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A MONOGRAPH
ON
SILK FABRICS

PRODUCED IN THE
NORTH-WESTERN PROVINCES AND OUDH.

Compiled by A. YUSUF ALI, Esq., I.C.S.



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P R E F A C E.

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ABDULLAH *IBN* YUSUF ALI, I.C.S.

The 25th July 1899.

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APPENDIX I.

TESTS FOR SILK.

THE following chemical tests for silk are mentioned by Mr. B. F. Cobb in his article on Silk in "Bevan's British Manufacturing Industries" (Lond. 1877), and may be appended here for convenience of reference:—

"The tests for silk are by burning and treatment with chemicals. Silk, if burnt, gives off the well-known smell of burnt horn.

"Nitric acid turns it yellow, and dilute acids have little immediate action. Alkalies dissolve it, but as no sulphur is present, there is no formation of a sulphide, and the acetate of lead does not yield a black precipitate. Dilute alkalies affect it, but without solution. Ammonia has no action. In the cuprate of ammonia, the ammoniacal solution of copper sometimes known as Schweitzer's test, it dissolves like cotton. Its affinity for colours is like that of wool. To detect cotton, hemp, flax, and jute in mixture with wool and silk, boil the sample in an aqueous solution of soda containing 10 per cent. of hydrate of soda. Wool and silk dissolve, while the vegetable fibres remain unacted upon. The whole is thrown upon a cotton filter, and the undissolved matter is then washed with hot water, and afterwards acidulated with 5 per cent. of hydrochloric acid, to which, if the residue is black or dark-coloured, a few drops of chlorine water are added. Meantime the original alkaline filtrate can be tested for wool with the acetate of lead. If a white precipitate is formed, which dissolves on stirring, silk alone is present. A black precipitate indicates wool. The nitro-peroxide of sodium gives a violet colour if wool is present. If the tissue is deeply-coloured, it may be cut up and steeped for 15 to 20 minutes in a mixture of two measures of concentrated sulphuric acid and one of fuming nitric acid. Wool, silk, and colouring matters are destroyed, while the cellulose is converted into gun-cotton. White and pale mixed tissues may be tested by their affinity for colours. They must be cleansed and rinsed thoroughly in water to remove starch and similar dressings; boiled for 10 minutes in water containing 2 per cent. carbonate of soda and a little soap; then rinsed in hot water; steeped five to 10 minutes in water at 50 to 60 degrees cent., containing 2 per cent. sulphuric acid, and washed again. In the meantime the colour bath must be prepared by dissolving a few decigrammes of magenta in 28 to 30 cubic centimetres of water and heated to boiling; and during ebullition add to, drop by drop, caustic soda till a pale rose colour only remains in the liquid; take off the fire, and put in the sample; after some minutes take out to dry. Silk and wool are dyed, while the vegetable fibres remain colourless. Wool may be detected in silk by the presence of sulphur; if it is immersed for a short time in plumbate of soda, the silk will be colourless and the wool black; or a piece of the tissue, two centimetres square, may be boiled in 10 to 12 cubic centimetres of Schweitzer's test; in from five to 10 minutes the silk will be dissolved. If the silk is black, add double the volume of Schweitzer's test and soak from 10 to 12 minutes; after taking out the undissolved wool, the liquid quickly neutralized with nitric acid, gives no precipitate if silk only is present, while cellulose is precipitated.

"Hydrochloric acid is a solvent of silk, while it leaves wool and cotton unacted upon for a lengthened period."

APPENDIX II.

LIST OF BOOKS AND PAPERS CONSULTED.

1. A Monograph on Trades and Manufactures in Northern India, by Dr. William Hoey, C.S., Lucknow, American Methodist Press, 1880.
2. The History of India as told by its own Historians. The Muhammadan Period. Edited from the Posthumous Papers of the late Sir H. M. Elliot, K.C.B., East India Company's Bengal Civil Service, by Professor John Dowson, M.R.A.S., Staff College, Sandhurst, Vol. III, London; Trübner & Co., 1871.
3. The Textile Manufactures and the Costumes of the People of India, by J. Forbes Watson M.A., M.D., F.R.A.S., Art Reporter on the Products of India, to the Secretary of State for India in Council. Printed for the India Office by George Edward, Esq. and William Spottiswoode, Printers to the Queen's Most Excellent Majesty, London, 1866.
4. The Travels of Ibn Batuta translated from the abridged Arabic manuscript copies preserved in the public library of Cambridge, with notes, illustrations of the History, Geography, Botany, Antiquities, etc., occurring throughout the work, by the Revd. Samuel Lee, B.D., London, printed for the Oriental Translation Committee, London, 1829.
5. British manufacturing industries, edited by G. Phillips Bevan, F.G.S., second edition, London. Edward Stanford, 55, Charing Cross, 1877.
6. Ayeen Akbery, or the Institutes of the Emperor Akbar, translated from the original Persian--by Francis Gladwin, in three volumes, Calcutta, 1783--86.
7. A Handbook of Indian Products, Art Manufactures, and Raw Materials, by P. N. Mukharji, author of a rough list of Indian Artware and a Descriptive Catalogue of Indian Products contributed to the Amsterdam Exhibition: published by J. Patterson, Calcutta, printed by C. J. A. Pritchard at the Star Press, 19, Lall Bazar Street, 1883.
8. Notes from the South Kensington Museum Art Handbook. The Industrial Arts of India--by George Birdwood, C.S.I., M.D., Edin. Published by the Committee of Council on Education, London W., 1880.
9. General report of the North-Western Provinces Exhibition held at Agra, February 1867, Boorkee; printed at the Thomason Civil Engineering College Press, 1868.
10. Sericulture in Oudh, by Dr. E. Bonavia, Lucknow, 1863.
11. Liotard's Memorandum on Silk in India, Part I, 1883.
12. Silk in India--some account of silk in India, especially of the various attempts to encourage and extend sericulture in that country, compiled by J. Geoghegan, Under Secretary to the Government of India, Department of Agriculture and Commerce, second edition, Calcutta; Office of the Superintendent of Government Printing, 1880.
13. Statistical, Descriptive, and Historical Account of the North-Western Provinces of India, Vol. XIV, Part I, Benares: by F. H. Fisher, B.A., London and J. P. Hewett, both of the Bengal Civil Service, Allahabad, North-Western Provinces and Oudh Government Press, 1884.
14. Census Report of 1881.
15. Census Report of 1891.
16. A Dictionary of the Economic Products of India, by George Watt, Vol. 6, Part 3, articles on Silk, London and Calcutta: published under the authority of the Government of India, 1893.
17. Handbook of the Collections illustrative of the wild Silks of India in the India Section of the South Kensington Museum, with a catalogue of the collection and numerous illustrations; by Thomas Wardle, London, 1881 (South Kensington Museum Handbook).
18. *Pioneer* of 5th October 1898.
19. *Pioneer* of 9th November 1898.
20. Final report of the eighth Revision of the Land Revenue Settlement of the Dehra Dún District, by F. Baker, Esq., C.S., late Superintendent of the Dún, and in charge of the Settlement Operations, Allahabad, North-Western Provinces and Oudh Government Press, 1886.
21. Mr. Reid's Settlement Report of Azamgarh, 1879.
22. Azamgarh Gazetteer, by F. H. Fisher, B.C.S., Allahabad, 1883.
23. Annual Reports on the Operations of the Department of Agriculture and Commerce, North-Western Provinces and Oudh, (now Department of Land Records and Agriculture) from 1882 for-wards--*passim*.
24. Monograph on Dyes and Dyeing in the North-Western Provinces and Oudh, by Sayid Muhammad Hadi, M.R.A.C., M.R.A.S., Assistant Director of Land Records and Agriculture, North-Western Provinces and Oudh. Published by authority, Allahabad, printed at the Government Press, 1896.
25. The Agriculture Ledger, 1898, No. 16. The Arabian Drug--Waras or Wars. A description of its history, uses and composition, with remarks on its occurrences in India, by the officiating Editor.
26. Proceedings of the Government of the North-Western Provinces and Oudh--*passim*.
27. District Reports for this Monograph.

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