

## Science Notes

BY WILLIAM G. HAYNES.

### MASTICATION AND FOOD UTILIZATION.

Again and again in every day life we find that some dictum which either commends itself to common sense or lends itself freely to argumentative proof is being made the basis of a widespread propaganda. What was more reasonable than to assume that water ingested with meals would dilute the gastric juice and thus diminish the proteolytic efficiency? And what was more logical than to urge the abolition of such an assumedly harmful custom of water drinking? Yet, investigation has showed that some of the postulates in this contention are wrong, and that unsuspected factors further vitiate the conclusions. Indeed, under certain conditions water may even promote the gastric secretion, and thus upset the revered traditions.

The proper mastication of food has certain obvious justifications. It promotes a more extensive insalivation, which is not without advantage to certain types of foodstuffs, and it permits a speedier admixture of the alimentary digestive secretions with the individual comminuted food particles. Enthusiasts have not been content with the insistence of these indisputable advantages, but have attempted to infuse far-reaching effects into the habit of very complete mastication. We may be ready to admit that insufficient mastication is the cause of direct or indirect evils which may be greatly exaggerated in certain pathologic conditions. When, however, we are urged to chew our food with unremitting vigor because it "secures proper insalivation of food, increases the quantity of alkaline saliva passing into the stomach, stimulates the heart and circulation, influences the nutrition of the jaws and their appendages by stimulating blood and lymph circulation, and, finally, tends to diminish the amount of food consumed because it is more economically disposed of in the system," one may well pause to make a few related inquiries. Where is the borderline between "truth and poetry" in these matters?

The two extremes of practice are doubtless represented by under-mastication, as involved in the hasty bolting of food, and over-mastication, to which the epithet "fletcherizing" is sometimes applied. Foster and Hawk have completed studies of the utilization of typical protein as influenced by different degrees of mastication. The principal protein constituent of the diet was cooked beef in the form of 15-millimeter cubes. It happened that protein utilization was most complete as the result of good mastication, and least complete when bolting was practiced. The output of fecal nitrogen was highest during the food bolting, and macroscopic meat residues appeared in every stool under such conditions. Yet the discrepancies in the protein utilization during these extremes of mastication averaged only 1.6 per cent.

Such insignificant differences surely cannot be used in support of any enthusiastic claims for the alleged marvelous efficiency of the excessive mastication of food, even when judged by the other extreme of food bolting.

In another recently published series of experiments on man in which vegetable products, notably potatoes and

cereal breads, formed the prominent articles of diet, utilization was apparently improved by good mastication. Neither these nor the earlier quoted results are to be taken as an appeal for the complete indifference in the matter of eating, but rather as an indication of the rationality of that happy medium of performance in mastication which is usually a sign of physiologic wisdom in other functions. —Journal of the American Medical Association.

### PRESERVING "CASTE" IN ENGLISH HOSPITALS.

The employment of men from the East Indies, among whom caste customs are strictly observed, in the British fighting line in France has brought about unusual conditions. How this "caste" question affects a hospital is told in a London letter in the Medical Record. The hospital referred to is located at Brighton, and the correspondent says:

"Major S. James, chief of the hospital, which is equipped for two thousand patients and is run by officers of the Indian medical service, described the provision made for enabling Indians to live in accordance with the customs of their own country, and pointed out various conditions which must be strictly observed to prevent patients losing caste. They had to serve eight separate diets, cooked in twenty-one cookhouses in the hospital grounds, for the patients. For the staff sixteen other cookhouses were in use in the village. The Hindu cooks have to be of the same caste as the patients they cook for, or else higher. No beef is allowed inside the hospital, as the cow is a sacred animal to Hindus. Bacon and pork are also prohibited. As Indians must themselves slaughter the sheep they use for food, and in their special manner, a slaughter house has been provided for them. Hindus sweep off the head of the animal with a single stroke of a talwar or sword. For Mohammedans the mouth of the animal must be pointed toward Mecca.

"The hospital requires 60 or 70 gallons of water per man a day—not so much when it is remembered that an Indian must bathe before prayer, and that a good Mohammedan must pray five times a day. The flooding of the bathrooms is a common trouble, as the patients neglect to turn off the water. Before the electric light was in use they persisted in blowing out the gas, so there was always danger of poisoning. As Hindus who die must be cremated by members of their own caste, a site has been set apart for this, and the funeral ceremonies can be carried out as precisely as in India.

"Mr. Clement (Deputy Surveyor) estimated the consumption of water at the Kitchener Hospital as over 100 gallons a day. He added that one amiable failing of the Indian was to turn on the hot water and wait till it cooled to a comfortable temperature for bathing."

### INFECTION FROM THE CIGAR-CUTTER.

To the list of utensils in common use that are being stigmatized as carriers of infection is now added the cigar-cutter, as it appears on the counter of the tobacconist, in hotels, restaurants, and other public places. To quote and condense an article in American Medicine (New York):

"When it is recognized how easily the cigar cutter may be the means of spreading infection, and infection of a dangerous nature, the days of this article of convenience will be numbered. To illustrate, a person will often after he has first held his cigar in his mouth

step to the counter and put his cigar into the cutter. This thoughtless yet dangerous habit is so common that it can be witnessed time after time at every cigar stand. Undoubtedly it has been one of the principal means of spreading infection among those who smoke cigars, and it is high time that an agent so potent for harm was abolished."—Literary Digest.

### EQUAL RIGHTS LEAGUE ELECTS OFFICERS.

Philadelphia, Pa., Dec. 30.—At the eighth annual convention of the National Equal Rights League recently held in this city, the following officers were elected: The Rev. Byron Gunner, New York, president; William Monroe Trotter, Massachusetts, corresponding secretary; Dr. J. L. Johnson, Ohio, recording secretary; Thomas Walker, Washington, D. C., treasurer; the Rev. Reverdy C. Ransom, New York, national organizer; J. E. Churchman, New Jersey, assistant organizer; Dr. W. A. Sinclair, Pennsylvania, financial secretary; the Rev. E. George Biddle, Connecticut, chaplain.

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### Tenant Defense Leagues.

The workers' war emergency committee of Great Britain, in consideration of the increase of house rents throughout the country, are organizing conferences to be held in all the chief industrial centers within the next few weeks with a view to forming tenant defense leagues. These leagues are to organize the tenants with the object that they shall refuse to pay the increased house rents during the war. It has been indicated that the government would take action against the abusive demands of landlords, but the workers' war emergency committee will carry out their present plans.

### Dawn Near Armentieres.

One of the most poignant memories, it may be, that I have brought back from the war is the unearthly beauty of the dawn in that low country, writes a British captain in the Atlantic Monthly. Morning after morning I watched it, and the wonder never ceased. Water, mirroring willows and the silvery sky, stood ever in the foreground; the low farm houses lay mysterious; the battered church was whole again. With the full light and an awakened world the picture was commonplace; in the half light and the silence its beauty seemed the one spiritual element in a ravaged world.

### First Telegraphing.

New world's records for fast and accurate telegraphing were made at the international telegraphic tournament in San Francisco a few weeks ago.

Richard C. Bartley transmitted the fastest and most perfect "Morse" by ticking off 40 railroad messages without an error in 28 minutes and 13 seconds, and beating the automatic transmitters.

George W. Smith, Jr., won the receiving contest by taking and transcribing without an error 40 railroad messages in 31 minutes and 12 seconds.

### American Linotype to Africa.

The first American linotype machine has recently arrived in Tripoli, Africa, and been installed by La Nuova Italia, the only newspaper in the colony.

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