45 (1505)

The nutritive value of some nuts.

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In earlier experiments on the utilization of protein-rich nuts by man, it was found that the "coefficient of digestibility" was practically equivalent to that of the protein coefficient of a mixed diet. The conclusion was drawn that such nuts, when used in the diet with due recognition of their concentrated make-up, are of a physiological value comparable with that of our more common foods.[1]

The investigation has been extended to a study of the nutritive value of specific constituents of nuts. Johns' analysis of the nitrogenous components of the peanut and coconut suggest that they are sources of complete protein.[2, 3]. This has been verified by the feeding experiments of Johns with the coconut[4] and Daniels with the peanut.[5] Osborne and Mendel have maintained rats over long periods on excelsin, the principal protein of the Brazil nut, as the sole source of protein.[6] Following the same technique, we have observed satisfactory growth on diets furnishing the almond, English walnut, filbert, and pine nut, respectively, as the essential source of protein in the ration, to the extent of 18 per cent. of the total diet. Experiments with the pecan nut have as yet been less successful.

The presence of abundant quantities of water-soluble vitamine in the coconut and peanut has already been demonstrated,[4, 5]. We have found that normal growth can be secured when rats are fed upon otherwise adequate diets containing the almond, English walnut, Brazil nut and chestnut as the sole source of water soluble vitamine and that animals which have declined on a diet devoid of

[1] Cajori, F. A., 1918, *J. of Home Econ.*, 10: 304.

[2] Johns and Jones, 1917, *J. of Bio. Chem.*, 30: 33.

[3] Johns, Finks and Gersdorff, 1919, *J. of Bio. Chem.*, 37: 149.

[4] Johns, Finks and Paul, 1919, *J. of Bio. Chem.*, 37: 497.

[5] Daniels and Loughlin, 1917, *J. of Bio. Chem.*, 33: 295.

[6] Osborne and Mendel, 1912, *Zeit. f. Physiol. Chem.*, 80: 307.

water soluble vitamine promptly recover when either the almond, English walnut or filbert is introduced in the diet.

Investigations in this field are being continued.

46 (1506)

The local anesthetic properties of benzoyl carbinol.

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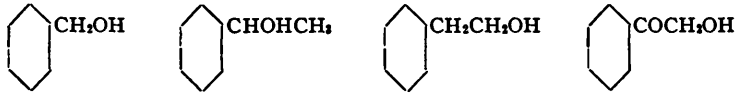
Since Macht[2] observed that benzyl alcohol possessed local anesthetic powers, several of its homologues have been studied for like properties in this laboratory. These consist of α[3] and β[4] phenethylol and benzoyl carbinol. The structural relationship of these substances is:



Benzyl Alcohol — α Phenethylol — β Phenethylol — Benzoyl Carbinol

Hirschfelder[5] recently reported his observations on a series of compounds closely related to the above. β phenethylol and phenyl glycol were amongst these, the latter being the reduction product of benzoyl carbinol, the subject of this paper.

The relative efficiency of the substances investigated, with respect to their local anesthetic properties, is shown by the following table:

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[1] This research has been supported by a grant from the Committee on Scientific Research of the American Medical Association.

[2] Macht, D. I., *Journ. Pharm. & Exp. Therap.*, 1918, xi, 263.

[3] Hjort, A. M., and Kaufmann, C. E., Ibid. In press.

[4] Hjort, A. M., and Eagan, J. T., Ibid., 1919, xiv, 211.

[5] Proc. Soc. Pharm. & Exp. Therap. (Dec., 1919), *J. Pharm. & Exp. Therap.*, 1920.