





Iron is largely smelted in Kāngra and Simla Districts, but Ironwork. the out-turn is insignificant compared with the amount imported into the Punjab. Lahore used to be famous for the manufacture of weapons, but the industry is now extinct. In Gujrānwāla and at Bhera in Shāhpur District cutlery is made, but the production is irregular. The finish of these articles, though not perfect, is better than the quality of the steel, which is tough but deficient in hardness. Damascening or inlaying small articles of iron with gold wire is carried on in Sialkot and Gujrāt Districts. Agricultural implements are made by village blacksmiths, who are also often carpenters. In Lahore ironwork has been considerably improved under the influence of the North-Western Railway workshops.

All the brass and copper used is, in the first instance, Brass and imported, chiefly from Europe. Formerly copper was obtained copper from Kābul, but the import has entirely ceased. Various manu- copper and zinc ores, found in the Kulū hills and other parts factures. of the Himālayas, used to be mined, but the imported metals are so cheap that there is no immediate likelihood of the mines being reopened. European spelter, chiefly German, has long since driven the Chinese zinc out of the market. Both yellow and grey brass (or bell metal) are manufactured in the Punjab. Brass-ware is either hammered or cast; copper-ware is either cast or made of sheet copper soldered together. The industry is limited to the manufacture of domestic utensils, which are only roughly ornamented. The chief centres of the manufacture are the towns of Rewārī, Delhi, Jagādhri, Pānīpat, Gujrānwāla, Amritsar, Pind Dādan Khān, and various places in Sialkot District.

Rough unglazed pottery is made in nearly every village, the Pottery. potters being generally village menials who supply the villagers' requirements in return for a fixed share of the harvest. Unglazed pottery of a rather better kind is made at Jhajjar, and thin or 'paper' pottery at Pānīpat, Jhajjar, Jullundur, Tānda, and a few other places. Glazed pottery is made at Multān. Originally confined to the manufacture of tiles, there is now a large trade in flower-pots, plaques, vases, &c. The predominant colours are light and dark blue, brown, and green. Porcelain of disintegrated felspathic earth, mixed with gum, is made at Delhi. China clay is found near Delhi and in the Himālayas, but has not hitherto been utilized. The manufacture of glass is mainly confined to the production of glass bangles. Bottles, glasses, mirrors, lamps, lamp-chimneys, and other articles are made at Karnāl, Kāngra, Hoshiārpur, Lahore, and Delhi.

Wood-carving and furniture.

Wood-carving as an indigenous art is almost entirely architectural, but devoted to doors and doorways, balconies and bow windows. Apart from the hill work, which has a character of its own, the wood-carving of the Punjab may be divided into three styles: the earliest or Hindu, the Muhammadan, and the modern Sikh style. Examples of the Hindu work are to be seen principally in the large towns, particularly at Lahore. The forms used are fantastic, tassel shapes, pendants, and bosses being predominant; but the style, except for a very recent revival, may be said to be extinct. With the Muhammadans came the development of lattice-work or *pinjra*, which is to this day the characteristic feature of Punjab wood decoration. Most of the old doorways and *bukhārchās* to be seen in frequent profusion in the old towns belong, broadly speaking, to this style of work. The Sikh style, the work of the present day, may be said to be a modern adaptation of the Muhammadan, with occasional Hindu influence underlying it. It is characterized by clear-cut carving, broad treatment, and as a rule fairly good joinery. The best wood-carvers are to be found at Amritsar, Bhera, Chiniot, and Batāla. Of late years the European demand has led to this handicraft being largely applied to small articles of decorative furniture.

Inlaid work.

Inlaid work is also of Muhammadan origin, and was probably introduced from Arabia. The chief centres are Hoshiārpur and Chiniot. The wood inlay-work of Hoshiārpur has a high local reputation, and is capable of considerable development. For many years pen-cases, walking-sticks, mirror-cases, and the low *chauki*, or octagonal table, common in the Punjab and probably of Arab introduction, have been made here in *shisham* wood, inlaid with ivory and brass. Since 1880 tables, cabinets, and other objects have also been made, and a trade has sprung up which seems likely to expand.

Lacquer-work.

Turned wood ornamented with lac in various combinations of colours is produced in almost every village. Pākattan has more than a local reputation for this work, while a family in Ferozepore produces a superior quality.

European furniture.

Furniture after European patterns is made in every station and cantonment, the best-known centres being Gujrāt and Kartārpur in Jullundur District. Gujrāt is known for its wood chairs, chiefly made of *shisham*, the supply of which is abundant.

Ivory.

Ivory-carving is practically confined to the cities of Amritsar, Delhi, and Patiāla, but at the latter place it has greatly declined. Combs, essential to the attire of an orthodox Sikh,

are made in large quantities at Amritsar, where paper-cutters and card-cases ornamented with geometrical open-work patterns, of some delicacy of execution but no great interest of design, are also made. The ivory-carving of Delhi is of a high order of excellence, and miniature painting on ivory is also carried on. Ivory bangles are turned in several Districts, the chief being Amritsar, Dera Ghāzi Khān, Gujrānwāla, Multān, and Lahore. Billiard-balls are made at Ludhiāna.

The manufacture of paper is now confined almost entirely to the jails. Siālkot was famous in Mughal and Sikh times for its paper, but the industry has greatly declined owing to the competition of jail-made and mill-made paper; and this is also the case in Multān. Gunny-bags, matting, ropes, baskets, blinds, and the like are largely made of various fibrous plants all over the Province.

The decade 1891-1900 witnessed a striking extension of industrial enterprise. In the cotton industry there were, in 1904, 114 steam factories for ginning and pressing cotton, compared with 12 in 1891, and 6 in 1881. The produce of these factories is still for the most part exported abroad, or to other Provinces in India. The Punjab contains eight cotton-spinning and weaving mills, of which six have been started since 1891, and a good deal of the Punjab-grown cotton is utilized in the Province. The following table shows their recent development:—

	Number of			Daily average of hands employed.
	Mills.	Looms.	Spindles.	
1900-1 . . .	5	426	80,188	2,040
1903-4 . . .	8	475	112,508	3,201

These mills have a nominal capital of 60 lakhs. The out-turn of yarn has steadily increased since 1895-6, but that of woven goods shows a tendency to decrease, as appears from the following figures, which give the out-turn in pounds:—

	1895-6.	1899-1900.	1900-1.	1901-2.	1903-4.
Yarn spun . . .	4,361,000	7,601,863	7,235,843	9,629,422	11,578,346
Goods woven . . .	91,254	705,408	404,258	272,695	64,927

The commonest counts spun are 13's, 11's, 15's, 16's, and 12's, in the order given, and these amounted to  $8\frac{1}{2}$  of the 9.6 million pounds spun in 1901-2. The goods woven are almost all grey. The estimated out-turn of cleaned cotton in 1903 was