day in summer, on a day's trip through the fields and woods, even in New England, one will actually see many more snakes than one would encounter in any part of the tropics with which I am familiar, if one excepts the seasonal sea snakes. These reptiles, at certain seasons, may at times be seen literally by the thousands, particularly when they leave the sea to breed. All or most of them are poisonous, but their mouth parts are so constructed that they can not possibly strike a flat surface (they might be able to strike a small surface like one's finger). It is rather amusing to note how indifferent the native fishermen are when they happen to draw a net and bring in large numbers of them; they kick them about with their bare feet and nonchalantly pick them up and throw them back into the sea—so much for poisonous snakes.

Another fetish is the terrible poisonous plants that one must guard against in the tropics. I suppose that here our imaginations have been fed by the marvellous tales of the deadly upas tree, and in modern times, by the terrible man-eating tree of Madagascar. Incidentally some years ago, an American soldier who couldn't let the Philippines be outdone by Madagascar, published a lurid Sunday supplement story about one he saw in the Philippines; just another case of *horribilia philippinensia*. Here again, as far as contact poisons are concerned, there is infinitely less chance of one's being poisoned in any part of the Old World tropics than there is in any part of the United States where the poison ivy, poison oak, and poison sumac occur. In the jungles of the Malay Peninsula, Borneo, New Guinea, or any other part of the Malayan region, one is infinitely safer, as far as dangerous plant species are concerned, than one would be in the suburbs of Boston or in the Berkeley hills in California, or even within the New York Botanical Garden or the Arnold Arboretum where poison ivy occurs. It is interesting to note that without exception, and no matter where they occur, those plant species that produce eruptions simulating *Rhus* poisoning, all belong in several genera of the same natural family, the Anacardiaceae. Thus in the Malay Peninsula, Sumatra, Java, and Borneo, there are various forest trees collectively known as *rengas,* belonging in such genera as *Gluta, Melanorrhoea, Melanochyla, Semecarpus,* and *Swintonia,* that have a distinctly poisonous sap; some of these genera have representatives in the Philippines and in New Guinea. The sap of several species of *Mangifera,* such as *M. caesia* (bingai), *M. odorata* (kwini), *M. kemanga* (kemang), *M. foetida* (bachang), cause bad skin eruptions; rarely one will note cases where individuals may be allergic to the common mango (*Mangifera indica*). Several of these "poisonous" species of *Mangifera* are actually cultivated for their edible fruits and occur about residences and in towns, but the local residents are not inconvenienced by them. Even the resinous sap in the pericarp of the fruit of the common cashew nut (*Anacardium*) is irritating. The remedy for any eruptions caused by contact with the sap of these species is the same as that indicated for poison ivy infections. In passing, it is interesting to note that while the sap of the trunk or branches, or occasionally the leaves may be irritating, yet in several of the genera mentioned above the fruits may be eaten with impunity (*Mangifera, Semecarpus,* and some species of *Gluta*).

Aside from the contact poisons among the representatives of the Anacardiaceae mentioned above, mostly large forest trees, and not likely to cause any trouble except if one actually cuts them down, all other plants with which one might come in contact in Malaysia and in Polynesia may be classed as minor nuisances. These are the few species that bear stinging hairs. The worst of these are the tree nettles (*Laportea*) of which about 100 species have been described. Contact with the hair-bearing parts instantly produces the sensation of having touched a piece of very hot iron. While the sting from these hairs (apparently caused by formic acid) is intense, it is not normally dangerous, for not even a cub Boy Scout would touch a plant a second time. Fortunately these shrubs or small trees are not common, and certainly none of them is to be feared. *Laportea* is merely a somewhat exaggerated stinging nettle.

The remaining category are those species, few in number, widely scattered, and often very rare, where the inflorescences, or the fruits, or both, may be supplied with stiff bristle-like stinging hairs, their tips supplied with minute retrorse barbs (*Mucuna*). These hairs are easily detached but are never poisonous, and are merely mechanical irritants. They are never dangerous, and again not even a cub Boy Scout, once stung, would touch a plant a second time. And we should remember that cowhage (*Mucuna*) hairs were formerly used as a remedy for tapeworm, the hairs being mixed with molasses and swallowed. The theory back of this remedy, I suppose, was that the tissues of the tapeworm are softer than the lining of the human stomach and would thus attract the stinging hairs which in turn would kill the tapeworm.

E. D. MERRILL

MORE ABOUT "DEFORMATION OF ROCK STRATA BY EXPLOSIONS"

MR. NETTLETON[1] is probably correct in rejecting the idea that the gravity anomaly found in Sierra Madera

[1] L. L. Nettleton, SCIENCE, December 4, 1942, Vol. 96, No. 2501, page 515; J. D. Boon and C. C. Albritton, Jr., SCIENCE, October 30, 1942, Vol. 96, No. 2496, pages 402–403.

is due to buried meteoritic material. Not that meteorites large enough to produce this anomaly never fall upon the earth, but rather that giant meteorites are largely back-fired from their craters. Moulton[2] has calculated that a swiftly moving meteorite may produce a pressure of fifteen million atmospheres at the time of its impact. No one knows how earth rocks would be affected by fifteen million atmospheres of pressure, for this is far beyond our experiments and in fact beyond our comprehension. However, it seems quite certain that rocks of all kinds would be greatly compressed by this amount of pressure. If this be true a terrific explosive rebound must follow the impact, lifting strata far above their original level. This uplift of the deeper strata might well produce a gravitational anomaly. Rebounds of elastic solids is not a matter of speculation. It seems to be characteristic of all great impacts that are not able to break through the material that receives the impact.

Can any one suggest how structural bilateral symmetry with overtilted beds on one side of the structure can be produced by volcanic explosions that come solely from within the earth? It is this kind of symmetry that is found in Meteor Crater, Sierra Madera, Flynn Creek structure and a number of the cryptovolcanic structures. Oblique meteorite impacts offer a satisfactory explanation of this symmetry.

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VITAMIN C (ASCORBIC ACID) CONTENT OF THE BUFFALO-BERRY

THE buffalo-berry, *Lepargyrea argentea* (Nutt.) Greene, a native fruit of North Dakota, has been found to contain an abundance of vitamin C, as determined by the method of Bessey and King,[1] as adapted for the Evelyn photoelectric colorimeter by Bessey[2] and Morell.[3] The ripe fruit, on a fresh basis, apparently contains well over 150 mgs of vitamin C per 100 grams. One sample of fruit, picked on October 15, 1942, contained 184 mgs of vitamin C per 100 grams.

This fruit is usually consumed in the form of a jam or a jelly. Although destruction of vitamin C occurs, samples of buffalo-berry jam contained 80 to 90 mgs of vitamin C per 100 gms.

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SCIENTIFIC BOOKS

VITAMINS

Chemistry and Physiology of the Vitamins. By H. R. ROSENBERG. xix + 674 pages. New York: Interscience Publishers, Inc. 1942. $12.00.

THIS is an encyclopedic monograph treating practically all the substances commonly called vitamins; and, in general, each of them on the same comprehensive plan—nomenclature, chronology, occurrence, isolation, properties, specificity, synthesis, industrial methods of preparation, determination, "standards" (units of quantitative expression), metabolism and requirements in nutrition. Different aspects are, however, obviously treated with very different degrees of fullness; and, in the opinion of this reviewer, of critical acumen as well. In his preface the author introduces himself as having "been connected, at some time or other, with the development of many of the vitamins known to-day"; and this phrase well foreshadows the strength and weakness of the author's handling of the broad and many-sided subject he has undertaken. The book gives a relatively complete account of the "development" of each vitamin from a biochemical discovery into a commodity to be patented, if possible, and manufactured for commerce; while the treatment of the significance of the vitamins in nature, and in the scientific undertaking "to render more intelligible the world in which we live," is disappointingly sketchy; and the generalizations as to vitamin values of foods are unwarrantably dogmatic in form and, at least in this reviewer's opinion, excessively pessimistic in substance.

The volume contains the materials for a useful reference handbook on the industrial chemistry of the vitamins. It seems unfortunate that in so many of the chapters this useful material is intermingled with compilations of material from the physiological or nutritional literature of the vitamins which latter can hardly be said to be handled with a firm grasp nor with freedom from errors and inconsistencies, *e.g.*, on pages 34; 57 and 60 *vs.* 75; 100; 123; 180; 190; 198; 199; 338. Whether all these will be obvious to the reader will naturally depend largely upon the knowledge of vitamins which he already

[2] F. R. Moulton, "Astronomy," 1931, p. 305.

[3] In the absence of the junior author, C. C. Albritton, Jr., the senior author should be held responsible for this reply.

[1] O. A. Bessey and C. G. King, *Jour. Biol. Chem.*, 103: 687, 1933.

[2] O. A. Bessey, *Jour. Biol. Chem.*, 126: 773, 1938.

[3] S. A. Morell, *Indust. and Eng. Chem., Anal. Ed.*, 13: 793, 1941.