SCIENCE NEWS

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INFANTILE PARALYSIS

ARE we on the verge of another infantile paralysis epidemic like that of 1916? Late summer and early fall are the times when this little understood disease is most prevalent, but the number of cases reported to the U. S. Public Health Service in the last few weeks have shown a decided gain over those reported for the same period last year.

The figures just in for the week ending August 6 show 180 cases as opposed to only 66 for the corresponding week for 1926. Ohio reports several widely scattered cases, while California has 56 for this last week alone.

Like influenza, poliomyelitis, as infantile paralysis is known to medical men, is one of the unfinished problems on which scientists are still hard at work. It is believed to be caused by a filterable virus which is spread by contact with articles that have been touched by the infected person. From the way in which epidemics have spread in the past it is thought that it must be transferred either by animals or human carriers, but at this time little has been definitely established on this point.

In the big epidemic in New York City that occurred eleven years ago it was clearly shown that prompt hospitalization of all cases that could be safely moved checked the spread of the disease more effectively than any other measure. Another outstanding point that emerged from this experience was the fact that isolation of groups of children from contact with other children or adults, even when carried out in the midst of areas where the disease was prevalent, sufficed to protect almost absolutely from infection.

At the Rockefeller Institute for Medical Research attempts have been made to immunize monkeys to poliomyelitis, but the results were too variable to be useful.

French workers have tried to use pieces of the dried spinal cord after the same procedure as that followed in rabies treament, but the results were too uncertain to be practical. Dr. E. C. Rosenow, of the Mayo Clinic, has used an antistreptococcus serum to treat acute cases, but this is a recent development that has not received any general application.

BUBONIC PLAGUE IN CALIFORNIA

A CASE of bubonic plague in Los Angeles, announced by the federal health authorities, will probably lead to redoubled efforts to rid cities of the Southwest of the rodents that carry the disease.

Man has to a certain extent developed control of acute plague and its migration from port to port, but little really effective work has been done to control the chronic reservoirs of the disease in animals. The California case was contracted by the patient, a little child, from handling ground squirrels. These animals harbor the disease in a chronic and subacute form, passing it on to each new generation. From them the disease spreads to suburban rodents and from these in turn to city rats, where chances of communicating the infection to human beings are greatly enhanced.

Poison, explosives, traps, guns and gas have all been tried out in extermination campaigns, but the ground squirrel of the Southwest is notoriously prolific, and none of the methods has been as successful as could be desired. California has attempted to create rodent-free zones around the suburbs in the hope that the stamping grounds of suburban rats and city rodents will not overlap, thus reducing the chances of exchanging plain, unadulterated fleas for those that are infected with plague germs.

The valuable fur-bearing marmot of Asia, the souslik of southwest Russia and the gerbille of South Africa also act as carriers of this much-dreaded disease. The ground squirrel of the United States is distributed in various varieties in an almost continuous belt from the Atlantic to the Pacific. It is not inconceivable that plague might spread through these different species of rodents all the way from California to Massachusetts.

Rat-proof ships, periodic fumigation, quarantine inspection and building with concrete or other rat-proof material seem to be the best methods to reduce plague possibilities at the present time.

COFFEE GROWN IN CALIFORNIA

MOCHA coffee is the latest addition to the list of California's agricultural products. At least this is the claim of R. C. Wahl and associates of Los Angeles, whose extended experiments near Holtville have convinced them that the United States can grow some of its own coffee. Experimental crops, roasted by San Francisco experts, are said to have yielded a beverage equal to Arabia's finest.

The torrid Imperial Valley, below sea-level, again takes credit for unusual agriculture. The new coffee is not of ordinary species grown in the humid Brazilian tropics, but rather the genuine Mocha indigenous to dry Arabia. This coffee commands high prices and is almost unknown in present-day American trade.

Unfortunately the Imperial Valley sun is too hot for the unsheltered coffee plant. Whence comes the plan to plant alternately rows of coffee with castor-bean or acacia trees. The castor-bean is especially favored for its generous shade. It is hoped further that the bean may pay its way in castor-oil.

In the proposed new coffee belt the subterranean water-level is so far beneath the surface of the soil that growers will have no fear of the flooding and standing water which make trouble on tropical plantations. Ample irrigation on a freely drained, warm alluvial soil is the requirement, and one easily satisfied in the flood-plain of the Colorado.

TESTS FOR ICE CREAM

THE human tongue is a better scientific instrument than it is usually credited with being, at least so far as ice

cream is concerned. Recent experiments made by the U. S. Department of Agriculture indicate a rather close correspondence between the "taste test" of a large number of people and the more precise determination of quality made by instrumental means.

The first test involved three ice creams of varying butter fat content. These, containing 18, 15 and 12 per cent. were fed to 50 daily purchasers for a period of 10 days. In each instance freezing and hardening conditions were alike, the consumer changing his choice at will. The result was that 82 per cent. of the samplers favored the ice cream of 18 per cent. butter fat content.

The second test proposed to show whether or not sugar strongly affects the palatability of ice cream. An experiment was made with mixes containing 19, 16 and 13 per cent. of cane sugar. About 90 per cent. of the consumers preferred the 16 per cent. composition.

The third experiment tested the effect of non-fat milk solids on the palatability of ice cream. For a period of six weeks three mixes of 12, 9 and 6 per cent. non-fat milk solids were sold. More than 80 per cent. of the 1,185 sales showed a preference for a 9 per cent. non-fat milk solid rather than the commercial ice cream with but 6 per cent.

A debated point among ice cream magnates concerns the popularity of ice cream containing gelatin. For years it was used much as a stabilizer, that is, to prevent the ready formation of ice crystals. Nowadays iceless refrigeration eliminates that possibility, so many manufacturers do without gelatin altogether.

Yet some persons prefer the smooth taste gelatin gives to ice cream. Indeed, experiment four showed that some 63 per cent. of 394 purchasers preferred ice cream with 1 per cent. gelatin. Twenty-three per cent. wanted ice cream entirely without it and others insisted on a content of 0.5 per cent.

Contrary to popular belief, the fat content of ice cream has little effect on the quantity a person will eat. A test was made with two common grades of ice cream, one containing 10 per cent. fat and the other 15 per cent. It was found that the average person can consume 1.2 pints of the 10 per cent. and 1.12 pints of the 15 per cent. cream.

SCIENTIFIC COLLECTING IN CHINA

GOVERNMENT officials in Peking have decreed that no specimens of birds may be exported from China, and only three scientific specimens of any other species of animal or plant life. These regulations, very recently enforced, will greatly hamper foreign scientists who are studying Chinese birds, fish, insects, and other creatures, according to Arthur de C. Sowerby, editor of the China Journal.

The bird law is a hang-over from customs regulations established some years ago to prevent wholesale exportation of pheasants for their skins, he points out. It was never intended to apply to scientific collections, and its revival can not be attributed to any need to save the Chinese birds from extinction at the hands of foreign scientists. Permission to send three specimens of other species back to the museums of Europe or America for study and classification is not an adequate allowance for this purpose, since it is unsafe to describe or classify a species on the basis of so few samples.

The inconsistency of the law is pointed out by Mr. Sowerby, who writes:

"Every year tens of thousands of skins of antelopes, deer, foxes, wild cats, leopards, raccoon dogs, martens, minks, civets, badgers, squirrels and many other animals and the feathers (not the skins) of all sorts of birds in huge quantities are shipped out of China in the course of trade. For years immense numbers of game birds were shipped out of the country in cold storage for consumption abroad, and to-day tinned games of all sorts is sent out, while passenger steamers load up with their supplies of game in China without let or hindrance.

"Millions upon millions of fish are taken from the streams and rivers every year and consumed as food. Thousands of musk deer are killed every year in China and the musk-pods exported to the perfumeries in Europe and America. Thousands of deer are killed every season for the sake of their horns, when in velvet, which are used as medicine.

"All this without the vestige of a regulation controlling the slaughter—yet the scientific collector, the man who is working for the benefit of mankind in general and for China in particular, is prohibited from exporting more than three specimens of any one species of beast, fish, reptile, insect, amoeba, or plant, and is not allowed to send a single specimen of bird out of the country."

China has no museums or libraries adequate for identification and classification of new species, and unless specimens can be shipped to foreign institutions it will be many years before the useful and dangerous wild life of China can be understood, he says.

PREHISPANIC RUINS IN MEXICO

IMPORTANT prehispanic ruins in northern Mexico of a civilization that bridges the gap between the Pueblo culture in the southwestern United States and that of the more advanced culture of the Aztecs and Mayas in southern Mexico have recently been inspected and studied by Dr. Eduardo Noguera, of the department of archeology of the Mexican Department of Education.

The ruins are of a fortified city on the crest of a hill about thirty-five miles southeast of Zacatecas, the capital of the state of that name. The locality was apparently chosen for defense, Dr. Noguera says, and suggests that the prehistoric town was surrounded by enemy tribes. The hill is about 500 feet high and over 3,000 feet long at its greatest point, and where it is not naturally defended by steep cliffs it is surrounded by stone walls which are double in some places.

The hill is a series of five terraces, and each terrace has its groups of buildings. The approach is guarded by a small pyramid and from there an avenue leads uphill to the first terrace. Minor avenues lead to other parts of the hill and to other edifices.

On the first terrace is a great "salon" about 130 by 100 feet. It is surrounded by a wall, and within are eleven pillars constructed of stone. They are at irregu-

lar distances from each other, but are placed at regular distances from the walls. Their purpose is a mystery. Even in their ruined state the highest of them are over seventeen feet.

This salon leads to another many times larger and also surrounded by walls which open at the east end and give access to a small pyramid. A third pyramid on the same terrace is of a peculiar structure in that its top is not truncated as in the case of all other known pyramids of the Mexican Indians. It is about fifty feet high and thirty-five feet at each base line.

A fourth pyramid of this ancient Indian city has a series of rooms of different sizes built into one of its sides. Although this structure is in a very bad state of ruin, the material that remains gives an idea of what it was in its heyday.

The best preserved edifice of all is another pyramid in an adjoining quadrangle. It is thirty-three feet high and has a series of rooms or living quarters.

SULFUR DUST

SULFUR grains as small as one twenty-five thousandth of an inch in diameter were described as a powerful new pest-killer in a report to the recent meeting of the American Chemical Society. The remarkable new preparation was announced by its discoverer, Dr. Ludwig Rosenstein, of San Francisco.

Recently finely divided sulfur powder has attained great importance as a material for dusting grape, orange, asparagus and other plants afflicted with insect and fungus pests. The sulfur seems to be acted on by moist air to give products which attack the pest. Unfortunately, sulfur is not directly soluble in water, so that its usefulness depends principally on the amount of surface of the solid powder; and no ordinary grinding process will divide the sulfur into grains as small as those of the new product.

Dr. Rosenstein's new ultra fine sulfur comes as a by-product of his new process for extracting the undesirable hydrogen sulfide from household fuel gas. In the process a little nickel sulfide happens to be intimately mixed with the sulfur, and it is suspected that the accidental presence of this nickel compound is at least partially responsible for the great potency of the resulting sulfur dust. While ordinary "flowers of sulfur," for example, will kill the red spider pest fairly readily, the new dust kills both eggs and mature insects. Other results as reported by the University of California experiment station are equally promising.

The by-product sulfur seems to exist as minute globules of a spongy suspension of water in sulfur suggestive of water-soaked grains of gelatin or starch, and may derive value from this condition.

Fortunately the gas-purification process is so successful that a large supply of the new sulfur is likely to be available shortly. One Pacific coast gas company alone will have 3,600 tons of sulfur per year to work out in this way if demanded.

ITEMS

FIRST evidence that Scotland was inhabited by cave men in the Old Stone Age has been obtained as a result of excavation in caves of northern Scotland. James E. Cree, who directed researches in four cases, under a grant from the Royal Society of London, has reported the discovery of two human skeletons in connection with bones of bears and other animals of frigid climates. Further evidence of man's occupation of the caves in ancient times was found in a lower level of gravel containing antlers and bones of reindeer together with tools of reindeer horn, antlers cut and scratched by human beings, and bits of charcoal which showed that fires had been burning. These finds are the first indication that there were any human beings in Scotland as far back as the Paleolithic Era, which ended some 10,000 years ago. Mr. Cree's researches have disclosed the first bones of cave-bears and arctic foxes to be found in Scotland. Further search for traces of Stone Age culture will be made during this summer, it is planned.

BLOOD tests to determine questions of paternity can safely be used as legal evidence, the medical faculty of the University of Lund, the next oldest in Sweden, has advised the Department of Health in Stockholm in response to a formal request for advice. In the making of the tests certain careful precautions are demanded and it is suggested in cases where the blood tests give no definite results, as does occasionally happen, that finger-print tests which also tend to prove blood relationship should be used.

THE record for continuous sleep is believed to be held by a land snail owned by Walter F. Webb. This little mollusk has remained dormant for thirty years, with the exception of one summer when Mr. Webb gave it the right condition for becoming active. This interlude occurred twenty years ago, so that the snail has now equalled the fabled record of Rip Van Winkle, and its owner says it appears to be able to continue its dormancy for an indefinite period.

Telescopes will soon be used to allow visitors to the Grand Canyon to inspect the latest geological discoveries in the depths of nature's great gully. Scientists are at work unearthing fossil footprints and other geological wonders in the Grand Canyon National Park. Visitors will be taken to the actual sites, but an observatory situated on the canyon's rim will allow a preliminary introduction to the various discoveries.

THE language of Tut-ankh-amen and Rameses is now available in terms of modern speech, as a result of co-operation between American and German brain and capital. The publication of the first volume of a great Egyptian dictionary has been announced in Berlin. The work is edited by Professor Adolph Erman and Professor Hermann Grapow, and represents the fruit of twenty-eight years of research on over a million and a half of texts and inscriptions. In acknowledging the assistance received from sources all over the world, the editors make special mention of the cooperation of Professor J. H. Breasted, of the University of Chicago, noted Egyptologist, and of the financial support of the enterprise by John D. Rockefeller, Jr.