

has already constructed a short line in that city, is at present busy on the construction of mining roads; one of these, now under way, being six thousand feet long, and wholly in the mine. The Sprague company of this city has completed a short road for a Boston sugar-refinery, and is now making estimates for street-lines in several of our larger cities. This company has made a series of tests with storage-batteries for street-car purposes, which have given very satisfactory results.

A cross-town line in this city is to be equipped with the Bentley-Knight conduit system, — a system specially devised to meet the requirements of street-car traffic in crowded city streets. A road in Allegheny City, Penn., is contracted for by the Bentley-Knight company. On the Eighth Avenue road in this city, and also on a road in St. Louis, the Julian storage-battery system has been tried, and, it is claimed, with results showing economic features as compared with horse-traction.

After referring to the many systems still in the purely experimental stage, Mr. Martin concludes as follows: "At Ansonia, Conn., an electric road, three and a half miles long, from Derby to Birmingham and Ansonia, using overhead wire, has been contracted for. It will be used for both freight and passengers, and power to drive the dynamo will be taken from the Housatonic dam. At Newton, Mass., a road is to be built by a company already formed; one is proposed for Worcester, Mass. At Brookline, Mass., two will soon be in operation, and one each is in view at Bangor and Biddeford, Me. Two roads are contemplated in Brooklyn, one at Coney Island, and one at Rockaway. Pelham Park, N.Y., is to have a road this summer, and Asbury Park, N.J., is advertising for bids on another. Franchises are asked for a road in Jersey City and Bayonne; and Plainfield, N.J., is also wanting a road. In Pennsylvania, Scranton, with one successful road, is to have another, and probably two. A road is to be built from Carbondale to Jermyrn, four miles. In Reading, the Perkiomen Avenue company proposes to adopt electricity. Harrisburg is to have a road, and it looks as though, before the end of the year, Pittsburgh will have half a dozen. Down south, steps have been taken to construct new electric roads, or adopt the system on old roads, in Jacksonville, Fla.; Pensacola, Fla.; Birmingham, Ala.; Selma, Ala.; Atlanta, Ga.; and Fort Smith, Ark. Among roads spoken of in Ohio are several at Cincinnati, Cleveland, Tiffin, and other places. Wichita, Kan., is proposing to adopt electricity for its street-cars. Lincoln, Neb., has formed a company to operate an electric railway from the business part of the town to the stock-yards. In San Francisco a road is to be

built on Fillmore Street hill, and roads are also wanted at San Jose and Riverside, San Bernardino county. If I were at liberty to do so, I could add to the above list about fifty names of places where, from present indications and movements, it is safe to say that electric roads will be running within a year."

#### EXPLORATION AND TRAVEL.

##### *Sierra Leone.*

WE give elsewhere a brief sketch of the tribes of Sierra Leone. Our knowledge of this country is principally due to the commercial companies which are established on the coast, and to the endeavors of the English and French to extend their colonies towards the interior. We find some very interesting notes on Sierra Leone in letters by Lieutenant Mathews, which were published in 1791; and his descriptions of the people are still true, though a long time has elapsed, and the slave trade was long since abolished. The first to enter the interior was Major Laing, who, in 1822, succeeded in reaching the sources of the Scarcies and Rockelle, the principal rivers of the colony. R. Caillié, on his journey from the Senegal to the Joliba (the upper Niger) and Timbuktu, and thence through the Sahara to Morocco, 1824-28, crossed the territory of the Mandingos, and gave an interesting description of their customs and mode of life. In 1843, W. C. Thomson explored the district north of the Scarcies River and Futa-Jalon, where the Scarcies, Gambia, and many tributaries of the Senegal and Niger, have their sources. In 1869, Winwood Reade, who was sent out by the London geographical society, explored the country between the Scarcies and Rockelle rivers, and after having reached the town of Falaba, Major Laing's farthest point, crossed the watershed and descended the Niger, which he followed a long distance. The latest important researches are those of E. W. Blyden, who travelled in the Susu country, north of the Scarcies, in 1872, and of J. Zweifel and M. Moustier, who were sent out by the French merchant Verminck for the purpose of discovering the source of the Niger (1879). They followed Reade's route as far as Falaba, and then turned south to the head waters of the Niger. Most of these routes run parallel to the large rivers. The tributaries which are crossed by these routes are little known, and much work remains to be done before the geographical features of the country and the ethnological character of its inhabitants will be tolerably well known.

The proposed French expeditions to the upper Niger will add considerably to our present knowledge of the interior parts of this district. Owing

to the hostility of the Marabout Mahmadu Lamine, two expeditions were formed last December to proceed against him (*Proc. roy. geogr. soc.*, April, 1887). The country to be traversed is little known, and topographical surveys will be carried on during the expedition. Besides this, Dr. Tautain and Lieutenant Quiquandon will explore the country adjoining the north-eastern boundary of Senegambia, which includes the country called Bakunu, between the desert and the upper course of the Niger. It was traversed by Mungo Park in 1796. A third party will survey the unknown part of the Niger, as far as it forms the boundary of Senegambia, and ascend the Tankiso, which has its source in Futa-Jalon, and has never been visited.

#### Asia.

H. E. M. James, F. E. Younghusband, and H. Fulford have made an interesting journey in a part of Manchuria which had hitherto not been visited by Europeans. They left Mukden, the capital of South Manchuria, on May 29, 1886, intending to ascend the Yalu River and to reach the point where the Chinese, Korean, and Russian frontiers meet. They were prevented from carrying out their intention by the impracticability of the upper valley of the Yalu. Therefore they turned due north, up one of the tributaries of the Yalu, crossed the main chain of mountains by a low pass 2,700 feet high, and came down the Tang-ho, an affluent of the main or western branch of the Sungari. They then visited the Chang Pei-shan ('ever white mountain'). It was found to be a recently extinct volcano, with a lovely blue pellucid lake filling the bottom of the crater, and surmounted by a serrated circle of peaks rising about 650 feet above the surface of the water. The loftiest of these was found to be 7,525 feet high, while formerly its height was estimated at 10,000 to 12,000 feet. The sides of the mountain are composed of disintegrated pumice, to which its conspicuously white aspect is due. There are no glaciers, but snow lies in the clefts all the year round. The Pei-shan forms the centre of the river-system of Manchuria; the Yalu, which forms the southern part of the Korean frontier, the Tumen, which forms its northern part, and the western Sungari, having their sources here. From here the party went to Kirin, descending the Sungari. While the rest of Manchuria is infested with robbers, the colonists and hunters of this district have managed to suppress them, and travelling is comparatively safe. Considerable difficulties were experienced owing to incessant rains, which made the rivers impassable. Numerous gold-diggings were met with, the most extensive being but a few marches from Kirin. Here

they staid for three weeks, and started on Sept. 3 for Tsitsihar, the capital of northern Manchuria, on the Nonni, a tributary of the Sungari. From Tsitsihar they turned south-east, and crossed a high, undulating, and perfectly uncultivated steppe, with numerous brackish lakes. At the shores of these lakes, earth containing soda and salt is gathered, from which soda and salt are made. Thus they reached Hulan, on the Hulan River, a few miles from the Sungari. The country all around here is very fertile, and is being rapidly settled, some of the towns having upward of 25,000 inhabitants. They visited the south-east corner of Manchuria, where the Russian, Korean, and Chinese frontiers meet, and returned to Kirin and Mukden. A great part of the country they traversed was never visited by Europeans, and the compass survey of their route will be very valuable (*Proc. roy. geogr. soc.*, Dec., 1886; April, 1887).

#### America.

*La gazette géographique* (April 21) says that Chaffanjon's explorations on the upper Orinoco have been successful, and that he has returned to Ciudad Bolivar.

Thouar's expedition, which was sent out to explore the Pilcomayo, is detained at Lagunillas, on account of the outbreak of cholera in Paraguay.

#### NOTES AND NEWS.

THE second annual meeting of the American economic association will be held in Boston and Cambridge, May 21-25, 1887. The meetings will, for the most part, be held in the buildings of the Massachusetts institute of technology; but one session will be held at Harvard university in Cambridge. The following is the programme, subject to revision: May 21 (evening), joint session of the American economic association and the American historical association, with addresses by the presidents of the two associations (Gen. Francis A. Walker and Prof. Justin Winsor), reception of both associations in the Museum of fine arts; May 23, report of the standing committee on transportation, 'Agitation for federal regulation of the railways' (by Prof. E. J. James), 'Long and short haul clauses of the federal railway law' (by Dr. Edwin R. A. Seligman), 'Some curious phases of the railway question in Europe' (by Simon Sterne, Esq.), 'Sociological character of political economy' (by F. H. Giddings, Esq.), and 'Mine labor in the Hocking valley' (by Dr. Edward W. Bemis); May 24 (forenoon), economic association, report of committee on trade on 'Condition and organization of retail trade,' report of standing com-