

limited to the valley of only one river; its effects should be visible in all the neighboring valleys of the lake district, and until these effects are carefully deduced and systematically searched for, it seems safer to regard the erosion of the pass by a recently extinct river not as a probable conclusion, but only as an open suggestion.

A possible origin of the pass by glacial erosion in a preglacial notch of less depth is considered by Oldham and dismissed, because traces of glaciation were not found at a sufficient height; but on the latter point other observers do not agree, some maintaining the occurrence of an extensive local glaciation before the minor glaciation referred to by Oldham. Hanging valleys are not rare in these mountains ("We find in the Lake district a number of tributary valleys occurring in the hearts of the ridges, and opening out far above the bottoms of the main valleys, discharging their waters down the slopes in cascades." Marr, 'Scientific Study of Scenery,' 136), and one of them may be seen opening in the mountain side on the east just north of Dunmail summit. Glacial erosion as well as river erosion may, therefore, still deserve consideration in discussions as to the origin of the pass.

#### BRITTANY.

ONE of the excursions of the International Geological Congress held at Paris a year ago was led through Brittany by Barrois. An interesting account of it has been prepared by H. Credner under the title of its ancient name ('Armorika,' *Geogr. Zeitschr.*, VII., 1901, 21 p.). In contrast to the great deformation of the ancient rocks, moderate reliefs prevail to-day, much of the surface being nearly level to the eye for long distances. The region is peneplain, with occasional ridges and uplands maintained by the stronger rocks, but even there the forms are well subdued. The plain is usually clothed with a deep soil. It is here and there incised by narrow, steep-sided valleys, on whose walls the firm rock is exposed. The uplift of the peneplain, whereby the incision of young valleys has been permitted, is not explicitly stated, and the assertion that 'the valleys are extraordinarily old' is liable to misunderstand-

ing, until the reader infers that it is the predecessors of the present valleys that must be meant. The coast is generally marked by cliffs, torn into a ragged outline by a violent sea. The destructive work of the waves has been aided by a submergence of the land, of which there is not only geographical evidence in the form of bays and drowned valleys, but historical also, in the form of the ruins of a submerged town, of Roman roads that lead into the sea, and of megalithic monuments visible only at extreme low tide. The separation of England from France is ascribed to this submergence as well as to marine abrasion.

W. M. DAVIS.

#### A NEW ARCHEOLOGICAL PUBLICATION.

COMMENCING about September 1, the Archeological Section of the Wisconsin Natural History Society will publish, at regular intervals, a little 6- or 8-page sheet to be devoted to the cause of Wisconsin archeology. By this means it is hoped to keep alive and further the interest of the students, educators and collectors of Wisconsin in bringing about a better state of affairs as regards the preservation of the prehistoric monuments of the State.

The as yet uninterested attitude of the legislators argues that, for a year or two, at least, no bill favoring a State survey can be introduced. It is best, at present, to band together all persons interested until the time for action shall arrive so that the project can be carried to a successful issue.

The Bulletin is to be the organ of the campaign for a State archeological survey. It will not trespass upon the field of the journals now being published and which, being of too high price for the majority of State collectors and of a nature technically beyond their training, are not available for this purpose. It is intended to publish articles of local interest, short, general articles intended to train the average student, editorials favoring the free study and preservation of antiquities, notes, contributions of state collectors and students, notices of books bearing upon Wisconsin archeology, and all matter which will make the Bulletin of particular value to the archeologist of Wisconsin.

Dr. Charles E. Brown, of the Milwaukee Public Museum, is acting editor of the Bulletin, which will be known as the *Wisconsin Archaeologist*.

HARLAN I. SMITH.

#### GOVERNMENT RAILWAYS IN EUROPE.

DR. A. VON DER LEYEN, a railroad expert, has published an article in the June number of the *German Review*, concerning the management of the government railroads of Prussia, of which Consul General Günther sends an abstract to the Department of State.

He demonstrates that the example of Prussia in buying the private railroads and running them on government account has contributed to popularize this system in other countries, and states that not only have the other German states followed it, but that almost all the other European countries have purchased the existing railroads.

The Austrian government railroad net has to-day a mileage of almost 6,300 miles; that of Hungary, about 8,150 miles. Since 1882 a great change has taken place in Russia; of the then existing 14,000 miles of railroad, only about 40 miles were owned by the government. The total mileage in 1897 was about 24,300 miles, of which 15,780 miles belonged to the government. To this must be added the government railroads in Finland and Asiatic Russia, the Trans-Caspian and the Siberian railroads. The Servian, Roumanian and Bulgarian railroads are owned exclusively by the respective governments. Of the northern European kingdoms, Denmark has a government railroad system of 1,167 miles and 525 miles of private railroads. Norway's railroads belong almost exclusively to the government. Sweden has 2,303 miles of government and 4,387 miles of private railroads. The government has not yet succeeded in acquiring the latter, although efforts have been made to do so. Belgium, in 1898, through the purchase of the Grand Central Belge and some minor private roads, became the possessor of the whole Belgian railroad system. Holland acquired all the remaining private railroads in 1890; they are, however, operated by two private companies. The Italian Government purchased all

private main railroads of Italy in 1885 and leased them for twenty years to private corporations. Mr. von der Leyen states that both the last countries have had unpleasant experiences with this arrangement. Switzerland, after long discussion, resolved by federal law in October, 1897, to gradually purchase all the private railroads. On January 1, 1901, the first federal railroads were operated by the Government. By agreements of 1883, the six large French private railroads had their rights recognized by the Government, and no change has been made in the policy in that country. The relatively small Government railroad system, located between the Orleans and the Western railroads, has remained intact. As the private railroads, however, have received large subsidies from the Government, and as they will revert to the State in the second half of the present century, they can hardly be considered purely private railroads. Of the countries which have a private railroad system exclusively, only England and the United States remain.

#### SCIENTIFIC NOTES AND NEWS.

THE fiftieth annual meeting of the American Association for the Advancement of Science, as all the readers of this Journal are doubtless aware, opens with a meeting of the council, at three o'clock on the afternoon of Saturday, August 24. The first general session of the Association, however, begins at ten o'clock on the following Monday, when Professor Woodward, the retiring president, will introduce the president-elect, Professor Minot. Addresses of welcome will be made by the Hon. J. B. Orman, Governor of Colorado, and Hon. R. R. Wright, Jr., Mayor of Denver. Honorary President, J. B. Grant, will introduce General Irving Hale and Aaron Gove, who will welcome the Association on behalf of the business men of Denver and the educators of Colorado. To these addresses President Minot will reply. After announcements have been made by the secretaries, the general session will adjourn and the sections will be organized. The addresses of the vice-presidents are delivered in the afternoon, and the retiring president will give his address entitled 'The Progress of Science' on Tuesday evening. The Sections of