that it may be necessary to have recourse to some stimulus such as a "catalyst" to ensure equilibrium in reasonable time. Nature has at her disposal an abundance of "catalysts" and limitless time.

William Barton Rogers and his contribution to the geology of Virginia: JOSEPH K. ROBERTS.

Geographic distribution of sea-level cosmic-ray intensities: R. A. MILLIKAN and H. VICTOR NEHER. With Neher self-recording electroscopes sent to many parts of the globe on ten different ships a precision survey has now been completed of the variation of cosmic-ray intensities with both latitude and longitude, so that the earth as a whole can now be covered with sea-level equal intensity cosmic-ray lines. The electroscopes run automatically for three months without attention, save for the occasional winding of a clock. The films are developed after return to the laboratory at Pasadena, and are measured by different observers so that the personal equation is largely eliminated. The major changes in sea-level cosmic-ray intensities can be described as follows: In going along the longitude line 75° W., which runs from the far north through Washington and along the west coast of South America, there is no appreciable change until the magnetic latitude of about 42° is reached. The equatorial dip then begins to set in and shows a maximum decline of 8 per cent. off Peru and returns again to its normal value off Cape Horn. In going south from Liverpool through the Atlantic Ocean—Longitude 30° W.—and around Cape Horn the maximum dip is 8.5 per cent. In going south from Alaska in Latitude 165 W. to New Zealand the maximum dip is 10 per cent. In going along Longitude line 80° E. through southern India the maximum dip is 12 per cent. In the region most accurately studied—the west coast of the United States—the intensity remains remarkably constant until the latitude of Pasadena—about 42° magnetic—is reached, and then drops remarkably suddenly. In the Atlantic Ocean the drop sets in at about the same magnetic latitude with equal suddenness. It appears also to take place quite suddenly at about magnetic latitude 42° in the southern hemisphere. Nevertheless, the existence of a longitude effect shows that in strictness there is no such thing as magnetic latitude. In other words, the earth's magnetic field, even at the remote distances of thousands of miles at which these deflections occur, is strikingly dissymmetrical with respect to any line passing through the earth's center. This method of study opens up the possibility of determining these dissymmetries at large distances from the earth. The observed magnetic effects are to be expected quite independently of whether cosmic rays are in their origin photonic or corpuscular. This survey has been carried on with the aid of a grant made by the Carnegie Corporation of New York, administered under the Carnegie Institution of Washington. The authors wish to express appreciation for this assistance.

Anthropological excavations on Kodiak Island: A. HRDLIČKA.

Exploration of a mound at Belle Glade, Florida: M. W. STIRLING. The site consists of a habitation mound rich in artifacts of bone, shell, stone, wood and pottery, and a burial mound which revealed three periods of construction. It was composed of a primary mound of muck with two later additions built of sand, the latter containing objects of sixteenth century Spanish origin. Unique architectural features were a limestone pavement in front of the mound and a log stairway leading up the face. More than 1,000 burials were encountered. Here for the first time in Florida was recovered a representative collection of kitchen midden artifacts, burial furniture and skeletal material all from one site. Historical information links the site with the now extinct Calusa Indians, enabling the identification of other sites exhibiting the same culture.

Relations of symmetry in the developing ear of amblystoma: ROSS G. HARRISON.

The copper beech and the sugar maple: WILDER D. BANCROFT and JOHN E. RUTZLER, JR. The leaves of the copper beech may vary in color in different parts of the tree at the same time, and the same leaves may vary in color from week to week. Some years, the sugar maples in Ithaca turn a wonderful red and other years they will be yellow with only spots of red. The ultra-violet light which passes through glass develops the red in the copper beech; but it acts by stimulating enzymes and not directly. Sunshine and cool nights are factors in turning maple leaves red; but no direct correlation between weather conditions and red maple leaves is possible at present. What Willstätter calls internal factors are of tremendous importance, because the leaves of the copper beech turn yellow in the fall under weather and soil conditions which produce red in a sugar maple alongside. The problem of autumn coloring is primarily an enzyme problem and must be studied as such.

(To be continued)

BOOKS RECEIVED

Annals of the Dearborn Observatory of Northwestern University. Vol. III: *Stellar Parallaxes* by PHILIP FOX. Pp. 194. 18 figures, 3 plates. The University.

HARDING, ARTHUR M. *Astronomy.* Pp. x + 418. Illustrated. Garden City Publishing Co., Garden City, N. Y. $1.98.

JENNINGS, H. S. *Genetic Variations in Relation to Evolution.* Pp. 139. 21 figures. Princeton University Press. $2.00.

MOORE, ELIAKIM H. *General Analysis. Part I.* Vol. I, 1935 of the *Memoirs of the American Philosophical Society.* Pp. 231. The Society, Philadelphia.

Second Report of the Science Advisory Board, September 1, 1934 to August 1, 1935. Pp. 494. 6 figures. National Research Council, Washington, D. C.

Erratum: In the Scientific Event entitled "The Simplification of International Weather Reports" in the issue of SCIENCE for November 29, in the fifth line from the bottom of the first column "now" should be substituted for "not."