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TANJO

Indian Timbers.

The Hill Forests of Western India.

BY

HERBERT MILLS BIRDWOOD, C.S.I., L.L.D., M.A.

Illustrated by eleven Page Plates in Colours and one
Page Plate in Monochrome.

NOV 11 1891

Asian Carpet Designs

By W. GRIGGS

(27 years in the service of the Hon. East India Company, and Secretary of State for India).

A Crown (20 by 15 inches) Series of 150 plates, in 6 Parts, each containing 25 plates, superbly printed in colours, and enclosed in a strong ornamental Box Portfolio. Price £18 net.

In this exhaustive work an endeavour has been made to cover the whole known field of early carpet manufacture. The text (by Colonel T. H. Hendley, C.I.E.) is decorated in a style worthy of the charming designs illustrated; each page being surrounded with a beautiful 16th century Persian border in eight colours and gold. His Highness the Maharaja of Jaipur, with his well-known liberality, readily consented to allow his collection of old Persian and other carpets to be photographed specially for this work. From these carpets full-size patterns of the details, in colour of originals, have been prepared by Jaipur artists, also large "keys" showing the planning of the details in forming the schemes of design. In all cases the designs are on a large scale suitable for technical work. The best carpets and rugs now in the Indian and Persian Sections of the Victoria and Albert Museum have been photographed, including the beautiful Ardabil carpet* (see press notice).

* This carpet measures 34 feet by 17 feet 6 inches, and contains about 380 hand-tied knots to the square inch, which gives over 32,500,000 knots to the whole carpet. One-fourth of the carpet has been photographically reduced to half scale of original, and has been printed in the colours of the original to form 10 double plates (30 by 20 inches), and may also be obtained flat for mounting on linen, about 8 feet 6 inches by 4 feet 4½ inches, for Museums, Schools, and other educational or industrial purposes. The price of this part, or separate set of plates 101-125, for framing, is £3 net.

NOTE ON PERSIAN CARPETS. [Daily Telegraph.]

In the Indian section of the South Kensington Museum is now exhibited one of the most splendid examples of the product of the Persian loom that have ever been seen in Europe. This is the famous Ardabil or Ardebil carpet, so-called from a Persian town in the province of Aderbaidjan, which from time immemorial has been an emporium of merchandise, en route between Tiflis to Ispahan. Ardabil, which from the salubrity of its climate and the abundance of water which it enjoys has been called "the abode of felicity," is full of mosques and the tombs of exceptionally pious or otherwise renowned Mussalmans, and the famous carpet now on view is said to have been obtained from a mosque at Ardabil. It was not without difficulty that this wonderful piece of weaving was secured for South Kensington. The price demanded for it (£2,500)¹ exceeded that which the authorities of the Museum thought themselves justified to offer; but through the liberality of a number of gentlemen deeply interested in Oriental arts and crafts the sum which the Museum was prepared to give has been supplemented to an adequate amount. The carpet thus obtained for the nation measures 34 feet in length and 17 feet 6 inches in breadth, and an idea of the extreme fineness of its texture may be formed from the fact that it contains about 380 hand-tied knots to the square inch, which gives over 32,500,000 knots to the whole carpet. The main design comprises a large central medallion in pale yellow, surrounded by cartouches of various colours, disposed on a dark blue ground diapered with floral tracery. Each of the corners is filled with a section of a large medallion surrounded by cartouches. The border is composed of long and circular panels alternating with lobed outlines on a brown ground covered with floral embellishments, while at the summit of the carpet is a panel bearing a devout inscription tending to the inference that the carpet was originally used as a veil or curtain for a porch, and that it was the work of the slave "of the Holy Place, Maksoud, of Kashan, in the year of Hegira 946," corresponding with our A.D. 1540. Now, Kashan, on the high road between Teheran and Ispahan, was founded by Zobeide, the favourite wife of the Caliph Haroun-al-Raschid. It has been destroyed once or twice by earthquakes, but is at present a flourishing town adorned by a palace for the Shah, many large and beautiful mosques, and a number of caravanserais and public baths. At Kashan numerous manufactories of carpets, shawls, brocades, and silk fabrics are still carried on; but in 1540, when Maksoud, the slave of "the Holy Place," executed this marvellous work, admirable alike for its fineness of texture, its beauty of colour and symmetry of design, Kashan, with the rest of Persia, was under the sway of the Sophi dynasty, and the town is alleged to have contained no fewer than a hundred and fifty thousand inhabitants.

It is only within recent years that any very accurate knowledge of Oriental carpets has been disseminated in this country. The ordinary buyer knows three classes, and only three, which he roughly distinguishes as Turkey, Indian, and Persian carpets. The expert is, of course, a good deal more exact in his classification; but even his knowledge is as yet vague and confused. Carpets, either of cotton, silk, or wool, have during many centuries been used in the Orient, from the South of India to European Turkey, for domestic use, for the prostration of the praying Muslim, and for occasions of State. The carpets employed by the ancients are thought to have been of the nature of tapestry, and to have been chiefly used as loose coverings for couches rather than for floors. True carpets appear to have been early employed in Persia, and those called Turkish were no doubt originally of Persian manufacture, and were gradually exported and at length imitated in Turkey. Kernanshaw in Persia has still a carpet manufacture producing rich, soft, and beautiful goods, the sale of which adds considerably to the wealth of the province; while true Persian carpets are also made at Meshed in the Turkoman country and in Khorassan, and are justly renowned for the exquisite beauty of the patterns and the durability of the colours, which are purely vegetable dyes, comprising, among others, a green which is very difficult to make; it is conjectured to be a subtle combination of saffron and indigo. There is likewise a famous carpet manufacture carried on at Feraboun, near Teheran. The finest of all Persian carpets were formerly made at Herat, and one produced in the Chahal Minar at Ispahan largely exceeded in size the dimensions of the wonderful fabric at South Kensington, inasmuch as its length was a hundred and forty feet and its width seventy feet. The majority of these exceptionally vast and gorgeous products of the loom were destined either for the adornment of Royal palaces or the glorification of the holy Kaaba, or some scarcely less venerated shrine. Sometimes the entire interior of a mosque, such as that at Meshed Ali, was hung with superb carpets; and the Mihrab or niche towards Mecca was always a favourite object for such ornamentation. Mats or rugs of a much less costly nature were spread on the floors. With respect to the ordinary Oriental carpets, they may be roughly divided into two classes, the floral and the geometrical; and the former is the design affected by the higher and Aryan races, the last being preferred by the lower and Turanian races.

The beautiful Persian carpet at South Kensington may, it is to be hoped, become a most valuable factor in technical art education in this country. Some humourist once said of a Turkish carpet that its pattern resembled nothing visible in the heavens above or in the earth beneath, or in the waters under the earth; and, to a slight extent, this hyperbolic disparagement is justifiable in the case of the Turkoman carpets for which Vambéry saw the old woman tracing the pattern in sand. The girls employed in carpet-weaving would obviously prick or chalk down on the particular piece of textile fabric assigned to them so much of the pattern as they were expected to weave, and these hasty sketches might in many cases deviate from the original model. Scores of workers were often employed in as many cottages in making these detached portions, which, when sewn together, may have presented a slightly mixed appearance, the incongruity of which was at the same time happily modified by the predominant traditions of design and colour which had come down to the people from remote ages. The pattern of the Ardabil carpet seems to be one perfectly distinct and regular, and, even did it present some slight obscurities, the puzzle could be easily cleared up by a careful and minute analysis and dissection of the whole work by the aid of practical geometry and conventional botany. It is curious to learn that, at the very period when Maksoud of Kashan, the slave of the "Holy Place," was completing the Ardabil carpet the manufacture of these commodities was first introduced into England by one William Sheldon, under the direct patronage of Henry VIII. The manufacture, nevertheless, was for many years exclusively confined to its use as tapestry or arras for the decoration of walls. The apartments of the palaces of Queen Elizabeth were hung with the costliest products of the Flemish looms, but her Majesty had certainly no carpets on the floors of her presence chambers or her banqueting halls. The floors were simply laid with rushes. The Oriental custom has always been and still is to employ carpets as hangings for shrines and porches, as coverlets for couches, and as rugs lying loose on the floor; and this sensible system, which has been largely adopted among us since the extension of the trade in Oriental rugs, will, in all probability, be still further developed by the technical as well as by the æsthetic teaching of the splendid carpet at South Kensington.

¹ Bought for £2500, of which £750 was contributed by A. W. Franks, Esq., C.B., E. Steinkoppf, Esq., William Morris, Esq., and J. E. Taylor, Esq.

It was from the city of Edinburgh, with its grand botanic gardens and its long array of men of science—prominent among them, in our own time, in connection with much that relates to the science of forestry, being Professors James Hutton Balfour and Bayley Balfour—that the effective impulse was received which determined the further development of the Forest Department. In 1850 the British Association met in Edinburgh and appointed a Committee to consider the probable effects, from an economic and physical point of view, of the destruction of tropical forests. In the following year the Committee presented at Ipswich a report which embodied the general conclusions and recommendations arrived at, and demonstrated clearly the importance of preserving every condition tending to maintain an equilibrium of temperature and humidity, of preventing the disappearance of indigenous forests from the wasteful habits of the people, and of taking the requisite steps for extending forest produce. The weighty evidence adduced by the Committee, and the broad views enunciated by them, so impressed the Court of Directors that, within a few years, regular establishments were sanctioned for the Madras Presidency and British Burmah. In 1856 Dr. Cleghorn took up General Michael's work, and was appointed Conservator of Forests in Madras, with Captain Douglas Hamilton and Lieutenant Beddome as his assistants, who in turn succeeded him in the office of Conservator after his transfer, first to Bengal, where he gave most efficient aid to Dr. Brandis in carrying out forest conservancy, and afterwards to the Panjab. According to Colonel Bailey, Dr. Cleghorn checked the destructive practice of temporary cultivation in the Madras forests notwithstanding the opposition he encountered. He was ultimately successful "because his well-known desire to promote native interests inspired the rulers of the country with confidence in his proposals." In 1856 also, Dr. Brandis (now Sir Dietrich Brandis, K.C.I.E.) was appointed Superintendent of Forests in Pegu, and six years afterwards was placed on special duty with the Government of India. He was the first Inspector-General of Forests to the Government of India, and held the office till 1881, when he went on special duty to Madras. His book on the Forest Flora of North-Western and Central India is a standard work, greatly prized by Indian botanists and foresters. "From the time of his appointment," says Sir George Birdwood, in his preface to the catalogue of the Indian exhibit at the International Forestry Exhibition, already referred to, "the successful future of forest conservancy in India was assured. . . . He, in fact, by his great capacity, his wise recommendations, and his personal example of enthusiastic devotion to duty, has made the Forest Department of India what it now is." We owe to Dr. Brandis, among other important services, the suggestions for the various Indian Forest Acts, which, while strengthening the hands of the Government, have secured to the people the maintenance of all the ancient rights and privileges inherited by them from time immemorial; and also the inauguration, in 1866, of arrangements for the annual supply of trained officers to discharge the duties of assistant conservators of forests in India. At first these officers were educated in France and Germany. In 1876 the student candidates were withdrawn from Germany and stationed at Nancy under an English officer. In 1885 Dr. Schlich (who had succeeded Dr. Brandis on his retirement) organised the Forest Branch of the Royal Indian Engineering College on its present footing at Cooper's Hill.

While candidates with special qualifications for the higher grades of the Forest Department are, with some exceptions, now recruited from England, it is obvious that there must be much important work connected with the executive charge of the forest ranges, into which the larger divisions are split up, the disposal of which the Government of India must entrust to officers trained in India itself. The class of Forest Rangers has been described as the "backbone" of the Department. Candidates for this branch of the forest service are trained at the Imperial Forest School at Dehra Dun, which is attended by students from all parts of India. A certain number of forest appointments has also been guaranteed annually by the Government to the students of the College of Science at Poona. A protective service of Forest Guards is also employed for the purpose of patrolling forests and ensuring compliance with forest regulations. The members of this branch of the service receive no professional training.

The Indian Forest Service thus organised has been able not only to meet the demands of India, but to help other countries also. Ceylon, New South Wales, New Zealand, the Cape, Mauritius, Jamaica, and Cyprus, as General Michael, in his paper on Forestry tells us with just pride, have all borrowed officers from India to put them in the way of organising conservancy and working their forests economically. The head of the Forest Department at the Cape and the Conservator in Ceylon are both Indian forest officers. The United States of America have also recognised the value of the work done in India by lately deputing an expert to study the methods there in force.

The forests to which the Indian Forest Act of 1878 is applicable include "reserved forests," which are State property, or over which the State has certain rights; "village forests," assigned or yet to be assigned by the Government to village communities from reserved forest areas; "protected forests," which, as regards the proprietary rights of the State, are on the same footing as reserved forests, but are subject to less stringent supervision—only certain kinds of timber being protected, and all private rights of cultivation, pasturage, and wood-cutting within the protected area being respected; and, lastly, "private forests," which are controlled only to such an extent as is necessary for their regulation or protection for certain special purposes. The Forest Department has also the control of State plantations of timber trees.

The area of British India, exclusive of the Native States, is about 960,000 square miles; and of this area more than 79,000 square miles had been constituted as reserved forests before the end of the year 1896-7. About 9,000 square miles were "protected," and nearly 26,000 square miles were tabulated as "unclassified." The total area under the control of the Forest Department amounted, therefore, to about 114,000 square miles, inclusive of about 1,100 square miles leased from Native States. Of this area, which is only about 7,000 square miles less than that of the British Isles, about 32,000 square miles are closed to all animals, and about 41,000 to browsing animals only. I am unable to give any exact statistics as to village forests and private forests, but it has been estimated that the area of private forests and forests belonging to corporations and endowments is about equal to that of the State forests, and that the total area of forests of all kinds is about 25 per cent. of the total area of British India. In Great Britain and Ireland the corresponding percentage is only 4. The corresponding figures for Europe and the United States of North America are 31 and 17 respectively. In European countries the highest percentage is reached in Servia, where it is 48; in Russia and Sweden it is 42; in Austria, 33; in Hungary, 29; in Germany, 26; in Norway, 25; and in Turkey (including Bulgaria, Bosnia, and Herzegovina), and also in Roumania and Italy, 22. In Switzerland, Spain, France, Greece, and Belgium, it lies between 19 and 15. In Holland it falls to 7, in Denmark to 6, and in Portugal to 5. Great Britain and Ireland thus show the lowest percentage of all the countries named, while India comes seventh in the list, being bracketed with Norway.*

The area of plantations directly under the Government of India and the Government of Madras is said to extend to 41,000 acres. In the Bombay Presidency the afforestation of waste tracts has been pushed with vigour, but I am unable to give the acreage. One of the plans adopted by Mr. Shuttleworth in the central division—as he has personally explained to me on the site of some of his operations on the hills near Poona—has been to sow the seeds of all kinds of forest trees and shrubs broadcast on the ground. The results of the annual sowings have been satisfactory, except in seasons when the rainfall has failed at the close of the monsoon. Hill tops and stony valleys, which, twenty years ago, were bare and unsightly, are now well covered with innumerable saplings and most refreshing verdure. Similar results have been obtained on many of the rocky hills of the Dekhan.

The review of Forest Administration in British India for the year 1896-7, by Mr. B. Ribbentrop, C.I.E., Inspector-General of Forests, shows that in that year, which is the latest for which I have any report, the State forests yielded more than 47,000,000 cubic feet of timber, nearly 100,000,000 cubic feet of firewood, nearly 135,000,000 bamboos, and minor produce to the value of nearly 3,250,000 rupees.

In the same year the exports from British India to foreign ports included 64,221 tons of teak wood, valued at nearly 7,000,000 rupees; sandalwood, ebony, and other ornamental woods, worth nearly 600,000 rupees, and such minor produce as caoutchouc, lac, lac-dye, cutch and gambier, myrobalams and cardamoms, worth about 21,000,000 rupees.

The total value of exports, which reached nearly 28,500,000 rupees, was less by 6,500,000 rupees than the total value for the preceding year, the decrease being due almost entirely to the disastrous effects of plague and famine.

The gross revenue realised from forests during the year 1896-7 amounted to nearly 18,000,000 rupees, the surplus over expenditure having been 8,000,000 rupees. More than 17 per cent. of the gross revenue represented the estimated value of forest produce given away free or at reduced rates to right-holders and free grantees. When it is remembered that before 1848 the forest revenue, which was treated as a branch of the land revenue, was very trifling, the progress made in the past fifty years is very remarkable. But, as most truly observed by Sir George Birdwood, in the paper from which I have already quoted, "the annual revenue which forest conservancy has as yet provided is utterly insignificant when compared with the capital value of the Indian forests redeemed by the British Government from certain destruction."

It would indeed be strange if such results had been achieved without opposition. I have already spoken of the conciliatory course adopted with obvious advantage by some forest administrators towards those whose privileges were affected by the stringency of the new regulations. Villagers on the outskirts of forests had for generations cut firewood and grazed cattle therein, and cleared patches for cultivation without hindrance. The policy aimed at has been to stop the exercise of privileges incompatible with the continued existence of forests, and to allow others as far as possible. But the necessity for a restrictive policy at all, while necessarily distasteful to right-holders, was not readily accepted as right by the local officers of the Indian Civil Administration, with whom it has always been an honourable tradition to seek above all things the happiness and contentment of the people. They were unable to look with favour on measures which seemed to indicate an excess of zeal on behalf of the State, and to be in needless derogation of privileges long enjoyed without much apparent injury to public interests. It has been suggested that though the accumulated mischief, caused by neglect of conservancy during a long series of years, is incalculable, yet it is not possible always to detect any

* Schlich's "Manual of Forestry," vol. i., p. 54.




34.—*Aquilaria agallocha*. A large evergreen tree of Sylhet. Wood soft, even-grained, and scented when fresh cut. In old trees are masses of harder and darker wood, which is the famous Eagle-wood of commerce. MANSON.




35.—*Terminalia belerica*. A large deciduous tree growing in the forests of India and Burma. Wood yellowish-grey, hard, no heartwood. Weight about 48 lbs. per cubic foot. MANSON.



36.—*Deodara Forest*; *N. W. Himalaya*. Between 4,000 and 10,000 feet above sea-level, extending east to the Dauli river, in the mountains of Afghanistan and North Beluchistan. The tree is very large and tall, with heartwood light yellowish-brown, scented, and moderately hard. In each annual ring the outer belt of firmer and darker coloured tissue is generally narrow. MANSON.



37.—*Cedrus libani* var. *Deodara*. A very large evergreen tree. Bark greyish-brown, with numerous fissures, which give a reticulate appearance. Wood fairly hard, strongly scented, and oily. GAMBLE.



38.—*Cinnamomum glanduliferum*. (Nepal Camphor wood.) A large tree of South Himalaya and Assam. Wood rough, pale-brown, and highly scented, with a strong smell of camphor when fresh cut. MANSON



39.—*Dysoxylum malabaricum*. (White Cedar.) A very large tree. The colour of the wood is white, shading to yellow. It is beautifully grained, takes a good polish, and is most suitable for cabinet work.
[Mysore Catalogue.]



40.—*Dysoxylum malabaricum*. Coorg. A very large tree. Wood hard, close-grained, and elastic. Pores moderate-sized, numerous, and evenly distributed, sometimes in fine concentric white lines. Medullary rays fine, and numerous. GAMBLE.



41.—*Bischofia javanica*. (Red Cedar.) A deciduous tree found in Kumaun and Burma. Weight $47\frac{1}{2}$ lbs. per c. ft. Wood rough, and moderately hard. In Assam it is highly esteemed and used for bridges &c. MANSON.



42.—*Artocarpus*... A lofty deciduous tree, met with in Eastern Bengal, Burma, and the Andaman
... to brown, moderately hard, even-grained, rough, durable, and ...

43.—*Artocarpus integrifolia*. Linn. A large tree, cultivated throughout India, except in the northernmost part. Wild in the mountain forests of the Western Ghâts, ascending to 4,000 feet above sea-level. (Beddome). Heartwood yellow or rich yellowish-brown, darkening on exposure, compact, even-grained, moderately hard, seasons well and takes a fine polish. Weight about 40 lbs. per cubic foot. It is largely used for boxes and furniture, and is exported to Europe for cabinet work, turning, and brush-



44.—*Artocarpus integrifolia*. A very large evergreen tree. Wood moderately hard; heartwood bright yellow, darkening on exposure. The wood is used for furniture, boxes, planking, and cabinet work. Weight about 33 lbs. per cubic foot. [Mysore Catalogue.]

49.—*Shorea talura*. A large tree; wood yellow or yellowish-brown, hard and smooth. This handsome tree is found largely in the Kadur District and sporadically in Mysore and Shimoga Districts. The wood is much used for house-building and is exported to the Kolar Gold Fields. Weight about 53 lbs. per cubic foot. [Mysore Catalogue.]



47.—*Shorea assamica*. A very large gregarious tree. Bark brown, and rough. Wood light-brown, soft, and open-grained. Pores large, ringed, single, in groups, or in short oblique lines. GAMBLE.



48.—*Artocarpus lakoocha*. Found in Sikkim, Eastern Bengal, Burma, and in the evergreen forests of the Western Ghâts and Ceylon. Seasons well, and takes a good polish. Weight 30 to 50 lbs. per cubic foot.



45.—*Albizzia lebbek*. A very large tree. Wood hard; heartwood dark reddish-brown, marked with darker streaks. Takes a high polish; used for sugarcane crushers, furniture, and carts. [Mysore Catalogue.]



46.—*Artocarpus integrifolia*. (Jackwood.) A large evergreen tree. Bark thick, blackish, and deeply cleft when old. Wood moderately hard; sapwood pale; heartwood bright yellow, darkening on exposure. GAMBLE.

