

Nile Swimmers "Crawled"

Archæology

The "modern" crawl stroke recently adopted by European and American swimmers was nothing new to the Egyptians 3,000 years ago, according to Prof. James E. Dunlap, of the University of Michigan, writing in *Art and Archæology*.

Study of ancient mosaics and vases has convinced Professor Dunlap that overhand strokes were practiced by swimmers of Egypt, Rome, and Greece. The Assyrians appear to have been less at home in the water. In one scene of Assyrian soldiers crossing a river, two of the three soldiers stopped to blow up inflated skins, so that they would have support. Clinging to the long, balloon-like skin, the soldier pushed back and down with his (*Turn to next page*)

Germes To Fight Borer

Bacteriology

A near relative of the silkworm disease which caused the famous Pasteur much grief, but also brought him much fame, is being studied in France as a possible ally in the war against the corn borer.

It is known that insects suffer from a multitude of diseases, many of which are epidemic and destroy large numbers, but the practical applications of insect pathology present an almost unexplored area of science. Insect diseases, like those of man, are usually caused by microbes such as bacteria, fungi, or the ultra-microscopic group of viruses.

Dr. A. Paillot, in a paper presented at a recent meeting of the French Academy of Science, reported the discovery of two new protozoa or single-celled animals which are parasites of the European corn borer in certain parts of France. One is a flagellate and propels itself forward and backward with a nearly ultramicroscopic whip-like appendage. It is quite rare and is found occasionally in the internal organs of the corn borer larva.

A more promising disease is a microsporidia to which Dr. Paillot proposes to give the name *Perezia pyrausta*. It spreads decidedly in an epidemic fashion, and has been observed frequently in two regions of the Jura.

Dr. Paillot says that externally the sick corn borer larvæ do not differ from the healthy larvæ, but that internally they are pretty badly wrecked. The disease is transmittable from individual to individual through the intestinal tract.

Science News-Letter, August 11, 1928

Keeping Cool A Science

Physiology

Keeping cool is really a science, but one which the everyday man can practice. Many of the customs we follow in our struggle to beat the temperature have a scientific background, though few of us realize it. For instance, we instinctively wear loose, porous clothing, and not too much of it, knowing that we feel cooler so.

The reason is that such clothing allows the heat generated in our bodies to pass into the air away from our bodies. For it is not a question in hot weather of how to keep the heat out but of how to get the heat out.

No matter what the weather, we have to keep our body temperature at normal. In cool weather the heat passes from a higher to a lower temperature as easily as water runs down hill. When the temperature around our bodies gets as high as the temperature inside them, it is difficult to get rid of the surplus heat of our bodies.

One way to do this is to keep the body from making much heat by eating very little food, especially those foods that have a high fuel value and make the body fires burn faster and hotter. Such foods are sweets and starches and proteins, which the dietitians call high-calory foods.

Another way of keeping cool is by perspiring. Water can carry more heat without showing it than anything else in the world. Of course, we must drink plenty of water, in order to replenish the supply in our bodies. People who do not perspire much will

be more comfortable in hot weather if they drink hot tea and coffee rather than the iced variety, as the warm drinks will induce extra perspiration.

If you sweat a quart of water you have gotten rid of about 500 calories of heat. But if the air already holds all the water it can take up, you cannot get cool by sweating off the heat, which is why a muggy day with high humidity is so uncomfortable. On such a day you must drive the hot, moist layer of air away from your skin, using a fan if there is no breeze available.

Of course, everybody drinks more water during very hot weather, but if just a pinch of salt is added it will help greatly toward enduring the heat.

Scientists investigating conditions in hot coal mines and steel plants found that the workers who succumbed rapidly when working in a temperature of about 100 degrees, were able to stand it better when this small amount of salt was added to their drinking water.

At high temperatures, especially when working hard, the body gives off large amounts of water in perspiration. This is Nature's way of keeping us cool. But our bodies also lose much salt with the perspiration, which is what causes a large part of the physical exhaustion felt when working in hot weather. To overcome this add a pinch of salt to your drinking water.

Science News-Letter, August 11, 1928

Ice Cakes Standardized

Home Economics

Now the ice cake that meltingly does its part in combatting summer heat is to be standardized. The U. S. Bureau of Standards has issued standard weights and maximum sizes for the chunks of frozen water that the ice man puts into the refrigerator daily. Cakes of 25, 50, 75, 100 and 150 pounds are declared standard and for these weights maximum dimensions are specified. The smallest weight, 25 pounds, must measure less than 12 by 12 by 8 inches, while the 150 pound cake must not exceed 12 by 24 by 24 inches. Manufacturers will shape the ice compartments of refrigerators so that the standard cakes will slide into them easily.

Science News-Letter, August 11, 1928

Army To Test Explosive

Chemistry

The region of Fort Humphrey, Virginia, will echo to the explosions of radium atomite, new explosive claimed to be more powerful than T. N. T., some time this month. According to the office of the Chief of Engineers, of the War Department, Major William H. Lanagan, of the Board of Engineer Equipment, has requested such a demonstration. A preliminary test of the explosive invented by Capt. H. R. Zimmer, of Los Angeles, former army officer, was made at Pasadena by Lt. Col. L. M. Adams, of the California Institute of Technology. Lt. Col. Adams reported to the Chief of Engineers, and the board, after examining his report, has decided that the new explosive "appears to have military value."

Science News-Letter, August 11, 1928

Degrees in Dependence

Biology

WILLIAM MORTON WHEELER, in *Foibles of Insects and Men* (Knopf):

Parasitism is, of course, a form of "behavior", and may be described as one of several complex types of the reactions of organisms to the most important source of their energy, their food supply. Other reactions to this element of the environment are predatism, commensalism, scavengerism and mutualism. There is in the main sufficient consensus of opinion concerning the distinctions between these different phenomena. Predatory animals kill other animals and devour them wholly or in part. Parasites put other organisms in the position of "hosts" by living *directly* on their tissues in such a manner as not to cause their immediate death. The parasite thus draws *indirectly* on the food supply of another organism by permitting or compelling it to do the hard work of procuring the food and of converting it into much more accessible and more easily assimilable compounds. The parasite may be said, therefore, to use its host as an instrument not only for procuring, but for predigesting, its food. The commensal also uses another animal as an instrument, but merely in gaining access to a food supply which the latter has procured but has not yet assimilated. The scavenger, like the saprophyte among plants, may be described as a parasite of the dead, deriving its sustenance from decompositing animals or plants or from the excretions of the former. The mutualist, finally, as the name implies, lives

The airplane carrier Saratoga can carry 83 planes.

The porcupine's quills help to keep him afloat in the water.

American population in China has fallen off more than 3,000 in the past three years.

The art of weaving carpets is handed down from mother to daughter through many generations in Turkey.

It is believed likely that the top of Mt. McKinley, almost four miles above the sea, and frozen by the long northern winters, may be the scene of the world's lowest temperature records.

in a condition of balanced energetic or nutritional cooperation with another organism.

Of all these types of reactions to the food supply, parasitism is far and away the most prevalent; so prevalent, in fact, that it may be doubted whether there is any animal that does not resort to it, at least during a brief portion of its life, even if this be only during the period when, as an egg, it is drawing its supply of food-yolk from its parent. That parasitism has been most frequently developed from predatism is certain, that it may occasionally have its origin in commensalism, mutualism or scavengerism is highly probable, that it can, especially when it affects a considerable portion of the life-cycle, develop into anything but a more extreme form of parasitism, is very doubtful.

It would be easy to show by the citation of many examples that parasitism is an extremely protean phenomenon, one which escapes through the meshes of any net of scholastic definitions in which we may endeavor to confine it. Nor is this surprising when we stop to consider its great prevalence and the fact that during the course of time the organic world, *pari passu* with its increasing differentiation, has become ever more and more heavily weighted with parasitism and mutualism.

Science News-Letter, August 11, 1928

Staff of Science Service—Director, Edwin E. Slosson; Managing Editor, Watson Davis; Staff Writers, Frank Thone, James Stokley, Emily O. Davis, Jane Stafford; Librarian, Minna Gill; Sales and Advertising Manager, Hallie Jenkins.

Board of Trustees of Science Service—*Honorary President*, William E. Ritter, University of California. Representing the American Association for the Advancement of Science, J. McKeen Cattell, *President*, Editor, Science, Garrison, N. Y.; D. T. MacDougall, Director, Desert Laboratory, Tucson, Ariz.; M. I. Pupin, Professor of Electromechanics, Columbia University, New York City. Representing the National Academy of Sciences, John C. Merriam, *President*, Carnegie Institution of Washington; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; Dr. David White, Senior Geologist, U. S. Geological Survey. Representing National Research Council, Vernon Kellogg, *Vice-President and Chairman of Executive Committee*, Permanent Secretary, National Research Council, Washington, D. C.; C. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.; Harrison E. Howe, Editor of Industrial and Engineering Chemistry. Representing Journalistic Profession, John H. Finley, Associate Editor, New York Times; Mark Sullivan, Writer, Washington, D. C.; Marlen E. Pew, Editor of Editor and Publisher, New York City. Representing E. W. Scripps Estate, Harry L. Smithton, *Treasurer*, Cincinnati, Ohio; Robert P. Scripps, Scripps-Howard Newspapers, West Chester, Ohio; Thomas L. Sidlo, Cleveland, Ohio

Nile Swimmers—Cont'd

free hand and so propelled himself across.

That the Greeks used the overhand stroke is shown by a vase depicting a scene in a women's bathing establishment. One of the women is swimming with her right arm extended forward to begin the downward and backward stroke, and her left arm is near her side at the end of a stroke. Two of the other Greek women in the picture wear bathing caps, but bathing suits were thought unnecessary.

Swimming instructors were known upon the banks of the River Nile at a very early date, Professor Dunlap points out. A nobleman of Egypt, who lived before 1800 B. C., recorded proudly that his children and the children of the king took their swimming lessons together.

Science News-Letter, August 11, 1928

Woods Hole Rimes

(From the Woods Hole Song Book)

The Gull

The graceful gull is not content
On furnishing an ornament,
As thru the air he floats and sweeps,
He dreams of fishy food and sleeps
When his large appetite is dulled
So don't you let yourself be gulled.

The Nereis

The Nereis, the Nereis
By moonlight grows delirious,
It fills the sea with progeny
Now isn't that mysterious?

The Sea Urchin

To my peaceable existence
The biologist a menace is,
He takes my eggs to study
Artificial parthenogenesis.

The Sea-Cucumber

Beneath the waves the sea-cucumber
Spends all his hours rapt in slumber,
And he does not appear to see
The fine aquatic scenery.
It seems to me he spends his day
In a most slow, cucumbrous way.

The Squid

The squid, he swims from head to tail,
He blushes when he is pale,
If you attack he will sink
And screen himself with sepia ink.

The Sand-Dollar

The sand dollar is such a good
financier
He deposits himself in a sand bank,
it's clear,
That this is a simple, methodical way
Of saving himself for a rainy day.

Science News-Letter, August 11, 1928