

PHYSIOLOGY

Cigarettes Have Effect On Long-Time Smokers

HABITUAL smokers of cigarettes develop a tolerance for the drug they contain, but they still feel the effects to a certain extent, Dr. A. L. Winsor of Cornell University reported before the annual meeting of the American Psychological Association.

Your first cigarette makes a pronounced disturbance. Glands are kept from secreting in normal fashion. Muscles are so affected that you are decidedly unsteady.

Continued smoking gradually reduces the effect on the glands and lessens the marked unsteadiness. In Dr. Winsor's tests, however, it was not possible to reduce the unsteadiness beyond a certain point.

Similar tests with coffee showed that the first drink produced a considerable increase in glandular secretion, followed, when the coffee drinking continued, by a gradual reduction in this increase. Coffee had practically no effect on steadiness.

Science News Letter, November 4, 1933

MEDICINE

Study of Working Man's Ills Began in 1700

RIGHT NOW when so much is being done to improve the lot of the laborer comes the tercentenary of the birth of the person who first concerned himself with the working man's health.

Sunday, Nov. 5, is the three hundredth birthday of Bernardino Ramazzini, founder of industrial medicine. This Italian was a man with a social consciousness several centuries ahead of his time, writes Dr. Herman Goodman, a New York physician who recently published a compilation of Ramazzini's work, "Diseases of Tradesmen." Ramazzini's original observations were published about 1700. As recently as 1924 authors writing of industrial diseases took their descriptions from sources based on Ramazzini's work.

The divisions which he made as to two causes of dire results of occupation on the workers' health cannot be improved upon, states Dr. Goodman in a biographical note published in *Atlantica*.

"Ramazzini gives the deleterious nature of the material which the workman must handle, and the strange, im-

proper position of the body as the two causes for ill health due to occupation," Dr. Goodman continues.

In the first cause group belong the men who worked in mines, gilders, those who rubbed mercury, worked at pottery, or with brimstone. Painter's colic and other ill effects of working with lead were known to Ramazzini.

"In the second category of causes of illness among workmen, Ramazzini devotes chapters to those who work standing up, those who sit, those who run, those who ride horseback and those who partake of sports or the activities of camp life. He explains the habitual posture of porters as being due to the distribution of the heavy weights they bear across the shoulders.

"Writer's cramp was first recognized by Ramazzini. Other chapters are devoted to the illness of midwives, nurses, vintners and brewers as well as to the special diseases of Jews and of learned men."

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SURGERY

Operating Risk Now Mathematically Calculated

A NEW yardstick of safety for the operating room was described at the Congress of Anesthetists by a British anesthetist and physician, Dr. W. Stanley Sykes of Leeds.

With this yardstick, called the energy index, surgeons and anesthetists can determine with mathematical precision the risk of operating on any patient. The exact load under which the patient's heart is working can be checked as accurately as an engineer can check on the load of a dynamo in a power plant.

The test gives in millimeters of mercury the mathematical load under which the patient's heart is laboring. The index is determined by adding the systolic and diastolic blood pressure readings and multiplying the sum by the pulse rate. As the heart's load increases or decreases from the normal of 14,400 millimeters per minute, the risk the patient runs in being operated on becomes greater. If the reading is higher than normal, it is because the heart has enlarged to take care of a greatly increased load of work. If the reading is lower than normal it is because the heart has given out entirely under the load and the energy it can expend has decreased.

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IN SCIENCE

MEDICINE

Potent Reducing Substance Found in Cancerous Tissues

DISCOVERY of a new substance in cancer tissue has been reported by Dr. Leslie J. Harris of the Nutritional Laboratory, Cambridge, England.

The significance of the discovery lies in the fact that this newly-discovered substance, called "reducytin," is what chemists designate as a reducing substance, and abnormality of reducing action is one of the most important characteristics of cancer tissues.

Dr. Harris made this discovery, just reported to *Nature*, while investigating the reducing activity of vitamin C. This reducing property of the anti-scurvy vitamin shows itself in ability to bleach a blue dye which has the long technical name of dichlorophenolindophenol. Cancer tissue, Dr. Harris found, also can rapidly bleach the blue dye. The process is one of removing oxygen or adding hydrogen atoms to the dye.

At first he thought the reducing or bleaching action of the cancer tissue might be due to the presence of vitamin C. Subsequent investigation showed that the amount of vitamin C present could only account for one-third of the reducing action of the cancer tissue. Therefore he concludes that a hitherto unrecognized and unusually powerful substance must be present.

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SEISMOLOGY

Interior of Bolivia Shaken by Earthquake

SHARP earthquake disturbance in the interior of Bolivia was indicated by a study of data collected telegraphically by Science Service and interpreted by seismologists of the U. S. Coast and Geodetic Survey. The quake began at 6:28.2 p. m., eastern standard time, on Wednesday, Oct. 25. Its epicenter was in approximately 22 degrees south latitude, 67 degrees west longitude. This point lies in the Bolivian state of Potosi.

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CE FIELDS

ORNITHOLOGY

Wild Ducks Vegetarians Says Biological Survey

WHEN a duck "stands on its head" in the water, leaving only its tail and perhaps a pair of energetically kicking legs protruding, what is it after?

Food, of course. But not the bugs and frogs that most of us think of as duck food, says the U. S. Biological Survey. With the exception of the mergansers, or fish ducks, all wild ducks are at least 90 per cent. vegetarian in their food habits. The tidbits they stand on their heads for are rootstocks and tubers of aquatic plants and seeds that have sunk to the bottom. Even when a duck does a deep dive it is not after a fish, but is going to the bottom to hunt for vegetable food. The tenth of duck-food that is of animal origin consists of worms, insects, snails and crayfish—very seldom fish.

Science News Letter, November 4, 1933

PLANT PATHOLOGY

Quarantine Regulations Guard Against Elm Disease

PROTECTION for the elm-shaded streets and lawns of American cities is sought through a new quarantine regulation imposed on imported elm logs which were the means of introduction of two outbreaks of Dutch elm disease which have occurred in this country during the past three years. The regulations, which have been announced by Secretary of Agriculture Wallace, aim to permit the continued importation of these special logs, which are necessary to a part of the furniture trade, but at the same time to rid them of the risk of carrying the disease. Throughout the campaign against this new plague the Department of Agriculture has had the willing cooperation of the importers and manufacturers, it is stated.

Dutch elm disease is due to a fungus which spreads to all living parts of the tree, withers its leaves and hence kills the tree. It is carried by a species of beetle which burrows under the bark.

Hitherto all the elm logs imported

for the furniture trade came in with their bark on. The key provision of the new quarantine regulations is that the bark must be removed before the logs are shipped. This practically eliminates the chance of new importations of infected beetles. A second important requirement is that the logs shall be treated with steam or hot water at a temperature of 180 degrees Fahrenheit, until they have been heated completely through for at least two hours. This will kill any fungus that may be in them.

A subsidiary provision calls for the de-barking of all elm and related lumber, in crates, etc., which may enter this country from abroad. This is to head off beetles that may be hiding in such smaller pieces.

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MEDICINE

Susceptibility to Colds Does Not Persist

IF YOU ARE one of those unfortunate persons who seems unusually susceptible to colds you may be cheered by the knowledge that such susceptibility does not persist year after year for an indefinite period. On the other hand, neither does resistance to colds persist indefinitely.

These seem to be among the findings of the studies on the common cold that Dr. William M. Gafafer, and Dr. James A. Doull, now of Western Reserve University, have been conducting at the Johns Hopkins University under the John J. Abel Fund for Research on the Common Cold. These latest findings have just been reported in a preliminary note to *Science*.

The frequency of attacks of colds in the same person for two successive years was studied both in medical school students and in members of a group of one hundred Baltimore families. In the medical group the frequency of attacks in the same student for two years with an interval of one year and two years in between was also studied.

A tendency for persons to remain cold-resistant or cold-susceptible at least for successive years was noted; but when the years observed are separated by one year the results are doubtful, and when the interval is two years there is no indication of a definite tendency for persons to remain in the same class as regards susceptibility or resistance to colds.

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ICHTHYOLOGY

Male of Deep-Sea Fish Species Never Grows Up

DR. WILLIAM Beebe, American Museum naturalist, has discovered a fish that never grows up. It is the male of a small deep-sea species known to scientists as *Idiacanthus fasciola*; it has no common English name. The females of the species are little fish, reaching a length of from 2½ to 10½ inches, and are normally developed. The males are much smaller, only 1¼ to 1¾ inches long, and of such generally immature appearance and structure that specimens hitherto dredged up have been judged to be not mature but "post-larval."

However, these immature-looking tiny fish contain fully developed reproductive glands, Dr. Beebe has found, and they must therefore be considered full-grown in spite of appearances. At the same time, small fishes which have hitherto borne an entirely different name have been identified by Dr. Beebe as the larval and post-larval stage of *Idiacanthus*.

Dr. Beebe's account of his discovery is given in detail in *Science*.

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ECOLOGY

Long Alaska Daylight Boosts Tomato Yields

CONTINUOUS daylight under actual garden conditions at Fairbanks, Alaska, did not prove a bad thing for tomato plants, as experiments under purely laboratory conditions have been interpreted to indicate, Dr. George M. Darrow of the U. S. Department of Agriculture states in a report to *Science*.

Experiments with tomato plants raised under electric light, and under a combination of electric and natural light, had obtained the best results when the illuminated and dark periods were twelve hours each in length. But tomatoes planted outdoors at Fairbanks, which is just two degrees south of the Arctic Circle and in the land of the midnight sun, grew thriftily and bore heavy crops of fruit. During June and July the sun shines an average of nearly 21 hours a day in the latitude of Fairbanks, and most of the three-hour "night" is also light enough to keep plants still at work.

Science News Letter, November 4, 1933