eighty-two or thereabouts. And this is a new longevity record. It should be noted that this rat received no thyroid substance in the diet or in any other way, from the time the thyroid was removed up to the time of his death.

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THE VENOM OF NEW BORN PIT VIPERS

PROFESSOR ALBERT M. REESE, in his notes on "The Venom of New Born Copperheads,"[1] solicits information upon the age at which pit vipers acquire their power of injecting venom.

Professor George E. Beyer, in his "Contributions on the Life Histories of Certain Snakes,"[2] gives two very personal observations in connection with the poisonous qualities of the young of these snakes.

In speaking of a one-day-old water moccasin, *Agkistrodon piscivorus*, he makes the following statement: "To test their poisonous qualities I permitted one of them to bite me, but outside of the peculiar penetrating sensation attendant upon all venomous snake bites, and not unlike a bee sting, I did not feel other results."

In the same paper, speaking of *Sistrurus miliarius* he shows how he was mistaken in rating the toxic qualities of very young venomous snakes. During the noonday hour of August 20, 1894, exactly eight days after the birth of a brood of the young ground rattlers, he picked up one and presented the first joint of the little finger of his right hand for a bite. The snake bit with a vengeance, producing a momentary sensation resembling the sting of a bee; at the same time a lightning-like pain seemed to shoot up to the shoulder. In a few minutes the local pain extended to the second joint, the wound became discolored and edema set in. Increased swelling and pain gradually extended to the wrist and forearm. He carefully describes the symptoms which continued to be serious until half past eleven, when he went to bed. By daybreak the swelling had extended well down the right side and upwards, involving the same side of the face. The pectoral region was extremely painful. After 10 A. M. the reaction set in and the symptoms gradually subsided, but an uncomfortable feeling throughout the entire system remained up to thirty-six hours, and the inflammation did not disappear entirely until after three days. He concludes by stating that no remedy had been applied from beginning to end.

The evidence at hand seems conclusive that the venom glands of pit vipers are completely functional eight days after birth, but it seems doubtful that they secrete venom to any extent until some time after the first day.

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[1] SCIENCE, April 2, 1926.

[2] *The American Naturalist*, Vol. XXXII, No. 373, January, 1898.

SYMBOLS FOR MUTATIONS IN MICE

IN an attempt to standardize the symbols used for the mutations in mice, the Mouse Club, at its meeting in New Haven on December 27, 1925, agreed on the following symbols.

The following factors were recognized as orthodox and the symbols appearing herewith were voted into the code.

Agouti series:
- A^y—dominant yellow, A^w—White Bellied Agouti, A—Agouti, a—non-agouti.

Albino series:
- C—Full color, c^{ch}—Chinchilla dilution, c^d—Detlefsen extreme dilution, c—albinism.
- B—black, b—brown.
- D—dark coat, d—dilute coat (blue dilution).
- H—Normal head, h—haemoragic head.
- P—Dark eye, p—pink eye.
- R—Rodded or normal retinae, r—rodless retinae.
- S—Self coat dominant to recessive spotting, s—recessive spotting.
- S^E—Normal size ears, s^e—short ears.
- T—Normal length tail, t—short tail (tailless).
- V—Normal walking or running, v—waltzing.
- W—Black-eyed-white, w—recessive self allelomorph.

The following characters were passed as non-orthodox and will not be accepted until more work has been done upon them, but the symbols here recorded have been reserved tentatively for them.

- F—Normal foot, f—haemoragic foot.
- J—Normal jaw, j—haemoragic jaw.
- K—Normal tail, k—kinky tail.
- DP—Normal pupil, dp—dilate pupil.

Strong's carcinoma factors for immunity, A^{st}—1 factor, B^{st}—2 factor, C^{st}—factor were discussed, but no decision was reached concerning their status.

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EDUCATION IN MANITOBA

THE June 4th issue of SCIENCE contains a review of A. H. R. Buller's Researches on Fungi, Vol. III, the review concluding with the following statement: "Manitoba seems very remote even to an American, yet when an English trained botanist makes it his home and turns out such stimulating and exact work we realize more fully than ever that the man rather

than the environment counts the most." Manitoba has more pupils in high school and college, in proportion to the population, than any other province of Canada, excepting Ontario, and the University of Manitoba has a student body of over 2,400 with 1,500 additional in attendance on short courses and summer school, under the instruction of 195 professors and lecturers, and situated in a city of over 200,000. May I inquire why the reviewer chooses such an environment to point his platitudinous conclusion?

J. W. SHIPLEY

QUOTATIONS

WAR ON DISEASE

IN his Annual Report for 1925 on "The State of the Public Health," Sir George Newman strikes a new note. He is not concerned with the rival claims of those who believe in a state medical service and of those who oppose this service, because he sees that a truly national effort against disease, in which health officers and doctors and citizens will all take part, is the inevitable solution of present difficulties. Nor does he attempt to place any one of these partners before the other. They are equal; they are, and must remain, free; yet each, for the sake of all, must consent to give something both of personal liberty and of independence of action. This, it is contended, is made plain when the practical circumstances of the effort against disease are considered. Sickness is never a single event. Even a cold in the head is a problem of preventive medicine, a research problem, a problem in epidemiology and in therapy, and a problem of domestic and of personal hygiene. And what is true of a cold in the head is true also of every industrial accident, of each of the ailments which threaten child life and the lives of mothers, of cancer and tuberculosis and heart disease. The connection between the new regulations for the Insurance Medical Service, the rules governing the use of preservatives in food, and the plans to control atmospheric pollution may not be immediately apparent, but it is real and of vital importance. Last year, for example, in England and Wales there was lost to the nation among the insured population only, and excluding the loss due to sickness, for which sickness or disablement benefit is not payable, a total of twenty-five million weeks' work (480,770 years), or the equivalent of twelve months' work of nearly half a million persons. It is actually possible to-day to ascribe a great part of this loss to causes over which only the citizen himself has any control, to causes, that is to say, which lie beyond the scope of the medical profession.

This is obvious when the nature of the ailments responsible for the loss is considered. Common colds, bronchitis and bronchial and nasal catarrh stand easily first as causes of disablement among the working population. Sir George Newman produces important evidence to show that these ailments and also pneumonia are more prevalent and more fatal in the industrial north and north-west than in the south, and he is able, to some extent, to exclude the weather as the sole or even the chief cause of this difference. The purity of the atmosphere is probably the chief determining factor. In other words, smoke abatement —a matter for engineers and householders—is a department of preventive medicine. It is, moreover, a department of preventive medicine in which every doctor and every citizen, to say nothing of every employer of labor and every approved society, has a vital interest. Diseases of digestion, again, rank very high as robbers of health and of industry. These may seem to lie outside the sphere of preventive medicine altogether; but this is a narrow view, as those realize who have followed the controversy on the chemical purity of foodstuffs.

Nor can the research worker be relegated much longer to the obscurity of his laboratory. He too is needed in every home into which disease has been able to penetrate. Last year heart diseases ranked first among the "killing ailments." The cause of them is but imperfectly understood. Cancer had third place. It is manifest that in the fight with these two most deadly enemies the resources of prevention and of cure are largely unavailing until new knowledge has been obtained. Sir George Newman is therefore entitled to his vision of the "mutual aid and interdependence which should obtain between improved environment (including housing and industrial conditions), the care and nurture of the body, and the social life of the community." He is unquestionably right when he demands a closer partnership between all those who are engaged in, or who are interested in, the war against disease. The great voluntary hospitals have set in the past a conspicuous example of the spirit of cooperation between different types of workers, and for that reason alone deserve all the support which on this "Hospital Saturday" a generous and deeply interested public is likely to give them. The war on disease, curiously enough, is likely in the near future slightly to change its character. Owing to the fact that the birth-rate and the death-rate have fallen in this country side by side, the average age of the population has increased. The death-rate can not, in the nature of things, fall much further, but there is no sort of assurance that the fall in the birth-rate will not continue. Consequently old age may for a time go on increasing numerically at the expense of youth. The effect must be to make youth more valuable in an economic sense and to make the