

SCIENCE NEWS

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EPIDEMIC MENINGITIS

THE number of cases of epidemic meningitis is still increasing. For the week ending June 1, a total of 258 cases were reported, while for the previous week the total was 231. These figures are not high when compared to those of an influenza or scarlet fever outbreak, but, when compared with the usual weekly reports of 20 or so cases of meningitis in non-epidemic times, they appear to be significant.

The present outbreak has been most severe on the west coast, where it was introduced by Filipino immigrants who came into the country while suffering from the disease or when in the carrier state. The latest reports showed that the epidemic is moving east. Michigan, New York City, Ohio, Illinois, Missouri, California and Pennsylvania reported the greatest number of cases in the order given, Michigan leading with 71.

Radical steps to check the present outbreak, such as restricting immigration from the Philippines or other Oriental ports, may be necessary, according to state and federal health officials.

Methods of controlling this disease are about as unsatisfactory as those for controlling influenza. The one measure all agree on is isolation of the carriers of the disease. This is extremely difficult, because the number of carriers becomes very large during an epidemic, as experience with the outbreak in 1917-1918 showed. If the carrier is kept away from crowds and in the open air and sunshine as much as possible, he usually becomes within a few days free of the germs, and therefore free of danger to others.

Early recognition of the disease and prompt isolation of the patient is recommended, as in the case of all infectious diseases. Quarantine of the patient should continue until 14 days after the onset of meningitis. Immunization against the disease is in the experimental stage. Some investigators reported satisfactory results, but others have had little success. Serum for the purpose is available commercially and may also be had from some state boards of health. Personal cleanliness, adequate ventilation and avoidance of overcrowding, fatigue and strain are recommended in meningitis as well as in other epidemics. These measures are of general though not of specific usefulness.

While the present epidemic in the United States has been traced to Filipino immigrants landing in California and Washington, the actual source of the disease has not been detected. Filipinos suffering from meningitis were landed in Hawaii early last fall, but no meningitis had been reported in the Philippines. Whether the disease existed there unreported or whether the susceptible Filipinos acquired it when the ships carrying them stopped at Chinese and Japanese ports while *en route* to Hawaii and the United States has not been determined. Occasional cases were reported at Hong Kong and at Kobi. No definite knowledge of the situation among the native

population in China is available. First notice of the existence of epidemic meningitis in Northern China was received in April. Peculiarly, Canadian steamers from Manila, Honolulu and other Oriental ports have not brought more than three or four cases of meningitis into Canadian ports during the last six months or so, nor has any outbreak of the disease been reported in Canada.

SENATE COMMITTEE ON CANCER RESEARCH

Is there anything which the U. S. Government can do to aid science in its battle to find the cause and cure of cancer? The Senate of the United States wishes to learn the answer to this question, and, in order to get it, a subcommittee of the Commerce Committee is planning to begin hearings next week, at which Surgeon-General H. S. Cumming, of the U. S. Public Health Service, and perhaps other scientists will appear.

The hearings are authorized due to the passage of the Harris resolution, whereby the "Commerce Committee of the Senate or a subcommittee thereof, is authorized and directed to make a thorough investigation of the means and methods whereby the Federal Government may aid in discovering a successful and practical cure for cancer, and to report to Congress as soon as practicable the results of such investigation together with its recommendations for legislation and appropriations."

Senator Wesley Jones, chairman of the Commerce Committee, who will also be chairman of the cancer subcommittee, states that he is not sure at this time that the Federal Government can or should make any special appropriations for the cancer work.

"Many individual institutions are doing splendid work," he said, "and sometimes we get better results by not expanding in too many directions. However, if there is anything the government can do, and any appropriations which ought to be made, we want to know it, so that we can act accordingly."

Specialists from all over the country will be called before the committee, other members of which are Senators Harris, of Georgia; Vandenberg, of Michigan; McNary, of Oregon, and Copeland, of New York, the latter of whom is a physician.

One of the first steps to be taken by the cancer subcommittee is to obtain from Surgeon-General Cumming a list of medical men and surgeons who attended a cancer conference called by the Public Health Service in April, 1928.

To each of these men, Senator Jones plans to mail a copy of the report drawn up by an acting subcommittee of these conferees never before made public. Each will be asked if the report as to work which should be done on cancer meets with his approval, and for further suggestions.

If, as a result of the investigation of cancer research by a Senate Committee, the Federal Government decides

to further research on this disease, it may do so by increasing facilities for the work now being done at the Hygienic Laboratory of the U. S. Public Health Service.

This would not require the expenditure of vast sums of money, Surgeon-General Hugh S. Cumming indicated. A small part of the amounts that have been suggested for this work would be sufficient to enlarge the personnel and to multiply the investigations now being carried out at the Hygienic Laboratory. The work there is being done along two main lines. One is physical, in charge of Dr. J. W. Schereschewsky, and the other is biochemical, in charge of Dr. Carl Voegtlin.

Any other plans, such as the establishment of government cancer institutes for research and possibly for radium treatment of the disease, would be an entirely new departure for this country. Such centers for cancer treatment have been sponsored by governments of various European countries, the latest among them being England.

FABRIC FOR MOTION-PICTURE FILM

MOTION-PICTURE film made of fabric instead of celluloid, and equally applicable to silent movies or talkies, has just been demonstrated at New York by Dr. F. W. Hochstetter, of Pittsburgh, its inventor. Non-inflammability and cheapness are two of the advantages claimed for it.

In a New York hotel room, Dr. Hochstetter had the apparatus set up to reproduce a photographic sound record. Along the edge of the film, which is the same size and with the same perforations along the sides as the ordinary type, is a narrow strip containing a jagged line. The variations in the line correspond to the waves of the sound that made the record originally. This is the usual method of variable width sound on film recording, used in one of the most successful of talking movie processes.

But with the ordinary sound movie film, the light from a small lamp passes through this jagged strip as it passes over a narrow slit. The teeth in the line sometimes cover the slit and reduce the amount of light that can pass through, while at other times a space between the teeth is over the slit and a great deal of light can penetrate the slit. After this the light falls on a photoelectric cell, its variations are converted to variations in an electrical current, which in turn operates a loud-speaker and gives a facsimile of the original sound.

As shown here, the film passed behind a small square opening which exposed a bit of the sound record. Two powerful lights were focused on this hole, and a lens formed an image of whatever happened to be under the hole on a narrow slit several inches away. The method is the same as the post-card projectors, in which an ordinary post-card or photograph can be projected on a screen. In back of the slit is a photoelectric cell, so that the light falling on it is also regulated by the teeth in the sound record. The current from the cell is passed through a special amplifier that Dr. Hochstetter has designed, and then operates the loud-speaker.

Dr. Hochstetter stated that for talking movies the picture scenes, photographed on the main part of the film

in the usual way, could also be projected by reflected light. On the other hand, it is also possible to project by passing the light through the film from the rear. The film is not transparent, but translucent, and so much more light is required than for the ordinary celluloid film. This disadvantage is offset, Dr. Hochstetter claims, by the better gradations of light and shade it gives. Often a photographer, when making a print from a negative, will place a piece of ground glass between the light source and the negative, in order to reduce excessive contrasts.

The fabric film is prepared in a way similar to that used in the preparation of artificial silk. The fabric is parchmentized with the aid of strong alkalis, then the interstices between the fibers are filled in with a mordanting compound. This makes the film of uniform translucence and prevents any objectionable effect from the mesh of the cloth. If desired, the inventor states, the parchmentizing process can be carried far enough to make the film actually transparent, though this film was not demonstrated.

LABORATORY-BRED CLAMS FOR PEARLS

By raising clams in test-tubes and protecting them during their most dangerous period of life, Professor Max Ellis, Missouri physiologist and U. S. Bureau of Fisheries investigator, hopes to provide the pearl button industry with new and valuable pearly clam shells as well as an ample supply of the ordinary varieties.

The first two or three weeks of a clam's life, by far the hardest in its career, will be made secure by his process which provides an ample supply of food.

The young fresh-water clam or mussel leads a very uncertain life. Only comparatively few of the millions left by each mother clam to shift for themselves in the depths can find the right kind of fish on which to live for the necessary parasitic early existence.

The minute potential clams ride along with their fish, seeking growing beds. And many times a mussel that thrives on a sandy riverbed lets go of his fish in a mud-bottom stream. During this three-month period, almost every chance is against the clams. Without the proper environment they die in a few days, or are swallowed up by the tiny water animals.

Using the nutritive fluid he has devised, Dr. Ellis, with mature eggs taken from the female, can develop in ten days or two weeks millions of clams ready for planting in the environment that suits their type.

Successful experimental plantings have been made at the Bureau of Fisheries station at Fairport, Iowa. In five to eight years they develop shells worth, for the best quality, \$125 to \$150 a ton.

Professor Ellis plans to develop, by careful selection of planting beds, desirable species not now successful naturally. Some of these make the big lustrous sweater buttons and novelties of special iridescence.

Streams will be replenished with laboratory mussels in the same way that they are restocked with fish. One small test-tube can contain millions of potential pearl buttons. Yellowish liquid that barely covers the bottom of a tube will feed eight or ten thousand dollars' worth of shells in their earliest stages.

SKIN PIGMENT

"PIGMENT is not a racial characteristic. The same hue prevails in the white as in the so-called black, red and yellow races," according to Drs. Louis A. Brunsting and Charles Sheard, of the Mayo Clinic and Foundation, in a recent report of investigations carried on by the two scientists. Their work was done with a modified spectrophotometer. This instrument also is used in industry in grading oils, analyzing flour, paints and dyes, and is known as a color analyzer.

Dependable analysis of color rests on estimation of its three attributes: relative luminosity, dominant wavelength and purity. Relative luminosity is brilliance, or the amount of light reflected. Dominant wave-length is hue, the attribute by which a color is classified as reddish, bluish and so forth. Percentage of purity is saturation, vividness, distinctness, the attribute by which is determined how red or how blue a color is.

Drs. Brunsting and Sheard have found that the reason why some men are black and others white is not because their skin contains pigments of different colors, but because it contains different amounts of pigment. Less pigment is present in white than in red, yellow or black skins. Therefore, skins of white men reflect more light than skins of yellow, red or black men. In other words, relative luminosity of dark skins is low. The underlying factor in deposition of different amounts of pigment, or melanin, in the skin probably is the amount of exposure to sunlight through many generations.

The presence of much pigment hinders the blood that is in the superficial layers of the skin being seen. This is an important factor. The investigators have found that variation in the amount and character of the superficial blood is of more importance in production of changes in color of the skin than is the pigment alone.

OLD STONE AGE REMAINS IN IRELAND

E. K. TRATMAN, of the University of Bristol, has reported the discovery of a human skeleton deeply buried in the earth floor of Kilgreany Cave in southern Ireland. A stalagmite layer which slowly formed over the body contains bones of the wild boar, Irish giant deer, reindeer, brown bear, wolf, Arctic lemming and other animals that roamed northern Europe at the end of the Ice Age when the glaciers were retreating to the Arctic regions.

Previous discoveries of crudely chipped stones in Ireland have been hotly argued over, some scientists holding that the stones were tools hacked into shape by primitive human beings of the Old Stone Age, and other scientists maintaining that the stones were chipped by nature or that they were not very ancient. A group of well-known archeologists, including R. A. S. Macalister, who pronounced adversely on previous discoveries, have announced their "complete acceptance" of Mr. Tratman's discovery and "full appreciation of its importance."

There is absolutely no evidence of any disturbance of the stalagmite layer by the burial inserted from above, Mr. Tratman states in a report of his discovery in *Nature*. Hence, the cave-dweller must have been a contemporary of the animals of the Ice Age. No stone tools or weapons

have been found in the cave to show the stage of material development attained by the Stone Age Irishman.

In the upper layers of earth which accumulated over the burial are remains of later inhabitants of the cave. One layer contains part of a polished stone axe and a number of human skeletons. These men probably lived at the end of the New Stone Age or the dawn of the Bronze Age, it is reported. Still nearer the surface was a hearth of late Bronze or early Iron Age.

ITEMS

EDISON'S first electric lamp, which has been pictured on a special two-cent U. S. postage stamp as a part of electric light's golden jubilee, is one of the few inventions to be so honored. Last fall a picture of the Wright Brothers' first airplane appeared on a special stamp commemorating the twenty-fifth anniversary of the first flight. Airplanes, steamboats, bicycles and railway trains have appeared on U. S. postage stamps, but they won their places because they are means of transporting mail rather than because they are inventions. The Edison commemorative stamp was placed on sale on June 5 at Menlo Park, N. J., where fifty years ago this year the incandescent lamp was born of Edison's genius.

ORANGE and grapefruit growers in Florida who have suffered financial losses from the depredations of the Mediterranean fruit fly may be reimbursed through a special appropriation by Congress. Five bills have been introduced in the House and Senate providing for such reimbursement with the total amount of the appropriation varying from five to ten million dollars. All of these bills have been referred to the Department of Agriculture by the Agricultural Committees of Congress. After the resolution is reported by the House Appropriations Committee, it is expected to pass at once.

ORANGE beverages sold in Chicago are subject to regulations much as milk and cream are. The value in minerals and vitamins of orange juice is such that the content of fresh fruit in orange beverages is as important, from a public health standpoint, as the content of butterfat in milk, the city officials hold. Consequently surveys were made and regulations drawn up to control the sale of this popular beverage. Weekly samples of the orange drinks sold in almost every block of the business district are examined bacteriologically. The beverages are required to comply with the bacteriological standard for drinking water on interstate carriers. The latest regulations require that fresh fruit orange drinks must contain 10 per cent. orange juice and that artificial drinks must be sold as such and patrons advised of their contents, the committee on foods, drugs and nutrition of the American Public Health Association has reported. Employees, according to the regulations, must be examined for typhoid fever, either active or in the carrier stage. If orange peel is used in making drinks, the oranges must be treated with chlorine so as to disinfect the exterior.