SCIENCE NEWS

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THE NATIONAL HEALTH INSTITUTE

A LAST-MINUTE attempt made just before the Congress adjourned to pass a bill establishing a National Institute of Health, using the present Hygienic Laboratory of the U. S. Public Health Service as a nucleus, failed in the House. The Senate late Friday night passed such a bill, after it had been pressed by Senator Joseph Ransdell, Democrat, of Louisiana, who introduced it.

The bill was so amended as to leave out all references to authorization for appropriations necessary to carry out the act, and instead authorized the secretary of the treasury to submit plans and estimates of appropriations necessary to carry out the provisions of the act, and report back to the Congress next December.

In the House, however, when Representative William I. Sirovich, Democrat, of New York, moved to suspend the rules and pass the Senate bill, strenuous objections were made by members of the House Interstate and Foreign Commerce Committee, to which similar bills introduced in the House by Representatives Sirovich and Kindred, also a Democrat, of New York, had been referred. No hearings had ever been held by the House committee on these bills, and Sirovich based his request for suspension of the rules on the fact that little attempt had been made for such hearings.

Representative Edward E. Denison, Republican, of Illinois, member of the Interstate Commerce Committee, declared that if it were really necessary to ask for a suspension of the rules, that Representative Sirovich could do this in the special session which will convene about April 10. Such action would mean, of course, that the Senate would have to pass the bill again.

The bill would put the surgeon-general of the United States in charge of the national institute of health, and would allow him to establish fellowships so that individual scientists might work there and contribute the benefits of their research work to the United States. It would also allow the secretary of the treasury to accept gifts from wealthy men on behalf of the government, and invest these monies in U. S. government securities, using the income thus derived to establish these fellowships.

PRESIDENT HOOVER'S CRIME INQUIRY

WITH President Hoover's inaugural promise of "a national commission for a searching investigation of the whole structure of our federal system of jurisprudence," those interested in the intricate problems of human behavior see the beginnings of another of those famous Hoover inquiries that have already revolutionized ideas and relations in the field of business and the application of science to industry.

Crime in all its aspects will necessarily be considered by the proposed commission, although its recommendations and primary inquiries will be concerned with federal laws and courts, particularly the enforcement of the 18th amendment. Since criminals and personalities do not change with mere legal jurisdictions, the fundamental facts and theories developed will be of interest to state and local police departments and courts that have to cope with murder, robbery, speeding and other such crimes.

The first and most direct step in the remedy of "the failure of our system of criminal justice" will probably be a stocktaking of the national system of jurisprudence in order to make it more efficient and effective in administering and enforcing the laws that now exist. Essentially this will be a task comparable with the reorganization of the production methods of a great factory, using the same designs and policies that the old management had used.

But while the reorganization is in progress there will arise the need for new facts, improved design and the discovery of fundamental facts. The old legal ideals of the sanctity of precedent probably will be found to be inadequate for the conduct of the new business. So early in the Hoover investigation of crime there are foreseen inquiries into the causes, kinds and the personalities that fill our courts and jails. There may be expected questionings of the need for certain laws and the best penalties to achieve the ideal of public protection with the maximum of individual freedom. On such points, psychiatrist, psychologist, physician and sociologist studying the mental and physical attributes of men will need to give evidence along with the lawyer, judge and policeman.

Facts will be utilized by Hoover, the president, as effectively as by Hoover, the engineer or the administrator. Even the most elemental and fundamental statistical facts on crime are lacking for the guidance of the national jurisprudence investigation, if it considers the wide aspects of crime and judicial procedure. Personality diseases, known as crime, must be classified and reported as efficiently as health departments record epidemics of physical disease.

In President Hoover's pronouncement that "in public health the discoveries of science have opened a new era" there is promise that this new scientific progress will be made available to thousands who otherwise would suffer. The man who saved the Belgian people during the World War, who then rescued the hordes of starving children that the war had left in Europe, believes that health is as much a concern of government as education. Vigorous warfare for better health is forecast in his statement that "many sections of our country and many groups of our citizens suffer from diseases the eradication of which are mere matters of administration and moderate expenditure."

INFANTILE PARALYSIS

THE best hope of curing the paralysis and serious crippling which follow an attack of poliomyelitis, or infantile paralysis, lies in early preventive measures, accord-

ing to Dr. Lloyd W. Aycock, of the Harvard Medical School. This means that treatment must be begun before the nerve cells have been destroyed. Hence the plea physicians are making for early diagnosis of the disease.

"The paralysis itself is due to the destruction of the nerve cells in the spinal cord which govern the movement of muscles," said Dr. Aycock. "When these nerve cells are destroyed, the muscle with which they are connected loses entirely its power to function. It is like a telephone which may be in perfect order itself but which can not function without a wire leading to it from the telephone exchange."

Once the paralysis has occurred, it is too late to cure it, although patient treatment and care and exercise can do much for the affected muscles. The paralysis is practically always preceded by certain definite symptoms. It is during this preparalytic stage, before the nerves have been destroyed, that there is a chance of cure.

Serum from the blood of persons who have passed through an attack of the disease is the one remedy at present available for treating the disease in the preparalytic stage.

Mothers are always pretty much doctors to their children, Dr. Aycock said, and while they can not hope to make a diagnosis of this disease unaided, they can learn to suspect its presence so as to call for medical aid in time.

The onset of the disease is usually abrupt, with fever, headache and stomach and intestinal upset and the child is drowsy and wants to be let alone. The child is usually more prostrated than usual with the degree of fever, which is generally not over 102 degrees Fahrenheit. An anxious expression of the face, tremors and twitchings of the muscles and a sort of uncertainty in movement of the arms and legs are characteristic of this disease in the early stages.

The most suggestive sign is stiffness of the spinal column and neck. The latter will be held rigidly and often the child can not sit up comfortably without propping himself up on his arms.

Every stiff neck is by no means an indication of infantile paralysis, Dr. Aycock emphasized. The stiff neck of this disease is a rather special one. But if the mother finds such symptoms, she should at least suspect the disease and have the matter further investigated.

CLEFT PALATE

A NEW device which successfully overcomes the thick, sometimes unintelligible speech of persons afflicted with cleft palate has been made by two Viennese scientists, Dr. Albert Schalit and Professor Emil Froeschl. The new device was recently demonstrated to the Vienna Medical Society by a dialogue between a normal person and one afflicted with cleft palate treated by the new method. Physicians present were unable to tell which of the two speakers was the sufferer. The device is based on a new theory held by the two scientists about the cause of speech difficulties in cases of cleft palate.

This condition is relatively one of the most common deformities arising out of abnormal development of the human body before birth. It occurs in about one in every 1,000 births. Cleft palate is in most cases complicated by harelip. It consists of a gaping palate which, lacking the roof of the normal one, brings the interior of the nose into direct communication with the mouth. While the harelip can be easily handled by a simple minor operation, the cleft palate is very difficult to correct by surgical means. Even if the closing of the palate is successfully accomplished, the chief difficulty, inability to produce articulate speech, is not overcome by the operation.

Many attempts have been made to correct this defect by inserting devices into the mouth but so far they have failed. Dr. Schalit and Professor Froeschl found that the thickness of articulation is caused not so much by the fissure of the palate as by the resonance of the open fissures of the nose. Dr. Schalit did not bother with attempts to close the palate surgically, but inserted a wedge-shaped, cuneiform piece into the nasal cavity, which completely closes it from the mouth. To this part, other necessary minor parts are fixed.

YELLOW FEVER VIRUS

THE list of yellow fever martyrs grows, but scientists now feel hopeful that the death of Dr. A. Maurice Wakeman, of the Yale University School of Medicine, will be the last human sacrifice science needs to make to conquer this disease.

The discovery that a strain of yellow fever virus may be transported from the source of infection in Africa or South America to northern countries without losing its infectiousness gives rise to this hope. This discovery now makes it possible to start research on yellow fever in northern countries where natural infection is unknown and where the conditions of experiment are therefore easier.

This does not mean that yellow fever will not continue to take its toll of human lives for some time. But it does mean that scientists need no longer take the risk of working in tropical countries where the chance of infection outside their laboratories is very high, and where living and working conditions are so arduous that men become especially susceptible to disease.

Further sacrifices such as have been made by Lazear, Noguchi, Stokes and now Wakeman, may now be avoided. All these men died while investigating yellow fever in tropical countries, Lazear in Cuba and the other three in Africa.

This discovery that yellow fever virus may be kept long enough for transportation has been announced to the Royal Society of Tropical Medicine and Hygiene by Professor Edward Hindle, the Beit Fellow in Tropical Medicine. Dr. Andrew Sellards, of Harvard University, brought the virus of the disease back to London in the liver of an infected monkey that had been frozen during the voyage from Senegal to London, a period of 12 days. This strain has been the basis of investigations leading to the production of a yellow fever vaccine by Professor Hindle and also by Professor A. Pettit and his collaborators of the Pasteur Institute in Paris.

Infected organs have been found to keep their infectiousness for at least 18 days if kept frozen and Professor Hindle claims that liver or blood dried without air will remain infectious indefinitely.

RADIUM TO REDUCE FIRE RISK

RADIUM now fights fires by snuffing out dangerous sparks of static electricity in a large Russian rubber factory. So little radium is used that the method costs only a few dollars per year.

When rubber solution is flowed upon a fabric base and dries upon it, enormous charges of static electricity are produced from friction of the rubber-covered fabric against parts of the drying machinery. In time the pressure of these accumulated charges is raised so much that a breakdown through a discharge becomes inevitable. The hot, fat spark, exactly like the ignition spark in an automobile motor, presents a great fire hazard. Air in the drying room of a rubber factory is always saturated with highly explosive vapors, which ignite most readily.

The usual method of fire prevention consists of leading the charges of electricity away, before their pressure becomes too high. A fine wire-brush is used to collect the charges. Small sparks can not be avoided in this way, however, and the fire danger is always present.

All this is changed when radium is placed near the point where electricity is generated. Radium rays ionize the air and make it a good conductor of electricity. The dangerous charges then flow harmlessly through the air to the nearest metallic part and thence to earth. No sparks can be produced when radium is on sentry duty. The new method was tried out in the Russian State Rubber Factory "Treugolnik" at Leningrad and was found to be successful.

The cost of installation is reported to be very low, as one milligram of radium is quite sufficient to produce the desired results. Furthermore, it will not be necessary to renew the radium capsule, as it will last for a few centuries at least.

ITEMS

ROTATING fans of vari-colored light such as will guide future aviators to safe landings at night are now in operation at the Cleveland municipal airport. The airport beacon by rotating reaches the pilot at any angle at which he may approach the field. Half of the beam is white and half red, producing alternate flashes to distinguish the beacon from the brilliant lighting of parks, railroad yards or streets. High candle-power is used in order that light may penetrate fog as effectively as possible. Color is produced by special cover-glasses placed over the incandescent lamp projectors.

HENS that live in artificially-lighted henhouses lay more eggs in winter not because of any direct effect of the light but because they have more time to work at collecting egg-materials. This is the claim of M. Bette, a French investigator. As is well known, chickens go to roost at sunset and wake at sunrise. During the dark and short winter days the fowls devote the greater part of their time to sleep and generally only take one meal a day. All their functions are thus reduced and a considerable letup of laying is a consequence.

ORDINARY tracing cloth such as draughtsmen use for their drawings that are to be blue-printed may become a favorite curtain material on account of a discovery by C. H. Young at McGill University. Incidental to investigation of the effect of ultra-violet light on blue-print paper, Mr. Young found that the beneficial short wave-length radiation from the sun will pass through the tracing cloth although the ordinary paper and cloth act as a barrier. A single layer of tracing cloth will, moreover, screen off much of the heat. He suggests that a single thickness of tracing cloth between wide-meshed wire screens can now replace curtains and blinds and with this screen before an open sunny window it will be possible to enjoy the advantages of ultra-violet light without undue heat or glare. The eyes should be protected, however. Mr. Young believes that tracing cloth will provide a cheap and effective substitute for many special glasses and that the material hitherto confined to drawing-boards will find its use in sun-parlors, country cottages and on chicken farms.

A YOUNG okapi, one of the rarest of large animals and the latest to be discovered, has been brought out of its native jungles by a missionary, Brother Joseph Hutsebaut, and is now living in a Belgian zoological park with every apparent intention of continuing to do so. An earlier attempt was made to introduce this rare animal to Europe in 1919, but the specimen died after two months in captivity. This time a more careful program was followed. The young okapi was brought up by hand by the naturalist-missionary, and fed on bananas and Congo-raised European plants at the mission station until it had made the transition in diet successfully. A voyage to Belgium followed, under the personal auspices of Queen Elizabeth.

NEW YORKERS can now see the motion of the molecules in smoke which they breathe or exhale. A new exhibit at the Museums of the Peaceful Arts in New York makes this visible. The visitor blows a puff of cigarette smoke into a funnel, where it passes under a high-power microscope. Under the microscope, tiny smoke particles can be seen vibrating back and forth. This motion is caused by the bombardment of the particles by the constantly moving molecules of air around them, and is known to scientists as the Brownian movement.

AN unexpected visitor, in the form of a three-foot snake, arrived in Hanover, N. H., in a shipment of bananas from Central America. Professor W. B. Unger, of Dartmouth College, identified it as a young *Boa imperator*, a close relative of the better known *Boa constrictor*. Both varieties of serpents are non-venomous; but kill their prey by squeezing it to death. The adult *Boa imperator* reaches a length of nine feet.