been officially recorded from Virginia. This must come as a surprise to the naturalists of the state, since the black widow must be fairly prevalent all over the state, so much so that nobody has considered it significant enough to record its occurrence. Around Farmville it is rather common. A few minutes hunt under old logs, fence rails, etc., is almost certain to unearth a specimen, and scarcely a year passes that specimens are not brought into our laboratory.

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SPECIAL CORRESPONDENCE

NEW ENGLAND INTERCOLLEGIATE FIELD TRIP

THE 32nd annual meeting of the New England Intercollegiate Geologists was held on October 10, 11 and 12, at Littleton, New Hampshire. Dr. Marland Billings, of Harvard University, was in charge of the various trips, and was assisted by Dr. Arthur B. Cleaves, Dr. Charles R. Williams and Jarvis B. Hadley. The field excursions were planned to illustrate the geology of the Franconia, Littleton, Moosilauke, Mount Cube and Woodsville quadrangles. The geology of these quadrangles has recently been studied by those who led the trips.

On Saturday, October 10, more than 100 geologists were in the parties led by Billings and his associates, to study the stratigraphy and structure of the Ordovician (?), Silurian and Devonian rocks under conditions of epi-zonal (low-grade) metamorphism. The Highlandcroft granodiorite was studied in its type locality where it is separated by an unconformity from the overlying middle Silurian fossiliferous Fitch formation. The slates of the lower part of the Littleton formation (lower Devonian) and overlying volcanics were also seen. Continuing upward in the stratigraphy, the slates and sandstones of the upper part of the Littleton formation were viewed where an Oriskany fauna had been obtained. Finally, the Ammonoosuc volcanics, of upper Ordovician age, consisting of soda-rhyolite, volcanic conglomerate and soda-rhyolite tuffs, were seen. Localities at which the Ammonoosuc thrust fault is observable were also visited.

Three trips were conducted on Sunday, October 11, by Drs. Billings, Williams and others. Dr. Billings conducted a study of the Paleozoic rocks in areas where they showed mesozonal and katazonal metamorphism. Excellent fossils were found in the mesozonal Fitch along the Ammonoosuc near Gale River. Along Gale River the mesozonal Littleton is well exposed. Near Northey Hill the geologists studied the exposures of the Ammonoosuc volcanics, the Clough conglomerate, the Fitch formation and the Littleton formation on the limbs of the Garnet Hill syncline. In this same area the Littleton formation yields many excellent staurolite crystals. The Bethlehem granodiorite gneiss, with well-developed north-south vertical foliation and a pronounced vertical linear feature, was seen east of Swiftwater. The final stop of the trip was at Lost River, where both the Littleton formation and the Kinsman quartz monzonite are in the katazone.

Dr. Williams conducted a trip to the summit of Mount Hale and pointed out the compelling evidence for mapping the Mt. Garfield porphyritic quartz syenite as a ring-dike. This ring-dike is an arcuate body, 13 miles long and varying from one quarter to one mile in width. It forms approximately 100° of arc. The leader suggested that field evidence indicated that the syenite was intruded along some fracture or fracture system and fulfilled the requirements of a ring-dike. On the trail the party also studied the Devonian Talford schist, a gray quartz mica schist, with occasional garnet and sillimate, injected by sills and dikes of granitic material of the New Hampshire magma series.

A special glacial trip was led by J. W. and R. P. Goldthwaite, G. W. White and R. J. Lougee in the Whitefield and Mount Washington quadrangles to see the classic Bethlehem moraine (?). The Twin mountain ice contact deposits, the Zealand Esker, a delta near Meadows and a series of spillways, near Jefferson, and their associated deposits were examined. The trip concluded with a view of the low divide (spillway?) between the Connecticut and the Androscoggin drainage at Bowman and a view of the ravines and cirques on the north slope of Mt. Washington. R. P. Goldthwaite summarized some of his findings of his recent studies on the date of cirque cutting.

On Monday, October 12, a trip, led by Dr. Williams, was conducted to see the Franconia "breccia" and the Conway granite at the basin, and the deep post-glacial weathering of the Conway granite. This group also visited the Flume and Lost River, and at the former locality, Dr. Williams demonstrated that the Flume has been eroded along a series of trap dikes.

On the same day Jarvis Hadley led a trip within the Moosilauke and Mt. Cube quadrangles. Owl's Head dome, one of the great igneous domes of western New Hampshire, was viewed. One of the most striking features of this trip was the readily discernible evidence of the three-fold repetition of the Clough

conglomerate by thrust faulting on Sugar Loaf Mountain, southeast of Center Haverhill. About two miles south of Pike, the Blackberry schist was studied. Here many small zigzag folds were noted. Eastward, on the higher hills, the southward extension of the Northey Hill thrust fault was observed. Later, a section through the Blackberry formation, the Pike Volcanics and the Albee formations was seen. The Mascoma igneous dome was viewed at the end of the trip.

The general plan followed by Dr. Billings and his co-workers illustrated the stratigraphic sequence in proper order; showed conclusively the collected evidence of lithological change in any formation due to progressively increasing metamorphism from northwest to southeast; showed fossiliferous horizons which aided in dating the formations; and, finally, the sequences, structures, contact effects and intrusives of the various magma series. All the attending geologists agreed that the trips were exceptionally well organized, well prepared and most instructive.

At the general business meeting of the association on Friday evening, 118 people, representing 24 colleges, were in attendance. Dr. Lloyd W. Fisher, of Bates College, was selected as secretary-treasurer to succeed the late Dr. Edward H. Perkins. The College of the City of New York will be host at the annual field meeting in 1937.

LLOYD W. FISHER,
Secretary, New England Field Geologists' Association

SCIENTIFIC BOOKS

AN INVITATION TO MATHEMATICS

An Invitation to Mathematics. By ARNOLD DRESDEN. xiii + 453 pages. 1936. Henry Holt and Company. $2.80.

WHILE this book serves as basis for a course in first-year college mathematics, it departs strikingly in form and content from the traditional text-books familiar to all who have been exposed to required freshman work in this field. The author aims to present to his readers some broad vistas of mathematical development, expecting of course more than passive and cursory attention but demanding very little in technique. The reader may hope to find not only much of the charm and symmetry of mathematics but as well a lively appreciation of the fundamental significance for modern life of the expanding achievements of mathematical science. The treatment follows neither a rigid pedagogical, logical nor historical form but draws together in a moving net of conversation, suggestion, warning and proof many topics often isolated, some of which are seldom accessible to the college undergraduate. In addition to material in analytic geometry and in the calculus one finds much time devoted to number theory, non-Euclidean geometry, postulational systems, projective geometry, geometry of the triangle, differential geometry, etc., including even the four-color problem, Fermat's unproved theorem and the syllogism. In a work of this kind the choice of interesting problems within the technical scope of the reader presents a challenge met with singular success. The book is the outcome of several years of classroom experiment by a scholarly, reflective and sympathetic teacher. The chapter and section headings appear in picturesque allegorical phrasing, almost equally adapted, one might imagine, to describing "The Wonders of Geology," "The Rise of the Italian Renaissance" or "The Romance of Cleopatra." The "Contents" is thus useless for purposes of reference, but the remarkable collection of indices at the back sets a standard to appease prosaic-minded critics.

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British Association Mathematical Tables. Vol. V. Factor Table. By J. PETERS, A. LODGE and E. J. TERNOUTH, E. GIFFORD. xv + 291 pp. London, 1935. 20s.

THOSE who have to do with the peculiarities and mysteries of whole numbers, whether they be amateur or only professional number theorists, will be interested in this unique factor table. The particular usefulness of this table is not due to its extent—tables covering up to 100 times as much territory may be had—but rather to its completeness. Larger tables usually omit those numbers which are multiples of 2, 3, 5 or even 7 and give only the smallest prime factor of each number in the table. The present table gives for each number up to 100,000 its complete decomposition into primes, thus giving at a glance information which, if the larger type table were used, might require three or four divisions, consulting the table each time at a different page. Another feature of the table is the manner in which primes are represented. While larger tables merely leave a blank entry to indicate a prime, in the present table the primes are printed in bold face so that the reader is assured of having entered the table correctly. Of course these advantages are not gained without a sacrifice of space. Most pages cover only 350 numbers, as compared with 21,000 in Lehmer's table. No attempt is made to crowd the page with figures.

From the introduction it is evident that the table is