

ARCHAEOLOGY

Explores "Stepping Stone" Of Earliest Migrations

DISCOVERY of two decorated lamps and a quantity of skeletal remains is reported to the Smithsonian Institution from its expedition now excavating Kodiak Island, one of the important "stepping stones" of Alaska where some of the earliest immigrants of America are believed to have tarried.

Importance of Kodiak in American prehistory was called to scientific notice four years ago, when Dr. Ales Hrdlicka of the Smithsonian staff found evidence that the island was inhabited successively by peoples of varying cultures over a long period.

With five students, Dr. Hrdlicka is pushing excavations, hoping to accumulate enough buried evidence this season to show definitely what Kodiak Island meant in the oldest "colonizing" of North America.

By systematically collecting bird and animal bones from the buried layers of habitation, the expedition is learning what the ancient peoples ate, and what forms of wild life were important to them.

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MEDICINE

Failing to Nurse Children May Cause Breast Cancer

CANCER of the breast is the penalty women pay for failing to bear and particularly to nurse children, in the opinion of Dr. Emil Bogen of Olive View, Calif. Evidence for this theory, based on statistics and on animal experiments, was presented by Dr. Bogen at the meeting of the American Public Health Association.

Comparison of birthrates and of cancer deathrates show that where the birthrate is low, the deathrate from breast cancer is high. Furthermore, in urban localities, northern countries and regions where small families and early weaning of the babies are customary the deathrate from breast cancer is high. It also appears to be higher among unmarried women and married women who have not had children than among mothers of large families.

From experiments with white mice, Dr. Bogen finds an explanation for this. A derivative of the chemical substance, cholesterol, is capable of producing cancer just as some of the coal

tars do when painted on the skin, he pointed out. This same substance, cholesterol, is present in the ducts of the female breast, both when it is producing milk and when it is not. In the absence of the normal drainage that comes with milk production and child nursing, this cholesterol may undergo the chemical changes that make it develop cancer-producing qualities, in Dr. Bogen's opinion.

Childbearing and nursing is accordingly a natural preventive measure against this cancer-producing agent present in the body.

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VETERINARY MEDICINE

Raw Meat Recommended For Proper Dog Diet

DOG DIETS must contain a proportion of fresh raw flesh, Dr. R. G. Linton of Edinburgh's Royal Veterinary College contends.

"The dog is still a carnivorous animal," Dr. Linton declared. "Fresh raw flesh is definitely essential for young growing dogs, and raw liver, spleen, and kidney are particularly valuable in this respect."

Crushed bones or bone flour should always be given to mother dogs and also to puppies. Fresh horse flesh, if obtained from grass-fed animals, is quite as good for dog food as ox beef, Dr. Linton said.

Because the chemical composition of dog biscuits varies according to the kinds, it is necessary to know their composition in order to feed a standard ration. Research has shown that dogs can get along without vitamin C, but their diet should contain an abundance of the other vitamins.

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PSYCHOLOGY

Much Reading Produces Improvement in Spelling

IF YOU WANT to improve your spelling, read more. Tests made by Dr. Luther C. Gilbert of the University of California department of education show that high school and college students tend to become better spellers through their reading. And you do not need to read slowly. In fact in one test fast readers made more improvement than slow readers.

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IN SCIEN

METEOROLOGY

Deserts Waste Most Of Rain They Receive

DESERTS, which need water more than any other lands, are apparently most wasteful of such rainfall as they do get. Studies indicating this have been made by Dr. Forrest Shreve of the Desert Laboratory of the Carnegie Institution of Washington, located at Tucson, Ariz.

Desert soils lose approximately half of their annual precipitation income through run-off and evaporation, Dr. Shreve has learned. During the brief and heavy summer rains as much as seventy per cent. of the water runs off the soil immediately.

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PHYSICS

Father Time Unhampered By Magnetic Attractions

NEW WATCHES, not affected by the small forces of magnetism occurring nearly everywhere, are made more accurate with the use of non-magnetic hairsprings and balance wheels.

Ordinary watches, no matter how expensive and carefully made, all have characteristics which make them fall out of step with the steady pace of time.

A new type of watch studied by R. E. Gould of the National Bureau of Standards has its critical parts, hairspring and balance wheel, fabricated of non-magnetic metal. "Elinvar," a nickel-steel alloy, is used for the hairspring because it does not become sluggish after being exposed to small electric currents.

The use of elinvar further simplifies the construction of a watch because it also automatically compensates the effects of heat and cold and eliminates the intricate construction normally necessary to prevent changes in size of the balance wheel with temperature.

In carefully conducted tests covering nearly all conditions forty different watches were compared. Those with non-magnetic hairsprings were proven more accurate.

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CE FIELDS

ARCHAEOLOGY

Peasant Archaeologist Knighted at Seventy

FOR A LONG lifetime of devotion to the study of Swedish antiquities, a Swedish farmer, Olof Christoffersson, has been created a Knight of the Royal Order of Vasa.

Mr. Christoffersson, now 70 years old, still recalls studying his first archaeological book as a boy. Treasured specimens, found in the fields of his province Scania, were often thrown away as rubbish by his mother in those days.

Since then, from his farmhouse collection, he has made numerous priceless gifts to the historical museums in Stockholm, Lund, and Trelleborg, and has gained fame among archaeologists of Sweden for his unusual knowledge of Scania's ancient history.

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PUBLIC SAFETY

Drunken Driver Accidents Increased 60 Per Cent

TRAFFIC accidents attributable to drunkenness or drinking on the part of the driver increased over 61 per cent. in the last year, Capt. H. L. Barlow of the Los Angeles Police Department told members of the American Public Health Association.

Pedestrian cases in the same class increased 53 per cent.

These figures are for accidents in Los Angeles, where the amount of traffic is much heavier than in other cities of the same size, partly because the ideal climatic conditions make driving possible all year around and partly because of the large number of motoring tourists who complicate the situation by their ignorance of traffic regulations.

"Drunkenness, selfishness, ignorance, carelessness and lack of judgment are responsible for a large majority of traffic fatalities," Capt. Barlow declared. "Drunken drivers should be subjected to more severe criticism and it has been urged that in dealing with this type of offender there should be a suspension or revocation of the operator's license."

In Los Angeles the District Attorney has agreed to accept the testimony of two experienced police officers in preference to the testimony of a physician in cases where alcohol enters into auto accidents. This has eliminated failure to convict in certain instances where there has been more or less delay in getting the subject before a physician for a sobriety test, Capt. Barlow explained.

Chief causes of accidents where the driver was responsible were failing to observe traffic, exceeding speed limit and drunkenness. In the accidents in which pedestrians were responsible, the chief causes were failing to observe traffic, crossing at intersections against signals and crossing between intersections, Capt. Barlow's figures showed.

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CHEMISTRY

Dakin's Solution Now Produced Electrically

DAKIN'S solution, war-time antiseptic for treating infected wounds, may now be easily and satisfactorily made by an electrolytic cell. The apparatus was designed by Dr. O. R. Sweeney of Iowa State College at Ames, and has been developed for practical use in hospitals by Paul A. Frank of Akron, Ohio.

Dakin's solution, invented by Drs. H. D. Dakin and M. Daufresne during the early days of the World War, is a solution of sodium hypochlorite. Since the War its use in civilian hospitals has been limited by its poor keeping qualities and the fact that it requires considerable skill in its preparation. If it is not strong enough it will not destroy the microorganisms in the wound, and if too strong it will injure the tissues of the body. The differences between too strong and not strong enough is very small.

To overcome the technical difficulties in preparing this solution, Dr. Sweeney designed a simple, practically foolproof apparatus which is now called the antiseptic cell. An electric current controls the chemical reaction so that the resulting solution is of just the right strength. The hospital technician has only to put into the apparatus a measured amount of sodium chloride, distilled water and sodium bicarbonate, and turn on a switch. Fresh hypochlorite solution is then automatically produced at the rate of about an ounce a minute.

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PHYSIOLOGY

Studies on Fish Add To Knowledge of Kidney

BETTER understanding of the complex structure and functioning of the human kidney which may lead to more successful treatment of kidney diseases has been gained from study of this organ in the toadfish, according to a report of Dr. E. K. Marshall, professor of pharmacology at the Johns Hopkins Medical School.

The human kidney, Dr. Marshall explained, is a gland made up of about a million small units consisting anatomically of distinctly different structures. Two of these are especially different. One of them, called the glomerulus, is a tuft of blood vessels coiled around in a hollow sphere of cells. Another is a hollow tube called the tubule.

In order to understand how the kidney forms the fluid which carries away part of the waste products of the body, physiologists have realized for a hundred years that they must discover what part is played by the glomerulus and what part by the tubule.

The opportunity to make this discovery came when Dr. Marshall found that the toadfish has a kidney in which there are no glomeruli. Information gained from a study of this animal can not be transferred absolutely to the human kidney, but many of the findings do apply to man and other vertebrate animals, Dr. Marshall pointed out.

The kidney that has no glomerulus can not excrete sugar, he found. It does excrete, to some extent at least, practically all diffusible foreign bodies which may be introduced into the fish or other animal. It does not excrete protein.

The tubule secretes substances, Dr. Marshall stated. While the tubule of the kidney in man and other mammals may not have this power to as high a degree as the kidney of the toadfish, it probably has it to some extent.

The importance of this lies in the possibility that when the glomeruli of the kidney are injured by disease, the tubules may be able to take over some of the functions of the glomeruli. Recent investigations by Prof. William deB. MacNider of the University of North Carolina indicate that this may be what actually happens in cases of kidney disease, Dr. Marshall pointed out.

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