Fatahjang (Fatehjang).—Easternmost tahsīl of Attock District, Punjab, lying between 33° 10′ and 33° 45′ N. and 72° 23′ and 73° 1′ E., with an area of 866 square miles. The population in 1901 was 114,849, compared with 113,041 in 1891. It contains 203 villages, of which Fatahjang (population, 4,825) is the head-quarters. The land revenue and cesses amounted in 1903–4 to 1.9 lakhs. The tahsīl is divided into three distinct parts. North of the Kālā-Chitta range is a small plain much cut up by ravines. South of the Khairi-Mūrat is the fertile Sohān valley, while between the two ranges of hills lies a rough plain, narrow in the east and broadening towards the west.

Pindi Gheb Subdivision.—Subdivision of Attock District, Punjab, consisting of the PINDI GHEB and TALAGANG TAH-SĪLS.

Pindi Gheb Tahsīl.—Tahsīl of Attock District, Punjab, lying between 33° o' and 33° 47' N. and 71° 42' and 72° 40' E., with an area of 1,499 square miles. The Indus bounds it on the north-west. Its highest point lies in the Kālā-Chitta The tahsīl is mainly a bleak, dry, undulating and often stony tract, broken by ravines, and sloping from east to west: a country of rough scenery, sparse population, and scanty rainfall. West along the Indus are the ravines and pebble ridges which surround Makhad. Only near Pindi Gheb itself does the broad bed of the Sil river show a bright oasis of cultivation among the dreary uplands which compose the rest of the tahsīl. The population in 1901 was 106,437, compared with 99,350 in 1891. It contains the town of PINDI GHEB (population, 8,452), the head-quarters, and 134 villages. The land revenue and cesses amounted in 1903-4 to 1.9 lakhs.

Talagang Tahsil.—Tahsil of Attock District, Punjab, lying between 32° 34′ and 33° 12′ N. and 71° 48′ and 72° 32′ E., with an area of 1,198 square miles. The population in 1901 was 92,594, compared with 94,027 in 1891. It contains 86 villages, of which Talagang (population, 6,705) is the head-quarters. The land revenue and cesses amounted in 1903-4 to 1.4 lakhs. The Sohān forms the northern boundary, and the land along its banks is very fertile, and is irrigated by wells. Generally speaking, the tahsīl is a tableland intersected with deep ravines. Towards the south it becomes more broken and hilly, and in the south-west culminates in the peak of Sakesar (5,010 feet above the sea), the highest point in the Salt Range.

Kot.—Estate in the Fatahjang tahsīl of Attock District. Punjab, with an area of 88 square miles. The Ghebas, a tribe which claims alliance with the Sials and Tiwanas, had long maintained a semi-independence in the wild hill-country between the Indus and Sohān rivers, and only acknowledged the nominal supremacy of the Sikhs. Rai Muhammad, the Ghebā chief, rendered good service in 1830 to Ranjīt Singh against Saiyid Ahmad, the fanatical Muhammadan leader in Hazāra; and in 1848-9 and 1857 his son, Fateh Khān, stood by the British and received substantial rewards. Rai Fateh Khān wielded great influence in the country round Kot. his death at an advanced age in 1894 he was succeeded by Sardār Muhammad Alī Khān, who died in 1903. The present chief, who holds a jāgīr worth about Rs. 4,400 a year and owns 27 villages, is a minor, and his estate is under the Court of Wards. The chiefs of Kot are great horse-breeders, and their stud is now systematically managed by the Court of Wards.

Attock Town (Atak).—Fort and temporary head-quarters of the tahsīl of the same name in Attock District, Punjab, situated in 32° 53′ N. and 72° 15′ E., on the North-Western Railway and the grand trunk road; distant by rail 1,505 miles from Calcutta, 1,541 from Bombay, and 882 from Karāchi. Population (1901), 2,822. The fort rises in three tiers to a commanding height from the Indus, just below the point where it receives the Kābul river. Opposite it a whirlpool eddies between two jutting precipices of black slate, known as Kamālia and Jalālia, from the names of two Roshānia heretics, who were flung from their summits during the reign of Akbar. The buildings of the town formerly stood within the fort, but have been removed to a site on one side of it. The fort, which commands the passage of the Indus, is garrisoned by two companies of garrison artillery and a detachment of infantry.

Alexander is supposed to have crossed the Indus by a bridge of boats at Ohind, 16 miles above Attock. The fort was built by Akbar in 1581 to protect his empire against the inroads of his brother, Hakīm Mirza, governor of Kābul; and he named it Atak-Banāras in contrast to Katak-Banāras, the fort which lay in the south-east corner of his empire. Another story goes that Akbar, finding the Indus impassable, named the fortress Atak, 'the obstacle,' and that when he effected a crossing he founded Khairābād, the 'abode of safety,' on the western bank of the river. In 1812 Ranjīt Singh surprised the fort, which was in the possession of the Wazīr of Kābul. In the first Sikh War it was taken by the British, but

lost in the second despite a long and gallant defence by Lieutenant Herbert. It returned to British occupation at the end of the second Sikh War. The road and railway bridge over the Indus were completed in 1883. Attock is administered as a 'notified area.' The income and expenditure of cantonment funds during the ten years ending 1902-3 averaged Rs. 249 and Rs. 216 respectively.

Campbellpore (Kāmilpur).—Cantonment in the Attock tahsīl, and head-quarters of Attock District, Punjab, situated in 33° 46′ N. and 72° 22′ E., on the North-Western Railway, and connected by a rough, unmetalled road, 11 miles long, with the grand trunk road. Population (1901), 3,036. It takes its name from Kāmilpur, a small adjacent village. The garrison consists of a battery of field artillery, a company of garrison artillery, and an ammunition column. Campbellpore is also the head-quarters of a silladār camel corps. The income and expenditure of cantonment funds during the ten years ending 1902–3 averaged Rs. 5,300 and Rs. 5,200 respectively.

Chach (Chhachch).—Alluvial plain in the north of the tahsīl and District of Attock, Punjab, lying between 33° 53′ and 33° 59′ N. and 72° 22′ and 72° 44′ E. It is bounded on the north and west by the Indus, and is about 19 miles long from east to west, and 9 miles broad. Percolation from the Indus makes it extremely fertile. Dr. Stein has identified Chach with the Chukhsa or Chushka country of the Taxila copperplate inscription. In the Muhammadan period it was known as Chach-Hazāra, or Taht Hazāra, 'below Hazāra,' probably because it was subject to the Karlughs who held Hazāra. In this plain lies Hazro.

[Indian Antiquary, vol. xxv, pp. 174-5.]

Hassan Abdāl (Hasan Abdāl).—Village and ruins in the District and tahsīl of Attock, Punjab, situated in 33° 48′ N. and 72° 44′ E., and forming a part of the remarkable group of remains which lie around the site of the ancient Taxila. Hiuen Tsiang, the Chinese Buddhist pilgrim of the seventh century A.D., visited the tank of the Serpent King, Elapatra, which has been identified with the famous spring of Bāba Wali or Panja Sāhib in this village. Successive legends of Buddhist, Brāhman, Muhammadan, and Sikh origin cluster around the sacred fountain. The Muhammadan shrine of Bāba Wali Kandhāri crowns a precipitous hill, about one mile east of the town; and at its foot stands the holy tank called the Panja Sāhib, a Sikh shrine. The story is that Gurū

Nānak once came to Hassan Abdāl and asked the incumbent of Bāba Wali's shrine, which then possessed a spring, for water, which was refused. As a punishment the Gurū caused the water to spring up at the foot of the hill, instead of the top. The Muhammadan saint thereupon hurled a huge rock at the Gurū, who turned it aside with his hand. The rock was placed in the shrine, where it stands to this day. It bears the marks of the Gurū's hand, whence its name of Panja, 'the five fingers.' Two miles from Hassan Abdāl lies Wāh, a village which was once a halting-place of the Mughal emperors on the road to Kashmīr. Its ruined gardens and a bath, recently excavated, mark the site of the imperial camp.

Hazro.—Town in the District and tahsil of Attock, Punjab, situated in 33° 55′ N. and 72° 30′ E., in the middle of the Chach plain, 4½ miles by metalled road from Hathian on the grand trunk road, and 7½ miles from Lawrencepur on the North-Western Railway. Population (1901), 9,799. Hazro is a picturesque town, surrounded by rich cultivation, and has a flourishing trade, chiefly in tobacco and sugar, controlled by a few enterprising Hindus. The municipality was created in 1867. The income during the ten years ending 1902-3 averaged Rs. 18,300, and the expenditure Rs. 17,200. In 1903-4 the income was Rs. 19,200, chiefly from octroi; and the expenditure was Rs. 35,000, including a large investment in securities. An Anglo-vernacular middle school and a dispensary are maintained by the municipality.

Kālā-Chitta.—Mountain range in the Pindi Gheb tahsil of Attock District, Punjab, having the general form of a wedge or triangle, whose base rests upon the left bank of the Indus, near the township of Nāra, while its apex stretches to the Margala pass, about 50 miles to the eastward. The broadest portion has a depth of about 12 miles. The range is formed of two portions differing much in appearance. The southwestern part, stretching for 35 miles from the Indus through the Pindi Gheb tahsil, known as the Kālā Pahār or 'black mountain,' is generally formed of very dark sandstone, often quite purple in hue, and sometimes blackened by exposure to the weather. Mixed with this are grey sandstone and red clay. The Chitta or 'white' hill runs the whole length of the northern side of the range. It is formed of white Nummulitic limestone, but dark limestone also crops up in its midst; it is by far the more valuable part of the range, the limestone being used for burning, and the forest produce being far better than in the Kālā. Bushes of acacia and wild olive

are scattered over its rugged sides, but on the main portion a coarse grass forms the only vegetation.

Khairi-Mūrat. - Mountain range in the Fatahjang tahsīl of Attock District, Punjab, midway between the Sohān river and the Kālā-Chitta range. It rises about 30 miles from the Indus, and runs eastward for about 24 miles, a barren ridge of limestone and sandstone rock, extending from 72° 37' to 72° 56' E. and from 33° 25' to 33° 30' N. North of the range lies a plateau intersected by ravines; while southward a waste of gorges and hillocks extends in a belt for a distance of 5 miles, till it dips into the fertile valley of the Sohān, one of the richest tracts in Rāwalpindi District. The Khairi-Mūrat was formerly covered with jungle, but is now completely destitute of vegetation, except where the hill has been formed into a 'reserved' forest and closed to grazing. In these parts the trees are rapidly springing up again. The hills run nearly parallel to the Kālā-Chitta, about 10 miles to the south. The formation is chiefly limestone, edged with sandstone and earthy rocks whose vertical and contorted strata indicate intense disturbance. The southern portion of the range is extremely dreary, being formed of rocky ravines and stony hillocks, gradually sinking into the fertile valley of the Sohān.

Pindi Gheb Town.—Head-quarters of the subdivision and tahsīl of the same name in Attock District, Punjab, situated in 33° 14′ N. and 72° 16′ E., 21 miles from the Jand station on the North-Western Railway. Population (1901), 8,452. Formerly known as Pindi Malika-i-Shahryār or Malika-i-Auliya, or 'queen of the saints,' it derives its modern name from the Ghebā tribe of Jats, and is now the ancestral home of the Jodhra Maliks, who founded it in the thirteenth century. The municipality was created in 1873. The income and expenditure during the ten years ending 1902–3 averaged Rs. 4,400. In 1903–4 the income was Rs. 5,200, chiefly from octroi; and the expenditure was Rs. 5,800. A vernacular middle school is maintained by the municipality, and a dispensary by Government.

Talagang Town.—Head-quarters of the tahsīl of the same name in Attock District, Punjab, situated in 32° 55′ N. and 72° 28′ E. Population (1901), 6,705. It was founded by an Awān chieftain, about 1625. The place is healthily situated on a dry plateau, well drained by ravines, and has an extensive trade in grain, the staple product of the neighbourhood. Shoes worked with tinsel, which are worn by the Punjab

women, are largely exported to distant places. Striped cotton cloth (sūsī) is also made in considerable quantities, both for home use and for exportation. Talagang formerly had a small cantonment, which was abandoned in 1882. It possesses an Anglo-vernacular middle school and a Government dispensary. The municipality was abolished in 1886.

MULTĀN DIVISION

Multan Division.—The south-western Division of the Punjab, forming a wedge between the North-West Frontier Province and the State of Bahāwalpur. It lies between 28° 25' and 33° 13' N. and 69° 19' and 73° 39' E. The Sutlej divides it from Bahāwalpur on the south-east, while the Indus flows partly through the Division and partly along its border to the west. The head-quarters of the Commissioner are at Multan or, in the hot season, at Fort Munro. The Division was abolished in 1884 and reconstituted in 1901. In 1881 the population of the area now included was 2,036,956, in 1891 it had risen to 2,277,605, and in 1901 to 3,014,675. The total area is 29,520 square miles, and the density of the population was the lowest in the Province, 102 persons per square mile, compared with the Provincial average of 209. The Multan Division is considerably larger in area, but its population is considerably less than that of any other Division in the In 1901 Muhammadans numbered 2,391,281, or 79 per cent. of the total; Hindus, 536,052; Sikhs, 79,269; Jains, 334; and Christians, 7,686.

The Division includes five Districts, as shown below:--

District.	Area in square miles.	Population (1901).	Land revenue with cesses (1903-4), in thousands of rupees.	
Miānwāli	7,816	424,588	5,67	
Jhāng*	6,652	1,002,656	27,13	
Multān	6,107	710,626	17,51	
Muzaffargarh	3,635	405,656	8,46	
Dera Ghāzi Khān	5,306	471,149	6,41	
Total of Division	29,516	3,014,675	65,18	

^{*} In 1904 part of Jhang District was separated, to form the new District of LYALLPUR.

The Division contains 5,085 villages and 23 towns, the largest being Multān (87,394), Jhang-Maghiāna (24,382), and Dera Ghāzi Khān (23,731). The whole area is flat, excepting a spur of the Salt Range which runs into Miānwāli, and the Sulaimān range which divides Dera Ghāzi Khān from the trans-frontier Baloch tribes. A great part of the Division

is desert, but the Chenab Canal is rapidly changing the face of Jhang. Multan is the only place of first-rate commercial importance, though Dera Ghāzi Khān is a collecting mart for trans-Indus products, and Lyallpur is rapidly becoming a centre of trade. The historical importance of MULTAN and MANKERA is considerable. Fort Munro in the Sulaiman range (6,300 feet) and Sakesar in the Salt Range (5,010 feet) are minor sanitaria.

Mianwali District.—North-westernmost District of the Boun-Multān Division, Punjab, lying between 30° 36' and 33° 14' N. daries, configuration, and 70° 46' and 72° o' E., with an area of 7,816 square miles. and hill Of this vast area about three-fourths are east of the river Indus, and river comprising the tahsīls of Miānwāli, Bhakkar, and Leiah, which lie in that order from north to south along the river. On the east, the District is bounded by the Districts of Attock, Shāhpur, and Jhang, while on the south it adjoins Muzaffargarh. The cis-Indus portion of the District is bounded on the west, for the greater part of its length, by the Indus, which divides it from Dera Ghāzi Khān and the North-West Frontier District of Dera Ismail Khān. To the west of that river lies its remaining portion, the tahsil of Isa Khel, bounded to the west and north by the Bannu and Kohāt Districts of the North-West Frontier Province. This consists mainly of a semicircle of level plain enclosed between the Chichāli and Maidāni hills and the Indus. North of Kālābāgh, and between the termination of the Khattak hills and the Indus, lies the outlying tract of Bhangi Khel, a rugged area broken up by rough lines of hills, irregular but with a main direction from north to south. Vishorgun (4,001 feet above sea-level) is the highest point. The Isa Khel tahsīl is the only tract with a Pathān population which the Punjab has retained west of the Indus.

The cis-Indus territory has a maximum length from north to south of 180 miles, and attains a width of 70 miles in Bhakkar, its central tahsīl, which stretches eastwards almost to the Jhelum river. Thus the three cis-Indus tahsīls of Miānwāli comprise the greater part of the Sind-Sāgar Doāb, the country which lies between the Indus and the Jhelum. It includes two distinct tracts. Along the Indus lies a strip of riverain land, locally called the Kachhi, which is flooded by that river, and is of great fertility, though the action of the floods is often capricious, fields and hamlets being sometimes swept away in a few hours. About half the area is cultivated, the rest being covered with tall Saccharum grass and tamarisk scrub. The other tract is the vast barren upland known as the THAL, a desolate waste of shifting sandhills on a level surface

of hard clay. On this upland brushwood grows sparsely, and the only cultivation is that round the scattered wells sunk amid the sandhills. A great part of this tract will be commanded by the projected Indus Canal. The monotony is unbroken by hills or rivers; but its north-eastern corner runs up into the western flank of the Salt Range and the south-western slopes of the Sakesar hill, on which lie the summer head-quarters of the officials.

The Indus issues from the hills at Kālābāgh in a narrow channel, but rapidly spreads till above Isa Khel its width from bank to bank is nearly 13 miles. The whole of the Kachhi is intersected with straggling branches of the Indus, chief of which is the Pūzal.

Geology.

The District is of considerable geological interest, for it includes both cis-Indus and trans-Indus portions of the Salt Range. The chief points of interest in the series as exposed here are the disappearance of the older Palaeozoic beds, and the development of Jurassic and Cretaceous rocks. The salt marl and rock-salt still form the lowest member of the series; but as a rule all overlying formations, found in the eastern part of the range between the salt marl and the boulder-bed, are absent. The Jurassic beds are well seen in the Chichāli pass, where they contain ammonites and belemnites, and are overlain by rocks with Lower Cretaceous fossils. Coal of fair quality occurs in the Lower Tertiary beds in the Isa Khel tahsīl, and salt is quarried at Kālābāgh¹.

Botany.

The flora is in part that of the western Punjab, but there is a strong admixture of West Asian and even Mediterranean forms. Trees are scarce, except where planted; but the tāli (Dalbergia Sissoo) is frequent on the Indus, and the Mesopotamian aspen (Populus euphratica) is reported from the south of the District. The Salt Range at Kālābāgh has a flora of its own, corresponding to that of like situations on the ranges east of the Indus. The Thal sandhills are an extension of the Great Indian Desert, and their flora is largely that of north-western Rājputāna.

Fauna.

An occasional leopard on the Salt Range and a few wolves are the only representatives of the fiercer beasts. *Uriāl* are to be found on the Salt Range and in the Bhangi Khel hills,

¹ See Manual of Geology of India, passim; Wynne, 'Geology of the Salt Range,' Memoirs, Geological Survey of India, vol. xiv, and 'Trans-Indus Extensions of the Salt Range,' ibid, vol. xvii, Part ii; C. S. Middlemiss, 'Geology of the Salt Range,' Records, Geological Survey of India, vol. xxi, v, Part i.

where mārkhor are also sometimes seen. 'Ravine-deer' (Indian gazelle) are found in numbers in the Thal and along the foot of the hills. Wild hog are met with in a few islands in the south.

The greater part of the District is situated in the Thal, and Climate has a fiercely torrid and long hot season, with extreme cold and rainfall. in the winter months. At Sakesar in the Salt Range the elevation is sufficient to make punkahs a luxury only, but the heat is considerable until the rains break. The District is on the whole healthy, but the neighbourhood of the Indus is malarious. Goitre is not uncommon near Kālābāgh, and guinea-worm is prevalent in the Mianwali and Isa Khel The annual rainfall is slight, varying from 11½ inches at Miānwāli to 7 at Leiah.

Nothing is known of the early history. The remains at History

KĀFIRKOT in Dera Ismail Khān and MĀRI in this District and archaeoappear to testify to the existence in the north of a Hindu logy. civilization possessed of considerable resources and architectural The only other archaeological remains of any antiquity are some statues of Grecian type excavated at Rokhri, two erections near Nammal in shape like sentry-boxes and supposed to be dolmens, and several massive tombs of dressed stone in the Salt Range. There are no remains in the Thal earlier than the fourteenth century, and there is every reason to suppose that this area was previously an uninhabited desert. The country appears to have been colonized in the beginning of the fifteenth century by an immigration of Jats from the south, followed by the Balochs, who came in large bands under recognized leaders and took possession of the country as a military caste and overlords of the Jat cultivators, founding the towns of KAROR, BHAKKAR, and LEIAH. At the beginning of the seventeenth century we find the Jaskani Balochs ruling from the Indus to the Chenab, and from Bhakkar to Leiah, with their capital at MANKERA. In the north the earliest inhabitants were the Awans, who were driven back to the Salt Range by the Niāzai immigration in the sixteenth century. The Gakhars seem to have exercised an overlordship in the Miānwāli tahsīl as feudatories to the Mughal empire until 1748, when they were expelled by a Durrani army. The rest of the District was incorporated in the Durrāni kingdom in 1756, and towards the end of the century became the province ruled over by Nawāb Muhammad Khān Sadozai, whose successor

annexed Isa Khel in 1818. The cis-Indus portion was seized by the Sikhs in 1822, after the fall of MANKERA, and Isa Khel in 1836. On the outbreak of the second Sikh War a force

of local levies was raised by Sir H. Edwardes at Leiah, which took part in the siege of Multan. The territories now comprised in Miānwāli were annexed in 1849. The cis-Indus portion of the present District, together with the Sanāwan (or Kot Adu) tahsīl of Muzaffargarh, formed the Leiah District, and Isa Khel formed part of Dera Ismail Khān. Sanāwan was transferred to Muzaffargarh in 1859; and in 1861 Leiah District was abolished, the Bhakkar and Leiah tahsīls going to Dera Ismail Khān, and Miānwāli and Isa Khel forming part of the new District of Bannu. In 1901 the present District of Miānwāli was constituted, being the original Leiah District without Sanāwan and with Isa Khel. During the Mutiny the District was generally quiet; a detachment of irregular cavalry mutinied at Miānwāli, but the rising was quickly suppressed.

The people.

The population of the area now included in the District at the last three enumerations was: (1881) 365,621, (1891) 400,477, and (1901) 424,588, dwelling in 5 towns and 426 villages. It has increased by 6-1 per cent. in the last decade, the increase being greatest in the Leiah tahsīl, and least in Isa Khel. The District is divided into the four tahsīls of Miānwāli, Isa Khel, Bhakkar, and Leiah, the head-quarters of each being at the place from which it is named. The towns are the municipalities of Isa Khel, Kālābāgh, Bhakkar, Leiah, Karor, and Miānwāli.

The following table shows the principal statistics of population in 1901:—

	ns		nber of	ji.	on per mile.	re of in be-	of tble tnd
Tahsil.	Area in squ miles.	Towns,	Villages.	Population.	Population square m	Percentag variation population tween 18 and 190	Number persons a to read a write.
Miānwāli	1,478		69	111,883	75-7	+ 7.7	3,564
Isa Khel	678	2	43	64,224	94.7	+ 0.5	2,227
Bhakkar	3,212	I	196	125,803	39.2	+ 5.5	5,589
Leiah	2,433	2	118	122,678	50-4	+ 8-1	4,345
District total	7,816	5	426	424,588	54.3	+ 6.1	15,725

NOTE.—The figures for the areas of tahsils are taken from revenue returns. The total District area is that given in the Census Report.

Muhammadans number 371,674, or over 87 per cent. of the total; Hindus, 50,202; and Sikhs, 2,633. Pashtū is spoken by some of the Pathān inhabitants of the Isa Khel tahsīl. Elsewhere various dialects of western Punjābi are used.

The most numerous tribe is that of the agricultural Jats, who Castes and number 138,000, or 32 per cent. of the total population. Next occupato the lats come the Pathans (47,000), Balochs (27,000), Awans (23,000), and Rajputs (6,000). But one commercial money-lending caste, the Aroras (42,000), is of numerical importance, the number of Khattrīs being only 2,000. Saiyids number 10,000. Of the artisan classes, the Julahas (weavers, 13,000), Mochis (shoemakers and leather-workers, 10,000), Tarkhāns (carpenters, 10,000), and Kumhārs (potters, 7,000) are the most important; and of the menials, the Māchhis (fishermen, bakers, and water-carriers, 8,000), Chhīmbās and Dhobis (washermen, 8,000), Chührās and Kutānas (sweepers, 7,000), and Nais (barbers, 7,000). Kaneras, a caste which is found only in two other Districts, but is strongest here, number 2,000. Their original occupation was plaiting mats from grass and leaves, making string, and generally working in grass and reeds; but they have now taken to weaving generally, and even cultivate land. Of the total population, 57 per cent. are supported by agriculture. The District contained only 16 native Christians in 1901.

The semicircle of plain on the west bank of the Indus en-General closed between the river and the hills is level and open, has a agriculgood soil, and where irrigated by hill streams produces excel-ditions. lent crops. In the stony hills of the Bhangi Khel tract, on the other hand, a crop of the coarsest grain can be raised only in favourable seasons. Cultivation in the Kachhi depends entirely on inundation from the Indus, and the westerly trend of the river necessitates increased artificial irrigation by means of water-cuts and dams. The soil of the Thal is light and sandy, and cultivation is impossible without the aid of well-irrigation.

The area for which details are available from the revenue Chief agrirecords of 1903-4 is 7,707 square miles, as shown below:

statistics and principal crops.

Tahsīl.		Total.	Cultivated.	Irrigated.	Cultivable waste.	
Miānwāli			1,478	432	5	614
Isa Khel			678	170	30	182
Bhakkar			3,134	301	47	2,705
Leiah.		٠	2,417	259	132	2,000
	To	tal	7,707	1,162	214	5,501

The chief crop of the spring harvest is wheat, which occupied 341 square miles in 1903-4. Barley and gram occupied 45 and 119 square miles respectively. Spiked millet is the

principal staple of the autumn harvest (203 square miles). Pulses occupied 87 square miles, and great millet and oilseeds 45 square miles each. Little cotton, no rice, and practically no sugar-cane are grown.

Improvements in agricultural practice. The area cultivated has increased by 47 per cent. since the settlement of 1878, and tends to rise, owing to the extension of irrigation from wells and cuts from the hill streams or the Indus. Nothing has been done to improve the quality of the crops grown. Advances for the construction of wells and dams are readily taken from Government, about Rs. 29,000 having been advanced during the three years ending 1903-4.

Cattle, ponies, and sheep.

The population of the Thal is largely pastoral; and cattle, sheep, and goats are bred in large and increasing numbers. The local breed of cattle is, however, not of large size, and for the severe work of well-irrigation bullocks are generally imported from the south. Sheep-breeding is the principal means of livelihood of the inhabitants of the southern Thal; the sheep are of the ordinary thin-tailed breed. Camels are also bred in the Thal in large numbers. Buffaloes are found in all villages of the Kachhi. The people possess a good many horses, and the District board maintains one pony and three donkey stallions. A small cattle market is held weekly at Isa Khel.

Irrigation.

Of the total cultivated area in 1903-4, 214 square miles, or 18 per cent., were classed as irrigated. Of this area, 185 square miles were irrigated from wells, and 29 from canals, and in addition 444 square miles, or 40 per cent., are subject to inundation from the Indus. The District possesses 7,310 masonry wells, besides 993 unbricked wells, water-lifts, and lever wells. Nearly the whole of the Kachhi is intersected by branches of the Indus; and in the higher portions dams are thrown across these streams and a few small canals excavated, but for the most part the people trust to inundation and percolation. The Kot Sultan Canal, belonging to the MUZAFFAR-GARH INUNDATION CANALS, takes off from the Indus in the extreme south of the District; but with this exception the channels irrigating from the Indus are all private. Canal-irrigation in the Isa Khel tahsil consists of cuts from the hill streams, one channel being under the management of the Deputy-Commissioner. Well-irrigation is the great feature of the cultivation in the Thal. In the north-east the water-level is so deep that wells are used only for watering cattle, but in the west and south they supply a good deal of cultivation. In certain parts level strips are found free from sandhills, and these are full of

wells. In the two southern tahsils the Kachhi is dependent on the overflow from the Indus, and considerable improvements in the management of its irrigation have been made in recent years, the westerly trend of the river necessitating more and more attention to this subject. It has been proposed to irrigate the greater part of the Thal by a perennial canal taking off from the Indus at Kālābāgh.

The forest lands comprise 1,235 square miles of unclassed Forests. forest and Government waste under the control of the Deputy-Commissioner. In the Mianwali and Isa Khel tahsils these consist chiefly of groves of shisham (Dalbergia Sissoo), while in the Thal they are patches of waste land leased for grazing. The forest income in 1903-4 was Rs. 28,000.

Rock-salt occurs at many places in the Salt Range and in Mines and the Maidani range across the Indus. It is, however, worked minerals. only along the right bank of the river near Kālābāgh, where the salt stands out in the form of solid cliffs and is quarried on the surface. Alum, which is abundant throughout the whole Salt Range, was formerly manufactured at Kālābāgh and Kotki (at the mouth of the Chichali pass), the process being almost identical with that in Europe; but the industry has almost died out, owing to competition with other sources of cheaper supply. The shale from which alum was extracted was dug from shafts in the hill-side, sometimes of considerable depth. Coal or lignite of the oolitic period occurs at Jaba (cis-Indus), at Kālābāgh, Chopri, Chasmian, and Sultan Khel (trans-Indus), and crops out in many other parts of the Salt Range. The largest outcrop is in the hills between Kālābāgh and the Chichāli pass in Isa Khel. It is found in lumps of various sizes among dark bituminous shales, not in beds, but in detached masses, which appear to be compressed and fossilized trunks of trees. The occurrence of these masses is altogether uncertain and irregular, so that nothing like a systematic working or shaft-cutting would be remunerative. The coal is hard and light, very black, but marked with brown streaks, and often encloses nests of half-decomposed wood resembling peat. It is not so easily inflammable as good coal; it burns quickly, without coking, to a light-coloured ash, and emits a large amount of smoky yellow flame with but little heat. A seam of coal of some value was discovered in 1903 near Malla Khel.

Rock oil or petroleum is found at Jaba in Masan (cis-Indus), near Kundal in the Khisor range, and in lesser quantities elsewhere in the hills of Isa Khel and Mianwali. reservoir was tapped scientifically about twenty years ago, and

the oil drawn up sent to Rāwalpindi for lighting purposes; but the experiment was not remunerative. It is used for treating itch on camels and sheep, and also to light the Kālābāgh mines when men are at work in the tunnels excavating shale for the alum manufactory. The hill at the foot of which the springs lie is said to contain sulphur. Gold is found in minute quantities, mixed with the sand of the Indus, and is extracted by a laborious process of washing; but the yield is very small. Saltpetre is made from the earth of old village sites, and limestone and building stone are found.

Arts and manufactures. Iron vessels and instruments are manufactured at Kālābāgh, and striped cotton cloth $(s\bar{u}s\bar{i})$ is made there in considerable quantities. A particularly excellent form of cotton check (khes) is made at Leiah. The weaving of baskets and other articles from the dwarf-palm employs a fair number of workers. Water-mills for grinding corn are worked in large numbers on the hill streams of Isa Khel.

Commerce and trade.

The chief exports are salt, alum, iron vessels, sūsī, coal, articles made from the dwarf-palm, wheat and other grains, oil-seeds, wool, and hides. The principal imports are iron, cotton piece-goods and thread, silk, sugar, rice, potatoes, and timber. Exports go chiefly by rail and river to Multān and Karāchi. The chief centres of trade are Miānwāli, Kālābāgh, Isa Khel, Bhakkar, Leiah, and Karor.

Means of communication.

The line of the North-Western Railway running from Multān to Rāwalpindi passes through the District, with a short branch to Māri opposite Kālābāgh, and is joined at Kundiān by the Sind-Sāgar branch from Lāla-Mūsa. There are 2 miles of metalled road under the Public Works department, and 200 miles of unmetalled roads maintained by the District board. The principal road runs parallel to the railway through Miānwāli, Bhakkar, and Leiah. There is no wheeled traffic, camels, mules, and donkeys being the means of conveyance. A great deal of traffic is carried on the Indus to Multān and Sukkur. The Indus is crossed opposite Dera Ismail Khān by a bridge of boats in the cold season, replaced by a steam ferry in the hot season, and by thirteen ordinary ferries. Inflated skins are largely used by the natives for crossing the river.

Famine.

The District has never suffered seriously from famine. The Kachhi and a large proportion of Isa Khel are rendered secure by irrigation or floods, while the scattered cultivation in the Thal is entirely dependent on well-irrigation. In the famine year of 1899–1900 the area of crops matured exceeded 70 per cent. of the normal area.