

teaching modern languages will be given by Mr. W. H. Kerridge. The secretary of the Association is Dr. H. Schofield, Loughborough College, Loughborough, Leicestershire.

THE examination for county minor scholarships of 15,485 children of 10-12 years of age in the West Riding of Yorkshire last February forms the subject of an interesting report issued by the County Education Committee. The task of organising the assignment of marks to so large a number of examinees with the nearest possible approach to uniformity presents formidable difficulties, and the report sets out in detail how these difficulties were met. A decentralised system of marking was adopted in 1927 with the object of associating in the conduct of the examination the whole body of teachers in the area. By selecting the assistant examiners from a panel nominated by local committees, by limiting their number to about fifty, by assigning to them scripts in their favourite subjects, and by facilitating conference and consultation, this system has gradually been perfected and is now working satisfactorily. For the written test, papers were set in English and in arithmetic. These are reproduced in the report, with comments by the chief examiners. Taken with the statistics of results classified according to percentages of marks obtained, the whole report gives a fairly definite measurement of the intelligence of the children of the county.

Calendar of Geographical Exploration

Feb. 22, 1878.—The Essequibo and its Tributaries

Sir Everard im Thurn started from Aretaka, south of Bartica, on his first expedition up the Essequibo River. Thence he went by canoe to Pirara, and from that point crossed the savannah to the Takootoo River, down which he travelled to its junction with the Branco. Later in the same year he visited the Kaietur falls on the Potaro River, which here leaps 750 feet; the falls had been first visited in 1871 by C. Barrington Brown. In further visits to the region he explored other rivers, notably the Cuyuni and the Mazaruni. But his most important work was on the ethnological side; his studies of the customs of the Indians of British Guiana have become a classic.

Feb. 23, 1540.—The Coronado Expedition

F. V. de Coronado left Compostela with an army to conquer the Seven Cities of Cibola, now identified as probably the Zuñi Pueblos of New Mexico. Coronado went to Mexico in 1535 and became governor of New Galicia in 1539. In that year he heard rumours of the fabled wealth of Cibola and determined to conquer it. In this he succeeded, but he found no wealth. He moved westwards to the Rio Grande and sent out exploring parties, one of which found the records of Alarcon. The latter in 1540 ascended the Gulf of California and explored the Colorado River from its mouth: he reported that lower California was a peninsula. Another party under Cardenas discovered the Grand Cañon of the Colorado, which baffled their efforts to cross it. Coronado himself proceeded to Quivira, reported to be an El Dorado, which seems to have been in the region where the Arkansas and Kansas Rivers approach one another. Coronado and the tattered remnants of his army reached Mexico in 1542, having completely failed to find gold or silver. But from a geographical point of view his march was of first-class importance. It formed the basis of the cartography of the hitherto unknown interior of the northern continent. It gained the first information about the sedentary Pueblo tribes of the south-west

of the United States and about the hunting tribes of Indians dependent upon the bison, an animal never before seen by the Spaniards, who called it a cow. In addition, the Grand Cañon had been discovered and the lower Colorado explored.

Feb. 23, 1770.—The Great Slave Lake

Samuel Hearne, an agent of the Hudson Bay Company, started on a journey the objects of which were to verify a rumour of the existence of copper ore and to find out whether there was a passage westward from Hudson Bay. He reached the northern shore of Dubawnt Lake, but there broke his quadrant and therefore returned. He had covered some new ground, but had failed in the main object of his journey. In December of the same year he started again, reached the Coppermine River, and followed it to its mouth, thus for the first time reaching the Arctic Ocean in this region. On his return journey he followed a different route and discovered the Great Slave Lake, which he crossed. He himself called the lake Athapuscow, and it was by some thought to be Athabasca, but his route indicates that this was a mistaken identification. His voyage settled the question of the existence of a north-west passage from Hudson Bay.

Feb. 26, 1807.—Pike's Peak

Z. N. Pike arrived at the Rio Grande del Norte, in the region where Alamosa, Col., now stands, and was taken prisoner by the Spanish authorities. Pike had set out in 1806 to lead an expedition which was to explore the country west and south-west of St. Louis to the headwaters of the Arkansas and Red rivers. He ascended the Arkansas through the Royal Gorge and sighted the mountain which now bears his name. He mistook the Rio Grande del Norte for the Red River. The Spanish sent him to Santa Fé and then to Chihuahua, whence he was deported, returning home through Texas. His account of his experiences made available for the first time a fairly accurate knowledge of New Mexico, Texas, and northern Mexico.

Societies and Academies

LONDON

Royal Society, Feb. 11.—J. Chadwick and J. E. R. Constable: Artificial disintegration by α -particles. (2) Fluorine and aluminium. The protons liberated from fluorine and from aluminium when bombarded by α -particles from polonium have been examined. In each case they can be resolved into definite groups which occur in pairs. The results are explained on the assumption that the α -particles can enter the nucleus through certain resonance levels. To explain the fluorine disintegration it is necessary to suppose that there are two (possibly three) levels, while for aluminium four levels must be assumed.—A. J. Bradley and A. H. Jay: The formation of superlattices in alloys of iron and aluminium. Alloy structures of iron and aluminium in the range Fe-FeAl are primarily based on a simple body-centred cubic lattice like that of α -iron, but a detailed examination of the annealed and quenched states gave widely-differing results. Alloys quenched from 600° C. and above showed a random distribution of atoms up to 25 atomic per cent aluminium. Between 25-26 per cent and 50 per cent aluminium, cube centres differ in composition from cube corners. Annealed alloys with less than 18 atomic per cent aluminium have a random distribution, and at 40-50 per cent aluminium they have the FeAl type of structure exactly like the quenched alloys in this range. At intermediate compositions a new type of structure appears, which