PUBLIC HEALTH

Influenza Cases Jump; Flood May Bring Still More

A BIG jump in influenza cases that was not due to the disastrous Ohio River floods has been reported by state health officers to the U. S. Public Health Service. The increase, to a total of 35,953 new cases, was reported for the week ending Jan. 23. Western states showed largest numbers of cases per state.

Since that date hundreds of thousands have been driven by the flood from their homes and following exposure to cold and wet are now crowded together in temporary and makeshift living quarters. It looks like a perfect set-up for another big jump in influenza cases. Reporting of influenza cases is sketchy at best and under present circumstances reports will probably lag farther than ever behind the actual number of cases.

Science News Letter, February 6, 1937

ENTOMOLOGY

Black Widow Spider Bad? Pooh! Keep in Woodpile!

BLACK widow spiders deadly? Dangerous to have around the premises?

Dr. H. A. Allard, scientist in the U.S. Department of Agriculture, pooh-poohs the whole idea. (*Science,* Jan. 15.)

Black widows are poisonous; that he does not dispute. They can make you sick if they bite. The joker is, they almost never bite.

Years ago, says Dr. Allard, he found the spider very abundant in northern Georgia. Doubting its poisonousness and willing to play guinea pig himself, he tried to make it bite him on the thin skin between his fingers. The obstinate arachnid would not bite.

"On collecting trips as many as five or six were carried in the closed hand on several occasions with no effort on their part to bite," Dr. Allard continues. "The writer has liberated swarms of the young in an old woodpile near his garden, with no fear of being bitten. Much has been written within recent years about the evil ways of this spider, but there is little reason to fear its attacks and no reason to wish that it could be exterminated."

Black widows apparently have the strongly developed maternal instincts often attributed to their human namesakes. At any rate Dr. Allard states that they will adopt the cocoons containing the spiderlings of other females of their species. "If one is dropped on the floor of a box with a female she proceeds to suspend it in a web and watch over it. The process is repeated if others are dropped about, showing a rather marked solicitude for the nest."

Science News Letter, February 6, 1937

TECHNOLOGY

New Patented Device Tells Smoothness of Paper

HOW smooth is a piece of paper? Seems simple, doesn't it, when you contrast the feel of a glossy magazine such as the SCIENCE NEWS LETTER with the rough coarseness of the so-called "pulps."

But your finger will not be sufficient if you are a printer and have to choose the proper ink. To give a definite numerical basis for paper smoothness a device has just been patented (No. 2,050,486) by M. N. Davis and H. E. Malmstrom of Appleton, Wis.

A photoelectric cell, glass prisms and plates, a small hydraulic press and a light beam projector are essentials of the device which utilizes well-known principles of optics.

One of the best known feats of the science of optics is to bend light around corners with internal reflection in prisms. High-grade compact field glass and submarine periscopes are only two of many devices which use this well-known phenomenon.

If, however, a piece of paper is pressed against the back face of the prism which reflects the light, some of the light is not reflected but passes out of the prism and is lost. The degree of reflection depends on how good is the contact between the prism face and the paper. Good contact, great reflection loss; poor contact, little light loss.

In the new patent a beam of light enters the prism, strikes the two back faces in succession and is caught by the photocell and turned into electrical current which can be measured. The smoothness of the paper sample under test is determined if it is pressed against the back face and reduces the light intensity coming out.

Smooth papers make good contact and greatly lower the intensity, while rough coarse papers cannot make as good contact and dim the light less. The amount of electrical current generated in each case is thus a measure of the smoothness of the two papers.

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IN SCIENC

PLANT PATHOLOGY

Natural Acid May Replace Poisons as Fungicides

ARSENIC, lead, copper and other mineral poisons now used to protect plants against fungus, bacterial, and insect enemies may find practicable and harmless replacement in an acid naturally formed by living plants, suggests Maurice Copisarow, Manchester, England, biologist (*Science,* Jan. 30).

The substance is known as maleic acid. Experiments have shown that it exercises an inhibitory effect on the growth of microorganisms of decay, and Mr. Copisarow suggests that its effects may extend also to viruses hidden in dormant seeds and to insects in early stages of development. This same natural inhibitor, he adds, is probably transformed into the natural accelerator of fruit ripening, ethylene.

Maleic acid may be applied as a spray in some suitable neutral oily medium, Mr. Copisarow suggests. Unlike the mineral poisons commonly used for plant protection, maleic acid can be eaten by human beings without harm.

Spray residues of mineral poisons used against fungi and insects have in the past caused considerable controversy and some legislation adversely affecting the commercial fruit industry.

Science News Letter, February 6, 1937

BIOLOGY

Pigs Is Still Pigs, Medical Scientists Find

THE modern scientific version of the famous "Pigs is Pigs" story was revealed in the medical report on "Silicosis and Allied Disorders" made public by the Air Hygiene Foundation of Pittsburgh. Scientists wished to study the effect of coal dust on animal lungs and sent a cage of 25 guinea pigs into a West Virginia coal mine. The orders were to keep them two years and then return them for tests. The animals ultimately returned in their cage but Mother Nature was left out of the calculations. Now the scientists are wondering which were the original 25.

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E FIELDS

SEISMOLOGY

Earthquake Under Remote South Seas

A SEVERE earthquake shook the bottom of the far South Seas on Monday, Jan. 25, at 1:34 a. m., Eastern Standard Time. The epicenter, as worked out by the U. S. Coast and Geodetic Survey from data collected telegraphically by Science Service, was in approximately 12 degrees south latitude, 164 degrees east longitude, near the Solomon Islands.

Observatories reporting to Science Service were those of Pennsylvania State College, Canisius College, Fordham University, Weston College, the Seismological Laboratory at Pasadena, Calif., the stations of the U. S. Coast and Geodetic Survey at Ukiah, Calif., and Tucson, Ariz., the Manila, P. I., Observatory, the Zikawei Observatory near Shanghai, and the Dominion Meteorological Observatory at Victoria, B. C.

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ANTHROPOLOGY

Peking Man's Portrait May Soon Be Known

THE face of Peking Man, vanished from earth nearly a million years ago, will be seen again.

Discovery of a new skull of this most ancient Asiatic provides science, for the first time, with material showing the eye socket, nose bones, and certain other parts of the head heretofore unknown.

The skull, pronounced the most complete specimen yet unearthed, was found in the now famous cave of Choukoutien, near Peiping, China. Since the first discovery of Peking Man, no less than 24 individuals have been found in the cave, but always in crushed and very incomplete state. A series of discoveries within recent months has brought to light five skulls, including the latest and most enlightening example. The discoveries which offer new hope of reconstructing the features of Peking Man are being studied at Peiping Union Medical College by Prof. F. Weidenreich.

An appeal has been issued to scientific workers to withhold judgment on the place in human history that this ancient Asiatic type deserves, until Prof. Weidenreich can make his report. Inaccurate rumors have already arisen, declares W. C. Pei, Chinese geologist, in a communication to the British journal *Nature*. The last three skull discoveries are erroneously being called exactly like remains of Java Man, or Pithecanthropus, which is usually classified as the earliest of all specimens of man. Another false rumor, according to Mr. Pei, is that the discoveries reveal Peking Man to be identical with Neandertal Man, an extinct form who throve in Europe some 75,000 years ago.

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ORNITHOLOGY

Pointedness of Murre's Egg Helps Species To Survive

MURRES, which are birds that haunt seacoast cliffs, lay eggs so pointed they are almost top-shaped. A double usefulness for this extreme shape in the murre's extreme habitat has been discovered by Prof. R. A. Johnson of the State Normal School at Oneota, N. Y.

First, since the eggs are laid on practically bare rock, they are liable to roll. Since they come down to a point at one end, they roll in a narrow circle rather than a more open course which would take them over the edge of the cliff where the murres nest.

The second advantage lies in the fact that the parent bird straddles the egg with the narrow end pointed backward. This fits the egg closely against the body all the way, so that it is warmed uniformly from end to end, and thus better incubated than a conventionally shaped egg would be.

Mama Murre is "spelled off" by Papa Murre in the job of sitting on the egg, Prof. Johnson found. There do not seem to be regular hours for either of the parents, however. One relieves the other whenever he (or she) happens to feel that way, apparently.

The young murres learn to swim before they learn to fly—before the stiff flying-feathers on their wings are fully developed, in fact. Hatched on narrow shelves down the face of a towering cliff, they scramble around until they just fall off. If they drop a few score feet onto another rocky ledge, it is just a case of another young murre wasted. But if, with better luck, they plop into the sea—well, they swim. They've got to.

Science News Letter, February 6, 1937

ENGINEERING

Air Conditioning of Home Admitted To Be Luxury

PARTLY in scientific sessions but mostly in corridor discussion, scientists of the American Society of Heating and Ventilating Engineers meeting at St. Louis took home air conditioning apart and described the present trends that partially answer that much-posed question, "When shall we have cheap home air conditioning?"

Admittedly home air conditioning by mechanical refrigeration is luxury, revealed the engineers in their more anonymous and unguarded moments. For a few years it may remain so. But already simple, less costly forms of ventilating engineering are coming into wide use. These will so demonstrate their usefulness that true air conditioning is not too far away in time or price.

Growing in use are the forced air heating systems through small ducts which distribute cleaned, heated and moisture-controlled air throughout a home. When the owner wishes, it is not too difficult to tap into his system and add refrigeration.

But even at the moment the blower systems permit of pleasing cooling by sucking in the cooler night air and by forcing out the heated air of such places as the attic. Another discovery is that in summer the window shades or blinds of the Venetian type are much more effective in keeping out heat when they are placed outside of the windows rather than on the inside.

Looking to the day when the modern flat-roof type of home will be generally prevalent, heating engineers are already studying experimental homes which have about two or three inches of water on the roof. In winter this water freezes and adds a layer of heat-insulating ice to the normal roof thickness. In this point the engineers are simply stealing an idea which Mother Nature has long used to protect plants with a covering of snow and ice. In summer this water-covered roof would be the spray system with which the air conditioning unit would be cooled.

Along with these newer ideas are the old standby problems of better house construction to conserve heat in winter and keep the interior cool in summer. Most present day homes, it is generally agreed, are about as leaky as sieves to winds even though they may be watertight and keep out the rain.

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