

connected with the Punjab by the broad-gauge North-Western State Railway from Lahore. Delhi is in direct communication with Karāchi by another line passing through Rewāri and Merta Road Junctions, and also by the Southern Punjab Railway, which runs along the southern border of the Province to join the Karāchi line at Samasata. Karāchi has recently been brought into closer contact with Ludhiāna by the new branch of the Southern Punjab Railway from Ludhiāna via Ferozepore and McLeodganj Road. The north-west corner of the Province is directly connected with Karāchi by the branches of the North-Western Railway, which leave the main line at Campbellpur, Golra, and Lāla Mūsa and converge at Kundiān, whence the Sind-Sāgar branch follows the east bank of the Indus and joins the Karāchi branch at Sher Shāh. The new Wazirābād-Khānewāl line taps the fertile Chenāb Colony in the Rechna Doāb and also connects with Karāchi via Multān. The Jech Doāb line commences from Malakwāl, a station on the Sind-Sagār branch of the North-Western Railway, and ends at the Shorkot Road station of the Wazirābād-Khānewāl branch. Another small line is under construction from Shāhdara, 3 miles north of Lahore, to Sangla Hill on the Wazirābād-Khānewāl Railway. It will serve as an outlet to the immense grain traffic in the interior of the Chenāb Colony.

In the east of the Province the country is covered with a network of branch lines, of which the Delhi-Umballa-Kālka, Simla-Kālka, Rājputana-Bhatinda, Bhatinda-Ferozepore, and Ludhiāna-Dhūri-Jākhāl are the most important. The Rewāri-Bhatinda-Fāzilka (metre-gauge) State Railway links up the important junction of Bhatinda with the Rājputāna-Mālwa line, which also connects with Delhi. The Delhi-Agra branch of the Great Indian Peninsula Railway has recently been opened. In the centre of the Province a branch of the North-Western Railway, recently opened, connects Amritsar with Patti, a town in Lahore District.

The oldest railway is that from Amritsar to Lahore, opened in 1862. That from Multān to Lahore linked up the capital with the Indus Flotilla in 1865; but it was not till 1878 that its extension north-westwards began, and only in 1883 was through communication from Peshāwar to Calcutta and Bombay established. Meanwhile Amritsar and Rewāri had been linked with Delhi in 1870 and 1873 respectively; and though no farther extensions were made till 1883, progress was rapid after that year. In 1891 the Province contained 2,189 miles

of railway, which increased to 3,086 in 1901 and 3,325 miles in 1904. In the latest year the total was distributed under—broad gauge, 2,757 miles ; metre gauge, 380 ; and narrow gauge, 198 miles.

The greater portion of the railways in the Punjab is worked by the North-Western State Railway, which included 2,585 miles on the broad gauge, and 138 on narrow gauges in 1904. In January, 1886, when the contract of the Sind, Punjab, and Delhi Railway Company expired, Government took over that line and amalgamated it with the Indus Valley, the Punjab Northern State Railways, and the Sind-Sāgar branch into one imperial system called the North-Western State Railway. The Amritsar-Pathānkot Railway, which originally belonged to the Local Government, was transferred to the North-Western Railway in 1892. The Rājpora-Bhatinda, Ludhiāna-Dhūrt-Jākhāl, and Jammu-Kashmīr Railways were built respectively by the Patialā, the Māler Kotla and Jind, and the Kashmīr States, but are worked by the North-Western Railway, with which has also been amalgamated the Southern Punjab Railway. The management of the Kālkā-Simla Railway was taken over by the North-Western Railway on January 1, 1907.

The railways in the Punjab may be classed under two heads, commercial and military. The commercial section of the North-Western Railway cost on an average Rs. 1,32,000 per mile to construct, inclusive of the worked lines and the Amritsar-Pathānkot Railway. The worked lines cost on an average Rs. 55,000 per mile to construct, and the Amritsar-Pathānkot Railway Rs. 82,000 per mile. In 1904 the Punjab had one mile of rail to every 40 square miles of territory. The only Districts not yet traversed by a railway are Dera Ghāzi Khān, Kāngra, and Hoshiārpur. The strategical value of the railway system lies chiefly in the facilities it offers for the transport of troops to the north-west frontier of India ; the commercial value lies mainly in the export of cotton, grain (especially wheat), and oilseeds to Karāchi. Combined with the canals the railways have revolutionized economic conditions, the former inducing the production of wheat on a vast scale, and the latter placing it on the world's market. Further, their combined effect renders the Province, as a whole, secure from serious food-famines. In 1899-1900 the canal-irrigated tracts formed a granary whence grain was distributed by the railways. The railways also tend to equalize prices in all parts of the Province and from year to year, but it may be doubted whether by themselves they have raised prices generally. It is, how-

ever, true that they are tending to erase local variations in speech, dress, manners, and customs, and to obliterate the few restrictions which the caste system in the Punjab imposes on the ordinary intercourse of daily life.

The chief road is a continuation of the grand trunk road, Roads. which, starting at Calcutta, runs through Northern India to Delhi. Thence, in the Punjab, it passes through Karnāl, Ambāla, Ludhiāna, Jullundur, Amritsar, Lahore, Jhelum, Rāwalpindi, and Attock, where it enters the North-West Frontier Province and ends at Peshāwar, with a total length of 587 miles, metalled and bridged throughout. The section from Karnāl to Ludhiāna was made in 1852, but that from Phillaur to the Beās was only completed in 1860-1. From the Beās to Lahore the road was opened in 1853, and thence to Peshāwar in 1863-4. It runs alongside the railway, and still continues to carry a certain amount of slow traffic. The other roads are mainly important as feeders to the railway system. On the north the chief routes are the Hindustān-Tibet road, which runs from the Shipki Pass on the frontier of the Chinese empire to the railway termini at Simla and Kālka; the Kāngra Valley cart-road, which brings down tea and other hill products to Pathānkot: the Dalhousie-Pathānkot road; and the Murree-Rāwalpindi road, which now forms the main route from Kashmīr. All these, except the Dalhousie road, are metalled, and all are practicable for wheeled traffic, except that part of the Tibet road which lies north of Simla. In the centre of the Province a metalled road runs in a loop from Lahore via Kasūr and Ferozepore to Ludhiāna, where it rejoins the grand trunk road. The other metalled roads are merely short feeders of local importance connecting outlying towns, such as Hoshiārpur and Kapūthala, with the railways. As feeders and for local traffic unmetalled roads suffice for the requirements of the people, and the construction of metalled roads has accordingly been of recent years subordinated to that of railways, at least in the plains. Thus in 1880-1 the Province contained 1,381 miles of metalled roads, and though in 1900-1 the mileage had risen to 1,916, in 1903-4 it was only 2,054, compared with 20,874 of unmetalled roads. All roads, except 147 miles of strategic roads in Dera Ghāzi Khān District, are maintained from Provincial or District funds. Most of the important metalled roads are Provincial, while unmetalled roads are maintained by District boards, their metalled roads being often made over to the Public Works department for maintenance. The total annual expenditure

on land communications is about 4 lakhs for original works, and 10 to 12 lakhs for repairs.

Vehicles.

The chief means of transport of goods by road is the bullock-cart. This is a heavy substantial vehicle without springs or tires, and made by any village carpenter. It is drawn by a pair of bullocks at the rate of 2 miles an hour, and 10 to 15 miles are reckoned a fair day's journey. It will stand the roughest usage and the worst roads, and only in the hills and in the sandy tracts does its weight render its use impossible. In the sandy deserts bordering on the Bikaner desert, and in the Sind-Sāgar Doāb, including the Salt Range, the camel is the chief means of transport of merchandise, while in the Himālayas goods are carried on mules or by bearers. For passengers by road the light springless cart known as the *ekka* is the almost universal means of locomotion; it will carry four to six passengers, and go at the average rate of 5 miles an hour. On metalled roads, the 'tutum,' a vehicle with springs not unlike a dog-cart, is much in use. On the important cart-roads to the hills regular passenger services are maintained by means of a two-wheeled carriage called a 'tonga,' drawn by two ponies; at every 4 miles there are stages at which ponies are changed, and journeys are performed at the rate of about 8 miles an hour. Regular services of bullock-carts are also maintained on these roads.

Rivers.

All the great rivers are navigable in the rains; and the Indus and the lower reaches of the Jhelum, Chenāb, and Sutlej are navigable throughout the year. Except on the Indus, timber is the most important article of commerce transported by this means. There is a considerable trade on the Indus with Sind. Navigation on all rivers is entirely by means of rude country craft, the Indus Steam Navigation Flotilla having ceased to exist some twenty years ago. The grand trunk road crosses the Rāvi, Jhelum, and Indus by roadways attached to the railway bridges, and the Chenāb by a footway; and roadways cross the Sutlej between Lahore and Ferozepore, and the Chenāb between Multān and Muzaffargarh. There is a bridge of boats on the Rāvi near Lahore; and the Indus is crossed by bridges of boats at Khushālgarh, Dera Ismail Khān, and Dera Ghāzi Khān, the latter two replaced by steam ferries in the summer. All the rivers are provided with ferries at frequent intervals, which are generally managed by the District boards.

Post Office. The Districts and States of the Punjab (except the States of Chamba, Jīnd, Nābha, and Patīāla, which have their own