

PHYSIOLOGY

Chickens Lose Their Brains if New Diet Factor is Missing

A NEW factor in the vegetable oils fed to baby chicks has been found by Drs. Marianne Goettsch and Alwin M. Pappenheimer of Columbia University's College of Physicians and Surgeons. When the new diet factor is lacking the chicks will literally lose their brains.

They fed pedigreed chicks on a diet which contained all the nutrients and vitamins known to be necessary, yet these birds persisted in ailing. After a short period of normal growth, they would begin to have nervous tremors, to pull in their heads after the manner of sick chicks, and to lose the power of coordinating their movements. Finally they would sink into a stupor which would end in death.

Autopsies all showed the same results. Parts of the brain had become swollen, soft, and wet; appearing either pale or stippled with the blood of many tiny hemorrhages. As the disease progressed, the dead areas became more definite. Parts of the brain were actually being killed as, for some reason, the tiny blood-vessels leading to them were blocked, and blood was prevented from

reaching the diseased parts of the brain.

Placed on various diets, the chicks still failed to become healthy, until to their ration was added a vegetable oil. The disease, which appeared only in chicks whose brains were actively growing, was prevented by the addition of corn, cottonseed, peanut, or soybean oils and even the hard, artificially made "vegetable fats." Lard, however, actually seemed to favor the development of the trouble.

Other experimenters suggested that the condition was caused by the lack of an already known vitamin, B₄. But this is soluble in water, which the material found effective by the Columbia researchers is not. So this material is probably a new vitamin.

So delicate is the new food-requirement that only by treating the petroleum ether used to extract it from the oil with sulfuric acid for a number of hours could it be brought to a pure enough state to be used. When this purification process was not carried on, the minute impurities of the ether destroyed the effectiveness of the material.

Science News Letter, September 26, 1936

PHYSIOLOGY

Garlic Breath War Continues; Yale Insists on Mouthwash

LATEST skirmish in the war on—and about—garlic breath, seems to put the mouthwash adherents on top.

Garlic or onion breath is a local affair, resulting from tiny particles of the odorous vegetables which remain in the mouth, Dr. Howard W. Haggard of Yale University insists in a report to *The Journal of the American Medical Association*. He reaffirms that washing the mouth with a solution containing chlorine will completely banish the offending odor from the breath by chemical neutralization of the odorous substance. Chloramine was first recommended by Dr. Haggard as an anti-onion breath mouthwash, but now he reports finding a dilute Dakin solution even more effective.

The scientific studies which led Dr. Haggard and his associate, Dr. Leon A. Greenburg, to support this view of garlic breath were reported in an earlier issue of the medical association's journal. This brought a prompt counter-attack by Drs. M. A. Blankenhorn and C. E. Richards of the University of Cincinnati. Garlic breath is systemic, they hold, the odor coming from the lungs via the blood which picks it up in the stomach. Mouthwashes, in their opinion, merely mask the odor. As proof of their view they reported experiments in which patients who were unable to swallow were given garlic extracts directly into their stomachs. Hours afterward impartial observers detected the garlicky smell on the patients' breaths though no garlic

had been in their mouths. (See *SNL*, Aug. 15.)

Re-entering the fray, Dr. Haggard points out what he considers discrepancies in the Cincinnati experiments. For one thing, the Cincinnati doctors gave their patients extracts from as much as one and one-half pounds of garlic.

"We are willing, indeed anxious, to concede that anyone eating a pound of garlic at one sitting may have the odor in the blood stream as well as the mouth, but our point was and still is that no one eats a pound of raw garlic," he declared.

"The significant point, however," Dr. Haggard says in his latest discussion of the subject, "is the time elapsing between the ingestion of the garlic and the appearance of the odor. If the smell comes from the blood following digestion, minutes or hours must pass before the breath is tainted. This delay is contrary to common experience in eating onions; the characteristic odor appears immediately. In the experiments of Blankenhorn and Richards, some three hours elapsed, even after massive doses of garlic oil, before the odor was detected on the breath."

Yale seems to be winning, but the war may not be over yet. The Cincinnati forces recently gained an ally who reported that he long ago noted a strong garlic odor on the breath of a baby immediately after its birth. He had noted the same odor on the mother's breath during the confinement. Obviously the odor did not reach the infant's breath from garlic or onion particles in its mouth but presumably from the lungs via the blood which, until birth, was supplied from the mother's body. In reporting this, Dr. William Curry Moloney of Jamaica Plains, N. Y., suggests that it should not be hard to find garlic-eating mothers if the Cincinnati doctors wish to continue their studies.

Science News Letter, September 26, 1936

PHYSICS

"Black as Ebony" Is Not Always Height of Blackness

BLACK as ebony is the height of blackness in literary figures of speech. But botanists at the Field Museum of Natural History, say that real ebony varies from jet black or purplish black to streaked or patchy tones. The ebony woods brought to the commercial world to be made into violin bridges, piano keys, umbrella handles, and other articles range through these dark variations of color.

Science News Letter, September 26, 1936