"Cretaceous Reptiles," published by the Smithsonian Institute. The review was signed by "H," which led others and myself, to suppose [that it] proceeded from Huxley, and I assure you I felt much annoyed about it, though I took no printed notice of it. I have just been informed by Professor Newberry of New York, that he was authorized to say that Professor Huxley not only did not write it but knew nothing of it until it was printed and that he does not sympathize with, but utterly condemns it. I give this information to you for I should not like my credit disputed.

Yours truly,
JOSEPH LEIDY.

School of Mines, Columbia College,
Corner 49th Street & 4th Ave.,
New York, Jan. 29th, 1869.

Professor Joseph Leidy
My dear Sir:—

I suppose you have noticed the very harsh and unjust review of your "Cretaceous Reptiles" in the October Number of Geological Magazine. I need not assure you that all who know you and the high character of all the scientific work you have done feel that American science which has no more creditable representative than yourself has been grossly insulted in the article referred to and that on this side of the Atlantic at least this review will do you more harm than good.

My object, however, in writing you now is not to tell you this, for you must know that such would be the feeling of your scientific friends, but to say to you that if you have been led to suppose from the fact that this review was signed "H" that it was written by Prof. Huxley, as was the impression producing great surprise and regret among us here when it was published, I can have the pleasure of assuring you that Professor Huxley did not write the article and knew nothing of it until it appeared and farther that he has no sympathy with the views or spirit of the article and condemns it as earnestly as we do. I have his authority for saying this much to you.

I suspect the avenues and the facts or assertions of the obnoxious article emanated from a source much nearer home.

We all deeply deplore Cassin's early death. At the last meeting of the Lyceum, resolutions of regret and sympathy were passed which will be communicated to his family.

I hope to be in Philadelphia in a few days and to see you. I have some things to say to you that I can't well put on paper.

Yours very cordially,
J. S. NEWBERRY.

SIGNIFICANCE OF BAER'S LAW

IN discussing my paper published in the issue of SCIENCE for November 13, 1931, Kirk Bryan and Shirley L. Mason[1] state that I "neglected to mention the factor of stream deflection due to the earth's rotation," in my explanation of contrasts, "in the rate at which denudation takes place on the banks of any rills or streams flowing in directions approaching east or west" in southern Ohio and in New Jersey. The impression which I get out of the discussion is that the authors consider that the neglect of this consideration may well invalidate all my observations.

The criticism of Bryan and Mason refutes itself: I called attention to the steepness of northward slopes in valleys having streams flowing east and in valleys having streams flowing west, mentioning both directions specifically. How then would right-hand deflection result in steepening of northward slopes? Their entire criticism breaks down before this one simple fact. It hardly seemed necessary to state that field observations yielded no hint of the influence of rotation on topography, nor to discuss that factor in a brief note on slope asymmetry. However, the point is discussed, and negatively dismissed, in one of the references I cited. F. Bascom[2] explains the steeper nothward slopes, characteristic of the Coastal Plain in New Jersey, on the basis of differential exposure which causes contrasts in the active processes of weathering and transportation.

Bryan and Mason cite the classic example of steep banks on the western sides of Long Island streams as evidence of the potency of rotation in producing asymmetric valley cross-sections. As Fuller[3] limits this characteristic to the portions of these valleys in outwash plains and definitely states that their cutting began in Wisconsin time it seems strange that Bryan and Mason shy away from the study of asymmetry in the glaciated portions of North America on the basis that many of the streams are "too youthful." Their statement that "Obviously the nearly unglaciated northern portion of Asia is the region for testing" the question of valley asymmetry appears inconsistent with their faith in the examples cited from Long Island.

The principle that rivers in the northern hemisphere tend to cut their right banks more vigorously than their left was apparently first advanced by Babinet,[4] though it is customarily called Baer's Law because of its formulation by Karl von Baer[5] in 1866. Dunker, Klockmann, Nansen, A. E. Nordenskiöld and others have discussed it at various times since. American geologists usually refer to the classic papers by Gil-

[1] "Asymmetric Valleys and Climatic Boundaries," SCIENCE, 75: 215, 1932.
[2] *U. S. Geol. Surv.*, Folio 167: 2, 1909.
[3] M. L. Fuller, "Geology of Long Island," *Prof. Paper* 82: 51, 1914.
[4] *Comptes Rendus Acad. Sci.*, xl: 638, 1849.
[5] *Bul. Acad. Sci. Petersbourg*, 2: 1, 218, 353, 1866.

bert on the question. In recent years, Eakin[6] has concluded that it is operative for the lower 600 miles of the Yukon and that it influences the pattern of the Missouri River. The deflective force acting on any moving body varies with its mass, its velocity, and the sine of its geographic latitude. The factor of latitude is of such importance that the law has seldom been considered in explaining the courses of streams other than those in comparatively high latitudes. The factors mass and velocity are such that the possibility of an asymmetric effect appears to be reduced to insignificance in the case of smaller streams. Geologists are by no means united in an opinion that even under favorable conditions valleys, thalwegs, stream-threads, or stream patterns demonstrate unquestionably a morphologic effect of earth's rotation. Sir Archibald Geikie[7] states, "When, however, we consider the comparatively small volume, slow motion and continually meandering course of rivers, it may reasonably be doubted whether this *vera causa* can have had much effect generally in modifying the form of river-channels."

With but little effort an array of examples may be marshaled in support of Baer's Law, for example, those considered by Eakin, taken from the course of the Missouri River; or, equally convincing facts may be cited against it. The most rigorous test of the whole hypothesis, in all probability, has been that applied by Exner,[8] who finds that the swift-flowing, relatively large and well-established Danube at Vienna has about one one-thousandth more corrasive effect upon the right half of its bed than upon the left. In the light of Exner's rigorous computation of the deflective force acting on the Danube it seems utterly absurd to invoke the rotation of the earth as an explanation of conspicuous slope asymmetry in valleys of small streams and rills in southern Ohio and in New Jersey, apart from the fact that the phenomena cited in my paper are not limited to right banks.

In a series of observations on the geology and geomorphology of Louisiana now being undertaken by members of the school of geology at this university the thesis advanced in Baer's Law will be closely scrutinized. Though the latitude is somewhat less than that of southern Ohio and New Jersey, adequate compensation should exist in the slight degree of induration of the sediments being cut by streams flowing across the Coastal Plain.

RICHARD JOEL RUSSELL
LOUISIANA STATE UNIVERSITY

[6] H. M. Eakin, "The Influence of the Earth's Rotation upon the Lateral Erosion of Streams," *Jour. Geol.*, 18: 435–447, 1910.

[7] *Text-Book of Geology, London* (Macmillan and Company, 1: 23, 1903.

[8] Felix M. Exner, "Zur Wirkung der Erddrehung auf Flussläufe," *Geog. Annaler*, 9: 173–180, 1927.

LIGHT A FACTOR IN RANCIDITY[1]

RESULTS of experiments conducted in the Food Research Division of the Bureau of Chemistry and Soils show that certain wave-lengths of light play an important rôle in producing rancidity of oil-bearing foods.

Rice bran and rice polish were used in this investigation. When these products were kept under color filters such as blue, purple, blue-green, yellow and various shades of red, they showed characteristics of rancidity when examined organoleptically and by the modified Schiff's test. When kept under sextant green and sextant red filters, however, they showed no evidence of deterioration either by odor or in tests with the fuchsine sulphurous acid reagent. It is evident that the green filter, which approximates chlorophyll green, absorbs all photochemically active wave-lengths conducive to rancidity, allowing only chemically inert wave-lengths to pass through. The sextant red filter, being virtually black, accomplished the same result by absorbing practically all light. Screening out certain wave-lengths of light from oil-bearing foods and feeds, therefore, prevents or delays oxidation of the oil.

Antioxidants, such as pyrogallol, hydroquinone and substituted hydroxylamines, when added to oil-bearing foods may prevent or delay rancidity, but their use is considered objectionable on account of their possible physiological effects.

The keeping qualities of foods, such as salad oils, mayonnaise, butter, lard and potato chips, may be greatly enhanced by the use of properly colored wrappers, bottles, etc., capable of screening out active light wave-lengths.

A U. S. public service patent and foreign patents covering this discovery have been applied for. The application of the principle embodied in these patents should prove of great economic value to producers of package foods.

MAYNE R. COE
BUREAU OF CHEMISTRY AND SOILS,
U. S. DEPARTMENT OF AGRICULTURE

TWISTED TREE TRUNKS ON THE GASPÉ PENINSULA

IN connection with recent discussions in SCIENCE relative to the twisting of tree trunks during growth I should like to call attention to a forested area in Eastern Canada which should prove interesting to any one working on the growth of such trees. While encircling the Gaspé peninsula in the Province of Quebec over the new Perron Boulevard, we observed, among the logs which had been brought down from the mountain forests for pulp wood, a great many which were noticeably twisted, and where the more open agricultural land is divided by rail fences,

[1] Food Research Division Contribution No. 137.