recently, however, the owner of the farm on which they are situated began plowing over them and because he foresaw their total destruction unless he acted to recover their contents, Mr. Langford began to drive his trenches.

The lowest group of burials were found beneath the original ground level and represented a race of probably great antiquity. Little could be learned of them, however, for they left no gifts with their dead, except a few flints of such crude shape that it is doubtful whether they were tools or weapons at all. These people had skulls ranging from long to medium in proportions and there are indications that the "long-skulls" and the "medium-skulls" were separate and successive tribes.

Above the ground level, and constituting the bulk of the burials in the mounds, were a large number of skeletons of a round-headed, rather slightly-built race, who left gifts of pottery, ornaments and stone and copper tools and weapons in their graves. Some of their workmanship rather suggests that of the Iroquoian tribes of Indians. Inasmuch as these people have never been west of New York during historic times and since their archeological remains have heretofore not been found west of Ohio, this feature of Mr. Langford's work may come to have great significance in the development of Indian history.

The upper layer contains fewer burials. The skulls here are of a very broad-headed race, quite different from the round-heads who preceded them. This layer is of especial interest because the uppermost graves in it contain silver buckles, beads and a few fragments of cloth of European manufacture, marking the first contact of the tribes of this region with white men.

Although he has already recovered about five hundred skeletons and a vast quantity of implements, utensils and weapons from his excavations, Mr. Langford states that he has only made a good beginning on the mounds and that he intends to continue his work until he has made a complete clean-up of the whole site.

REINDEER IN ALASKA

REINDEER grazing has proved such a success that it will become an increasingly important factor in the future of Alaska, says Lawrence J. Palmer, of the U. S. Biological Survey, who has just completed an investigation of this husky new industry of the North. The original stock of around 1,200 reindeer imported from Siberia has increased to about 350,000 since 1902 and over 1,000,000 pounds of reindeer meat was exported from Alaska dur-

ing the years 1924 and 1925, according to the estimates made by the government experts.

Reindeer herding has grown up spontaneously, with pretty much hap-hazard methods among both Esquimo and whites, but many of the large owners have started to fence in their range, build better corrals and systematize generally the handling of the herds. Alaska newspapers a generation or two hence will quite possibly be printing pictures of prize-winning contenders for St. Nicholas's team when improvement of breed in this lusty infant of stock-raising enterprises is put on a better established and more scientific basis.

Reindeer that have been broken to the sled are recommended by the experts who have studied the question, for managing the herds of half-wild unbroken animals. Studies are likewise being made on possible substitutes for the lichen diet, commonly known as reindeer moss, on which reindeer chiefly subsist in the winter. Since these moss-like lichens grow up very slowly after being grazed over, conservation of lichen ranges through feeding other forage is extremely desirable, declares Mr. Palmer.

ITEMS

On a study tour in Africa, Professor R. Bruynoghe, of the department of colonial hygiene of the University of Louvain, had a first-hand opportunity to observe the effect of antimeningococcus vaccination in an epidemic of cerebro-spinal meningitis. This disease, though normally only slightly infectious, causes universal alarm when it assumes epidemic proportions. Patients undergo fearful pain and death usually ensues within a few days. In times past the fatality often ran over seventy per cent. The development of a specific serum, however, has brought this terrific rate down to less than twenty per cent. when its use is begun early enough after the onset of the disease. About 15,000 persons during the African epidemic were given three injections of serum under the skin at intervals of eight days, while the disease raged among workmen in the mines at Karanga in the Belgian Congo. In most cases the inoculation brought only mild discomfort and the epidemic was brought to a full stop.

Dr. Paul A. McIlhenny has reported to the American Medical Association on preventive methods that may head off many of the deformities long associated with leprosy. At the national leprosarium at Carville, La., corrective treatments consisting of massage, baths, exercises and ultraviolet irradiation have been used with success in treating the misshapen hands and feet even of cases of long standing. Since very little preventive work of this character has ever been attempted in leper colonies, physicians are watching the progress of these corrective methods with great interest. So many deformities have been improved that in time cures of the less severe deformities are not regarded as impossible.

Whole chapters of the prehistory of the Chinese are expected to come to light as the result of an archeological expedition to Manchuria and Mongolia now being organized at Tokyo. Relics of the stone age and other ancient periods of man's existence in Asia are sought by the scientists in charge. From what has already been discovered in these regions there is every indication that the surface of this particular habitat of early man has only been scratched yet, archeologically speaking, and that valuable records of his existence in China await the explorer's pick and shovel.

A widening of the field of production of helium gas to include the Canadian province of Ontario has been recently announced. The Ontario government claims that a deposit of helium gas has been discovered at Inglewood, about 40 miles from Toronto. Three wells have been taken over by the government and are being worked. Commercial development of helium gas on a large scale is expected to result in time. The discovery was made during the war but was kept a secret until recently when the wells were taken over by the government.

Fossil nuts discovered at Mangonui, New Zealand, indicate that the coconut palm flourished there possibly as early as a million years ago, according to Professor Edward W. Berry, of Johns Hopkins University. There have been two opinions among botanists as to the place of origin and the method of distribution of the coconut palm. Alphonse De Candolle and other botanists have held that its place of origin was Asia or Polynesia and that nuts carried by the ocean currents and tossed ashore by the waves spread the palm from land to land. On the other hand, James Cook collected and published abundant and convincing evidence of its South American origin and its inability to establish or maintain itself in any location without the assistance of man. Professor Berry identifies the deposits in which these fossils were discovered as Pliocene or pre-Pliocene in age. This would indicate that these coconuts were growing wild, as there is no evidence in that remote age of men who might have cultivated them.

Cannibal butterflies and caterpillars that give off electric shocks are among the phenomena of nature described by Dr. Austin H. Clark, of the U. S. National Museum, in the annual report of the Smithsonian Institution. Certain butterflies found in the Orient and in our own New England reverse the usual vegetarian habits of their kind and feed on plant lice and mealy bugs during the larval stage, says Dr. Clark. Little butterflies of the kind known as hairstreaks carry this practice to the point of attacking their own species during the helpless state of transition from the larva into the pupa. Before the pupa case is hardened preparatory for the dormant period during the winter, the insect is practically at the mercy of its fellows, who frequently fall upon it and devour it. The "electric" caterpillars were found in Nigeria feeding on mistletoe flowers. While handling them the collector experienced a tingling sensation distinctly resembling an electric shock, though the insects had no bristles or other protrusions that would cause irritation.