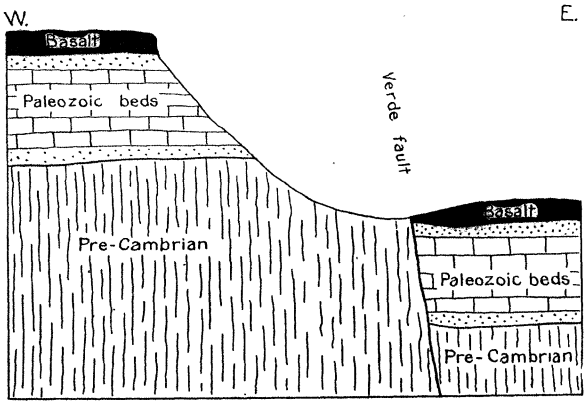
the pre-Cambrian. These relations are shown in the following diagrammatic sketch.

East of Jerome, between that town and the Verde River, are at least two other faults of similar character but probably smaller throw, so that the above section, if continued eastward, would show a succession of down-stepped blocks. These faults are apparently northward branches from what, south of Jerome, is a single great fault zone.



Diagrammatic section showing faulting at Jerome, Arizona

The points that deserve emphasis are (1) that the Black Hills with relation to the Verde Valley is an uplifted fault block; (2) that the faulting, inasmuch as it displaces basaltic flows that can scarcely be older than late Tertiary, is relatively recent; (3) that the basalt on top of the Black Hills is the same as that some 1,600 feet lower, just north of Jerome, and probably, also, the same as that known to underlie the thick accumulation of lake beds in the bottom of the Verde Valley; (4) that there is no evidence that the basalt on the Black Hills was ever covered by later sedimentary or volcanic deposits; and (5) that the present Verde Valley could not have been in existence when the basalt flowed over what is now the upper part of the Black Hills. The conclusion that the distinction between the Black Hills and the Verde Valley arose in late Tertiary or early Quaternary time as a consequence of block faulting is, I believe, inevitable, and Jerome deserves to take rank as a clearly demonstrable example of a type of structure which most geologists believe to be characteristic of the Basin-and-range province.

The existence, in Verde Valley, of a series of lake beds at least 2,000 feet thick, resting on basalt, and of supposedly late Tertiary or early Quaternary age[2] is additional evidence for the conclusion that the valley is essentially a structural feature and not a valley of erosion, although of course erosion has modified its original form.

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[2] Jenkins, O. P., Verde River lake beds near Clarkdale, Arizona: *Am. Jour. Sci.*, 5th ser., Vol. 5, pp. 65–81, 1923.

THE AMERICAN MATHEMATICAL SOCIETY

THE two hundred forty-second regular meeting of the American Mathematical Society was held at Columbia University on Saturday, May 2, 1925, extending through the usual morning and afternoon sessions. The attendance included sixty-three members of the society. There was no meeting of the council or of the trustees.

At the beginning of the afternoon session an address was made, at the request of the program committee, by Mr. J. R. Carson, of the American Telephone and Telegraph Company, and Dr. T. H. Gronwall, on "The Heaviside operational calculus and its application to electric circuit theory." A number of engineers and physicists were present by invitation at this session.

The following other papers were read:

The operational calculus: NORBERT WIENER.

Analytic approximations to topological transformations: NORBERT WIENER and PHILIP FRANKLIN.

Functions with assigned derivatives: PHILIP FRANKLIN.

On the types of division algebras: OLIVE C. HAZLETT.

On conditions for self-dual curves: T. R. HOLLCROFT.

The invariant system of two associated bilinear connexes: O. E. GLENN.

Algebraic surfaces with reducible bitangent and osculating hyperplanar sections: MARIA CASTELLANI.

The elementary divisors of a real symmetric matrix: J. H. M. WEDDERBURN.

The absolute value of the product of two matrices: J. H. M. WEDDERBURN.

The algebraic structure of the formulas in plane trigonometry: T. H. GRONWALL.

The behavior at infinity of the gamma and associated functions: T. H. GRONWALL.

A canonical form for biunivocal continuous sense-preserving transformations of a sphere: NORBERT WIENER.

Ricci's canonical congruences: HARRY LEVI.

Operations of Boolean algebras: ORRIN FRINK.

Alternatives to Zermelo's assumption. Preliminary report: ALONZO CHURCH.

Projective normal coordinates for the geometry of paths: OSWALD VEBLEN and J. M. THOMAS.

Conformal correspondence of Riemann spaces: J. M. THOMAS.

Asymmetric displacement of a vector: J. M. THOMAS.

On the inverse problem of the calculus of variations: J. H. TAYLOR.

On a certain functional equation: J. P. BALLANTINE.

ARNOLD DRESDEN,
Assistant Secretary