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NATURE AND THE DOCTOR[1]

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EVERY good doctor is a naturalist, and there is none more whole-souled or with a larger task. It is no accident that so many medical students have ranged through the fields as boys for rocks or plants, or that John Hunter while at the zenith of his London practice took time to inquire into the structure and economy of whales. To be an ardent observer seems the best of qualifications for the study of medicine. That it is not, though it is the first.

The doctor has always deemed himself eager to listen to Nature and to carry out her commands. Her name has been as often on his lips as that of Liberty on those of the social philosophers. Always he has spoken of aiding her, of not offending her, of letting her take her course (as if she would not take it anyhow by hook or crook), and time and again he has invoked the *vis medicatrix naturae,* conceding that "Nature is the best physician," an admission not the less wise because the fact has so often been staringly evident. Yet with all said it remains true that his relations with Nature have not been continually happy. In the great Oxford Dictionary, under head four, subhead eleven, section C of the meanings given for the word "nature," one finds the following: "Nature—contrasted with medical skill or treatment in the cure of wounds or disease." When first read this seems an innocent and even an encouraging usage; for it stresses the surgeon's success in changing the natural course of events in acute appendicitis, and the physician's in diabetes or pernicious anemia. One becomes for the moment complacent. And then, reading on, one notes just below in the dictionary, under section D, a companion statement, "Nature—contrasted with art," and there come to mind certain recent forms of art which seem expressive of a lively disagreement with nature. Then one thinks of the history of the medical past—of the many centuries

[1] Convocation address at the Medical School of the University of Michigan, October 1, 1938.

than for the other altitudes except the lowest at which samples were taken. The plates showed also numerous fungus spores, plant hairs and pollen from other species of plants, notably *Pinus* spp. One pine pollen grain collected at 4,000 feet above the valley floor had germinated on the agar.

It seems at this time desirable merely to record the presence of viable sugar-beet pollen in the air at high elevations without any inferences as to relation to cross-pollination problems of the sugar beet.

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BASAL DIETS FOR VITAMIN B_1 DETERMINATION

INVESTIGATIONS which are still in progress have demonstrated that it is quite practical to prepare a diet satisfactory for the determination of vitamin B_1 by applying the observation of Williams and coworkers[1] that this vitamin is destroyed by cleavage with sulfite. A basal diet consisting of sucrose, 71 per cent., vitamin B_1 free casein, 18 per cent., salt mixture, 4 per cent., fat, 5 per cent., and cod liver oil, 2 per cent., was used, and various proportions of sucrose were replaced by addenda containing the vitamin B complex.

Sulfite treatment of yeast was carried out as follows: 400 cc of 0.1 per cent. sodium sulfite were added to 50 grams of dried yeast in a 500-cc wide mouth bottle. SO_2 was introduced until a pH of 4 was reached, and the bottle was then stoppered and allowed to stand 5 days at room temperature (25° C.). The contents of the bottle were then dried on purified casein at a temperature not exceeding 65° C.

Rats fed the basal ration containing 5 or 15 per cent. of sulfite-treated yeast, and receiving in addition crystalline vitamin B_1, grew as rapidly as animals receiving the same quantity of untreated yeast in the basal diet. Six animals 27 days old, weighing approximately 40 grams, were fed the basal ration with 15 per cent. of sulfite-treated yeast. Four of these animals developed acute polyneuritis in 32, 33, 34 and 34 days, respectively. Two animals died in 24 and 31 days, respectively, the latter showing slight symptoms of polyneuritis before death. There is reason to believe that with slight modification of the basal diet the percentage of polyneuritis can be increased and animals may be produced which are more suitable for quantitative assay where duration of cure of polyneuritis is used as the criterion.[2]

In the preparation of rations which contain adequate amounts of the members of the vitamin B complex and devoid of vitamin B_1, the destruction of vitamin B_1 with sulfite appears to offer definite advantages over any procedure that has been proposed. Details of an exact procedure are being studied, but because of a widespread interest at present in methods for determining the vitamin B_1 content of foods and pharmaceutical preparations as well as human requirements for vitamin B_1, this preliminary report may be helpful to others.

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[1] R. R. Williams, R. E. Waterman, J. C. Keresztesy and E. R. Buchman, *Jour. Am. Chem. Soc.*, 57: 536, 1935.

[2] O. L. Kline, C. D. Tolle and E. M. Nelson, *Jour. Assoc. Off. Agric. Chem.*, 21: 305, 1938.

BOOKS RECEIVED

Actualites Scientifiques et Industrielles; Nutrition, 563, VIII, Les Régulations Hormonales du Métabolisme Glucidique. Pp. 92. 20 fr.; *576, IX, Homéothermie et Thermorégulation, I, L'Homéothermie.* Pp. 70. 15 fr.; *577, II, La Thermorégulation.* Pp. 73. 15 fr.; *581, XI, Nutrition et Dentition.* Pp. 76. 20 fr.; *582, XII, Le Problème du Pain, III, La Qualité des Blés et Son Amélioration.* Pp. 43. 10 fr.; *594, Physiologie; 1, Glucides.* Pp. 66. 15 fr.; *2, Eau et Sels.* Pp. 27. 8 fr.; *3, Protides.* Pp. 54. 12 fr.; *4, Substances Nucléiniques.* Pp. 30. 8 fr.; *5, Créatine et Créatinine.* Pp. 40. 12 fr. Hermann, Paris.

BLAIR, G. W. SCOTT. *An Introduction to Industrial Rheology.* Pp. xiii + 143. 20 figures. Blakiston.

BREDERECK, HELLMUT and ROBERT MITTAG. *Vitamine und Hormone und Ihre Technische Darstellung; Erster Teil, Ergebnisse der Vitamin- und Hormonforschung.* Pp. xii + 138. Hirzel, Leipzig.

CARMICHAEL, EMMETT B. *Laboratory Manual of Physiological Chemistry.* Pp. xxi + 126. University of Alabama. $2.10.

IMUS, HENRY A., JOHN W. M. ROTHNEY and ROBERT M. BEAR. *An Evaluation of Visual Factors in Reading.* Pp. xiv + 144. 11 figures. Dartmouth College.

MADISON, HAROLD L. *Wild Flowers of Ohio.* Pp. 190. Illustrated. Museum of Natural History, Cleveland. $1.50.

Science Reports of the Tôhoku Imperial University; Fourth Series (Biology), Vol. XIII, No. 2; October, 1938. Pp. 139. Illustrated. Maruzen, Tokyo.

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Scientific Reports of the John Murray Expedition, 1933–34; Vol. V, No. 4, by N. B. EALES, *A Systematic and Anatomical Account of the Opisthobranchia.* Pp. 122. 1 plate. 28 figures. 5/. Vol. V, No. 7, by J. STANLEY GARDINER and PEGGY WAUGH, *The Flabellid and Turbinolid Corals.* Pp. 167–202. 7 plates. 6 figures. 5/. British Museum, London.

STAMP, L. DUDLEY. *Physical Geography and Geology.* Pp. vii + 256. 199 figures. Longmans, Green. $1.75.

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