Survey of India.

GENERAL REPORT

FOR 1922-23.

From Ist October 1922 To 30th September 1923.

200000



PREPARED UNDER THE DIRECT NOF Colonel C. H. D. RYDER, C.B., C.I.E., 1 S.O., R.E., SURVEYOR GENERAL OF INDIA.

> oto.-Litho. Office. of India, UTTA. 24.

or Four Shillings.

Survey of India. GENERAL REPORT

FOR 1922-23.

From 1st October 1922 To 30th September 1923.



PREPARED UNDER THE DIRECTION OF Colonel C. H. D. RYDER, C.B., C.I.E., D.S.O., R.E.,

SURVEYOR GENERAL OF INDIA.

Printed at the Photo.-Litho. Office, Survey of India, CALCUTTA, 1924. PRINTED AT THE PHOTOGRAPHIC AND LITHOGRAPHIC OFFICE, SURVEY OF INDIA. 14, WOOD STREET, Calcutta.

NOTICE.

MAPS PUBLISHED BY THE SURVEY OF INDIA

are obtainable from the Map Record and Issue Office, 13, Wood Street, Calcutta, on the Public Service—on Cash Payment or Book-Transfer, and, for private use on Cash Payment or V. P. P.

Forest maps are obtainable only from the Officer in charge, Forest Map Office, Dehra Dun.

Geological maps are obtainable from the Director, Geological Survey of India, Calcutta.

The Survey of India publish maps for the greater part of SOUTHERN ASIA between the meridians of 44° and 124° East of Greenwich and between parallels 4° and 40° north latitude.

2. Surveys executed after 1905 are classed as "MODERN", those prior to that date are classed as "OLD".

3. Maps are printed in two styles or editions viz., LAYERED and POLITICAL:-

- (a) The LAYERED edition represents a map printed in colours with graduated layer tints of colour to show altitudes, and, shading to emphasize the hills. This edition gives prominence to the physical features.
- (b) The POLITICAL edition represents a map printed in colours, but without graduated layer tints. Hills are represented by contours and shading. This edition gives prominence to the Civil Divisions of India which are shown by ribands of colour along boundaries of administrative partitions.

NOTE.-...When maps are printed in colours, from mixed or old surveys, the edition is styled . "PRELIMINARY"; and when published in black only or with hills in brown, the edition is styled "PROVISIONAL" issue.

- 4. The series of Modern maps are grouped under three Divisions :----
 - (I) GEOGRAPHICAL, embracing-
 - (a) SOUTHERN ASIA SERIES, scale 1:2,000,000 or nearly 1 inch = 32 miles, in LAYERED and POLITICAL editions, size 36 inches × 24 inches, price Rs. 3 per copy.
 - (b) INDIA AND ADJACENT COUNTRIES; scale 1:1,000,000 or nearly 1 inch = 16 miles, in LAYERED and POLITICAL editions, or if from old surveys, as PRELIMINARY editions; size 24 inches × 19 inches, price Re. 1-8 per copy. If printed on linen-backed paper Rs. 2-4.
 - (c) INTERNATIONAL MAP OF INDIA, scale
 1:1,000,000 or nearly 1 inch = 16 miles, in LAYER-ED edition (without shading of hills), size 30 inches
 × 26 inches, price Re. 1-0 per copy.
 - (II) TOPOGRAPHICAL, comprising maps on :---
 - (a) SCALE 1 INCH = 1 MILE, in the POLITICAL edition, size 24 × 19 inches, price Re. 1-8 per copy.
 - (b) SCALE 1 INCH = 2 MILES, in the POLITICAL edition, size 24 × 19 inches, price Rs. 3-0 per copy.
 - (c) SCALE 1 INCH = 4 MILES, in the LAYERED and POLITICAL editions, size 24 × 19 inches, price Re. 1-8 per copy, and from old surveys as PROVI-SIONAL issues, price Re. 1 per copy.

NOTE.-Modern Topographical maps printed on linen-backed paper are As. 12 extra per copy. Index charts or Key maps to the Geographical and Topographical series are obtainable gratis.

(III) GENERAL MAPS which include:-

- (a) GENERAL MAPS OF INDIA, scale 1 inch = 32 miles, in sets of 12 sheets, each sheet 25 × 32 inches, in LAYERED and POLITICAL editions, price Rs. 12 per set, and on scale 1 inch = 64 miles, POLITICAL edition only, size about 3½ feet square, at Rs. 6 the copy. Also various maps of India on the same and smaller scales and miscellaneous special maps illustrating Railways, &c.
- (b) PROVINCIAL MAPS, on scales 1 inch = 16 miles and 1 inch = 32 miles.

(ⅲ)

- (c) DISTRICT MAPS, on scales 1 inch = 4 miles and 1 inch = 8 miles.
- (d) CANTONMENT AND TOWN MAPS AND OTHER MISCELLANEOUS MAPS, of various scales and prices.

5. MAP CATALOGUES can be obtained at ONE RUPEE per copy.

6. Maps can be mounted on cloth and folded or mounted on rollers for hanging, &c., at an extra charge.

7. For particular purposes, copies of any map can be supplied in black or black and brown on request and at special rates.

8. Any map, chart or diagram can be reproduced if the applicant submits a suitable original drawing. Special rates exist for such work and estimates can be given on request.

9. The prices quoted for various maps are exclusive of postage and V. P. P. charges. Any further information may be obtained free of charge from the Officer in charge, Map Record and Issue Office, 13, Wood Street, Calcutta. (Telegraphic address, Surmaps).

AGENTS FOR THE SALE OF INDIAN OFFICIAL PUBLICATIONS.

LONDON.

- A. CONSTABLE & Co., 10, Orange Street, Leicester Square, W.C.
- P. S. KING & Son, 2 and 4, Great Smith Street, Westminster, S.W.
- KEGAN PAUL, TRENCH, TRÜBNER & Co., 68, Carter Lane, E.C.
- B. QUARITCH, 11, Grafton Street, New Bond Street, W.
- HENRY S. KING & Co., 65, Cornhill, E.C.
- GRINDLAY & Co., 54, Parliament Street, S.W.
- T. FISHES UNWIN, LTD., 1, Adelphi Terrace, W.C.
- W. THACKER & Co., 2, Creed Lane, Ludgate Hill, E.C.
- LUZAC & Co., 46, Great Russell Street, W.C.

EDINBURGH.

OLIVEB AND BOYD, Tweeddale Court.

DUBLIN.

E. PONSONBY, LTD., 116, Grafton Street.

OXFORD.

B. H. BLACKWELL, 50 and 51, Broad Street.

CAMBRIDGE.

DEIGHTON, BELL & Co., LTD., Trinity Street.

ON THE CONTINENT.

EENEST LEEOUX, Rue Bonaparte, Paris - France. MARTINUS NIJHOFF, The Hague - Holland. ÓTTO HARRASSOWITZ, Leipzig FEIRDLANDER & SOHN, Berlin

FOR MAPS ONLY.

LONDON.

EDWARD STANFORD, LTD., 12-14, Long Acre, W.C.

SECRETARY TO THE HIGH COMMISSIONEE FOR INDIA, (GENERAL DEPARTMENT), 42, Grosvenor Gardens, S.W.1.

INDIA.

- THAOKER, SPINK & Co., No, S, Esplanade, East, Calcutta.
- NEWMAN & Co., No. 3, Old Court House Street, Calcutta.

THACKEE & Co., LTD., Bombay.

D. B. TABAPOBEVALA SONS & Co., Bombay.

THE PUNJAB RELIGIOUS BOOK SOCIETY, Labore.

HIGGINBOTHAMS, LTD., Madras.

BUBMAN & Co., Muzaffarpur.

OXFORD BOOK AND STATIONERY Co., Kashmir Gate, Delhi.

NOBTHEBN INDIA BOOK DEPÓT, Peshäwar.

THE CURATOR, GOVERNMENT BOOK DEPOT, BURMA, Rangoon.

THACKEE, SPINK & Co., Simla.

COCKBURN AGENCY, Srinagar, Kashmir.

CONTENTS.

·

.

						PAGE.
PART 1G	ENE]	RAL RI	EMARK	<u>s</u> —		
						1
I.—INTRODUCTION— II.—ADMINISTRATION AND PERSON	INEL-				•-•	3
		ת דידים	PARTI	ES. &c	. <u></u>	
						2
I.—Topographical Surveys.—	· T.	ADT TATT	,—Progress : ,—Out-turn	and cost	• •	5 6
		orthern Cir		S GHU CUBE		10
		uthern Circ			•	13
•		stern Circl				16
	B	ırma Circle	•			18
IIFOREST SURVEYS	No	rthern Circ	cle	• • •	•••	20
	-+ +	uthern Cir	-		• •••	21
		stern Circl	• • • • •	•••	• - •	21
		rına Circle		••••	•••	21
III CANTONMENT AND LARGE SCA			5. 20 Party		•••	2 <u>4</u> 25
IV. —THE TRIGONOMETRICAL SURVE		ntonments	 Tatitudaa	•••	•••	20 26
IV. —THE TRIGONOMETRICAL SURVE	а.— да Ра	ndninm Ol	bservations	•••	•••	26
		iangulation		•••		26
		ial Operati				26
		velling	•		•	28
		se Lines	•••	•••		26
	Ma	gnetic Sur	vey		•••	30
PART 3.	-OFF	ICE [®] W	ORK-	•		
IHEAD QUARTER OFFICES		p Publicati		•		31
I.— <u>HEAD</u> QUARIAN OFFICES.—			and Issue Of	6ce		34
•			Publicatio		the year	
	No	. 1 Drawin	g Office			37
	En	graving O	ffice	•••		41
		otoLitho.		••		48
			Instrument	Office		44
IIDEHRA DUN OFFICES		mputing (•	45
•	No	. 2 Drawin	ig Office	<u></u>	•••	46
III CIRCLE AND LOCAL DRAWING	LOBATOL	rest Map C	Jince	•••	•••	50
			•••	·	••••	52
PART 4						
WORK FOR OTHER GO	VERN	MENT	DEPAR	TMEN	TS-	· 58
				•	,	
INDEX M	APS (1	bound at e	nd of Report	;).		
. 1, Modern survey and publication.						
2. Publication of modern one-inch						
3 modern half-inch		or India.				
4 " quarter-ir	nch "	**				•
5 India and Adjac	ent Cou	ntries' seri	es, scale $\frac{1,0}{1,0}$	<u>1</u> 00,000'		
6, Indian sheets of "	'La Cart	e Internati	onale du Mo	nde," scal	⁸ 1,000	,000
7. ,, 'Southern Asia'	series, so	ale - 1	·····••		· .	-
		- 2,000,0	00			
•						