

MEDICINE

Animals Do Not Carry Infantile Paralysis

ANIMALS other than man do not carry infantile paralysis. The disease is not acquired by swallowing the causative virus with food or drink.

Evidence showing these statements to be true were presented by Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, at the meeting of the National Academy of Sciences.

Previously Dr. Flexner has reported that the virus or germ of this disease enters the body via the nerves of smell. His latest studies seem to show conclusively that the virus cannot penetrate the lining of the stomach or digestive tract. Neither can it penetrate the unbroken skin. It can cause disease only by attacking nerve tissue, and its only way of reaching the central nervous system is by way of the exposed nerves of smell in the nose.

"The evidence is strong that the virus is confined to the human host, and passes from individual to individual in the secretions of the nose and throat," he stated.

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GEOLOGY

"Galloping Snails" Solve Riddle of Rock Markings

SNAILS of the east coast of Africa have helped Prof. Othenio Abel, Vienna University geologist, to solve the riddle of certain markings in fine-grained sandstones found near Vienna, that have stumped scientists for many years.

Some time ago, Prof. Abel had opportunity to watch the behavior of the strand animals on the wet beaches of the east coast of Africa. A certain species of snail attracted his special attention. This snail, scientifically known as *Bullia*, is a veritable galloper among snails; it can travel over the wet sand at the rate of nearly a yard a minute. It feeds mostly on stranded jelly-fish; hundreds of the snails can be seen hastening to the feast wherever one of these luckless creatures has been washed ashore.

If the sand becomes too dry, or if something frightens the snail, it behaves in a most peculiar manner. It wraps its wide "foot" around its shell, turns a somersault, and disappears into the sand. There, having found a level at which

the moisture is more to its liking, and concealment from any threatening foe as well, it goes on its subterranean way, mole-fashion. Naturally, this subterranean path leaves a burrow quite different from *Bullia's* surface track; and a comparison of the modern snail-burrows in the African beach sand and the puzzling markings in the ancient Austrian sandstone shows a convincing similarity.

Clinching the argument even more closely was Prof. Abel's observation that an abruptly ended surface track on a slab of the sandstone could be traced as a burrow-marking on the under-side of the same slab. The ancient *Bullia* had evidently seen something it did not like, dived, and "continued the march" underground, leaving its footprint in the gradually hardening sands of time.

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PHYSICS

World Cruise Shows Cosmic Rays Less in East

ANEW fact about cosmic rays was revealed when Dr. Victor Neher of the California Institute of Technology described the results obtained from instruments which recently returned from cruises around various parts of the world aggregating fifty-two thousand miles.

The instruments recorded automatically for a period of several months. As the vessels on which they shipped idled in some ports the instruments busily recorded more and more data until they achieved the highest accuracy so far obtained in work of this kind.

This accuracy permitted Dr. R. A. Millikan to say with certainty that in these voyages there appeared not only a latitude effect but a longitude effect as well. That is, not only did the cosmic rays show a decrease in intensity as one sails into the equatorial regions but they also showed a decrease to a lower value in the eastern hemisphere than in the western. This effect can probably be correlated with the magnetic field of the earth, which is strongest in the eastern hemisphere.

The new result is, however, so difficult to reconcile with existing interpretations that Drs. Millikan and Neher present it merely as the result of these voyages, leaving it to the future to determine whether it is repeatedly duplicable or not. The experiments were all a part of a program of Dr. Millikan which is supported by a fund of the Carnegie Foundation.

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IN SCIEN

PHYSICS

Explosions Observed Under Microscope

THE POSSIBILITIES of studying explosions under the microscope has been pointed out by two French scientists, Dr. A. Michel-Levy and Dr. H. Muraour.

The quantity of explosive used must be very minute, a milligram (.015 grain) or less, and the explosive should preferably be one that leaves a metallic deposit. Nitride of lead was found suitable. From the lead pattern left on the microscope slide, the nature of the explosion can be studied.

Using two specks of this substance a short distance apart and exploding one of them, the experimenters found that the second was exploded by the shock, and an interference pattern was formed. When the distance apart was large, the second speck was not exploded, but merely burned by the hot gases when they arrived, and no interference pattern was formed. When the experiment was tried in a vacuum, the second particle did not explode even when quite near to the first one. The shock wave is therefore propagated by the air and precedes the expanding hot gases.

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PHYSIOLOGY

Cut Nerve Remains Active For Week

NERVES cut off from their base of action do not necessarily give one last "kick" of activity and then quit, as the old theory has it. They can stay at a high level for a solid week, Prof. G. H. Parker of Harvard University reported before the meeting of the National Academy of Sciences.

It has been supposed all along that a severed nerve responds momentarily when stimulated, as by an electric shock, but that the response is never for more than a moment. Prof. Parker found, however, that when he cut a nerve that causes the color of a catfish's tail skin to darken, a dark band appears and persists for as much as seven days.

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CE FIELDS

ASTRONOMY—PHYSICS

Electric Eye Aids In Viewing Distant Objects

SO SENSITIVE that it will detect without telescopic aid an ordinary candle flame thirty miles away, a photoelectric cell-vacuum tube amplifier combination is the latest useful tool of the astronomer described to the National Academy of Sciences by Dr. Joel Stebbins of the University of Wisconsin and Dr. Albert E. Whitford of the Mount Wilson Observatory, Calif.

Using the world's largest telescope, Mt. Wilson's 100-inch reflector, the amplifying "electric eye" could detect a candle at 3,000 miles. It can measure the faint luminosity of the sky beyond the range of the photographic plate, and it measures star colors more precisely than the human eye or photography.

The first success of the new instrument used at Mt. Wilson was the detection of interstellar dust of the Milky Way through the reddening effect of the dust upon starlight. Just by measuring the colors of the stars of the Milky Way, Drs. Stebbins and Whitford were able to tell that the earth is at one side of the center of the great stellar system that comprises our Milky Way galaxy. When allowance is made for the obscuring effect of the dust between the stars, our galaxy is found to be not so great or important as was thought, although it may still be the largest one in sight.

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CHEMISTRY

Deuterium Measures Efficiency of Catalysts

HEAVY hydrogen (deuterium), with atoms double the weight of those of ordinary hydrogen, has been studied by science for hardly more than a year, yet it has already found one use of both scientific and eventual economic importance. This was described before the meeting of the American Philosophical Society by Prof. Hugh S. Taylor of Princeton University.

The new double-weight twin of hy-

drogen is used to measure the efficiency of various kinds of surfaces on which chemical reactions involving hydrogen are hastened. These surfaces, collectively known as catalysts, are of great importance in industry as well as in the laboratory; modern chemical engineering and manufacturing could not exist without them.

The method of measuring the efficiency of hydrogenating surfaces used by Prof. Taylor is simple. He applies to such surfaces a mixture of hydrogen molecules, each consisting of two light-hydrogen atoms, and deuterium molecules, each consisting of two heavy-hydrogen atoms. The action of the surfaces brings about a regrouping of part of the gases, forming molecules consisting of one heavy-hydrogen atom and one light-hydrogen atom each. The efficiency of any given surface is measured by the rate at which this transformation takes place.

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MEDICINE

Tetany Cured By Drug Related to Vitamin D

TETANY, the severe nervous and muscular disease featured by painful muscular cramps and caused by an insufficiency of calcium in the blood, can now be cured or greatly relieved without delay, even in the worst cases. Tetany should be distinguished from tetanus, or lockjaw.

The new treatment, described by Dr. I. Snapper, professor of medicine and general pathology in the University of Amsterdam, in *The Lancet*, British medical journal, is the giving of a substance known to pharmacologists as "A.T. 10."

"A.T. 10" is a fraction of the well-known irradiated ergosterol which is rich in vitamin D. Prolonged dosage with ordinary irradiated ergosterol, in conjunction with oral doses or injections of calcium, has previously been used as a treatment for tetany. Though in some cases it was fairly successful, in others disagreeable and even dangerous symptoms were produced. From "A.T. 10," however, the vitamin D is absent, and there are no unwanted symptoms provided that the doses are stopped as soon as the blood's calcium content has been brought to normal. This is usually achieved within comparatively few days.

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ETHNOLOGY

No Talk To Mother-in-Law, Strange Tribe Decrees

A TRIBE that has solved the mother-in-law problem has been found.

Among the Yaruro Indians of Venezuela, a son-in-law is forbidden to talk to his mother-in-law, is the report brought by Vincent Petruccio, of the University of Pennsylvania Museum, who has just returned from studying these natives.

Although son-in-law and mother-in-law may not speak, or even look at one another, they must take care of each other, Mr. Petruccio said. If in camp together, they sit facing in opposite directions, and if there is need for conversation, a third person acts as go-between. The same system applies to a daughter-in-law and her father-in-law.

Mr. Petruccio was accepted by the Yaruros as a relative of the gods, because of his sympathetic understanding of native ways and religion. The Yaruros did all in their power to aid the young scientist to gather facts about their manner of living.

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PALEONTOLOGY

Giant Sloths of Nevada Browsed on Yucca Plants

WHEN giant sloths inhabited Gypsum Cave in Arizona, famous for the discovery there a few years ago of human artifacts associated with the bones of extinct animals, the climate of the region probably was much moister than it is now. This is indicated by a study of the plant fragments in the digestive waste of the animals, which was abundant in the caves. A report of this study was presented before the meeting of the Geological Society of America at Berkeley, Calif., by J. C. Lauder milk of Claremont, Calif., and Dr. Philip A. Munz of Pomona College.

Eighty per cent. of the refuse, the two scientists stated, consisted of tissues of a species of giant yucca known as the Joshua tree. The remainder was derived from various other desert plants. This yucca species does not grow in the vicinity of Gypsum Cave today, but is abundant in the Clark Mountains, 42 miles distant and at about 3,500 feet greater elevation, with a more generous rainfall.

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