

ZOOLOGY

Big South American Toad Devours Young Alligator

IF JONAH had swallowed the whale, that would have been real news.

A somewhat similar feat in the lower animal world has been accomplished by a toad that swallowed an alligator.

A short time ago, reports Dr. C. W. Parsons of the University of Glasgow, four giant toads from South America were received by his department. They were six inches long and three inches wide. They were put in the same vivarium with a couple of young alligators, about eleven inches long.

For a time all went well. The toads dug burrows in the sand, and fed contentedly on the semi-cannibalistic diet of frogs which was offered them. The alligators basked on the roof of a shelter, or swam about in the water. Both parties ignored each other.

Then came a morning when Dr. Parsons sought the 'gators, to remove them to a new home. He found only one of them, though he searched the laboratory high and low. On suspicion, he X-rayed the four toads. Sure enough, a dark shadow in one of them betrayed the whereabouts of the luckless young alligator.

Science News Letter, October 1, 1932

FORESTRY

Forest Fire Situation Worst in California

CALIFORNIA is the only National Forest area that is causing the U. S. Forest Service really acute concern over fire danger. Although the 160,000-acre brush fire that threatenend a part of the vital watershed area of Southern California was finally brought under control, there is a great deal of potential kindling all over the state. No rain has fallen for months, and none is in sight. For this reason National Forest Region No. 5, which is the only such region made up of a single state, is marked as "very unfavorable" in the Forest Service's latest summary.

"Unfavorable" regions include numbers 3, 4 and 5, ranging from Washington on the north to New Mexico on the Southeast. Here drought conditions are in general bad, but not as bad as they have been in California. In Regions 1 and 2, which take in the northern and central Rockies and the Plains states east to the Missouri, conditions

are listed as favorable. Favorable also are conditions in Region 9, comprising the upper Mississippi and Great Lakes states. Here there have been few fires, and on the whole adequate rains.

In the East and South, Region 7, taking in all the seaboard states from Maine through Florida to Texas, is listed as "unfavorable." Through much of this territory there has been a severe late-summer drought, and hundreds of short-lived but quick-running fires have had to be fought.

There have been more than 5,000 forest fires throughout the country during the current year. Of these, approximately forty per cent. have been caused by smokers, campers, steam-engines and other human agencies. The rest are due mainly to lightning. Man-caused fires predominate in the East, accounting for over ninety per cent of the total. In the West, lightning is the more frequent cause of forest fires.

Science News Letter, October 1, 1932

ARCHAEOLOGY

Plaster-Stiffened Flags In 6000-Year-Old Tomb

TWO LINEN OBJECTS resembling flags, covered with plaster, are among the unusual finds recently discovered in tombs dating back to about 3900 B. C. at Armant, Egypt, and shown at the Wellcome Museum, London, in a temporary exhibition by the Egypt Exploration Society. One of the "flags" has a pattern, white on red, something like a St. Andrew's cross; another has a design of concentric rings.

"Such objects were not known before in predynastic tombs," said T. J. C. Baly, a member of the exploring group, "and their symbolic meaning is uncertain."

Two quartz beads, also found at Armant in a tomb dating to about 3600 B. C., glazed in the particular Mesopotamian fashion of that period, indicate that trade relations existed between the two countries in predynastic times, the director of the Armant Excavations reported.

Even more surprising are some amber beads which were apparently brought from the Baltic shore, possibly down the Danube valley to the Black Sea and thence to Egypt.

The work of exploration was carried out last winter, largely through the support of Sir Robert Mond, president of the Egypt Exploration Society.

Science News Letter, October 1, 1932

IN SCIEN

PHYSICS

Light Speed Not Varying With Passage of Time

THE VELOCITY of light is not decreasing with the passage of time, Prof. Roy J. Kennedy of the University of Washington has concluded as the result of experiments carried on at the California Institute of Technology. M. E. J. Gheury de Bray recently suggested from an examination of measurements published over a period of decades that the velocity of light may be decreasing slightly year by year.

Prof. Kennedy will shortly announce to the American Physical Society that he has established experimentally the relativity of time. In a letter to *Nature*, he reports a test of the de Bray suggestion by means of experiments, and concludes that light does not have a variable velocity unless its frequency itself varies correspondingly to the supposed velocity change.

Science News Letter, October 1, 1932

PHYSIOLOGY

Strong Electric Current Makes Ameba Back Up

AMEBAE, lowliest of one-celled animals, do not like a too-strong electric current any better than we do ourselves, and if they encounter one will start for somewhere else immediately. How they do it has been studied by William F. Hahnert of the Johns Hopkins University, who will report his results in the forthcoming issue of *Physiological Zoology*.

An ameba, being only a naked bit of protoplasm, moves by just "oozing along," its living substance flowing in a slow current. When it meets a sudden increase in an electric current, its protoplasmic flow in front stops, and at its rear edge the flow reverses. If the current is weak, this pause is only momentary, and the ameba then keeps on going in the original direction. But if it meets a strong electric "jolt" it reverses itself and leaves the unpleasant neighborhood as fast as it can.

Science News Letter, October 1, 1932

CE FIELDS

PHYSICS

Storms Bombard Earth With Penetrating Radiation

WHEN lightning flashes, some form of penetrating radiation is shot heavenward and eventually reaches earth at a distant point probably through the influence of the earth's magnetic field.

This is suggested by Drs. B. F. J. Schonland and J. P. T. Viljoen of the University of Cape Town, South Africa, in a communication to the British scientific journal, *Nature*.

The penetrating radiation emitted by thunderstorms was detected by a Geiger-Muller counter and time signals and the radio atmospheric caused by the lightning flashes were recorded on the same electric chronograph. During certain distant storms the number of coincidences between kicks in the counting device and lightning flashes were considerably more than can be ascribed to chance. Storms overhead did not show systematic coincidences.

Science News Letter, October 1, 1932

CHEMISTRY

Nobel Prize Winner Finds Second Respiration Ferment

A SECOND respiration ferment, one that is not the haemin which controls the conveyance of oxygen from the lungs to the muscles and other tissues of the body, has been found by Prof. Otto Warburg, Nobel Prize winner, and his associate, Dr. Walter Christian, of the Kaiser Wilhelm Institute for Biology in Berlin.

Prof. Warburg's demonstration of the constitution and action of haemin was one of the significant contributions that won him the Nobel prize in medicine and physiology in 1931. Now he describes in a preliminary report to *Die Naturwissenschaften* his discovery of this second oxygen-carrying ferment.

When certain cells, called anaerobic because they normally cannot live in the presence of oxygen, are shaken up with oxygen, a respiration or burning of carbohydrate takes place, Prof. War-

burg and Dr. Christian found. This respiration or breathing cannot be stopped by carbon monoxide or by hydrocyanic acid, poisons which stop ordinary respiration in animals by acting upon the haemin that controls the conveyance of oxygen in the body.

Juices squeezed out of many other cells behave like anaerobes. In such juices the Berlin investigators also found respiration which cannot be stopped by either carbon monoxide or hydrocyanic acid. From these observations they concluded that an oxygen-carrying ferment other than haemin is to be found in nature.

The second respiration ferment appears to be present in high concentrations in anaerobic cells. It is an orange colored substance that breaks down when heated for ten minutes at a temperature of 60 degrees Centigrade. Prof. Warburg and Dr. Christian described its absorption spectrum and the other physical and chemical properties which they had observed.

Science News Letter, October 1, 1932

ENTOMOLOGY

Grasshopper Plague Nipped By Early Summer Rains

GRASSHOPPERS, feared as an impending plague at the beginning of this summer, failed to reach destructive numbers largely because of timely rains. In places where rain did not stop them baits of arsenic-poisoned bran served to hold them in check.

Rains were effective in Iowa, South Dakota, Nebraska and Kansas. They fell most heavily during early summer, when the hoppers were just emerging from the eggs or were crawling about in their youngest growth stages. The rains either battered and drowned them outright, or encouraged the growth of parasitic fungi which killed them, or caused such rank growth of wild plants that there was food for them outside the cultivated fields.

Rains were less abundant in Minnesota and North Dakota, but here the people were awake to the danger, and got in their poison campaign in time.

Grasshoppers will do no more damage this season, for egg-laying time has arrived, and the insects feed very little now. Field researchers of the Bureau of Entomology are preparing to make a comprehensive egg survey, to estimate the prospects for a grasshopper year in 1933.

Science News Letter, October 1, 1932

GEOGRAPHY

New Low Pass Discovered In Rockies

A NEW LOW PASS through the Canadian Rockies which promises eventually to be traversed by a railroad to carry Peace River district wheat to the Pacific Coast was discovered in 1926 by Prentiss N. Gray, British scientist, who has just reported his discovery to the Royal Geographical Society.

Traveling in the last unmapped area of the Rockies that gave no indications that it had ever been visited before, Mr. Gray found the low pass through the continental divide. Tucked away in a dense growth of spruce timber only 4,250 feet above sea level, it is at the headwaters of an unexplored river called the Narraway. With wide meadows, Gray pass looked more like a ranch than a top of the Rockies. A chain of three lakes, which were named Sherman Lakes, lay in the pass. When ice is melting from extensive glaciers that overhang the northern rim, these lakes flow together, but at low water the southern lake drains through Barbara River to Fraser River and to the Pacific. The other other two lakes form the source of the Narraway, draining through the Peace River to the Arctic Ocean.

Gray Pass will allow a railroad to be built over a distance of 165 miles from Beaverlodge, Alberta, to a junction with the Canadian National Railway at Dome Creek in British Columbia. When this railroad is built, it will not be necessary to send wheat grown in the Peace River area eastward to Edmonton in order to ship it to the Pacific Coast.

Science News Letter, October 1, 1932

BOTANY

Arabs Use Fish Poison Mentioned by Pliny

THE ARABS of Palestine and other parts of the Near East are still using the same plant for fish poison that was mentioned by the Roman author Pliny in the first century A. D. as a common means for killing fish. It is the cyclamen, widely used as a potted plant. The Arabs' use of cyclamen for catching fish has been noted by Dr. Ephraim Hareubeni of the Hebrew University in Jerusalem, in the course of his study of Arabian plant lore. Two other plants, styrax and mullein, are also used by them as fish poisons.

Science News Letter, October 1, 1932