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The Concept of Natural Law in Geology: PROFESSOR
WALTER H. BUCHER 491

The Structure of Natural and Synthetic Antigens:
DR. MICHAEL HEIDELBERGER 498

Scientific Events:

*The Norwegian Medical Association; The British
Public Health Exhibition; Study of Airplane Vi-
bration at New York University; The American
Society of Tropical Medicine; The American Acad-
emy of Tropical Medicine; Recent Deaths* 501

Scientific Notes and News 503

Discussion:

*Lens-like Action of a Star by the Deviation of
Light in the Gravitational Field:* DR. ALBERT EIN-
STEIN. *Pleistocene Man in Southern California:*
A. O. BOWDEN and IVAN A. LOPATIN. *Fossil Leaves
of Dicotyledonous Flowering Plants:* PROFESSOR
O. M. BALL 506

Scientific Books:

Geography of Disease: COLONEL CHAS. F. CRAIG.
Astronomy: J. M.; C. J. A. R. 508

Reports:

*The Work of the Massachusetts Institute of Tech-
nology* 510

Special Articles:

*The Ultracentrifugal Crystallization of Tobacco
Mosaic Virus Protein:* DR. RALPH W. G. WYCKOFF
and DR. ROBERT B. COREY. *A Relation between
Seed Attachment and Carpel Symmetry and Devel-
opment in Prunus:* DR. H. B. TUKEY 513

Scientific Apparatus and Laboratory Methods:

*A Simplified Automatic Recorder for Ionospheric
Height Measurement:* PROFESSOR ROBERT C. COL-
WELL, N. I. HALL and L. R. HILL 515

Science News 8

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THE CONCEPT OF NATURAL LAW IN GEOLOGY¹

By Professor WALTER H. BUCHER

UNIVERSITY OF CINCINNATI

GEOLOGY operates largely without the concept of "natural law." The speaker became keenly aware of this circumstance when, a number of years ago, he began his efforts to derive from rapidly accumulating knowledge concerning the geology of different parts of the earth generalizations to form a reliable foundation for reasoning concerning the dynamics of the earth's crust.² When he spoke of them as "laws of crustal deformation," he had to meet the objections of others and his own doubts. He had to view the procedure of geologic investigations in the light of the fundamental methods of all science.

Some of the resulting reflections are presented here before men from many fields of science in the hope

¹ Presidential address read before the Ohio Academy of Science, at Toledo. A number of minor changes have been made in the final manuscript.

² Walter H. Bucher, "The Deformation of the Earth's Crust. An Inductive Approach to the Problems of Diastrophism." Princeton University Press, 1933.

that they will lead to a clearer understanding of the nature of the geologist's work, and to that finer sympathy from which springs effective cooperation between men in different sciences upon which further progress depends in a large measure.

Geology is peculiarly dual in its aims: on the one hand, it is concerned with what happened *once* at a *certain place*, in *individual* mines, mountains, regions. Interest that centers on individuals is *history*, not science.³ As a *science*, geology is concerned with the *typical* that finds expression in *generalizations*, whether they be called laws or something else. In his actual work, the geologist describes the individual and attempts to grasp its meaning in terms of the typical. If you catch him unawares, he will tell you that he tries to "explain" the "facts" of geology in terms of

³ Heinrich Rickert, "Die Grenzen der naturwissenschaftlichen Begriffsbildung." Tübingen, 1929, esp. pp. 217-237.

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Contents for January, 1937

No. 1

- E. K. HALL. The determination of the axes of the embryonic ear: An experimental study by the method of 90° rotations. One text figure and two plates.
- J. NEEL. Phenotypic variability in mutant characters of *Drosophila funebris*.
- D. M. WHITAKER. Extension of the fertilizable life of unfertilized *Urechis* eggs by alcohol and by dextrose. Three text figures.
- E. CARPENTER. The head pattern in *Amblystoma* studied by vital staining and transplantation methods. Ten text figures and one plate.
- L. E. ALEXANDER. An experimental study of the role of optic cup and overlying ectoderm in lens formation in the chick embryo. One text figure and two plates.
- F. H. SWETT. Experiments upon delayed determination of the dorsoventral limb-axis in *Amblystoma punctatum* (Linn.). Five text figures.
- H. G. ALBAUM and H. A. NESTLER. Xenoplastic ear induction between *Rana pipiens* and *Amblystoma punctatum*. Two tables, three text figures and one plate.
- J. S. YUILL and R. CRAIG. The nutrition of flesh fly larvae, *Lucilia sericata* (Meig.). II. The development of fat. Four text figures.
- C. L. YNTEMA. An experimental study of the origin of the cells which constitute the VIIth and VIIIth cranial ganglia and nerves in the embryo of *Amblystoma punctatum*. Eight text figures and two plates.

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