

C O N T E N T S .

(Govt. of India)
Industrial Research Bureau.

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GOVERNMENT OF INDIA
INDUSTRIAL RESEARCH BUREAU



REPORT
FOR THE YEAR
1935-36



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APPENDIX A.

CAMP CALCUTTA,

The 5th August 1939.

INDUSTRIAL RESEARCH COUNCIL.

REPORT OF THE PRIZES COMMITTEE, 1939.

Open subjects prize papers scheme.—This competition of the Council was advertised in February 1939, the closing date for the competition being 1st June, the latter date being decided upon on this occasion in view of the considerable interval that had hitherto elapsed between the last date allowed for submission of papers and the consideration of the report of the Prizes Committee by the Council. The prizes allotted this year were as follows :—

- 1 prize of Rs. 1,000,
- 2 prizes of Rs. 500 each,
- 2 prizes of Rs. 250 each, and
- 3 prizes of Rs. 150 each.

Twenty-two papers were received on this occasion, but one was subsequently withdrawn by the candidate. Certain of these papers were reported upon by officers of the Bureau and 16 were sent to selected expert referees.

The Prizes Committee met on the morning of the 5th August 1939, for consideration of the reports of the scrutineers and agreed as to the relative merits of the papers. Two members of the personnel of the Prizes Committee which had been appointed by the Council at its last session were unable to attend, these being Mr. L. B. Green, Director of Industries, Madras, and Mr. M. S. Ramchandra Rao, Director of Industries and Commerce, Mysore.

The Committee decided to recommend to the Council the following awards :—

Prize.	Nom de plume.	Title of the paper.
Rs. 500	" Bells " ..	The Tower-clock ringing mechanism.
250	" Pursand " ..	Purification of Indian glass-making sands.
250	" J. C."	Contribution to the chemistry of Permanganate preparation from the Indian standpoint.
150	" Precision " ..	Precision manufacture in India.
150	" Plantain Grove ..	Some critical conditions in silvering on glass.
150	" Nageshwar " ..	Refining of Nageshwar Oil.

The numbers of papers received is approximately the same as that received last year, but the Committee regrets to say that the general technical standard remains low and disappointing. In certain cases also the anonymity of the author has been destroyed by the disclosure of the author's name either on papers received with the prize paper or on the wrapping of the papers. The Committee recommends, however, that these failures to

maintain anonymity be condoned, as these cases continue to appear annually and seem to be due to misunderstandings. As it happens, this matter only concerns one of the papers recommended for the awards of prizes.

Set subjects prizes scheme.—The list of subjects proposed by the Directors of Industries for the Set Subject Prize Paper Scheme, recommended for introduction by the Industrial Research Council at its Third Session, was amplified by proposals received from other sources, and copies circulated to selected scientist advisers, viz., Professor S. S. Bhatnagar, Lahore University, Professor P. N. Ghosh, University College of Science, Calcutta, and Professor N. R. Dhar, Allahabad University. The list was also circulated to heads of Departments of the Universities and research institutions in India to elicit information as to the extent of the work which had been already done or was in progress on the various items in this list. The views of the scientist advisers and the information obtained from the Universities and technical institutions were considered by the Committee, and as a result the following abridged list of subjects is recommended to the Council for consideration and selection of a subject suitable for this scheme.

Serial No. of item on the list.	Title of Item (amended where necessary).
3	Utilisation of indigenous materials in the manufacture of insecticides, fungicides and weed killers.
5	Manufacture of patent foods from indigenous products.
24	Warping and sizing in hand-weaving.
26	Utilisation of paddy husk and saw dust,
46	A simple mechanical method suitable for Indian glass factories for the industrial production of glass tubing on a small scale.
47	The preparation and manufacture of sillimanite or other highly refractory glass melting pots for use in pot type glass furnaces.
48	The preparation of pure tungsten suitable for use in the manufacture of electric lamp filaments from Burmese tin-tungsten ores.
49	Utilisation of molasses or products from molasses on a large industrial scale other than for the production of alcohol.
50	The production of high-grade alpha-cellulose suitable for use in an artificial silk industry from an agricultural waste material widely available in India.
52	A process for the commercial recovery of vanadium from vanadium bearing ores in the Singhbhum district.

Item 11 ' Manufacture of Enamel Wares ' and Item 18 ' Manufacture of Toy Enamels with bright colour and rapid drying properties ' might also be worthy of consideration, and it is recommended that the Directors of Industries concerned might explain the purpose of their inclusion to the Council.

The Committee recommend that the above list should be considered when Item V of the Agenda is under consideration.

APPENDIX B.

LIST OF PUBLICATIONS OF THE INDUSTRIAL RESEARCH BUREAU IN THE SERIES OF BULLETINS OF INDIAN INDUSTRIAL RESEARCH.

- I. R. B. 2. 1.—No. 1 Bibliography of Industrial Publications published in India from 1921. (Rs. 4-6-0 or 7s. 3d.).
- I. R. B. 2. 2.—No. 2 A survey of the Indian Glass Industry, by E. Dixon A. M. I. Mech. E. (As. 14 or 1s. 6d.).
- I. R. B. 2. 3.—No. 3 The Effects of Annealing Procedure on the Tensile Properties of Arsenical Copper Bar, by E. F. G. Gilmore, B.Sc., M. I. Mech. E. (As. 8 or 10d.).
- I. R. B. 2. 4.—No. 4 The Manufacture of Photographic Plates in India, by N. Kasinathan, M.A., M.Sc. (As. 12 or 1s. 3d.).
- I. R. B. 2. 5.—No. 5 Improved Reflex Copying, by N. Kasinathan, M.A., M.Sc. (As. 4 or 5d.).
- I. R. B. 2. 6.—No. 6 The Preparation of Alumina and Sulphur Dioxide from Bauxite-Gypsum Mixture, by Dr. V. S. Dubey, M.Sc., Ph.D. (London), D.I.C., M.B. Rane, M.Sc., and M. Kanakaratham, M.Sc. (As. 3 or 4d.).
- I. R. B. 2. 7.—No. 7 The Utilization of Nepheline Syenite Rock as a Partial Substitute for Soda Ash in the Glass Industry of India, by Dr. V. S. Dubey, M.Sc., Ph. D. (London), D. I. C., and P. N. Agarwala, M.Sc. (As. 6 or 8d.).
- I. R. B. 2. 8.—No. 8 Development of Heavy Chemical Industries in India, by N. N. Sen Gupta, M.Sc., A.I.C. (Rs. 1-6-0 or 2s. 3d.).
- I. R. B. 2. 9.—No. 9 Purification of Clay, by S. R. Das, M.Sc., and M. A. Saboor, M.Sc. (As. 6 or 8d.).
- I. R. B. 2. 10.—No. 10 Indian Vegetable Oils, by N. Brodie, M.Sc., F.C.S., A.I.C. (Rs. 1-14-0 or 3s. 3d.).
- I. R. B. 2. 11.—No. 11 The Manufacture of Sulphitation Sugar from Coloured Canes (Purple Mauritius), by S. Venkata Ramanayya B.A., M.Sc. (As. 10 or 1s.).
- I. R. B. 2. 12.—No. 12 The Manufacture of Soap in India, by A. K. Menon B.A., F.C.S. (Re. 1 or 1s. 6d.).
- I. R. B. 2. 13.—No. 13 A study of Indian Mustard and Rape Seeds and their oils, by D. Y. Athawale, M.Sc., J. A. Hare-Duke and P. N. Mathur, Dip. Tech. (As. 14 or 1s. 3d.).
- I. R. B. 2. 14.—No. 14 Indian Refractory Clays, by H. Crookshank, B.A., B.A.I. (Rs. 1-6-0 or 2s.).
- I. R. B. 2. 15.—No. 15 Recovery of Titanium Oxide as a by-product in the Manufacture of Alumina-Ferric from Bauxite, by Sudhir Chandra Chakravarty, M.Sc. (As. 4 or 5d.).
- I. R. B. 2. 16.—No. 16 The Manufacture and Application of Liquid Gold, by Atma Ram, D.Sc., Karimullah, Ph.D., Dr. Phil, and Lal C. Verman, Ph.D., M.S., F. Inst. P. (As. 6 or 7d.).

N.B.—Copies of all above publications are obtainable from the Manager of Publications, Civil Lines, Delhi, and also from all local sale depots for the sale of Government of India Publications.

APPENDIX C.

TABLE I.

Reports submitted by the Research Branch during 1939-40.

Report No.	Title.
<i>Paints.</i>	
R. B. Paint No. 4	Use of Indigenous Umber in Paints.
R. B. Paint No. 5	Use of Talc and Asbestine in Paints.
<i>Dry Cells.</i>	
R. B. Dry Cells No. 2	Brief Note on " Carsac " type cells.
<i>Oils for Internal Combustion Engines.</i>	
R. B. I. C. Eng. No. 2	Utilisation of Indian Vegetable Oils as Lubricants in Internal Combustion Engines, Part I.
<i>Glass.</i>	
R. B. Glass No. 19	Thermal Endurance of Electric Lamp Glass Bulbs.
R. B. Glass No. 20	Glass Tank Furnace at the Lucky Glass and Calcutta Silicate Works, Calcutta.
R. B. Glass No. 21	The Manufacture and Application of Liquid Gold.
<i>Miscellaneous.</i>	
R. B. Misc. No. 23	Pyritiferous Schist.

TABLE II.

Papers published by members of the staff of the Research Branch during 1939-40.

No.	Title.	Authors.	Reference.
1	Indian Substitute for Leighton Buzzard Standard Sand.	C. A. R. Khan and Lal C. Verman.	<i>Proc. Ind. Sc. Cong.</i> p. 44, 1940.
	Cement-Surkhi Mortars ..	C. A. R. Khan and Lal C. Verman.	<i>Ibid.</i> p. 44, 1940.
3	Jute Cloth Testing at different temperatures but constant humidity.	Lal C. Verman and A. N. Chowdhuri.	<i>Ibid.</i> p. 43, 1940.
4	Bearing Metal Deposits on Journal Surfaces.	Lal C. Verman ..	<i>Ibid.</i> p. 42, 1940.
5	Particle Size Distribution of Red Lead Pigments.	A. Jogarao and Lal C. Verman.	<i>Ibid.</i> p. 56, 1940.
6	Semi-Automatic Cell Testing Device for Dry Cells.	Lal C. Verman ..	<i>Current Science</i> , 8, pp. 332-335, 1939.
7	Effect of Iron Content of Manganese Ores on Dry Cell Characteristics.	Lal C. Verman, K. Subba Ramaiah and G. D. Joglekar.	<i>Ibid.</i> 9, pp. 64-65, 1940.