on the east coast, and refined in the island of Setnbilan. Arsenic, saltpetre, alum, naphtha and sulphur may be collected in the volcanic districts. A systematic mineralogical survey has been undertaken in central Sumatra.

*Roads and Railways.—*In the west, with its long line of coast and numerous valleys, the transport *of* coffee has induced the construc­tion of very good roads as far as the Lake of Toba, owing to the want of navigable rivers. There is a railway connecting not only the coalfields of the Ombilin valley with Padang, but also the Ombilin river and the Lake of Singkara with the most productive and densely populated plateaus and valleys, north and south of the line of the volcanoes Singalang, Merapi and Sago. A second railway in the district of Deli connects the inland plantations with the coast; and there is another, as already indicated, in the lower Achin valley. Good roads traverse the broad plains of Benkulen, Palembang and the Lampong districts.

*History.—*As far as is known, Sumatran civilization and culture are of Hindu origin; and it is not improbable that the island was the first of all the archipelago to receive the Indian immi­grants who played so important a part in the history of the region. Certain inscriptions discovered in the Padang high­lands seem to certify the existence in the 7th century of a power­ful Hindu kingdom in Tanah Datar, not far from the site of the later capital of Menangkabo. In these inscriptions Sumatra is called the “ first Java.” The traces of Hindu influence still to be found in the island are extremely numerous, though far from being so important as those of Java. There are ruins of Hindu temples at Butar in Deh, near Pertibi, on the Panbi river at Jambi, in the interior of Palembang above Lahat, and in numerous other localities. One of the principal Hindu ruins is at Muara Takus on the Kampar river. The buildings (includ­ing a stupa 40 ft. high) may possibly date from the nth century. At Pagar Rujung are several stones with inscriptions in Sanskrit and Menangkabo Malay. Sanskrit words occur in the various languages spoken in the island; and the *Ficus religiosa,* the sacred tree of the Hindu, is also the sacred tree of the Battas. At a later period the Hindu influence in Sumatra was strengthened by an influx of Hindus from Java, who settled in Palembang, Jambi and Indragiri, but their attachment to Sivaism prevented them from coalescing with their Buddhist brethren in the north. In the 13th century Mahommedanism began to make itself felt, and in course of time took a firm hold upon some of the most important states. In Menangkabo, for instance, the Arabic alphabet displaced the Kavi (ancient Javanese) character previously employed. Native chronicles derive the Menangkabo princes from Alexander the Great; and the Achinese dynasty boasts its origin from a missionary of Islam. The town of Samudera was at that period the seat of an important principality in the north of the island, whose current name is probably a corruption of this word. There is a village called Samudra near Pasei which possibly indicates the site.

Sumatra, first became known to Europeans through the Portuguese, Diogo Lopes de Sequeira, in 1508. The Portuguese were the first to establish trading posts on the island, but at the end of the century they were driven out by the Dutch. At this time the most powerful native state in the island was Achin *(q.v.).* Elsewhere Dutch sovereignty was gradually extended—in 1664 over Indrapura; in 1666 over Padang, until by 1803 it was established over much of the southern part of the eastern lands, including Palembang. Meanwhile, in 1685 the British had acquired a footing in Benkulen, and between them and the Dutch there was always much jealousy and friction until in 1824 a treaty was made under which the British vacated Sumatra in favour of the Dutch, who reciprocated by giving up Malacca. In May 1825 Benkulen was taken over from the British. In the second half of the 19th century the Dutch found a succession of armed expeditions necessary to consolidate their power. Thus in 1851 a revolt was suppressed in Palembang, and an expedition was sent to the Lampong districts. In 1853 Raja Tiang Alam, ringleader of the revolt in Palembang, surrendered. In 1858 an expedition was sent against Jambi; the sultan was dethroned and a treaty made with his successor. In i860 Rejang was added to the Palembang residency. In 1863 there was an expedition against Nias, and in 1865 another against Asahan and Serdang (east coast). In 1873 war was declared against Achin. In 1876 there was an expedition against Kota Jutan (east coast) and the emancipation of slaves was carried out on the west coast. In 1878 Benkulen was made a residency, and the civil administration of Achin and dependencies was entrusted to a governor. From 1883 to 1894 the government, with the help of missionaries, extended its authority over the south-east and south-west of the island, and also over some of the lands to the east and north of Toba lake, including the districts of Toba, Silindong and Tanah Jawa, and in 1893 over the southern part of the peninsula of Samosir in Toba lake. Its jurisdiction was also extended over Tamiang, till then the northern frontier of the Dutch east coast of Sumatra. By military expeditions (1890-95) the Dutch influence on the Batang Hari, or Upper Jambi, was increased; as also in 1899 in the Lima Kotas@@1 in central Sumatra, included within the territory of Siak. The war in Achin did not materially retard the develop­ment of Sumatra, and although the titular sultan of Achin continued a desultory guerrilla warfare against the Dutch in the mountainous woodlands of the interior, the almost inacces­sible Pasei country, really active warfare has long ceased. All along the main coasts of the former sultanate of Achin military posts have been established and military roads constructed; even in Pedir, on the north coast, until 1899 the most actively turbulent centre of resistance of the sultan’s party, and still later only pacified in parts, Dutch engineers were able to build a highway to connect the west with the east coast, and other works have been successfully carried out. Practically the whole of the island is now more or less explored and under control.

The literature dealing with Sumatra is very extensive. Of the older works the best known is W. Marsden, *History of Sumatra* (London, 1811). A full list of other older authorities will be found in P. J. Veth’s *Aardrijkskundig Woordenboek van Nederl. Indie* (1869). Among later works one of great importance is *Midden- Sumatra; Reizen en Onderzoekingen der Sumatra Expeditie, 1877- 187ς* (Leiden, 1881, sqq.), edited by P. J. Veth. See also Brau de Saint-Pol Lias, *Île de Sumatra* (Paris, 1884) ; E. B. Kielstra, *Beschrij­ving van der Atjeh Oorlog* (1885-1886), and “ Sumatras West-Kust van 1819-1825,” in *Bijd. tot Land-,* &c*., Kunde* (1887); on the history of Palembang, west coast and the war in Achin, in *Indisch miltlair Tijdschrift* (1886-1889); *Tijdschr. bat. Gen.* (1887-1892). For topo­graphy and geology, see R. Fennema, " Topographische en geolo­gische Beschrijving van het Noordelijk gedeefte . . . Westkust, &c.,” *Jaarb. v. het Mijnwezen* (1887); R. D. Μ. Verbeek, *Topographische en geologische Beschrijving van een Deel van Sumatra's Westkust,* with atlas (Batavia, 1883) ; similar work dealing with south Sumatra, *Jaarb. v. het Mijnwezen* (1881), and *Supplement* (1887). W. Volz, ” Beiträge zur geologischen Kenntniss von Nord-Sumatra,” *Zeitschr. deutsch, geol. Gesell.* (1899), vol. li.; H. Bücking, ‘‘Zur Geologie von Nord- und Ost-Sumatra,” *Samml. geol. Reichs-Mus.* 1st series, vol. viii., with map and five plates (Leiden, 1904); D. J. Erb, “ Beiträge zur Geologie und Morphologie der südlichen West-Küste von Sumatra,” *Z. Ges. E. Berlin* (1905); J. F. Hoekstra, *Die Oro- und Hydrographie Sumatras* (Groningen, 1893); J. W. Ijzerman, &c., *Dwars door Sumatra, Pacht van Padang naar Siak* (Haarlem, 1895); A. Maas, *Quer durch Sumatra* (Berlin, 1904); E. Otto, *Pflanzen- und Jägerleben auf Sumatra* (Berlin) 1903) ; B. Hagen, “ Die Gajo-Lānder,” *Jahresb. Frankfurter V.G.,* lxvi., lxvii. (1901-1903); Climate: J. P. van der Stok, *Regenwaarnemingen* and *Atlas of Wind and Weather* (Batavia, 1897). Consult further *Tijd. Aardr. Gen., Tijd. Batav. Gen., Jaarb. van het Mijnwezen,* and *Koloniale Versiegen,* passim. (See also Malay Archipelago.)

**SUMBA** (Tjendana, or Sandalwood), one of the Lesser Sunda Islands in the Dutch East Indies, lying south of Flores, from which it is separated by Sumba strait, about 10° S., 120° E. It has an area of about 4600 sq. m., consists of a plateau with an extreme elevation of about 33∞ ft., and appears to be composed mainly of sedimentary rocks. It has a large Malay population (estimated at 200,000). Some trade is carried on in cotton, ponies, edible birds’ nests, tortoiseshell, &c., mainly by Bugis and Arabs, the chief centre for which is Waingapu or Nangamessi on the north-east coast. Sumba is included in the Dutch residency of Timor, together with the lesser island of Savu, to the east. From this last island the sea is enclosed by Timor, Sumba and the islands between them, and Flores and the chain of islands east of it is called the Savu Sea.

@@@1 “ Kota ” means settlement or township, and a great many districts have been named from the number of kotas they contain; *e.g.* the VII. Kotas, the VIII. Kotas, &c.