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FOR THE YEAR

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METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

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Corrigenda in India Monthly Weather Reviews and Annual Summary for the year 1897.

TEXT.

Page.	Column.	Part.		CORRECTION.
66	...	February	1897	*For* "1·8" *read* +1·8 against Central Bengal in column 9 of the third tabular statement.
99	1	March	,,	*For* "8 A. M." *read* 10 A. M. in line 4.
227	...	May	,,	*For* "0·59," and "—0·28" *read* 0·86 and—0·55 against Punjab (Submontane) in columns 2 and under Rainfall in the tabular statement.
285	...	June	,,	*For* "8·4," "7·13" and "— 2·85" *read* 8·8, 7·49 and —3·21 against Central Provinces (West) in figure columns 2, 4 and 5 respectively in the tabular statement beginning the page.
,,	...	Ditto	,,	*For* "8·0," "7·42" and "— 2·99" *read* 9·1, 8·22 and —3·79 against Central Provinces (Central) in figure columns 2, 4 and 5 respectively in the tabular statement beginning the page.
,,	...	Ditto	,,	*For* "6·6," "7·72" and "—2·30" *read* 9·2, 8·31 and—2·89 against Central Provinces (East) in figure columns 2, 4 and 5 respectively in the tabular statement beginning the page.
289	2	Ditto	,,	*For* "6·6," "8·0" and "8·4" in column 3, "+0·3," "—2·1" and "—3·0" in column 4, "7·72," "7·42" and "7·13" in column 6, and "—30", "—40" and "—40" in column 7 *read* 9·2, 9·1 and 8·8; —2·3 —3·2 and —3·4, 8·31, 8·22 and 7·49; and —35,—46 and —43 in respective columns in the first tabular statement.
342	...	July	,,	*For* "12·74" and "+0·53" *read* 12·29 and +0·98 against Bihar (South) in columns 2 and 3 respectively under 'Rainfall' in the tabular statement.
,,	...	Ditto	,,	*For* "3·1," "2·92" and "+1·16" *read* 5·1, 4·87 and —0·79 against Punjab (South), respectively in column 2 under 'Number of rainy days' and columns 2 and 3 under 'Rainfall' in the tabular statement.
,,	...	Ditto	,,	*For* "14·4" *read* 15·4 against Central Provinces (West) in column 2 under 'Number of rainy days" in the tabular statement.
343	2	Ditto	,,	*For* "12·74" and "+0·53" *read* 12·29 and +0·98 against South Bihar in columns 2 and 3 respectively under 'Rainfall' in the first tabular statement.
348	1	Ditto	,,	*For* "14·4" and "—1·2" *read* 15·4 and —2·2 against Central Provinces (West) in figure columns 2 and 3 respectively in the second tabular statement.
395	...	August	,,	*For*"—1·02" *read* +1·02 against Central Bengal in figure column 5 in the tabular statement.
448	1	September	,,	For "31," read 30 in the ninth paragraph second line.
449	...	Ditto	,,	*For* "9·1," "8·41" and "—0·63" *read* 9·6, 8·83 and—1·05 against Central Provinces (West) in figure columns 2, 4 and 5 respectively in the tabular statement.
,,	...	Ditto	,,	*For* "8·5," "7·18" and "+0·62" *read* 9·7, 7·95 and—0·15 against Central Provinces (Central) in figure columns 2,4 and 5 respectively in the tabular statement.
,,	...	Ditto	,,	*For* "6·1," "7·03" and "+0·33" *read* 9·5, 7·57 and—0·21 against Central Provinces (East) in figure columns 2, 4 and 5 respectively in the tabular statement.
455	2	Ditto	,,	*For* "6·1," "8·5" and "9·1" in column 3, "+4·7," "+2·2" and "+1·6" in column 4, "7·03," "7·18" and "8·41" in column 6 and "+0·33," "+0·62" and "—0·63" in column 7, *read* 9·5, 9·7, and 9·6, +1·3, +1·0, and +1·1, 7·57, 7·95 and 8·83, and —0·21, —0·15 and —1·05 in respective columns in the first tabular statement.
555	...	November	,,	*For* "3·12" and "—2·67" *read* 2·28 and —1·83 against Madras (Central) in figure columns 4 and 5 respectively in the tabular statement.
637	2	India Weather Review, Annual Summary, 1897.		*Insert* date after "normal" in line nine of para. below tabular statement.
639	1	Ditto	.	*For* "until the 10th or 11th of July" *read* until the 8th July in line ten of para. third.
648	1	Ditto	.	*For* "two" *read* three in line two of para. immediately below tabular statement.
652	1	Ditto	.	*For* "third" *read* fourth in line six of para. fourth.
669	1	Ditto	.	*For* "Two storms" *read* three storms in line three of para. first.
680	2	Ditto	.	*For* "Two storms" *read* three storms in line three of para. first below first tabular statement.

Corrigenda in India Monthly Weather Reviews for the year 1897.

TABLES I AND II.

Page.	Part.	Table.	Meteorological Province or Station.	Heading.	Column number.	CORRECTION.
33	January 1897 . .	I	Sibsagar . . .	Rainfall . .	4, 6, 7 and 9.	*Add* 0·01 to each entry in each column.
38	Ditto ,, . .	I	Mangalore . . .	Temperature of air.	9	*For* "93·" *read* 93·8.
40	Ditto ,, . .	I	Leh	Ditto .	1	*For* "8·9"† *read* 8·5.†
42	Ditto ,, . .	I	Teheran . . .	Ditto .	13	*For* "6·8" *read* 36·8.
46	Ditto ,, . .	II	Bangalore . . .	Pressure . .	5	*For* "—·006" *read* +·002.
,,	Ditto ,, . .	II	Bellary . . .	Ditto . .	5	*For* "+·003" *read* —·009.
46, 94, 146 and 246.	January to March and May 1897.	II	Mount Abu . . .	Ditto . .	6	*For* "30·046," "29·980," "·895" and "·694" *read*?, respectively.
46, 94, 146 and 246.	January to March and May 1897.	II	Chikalda . . .	Ditto . .	6	*For* "30·036," "·932," "·873" and "·699" *read*?, respectively.
47	January 1897.	II	Raipur . . .	Station . . .	...	*For* "Raipur" *read* Sutna.
,,	Ditto ,, . .	II	Sutna	Ditto . . .	...	*For* "Sutna" *read* Raipur.
,,	Ditto ,, . .	II	Hyderabad (Deccan) .	Cloud . . .	4	*For* "—0·8" *read* —0·3.
89	February ,, . .	I	Murree . . .	Rainfall. . .	1, 3, 4, 6, 7, 9 and 10.	*For* "3," "—0·36," "3·13," "—0·60," "7·28," "+0·03" and "2·26" *read* 2, —1·36, 0·86, —2·87, 5·01, —2·24 and 0·57, respectively.
90	Ditto ,, . .	I	Zanzibar . . .	Elevation of bar-cistern, etc.	...	*For* "23" *read* 73.
94	Ditto ,, . .	II	Jubbulpore . . .	Pressure . .	6	*Insert* ·880.
,,	Ditto ,, . .	II	Bangalore . . .	Ditto . .	5	*For* "—·040" *read* —·031.
,,	Ditto ,, . .	II	Bellary . . .	Ditto . .	5	*For* "—·034" *read* —·054.
,,	Ditto ,, . .	II	Murree . . .	Temperature of air.	5 and 6	*Insert* ? after figures in each column.
95	Ditto ,, . .	II	Hyderabad (Deccan) .	Cloud . . .	4	*For* "—0·9" *read* +0·1.
,,	Ditto ,, . .	II	Quetta . . .	Vapour tension .	4 and 5	*For* "·158" and "—·008" *read* ·150 and 0, respectively.
,,	Ditto ,, . .	II	Murree . . .	Humidity . .	4	*Insert* ? after figures.
134	March ,, . .	I	Cooch Behar . .	Elevation of bar-cistern, etc.	...	*For* "150" *read* 156.
134, 182, 234, 406, 460, 516 and 560	March to May and August to November.	I	Cooch Behar . .	Pressure, 8 A.M., etc	3	*Deduct* ·006 from the figures in each column of each month.
144	March 1897 . . .	II	Sibsagar . . .	Temperature of air	5	*For* "1·5" *read* 51·5.
145	Ditto ,, . . .	II	Port Blair . . .	Vapour tension .	3	*For* "·7" *read* ·907.
,,	Ditto ,, . . .	II	Lucknow . . .	Humidity . .	4 and 5	*For* "47" and "+4" *read* 41 and —2, respectively.
146	Ditto ,, . . .	II	Jubbulpore . . .	Temp., Wet-bulb .	4	*For* "69·9" *read* 60·9.
,,	Ditto ,, . . .	II	Srinagar . . .	Pressure . .	1, 2, 3, 4 and 5.	*For* "24·902(*a*)," "24·839(*a*)," "0·63," "24·864(*a*)" and "—·035" *read* 24·903, 24·841, ·062, 24·865 and —·034, respectively.
147	Ditto ,, . . .	II	Hoshangabad . .	Vapour tension .	4 and 5	*For* "·204" and "—·126" *read* 294 and —·036, respectively.
180	April ,, . . .	I	II Burma Inland . .	Temperature of air	3 and 7	*For* "+3·4" and "+2·2" *read* +3·1 and +2·0, respectively.
,,	Ditto ,, . . .	I	Thayetmyo . . .	Pressure, 8 A.M., etc.	4 and 8	*For* "29·890" and "·192" *read* 29·861 and ·163, respectively.
,,	Ditto ,, . . .	I	Thayetmyo . .	Temperature of Air	4, 5, 7 and 8.	*For* "76·2," "?," "?" and "27·9" *read* 75·9, +0·5, +0·9 and 28·3, respectively.

Corrigenda in India Monthly Weather Reviews for the year 1897—continued.

Page.	Part.	Table.	Meteorological Province or Station.	Heading.	Column number.	CORRECTION.
181	April 1897 . . .	I	II Burma Inland . .	Rainfall . .	4 and 6	*For* "0·61" and "—0·66" *read* 0·84 and —0·43, respectively.
"	Ditto " . . .	I	Thayetmyo . . .	Wind direction .	5 and 7	*For* "8" and "2" *read* 7 and 3, respectively.
"	Ditto " . . .	I	Thayetmyo . . .	Wind velocity .	1 and 3	*For* "2·8" and "—60" *read* 3·0 and —57, respectively.
"	Ditto " . . .	I	Thayetmyo . . .	Hygrometry, 8 A.M.	2	*For* "·716" *read* ·705.
"	Ditto " . . .	I	Thayetmyo . . .	Mean cloud amount	...	*For* "0·9" *read* 0·7.
"	Ditto " . . .	I	Thayetmyo . . .	Rainfall . .	1, 3, 4, 6, 7, 9, and 10	*For* "0," "—1·09," "0·03," "—0·77," "0·09," "—0·76" and "0·03" *read* 1, —0·09, 1·42, +0·62, 1·48, +0·63 and 1·39, respectively.
182, 234, 294, 354 and 406.	April to August 1897 .	I	Cooch Behar . .	Elevation of bar-cistern, etc.	...	*For* ? *read* 156.
193	April 1897 . . .	II	Akola	Vapour tension .	1	*For* "·276" *read* ·328.
"	Ditto " . . .	II	Buldana . . .	Ditto .	1	*For* "328" *read* ·276.
195	Ditto " . . .	II	Raipur . . .	Station . . .	...	*For* "Raipur" *read* Sutna.
"	Ditto " . . .	II	Sutna	Ditto . . .	...	*For* "Sutna" *read* Raipur.
233	May " . . .	I	Akyab	Rainfall . . .	1 and 3	*For* "11" and "+0·82" *read* 12 and 1·82, respectively.
"	Ditto " . . .	I	Akyab	Ditto . .	4, 6, 7, and 9.	*Add* 1·16 to the figures in each of the columns.
240	Ditto " . . .	I	Leh	Temperature of air.	6	*For* "45·1" *read* 45·3.
241	Ditto " . . .	I	Mercara . . .	Rainfall . .	4 and 6	*For* "5·94" and "—0·65" *read* 4·94 and —1·65, respectively.
244, 304, 526 and 570.	May, June, October and November 1897.	II	Cocos Island . .	Pressure . .	1, 2, 4, 5 and 6.	*Deduct* ·028, ·027, ·024 and ·034 from the figures in each of the columns for May, June, October and November, respectively.
244	May 1897 . . .	II	Sibsagar . . .	Temperature of air.	5	*For* "67·2" *read* 67·0.
"	Ditto " . . .	II	Darbhanga . . .	Temp. Wet-bulb .	4	*For* "78·1 *read* 76·1.
"	Ditto " . . .	II	Jacobabad . . .	Temperature of air.	4 and 6	*For* "119·2" and "46·3" *read* 120·9 and 48·0, respectively.
245	Ditto " . . .	II	Rangoon . . .	Humidity . .	3	*For* "63" *read* 83.
246	Ditto " . . .	II	Ranikhet . . .	Temp. Wet-bulb .	1	*Insert* 53·1.
247	Ditto " . . .	II	Leh	Vapour tension .	3	*For* "·15" *read* ·155.
249	Ditto " . . .	II	Aden	Ditto . . .	3	*For* "·800" *read* ·802.
294	June " . . .	I	Hazaribagh . . .	Temperature of air.	11, 12 and 13.	*For* "73·3," "12th" and "35·8" *read* 69·3, 26th and 39·8, respectively.
296	Ditto " . . .	I	Ajmere . . .	Ditto .	9, 10 and 13.	*For* "113·9," "8th" and "41·8" *read* 116·1, 10th and 44·0, respectively.
301	Ditto " . . .	I	Leh	Rainfall . .	4, 6, 7 and 9.	*Add* 0·08 to the figures in each of the columns.
"	Ditto " . . .	I	Leh	Ditto . . .	10	*For* "0·02" *read* 0·08.
304	Ditto " . . .	II	Hazaribagh . . .	Temperature of air.	5 and 6	*For* "73·3" and "35·8" *read* 69·3 and 39·8, respectively.
305	Ditto " . . .	II	Buldana . . .	Rainfall . .	1 and 2	*Insert* 1·18 and 0·55, respectively.
360	July " . . .	I	Chitaldroog . . .	Elevation of bar-cistern, etc.	...	*For* "7,405" *read* 2,405.
361, 413 and 467.	July to September 1897 .	I	Leh	Rainfall . .	7 and 9	*Add* 0·08 to figures in each of the columns for July to September, respectively.
364, 416 and 470.	Ditto " .	II	Cocos Island . .	Pressure . .	1, 2, 4 and 6.	*Deduct* ·020, ·016 and ·019 from figures in each of the columns for July to September, respectively.

Corrigenda in India Monthly Weather Reviews for the year 1897—concluded.

Page.	Part.	Table.	Meteorological Province or Station.	Heading.	Column number.	CORRECTION.
366	July 1897 . . .	II	Mercara . . .	Temperature, Wet-bulb.	4	*For* "69·9" *read* 64·7.
,,	Ditto ,, . . .	II	Chakrata, Katmandu and Mount Abu.	Pressure . .	5	*For* "+·01, "+·00" and "—·" *read* +·014, +·009 and —·021, respectively.
,,	Ditto ,, . . .	II	Darjeeling and Mount Abu.	Ditto . .	4	*For* "22·8" and "25·78" *read* 22·871 and 25·787, respectively.
367	Ditto ,, . . .	II	Mercara . . .	Vapour tension .	4 and 5	*For* "·662" and "+·083" *read* ·602 and +·023, respectively.
411	August ,, . .	I	Belgaum . . .	Rainfall . .	4, 6, 7 and 9	*Add* 0·07 to figures in each column.
415	Ditto ,, . . .	I	Wellington . . .	Ditto . .	10	*For* "1·66" *read* 1·16.
416	Ditto ,, . .	II	Cocos Island . .	Temperature of air.	10	*For* "—0·6" *read* +0·6.
417	Ditto ,, . . .	II	Dehra Dun . . .	Vapour tension .	4 and 5	*For* "·866" and "+·073" *read* ·800 and +·007, respectively.
,,	Ditto ,, . . .	II	Poona	Ditto . .	4 and 5	*For* "·798" and "+·115" *read* ·710 and +·027, respectively.
419	Ditto ,, . . .	II	Mercara . . .	Ditto . .	4 and 5	*For* "·668" and "+·089" *read* ·608 and +·029, respectively.
460, 516 and 560	Sept. to Nov. 1897 .	I	Cooch Behar . .	Elevation of bar-cistern, etc.	...	*For* "150?" *read* 156.
462	September 1897 . .	I	Mooltan . . .	Temperature of air.	7	*For* "—0·2" *read* +0·2.
465	Ditto ,, . .	I	Secunderabad . .	Rainfall . .	4	*For* "5." *read* 5·19.
470	Ditto ,, . .	II	Diamond Island . .	Temperature, Wet-bulb.	4	*For* "73·2" *read* 77·2.
,,	Ditto ,, . .	II	Lucknow . . .	Temperature of air.	2, 3, 5, 6, 9 and 10	*For* "79·3," "13·8," "76·9," "20·3," "85·3" and "+1·5" *read* 79·0, 14·1, 74·8, 22·4, 85·1 and +1·3, respectively.
471	Ditto ,, . .	II	Lucknow . . .	Vapour tension .	1	*For* "·860" *read* ·864.
526	October 1897 . .	II	Cuttack . . .	Temperature of air.	5 and 6	*For* "63·8" and 29·5" *read* 63·6 and 29·7, respectively.
559	November 1897 . .	I	Car-Nicobars¶ . .	Rainfall . .	1	*Insert* 18.
562	Ditto ,, . .	I	Ajmere . . .	Temperature of air.	4, 5 and 8	*For* "50·6," "+1·2" and "34·2" *read* 50·9, +1·5 and 33·9, respectively.
564	Ditto ,, . .	I	Belgaum . . .	Ditto .	2, 3, 8, 9, 10 and 13	*For* "84·4," "+2·8," "25·8," "86·2," "6 days" and "32·3" *read* 84·6, +3·0, 26·0, 86·9, 12th and 33·0, respectively.
,,	Ditto ,, . .	I	Sutna	Ditto .	2, 3 and 8	*For* "82·2," "+2·1" and "26·4" *read* 82·0, +1·9 and 26·2, respectively.
568	Ditto ,, . .	I	Minicoy . . .	Pressure, 8 A.M., etc.	3	*For* "?" *read* 29·834.
570	Ditto ,, . .	II	Dhubri . . .	Temperature of air.	5 and 6	*For* "58·3" and "25·7" *read* 58·7 and 25·3, respectively.
572	Ditto ,, . .	II	Mount Abu . . .	Ditto .	2, 3, 5, 6, 9 and 10	*For* "57·0," "15·4," "50·9," "25·2," "64·1" and "—0·6" *read* 57·5, 14·9, 51·4, 24·7, 64·3 and —0·4, respectively.
573	Ditto ,, .	II	Mount Abu . . .	Vapour tension .	1	*For* "·242" *read* ·237.
,,	Ditto ,, . .	II	Mount Abu . . .	Humidity . .	1	*For* "52" *read* 50.
574	Ditto ,, . .	II	Minicoy . . .	Pressure . .	6	*For* "?" *read* ·807.
614	December ,, . .	I	Baghdad . . .	Temperature of air.	7	*For* "3·0" *read* —3·9.

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ANNUAL SUMMARY, 1897.

INTRODUCTION.

The present annual summary completes the discussion of the meteorology of India for the year 1897.

It should be noted that in the monthly reviews it is attempted to present the facts and data from two different points of view. Meteorological data in India are chiefly utilized for the following purposes :—

1st.—In the discussion of the prevalence and spread of diseases, more especially of cholera and other diseases of an epidemic character.

2nd.—In connection with agricultural questions, more especially the progress and character of the crops as determined by the weather conditions of the period.

India has hence been divided into two groups of divisions from what may be termed the medical and agricultural stand-points. For the comparison of medical and meteorological statistics, India is arranged into the following provinces, which are believed to be fairly homogeneous so far as the conditions of the prevalence of the more common diseases are concerned :—

(1) Burma Coast and Bay Islands,
(2) Burma Inland.
(3) Assam.
(4) Bengal and Orissa.
(5) Gangetic Plain and Chota Nagpur.
(6) Upper Sub-Himalayas, including the sub-montane districts of the North-Western Provinces and the Punjab, and the meteorological divisions of the South-East, South, Central and North Punjab.
(7) Indus Valley and North-West Rajputana.
(8) East Rajputana, Central India and Gujarat.
(9) Deccan.
(10) West Coast.
(11) South India.

The data for each of these divisions are given in Table I in large figures, and the portion of each monthly review entitled, "Summary of the chief features of the weather in India during the month," is intended to give a sketch of the broader and more important features of the weather in India for the use of those who study the relations between the prevalence and spread of diseases and the weather conditions prevailing at the time in India.

According to the second method of arrangement into meteorological divisions, India is divided into 57 meteorological districts, or divisions, from the agricultural standpoint, each of which is fairly homogeneous so far as the distribution of rainfall and the general character of the crops and the conditions of their growth are concerned. The following gives the two series of divisions arranged under the respective political areas or provinces to which they belong :—

Political Division or Province.	Meteorological Division or District.	Meteorological Province.
BURMA	Tenasserim and Bay Islands.	Burma Coast and Bay Islands.
	Lower Burma	
	Arakan	
	Central Burma	Burma Inland.
	Upper Burma	
ASSAM	Assam (Surma)	Assam.
	„ (Brahmaputra)	
BENGAL	East Bengal	Bengal and Orissa.
	Deltaic Bengal	
	Central Bengal	
	North Bengal	
	Orissa	
	Chota Nagpur	Gangetic Plain and Chota Nagpur.
	South Bihar	
	North „	
NORTH-WESTERN PROVINCES AND OUDH.	North-Western Provinces, East.	
	North-Western Provinces, Central.	
	South Oudh	
	North „	
	North-Western Provinces, East Sub-montane.	
	North-Western Provinces, West Sub-montane.	Upper Sub-Himalayas.
PUNJAB	South-East Punjab	
	South „	
	Central „	
	Punjab Sub-montane	
	North Punjab	
	West Punjab	
BOMBAY NORTH	Sind	Indus Valley and North West Rajputana.
RAJPUTANA AND CENTRAL INDIA.	West Rajputana	
	Central India, East	East Rajputana, Central India and Gujarat.
	Rajputana, East, Central India, West.	

Political Division or Province.	Meteorological Division or District.	Meteorological Province.
BOMBAY NORTH	Kathiawar	East Rajputana, Central India and Gujarat.
	Gujarat	
NORTH-WESTERN PROVINCES.	North-Western Provinces, West.	
BOMBAY	Bombay Deccan	Deccan.
	Khandesh	
BERAR	Berar	
CENTRAL PROVINCES	Central Provinces, West	
	" " Central	
	" " East	
HYDERABAD OR THE NIZAM'S DOMINIONS.	Hyderabad, North	
	" South	
BOMBAY	Konkan	West Coast.
	Malabar	
MADRAS	Madras, South	South India.
	" " Central	
	" East Coast South	
	" Central	
	" East Coast Central	
	" East Coast North	
COORG AND MYSORE	Coorg	
	Mysore	
HILL DISTRICTS	Assam Hills	Hills.
	Bengal "	
	North-Western Provinces Hills.	
	Punjab Hills	
	Baluchistan Hills	

The double grouping is shown in Plate I, at the end of this summary.

The data of Table I in the monthly reviews and in the present annual part are obtained, with a few exceptions, from the observations telegraphed daily to Simla for publication in the Daily Weather Report. In the case of thermometric observations, they are telegraphed to the nearest half degree. Hence the maxima and minima temperature data of the second class observatories derived from these telegraphic reports and given in that table occasionally differ to some slight extent from the means of the more exact data (recorded to tenths of a degree) tabulated in the observation forms sent into the Calcutta Office, and which are used in the calculation of the mean temperature data in Table II. There is also another reason why the mean maxima and minima data in Tables I and II differ to a slight extent. In Table I the daily or 24 hours' period is assumed to end at 8 A.M., and in Table II at 4 P.M., and hence the maximum temperature in Table I for any month of thirty-one days at any station gives the mean for thirty-one periods of 24 hours ending at 8 A.M. of the 31st, and in Table II for the same number of 24 hours' periods ending at 4 P.M. on the 31st and hence virtually of a monthly period one day in advance of the former. Similarly, for months of 28, 29, or 30 days. These remarks will explain some of the slight discrepancies which may be found between the maxima and minima temperature mean data in Tables I and II, and hence also in the monthly mean variation data given in these tables in the monthly reviews and annual summary.

The methods of exposure of the instruments at observatories in India, and of the reduction of the observations and the calculation of mean data, have been fully stated and explained in the Annual Reports on the Meteorology of India, and need not be repeated. The reader is referred more especially to the Annual Reports of the year 1885 and to the "Instructions to Observers of the Indian Meteorological Department," for full information on this subject.

Temperature.

The methods of exposing the thermometers at observatories in India and of deducing the daily and monthly means from the observed readings of the instruments are described in pages 18-19 of the Annual Report for 1890.

The variations of the mean temperature of each month from the normal given in Table II of the monthly reviews are deduced by a comparison of the actual monthly means with the normal monthly means obtained by the same methods given in Table XII of average monthly temperatures of 87 stations in India and Ceylon, etc., in pages 19 to 22 of the Annual Report for the year 1890. Average data for 134 stations will also be found in pages 39 to 42 of the Annual Report for the year 1887.

Average or normal monthly temperatures of 82 second class stations have been recalculated during the past year, and the whole of the data up to December 1896 have been utilized for the determination of these values. These normal means were given in Table I of the Annual Summary for 1896.

The variations obtained by a comparison of these normal means with the actual monthly means in Table II of the monthly weather reviews for the year are given in Table I.

The mean variations given in Table II below of the Geographical Summary are derived from the variation data of Table II of the monthly weather reviews of the year 1897.

In Table I published in each monthly review, as in the Daily Weather Report, the mean temperature of the day is calculated by the formula, daily mean $= \frac{\text{Maximum} + \text{Minimum}}{2}$. It differs from the true daily mean by amounts varying slightly with the season. The variations of the daily or monthly means obtained by this method from normal daily or monthly means similarly calculated, usually differ very little from those obtained by the more laborious computation of true daily means and the comparison of these with normal true daily means. In Table I of the monthly weather reviews of the year 1897 the variations of the monthly mean maxima and minima temperatures from the normal as well as the variations of the monthly mean temperatures (*i. e.*, $\frac{\text{Maximum} + \text{Minimum}}{2}$) are given.

Normal monthly mean maxima and minima temperatures of 94 stations calculated from the observations of the eleven years' period, 1878—1888, were given in the Annual Summary for 1891. The additional data for the years 1889—93 have been recently utilized to furnish what are probably slightly more accurate means than those given in the 1891 Annual Summary. The re-calculated means were given in the 1894 Annual Summary, Tables I and II and need not be repeated here.

Tables II and III(*a*), III(*b*) and III(*c*) give summaries of the temperature variation data for each month of the year 1897 and for the year. In the first table (Table II) the same division has been adopted as that employed in the Annual Reports from 1881 to 1890. This enables an exact comparison to be made of the temperature data of the year 1897 with those of previous years given in the Annual Reports. In the second set of tables [Table III (*a*), III (*b*) and III (*c*)] the variation data are given for the eleven meteorological provinces into which the empire is divided for the purpose chiefly of comparing meteorological and health statistics, and in the last table (Table IV) the data are given for 54 of the 57 smaller divisions or areas into which India is sub-divided with a view to the comparison of meteorological and crops statistics—

TABLE I.—*Comparison of monthly mean air temperatures in 1897, with the averages of past years.*

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Burma Coast and Bay Islands.	Port Blair	+1·2	+2·3	+1·4	+1·5	+0·2	+1·4	—0·5	+0·8	+0·7	+0·3	—0·3	+0·8	+0·8
	Rangoon	+1·5	+2·7	+1·4	+1·7	—1·0	+0·9	+0·8	+0·2	+1·1	+0·4	—1·2	+0·3	+0·7
	Diamond Island	+2·4	+2·7	+0·8	+0·8	0	+1·7	+0·5	+1·1	+1·2	+1·0	+0·2	+1·4	+1·2
	Cocos Island	+3·3	+3·2	+1·0	?	—1·7	+1·4	—0·8	+0·6	+0·6	+1·5	+0·9	+2·0	?
	Akyab	+1·3	+3·1	+0·3	—0·3	+1·0	0	+0·5	0	+0·4	+0·5	+0·1	+0·4	+0·6
Assam	Silchar	+1·9	+2·1	+0·8	+2·4	+0·1	+0·9	+0·4	+0·6	—0·1	+2·7	+0·5	+1·3	+1·1
	Sibsagar	+2·0	+1·0	+0·2	+0·8	—1·2	+0·4	—1·9	—0·3	—1·6	+2·0	—1·1	+0·7	+0·1
	Dhubri	+0·9	+1·1	—2·0	+1·7	—0·6	+1·7	+0·3	+0·8	+0·1	+1·7	—0·2	—0·2	+0·4
Bengal and Orissa.	Chittagong	+2·8	+3·3	+1·0	+1·9	+3·1	+1·4	+0·4	+0·2	+0·4	+2·2	?	?	?
	Narayanganj	+1·5	+2·5	+0·3	+0·6	+1·7	+0·7	+0·3	+0·2	—0·1	+2·1	+0·7	+0·3	+0·9
	Calcutta (Alipore)	+2·6	+2·4	+0·2	+0·7	+1·7	+0·1	+0·5	—0·6	+0·6	+0·1	+0·3	—0·2	+0·7
	Saugor Island	+2·0	+3·0	+0·5	+0·6	+1·4	+0·6	+0·8	+0·2	+1·0	+0·4	+0·4	—0·5	+0·9
	Burdwan	+3·2	+2·7	+0·5	+0·5	+1·1	—0·4	+0·7	—0·8	+0·3	—0·1	+0·7	0	+0·7
	erhampore	+1·3	+1·4	—0·2	+0·4	+0·1	—0·1	+0·8	—0·8	0	—0·1	+0·4	—0·3	+0·[illegible]
	False Point	+2·3	+4·5	+1·1	+0·7	+1·5	+1·3	+0·5	—0·1	+1·1	+0·1	+0·1	—1·3	+1·0
	Cuttack	+3·3	+4·3	+0·6	—0·1	+2·1	+2·7	+0·9	—0·6	+0·8	—0·6	—0·5	—2·0	+0·9
Gangetic Plain and Chota Nagpur.	Hazaribagh	+1·9	+1·4	—0·5	+0·9	+4·1	+0·7	+2·2	0	+1·2	—0·4	+0·3	—1·2	+0·9
	Patna	+2·7	+3·1	—0·3	+0·8	+1·9	—0·3	+0·9	—0·4	+0·6	—0·6	+1·6	+0·3	+0·9
	Darbhanga	+1·3	+1·8	—0·7	0	+1·1	+1·6	+0·9	+0·5	+0·7	—0·7	+0·3	—0·2	+0·6
	Allahabad	+2·1	+2·6	—0·3	+1·8	+4·7	+2·2	+2·8	—0·3	+1·6	—0·5	+0·6	—0·5	+1·4
	Lucknow	+1·8	+1·4	—0·5	+0·9	+3·6	+1·4	+1·7	—1·2	+1·3	?	+2·0	+0·6	?

TABLE I.—*Comparison of monthly mean air temperatures in 1897, with the averages of past years*—contd.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Upper Sub-Himalayas.	Dehra Dun	+0·6	−0·5	−1·1	−0·5	+2·4	−0·5	+0·2	−1·0	−0·6	+1·0	+1·1	−1·1	0
	Roorkee	+1·2	+0·1	−0·3	+0·4	+2·9	−0·4	−0·2	−1·3	−0·4	+0·1	+1·4	−0·9	+0·2
	Meerut	+2·5	+1·8	0	+0·1	+2·5	+0·3	−0·3	−0·8	−0·3	−0·5	+1·0	+0·5	+0·6
	Lahore	+1·9	+1·8	+0·6	+0·5	+3·6	+0·3	+3·7	−0·8	+2·2	+2·0	+2·8	+2·0	+1·7
	Ludhiana	+1·1	+1·0	+0·1	+0·4	+4·1	+0·4	+0·7	−0·5	+1·5	+1·3	+2·7	+1·3	+1·2
Indus Valley and North West Rajputana.	Peshawar	−1·4	+1·5	−2·4	−3·9	−0·1	−2·6	+0·4	−2·0	−0·8	+1·0	+1·6	+0·3	−0·7
	Mooltan	+1·3	+2·6	−0·9	+0·1	+4·4	+0·6	+1·9	−0·2	+0·7	+0·8	+2·9	+1·5	+1·3
	Jacobabad	−0·3	0	−1·7	−1·3	+3·7	+2·9	+1·7	+0·6	+0·7	−0·6	+4·3	+2·6	+1·1
	Kurrachee	−1·6	−0·5	−1·1	0	−0·1	+1·1	+2·1	+2·7	+2·6	0	+1·1	+1·9	+0·7
East Rajputana, Central India and Gujarat.	Jeypore	+0·5	+1·9	−0·9	−1·1	+3·3	+3·4	+2·2	+1·0	+0·5	+0·6	+0·8	+1·4	+1·1
	Ajmere	+0·4	+1·8	0	−0·4	+4·4	+4·0	+2·6	+1·5	−0·3	−1·3	+0·7	+0·6	+1·2
	Deesa	−2·1	−1·0	−2·1	+0·4	+1·5	+3·5	+2·8	+0·9	+0·3	−2·0	−1·3	−0·8	0
	Nowgong	+1·2	+1·1	−0·5	0	+3·6	+1·3	+2·4	+0·2	+0·4	+0·8	+1·0	+0·1	+1·0
	Agra	+0·8	+1·1	+0·3	+0·1	+2·9	−0·8	+1·7	−0·1	+2·6	+1·1	+2·9	+2·0	+1·2
Deccan	Belgaum	+2·7	+2·0	+0·6	+1·0	+1·5	+2·2	+0·8	+1·5	+1·8	0	+0·2	−0·3	+1·2
	Sholapur	+4·7	+3·7	+1·1	+1·3	+2·2	+2·3	+3·0	+3·2	+1·2	+0·7	−0·4	−1·3	+1·8
	Poona	+4·0	+3·0	−0·2	+1·7	+2·2	+2·3	+2·0	+0·8	+1·7	+0·2	−2·0	−2·3	+1·1
	Akola	+5·6	+4·1	+0·1	+2·5	+3·3	+6·3	+3·6	+1·1	+1·4	+2·1	−0·7	−1·7	+2·3
	Buldana	+3·1	+3·0	+0·2	+1·4	+3·3	+5·5	+3·1	+1·1	+0·8	+1·1	−0·1	−1·1	+1·8
	Khandwa	+3·7	+3·6	−0·4	+2·1	+4·0	+5·3	+4·1	+1·1	+1·3	+1·4	−0·3	−0·7	+2·1
	Hoshangabad	+2·4	+2·8	−0·6	+1·4	+2·7	+3·9	+3·7	+0·8	+0·4	+0·3	−1·1	−2·1	+1·2
	Nagpur	+4·0	+4·9	+0·6	+2·0	+2·5	+4·5	+3·4	+0·6	+1·6	+1·2	+0·1	−0·9	+2·0
	Jubbulpore	+3·5	+2·8	−0·1	+0·7	+2·6	+2·3	+2·5	+0·8	+1·3	+1·0	0	−1·7	+1·3
	Saugor	+1·5	+2·9	+1·5	−0·6	+3·7	+3·2	+3·9	+1·2	+1·3	+0·2	−0·1	+0·5	+1·6
	Sutna	+3·4	+3·2	+1·0	+1·5	+4·5	+3·0	+3·1	+0·1	+1·7	+0·7	+1·4	+0·1	+1·9
	Raipur	+4·0	+4·5	+0·6	+0·2	+2·7	+4·1	+3·5	+0·5	+1·4	0	+0·6	−1·1	+1·8
	Hyderabad (Deccan)	+4·4	+5·3	+3·6	+1·4	+2·5	+4·4	+2·4	+2·2	+0·6	+0·9	+0·4	−1·0	+2·3
West Coast	Bombay	−0·3	−0·8	−1·6	−0·3	+0·1	+1·2	+0·3	+1·0	+1·1	+0·3	−0·9	−0·9	−0·1
	Ratnagiri	+1·0	0	−1·6	+0·5	+0·9	+2·7	−0·3	+1·1	+1·2	+0·1	−1·4	−1·2	+0·3
	Karwar	+1·6	+0·8	−1·5	+0·1	+0·8	+2·0	+0·4	+2·2	+1·0	+0·9	−0·1	−0·8	+0·6
	Cochin	+2·5	+2·9	+2·5	+0·4	+2·2	+0·7	+1·3	+0·5	+0·3	+1·2	+1·1	+0·6	+1·4
South India	Salem	+1·9	+2·6	+2·8	+0·6	+0·3	+2·0	+1·8	+1·4	−0·4	+1·8	+2·2	+0·9	+1·5
	Mercara	+2·6	+2·0	+1·0	+1·5	+0·9	+0·8	+1·0	+1·0	+0·8	−0·1	+0·6	+0·5	+1·1
	Chitaldroog	+3·6	+3·2	+1·6	+2·2	+3·3	+1·6	+1·4	+1·5	+0·4	0	+1·6	−0·7	+1·6
	Bangalore	+3·5	+4·4	+3·1	+1·5	+3·0	+2·5	+1·8	+1·7	+0·2	+1·3	+1·6	+0·5	+2·1
	Hassan	+2·0	+3·5	+1·3	+1·1	+3·0	+1·7	+0·6	+1·1	+0·3	+0·3	−0·3	−0·9	+1·1

TABLE I.—*Comparison of monthly mean air temperatures in 1897, with the averages of past years*—concld.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
South India —*concld.*	Mysore	+2·3	+3·6	+1·6	+1·8	+2·5	+0·8	—0·1	+0·5	—0·4	—0·2	+0·4	+0·1	+1·1
	Trichinopoly	+2·0	+2·2	+2·0	—0·2	+1·0	+0·8	+2·0	+1·3	—1·3	+2·0	+1·7	+1·2	+1·2
	Madras	+1·2	+3·2	+1·2	—0·4	+0·9	+1·2	+1·3	+0·3	—2·1	+1·9	+1·0	—1·6	+0·7
	Bellary	+4·0	+5·3	+2·3	+0·4	+2·5	+1·7	+2·2	+1·7	—0·8	+0·8	+1·0	—0·7	+1·7
	Cocanada	+3·2	+3·2	0	+0·3	—1·2	+3·9	+2·7	+0·4	—1·0	+1·2	+0·2	—1·0	+1·0
	Vizagapatam	+1·5	+2·8	+0·3	0	—0·4	+1·5	+0·7	+0·1	—1·4	—0·1	—0·5	—0·9	+0·3
Hill Station, Baluchistan.	Quetta	—0·7	+1·6	—1·6	—1·6	+1·7	—3·1	+0·5	+0·4	+0·8	—0·8	+4·4	+1·9	+0·2
Hill Stations, Northern India.	Leh	—6·7	—5·9	—4·9	—1·0	—4·2	—2·6	—1·0	+2·4	+2·0	+3·3	+4·6	+3·2	—0·9
	Srinagar	—4·0	—2·0	—1·1	—4·6	—4·2	—4·8	0	+1·1	—0·4	?	?	+2·5	?
	Murree	—3·4	—0·1	—4·2	—4·9	—0·5	—0·9	+2·6	—0·3	0	+2·9	+5·8	—0·5	—0·3
	Kailang	—0·5	—0·2	—0·6	—4·1	—4·6	—3·4	—0·8	+0·3	—1·3	+1·2	+5·7	+2·1	—0·5
	Simla (Ridge)	—0·8	—0·1	—2·4	—3·3	+0·9	—1·3	—0·9	—0·6	—1·2	—0·2	+0·8	—1·8	—0·9
	Chakrata	+0·2	+0·7	—2·3	—1·7	+1·4	—0·8	—0·4	—0·1	—0·3	+1·4	+0·3	0	—0·1
	Ranikhet	+0·3	+1·0	—1·9	—0·6	+3·8	+0·9	—0·1	—0·2	—0·2	+1·2	+0·2	—0·8	+0·3
	Katmandu	+0·7	+1·7	—1·4	+0·9	+1·5	+0·8	0	+0·3	—0·5	+1·4	—0·8	—2·8	+0·2
	Darjeeling	+1·0	+1·5	+0·5	+0·7	+1·9	+0·6	—0·2	+0·3	+0·8	+1·1	+1·0	—0·6	+0·7
Hill Stations, Central India.	Mount Abu	—1·7	—1·0	—2·3	—0·5	+2·7	+3·4	+2·3	+1·9	+0·2	—2·8	—0·6	—0·4	+0·1
	Pachmarhi	+3·2	+2·3	—0·3	+1·1	+3·4	+2·7	+3·0	+1·0	+1·1	+0·7	—1·3	—1·7	+1·3
	Chikalda	+2·4	+3·0	+0·3	+1·2	+2·8	+4·3	+3·3	+1·3	+1·8	+0·7	—0·2	—0·4	+1·7
Hill Station, Southern India.	Wellington	+1·8	+2·6	+1·0	—0·2	+0·7	0	+0·6	+0·7	+0·2	+0·9	—0·4	+0·6	+0·7
Extra Indian Stations.	Muscat	—1·6	—0·9	—0·7	—1·8	+0·2	—0·4	+2·4	+1·6	+2·8	+2·4	+1·6	+2·3	+0·7
	Aden	—0·2	+0·8	—0·3	+0·1	+1·2	+2·0	+2·6	+0·2	+1·2	+1·2	+0·2	+0·5	+0·8
	Perim	—1·0	0	—0·4	0	—0·6	?	?	?	?	?	?	+0·9	?
	Zanzibar	+1·0	—0·1	+0·9	—0·1	+1·6	—0·1	+0·5	+1·4	+0·7	—0·1	+2·5	+1·8	+0·8
	Port Victoria (Seychelles)	+1·1	?	+1·7	+1·8	+0·4	+1·3	+1·4	+0·9	+0·3	—0·1	+1·1	+0·4	?

TABLE II.—*Geographical Summary of the temperature data of Table I in the monthly reviews of 1897.*

Meteorological Province.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		°	°	°	°	°	°	°	°	°	°	°	°	°
North-West Himalaya	6—7	—2·1	—0·9	—2·5	—2·9	—1·1	—1·8	—0·1	+0·4	—0·2	+1·6	+2·9	+0·7	—0·5
Sikkim Himalaya and Nepal.	2	+0·9	+1·6	—0·5	+0·8	+1·7	+0·7	—0·1	+0·3	+0·2	+1·3	+0·1	—1·7	+0·4
Punjab Plains	4	+0·7	+1·7	—0·7	—0·7	+3·0	—0·3	+1·7	—0·9	+0·9	+1·3	+2·5	+1·3	+0·9
Gangetic Plain	7—8	+1·6	+1·4	—0·4	+0·5	+2·8	+0·4	+1·0	—0·6	+0·7	0	+1·4	+0·1	+0·7
Western Rajputana	4	—1·4	—0·6	—1·8	—0·4	+2·0	+2·7	+2·2	+1·5	+1·0	—1·4	+0·9	+0·8	+0·5

TABLE II.—*Geographical Summary of the temperature data of Table I in the monthly reviews of 1897*—concld.

METEOROLOGICAL PROVINCE.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
		°	°	°	°	°	°	°	°	°	°	°	°	°
Eastern Rajputana and Central India.	5	+1·4	+2·2	+0·2	—0·1	+3·9	+3·0	+2·8	+0·8	+0·7	+0·2	+0·8	+0·5	+1·4
Nerbudda Valley .	3	+3·2	+3·1	—0·4	+1·4	+3·1	+3·8	+3·4	+0·9	+1·0	+0·9	—0·5	—1·5	+1·5
Chota Nagpur . .	1	+1·9	+1·4	—0·5	+0·9	+4·1	+0·7	+2·2	0	+1·2	—0·4	+0·3	—1·2	+0·9
Lower Bengal . .	5	+2·1	+2·4	+0·3	+0·6	+1·2	+0·2	+0·6	—0·4	+0·4	+0·5	+0·5	—0·1	+0·7
Assam and Cachar .	3	+1·6	+1·4	—0·3	+1·6	—0·6	+1·0	—0·4	+0·4	—0·5	+2·1	—0·3	+0·6	+0·6
Orissa . . .	2	+2·8	+4·4	+0·9	+0·3	+1·8	+2·0	+0·7	—0·4	+1·0	—0·3	—0·2	—1·7	+0·9
Central Provinces South and Berar.	6	+3·7	+3·6	+0·3	+1·4	+3·0	+4·6	+3·3	+0·9	+1·4	+1·0	—0·3	—1·2	+1·8
Konkan . . .	3	+0·8	0	—1·6	+0·1	+0·6	+2·0	+0·1	+1·4	+1·1	+0·4	—0·8	—1·0	+0·3
Malabar Coast .	1	+2·5	+2·9	+2·5	+0·4	+2·2	+0·7	+1·3	+0·5	+0·3	+1·2	+1·1	+0·6	+1·4
Deccan, Hyderabad and Mysore.	10	+3·4	+3·6	+1·6	+1·4	+2·4	+2·0	+1·5	+1·5	+0·6	+0·4	+0·3	—0·6	+1·5
East Coast and Carnatic.	5	+2·0	+2·8	+1·3	+0·1	+0·1	+1·9	+1·7	+0·7	—1·2	+1·4	+0·9	—0·3	+1·0
Arakan and Pegu .	3—4	+2·0	+3·0	+0·9	+1·0	+0·8	+1·0	+0·6	+0·4	+0·8	+1·0	—0·3	+0·7	+1·0
Bay Islands . .	1—2	+2·3	+2·8	+1·2	+1·5	—0·8	+1·4	—0·7	+0·7	+0·7	+0·9	+0·3	+1·4	+0·9
Extra-Tropical India	40—42	+0·7	+1·2	—0·7	—0·2	+1·8	+0·8	+1·2	+0·2	+0·5	+0·6	+1·1	+0·2	+0·6
Tropical India .	32—33	+2·7	+3·1	+0·9	+0·9	+1·6	+2·3	+1·4	+0·9	+0·5	+0·7	+0·1	—0·5	+1·2
Whole India . .	73—75	+1·6	+2·0	0	+0·3	+1·7	+1·4	+1·3	+0·5	+0·5	+0·7	+0·7	—0·1	+0·9

TABLE III(*a*).—*Variations of the mean monthly maximum temperature from the normal in 1897, in the eleven meteorological provinces of India.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Burma Coast and Bay Islands .	+1·5	+1·5	0	+0·8	—1·2	+1·1	+1·0	+0·8	+1·6	—0·1	—0·7	—0·2	+0·5
Burma Inland . . .	+4·5	+2·6	+1·3	+3·4	+1·1	+1·8	+0·7	+0·2	+0·6	+0·1	—1·6	+1·8	+1·4
Assam	+2·0	+2·1	+0·2	+2·9	—0·9	+2·1	—0·3	+0·6	—1·5	+0·7	—0·7	+0·8	+0·7
Bengal and Orissa . .	+2·8	+2·2	—0·4	+1·3	+1·6	+1·0	+1·2	—0·1	+0·3	—0·	+0·1	—0·2	+0·8
Gangetic Plain and Chota Nagpur.	+1·8	+2·3	—1·0	+0·3	+4·0	+0·6	+3·1	—0·4	+1·4	—1·3	+1·4	+0·4	+1·1
Upper Sub-Himalayas . .	—0·8	+1·1	—1·9	—2·4	+3·1	+0·3	+1·8	—1·5	0	+0·9	+1·8	—0·4	+0·2
Indus Valley and North-West Rajputana.	—1·5	+0·9	—2·3	—1·9	+3·2	+1·9	+1·5	—0·7	—0·6	+0·6	+3·4	+0·4	+0·4
East Rajputana, Central India and Gujarat.	—1·1	+0·8	—1·3	—0·4	+2·7	+3·3	+3·4	+0·4	+0·4	—0·5	+1·9	+1·2	+0·9
Deccan	+2·3	+2·8	+0·2	+0·2	+3·4	+4·6	+5·1	+0·5	+1·1	+0·8	+1·6	+0·8	+2·0
West Coast	+0·5	—0·3	—0·1	+0·4	+1·3	+2·1	+0·3	+1·2	+0·9	+0·5	+1·7	+0·9	+0·8
South India . .	+2·2	+2·1	+0·9	—0·1	+1·3	+2·0	+3·1	+1·0	—1·9	+1·5	+2·5	+0·9	+1·3

TABLE III(*b*).—*Variations of the mean monthly minimum temperature from the normal in 1897, in the eleven meteorological provinces of India.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Burma Coast and Bay Islands.	+2·5	+4·0	+1·3	+3·4	+0·8	+0·9	+0·5	+0·5	+0·6	+1·4	+0·2	+1·6	+1·5
Burma Inland . . .	+1·4	+3·4	+1·0	+0·9	+1·1	+1·5	+0·8	+0·8	+0·8	+2·4	0	+2·2	+1·4
Assam	+0·5	+1·1	—1·0	—0·3	—0·3	+0·6	+0·1	+0·8	+0·7	+2·7	—1·0	—0·8	+0·3
Bengal and Orissa . .	+1·3	+3·4	+0·6	—0·3	+1·5	+0·8	+0·5	+0·3	+0·7	+1·6	+1·1	—0·2	+0·9
Gangetic Plain and Chota Nagpur.	+2·8	+2·2	—0·6	+0·8	+2·8	+0·9	+1·4	+0·4	+1·2	+0·7	+2·6	—0·3	+1·2
Upper Sub-Himalayas . .	+2·0	+1·1	—0·2	+0·4	+3·5	—0·1	+1·4	+0·7	+0·7	+0·3	+3·3	+0·9	+1·2
Indus Valley and North-West Rajputana.	—0·2	+1·1	—1·9	—0·8	+3·0	+0·4	+1·1	+0·5	+1·0	—2·3	+3·1	+2·5	+0·6
East Rajputana, Central India and Gujarat.	+0·3	+0·1	—1·1	+0·7	+2·7	+2·1	+2·3	+1·6	+1·8	—1·0	+0·6	+0·3	+0·9
Deccan	+4·7	+3·8	—0·4	+2·1	+2·7	+2·9	+2·2	+1·1	+1·9	+1·0	—1·2	—2·2	+1·6
West Coast	+2·1	+2·0	—0·5	+0·6	+1·7	+1·8	+0·7	+1·6	+1·1	+0·9	—0·7	—0·8	+0·9
South India	+2·8	+5·3	+2·3	+1·1	+1·4	+1·7	+1·6	+1·3	+0·3	+1·3	+0·2	—0·8	+1·5

TABLE III(*c*).—*Variations of the mean monthly temperature from the normal in 1897, in the eleven meteorological provinces of India.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
	°	°	°	°	°	°	°	°	°	°	°	°	°
Burma Coast and Bay Islands	+2·0	+2·7	+0·7	+2·3	—0·3	+1·0	+0·7	+0·7	+1·1	+0·7	—0·3	+0·7	+1·0
Burma Inland . . .	+3·0	+3·1	+1·2	+2·2	+1·1	+1·6	+0·8	+0·5	+0·7	+1·3	—0·8	+2·0	+1·4
Assam	+1·3	+1·6	—0·4	+1·3	—0·6	+1·4	—0·2	+0·7	—0·5	+1·7	—0·9	—0·1	+0·4
Bengal and Orissa . .	+2·1	+2·7	+0·1	+0·5	+1·6	+1·0	+0·8	+0·1	+0·5	+0·8	+0·6	—0·2	+0·9
Gangetic Plain and Chota Nagpur.	+2·3	+2·2	—0·9	+0·6	+3·4	+0·8	+2·3	0	+1·4	—0·3	+2·0	+0·1	+1·2
Upper Sub-Himalayas . .	+0·6	+1·3	—1·1	—1·0	+3·3	+0·2	+1·7	—0·4	+0·3	+0·6	+2·6	+0·3	+0·7
Indus Valley and North-West Rajputana.	—0·8	+1·0	—2·1	—1·3	+3·1	+1·1	+1·3	—0·1	+0·2	—0·9	+3·3	+1·4	+0·5
East Rajputana, Central India and Gujarat.	—0·4	+0·5	—1·2	+0·2	+2·7	+2·7	+2·8	+1·0	+1·1	—0·7	+1·3	+0·7	+0·9
Deccan	+3·6	+3·3	—0·1	+1·2	+3·1	+3·8	+3·7	+0·8	+1·5	+0·9	+0·2	—0·7	+1·8
West Coast	+1·3	+0·9	—0·3	+0·5	+1·5	+2·0	+0·5	+1·4	+1·0	+0·7	+0·5	0	+0·8
South India . . .	+2·6	+3·7	+1·6	+0·5	+1·3	+1·9	+2·4	+1·2	—0·8	+1·4	+1·4	0	+1·4

TABLE IV.—*Variations of the mean monthly and annual temperatures from the normal in 1897, in 54 of the 57 meteorological districts or divisions of India.*

PROVINCE.	DIVISION.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
		°	°	°	°	°	°	°	°	°	°	°	°	°
BURMA . .	1. Tenasserim . .	—0·4	+1·8	+0·9	+2·1	—0·3	+1·0	+0·9	+0·8	+1·5	+0·8	+0·1	+0·6	+0·8
	2. Lower Burma, Deltaic .	+2·3	+2·9	+0·6	+1·8	—0·4	+0·9	+0·4	+0·4	+0·9	+0·7	—0·5	+1·5	+1·0
	3. Central do. . . .	+2·3	+3·6	+1·2	+3·0	—0·7	+1·6	+1·2	+1·2	+1·5	+0·9	—0·3	+0·8	+1·4
	4. Upper do. . . .	+2·9	+1·4	+1·1	+2·1	+1·1	+1·8	+0·7	+0·4	+0·6	+1·3	—0·9	+2·2	+1·2
	5. Arakan . . .	?	+3·0	?	?	+0·4	+0·3	+0·6	+0·2	+0·2	+0·2	—0·4	—0·2	?

TABLE IV.—*Variations of the mean monthly and annual temperatures from the normal in 1897, in 54 of the 57 meteorological districts or divisions of India*—continued.

Province.	Division.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		°	°	°	°	°	°	°	°	°	°	°	°	°
Bengal and Assam.	6. Eastern Bengal	+2·1	+3·1	+0·6	+1·7	+1·2	+1·1	+0·7	+0·2	+0·2	+1·8	+0·1	−0·1	+1·1
	7. Assam, Surma	+1·8	+2·6	+0·9	+2·5	+0·7	+1·2	+0·1	+0·7	−0·5	+2·3	?	+1·0	?
	8. Do. Hills	...	...	...	...	...	...	...	...	...	...	...	...	...
	9. Do. Brahmaputra	+1·0	+1·2	−1·1	+0·7	−1·3	+1·5	−0·4	+0·7	−0·4	+1·5	−0·9	−0·6	+0·2
	10. Deltaic Bengal	+2·0	+2·3	+0·3	+0·2	+2·2	+0·2	+0·7	−0·2	+0·8	+0·4	+0·4	−0·4	+0·7
	11. Central do.	+2·1	+2·3	−0·3	+0·7	+1·6	+0·5	+1·1	+0·1	+0·5	+0·8	+1·1	+0·3	+0·9
	12. North do.	+1·0	+2·1	−1·1	+0·8	+0·8	+1·6	+0·4	+0·8	+0·6	+2·0	+0·7	+0·3	+0·8
	13. Bengal Hills	+1·1	+2·5	−0·6	+1·4	+2·0	+1·6	−0·4	0	+0·2	+1·6	+1·1	−1·2	+0·8
	14. Orissa	+3·0	+4·1	+0·7	−0·7	+1·8	+1·2	+1·0	−0·2	+0·8	−0·2	+0·4	−1·2	+0·9
	15. Chota Nagpur	+3·1	+2·3	−0·9	−0·7	+4·3	+0·8	+2·5	+0·1	+1·7	+0·1	+1·3	−0·6	+1·2
	16. South Bihar	+2·4	+2·7	−1·2	+0·9	+1·9	+0·7	+2·2	−0·3	+1·0	−0·4	+2·4	+0·6	+1·1
	17. North do.	+1·6	+1·8	−1·0	+0·4	+1·2	+1·9	+1·3	+0·7	+0·8	+0·2	+1·5	+0·3	+0·9
North-Western Provinces and Oudh.	18. North-Western Provinces, East.	+2·4	+2·4	−0·1	+1·3	+4·1	+0·6	+2·6	−0·3	+1·6	−0·5	+2·3	−0·2	+1·4
	19. South Oudh	+1·7	+2·1	−0·7	+0·7	+4·3	?	+3·1	0	+2·0	?	+3·7	+0·8	?
	20. North do.	?	?	?	?	?	?	?	?	?	?	?	?	?
	21. North-Western Provinces, Central.	+0·6	+2·0	+0·5	+0·9	+5·2	+1·8	+3·7	+0·9	+2·0	+1·6	+3·3	+1·8	+2·0
	22. North-Western Provinces, West.	+1·5	+1·8	−0·9	−1·0	+2·9	−0·1	+1·4	−0·2	−0·3	−0·2	+2·4	+1·1	+0·7
	23. North-Western Provinces, East Submontane.	+1·2	+1·4	−1·0	+1·8	+3·6	+0·8	+1·5	+0·1	+0·9	−0·7	+2·1	+0·5	+1·0
	24. North-Western Provinces, West Submontane.	+1·4	+1·3	−0·7	−0·3	+3·6	+0·5	+1·0	−0·6	+0·1	+0·9	+2·4	−0·1	+0·8
	25. North-Western Provinces, Hills.	+0·5	+1·5	−2·3	−1·5	+3·2	+0·4	+0·6	+0·1	+0·2	+1·6	+0·9	−0·7	+0·4
Punjab.	26. South-East Punjab	?	?	−1·6	−1·6	?	+0·1	+1·4	−0·5	+0·2	?	+1·6?	−0·4?	?
	27. South do.	0	+0·4	−1·5	−1·8	+3·9	+0·2	+0·7	−0·8	?	−0·5	+2·1	+0·6	?
	28. Central do.	+0·8	+1·6?	?	−1·0	+3·5	−0·7	+3·6	−0·8	?	?	?	?	?
	29. Punjab, Submontane	+2·0	+0·6	−1·6	−1·0	+3·4	+0·2	+3·5	+0·1	+1·1	+0·8	+2·8	+0·3	+1·0
	30. Do., Hills	−2·2	+0·5	−3·5	−3·9	+1·0	−1·3	+1·2	−0·4	−0·7	+1·3	+3·8	−1·4	−0·5
	31. North Punjab	−1·8	+1·7	−2·5	−3·4	+0·9	−1·7	+1·5	−1·0	−0·1	+1·3	+2·8	+0·8	−0·1
	32. West do.	+0·8	+2·5	−1·2	−1·1	+3·7	−0·1	+1·1	−1·8	−0·6	−0·6	+3·0	+1·1	+0·6
Bombay and Malabar Coast Districts (Madras).	33. Malabar	+2·2	+1·8	+1·1	+0·6	+2·1	+1·4	+0·5	+1·2	+0·8	+1·1	+1·2	+0·4	+1·2
	34. Madras, South-Central	+1·9	+2·2	+1·4	+0·4	+0·9	+0·8	+2·3	+1·4	−0·4	+1·6	+1·6	+0·8	+1·2
	35. Coorg	+2·8	+2·6	+0·9	+1·4	+1·1	+1·1	+1·1	+0·9	+1·0	+0·2	+1·4	+0·7	+1·3
	36. Mysore	+3·4	+4·6	+3·0	+1·1	+2·7	+1·6	+1·3	+1·3	−0·1	+1·2	+1·8	+0·5	+1·9
	37. Konkan	+0·5	−0·1	−1·7	+0·4	+0·9	+2·5	+0·5	+1·7	+1·3	+0·4	−0·3	−0·3	+0·5
	38. Bombay Deccan	+3·9	+2·8	+0·4	+1·2	+2·4	+2·7	+2·3	+1·5	+1·8	+0·6	−0·8	−0·7	+1·5
	39. Hyderabad, North	?	?	?	?	?	?	?	?	?	?	?	?	?
	40. Khandesh	+3·2	+2·3	−1·1	+1·2	+2·5	+4·6	+3·8	+2·0	+1·1	+1·1	−1·3	−1·2	+1·5

TABLE IV.—*Variations of the mean monthly and annual temperatures from the normal in 1897, in 54 of the 57 meteorological districts or divisions of India*—concluded.

Provinces.	Division.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		°	°	°	°	°	°	°	°	°	°	°	°	°
Central Provinces and Berar.	41. Berar	+4·8	+4·1	+0·2	+2·6	+3·4	+5·6	+3·9	+0·7	+1·6	+2·2	+0·4	−0·5	+2·4
	42. Central Provinces (West)	+3·3	+3·8	−0·5	+1·5	+3·0	+4·5	+4·2	+0·6	+1·6	+1·0	0	−0·2	+1·9
	43. Do. (Central)	+2·7	+2·9	−0·6	+0·2	+2·9	+3·0	+4·3	+0·6	+1·5	+0·8	+0·4	−0·9	+1·5
	44. Do. (East)	+3·6	+3·2	−0·9	−0·6	+2·9	+2·7	+3·6	−0·4	+1·9	−0·5	+0·7	−1·8	+1·2
Bombay (North).	45. Gujarat	+1·2	+0·5	?	?	+0·5	+2·6	+2·5	+0·4	+1·3	+1·3	+0·8	+1·1	?
	46. Kathiawar and Cutch	−3·4	−2·4	−2·1	+0·4	+0·8	+3·5	+2·0	+0·9	+0·6	−2·6	+1·0	?	?
	47. Sind	−1·1	0	−1·7	−0·5	+2·9	+2·8	+1·6	+1·7	+1·0	−1·2	+4·8	+2·0	+1·0
	48. Baluchistan Hills	−0·4	+1·4	−1·7	−1·5	+2·2	−3·4	+0·1	−0·9	+0·4	−1·4	+5·9	+2·5	+0·3
Rajputana and Central India.	49. Central India (East)	+1·2	+2·0	−0·7	+0·8	+3·7	+2·7	+3·4	+1·0	+1·8	+0·3	+0·9	+0·1	+1·4
	50. Rajputana (East) Central India (West).	−0·4	+0·8	−1·3	−0·5	+4·1	+3·6	+3·1	+1·5	+0·8	−1·6	+1·1	+0·5	+1·0
	51. West Rajputana	?	?	−3·1	−1·4	+5·5	+2·9	+2·0	+0·2	?	−2·1	?	?	?
Madras.	52. East Coast (North)	+3·2	+3·8	+0·8	+0·4	−0·2	+3·1	+2·9	+0·4	−1·4	+0·8	+1·0	−0·6	+1·2
	52-A. Do. do. (*a*)	...	...	...	...	...	...	...	...	...	...	...	...	...
	53. Hyderabad (South)	+4·2	+4·9	+2·3	+1·6	+3·8	+4·6	+4·1	+1·3	+0·6	+1·4	+0·7	−0·5	+2·4
	54. Madras Central	+3·8	+5·5	+2·5	+0·7	+2·6	+2·5	+3·0	+2·0	−0·6	+1·7	+1·5	−0·5	+2·1
	55. East Coast (Central)	+1·9	+3·8	+0·7?	+0·7	+0·2	+2·1	+1·9	+0·7	−1·7	+1·0	+1·4	+0·1	+1·1
	56. East Coast (South)	+1·8	+2·7	+1·9	+0·4	+1·1	+1·3	+2·2	+1·4	−2·0	+2·1	+1·7	−0·1	+1·2
	57. Madras (South)	+0·8	?	+1·1?	+2·3	+1·8	?	?	−0·1	−1·8	?	+0·7	+0·7	?

In the discussion of the meteorology of India during the year 1897, the year is divided into four seasons according to the following arrangement :—

1st.—The cold weather period, including the months of January and February.

2nd.—The hot weather period, including the months of March, April and May.

3rd.—The period of the south-west monsoon rains proper, including the months of June, July, August and September.

4th.—The period of the retreating south-west monsoon, including the months of October, November and December.

The following gives a résumé of the chief features of the temperature conditions during the year :—

I.—The cold weather period.—Weather was less disturbed than usual throughout the season. One cold weather storm of moderate intensity crossed Northern India in January. It apparently formed in Baluchistan and Sind on the 12th and 13th, passed through South-East Rajputana on the 14th and the Gangetic Plain on the 15th and filled up in Bengal and Upper Burma on the 16th. A secondary depression gave stormy weather in the Punjab, more especially in the hill districts, on the 14th and 15th. Heavy snow fell in the Punjab and Kashmir Himalayas, and moderate snow in the Afghan and Baluch mountain districts. The storm was preceded by a well-defined warm wave, and followed by a wave of very cool temperature in Northern India.

Two cold weather storms affected Northern India in February. The first originated in Upper Sind and the South-West Punjab on the 10th and 11th and drifted eastwards to the foot of the Simla hills. It gave general and heavy snow in the Kashmir and Punjab Himalayas on the 12th and 13th, and moderately heavy and general rain in the north-west and sub-montane districts of the Punjab. Snow fell down to 2,500 feet in Chamba.

The second storm was initiated in Persia. It advanced across Baluchistan and Northern India between the 22nd and 26th and gave rise to a deep secondary depression in

the Punjab. The storm gave moderate snow in the Western Himalayas, and numerous thunder showers in the Punjab.

The warm and cool waves accompanying the storms in February were feebly marked.

The snowfall of the period was practically normal in Baluchistan and Afghanistan, but was heavier than usual in the Kashmir and Punjab Himalayas, and was especially heavy in North Kashmir. The precipitation of the period was below the normal generally in Northern and Central India.

The temperature conditions of the period were directly related to the chief abnormal features of the period which were—

(1) Fewer cold weather storms than usual. The storms were also of feebler intensity than usual.

(2) The warm and cool waves accompanying the storms were feeble, and hence exercised little influence on the mean temperature conditions of the period.

The following gives a summary of the chief features of these conditions.

(1) The mean maximum or day temperature was generally in excess during the period. It was below the normal to a moderate extent in North-Western India in January, and to a slight extent in the west coast districts north of Mangalore and the South-East Punjab, in February. The excess was greatest in January in Upper Burma, West Bengal and the Bombay Deccan where it averaged 4° and in February in the Deccan and Berar, in which it averaged 3½°. The following gives comparative data for fifteen provinces or areas :—

Area.	Variation of mean maximum temperature from normal in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Sind	−0·7	+0·6	−0·1
Punjab	−1·1	+0·1	−0·5
North-Western Provinces and Oudh	+0·5	+2·2	+1·4
Bihar	+1·9	+2·8	+2·4
Chota Nagpur	+2·5	+1·3	+1·9
Bengal	+2·7	+2·3	+2·5
Assam	+2·2	+2·4	+2·3
Burma	+1·9	+1·4	+1·7
Rajputana	−1·3	+1·4	+0·1
Central India	−0·2	+2·2	+1·0
Berar	+3·0	+4·1	+3·6
Central Provinces	+1·7	+2·4	+2·1
Deccan	+3·7	+3·5	+3·6
Bombay Coast	+0·5	−0·3	+0·1
Madras Coast	+1·8	+2·3	+2·1

An important feature of the period was the large excess in the day temperature over North-Eastern India, the interior of the Peninsula and Upper Burma.

(2) The mean minimum or night temperature was more or less in excess in both months, and hence also for the period, over the whole of India, except in a small area, including Sind, Cutch, Kathiawar and South-West Rajputana. The following gives comparative data for the various provinces in which the mean night temperature was above the normal :—

Area.	Variation of mean minimum temperature from normal in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Baluchistan (Quetta)	+1·2	+1·0	+1·1
Punjab	+2·0	+2·5	+2·3
North-Western Provinces and Oudh	+2·4	+1·5	+2·0
Bihar	+2·1	+1·6	+1·9
Chota Nagpur	+3·6	+3·3	+3·5
Bengal	+0·9	+2·6	+1·8
Assam	+0·6	+1·3	+1·0
Burma	+1·4	+3·6	+2·5
Rajputana	0	+0·1	+0·1
Central India	+2·6	+1·8	+2·2
Berar	+6·5	+4·1	+5·3
Central Provinces	+4·7	+4·2	+4·5
Deccan	+4·1	+4·9	+4·5
Bombay Coast	+2·1	+2·0	+2·1
Madras Coast	+2·6	+5·1	+3·9

The excess was greatest in an area in the centre of the Peninsula, defined by the stations for which comparative data are given below :—

Station.	Variation of mean minimum temperature from normal in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Akola	+7·7	+4·2	+6·0
Nagpur	+5·5	+5·4	+5·5
Hyderabad (Deccan)	+5·0	+6·7	+5·9
Kurnool	+5·0	+7·3	+6·2
Bellary	+4·0	+7·1	+5·6
Cuddapah	+3·3	+6·7	+5·0

The following gives data for stations in the area in which the night temperature was below the normal during the period :—

Station.	Variation of mean minimum temperature from normal in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Bushire	−0·5	−1·0	−0·8
Jacobabad	−0·6	0	−0·3
Hyderabad	−2·1	−1·2	−1·7
Deesa	−1·2	−1·3	−1·3
Mount Abu	−2·0	−1·4	−1·7
Bhuj	−2·8	−2·6	−2·7
Rajkot	−3·0	−2·1	−2·6

(3) The mean temperature was above the normal in both months, and hence also on the mean of the period, over the whole Indian area, except Sind, South-West Rajputana, Cutch and Kathiawar. The following gives comparative data for the provinces in which temperature on the mean of the period was in excess :—

Area.	Variation from normal of mean daily temperature in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Baluchistan (Quetta)	−0·4	+1·4	+0·5
Punjab	+0·5	+1·3	+0·9
North-Western Provinces and Oudh	+1·5	+1·9	+1·7
Bihar	+2·0	+2·2	+2·1
Chota Nagpur	+3·1	+2·3	+2·7
Bengal	+1·8	+2·5	+2·2
Assam	+1·4	+1·9	+1·7
Burma	+1·7	+2·5	+2·1
Rajputana	−0·7	+0·8	+0·1
Central India	+1·2	+2·0	+1·6
Berar	+4·8	+4·1	+4·5
Central Provinces	+3·2	+3·3	+3·3
Deccan	+3·9	+4·2	+4·1
Bombay Coast	+1·3	+0·9	+1·1
Madras Coast	+2·2	+3·7	+3·0

The excess was moderate to considerable in amount in Burma, North-Eastern India and the whole of the interior of the Peninsula.

The excess was absolutely greatest in the area represented by the stations for which comparative data are given below :—

Station.	Variation from normal of mean daily temperature in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Akola	+5·8	+4·3	+5·1
Nagpur	+4·0	+5·0	+4·5
Hyderabad (Deccan)	+4·2	+4·9	+4·6
Sholapur	+4·8	+3·7	+4·3
Raipur	+3·8	+3·7	+3·8
Bellary	+3·9	+5·4	+4·7
Cuddapah	+3·2	+5·6	+4·4
Bangalore	+3·4	+4·6	+4·0

The excess in the temperature was hence most marked in Mysore, the Deccan, Berar and the south-eastern districts of the Central Provinces.

The following gives comparative data for stations in the areas of diminished temperature :—

Station.	Variation from normal of mean daily temperature in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Bushire	−0·9	−2·0	−1·5
Jacobabad	−0·5	+0·1	−0·2
Hyderabad	−1·5	−0·1	−0·8
Deesa	−1·6	−0·5	−1·1
Bhuj	−3·3	−2·3	−2·8
Rajkot	−3·5	−2·4	−2·0

Temperature was in considerable defect at the interior hill stations in North-Western India and in slight to moderate excess in the Central and Eastern Himalayas. The following gives data :—

Station.	Variation from normal of mean daily temperature in		
	January 1897.	February 1897.	Cold weather period, January and February 1897.
	°	°	°
Leh	−6·7	−5·9	−6·3
Srinagar	−4·0	−2·0	−3·0
Murree	−4·2	+0·4?	−1·9?
Simla	−0·2	+0·9	+0·4
Ranikhet	+0·6	+1·5	+1·1
Darjeeling	+1·1	+2·5	+1·8

In consequence of the small number and slight intensity of the cold weather depressions (excepting two, one in January and one in February) there were fewer well marked warm and cool waves in Northern India than usual. The following gives a brief account of the two most important waves :—

(1) *Warm and cool waves of the 9th to the 19th January.*

The warm wave, as usual, was in front of a cold weather storm, and preceded it in its march across Northern India. The wave was in Baluchistan on the 9th, Rajputana and Central India on the 10th and 11th, Central India and the North-Western Provinces on the 12th, 13th, 14th and 15th, Bihar and West Bengal on the 16th and East Bengal on the 17th.

The cool wave advanced across Persia on the 11th, 12th and 13th, and affected Baluchistan on the 14th and 15th, the Punjab and Rajputana on the 16th and 17th, Central India and the North-Western Provinces on the 18th and Bengal on the 19th.

The following table gives the greatest positive and negative variations of temperature from the normal at thirteen representative stations in Northern India :—

Station.	Variation from normal of mean temperature preceding 8 A.M. of date.				Total range of variation during period.
	Greatest excess.	Date.	Greatest defect.	Date.	
	°		°		°
Quetta	+12·6	9th Jan.	—26·1	15th Jan.	38·7
Jeypore	+ 9·2	10th „	—11·5	17th „	20·7
Deesa	+ 7·2	10th „	—15·8	15th „	23·0
Rajkot	+ 6·3	10th „	—16·2	16th „	22·5
Agra	+ 9·5	12th „	— 8·7	17th „	18·2
Allahabad	+11·6	15th „	— 8·1	18th „	19·7
Benares	+ 9·7	15th „	— 8·6	18th „	18·3
Jubbulpore	+ 9·4	14th „	— 4·9	17th „	14·3
Patna	+ 9·3	15th „	— 5·9	18th „	15·2
Hazaribagh	+ 8·8	15th „	— 5·1	17th „	13·9
Calcutta	+ 9·4	16th „	— 4·5	19th „	13·9
Deesa	+ 7·0	16th „	— 4·4	18th „	11·4
Burdwan	+13·4	16th „	— 3·6	19th „	17·0

(2) *Warm and cool waves of the 23rd February to the 3rd of March.*

The warm wave passed through Baluchistan on the 23rd. It was transferred to Rajputana and the East Punjab on the 24th, the North-Western Provinces, Bundelkhand and Baghelkhand on the 25th, Bengal on the 26th and Upper Burma on the 27th.

The cool wave in the rear of the storm reduced temperature from 10° to 30° below that prevailing during the passage of the warm wave. It passed through Baluchistan on the 25th, Sind and Rajputana on the 26th and 27th, the North-Western Provinces on the 28th and Bengal on the 1st and 2nd of March.

The following table giving the greatest excess and deficiency of the mean daily temperature due to the passage of the wave at nine representative stations in Northern India illustrates the amount of the reduction of temperature accompanying the march of the storm :—

Station.	Variation from normal of mean temperature preceding 8 A.M. of date.				Total range of variation during period.
	Greatest excess.	Date.	Greatest defect.	Date.	
	°		°		°
Quetta	+11·8	23rd Feb.	—18·4	25th Feb.	30·2
Kalat	+ 9·9	22nd „	—19·0	25th „	28·9
Lahore	+15·2	24th „	— 3·4	26th „	18·6
Sirsa	+13·0	24th „	— 5·9	26th „	18·9
Rajkot	+ 3·7	23rd „	—13·6	26th „	17·3
Allahabad	+ 9·0	25th „	— 5·1	27th „	14·1
Nowgong	+10·9	25th „	— 7·3	26th „	18·2
Burdwan	+ 7·0	26th „	— 2·4	28th „	9·4
Calcutta	+ 5·6	26th „	— 3·5	27th „	9·1

The lowest actual temperatures of the period and also of the year were registered at the great majority of stations in Northern and Central India during the passage of the first of the two cool waves described above.

The following gives the lowest temperature of the year recorded at a number of stations, and also the lowest at the same stations in previous years for comparison :—

Station.	Lowest minimum temperature recorded during the cold weather period 1897.	Date on which recorded.	Lowest minimum temperature recorded during the cold weather periods previous to 1897.	Year in which recorded.
	°		°	
Baghdad	30·7	16th Jan.	24·0	1894
Bushire	38·9	13th „	32·0	1880
Quetta	9·3	15th „	14·0	1878 & 1879
Kalat	—6·4	15th „	0	1895
Murree	18·0	15th „	19·2	1893
Simla	27·1	15th „	19·2	1893
Srinagar	11·6	17th „	6·1	1893

Station.	Lowest minimum temperature recorded during the cold weather period 1897.	Date on which recorded.	Lowest minimum temperature recorded during the cold weather periods previous to 1897.	Year in which recorded.
	°		°	
Jacobabad . . .	30·5	16th Jan.	30·3	1885
Lahore . . .	36·2	17th ,,	29·2	1889
Jeypore . . .	36·2	17th ,,	35·0	1888
Deesa . . .	38·0	15th ,,	37·0	1885
Agra	39·9	17th ,,	36·3	1878
Allahabad . . .	38·4	18th ,,	36·0	1878
Neemuch . . .	37·5	17th ,,	37·8	1883
Sutna	42·7	17th ,,	34·2	1878
Patna	42·9	17th ,,	36·4	1878
Hazaribagh . . .	45·1	17th ,,	37·5	1874
Burdwan . . .	49·8	8th & 9th ,,	44·0	1874 & 1889
Calcutta . . .	49·2	19th ,,	45·5	1878

II.—The hot weather period.—The weather was unusually disturbed in March and three storms of the cold weather type advanced across Northern India during the month. Unusually heavy snow fell in Chitral and Kashmir during these storms which were hence followed by the advance of cool waves which reduced temperature for a considerable part of the month largely below the normal. The most noteworthy storm was that of the 20th to the 25th of the month. Temperature was hence more or less below the normal over the whole of Extra-Tropical India in March, the deficiency being most marked in Upper India. It was, on the other hand, in slight to moderate excess in Burma and the Peninsula. Weather was slightly more disturbed than usual in April and series of thunderstorms occurred at intervals throughout the month, chiefly in the Punjab and North-Eastern India. Temperature was in slight to considerable defect in Upper India, but increased above the normal over the remainder of Northern and Central India. The chief feature of the month was the high and excessive temperature in Burma.

May was hotter than usual and the mean temperature of the month was in moderate to considerable excess over the whole of the interior of India. The excess was greatest in the North-Western Provinces, Rajputana, Upper Sind and the South-West Punjab, over nearly the whole of which area it ranged between 4° and 5½°.

The following gives a summary of the more important temperature conditions of the period :—

(1) The maximum or day temperature was in slight to moderate defect in Northern and Central India in March and in moderate to large excess in May. On the mean of the period it was in slight excess. It was in slight to moderate excess throughout the period in the Peninsula.

The following table gives comparative data :—

Area.	Variation of mean maximum temperature from normal in			
	March 1897.	April 1897.	May 1897.	Hot weather period, March to May 1897.
	°	°	°	°
Persia (Bushire) .	—2·0	+0·6	—0·4	—0·6
Asiatic Turkey (Baghdad)	—5·2	+2·3	+1·2	—0·6
Baluchistan (Quetta) .	—1·7	—1·3	+2·4	—0·2
Punjab . . .	—2·5	—3·6	+2·6	—1·2
Sind	—1·9	—0·3	+3·1	+0·3
North-Western Provinces and Oudh.	—0·8	—0·1	+4·4	+1·2
Bihar	—1·4	+0·5	+1·8	+0·3
Chota Nagpur . .	—0·9	—1·0	+5·0	+1·0
Bengal . . .	—0·5	+1·9	+1·7	+1·0
Assam	+0·5	+3·3	—0·4	+1·1
Burma . . .	+0·6	+1·8	—0·8	+0·5
Rajputana . . .	—1·8	—1·1	+4·4	+0·5
Central India . .	—1·0	—0·1	+3·4	+0·8
Berar	+0·9	+1·2	+3·7	+1·9
Central Provinces .	—0·8	—0·6	+3·0	+0·5
Deccan . . .	+1·9	+0·5	+3·6	+2·0
Bombay Coast . .	—0·1	+0·4	+1·3	+0·5
Madras Coast . .	+0·3	—0·1	+0·4	+0·2

(2) The variations of the mean minimum or night temperature from the normal were similar in character to those of the maximum temperature. The mean night temperature of the period was in slight to moderate excess over the whole of India except the North Punjab and Assam, as is shown by the following comparative data :—

Area.	Variation of mean minimum temperature from normal in			
	March 1897.	April 1897.	May 1897.	Hot weather period, March to May 1897.
	°	°	°	°
Persia (Bushire) . .	—0·8	+1·6	+1·0	+0·6
Asiatic Turkey (Baghdad)	+2·0	+5·1	+0·3	+2·5
Baluchistan (Quetta) .	—1·7	—1·6	+2·0	—0·4
Punjab . . .	—0·8	+0·3	+3·5	+1·0
Sind	—1·5	—0·6	+2·7	+0·2
North-Western Provinces and Oudh.	—0·1	+1·2	+3·4	+1·5
Bihar	—0·8	+0·8	+1·3	+0·4
Chota Nagpur . .	—0·9	—0·4	+3·6	+0·8
Bengal . . .	+0·3	—0·3	+1·2	+0·4
Assam	—0·6	—0·2	—0·2	—0·3

Area.	Variation of mean minimum temperature from normal in			
	March 1897.	April 1897.	May 1897.	Hot weather period, March to May 1897.
	°	°	°	°
Burma . . .	+1·2	+2·7	+0·8	+1·6
Rajputana . . .	—2·6	—0·9	+5·2	+0·6
Central India . .	—0·4	+1·6	+3·9	+1·7
Berar	—0·6	+4·0	+3·0	+2·1
Central Provinces .	—0·5	+1·4	+2·8	+1·2
Deccan . . .	+1·2	+1·5	+1·7	+1·5
Bombay Coast . .	—0·5	+0·6	+1·7	+0·6
Madras Coast . .	+2·0	+1·2	+1·3	+1·5

(3) The mean daily temperature was on the average of the month of March in slight to moderate defect in Extra-Tropical India and in excess in Burma and the Peninsula. The excess was largest in the Deccan area where it averaged 2½°. The variations of the mean temperature conditions of April from the normal were small except in three areas, *viz.*, Burma and Berar, where the mean temperature of April averaged 2° above the normal) and the North Punjab where it averaged 3° below). The mean temperature of the month of May was in general excess except in Lower Burma and Assam, where heavier rain than usual reduced temperature slightly below the normal. On the mean of the whole period temperature was in general slight to moderate excess, the excess being greatest in the Deccan, Berar and the North-Western Provinces. The following gives comparative data:—

Area.	Variation from normal of mean daily temperature in			
	March 1897.	April 1897.	May 1897.	Hot weather period, March to May 1897.
	°	°	°	°
Persia (Bushire) . .	—1·4	+1·1	+0·3	0
Asiatic Turkey (Baghdad)	—1·6	+3·7	+0·8	+1·0
Baluchistan (Quetta) .	—1·7	—1·5	+2·2	—0·3
Punjab . . .	—1·7	—1·7	+3·1	—0·1
Sind	—1·7	—0·5	+2·9	+0·2
North-Western Provinces and Oudh.	—0·5	+0·6	+3·9	+1·3
Bihar	—1·1	+0·7	+1·6	+0·4
Chota Nagpur . .	—0·9	—0·7	+4·3	+0·9
Bengal . . .	—0·1	+0·8	+1·5	+0·7
Assam . . .	—0·1	+1·6	—0·3	+0·4
Burma . . .	+0·9	+2·3	0	+1·1
Rajputana . . .	—2·2	—1·0	+4·8	+0·5
Central India . .	—0·7	+0·8	+3·7	+1·3
Berar	+0·2	+2·6	+3·4	+2·1
Central Provinces .	—0·7	+0·4	+2·9	+0·9
Deccan . . .	+1·6	+1·0	+2·7	+1·8
Bombay Coast . .	—0·3	+0·5	+1·5	+0·6
Madras Coast . .	+1·2	+0·6	+0·9	+0·9

(4) Temperature was considerably below the normal in March and April at the hill stations in North-Western India, and was in slight to considerable excess in May at Ranikhet, Chakrata and Simla and in considerable defect at the interior hill stations. It was on the mean of the period in moderate defect, the deficiency increasing westwards to Murree and Srinagar. The following gives data in illustration :—

Station.	Variation from normal of mean daily temperature in			
	March 1897.	April 1897.	May 1897.	Hot weather period, March to May 1897.
	°	°	°	°
Ranikhet . . .	—1·7	—0·6	+4·3	+0·7
Chakrata . . .	—2·9	—2·4	+1·9	—1·1
Simla	—1·8	—2·5	+2·2	—0·7
Murree . . .	—5·0	—5·3	—0·2	—3·5
Srinagar . . .	—1·1	—4·6	—4·2	—3·3
Kailang . . .	—0·6	—4·1	—4·6	—3·1
Leh	—4·9	—1·0	—4·2	—3·4

The maximum temperatures of the period were generally registered during the last fortnight of the month of May, but the hot season in Upper India was protracted by the delay in the establishment of the monsoon on the West Coast and hence the hightest temperatures of the year were registered in the month of June instead of the last fortnight of May as is usually the case.

The effect of the heavy local snowfall over Central and North Kashmir in reducing temperature over the North Punjab and Kashmir throughout the period is clearly shown by the following data:—

Station.	Variation of mean daily temperature from normal in			
	March 1897.	April 1897.	May 1897.	Mean of period, March to May 1897.
	°	°	°	°
Peshawar	—3·0	—4·6	+0·1	—2·5
Rawalpindi.	—1·9	—2·1	+1·8	—0·7
Murree	—5·0	—5·3	—0·2	—3·5
Srinagar	—1·1	—4·6	—4·2	—3·3
Leh	—4·9	—1·0	—4·2	—3·4

The following gives a brief account of the two warm and cool waves which affected temperature largely in the month of March.

(1) *Warm and cool waves of the 9th to the 15th March.* These waves preceded and followed a cold weather storm of moderate intensity. This storm advanced eastwards from Sind on the 8th to Bengal on the 12th. The increase of temperature in front of the storm was very marked on the 9th in the North-Western Provinces, where temperature averaged 7° above the normal, and on the 10th in Bihar and Chota Nagpur, where temperature was 8° in excess. The reduction of temperature due to the cool wave was greatest on the 10th in Baluchistan, on the 11th in Sind, Cutch and Kathiawar, on the 12th and 13th in Rajputana and Central India, on the 14th in the eastern districts of the North-Western Provinces, and on the 15th in Bihar, Chota Nagpur and Bengal. The following gives data illustrating the changes of temperature due to the passage of these two waves:—

Station.	Variation from normal of mean temperature preceding 8 A.M. of date.				Total range of variation during period.
	Greatest excess.	Date.	Greatest defect.	Date.	
	°		°		°
Quetta	+4·3	7th	—14·6	10th	18·9
Jacobabad	+4·4	8th	— 9·8	11th	14·2
Lahore	+9·6	9th	— 5·0	12th	14·6
Jeypore	+4·0	8th	—10·3	12th	14·3
Neemuch	+4·4	8th	— 9·4	12th	13·8
Bhuj	+3·3	7th	—11·8	11th	15·1
Rajkot	+1·3	8th	—11·9	12th	13·2
Agra	+5·6	9th	— 8·2	12th	13·8
Sutna	+8·7	10th	— 6·5	13th	15·2
Allahabad	+8·5	10th	— 6·7	14th	15·2
Benares	+10·1	10th	— 7·3	14th	17·4
Jubbulpore	+6·4	10th	— 8·1	12th	14·5
Patna	+7·9	11th	— 4·2	13th	12·1
Hazaribagh	+9·4	9th	— 7·3	13th	16·7
Burdwan	+8·0	10th	— 4·4	13th	12·4
Calcutta	+7·1	11th	— 4·4	13th	11·5
Dacca	+4·7	11th	— 3·8	14th	8·5

(2) *Warm and cool waves of the 19th to the 25th March.* These waves accompanied a cold weather storm, which advanced across Northern India between the 20th and 23rd. The cool wave in the rear of the storm was of unusual intensity, and the storm was hence followed for some days by remarkably cool and dry weather in the plains of Northern India. The greatest deficiency of temperature due to this cool wave occurred on the 22nd and 23rd in Baluchistan, the Punjab and Sind, on the 24th and 25th in the North-Western Provinces, Bihar and Chota Nagpur and on the 26th in Bengal. The following data illustrate the large reduction of temperature which occurred during this period:—

Station.	Variation from normal of mean temperature preceding 8 A.M. of date				Total range of variation during period.
	Greatest excess.	Date.	Greatest defect.	Date.	
	°		°		°
Quetta	+4·9	19th	—16·7	22nd	21·6
Jacobabad	+3·0	20th	—10·8	22nd	13·8
Lahore	+4·1	19th	— 6·6	22nd	10·7
Jeypore	+6·1	20th	— 8·9	24th	15·0
Neemuch	+3·6	20th	— 7·0	25th	10·6
Bhuj	+0·9	21st	— 4·8	24th	5·7
Rajkot	+0·4	21st	— 4·2	24th	4·6
Agra	+6·5	17th	— 5·6	22nd	12·1
Sutna	+9·5	21st	—10·1	24th	19·6
Allahabad	+9·8	21st	—12·7	24th	22·5
Benares	+6·7	21st	—15·5	24th	22·7
Jubbulpore	+8·3	21st	— 9·8	24th	18·1
Patna	+8·5	21st	—14·1	24th	22·6
Hazaribagh	+5·6	21st	—15·7	24th	21·3
Burdwan	+7·2	19th	—12·5	24th	19·7
Calcutta	+4·5	19th	—11·5	24th	16·0
Dacca	+5·4	18th	—10·1	26th	15·5

One of the more noteworthy features of the meteorology of the year 1897 was the abnormally high temperature in the Punjab, Upper Sind and West Rajputana in May and the first fortnight of June. The fourth week of May is usually the culmination of the hot weather in Upper India, but in consequence of the delay in the establishment of the rains on the West Coast, the hot weather in 1897 period was protracted considerably beyond its normal and the highest temperatures of the year were registered in the second week of June in Upper India, as was also the case in the year 1896. Hotter weather than usual prevailed in that area without interruption during the period from the 10th of May to the 13th of June. The hottest periods in Northern India were from the 18th to the 21st of May and from the 10th to the 13th of June and the highest temperatures of the year were recorded in North-Western India during the second of these periods.

The following gives the maximum temperature of the

year at each of the seven hottest stations in Upper India :—

Station.	Highest maximum temperature recorded in June 1897.	Date on which recorded.	Highest maximum temperature in June previous to 1897.	Year in which recorded.
	°		°	
Jacobabad . . .	126·0	13th	123·7	1889
Pachpadra . . .	122·1	10th	116·0	1896
Jodhpur . . .	121·3	10th	?	?
Hyderabad (Sind). .	121·2	10th	116·2	1883,89,96
Mooltan . . .	121·0	12th	120·3	1890,92
Montgomery . .	120·6	12th	121·4	1890
Khushab . . .	120·4	12th	120·4	1896

The absolute maximum of the year was 126°·0 registered at Jacobabad on the 13th June. The absolute maximum of 126°·0 at Jacobabad is 2°·3 higher than has ever been recorded at that station and is the highest temperature that has been as yet observed under the standard conditions of thermometer exposure in India. The reading of the maximum thermometer on that day is fully corroborated by the readings of the standard or dry bulb thermometer, which were 119°·8 at 10 A.M. and 124°·8 at 4 P.M. of the 12th.

The following gives the variations of the mean maximum, mean minimum, and mean daily temperatures from the normal for every day during the hottest period of the year 1897, from the 9th to the 13th June, in Northern and Central India, immediately antecedent to the advent of the south-west monsoon rains on the Bombay Coast :—

Political Division or Station.	Variation from normal of mean maximum temperature of 24 hours preceding 8 A.M. of					Mean of period 9th to 13th June 1897.
	9th June 1897.	10th June 1897.	11th June 1897.	12th June 1897.	13th June 1897.	
	°	°	°	°	°	°
Bihar . . .	+1·9	+3·5	+5·2	—2·7	—2·0	+1·2
Chota Nagpur . .	+7·7	+5·4	+4·4	+3·5	—3·5	+3·5
North-Western Provinces and Oudh.	+6·8	+7·6	+7·4	+1·9	+1·9	+5·1
Central India . .	+13·2	+11·4	+8·6	+8·3	+7·6	+9·8
Rajputana . . .	+11·4	+13·6	+9·2	+6·9	+11·5	+10·5
Punjab . . .	+ 6·8	+ 7·5	+8·4	+9·6	+ 4·7	+ 7·4
Sind	+14·0	+15·2	+3·3	+5·9	+ 8·3	+ 9·3
Baluchistan (Quetta) .	+ 2·4	+ 2·3	+2·3	+4·5	+ 2·5	+ 2·8
Persia (Bushire) . .	— 0·4	+ 0·2	—2·6	—3·6	—4·1	— 2·1
Leh	+ 0·7	+ 1·4	+0·2	—7·3	—7·9	— 2·6

Political Division or Station.	Variation from normal of mean minimum temperature of 24 hours preceding 8 A.M. of					Mean of period.
	9th June 1897.	10th June 1897.	11th June 1897.	12th June 1897.	13th June 1897.	
	°	°	°	°	°	°
Bihar	+3·9	+3·8	+2·7	—0·9	—0·7	+1·8
Chota Nagpur . .	+3·2	—0·5	+3·1	—3·8	—1·0	+0·2
North-Western Provinces and Oudh.	+4·3	+5·2	+5·7	+2·1	—3·0	+2·9
Central India . .	+4·7	+5·4	+3·3	+5·4	+5·0	+4·8
Rajputana . . .	+3·4	+9·2	+9·4	+6·0	+9·2	+7·4
Punjab . . .	+3·7	+4·2	+4·1	+5·5	+4·7	+4·4
Sind	+1·5	+1·6	+2·6	+4·4	+3·7	+2·8
Baluchistan (Quetta) .	+3·6	+5·2	+3·5	+3·0	+0·2	+3·1
Persia (Bushire) . .	+3·2	+0·5	+0·8	—2·4	—0·1	+0·4
Leh	—1·2	—1·8	—2·2	—3·2	—6·4	—3·0

Political Division or Station.	Variation from normal of mean temperature of 24 hours preceding 8 A.M. of					Mean of period.
	9th June 1897.	10th June 1897.	11th June 1897.	12th June 1897.	13th June 1897.	
	°	°	°	°	°	°
Bihar	+2·9	+3·7	+4·0	—1·8	—1·4	+1·5
Chota Nagpur . .	+5·5	+2·5	+3·8	—0·2	—2·3	+1·9
North-Western Provinces and Oudh.	+5·6	+6·4	+6·6	+2·0	—0·6	+4·0
Central India . .	+9·0	+8·4	+6·0	+6·9	+6·3	+5·3
Rajputana . . .	+7·4	+11·4	+9·3	+6·5	+10·4	+9·0
Punjab . . .	+5·3	+5·9	+6·3	+7·6	+4·7	+6·0
Sind	+7·8	+8·4	+3·0	+5·2	+6·0	+6·1
Baluchistan (Quetta) .	+3·0	+3·8	+2·9	+3·8	+1·4	+3·0
Persia (Bushire) . .	+1·4	+0·4	—0·9	—3·0	—2·0	—0·8
Leh	—0·3	—0·2	—1·0	—5·3	—7·2	—2·8

It may be noted that several of the features of this hot weather period resemble those of the corresponding period of 1896. A noteworthy feature was the intensity of the heat in the North-Western Provinces and the Punjab during the last week of the month of May, but the temperatures recorded were not so high as in May 1894 and May 1895. The following gives examples :—

Station.	Highest maximum temperature in May 1897.	Date on which recorded.	Highest maximum in May previous to 1897.	Year in which recorded.
Gorakhpur . . .	111°·3	27th	113°·1	1899
Lucknow . . .	116·8	31st	119·0	1869
Jhansi	116·2	31st	118·0	1869
Mooltan . . .	116·0	30th	120·5	1895
Montgomery . . .	117·1	29th	121·9	1895
Hyderabad (Sind) . .	116·2	28th	121·0	1886

The chief feature of the hot weather of the year 1897 was its intensity and its duration, its continuation being protracted by the delay in the establishment of the monsoon on the West Coast until the second week of June, *i.e.*, a week later than usual.

III.—The South-West monsoon period.—As usual, the variations of the temperature conditions were mainly dependent upon the distribution and intensity of the rainfall in India.

The first advance of south-west monsoon winds occurred later than usual, commencing on the West Coast on the 12th and the Bengal Coast on the 13th. They extended rapidly into the interior, and gave rain over the whole of Northern and Central India, except the greater part of the Punjab, Sind and West Rajputana, from the 18th to the 24th. The monsoon winds then slowly retreated, and a break in the rains set in, which extended over the whole of the interior of India by the 29th and continued until the 10th or 11th of July. Temperature increased very rapidly in the last week of June, and was in very large excess in the North-Western Provinces, Central India and the Central Provinces.

The excess was most marked in the North Deccan on the 1st, 2nd and 3rd, and in the eastern districts of the North-Western Provinces on the 4th, 5th, and 6th. The following gives variation data for the stations in these areas, at which the excess was greatest on each day during this period :—

Date.	Station.	Variation from normal of		
		Mean maximum temperature.	Mean minimum temperature.	Mean temperature.
		°	°	°
1st July	Raipur	+14·3	+8·2	+11·3
2nd „	Amraoti	+15·1	+6·3	+10·7
3rd „	Raipur	+14·1	+8·4	+11·3
4th „	Allahabad	+15·2	+9·8	+12·5
5th „	Lucknow	+18·5	+9·9	+14·2
6th „	Allahabad	+16·9	+8·1	+12·5

Abnormally high day temperatures were recorded in this area of excessive heat during the period, higher in some cases than have been previously recorded in July. The following gives examples :—

Station.	Highest maximum temperature recorded in July 1897.	Date on which recorded.	Highest maximum temperature recorded in July previous to 1897.	Year in which recorded.
	°		°	
Allahabad	108·6	5th and 6th July	113·4	1876
Lucknow	110·8	5th and 6th „	113·0	1873
Bareilly	107·0	1st July	111·5	1876
Sutna	103·0	7th „	106·5	1876
Jhansi	106·1	4th, 6th, and 7th July.	113·2	1876
Nagpur	105·1	4th July	100·8	1891
Chanda	105·2	3rd and 4th July	98·9	1895 and 1896.
Raipur	102·4	1st July	100·0	1881
Akola	104·7	3rd „	109·0	1875
Amraoti	103·3	2nd „	99·4	1876

Moderate general rain was received during the second fortnight of July, but not sufficient in amount to reduce temperature to the normal.

The mean temperature of the first two months of the rainy season was hence more or less in excess over the whole of India, due first to the delay in the establishment of the monsoon, and secondly, to the unusual break in the rains extending from the 24th of June to the 11th of July.

The following gives comparative data for these two months for the whole of India :—

Political Division.	Variation of mean daily temperature from normal in		
	June 1897.	July 1897.	Mean of period, June and July 1897.
	°	°	°
Baluchistan (Quetta)	—3·4	+0·1	—1·7
Punjab	—0·4	+1·8	+0·7
Sind	+2·8	+1·6	+2·2
Rajputana	+3·3	+2·6	+3·0
North-Western Provinces and Oudh	+0·6	+1·9	+1·3
Bihar	+1·3	+1·8	+1·6
Chota Nagpur	+0·8	+2·5	+1·7
Bengal	+0·9	+0·7	+0·8
Assam	+1·4	—0·2	+0·6
Burma	+1·4	+0·8	+1·1
Central India	+2·7	+3·4	+3·1
Berar	+5·6	+3·9	+4·8
Central Provinces	+3·4	+4·0	+3·7
Deccan	+2·9	+2·8	+2·9
Bombay Coast	+2·0	+0·5	+1·3
Madras Coast	+2·0	+2·2	+2·1

Temperature was most largely in excess on the mean of the whole period in Khandesh, Berar, the Central Provinces and Hyderabad (Deccan). The following gives data for the stations at which the excess was most marked :—

Station.	Variation from normal of period, June and July 1897 of		
	Mean maximum temperature.	Mean minimum temperature.	Mean temperature.
	°	°	°
Akola	+6·3	+3·7	+5·0
Amraoti	+5·7	+3·1	+4·4
Khandwa	+5·8	+3·4	+4·6
Nagpur	+6·2	+2·7	+4·5
Malegaon	+5·6	+2·9	+4·3
Raipur	+5·4	+3·1	+4·3
Chanda	+7·1	+2·9	+5·0
Hyderabad (Deccan)	+4·9	+3·6	+4·3
Indore	+5·3	+2·8	+4·1

The preceding data show that both the day and night temperatures were above the normal, and that the excess was considerably greater in the day than the night temperature.

During the remainder of the season from the beginning of August to the middle of October the rainfall was normal in amount, and was unusually favourably distributed over nearly the whole of India. The Deccan and Madras received more abundant rain than usual in September and the first fortnight of October. The mean temperature conditions hence varied only slightly from the normal during these three months. The only important features were firstly, a moderate excess in the Deccan in August, and secondly, a moderate deficiency in Sind, Cutch, Kathiawar, and South-West Rajputana in October, apparently related to conditions in the Persian area.

The following gives comparative data for the three months of August, September and October 1897 :—

Political Division.	Variation of mean daily temperature from normal in			
	August 1897.	September 1897.	October 1897.	Mean of period, August to October 1897.
	°	°	°	°
Baluchistan (Quetta)	—0·9	+0·4	—1·4	—0·6
Punjab	—0·8	+0·1	+0·5	—0·1
Sind	+1·7	+1·0	—1·2	+0·5
Rajputana	+0·9	+0·8	—1·9	—0·1
North-Western Provinces and Oudh.	—0·1	+0·9	+0·3	+0·4
Bihar	+0·2	+0·9	—0·1	+0·3
Chota Nagpur	+0·1	+1·3	—0·1	+0·4
Bengal	+0·2	+0·5	+1·3	+0·7
Assam	+0·7	—0·5	+1·9	+0·7
Burma	+0·6	+0·9	+1·0	+0·8
Central India	+1·0	+1·8	+0·3	+1·0
Berar	+0·7	+1·6	+2·2	+1·5
Central Provinces	+0·2	+1·7	+0·4	+0·8
Deccan	+1·8	+0·8	+1·4	+1·3
Bombay Coast	+1·4	+1·0	+0·7	+1·0
Madras Coast	+0·8	—1·7	+1·6	+0·2

In consequence of the unusually high temperature which prevailed in June and July the mean temperature of the whole period was above the normal throughout India as is shown by the following statement :—

Political Division.	Variation from normal of period, June to September 1897 of			Variation from normal of period, June to October 1897 of		
	Mean maximum temperature.	Mean minimum temperature.	Mean temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature.
	°	°	°	°	°	°
Baluchistan (Quetta)	—0·9	—1·0	—1·0	—0·6	—1·4	—1·0
Punjab	—0·2	+0·7	+0·3	0	+0·5	+0·3
Sind	+1·6	+1·9	+1·8	+1·3	+1·0	+1·2
Rajputana	+1·8	+2·0	+1·9	+1·2	+1·0	+1·1
North-Western Provinces and Oudh.	+1·0	+1·0	+1·0	+0·7	+0·9	+0·8
Bihar	+1·0	+1·0	+1·0	+0·6	+1·0	+0·8
Chota Nagpur	+1·6	+1·0	+1·3	+1·1	+1·0	+1·1
Bengal	+0·7	+0·5	+0·6	+0·6	+0·8	+0·7
Assam	+0·2	+0·6	+0·4	+0·4	+1·0	+0·7
Burma	+1·0	+0·7	+0·9	+0·8	+0·9	+0·9
Central India	+2·3	+2·1	+2·2	+2·0	+1·7	+1·9
Berar	+3·3	+2·5	+2·9	+3·1	+2·4	+2·8
Central Provinces	+2·7	+1·9	+2·3	+2·2	+1·6	+1·9
Deccan	+2·4	+1·7	+2·1	+2·1	+1·6	+1·9
Bombay Coast	+1·1	+1·3	+1·2	+1·0	+1·2	+1·1
Madras Coast	+1·0	+0·8	+0·9	+1·1	+0·9	+1·0

IV.—The retreating South-West monsoon period.—The rains ceased slightly earlier than usual over the whole of Northern and Central India. The rains of the retreating south-west monsoon were scanty in the Deccan and the North Madras coast districts in the last fortnight of October and in November. The South Madras Coast districts and South Madras received occasional rain during the period. The period was, however, less disturbed by cyclonic storms than usual. A small cyclonic storm of great intensity advanced over the east of the Bay, and crossed the coast near Chittagong on the 24th of October. A diffused disturbance passed westwards from the neighbourhood of the Andamans to the Madras Coast in the fourth week of November, and was followed by general rain for some days over the greater part of Southern India. A storm of moderate intensity formed over the Bay nearly midway between the Madras coast and the Andamans in the fourth week of December. It gave squally weather and much rain in the centre of the Bay. It was transferred northwards, but filled up before it reached the head of the Bay.

Temperature was hence more or less above the normal throughout the months of November and December. The following gives variation data for the eleven meteorological provinces of India illustrating the conditions :—

Meteorological Province.	Variation from normal of mean daily temperature in			Variation from normal of period, October to December 1897 of		
	October 1897.	November 1897.	December 1897.	Mean maximum temperature.	Mean minimum temperature.	Mean daily temperature.
Burma coast and Bay Islands.	+0·7	—0·3	+0·7	—0·3	+1·1	+0·4
Burma Inland . .	+1·3	—0·8	+2·0	+0·1	+1·5	+0·8
Assam	+1·7	—0·9	—0·1	+0·3	+0·3	+0·2
Bengal and Orissa .	+0·8	+0·6	—0·2	—0·1	+0·8	+0·4
Gangetic Plain and Chota-Nagpur.	—0·3	+2·0	+0·1	+0·2	+1·0	+0·6
Upper Sub-Himalayas .	+0·6	+2·6	+0·3	+0·8	+1·5	+1·2
Indus Valley and North-West Rajputana.	—0·9	+3·3	+1·4	+1·5	+1·1	+1·3
East Rajputana, Central India and Gujarat.	—0·7	+1·3	+0·7	+0·9	0	+0·4
Deccan . . .	+0·9	+0·2	—0·7	+1·1	—0·8	+0·1
West Coast . . .	+0·7	+0·5	0	+1·0	—0·2	+0·4
South India . . .	+1·4	+1·4	0	+1·6	+0·2	+0·9

An important feature of the temperature conditions of the months of November and December was the excess in Baluchistan and North-Western India (including the Punjab, Sind, Rajputana, Bundelkhand, Baghelkhand and the North-Western Provinces). The following gives data :—

Province.	Variation from normal of mean maximum temperature in		Variation from normal of mean minimum temperature in		Variation from normal of mean temperature in	
	November 1897.	December 1897.	November 1897.	December 1897.	November 1897.	December 1897.
Baluchistan (Quetta) .	+9·6	+1·5	+2·2	+3·5	+5·9	+2·5
Punjab . . .	+2·1	—0·8	+3·2	+2·1	+2·7	+0·7
Sind	+4·8	+1·5	+4·8	+2·5	+4·8	+2·0
Rajputana . . .	+1·7	+1·2	+0·4	—0·2	+1·1	+0·5
Bundelkhand (Nowgong)	?	+0·2	+2·7	+0·5	?	+0·4
Baghelkhand (Sutna) .	+2·1	+1·1	+3·0	+0·5	+2·6	+0·8
North-Western Provinces	+1·9	+0·8	+3·4	+0·5	+2·7	+0·7

Another noteworthy feature of the same period was the low temperature prevailing in Persia. The following gives comparative data for the only stations at which observations have been taken for a long enough period to furnish means :—

Station.	Variation from normal of mean monthly temperature in			Mean of period, October to December 1897.
	October 1897.	November 1897.	December 1897.	
Baghdad	0	—2·4	—3·9	—2·1
Bushire	—0·1	—2·6	—1·2	—1·3
Aden	+0·7	—0·1	0	+0·2

The meteorological conditions in Persia during this period were not related to those obtaining in Baluchistan and North-Western India but probably to those in Southern or South-Eastern Europe.

Another interesting and important feature of the period from the 15th of October to the end of December was the high day and low night temperature and hence the abnormally large diurnal range of temperature over the area of deficient and scanty rain in the centre and north of the Peninsula.

The following gives data in illustration for representative stations :—

Station.	Variation from normal of period, October to December of		
	Mean maximum temperature.	Mean minimum temperature.	Mean daily range.
Kurnool	+1·5	−2·0	+3·5
Hyderabad	+1·7	−0·6	+2·3
Bellary	+1·5	−0·3	+1·8
Sholapur	+0·4	−0·6	+1·0
Belgaum	+1·6	−1·5	+3·1
Poona	+1·1	−3·2	+4·3
Malegaon	+0·7	−1·6	+2·3
Indore	+1·1	−1·7	+2·8
Akola	+2·0	−0·8	+2·8
Chanda	+0·3?	−0·8	+1·1

The year.—The following table gives the variations of the mean temperature of Extra-Tropical and Tropical India, and also of the whole of India from the normal, month by month during the year 1897 :—

Month.	Variation from normal of mean daily temperature in		
	Extra-Tropical India. From Table II.	Tropical India. From Table II.	Whole India. From Table II.
	°	°	°
January	+0·7	+2·7	+1·6
February	+1·2	+3·1	+2·0
March	−0·7	+0·9	0
April	−0·2	+0·9	+0·3
May	+1·8	+1·6	+1·7
June	+0·8	+2·3	+1·4
July	+1·2	+1·4	+1·3
August	+0·2	+0·9	+0·5
September	+0·5	+0·5	+0·5
October	+0·6	+0·7	+0·7
November	+1·1	+0·1	+0·7
December	+0·2	−0·5	−0·1
Whole year	+0·6	+1·2	+0·9

The variations of the mean temperature of the Indian area were positive for all months except December. The excess was moderately large in five months, *viz.*, January and February, when the cold weather rains were in defect, and in May, June and July. It was absolutely greatest in February (+2°·0). The excess was a maximum in Tropical India in February (+3°·1) and in Extra-Tropical in May (+1°·8).

The mean temperature of the whole Indian land area for the year was 0°·9 above the normal. The excess was greater in Tropical than in Extra-Tropical India, averaging 1°·2 for the former and 0°·6 for the latter area.

The following table gives the progressive variation of the mean annual temperature of the past 23 years :—

Year.	Number of stations.	Mean anomaly.	Progressive variation.
		°	°
1875	72	−0·29	...
1876	72	−0·08	+0·21
1877	74	+0·17	+0·25
1878	74	+0·62	+0·45
1879	70	−0·13	−0·75
1880	106	+0·13	+0·26
1881	110	−0·01	−0·14
1882	113	−0·11	−0·10
1883	122	−0·48	−0·37
1884	122	−0·61	−0·13
1885	118	−0·29	+0·32
1886	122	+0·08	+0·37
1887	126	−0·23	−0·31
1888	127	+0·36	+0·59
1889	81	+0·86	+0·50
1890	85	+0·13	+0·73
1891	72	−0·03	−0·16
1892	74	+0·66	+0·69
1893	68	−1·33	−1·99
1894	66	+0·11	+1·44
1895	69	+0·35	+0·24
1896	67	+1·30	+0·95
1897	75	+0·90	−0·40

Atmospheric Pressure.

Full information of the barometers in use at Indian observatories and of the methods of reducing the observations and obtaining the mean daily and monthly pressures will be found in the annual reports formerly issued by the Department (*e.g.*, pages 58 and 59 of the report for 1890) and also in page 7 of the monthly review for January 1897.

In Table II of each monthly review the monthly mean daily pressure (corrected for temperature) is given in the fifth figure column, and the variation from the normal in the sixth figure column. The normal monthly mean pressure values were recalculated for all first and second class stations in 1896 and will be found in Table VI of the Annual Summary for that year. The additional data for the years 1891—1896 were utilized in calculating these means, which are hence based upon the whole of the available data up to the end of the past year. The variation data in the monthly eviews for the year 1897 were obtained by a comparison of the actual monthly means with the corresponding normal monthly means published in the Annual Summary for 1896, and the variations of the monthly pressures of all first and second class stations in 1897 are given in Table V (below). The figures in the fifth and sixth figure columns of Table II appended to the present Annual Summary, giving the mean pressure of the air and its variation from the normal for all first and second class stations, are comparable with the corresponding data of previous years published in the annual reports and summaries.

In the seventh figure column of Table II in each monthly review the mean pressures reduced to sea-level and corrected to constant gravity (Lat. 45°) are given. These, it should be noted, are not comparable with the sea-level pressure values of the years 1875—90 as given in the Annual Reports for those years, for previously to 1891 no correction was made to reduce the monthly pressure means to standard gravity.

In Table I of each monthly review and also in that appended to the Annual Summary, the pressure data are given for a fixed hour (*viz.*, 8 A.M. local time) of the day. The second figure column in those tables gives the mean 8 A.M. pressures for the month corrected for temperature. In the third figure column the variations of the mean 8 A.M. pressures from the normal mean 8 A.M. pressures are exhibited.

Normal 8 A.M. mean monthly data for the great majority of stations will be found in the Annual Summary of 1894, Tables VII and VIII.

The mean pressure data for the year 1897 will be found under the headings "Pressure" in Tables I and II appended to the present Annual Summary.

TABLE V.—*Comparison of monthly mean pressures in 1897, with the averages of past years.*

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Burma Coast and Bay Islands.	Port Blair	+·015	—·017	0	+·022	+·020	+·002	+·018	+·002	+·019	+·009	—·030	—·020	+·003
	Rangoon	—·017	—·030	—·002	+·009	+·007	—·021	+·003	—·010	+·023	—·015	—·023	—·010	—·007
	Diamond Island.	—·011	—·035	—·007	+·001	+·005	—·020	+·005	—·003	+·027	—·017	—·025	—·016	—·008
	Cocos Island	—·004	—·045	—·001	?	?	?	?	?	?	+·028	—·001	—·010	
	Akyab	—·012	—·029	+·001	+·013	+·007	—·022	+·015	—·006	+·041	—·020?	—·019	—·017	—·004
Assam	Silchar	—·005	—·042	—·005	+·024	+·006	—·019	+·025	—·010	+·042	—·030	—·031	—·014	—·005
	Sibsagar	—·025	—·039	—·016	+·029	+·008	—·040	+·006	—·014	+·023	—·042	—·018	—·014	—·012
	Dhubri	—·013	—·038	+·002	+·035	0	—·028	+·016	—·005	+·031	—·038	—·012	—·008	—·005
Bengal and Orissa.	Chittagong	—·009	—·043	—·012	+·017	—·007	—·026	+·013	—·013	+·032	—·037	—·030	—·015	—·011
	Narayanganj	—·019	—·037	—·007	+·039	+·001	—·016	+·021	—·007	+·045	—·029	—·027	—·012	—·004
	Calcutta (Alipur.)	—·008	—·031	—·010	+·038	—·002	—·008	+·024	—·004	+·052	—·032	—·030	—·008	—·002
	Saugor Island	—·013	—·042	—·012	+·038	—·005	—·017	+·015	—·013	+·037	—·049	—·038	—·019	—·010
	Burdwan	—·008	—·041	—·004	+·044	—·012	—·019	+·018	—·005	+·047	—·036	—·020	—·008	—·004
	Berhampore	—·006	—·037	—·008	+·043	—·005	—·015	+·015	—·009	+·042	—·035	—·025	—·007	—·004
	False Point	—·012	—·054	—·013	+·040	—·004	—·024	+·013	—·014	+·038	—·051	—·036	—·013	—·011
	Cuttack	—·014	—·056	—·013	+·051	—·011	—·026	+·009	—·018	+·031	—·056	—·033	—·003	—·012

TABLE V.—*Comparison of monthly mean pressures in 1897, with the averages of past years*—contd.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Gangetic Plain and Chota Nagpur.	Hazaribagh	—·002	—·031	—·025	+·045	—·025	—·026	+·008	—·024	+·041	—·043	—·034	—·013	—·011
	Patna	—·012	—·045	—·018	+·031	—·030	—·022	+·005	—·020	+·040	—·034	—·029	—·006	—·012
	Darbhanga	—·019	—·049	—·009	+·040	—·017	—·027	+·022	—·006	+·034	—·036	—·021	—·007	—·008
	Allahabad	—·006	—·038	—·023	+·051	—·031	—·030	+·001	—·025	+·037	—·033	—·026	+·001	—·010
	Lucknow	+·003	—·036	—·026	+·063	—·028	—·023	—·007	—·029	+·025	—·046	—·032	—·002	—·012
Upper Sub-Himalayas.	Dehra Dun	—·003	—·031	—·031	+·045	—·026	—·017	+·001	—·006	+·015	—·036	—·020	—·003	—·009
	Roorkee	—·006	—·041	—·026	+·056	—·023	—·006	+·008	—·004	+·017	—·039	—·030	—·001	—·008
	Meerut	—·005	—·037	—·021	+·061	—·015	—·005	+·007	—·006	+·026	—·023	—·028	+·003	—·004
	Lahore	—·002	—·034	—·042	+·070	—·024	+·006	+·002	+·001	+·025	—·023	—·044	+·006	—·005
	Ludhiana	+·003	—·024	—·034	+·067	—·028	—·008	+·006	—·004	+·013	—·028	—·027	+·010	—·005
Indus Valley and North-West Rajputana.	Peshawar	+·016	—·027	—·021	+·109	+·015	+·043	—·001	+·003	+·016	—·037	—·059	+·011	+·006
	Mooltan	+·001	—·043	—·039	+·067	—·021	+·016	+·003	+·008	+·033	—·015	—·041	+·014	—·001
	Jacobabad	+·005	—·022	—·021	+·071	—·028	+·007	+·003	—·018	+·021	—·009	—·030	+·006	—·001
	Kurrachee	+·015	—·014	—·007	+·050	+·005	—·009	—·014	—·047	—·011	—·006	—·010	+·004	—·004
East Rajputana, Central India and Gujarat.	Jeypore	+·008	—·020	—·017	+·068	—·013	—·006	+·001	—·020	+·029	—·006	—·015	+·015	+0·02
	Ajmere	—·005	—·033	—·029	+·050	—·019	—·021	—·017	—·038	+·017	—·016	—·024	+·004	—·011
	Deesa	+·013	—·020	—·014	+·035	—·009	—·017	—·025	—·051	—·004	—·002	0	+·024	—·006
	Nowgong	—·001	—·039	—·022	+·053	—·016	—·011	+·001	—·022	+·036	—·021	—·018	+·012	—·004
	Agra	—·007	—·039	—·037	+·052	—·033	—·018	—·012	—·028	+·002	—·035	—·039	—·004	—·017
Deccan	Belgaum	+·001	—·028	—·010	+·023	—·003	—·010	—·015	—·025	—·012	+·012	—·003	0	—·006
	Sholapur	—·013	—·054	—·022	+·026	—·001	—·017	—·024	—·036	—·003	—·003	—·004	+·008	—·012
	Poona	—·009	—·033	—·006	+·022	+·011	+·002	—·024	—·034	—·012	+·004	+·004	+·016	—·005
	Akola	—·025	—·060	—·021	+·030	+·007	—·013	—·012	—·022	+·019	—·005	+·001	+·029	—·006
	Buldana	—·007	—·039	—·009	+·032	+·012	—·006	—·017	—·031	+·009	—·008	—·006	+·018	—·004
	Khandwa	0	—·034	—·001	+·034	+·012	—·009	—·014	—·030	+·018	—·007	—·003	+·021	—·001
	Hoshangabad	—·006	—·042	—·014	+·032	—·009	—·015	—·008	—·031	+·034	—·012	—·002	+·021	—·004
	Nagpur	—·011	—·053	—·018	+·038	+·002	—·023	+·001	—·029	+·031	—·016	—·015	+·019	—·006
	Jubbulpore	+·001	—·043	—·015	+·045	—·002	—·013	+·005	—·030	+·036	—·025	—·027	+·007	—·005
	Saugor	—·005	—·030	—·025	+·036	—·012	—·035	—·010	—·025	+·027	—·031	—·021	+·009	—·010
	Sutna	—·004	—·041	—·020	+·048	—·017	—·027	+·001	—·025	+·035	—·029	—·024	+·003	—·008
	Raipur	—·004	—·058	—·014	+·048	—·007	—·026	+·008	—·014	+·046	—·027	—·016	+·023	—·003
	Hyderabad (Deccan.)	—·002	—·046	—·010	+·043	—·003	—·011	—·013	—·019	+·011	—·010	—·034	—·017	—·009
West Coast	Bombay	+·006	—·012	+·003	+·022	+·018	+·006	—·029	—·045	—·017	+·010	—·001	+·013	—·002
	Ratnagiri	+·012	—·012	+·009	+·028	+·020	—·001	—·021	—·031	—·018	+·018	+·005	+·011	+·002
	arwar	+·010	—·011	+·008	+·019	+·013	—·014	—·021	—·030	—·020	+·019	—·006	—·004	—·003
	Cochin	+·017	—·013	+·001	+·011	+·001	—·015	—·012	—·023	—·018	+·021	—·003	—·002	—·003

TABLE V.—*Comparison of the monthly mean pressures in 1897, with the averages of past years* —concld.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
South India	Salem	+·010	−·035	−·023	+·017	−·012	−·026	−·017	−·033	−·014	+·005	−·015	−·013	−·013
	Mercara	+·004	−·006	−·002	+·015	+·003	−·011	−·013	−·018	−·011	+·017	−·003	−·006	−·003
	Chitaldroog	+·017	−·035	+·004	+·030	−·011	−·001	−·019	−·016	−·003	+0·15	−·021	−·011	−·004
	Bangalore	+·002	−·031	−·017	+·024	−·002	−·012	−·012	−·019	−·011	+·005	−·012	−·013	−·008
	Hassan	+·024	−·026	+·005	+·027	−·011	0	−·017	−·022	−·012	+·005	−·024	−·017	−·006
	Mysore	+·015	−·033	+·011	+·024	−·015	+·003	−·010	−·017	−·006	+·012	−·021	−·012	−·003
	Trichinopoly	−·008	−·040	−·024	+·025	−·015	−·020	−·011	−·024	−·006	+·007	−·009	−·011	−·011
	Madras	−·006	−·042	−·020	+·041	+·002	−·019	−·007	−·025	+·009	−·006	−·021	−·013	−·009
	Bellary	−·009	−·054	−·018	+·026	−·009	−·018	−·023	−·025	−·009	−·007	−·013	−·004	−·014
	Cocanada	0	−·052	+·002	+·063	?	−·018	+·003	+·004	+·033	−·046	−·055	−·023	?
	Vizagapatam	−·015	−·061	−·020	+·036	−·002	−·030	+·010	−·012	+·035	−·038	−·028	−·008	−·011
Hill Station, Baluchistan.	Quetta	−·010	−·041	−·024	+·051	+·017	+·026	+·017	−·004	+·022	+·015	+·019	+·014	+·009
Hill Stations, Northern India.	Leh	−·028	+·025	−·059	+·020	?	?	?	?	?	?	+·076	−·012	?
	Srinagar	+·028	+·024	−·035	+·072	+·023	+·032	+·015	+·005	+·035	−·021?	−·033	−·026	+·010
	Murree	−·021	−·025	−·056	+·044	+·002	+·014	+·012	+·006	+·029	+·002	+·009	+·023	+·003
	Kailang	−·034	−·022	−·074	+·017	+·010	−·010	−·021	−·025?	−.021?	−·039?	−·013	?	?
	Simla (Ridge)	+·009	−·005	−·035	+·054	+·013	+.005	+·011	+·006	+·018	−·008	−·001	+·009	+·006
	Chakrata	+·007	−·012	−·034	+·039	+·017	+·007	+·014	+ ·008	+·016	−·011	−·003	−·007	+·003
	Ranikhet	+·029	−·001	−·006	+·054	+·019	0	+·007	+·004	+·028	+·002	+·003	+·012	+·013
	Katmandu	−·027	−·048	−·028	+·022	−·001?	+·008	+·009	−·021?	−·023?	?	?	−·020	?
	Darjeeling	+·012	−·019	+·002	+·056	+·017	−·004	+·013	+·011	+·026	+·009	+·004	+·017	+·012
Hill Stations, Central India.	Mount Abu	−·030	−·045	−·033	+·024	−·001	+·004	−·021	−·045	+·004	−·022	−·015	+·006	−·015
	Pachmarhi	+·025	−·028	−·018	+·035	+·008	−·006	+·011	−·021	+·032	−·021	−·015	+·010	+·001
	Chikalda	+·006	−·028	−·006	+·044	+·026	+·009	+·008	−·015	+·030	−·010	−·010	+·009	+·005
Hill Station, Southern India.	Wellington	+·015	−·018	−·005	+·008	−·004	−·016	−·017	−·019	−·014	+·008	−·014	−·017	−·008
Extra Indian Stations.	Muscat	+·025	+·004	+·014	+·034	+·003	+·069	−·018	−·038	+·012	+·013	−·019	−·007	−·008
	Aden	+·008	+·010	+·006	+·017	+·007	+·005	−·010	−·033	−·007	+·027	+·002	+·008	+·003
	Perim	+·014	+·028	+·030	+·025	+·011	+·027	+·007	−·002	+·003	+·047	−·002	+·019	+·017
	Zanzibar	+·026	+·016	+·035	+·076	+·009	+·031	−·016	−·007	+·002	+·027	−·025	−·011	+·014
	Port Victoria (Seychelles).	−·004	?	+·007	+·020	−·026	−·019	−·048	−·015	−·013	+·030	−·012	−·007	?

The following tables give summaries of the pressure variation data according to the two groups of divisions employed in the corresponding tables of temperature variation data, that is, for the eighteen divisions for

which the variation data were given in the "Geographical Summaries" in the annual reports previous to 1891 and for the eleven meteorological provinces in Table I of each monthly review :—

TABLE VI.—*Geographical summary of the pressure variation data of Table II in the monthly weather reviews of 1897.*

METEOROLOGICAL PROVINCE.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
		"	"	"	"	"	"	"	"	"	"	"	"	"
North-West Himalaya .	6—7	—·001	—·002	—·043	+·043	+·014	+·008	+·006	+·001	+·018	—·013	+·005	0	+·003
Sikkim Himalaya and Nepal.	1—2	—·008	—·034	—·013	+·039	+·008	+·002	+·011	—·005	+·002	+·009	+·004	—·002	+·001
Punjab Plains . .	4	+·005	—·032	—·034	+·078	—·015	+·014	+·003	+·002	+·022	—.026	—·043	+·010	—·001
Gangetic Plain . .	8	—·007	—·040	—·024	+·050	—·025	—·019	+·003	—·016	+·025	—·035	—·028	—·002	—·010
Western Rajputana .	4	+·001	—·025	—·019	+·045	—·008	—·004	—·014	—·040	+·003	—·010	—·014	+·010	—·006
Eastern Rajputana and Central India.	5	—·001	—·033	—·023	+·051	—·015	—·020	—·005	—·026	+·019	—·021	—·020	+·009	—·006
Nerbudda Valley .	3	—·002	—·040	—·010	+·037	0	—·012	—·006	—·030	+·029	—·015	—·011	+·016	—·004
Chota-Nagpur . .	1	—·002	—·031	—·025	+·045	—·025	—·026	+·008	—·024	+·041	—·043	—·034	—·013	—·011
Lower Bengal . .	5	—·011	—·038	—·008	+·040	—·005	—·015	+·019	—·008	+·045	—·036	—·028	—·011	—·005
Assam and Cachar .	3	—·014	—·040	—·006	+·029	+·005	—·029	+·016	—·010	+·032	—·037	—·020	—·012	—·007
Orissa . . .	2	—·013	—·055	—·013	+·046	—·008	—·025	+·011	—·016	+·035	—·054	—·035	—·008	—·011
Central Provinces (South) and Berar.	6	—·003	—·044	—·014	+·038	+·008	—·011	0	—·022	+·028	—·015	—·010	+·018	—·002
Konkan . . .	3	+·009	—·012	+·007	+·023	+·017	—·003	—·024	—·035	—·018	+·016	—·001	+·007	—·001
Malabar Coast . .	1	+·017	—·013	+·001	+·011	+·001	—·015	—·012	—·023	—·018	+·021	—·003	—·002	—·003
Deccan, Hyderabad and Mysore.	10	+·003	—·035	—·007	+·026	—·004	—·008	—·017	—·023	—·007	+·005	—·013	—·006	—·007
Eastern Coast and Carnatic.	4—5	—·004	—·046	—·017	+·036	—·007	—·023	—·004	—·018	+·011	—·016	—·026	—·014	—·011
Arakan and Pegu .	4	—·012	—·034	—·005	+·010	+·003	—·022	+·009	—·008	+·031	—·022	—·024	—·015	—·007
Bay Islands . .	1—2	+·006	—·031	—·001	+·022	+·020	+·002	+·018	+·002	+·019	+·019	—·016	—·015	+·004
Extra-Tropical India .	40—42	—·004	—·030	—·023	+·047	—·007	—·009	+·004	—·015	+·024	—·024	—·019	+·001	—·004
Tropical India . .	31—33	—·001	—·036	—·008	+·028	+·002	—·013	—·006	—·020	+·009	—·006	—·016	—·003	—·006
Whole India . .	72—75	—·003	—·033	—·016	+·039	—·004	—·011	—·001	—·017	+·018	—·016	—·018	—·001	—·005

TABLE VII.—*Variation of the mean pressure of each month of 1897, from the normal in the eleven meteorological provinces of India (derived from the data of Table I of the monthly weather reviews, 1897).*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
Burma Coast and Bay Islands .	—·012	—·032	—·011	+·010	+·006	—·014	+·009	—·009	+·039	—·006	—·009	—·009	—·003
Burma Inland . . .	?	?	?	+·023	+·006	—·024	+·009	+·001	+·044	—·021	—·009	—·008	?
Assam	—·022	—·034	—·010	+·034	—·005	—·017	+·024	—·007	+·036	—·032	—·008	—·001	—·004
Bengal and Orissa . . .	—·011	—·041	—·016	+·040	—·009	—·017	+·017	—·010	+·044	—·039	—·015	—·001	—·005

TABLE VII.—*Variation of the mean pressure of each month of 1897, from the normal in the eleven meteorological provinces of India derived from the data of Table I of the monthly weather reviews 1897*—concld.

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
Gangetic Plain and Chota Nagpur.	—·005	—·036	—·026	+·048	—·028	—·027	+·001	—·020	+·042	—·037	—·021	—·002	—·009
Upper Sub-Himalayas . .	—·004	—·028	—·036	+·061	—·024	—·003	+·001	—·003	+·024	—·027	—·020	+·011	—·004
Indus Valley and North West Rajputana.	+·005	—·029	—·032	+·068	—·013	+·014	—·004	—·009	+·014	—·020	—·027	+·009	—·002
East Rajputana, Central India and Gujarat.	+·004	—·024	—·018	+·047	—·006	—·006	—·007	—·027	+·017	—·005	+·002	+·017	—·001
Deccan	—·005	—·045	—·016	+·038	+·004	—·010	+·001	—·021	+·029	—·008	+·002	+·015	—·001
West Coast	+·004	—·021	—·006	+·018	+·017	—·006	—·022	—·026	—·017	+·017	+·008	—·001	—·003
South India	+·001	—·047	—·022	+·027	0	—·011	—·008	—·017	+·001	—·003	0	—·006	—·007

1.—The cold weather period.—The mean pressure of the Indian area was in very slight defect in January and in large defect in February.

The weather was less disturbed than usual throughout the period in North-Western India and the precipitation was below the normal over the plains of India.

Pressure in both months was in slight to moderate relative excess in North-Western India and the western half of the Peninsula and in slight defect in Bengal, the centre and east of the Peninsula and the Central Provinces. The following table gives the mean pressure anomalies in different parts of India for the period :—

PROVINCE.	PRESSURE ANOMALY.		
	January 1897.	February 1897.	Mean of January and February 1897.
	"	"	"
Punjab	+·002	+·005	+·004
Sind	+·015	+·022	+·019
North-Western Provinces . . .	—·003	+·003	0
Rajputana	+·005	+·013	+·009
Central India	+·008	+·006	+·007
Bihar	—·008	—·002	—·005
Chota-Nagpur	+·008	+·007	+·008
Bengal	—·009	—·006	—·008
Assam	—·019	+·002	—·009
Berar	—·009	—·013	—·011
Central Provinces	0	—·012	—·006
Deccan	0	—·010	—·005
Bombay Coast	+·007	+·015	+·011
Madras Coast	+·002	—·012	—·005
Burma	—·009	+·004	—·003
Andamans (Port Blair) . . .	+·018	+·019	+·019
(Ceylon) Colombo . . .	+·007	+·001	+·004

Pressure in January was in moderate relative defect at the level of the hill stations in Upper India, and in slight to moderate excess at the same level in the Central and Eastern Himalayas. It was, on the other hand, in general relative excess at all the Himalayan hill stations in February and hence was also in excess on the mean of the period. The following gives data for eight pairs of stations :—

HILL AND PLAIN STATIONS.	VERTICAL PRESSURE ANOMALY.		
	January 1897.	February 1897.	Mean of period January and February 1897.
	"	"	"
Leh and Lahore	—·026	+·059	+·017
Murree and Peshawar . . .	—·018	+·036	+·009
Simla and Ludhiana	—·004	+·015	+·006
Ranikhet and Bareilly . . .	+·028	+·031	+·030
Chakrata and Roorkee . . .	+·030	+·034	+·032
Darjeeling and Dhubri . . .	+·024	+·019	+·022
Mount Abu and Deesa . . .	—·020	—·011	—·016
Quetta and Jacobabad . . .	—·018	—·010	—·014

The preceding data show that the vertical pressure anomalies of the period at the Himalayan stations were positive and small to moderate in amount. Weather was, as is usual with these conditions, less disturbed than usual in Northern India.

Pressure was in defect over the Indian area in January by amounts averaging —·001″ for Tropical India and —·004″ for Extra-Tropical India and in February was deficient by amounts averaging —·036″ in Tropical India and —·030″ in Extra-Tropical India.

The following data illustrate the local conditions in India in January and February :—

Meteorological Province.	Pressure anomaly.		
	January 1897.	February 1897.	Mean of period, January and February 1897.
	"	"	"
Burma Coast and Bay Islands	—·009	+·004	—·003
Assam	—·019	+·002	—·009
Bengal and Orissa	—·008	—·005	—·007
Gangetic Plain and Chota-Nagpur	—·002	0	—·001
Upper Sub-Himalayas	—·001	+·098	+·004
Indus Valley and North-West Rajputana	+·008	+·007	+·008
East Rajputana, Central India and Gujarat	+·007	+·012	+·010
Deccan	—·002	—·009	—·006
West Coast	+·007	+·015	+·011
South India	+·004	—·011	—·004

II.—The hot weather period.—Weather was unusually disturbed in March over Northern India, two storms of the cold-weather type passing across Northern India during the month. April was also slightly more disturbed than usual, more especially in Kashmir and the North Punjab. May was a very dry and hot month and temperature was excessive and largely above the normal, more especially in Northern and Central India, as was also the case in May 1894, 1895 and 1896.

The mean pressure of the Indian area was in moderate defect in March, in large excess in April and in slight defect in May, as is shown by the following statement :—

Month.	Mean pressure variation.			
	Whole India.		Tropical India.	Extra-Tropical India.
	From data of Table I.	From data of Table II.		
	"	"	"	"
March	—·020	—·016	—·008	—·023
April	+·039	+·039	+·028	+·047
May	—·005	—·004	+·002	—·007

Pressure averaged ·006" in excess for the whole period.

The following table gives the corresponding temperature variations for the whole of India :—

Month.	Mean temperature variation.		
	Whole India. From data of Table II.	Tropical India.	Extra-Tropical India.
	°	°	°
March	0	+0·9	—0·7
April	+0·3	+0·9	—0·2
May	+1·7	+1·6	+1·8

A comparison between the data of the two tables indicates no general relation between the pressure and temperature variations of the period over India. The former are almost certainly determined in part by more general and widely-spread actions than the variations of temperature in India itself.

The following gives the local variations of pressure anomalies for each month and for the whole period in each of the eleven meteorological provinces :—

Meteorological Province.	Pressure anomaly.			
	March 1897.	April 1897.	May 1897.	Mean of period, March to May 1897.
	"	"	"	"
Burma Coast and Bay Islands	+·009	—·029	+·011	—·003
Burma Inland	?	—·016	+·011	?
Assam	+·010	—·005	0	+·002
Bengal and Orissa	+·004	+·001	—·004	0
Gangetic Plain and Chota-Nagpur	—·006	+·009	—·023	—·007
Upper Sub-Himalayas	—·016	+·032	—·019	—·004
Indus Valley and North-West Rajputana	—·012	+·029	—·008	+·003
East Rajputana, Central India and Gujarat	+·002	+·008	—·001	+·003
Deccan	+·004	—·001	+·009	+·004
West Coast	+·014	—·021	+·022	+·005
South India	—·002	—·012	+·005	—·003

The local variations were small in amount in March over the whole of India except the Punjab, where pressure was in moderate relative defect. The local variations were larger and more broadly marked in April and May. In the former month, pressure was in moderate to considerable excess in Upper India and in moderate to considerable defect in Southern India, Ceylon, the south of the Bay, Lower Burma and Tenasserim. The chief features of the pressure conditions of the month of May were :—

1st—As light to moderate deficiency in Northern India and the eastern states of Central India. The deficiency was most pronounced in the Gangetic Plain between Lahore and Patna.

2nd—A slight to moderate excess in the Peninsula. The excess was, on the whole, most pronounced in the west coast districts, Berar, Gujarat and Kathiawar.

The pressure anomalies of the month of May were large, and were such as invariably accompany the prevalence of excessive temperature and exaggerated hot-weather conditions in Northern India, antecedent to the rains.

The following states more fully the chief abnormal features of the pressure conditions of May 1897.

The mean pressure of the Indian area was slightly below the normal (·005″). Pressure was, relatively to the general condition, more or less considerably in defect in Northern India and in excess in the Peninsula. The general contrast of conditions between Tropical and Extra-Tropical India, it may be noted, almost invariably obtains in years with strongly marked hot weather conditions (following milder winters than usual in the Western Himalayas). The local deficiency, as already stated, was most marked in Central Bihar, the North-Western Provinces, and the East and South Punjab and the local excess was greatest in the west coast districts from Rajkot to Karwar.

The following gives data for stations in these areas of greatest excess and deficiency of pressure :—

Area of greatest deficiency of pressure.			Area of greatest excess of pressure.		
Station.	Variation of mean 8 A.M. pressure of month of May from normal.	Anomaly.	Station.	Variation of mean 8 A.M. pressure of month of May from normal.	Anomaly.
	″	″		″	″
Jacobabad .	—·033	—·028	Bhuj . .	+·017	+·022
Mooltan . .	—·032	—·027	Rajkot . .	+·022	+·027
Sirsa . .	—·030	—·025	Belgaum .	+·015	+·020
Ludhiana . .	—·038	—·033	Akola . .	+·016	+·021
Dehra Dun .	—·035	—·030	Amraoti . .	+·016	+·021
Roorkee . .	—·032	—·027	Khandwa . .	+·016	+·021
Agra . .	—·028	—·023	Bombay . .	+·019	+·024
Lucknow . .	—·028	—·023	Ratnagiri .	+·028	+·033
Allahabad . .	—·033	—·028	Goa . .	+·029	+·034
Patna . .	—·034	—·029	Karwar . .	+·023	+·028
Gaya . .	—·035	—·030	Mercara . .	+·019	+·024

In the following table are given corresponding data for the month of May 1896, showing the general similarity of the abnormal features of the mean distribution of pressure in the two months :—

Station.	Area of greatest deficiency of pressure.		Station.	Area of greatest excess of pressure.	
	Variation of mean 8 A.M. pressure of May 1896 from normal.	Anomaly.		Variation of mean 8 A.M. pressure of May 1896 from normal.	Anomaly.
	″	″		″	″
Mooltan . .	—·018	—·031	Rajkot . .	+·054	+·041
Ludhiana . .	—·018	—·031	Bombay . .	+·044	+·031
Sirsa . . .	—·010	—·023	Ratnagiri . .	+·050	+·037
Delhi . . .	—·011	—·024	Goa . . .	+·054	+·041
Agra . . .	—·012	—·025	Karwar . .	+·046	+·033
Allahabad . .	—·013	—·026	Mangalore . .	+·046	+·033
Lucknow . .	—·011	—·024	Calicut . .	+·040	+·027
Patna . . .	—·011	—·024	Khandwa . .	+·045	+·032
Gaya . . .	—·010	—·023	Indore . .	+·050	+·037
Sambalpur . .	—·019	—·032	Neemuch . .	+·053	+·040
Raipur . .	—·010	—·023	Deesa . . .	+·048	+·035

The data of the fourth table of the preceding page show that the anomalies of the pressure distribution in India were similar in character in March and May, and were opposite in character in April, but were small in amount. Hence the mean anomalies of the period were similar to those of March and May, but less in amount. The chief features were :—

(1) A slight relative deficiency of pressure in Northern India, on the whole greatest in the South Punjab and the Gangetic Plain.

(2) A slight relative excess of pressure in Burma, the southern half of the Bay and the Peninsula, most marked in the west coast districts.

The most interesting feature of the pressure distribution of the period was the vertical pressure anomalies. They were generally negative in March and April in Upper India and positive for the remainder of Northern India; they were large and positive in May. The peculiar features of the vertical pressure anomalies in March and April indicated by the relatively low pressure at the level of the hill stations in Upper India were directly related to the stormy weather in Chitral, Kashmir and the North Punjab.

The following gives the vertical pressure anomalies as

determined from the pressure variations of eight pairs of stations in Northern and Central India :—

Hill and plain stations.	Vertical pressure anomaly.			
	March 1897.	April 1897.	May 1897.	Mean of period, March to May 1897.
	"	"	"	"
Quetta and Jacobabad	—·003	—·013	+·050	+·011
Kailang and Lahore	—·032	—·053	+·034	—·017
Murree and Peshawar	—·018	—·050	+·005	—·021
Simla and Ludhiana	+·002	—·019	+·054	+·012
Ranikhet and Bareilly	+·006	+·006	+·047	+·020
Darjeeling and Dhubri	+·001	+·014	+·025	+·013
Mount Abu and Deesa	—·022	—·005	—·002	—·010
Pachmarhi and Hoshangabad	—·009	+·001	+·012	+·001

The vertical anomalies were large in amount and positive in May for all the hill stations in Northern India, except Mount Abu. This large excess of pressure at the hill stations in May was chiefly a result of the excessive temperature prevailing at the level of the plains in Northern India.

A reference to the Annual Summary for 1896 will show that the chief features of the horizontal and vertical pressure anomalies of the hot-weather period of 1897 were similar in character to those of the corresponding period of the year 1896, but were somewhat less marked.

III.—The south-west monsoon period.—The south-west monsoon current in the Arabian Sea was established in the second week of June, and hence about a week later than usual. It gave very stormy weather in the neighbourhood of Socotra from the 7th to the 10th. The current, as shown by the occurrence of heavy general rain, apparently advanced or extended nearly due eastwards from the African coast across the centre of the Arabian Sea, and was established on practically the same date over the whole west coast from Mangalore to Bombay, *viz.*, on the 13th or 14th. The current extended rapidly into the interior and gave a burst of rain to Central India and Rajputana, commencing on 13th or 14th, and to the East Punjab on the 22nd and 23rd. The current was feeble and withdrew from Upper India on the 24th and from Central India, the Gangetic Plain and the Central Provinces on the 24th and 25th. A second and stronger advance of monsoon winds across the West Coast commenced on the 6th July and monsoon conditions were re-established in North-Western India on the 11th. The advance was, however, not so strong as usual in July and a short break in the rains occurred in Upper India from the 25th to the 29th of July. The Bombay current was unusually steady in August and the first-half of September and began to show signs of weakness in the third week of that month, when it retreated slowly from the Punjab, Rajputana and the western districts of the North-Western Provinces in the fourth week of that month. The variations in the strength of the Bay of Bengal current were parallel with those in the Arabian Sea current. The current was established about the normal date (13th of June) in Bengal. The squally weather in front of the advancing current developed into a cyclonic storm of moderate intensity. It passed west-north-westwards from the head of the Bay to Bundelkhand. A break in the rains set in over Bihar on the 27th of June and over Bengal on the 29th and lasted until the 5th of July. The monsoon current in the Bay, although of average strength, was unsteady in July. Two storms formed, one in the north of the Bay and the other in Central Bengal. They advanced almost due westwards across the belt of country stretching between Orissa and Kathiawar. Their tracks were in part determined by the antecedent pressure conditions and they modified to some extent the anomalies of the period.

The monsoon current in the Bay was very steady in August and September. It retreated down the Gangetic Plain and across Central India in the normal manner, and withdrew from North-Eastern and Central India and the Central Provinces about the normal date.

The following gives the chief features of the pressure conditions during the period from July to September :—

(1) The feeble advance of the monsoon currents in June exercised little influence on the pressure conditions, and the pressure anomalies of that month were generally similar to those of May. The full establishment of the monsoon in July was followed by a reversal of the pressure conditions, which was permanent throughout the season, and the anomalies of July, August and September were hence generally opposite in sign to those of May and June. The following gives data showing these features :—

Province.	Pressure anomaly.		
	May 1897.	June 1897.	Mean July, August and September 1897.
	"	"	"
Bengal	—·006	—·005	+·013
North-Western Provinces and Oudh	—·022	—·007	+·004
Rajputana	—·009	—·001	0
Punjab	—·015	+·019	+·004
Central India	—·009	+·003	—·002
Central Provinces	+·006	—·005	+·006
Berar	+·021	+·006	+·005
Bombay Coast	+·022	+·005	—·025
Deccan	+·009	+·007	—·013
Madras Coast	+·002	+·002	—·001

(2) Pressure in the Indian area was in slight to moderate defect from May to August and in moderate excess in September. The following gives data :—

Month.	Mean variation of pressure from normal.		
	Extra-Tropical India.	Tropical India.	Whole India.
	"	"	"
May	—·007	+·002	—·004
June	—·009	—·013	—·011
July	+·004	—·006	—·001
August	—·015	—·020	—·017
September	+·024	+·009	+·018

(3) Pressure was in July, August and September, relatively to the general condition, normal or in local excess in North-Eastern India, the Central Provinces, the Punjab and Burma. As the local conditions in June were the inverse of the local variations of July, August and September, the mean conditions of the whole period were similar in character to those of the latter months, but smaller in amount. The excess was most marked in Bengal and Orissa. The following gives comparative data :—

Province.	Pressure anomaly.			
	July 1897.	August 1897.	September 1897.	Mean of period, July to September 1897.
	"	"	"	"
Burma	+·009	+·010	+·017	+·012
Bengal	+·014	+·005	+·019	+·013
Orissa	+·013	+·003	+·025	+·014
Bihar	+·002	—·001	+·017	+·006
Chota Nagpur	—·001	—·008	+·019	+·003
North-Western Provinces and Oudh.	0	+·002	+·009	+·004
Central Provinces	+·009	—·006	+·016	+·006
Punjab	+·001	+·014	—·002	+·004

(4) Pressure was, relatively to the general condition, in defect or the anomalies were negative, over the remainder of India, as shown by the following data :—

Province.	Pressure anomaly.			
	July 1897.	August 1897.	September 1897.	Mean of period, July to September 1897.
	"	"	"	"
Central India	+·001	—·011	+·005	—·002
Rajputana	—·002	—·002	+·003	0
Sind	—·003	—·009	—·012	—·008
Kathiawar and Cutch	—·011	—·028	—·025	—·021
Gujarat	—·038	—·040	—·045	—·041
Konkan	—·022	—·012	—·037	—·024
Malabar	—·022	—·010	—·047	—·026
Bombay Deccan	—·016	—·010	—·023	—·016
Madras Deccan	—·009	—·003	—·020	—·011

The deficiency was most pronounced at the West Coast stations for which data are given below:—

Station.	Pressure anomaly.			
	July 1897.	August 1897.	September 1897.	Mean of period, July to September 1897.
	"	"	"	"
Bombay	—·036	—·024	—·039	—·033
Ratnagiri	—·020	—·007	—·029	—·019
Mangalore	—·025	—·012	—·046	—·028
Karwar	—·022	—·010	—·044	—·025
Calicut	—·020	—·009	—·048	—·026
Cochin	—·020	—·008	—·048	—·025
Colombo	—·021	—·010	—·055	—·029

(5) The vertical pressure anomalies were small and apparently of little significance throughout. As might be expected from the temperature conditions prevailing in the Gangetic Plain, they were generally positive. The following gives data for six pairs of stations :—

Pair of stations.	Vertical pressure anomaly.				
	June 1897.	July 1897.	August 1897.	September 1897.	Mean of period, June to September 1897.
	"	"	"	"	"
Kailang and Lahore	—·016	—·023	—·026?	—·046	—·028
Murree and Peshawar	—·019	+·019	+·007	+·021	+·007
Quetta and Jacobabad	+·017	+·008	+·011	+·005	+·010
Simla and Ludhiana	+·015	+·020	+·015	+·005	+·015
Darjeeling and Dhubri	+·007	—·017	+·009	—·030	—·008
Mount Abu and Deesa	+·002	—·007	+·013	—·004	+·001

IV.—The retreating south-west monsoon period. —The chief feature of this period was the scanty and deficient rainfall in the Deccan and North Madras. A storm which formed in the Bay at the commencement of the month of October advanced by a curved path through the Circars and the Central Provinces into Bihar. It gave very heavy rain in Bihar and North Bengal. Madras received light to moderate rain in the second and third weeks of the month. The pressure conditions were probably normal at this stage, but abnormal features developed in the fourth week of the month which were remarkably persistent during the remainder of the period. The chief abnormal features were :—

(1) Relatively low pressure in Lower Burma, the Andaman Sea and the south-east of the Bay.

(2) Relative excess of pressure in the Peninsula, more especially in the North Deccan.

With these two features were associated, (1) heavier rain than usual in Tenasserim and the Andamans, (2) deficient rain in the interior of the Peninsula, (3) fewer cyclonic storms than usual. The storms of the period marched northwards instead of westwards, with the exception of a very feeble diffused disturbance in the third week of November.

Southern India, more especially the Coromandel coast districts south of Nellore, obtained occasional rain until the end of the month of December. These showers were chiefly received when the north-east winds of the season were blowing more strongly than usual on that coast. The Bay was unusually free from storms during the whole period. A severe cyclonic storm of small extent passed over the north-east of the Bay between the 20th and 24th of October, and the storm-wave accompanying it inflicted great damage in the low-lying tracts of the Chittagong district.

A diffused disturbance passed westwards across the Bay from the Andamans in the fourth week of November. A storm of unusual character formed in the centre of the Bay in the fourth week of December. It marched northwards up the Bay, but gradually filled up when approaching the north of the Bay and it hence failed to reach land.

The following gives the chief abnormal features of the period :—

(1) Pressure was in slight to moderate defect over the whole Indian area in October and November and practically normal in December. The following gives data :—

Area.	Mean variation of pressure from normal.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Extra-Tropical India	—·024	—·017	+·001	—·013
Tropical India	—·006	—·016	—·003	—·008
Whole India	—·016	—·018	—·001	—·012

The following table gives the pressure anomalies in the eleven meteorological provinces for each month of the period and for the whole period :—

Meteorological Provinces.	Pressure anomaly.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Burma Coast and Bay Islands	+·010	—·001	—·012	—·001
Burma Inland	—·005	—·001	—·011	—·006
Assam	—·016	0	—·004	—·007
Bengal and Orissa	—·023	—·007	—·004	—·011
Gangetic Plain and Chota-Nagpur	—·021	—·013	—·005	—·013
Upper Sub-Himalayas	—·011	—·012	+·008	—·005
Indus Valley and North-West Rajputana.	—·004	—·019	+·006	—·006
East Rajputana, Central India and Gujarat.	+·011	+·010	+·014	+·012
Deccan	+·008	+·010	+·012	+·010
West Coast	+·033	+·016	—·004	+·015
South India	+·013	+·008	—·009	+·004

(2) Pressure, as stated above, was in local defect in the south-east of the Bay, the Andaman Sea and Lower Burma during the whole of the period, from about the middle of October to December. This feature is shown by the data of the following stations given below :—

Station.	Pressure anomaly.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Port Blair	+·025	—·022	—·023	—·007
Tavoy	+·028	—·005	—·020	+·001
Diamond Island	+·004	—·004	—·010	—·003
Rangoon	—·001	—·007	—·013	—·007
Akyab	—·003?	0	—·016	—·006
Chittagong	—·015	—·005	—·011	—·010
Saugor Island	—·041	—·024	—·015	—·027

The local deficiency was small in amount but was very persistent, and was evidently directly related to the abnormal features of the weather of the period and of the rainfall distribution.

(3) Pressure was throughout the same period in local excess, relatively to the remainder of India, in the centre and north of the Peninsula, the Central Provinces, Berar,

Central India, Gujarat and Kathiawar. This is indicated by the following comparative data:—

Division.	Pressure anomaly.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Kathiawar	+·026	+·023	+·020	+·023
Gujarat	+·009	+·021	+·013	+·014
Central India (West)	+·025	+·022	+·031	+·026
Berar	+·013	+·022	+·028	+·021
Central Provinces	+·004	+·003	+·015	+·007
Deccan	+·014	+·018	+·001	+·011
Madras (East Coast, North)	—·006	+·002	+·003	0
Do. do. South	+·013	+·003	—·019	—·001
Mysore	+·023	+·003	—·017	+·003
South India	+·021	+·012	—·010	+·008
Konkan	+·035	+·021	+·008	+·021
Malabar	+·030	+·009	—·019	+·007

(5) Pressure was in moderate relative defect in October and November in Northern India, but this feature disappeared in the beginning of December.

(6) A noteworthy feature of the period was the large excess of pressure in the Persian area which was apparently related to conditions in Southern Europe and Asia Minor and not to conditions in India:—

Station.	Variation of pressure from normal.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Baghdad	+·108(?)	+·047	+·019	+·058
Bushire	+·024	+·039	+·030	+·031
Jask	+·034	—·016	—·001	+·006
Aden	+·024	—·009	—·002	+·004

(7) The vertical pressure anomalies were generally positive throughout the period. They were large in November, moderate in October and small in December. The following gives the vertical pressure anomalies as determined from the pressure variations of seven pairs of stations:—

Pairs of stations.	Vertical pressure anomaly.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	"	"	"	"
Kailang and Lahore	—·016	+·031	—·037	—·007
Quetta and Jacobabad	+·019	+·057	+·010	+·029
Murree and Peshawar	+·040	+·056	+·011	+·036
Simla and Ludhiana	+·019	+·025	—·007	+·012
Ranikhet and Bareilly	+·027	+·028	+·007	+·021
Darjeeling and Dhubri	+·021	+·002	+·015	+·013
Mount Abu and Deesa	—·019	—·019	—·013	—·017

The following gives a statement of the cyclones and more important cyclonic storms which affected the Indian area during the south-west monsoon of 1897, drawn up in the form adopted in the Annual Reports of the Meteorology of India for the years, 1886—90. The tracks of twelve of these storms are charted in plate VI:—

No.	Month.	Date.	Greatest barometric depression.	Character of storm.	Details of storm.
1	May	11th to 15th	" ·17	Cyclonic storm of feeble intensity.	This storm formed in the North Andaman Sea in front of the first temporary advance of humid south-west winds over the south-east of the Bay on the 11th and 12th. It marched northwards into Lower Burma on the early morning of the 14th and broke up during the day. The storm was of feeble intensity throughout and belonged to a class of common occurrence in April and May in the Bay. It however initiated a burst of heavy rain in Burma.
2	June	7th to 11th	" ·35	Cyclonic storm of moderate intensity.	This storm was generated in the west of the Arabian Sea near and to the north of Socotra in front of the first advance of the monsoon current on the 7th and 8th. It intensified slowly on the 9th and 10th and marching northwards towards the Arabian Coast probably passed into Arabia during the 11th. The vessels passing through the storm experienced very stormy weather and winds of force 6 to 9. The S. S. *Sultan* and *Aden* were wrecked off the east coast of Socotra during this storm.

No.	Month.	Date.	Greatest barometric depression.	Character of storm.	Details of storm.
3	June .	15th to 20th	″ ·24	Cyclonic storm of moderate intensity.	This storm formed in front of the advancing monsoon current over the head of the Bay on the 14th and 15th. It developed slightly during the next two days and, moving westwards, passed inland across the Orissa coast a little to the north of False Point on the early morning of the 17th. It continued to drift along a west-north-west track on the 17th and 18th and was central in about Lat. 24½° N and Long. 81° E. at 8 A.M. of the 19th. The storm recurved to west during the next 24 hours and passed into Central India where it filled up on the 21st. It occasioned a deluge of rain in Bundelkhand and Bhopal and moderate to heavy rain over the whole tract of the country passed over by it. The strongest winds experienced by ships in the storm area in the Bay were of force 7.
4	July .	7th to 10th	″ ·2	Cyclonic storm of feeble intensity.	This storm was generated in the north-west angle of the Bay on the 7th July. It intensified slowly on the 8th during which it was almost stationary, and, advancing rather rapidly, westwards on the 9th, passed into the eastern districts of the Central Provinces on the 10th where it broke up during the succeeding 24 hours. The storm was of slight intensity throughout. It however occasioned a moderate burst of rain in South Bengal, Orissa, Chota Nagpur and the Central Provinces. The strongest winds in the Bay during the storm were of force 7.
5	July .	10th to 13th	″ ·25	Cyclonic storm of moderate intensity.	This storm belonged to a class of occasional occurrence in the early stages of the monsoon. A wave of low pressure preceded and accompanied an advance of monsoon winds and heavy rain along the West Coast. The depression in the low pressure wave increased slightly with its northward movement, and when the low pressure wave approached Kathiawar a cyclonic storm was formed between the Bombay and Kathiawar coasts on the 9th and 10th. It was displaced slowly northwards into Kathiawar and Cutch at an average rate of about 90 miles per diem from the 10th to the 12th and was central a little to the south of Bhuj at 8 A.M. of the latter day. It filled up rapidly during the next 24 hours. Very strong squally winds and stormy weather were experienced in the Arabian Sea off the Kathiawar and Bombay coasts on the 11th and 12th. The strongest winds experienced by vessels in that area were of force 10.
6	August	12th to 19th	″ ·24	Cyclonic storm of moderate intensity.	This storm originated on the 10th and 11th in the north-west of the Bay at the eastern extremity of the trough of low pressure during a period of strong monsoon winds in the Central Provinces and the Deccan. It developed very slightly on the 12th and 13th. It commenced to move westwards on the 13th, and passed through the eastern districts of the Central Provinces, Baghelkhand and Bundelkhand on the 14th, 15th and 16th, the south-western districts of the North-Western Provinces on the 17th, the South Punjab on the 18th and 19th and broke up in the Central Punjab during the next 24 hours. The storm although feeble was noteworthy for its prolonged existence and vitality. It occasioned more or less general rain over the whole of Northern and Central India. The strongest winds experienced by vessels in the Bay during the storm were of force 9.
7	September.	7th to 12th	″ ·11	Cyclonic storm of slight intensity.	This storm was generated in the north-west of the Bay on the 5th and 6th. It increased slowly in intensity on the 7th and 8th and marched across the Ganjam coast near Gopalpur on the 9th. It thence drifted west-north-westwards through the southern districts of the Central Provinces on the 10th, into Berar on the 11th. It thence continued to drift westwards during the day and was apparently absorbed into a depression forming between the Kathiawar and Bombay coasts. The storm was of feeble intensity throughout. It however gave moderate to heavy rain over the whole area affected by it. The strongest winds experienced by vessels in the Bay during its existence were of force 9.
8	September.	12th to 15th	″ ·12	Cyclonic storm of feeble intensity.	This storm originated over the Arabian Sea between the Kathiawar and Bombay coasts on the 10th while the previous storm was passing through the Central Provinces. It intensified slightly on the 11th and rather rapidly during the next 24 hours in consequence of the previous storm being absorbed into it. It drifted very slowly north-westwards along the coast during the next three days and filled up near the Sind coast on the 15th. It gave moderate rain to Cutch, Kathiawar and Gujarat and squally weather off the Kathiawar coast. The strongest winds in the Arabian Sea during its existence were of force 7.

No.	Month.	Date.	Greatest barometric depression.	Character of storm.	Details of storm.
9	September.	23rd to 27th	·14	Feeble cyclonic storm.	This remarkable storm most probably originated in the Gulf of Siam and, advancing westwards across the Malay Peninsula, entered the North Andaman sea on the 21st. It then travelled rapidly across the Bay on a west-north-west track and crossed the North Madras coast nearly midway between Vizagapatam and Gopalpur on the morning of the 24th. It thence advanced into the northern districts of the Central Provinces on a north-westerly course at an average rate of 18 miles per hour. The centre was probably in Lat. 22¾°N. and Long. 79¼°E. at 8 A.M. of the 25th. It developed slightly and recurved to north during the next 24 hours and the centre lay in about Lat. 28° and Long. 78¼° E. at 8 A.M. of the 26th. It continued to drift northwards during the 26th and was at 8 A.M. of the 27th breaking up in the Naini Tal and Mussooree hills. The storm was throughout of small extent but of considerable intensity. It however advanced too rapidly to give heavy rain in North Madras, the Central Provinces, and Central India, but it gave very heavy downpours in the Almora and Naini Tal districts whilst it was breaking up. Its rate of movement was almost uniform during the last three days of is existence, an unusual circumstance. The strongest winds experienced by vessels in the Bay during its existence were of force 9.
10	October.	2nd to 6th .	·4	Cyclonic storm of moderate intensity.	This storm formed in the Bay off the Circars coast on the 1st. It intensified during the next 48 hours and began to move northwards towards the North Madras coast which it crossed near Gopalpur on the morning of the 3rd. It continued to drift in the same direction and on the morning of the 4th the centre lay about 40 miles to the south-south-east of Sambalpur and near Patna at the same hour of the 5th. The storm broke up against the Nepal hills during the next 24 hours. It occasioned heavy and general rain over North Madras, Orissa, the eastern districts of the Central Provinces, Chota Nagpur, Bihar, the eastern districts of the North-Western Provinces and Bengal. The strongest winds in the Bay were of force 9
11	October.	21st to 24th	1·2	Cyclone of great severity.	This storm almost certainly originated outside the Indian area probably in the Gulf of Siam, and, advancing westwards across the Malay Peninsula, entered the North Anamad Sea on the night of the 20th. It continued to travel in the same westerly direction during the next 24 hours and passed through the Preparis North Channel into the Bay during the evening of the 21st. It then recurved through north-west to north on the 22nd and 23rd and the centre was probably in Lat. 20½° N. and Long. 90¾ E. at 8 A.M. of the 24th. It recurved rapidly to north-north-east during the day and passed over or near to Chittagong shortly before 8 P.M. It broke up rapidly in Upper Burma during the morning of the 25th. As the storm approached the Chittagong coast about the time of high water the storm wave which accompanied it was of destructive violence and overflowed the low coast districts, causing the death of at least 7,000 people and also great destruction of property and crops. The storm was noteworthy for its small extent and great violence and resembled in several respects the storm which passed over and wrecked Port Blair in November 1891. Very stormy winds and weather were experienced by vessels in the Bay on the 23rd and 24th and the strongest winds actually reported by vessels in the storm area were of force 10.
12	December.	24th to 29th	·76	Severe cyclonic storm.	This storm, which was remarkable in several respects, originated in the centre of the Bay during a period when unusually strong north-east monsoon winds prevailed over the north and west of that area. It advanced slowly northwards with a slight easting on the 26th and 27th intensifying rapidly at the same time. The centre lay in about Lat. 16° N. and Long. 86° E. at 8 A.M. of the 28th It, however, filled up rapidly during the next 48 hours. H. M. S. *Melpomene* experienced winds of force 10 to the west of the storm centre on the 26th, the S.S. *Bombay* of force 9 on the 27th and the *Bancoora* of force 8 to 9 on the 28th. The storm it may be noted resembled in its chief features two storms in December 1883 and 1894.

The following is a similar statement of the most important land-formed depression generated in the plains of Bengal during the south-west monsoon of 1897:—

No.	Month.	Date.	Greatest barometric depression.	Character of storm.	Details of storm.
1	July .	14th to 19th	·13	Land-formed depression of feeble intensity.	This land-formed depression was generated in Central Bengal on the 13th and 14th under usual conditions. It drifted slowly in a west-by-north direction during the next 24 hours into South Bihar. It continued to travel in the same westerly direction through the eastern and central districts of the North-Western Provinces on the 16th and 17th. It then recurved slightly and marched westward into Central and West Rajputana and finally filled up in the latter area on the 20th. The rainfall was heavy in Rewah and Bundelkhand and moderate to heavy in Gwalior and Bhopal.

Winds.

The mean direction of the wind and the mean diurnal movement of the air, as measured by Robinson's anemometers, are given for all second class stations in Table II in each monthly review. The normal values are also stated for the sake of ready comparison. The normal data of these elements utilized in Table II of the monthly weather reviews of the year 1897, will be found in a collected form in Tables XI and XII of the Annual Summary for 1896 (pages 638 to 644). The mean 8 A.M. wind directions for each month are laid down in the first chart in each monthly review. They are calculated in the usual manner by Lambert's formula from the 8 A.M. wind data given in Table I in each monthly review. As a general rule, the mean 8 A.M. wind directions vary little from the mean wind directions (calculated from the 10 and 16 hours wind data) in Table II of each monthly review, but in some cases and at certain seasons of the year they differ very considerably.

The chief features of the air movement over India in 1897 have been described in the monthly reviews of the year. The following gives a summary of the most important features for each period :—

I.—The cold weather period.—This period was less disturbed than usual in Northern India. The winds at the hill stations in Northern and Central India were largely above their normal strength in January and considerably above it in February. The following gives data in illustration :—

Station.	Mean daily air movement in miles.					
	Actual, January 1897.	Normal, January.	Percentage variation from normal, January 1897.	Actual, February 1897.	Normal, February.	Percentage variation from normal, February 1897.
Murree . . .	312	220	+42	266	218	+22
Chakrata . . .	193	123	+57	214	134	+60
Ranikhet . . .	66	44	+50	79	57	+39
Darjeeling . . .	122	88	+39	147	137	+ 7
Mount Abu . . .	161	119	+35	174	140	+24
Pachmarhi . . .	143	78	+83	137	98	+40

Winds were, on the mean of the period, of normal strength and steadier than usual in Northern India, as is shown by the following data :—

Province.	Mean wind steadiness during cold weather period.			Mean daily air movement in miles during cold weather period.		
	Actual percentage.	Normal percentage.	Variation from normal.	Actual.	Normal.	Percentage variation from normal.
Bengal . . .	34	37	— 3	86	83	+ 4
Bihar . . .	48	48	0	74	72	+ 3
Chota Nagpur . .	52	52	0	180	154	+17
North-Western Provinces and Oudh.	47	34	+13	68	64	+ 6
Punjab . . .	26	22	+ 4	45	50	—10
Rajputana . . .	30	23	+ 7	122	119	+ 3

Local sea winds set in later in South Bengal and Orissa than usual, and winds were less steady than usual in the former area in February. The mean wind directions for Calcutta and Narayanganj contained a northerly instead of the normal southerly component.

Winds were much steadier than usual on the mean of the period in Berar, and of normal steadiness in Central India and the Central Provinces. The following gives data in illustration :—

Province.	Percentage of mean wind steadiness.			
	January 1897.	February 1897.	Mean of period, January and February 1897.	Variation from normal of period, January and February 1897.
Central India . .	34	33	34	—1
Berar	18	62	40	+17
Central Provinces . .	15	29	22	0

The air movement in the Deccan was steadier and stronger than usual, and in Southern India was practically normal in character.

The following gives comparative data showing the variations of the intensity or amount of the diurnal air

movement from the normal in the Peninsula during this period :—

Province.	Mean daily air movement in miles.				
	Actual, January 1897.	Actual, February 1897	Mean of period, January and February 1897.	Mean normal of period, January and February.	Percentage variation from normal of period, January and February 1897.
Central Provinces	92	106	99	75	+32
Berar	132	135	134	117	+15
Deccan	181	178	180	151	+19
Madras Coast	113	120	117	115	+ 2
Mysore	154	137	146	148	+ 8
Bombay Coast or West Coast	163	190	177	166	+ 7

II.—The hot weather period.—Weather was more disturbed than usual in March, and was normal in April.

The hot weather conditions in May were more strongly marked than usual in the Punjab, Sind, Rajputana, the Gangetic Plain, the Central Provinces and the North Deccan. Temperature was, on the mean of the month, most largely in excess in the South and Central Punjab, Upper Sind, Rajputana, the North-Western Provinces, Baghelkhand and South Bihar.

The chief features of the air movement of the period were :—

(1) Winds were, on the mean of the period, slightly stronger and steadier and much more westerly than usual (more especially in May) in the interior of Bengal. The following gives data showing the actual deflection :—

Station.	Westerly deflection.			
	March 1897.	April 1897.	May 1897.	Mean of period, March to May 1897.
	°	°	°	°
Calcutta	−3	+38	+17	+ 7
Burdwan	0	+14	+25	+13
Berhampore	+3	+42	+17	+21
Narayanganj	−8	+15	+14	+ 7

(2) Winds were stronger than usual in the Gangetic Plain, the increased force being most pronounced in May.

(3) Winds were slightly steadier than usual in the Punjab and, on the whole, somewhat feebler than usual.

(4) Winds were also, on the whole, somewhat stronger and more westerly than usual in Rajputana.

The following gives data showing the percentage variation of the air movement month by month from the normal during this period in Northern and Central India :—

Province.	Percentage variation from normal of mean daily air movement in miles in		
	March 1897.	April 1897.	May 1897.
Bengal	+11	−11	+27
Bihar	− 1	− 5	+32
Chota Nagpur	+ 5	− 4	+13
North-Western Provinces and Oudh	+18	+15	+ 3
Punjab	+14	−12	− 4
Rajputana	+ 5	−19	+11
Central India	+15	− 3	+17

(5) Winds were stronger than usual throughout the period in the Central Provinces. They varied in direction very irregularly from the normal, but were, on the whole, somewhat more westerly than usual.

(6) Winds were also stronger than usual in the Bombay Deccan and Mysore.

(7) Winds were throughout the period practically normal in strength and direction in the Madras and Bombay coast districts.

The following gives data showing the percentage variation of the air movement from the normal month by month in the Peninsula :—

Province.	Percentage variation from normal of mean daily air movement in miles in		
	March 1897.	April 1897.	May 1897.
Berar	− 3	− 9	+ 5
Central Provinces	+30	+ 3	+17
Bombay Deccan	+18	+ 8	+ 5
Madras Deccan	−20	+ 4	− 3
Mysore	+15	+ 8	− 1
Bombay Coast	− 1	+ 4	+5
Madras Coast	− 1	−17	− 4

The air movement in Northern and Central India in May immediately antecedent to the advent of the monsoon was the ordinary hot weather circulation considerably strengthened and slightly modified in direction by the abnormal temperature and pressure conditions which prevailed throughout nearly the whole month in Northern India.

III.—The south-west monsoon period.—The Arabian Sea current was considerably delayed and was not established on the Malabar coast until the 12th and the Konkan coast until the 13th of June. It advanced with great rapidity into the interior and gave general rain to the Central Provinces and Central India on the 14th, and Rajputana on the 15th. The advance of the current over the Arabian Sea was made somewhat more quickly

than usual. A cyclonic storm formed near Socotra on the 8th, 9th and 10th of June.

The south-west monsoon current was established in the Bay during the second week of June. A cyclonic storm of moderate intensity formed in front of its advance. This storm marched west-north-westwards across the Orissa coast on the 17th and passed through Chota Nagpur into Baghelkhand and Bundelkhand, where it broke up.

The first burst of the monsoon current was feeble and withdrew gradually from Northern and Central India in the last week of June. The break in the rains thus initiated, held until the 6th or 7th of July. A shorter break obtained from the 25th to the 29th July. The monsoon currents were hence somewhat feebler than usual in June and July. They were very steady in August and September and withdrew from Upper India in the last week of the latter month.

The comparative data in the table below based upon the anemometric observations of four coast and four inland stations under the influence of the two currents give an approximate estimate of the strength of the air movement of the two branches of the monsoon currents :—

Month.	Percentage variation from normal of mean daily air movement in miles.			
	Bay of Bengal Current.		Bombay Current.	
	Four coast stations.	Four inland stations.	Four coast stations.	Four inland stations.
June	+11	− 1	+ 6	+20
July	+ 2	+ 1	− 9	− 2
August	+10	− 5	+19?	+ 5
September	+13	−17	− 2	−16
Mean of period	+ 9	− 6	+4?	+ 2

The data given in the above table show that the air movement varied irregularly and in opposite directions at the land and coast stations, but on the mean of both was practically normal.

The following table gives corresponding data for the steadiness of the two currents in the coast districts of India :—

Month.	Variation from normal of percentage of mean wind steadiness.			
	Bay of Bengal Current.		Bombay Current.	
	Four coast stations.	Four Inland stations.	Four Coast stations.	Four Inland stations.
June	+1	+1	+ 5	− 1
July	0	+5	0	− 4
August	−6	−2	− 2	− 9
September	−8	−6	−13	−23
Mean of period	−3	−1	− 3	− 9

The preceding data indicate that both branches of the monsoon air movement were slightly less steady than usual. This feature was more marked in the Bombay than the Bengal branch.

The comparative data given in the following table of the mean actual and normal force of the winds derived from the meteorological information contained in the logs of vessels navigating the Indian seas indicate that the air movement was below the normal to a moderate extent (10 per cent.) throughout the period in the Arabian Sea, and to a slight extent in the Bay of Bengal on the mean of the whole period. The actual variations are chiefly derived from vessels following four or five tracks in these seas, and hence do not necessarily indicate a variation common to the whole area. They, however, almost certainly establish that the current in the Arabian Sea was somewhat below its normal strength throughout the period :—

Month.	Mean daily force of wind (Beaufort's Notation) in the					
	Bay of Bengal.			Arabian Sea.		
	Actual, 1897.	Normal.	Variation from normal.	Actual, 1897.	Normal.	Variation from normal.
June	4·2	4·0	+0·2	3·9	4·5	−0·6
July	3·8	4·0	−0·2	4·2	4·6	−0·4
August	3·7	4·0	−0·3	4·0	4·3	−0·3
September	3·2	3·7	−0·5	3·1	3·5	−0·4
Mean of period	3·7	3·9	−0·2	3·8	4·2	−0·4

The following gives a summary of the more important variations of the mean air movement from the normal during the first half of this period :—

(1). The monsoon currents were below their normal strength in the Indian seas during the first two months of the monsoon, *viz.*, June and July. Winds were during this period stronger and more westerly than usual at Port Blair and on the Burma coast, indicating a stronger set of the monsoon currents to that area. The following data show the increased westing :—

Station.	Increased Westing.		
	June 1897.	July 1897.	Mean of period, June and July 1897.
	°	°	°
Port Blair	+13	+18	+16
Diamond Island	+10	+ 8	+ 9
Rangoon	+10	− 5	+ 3

(2). Winds were also during this period characterized

by the same feature of increased westing (or decreased easting) in Bengal as is shown below :—

Station.	Increased westing or decreased easting.		
	June 1897.	July 1897.	Mean of period, June and July 1897.
	°	°	°
Calcutta	+15	+ 6	+11
Berhampore	+15	+21	+18
Burdwan	+24	+27	+26
Narayanganj	— 1	+ 9	+ 4

(3). Winds over the greater part of the interior were stronger than usual in June due, however, chiefly to the strength of the hot dry winds which prevailed during the first fortnight of the month before the setting in of the south-west monsoon. Winds were, on the other hand, feebler than usual over the interior areas dominated by the Bombay current, more especially Rajputana and Central India.

During the second half of the monsoon period the monsoon currents were steady and less abnormal in character in India than in the previous half. The more noteworthy features were :—

(1). Winds were less westerly than usual in Burma as is shown below :—

Station.	Increased southing (or decreased westing.)		
	August 1897.	September 1897.	Mean of period, August and September 1897.
	°	°	°
Port Blair	— 9	+10	+ 1
Diamond Island	+ 6	+31	+19
Rangoon	+ 3	+17	+10

(2). They were more easterly at the coast stations of Orissa and Bengal, as is shown by the following data :—

Station.	Easterly deflection.		
	August 1897.	September 1897.	Mean of period, August and September 1897.
	°	°	°
Saugor Island	+16	+14	+15
False Point	+ 9	+34	+22

(3). Winds were practically normal in direction and character in Northern India. They were lighter and less steady than usual in the Deccan, Berar and the Central Provinces, more especially in the month of September.

The following data illustrate this feature :—

Province.	Percentage variation from normal of mean wind steadiness.		Mean of period, August and Sept. 1897.	Variation from normal of mean daily air movement in miles.		Mean of period, August and Sept. 1897.
	August 1897.	Sept. 1897.		August 1897.	Sept. 1897.	
Berar	+ 3	—18	— 8	—12	— 49	—31
Central Provinces	—16	—25	—21	+16	— 27	— 6
Bombay Deccan	— 2	—31	—17	+75	— 30	+23
Madras Deccan	+ 6	—17	— 6	—62	—132	—97

The following table gives the percentage variation of the strength of the winds from the normal, month by month, in different provinces :—

Division or Province.	Percentage variation from normal of mean daily air movement in miles.				Mean of period, June to September 1897.
	June 1897.	July 1897.	August 1897.	September 1897.	
Bengal	+10	+11	+ 6	0	+ 7
Bihar	+35	+22	+22	—33	+12
Chota Nagpur	+17	+11	+16	— 9	+ 9
North-Western Provinces and Oudh.	+39	+42	+23	+ 6	+28
Punjab	— 1	+13	— 6	—17	— 3
Rajputana	+ 1	— 5	— 8	—18	— 8
Central India	+ 2	—19	—16	—20	—13
Central Provinces	+30	— 5	+10	—24	+ 3
Bombay Coast	+ 3	—14	+ 9	— 3	— 1
Deccan	+10	— 5	+10	—20	— 1

The chief features of the south-west monsoon air movement were hence as follows :—

(1) The Bay current was normal in strength throughout the greater part of the period.

(2) It was determined in June and July over the south and centre of the Bay, to a greater extent than usual to Tenasserim, and less to Upper Burma.

(3) It was during the months of August and September directed more largely than usual to Northern and Central India.

(4) The Bombay current was weaker and less steady than usual throughout the whole season.

(5) During the greater part of the season it was determined more largely to the Peninsula, and less to Upper India than usual.

The retreating south-west monsoon period.—The south-west monsoon current withdrew from Upper India in the last week of September. The rains ceased in that area, as also in North-Eastern India, about their normal dates. The Deccan and Madras coast districts received moderate rain under normal conditions during the first three weeks of October. A considerable change in the pressure conditions then occurred which was more or less persistent throughout the remainder of the season. The chief abnormal features were:—1st, a slight to moderate relative excess of pressure in the North Deccan, North Bombay, Central India and the Central Provinces, and 2nd, a slight to moderate deficiency in the south-east of the Bay, the Andaman Sea, Lower Burma and Tenasserim. The following gives the more important features of the air movement in India during this period:—

(1) Winds were steadier and stronger throughout the period in Burma and at Port Blair.

(2) Winds were stronger in Bengal and contained a more pronounced easterly element than usual. The following gives data, showing the amount of the easterly deflection at several stations:—

Station.	Easterly deflection.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	°	°	°	°
Saugor Island	+ 2	—15	— 9	— 7
Calcutta	+ 64	+16	+13	+31
Berhampore	+113	+ 6	+ 6	+42
Chittagong	+ 22	+46	+56	+41

(3) The air movement in the Gangetic Plain was of normal strength, and varied in direction slightly and irregularly from the normal.

(4) Winds were very feeble in the Punjab, Central India and Sind.

(5) Winds contained an unusually strong westerly element in Rajputana and Central India, where the mean direction of the air movement at this season is from north-west. The following gives examples:—

Station.	Westerly deflection.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	°	°	°	°
Jeypore	+41	+43	+39	+41
Deesa	+44	— 9	—36	0
Mount Abu	+39	+48	+94	+60
Sutna	— 9	+20	+15	+9

The following gives comparative data of the mean amount of the daily air movement in Northern and Central India:—

Province.	Percentage variation from normal of mean daily air movement in miles.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
Andamans (Port Blair)	+ 3	+13	+ 3	+ 6
Burma	+22	+17	+37	+25
Bengal	+18	+13	—12	+ 6
Assam	+21	+57	+20	+33
Bihar	+41	—24	—17	0
Chota Nagpur	+44	— 2	+ 1	+14
North-Western Provinces and Oudh.	+11	—13	+27	+ 8
Punjab	—27	—15	—16	—19
Rajputana	— 8	— 1	— 6	— 5
Central India	—12	—24	—13	—16
Sind	—14	—29	—16	—20

(6) Winds were more northerly and less easterly than usual in the Central Provinces, the Deccan and the Madras coast districts. The following gives data for seven representative stations:—

Station.	Northerly deflection.			
	October 1897.	November 1897.	December 1897.	Mean of period, October to December 1897.
	°	°	°	°
Nagpur	+24	+23	+25	+24
Vizagapatam	Large.	+38	+44	...
Hyderabad (Deccan)	,,	+30	+50	...
Bellary	,,	+31	+23	...
Sholapur	+64	+24	+14	+34
Madras	+89	— 3	+16	+34
Trichinopoly	+39	— 6	+18	+17

The following table gives data of the mean air movement in different parts of the Peninsula:—

Division or Province.	Percentage variation from normal of mean daily air movement in miles.		
	October 1897.	November 1897.	December 1897.
Central Provinces	+ 6	+10	+11
Berar	— 2	+46	—26
Bombay Deccan	— 2	—12	+16
Madras Deccan	—37	—60	—49
Mysore	— 2	—21	— 6
Bombay Coast	— 3	— 2	+ 4
Madras Coast	—25	—11	— 4

Humidity.

The variations of the mean monthly and annual aqueous vapour pressure and humidity values from the calculated normals for the year 1897 are given in Tables VIII and IX. The normal values employed in the determination of the variations are given in Tables XIII and XIV of the Annual Summary for the year 1896. The four tables (Tables X to XIII) give variation data of aqueous vapour pressure and relative humidity for each month of the year and for the year :—

1st.—For the eighteen meteorological areas adopted in the geographical summaries of meteorological data in the annual reports issued by the department previous to 1891.

2nd.—For ten meteorological provinces of the Empire.

TABLE VIII.—*Comparison of the monthly mean vapour pressure data of 1897, with the averages of past years.*

Meteorological Provinces.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		"	"	"	"	"	"	"	"	"	"	"	"	"
Burma Coast and Bay Islands.	Port Blair	+·020	+·030	+·015	+·037	+·015	+·037	+·002	+·034	+·029	+·013	−·020	+·044	+·021
	Rangoon	+·043	+·041	−·018	+·013	+·041	+·015	+·001	+·007	+·029	+·045	−·010	−·013	+·016
	Diamond Island	+·059	+·056	−·006	+·035	+·011	+·032	+·005	+·020	+·023	+·043	+·016	+·043	+·028
	Cocos Island	+·043	+·075	−·003	?	+·027	+·021	−·018	+·011	−·004	+·034	+·019	+·078	?
	Akyab	+·069	+·121	+·094	+·098	+·115?	+·070?	+·052	+·059	+·069	+·087	+·054	+·059	+·079
Assam	Silchar	+·001	+·010	+·010	−·026	−·002	+·009	−·008	+·042	+·002	+·073	−·032	−·003	+·006
	Sibsagar	+·012	+·001	−·036	−·032	−·006	+·013	+·003	+·026	+·008	+·087	−·017	−·011	+·004
	Dhubri	+·001	−·018	−·027	−·017	−·008	+·030	+·003	+·027	+·022	+·083	−·024	−·029	+·004
Bengal and Orissa.	Chittagong	+·004	+·061	+·029	−·022	+·037	+·063	+·012	+·029	+·039	+·109	?	?	?
	Narayanganj	−·001	+·016	−·023	−·038	+·015	−·001	−·021	−·018	−·013	+·070	+·007	+·004	0
	Calcutta (Alipore)	+·010	+·019	−·031	−·127	−·008	−·011	−·010	−·005	+·006	+·015	0	−·019	−·013
	Saugor Island	−·007	+·075	−·017	−·040	+·015	−·004	−·001	−·008	−·005	+·013	+·002	−·035	−·001
	Burdwan	+·006	−·011	−·013	−·080	+·049	+·024	+·020	+·020	+·026	+·069	+·055	+·013	+·015
	Berhampore	−·019	−·037	−·044	−·108	+·018	+·018	+·012	+·014	+·016	+·037	+·023	−·010	−·007
	False Point	+·041	+·102	+·032	0	+·042	+·039	+·024	+·019	+·027	+·033	+·025	−·032	+·029
	Cuttack	+·021	+·094	+·025	−·079	+·014	?	−·004	+·015	+·031	+·024	−·003	−·043	?
Gangetic Plain and Chota Nagpur.	Hazaribagh	+·057	+·070	+·033	−·006	−·015	+·012	−·032	−·015	+·010	+·054	+·067	+·006	+·020
	Patna	−·001	−·037	+·018	+·035	+·056	+·032	+·009	+·025	+·038	+·053	+·065	+·010	+·025
	Darbhanga	−·012	−·036	−·049	−·039	+·003	+·003	+·006	+·012	+·023	+·022	+·024	−·015	−·005
	Allahabad	0	−·073	−·056	−·108	+·045	+·007	−·014	+·021	+·029	+·039	+·075	−·016	−·004
	Lucknow	+·038	−·034	−·016	−·067	−·034	−·001	−·025	+·084	+·036	?	+·052	+·070	?
Upper Sub-Himalayas.	Dehra Dun	+·020	−·028	−·028	−·029	−·064	−·086	−·043	+·073	+·030	+·028	+·021	−·014	−·010
	Roorkee	+·020	−·028	−·036	−·012	−·042	−·060	−·033	+·051	+·054	+·019	+·042	−·019	−·004
	Meerut	−·005	−·054	−·081	−·059	−·048	−·079	−·040	+·045	+·041	−·060	+·032	−·022	−·028
	Lahore	+·006	+·001	−·036	+·019	−·012	−·016	−·009	+·057	+·032	−·034	+·035	+·020	+·005
	Ludhiana	+·012	+·006	0	−·017	−·134?	−·095	−·040	+·044	−·012	−·075	+·008	−·022	−·027

TABLE VIII.—*Comparison of the monthly mean vapour pressure data of 1897, with the averages of past years*—contd.

Meteorological Provinces.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		"	"	"	"	"	"	"	"	"	"	"	"	"
Indus Valley and North-West Rajputana.	Peshawar	+·007	+·025	−·012	+·027	−·023	−·081	−·063	+·021	+·036	−·022	−·005	+·008	−·007
	Mooltan	−·032	−·009	−·110	−·089	−·173?	−·144	−·011	+·020	−·025	−·066	−·017	+·048	−·051
	Jacobabad	−·016	+·009	−·099	−·034	+·006	−·138	+·035	+·081	+·192	−·040	+·081	+·069	+·012
	Kurrachee	−·050	−·029	−·068	+·001	+·051	+·035	+·037	+·057	+·021	+·094	+·114	+·049	+·026
Eastern Rajputana, Central India and Gujarat.	Jeypore	+·027	+·004	+·005	+·020	+·039	−·086	−·005	+·059	+·030	−·044	+·017	−·028	+·003
	Ajmere	−·003	−·019	−·050	+·003	+·031	−·012	+·092	+·115	+·095	+·010	+·024	−·011	+·023
	Deesa	−·017	−·012	−·044	−·061	+·006	−·080	+·033	+·114	+·137	+·114	+·037	−·016	+·018
	Nowgong	+·048	+·003	−·100	−·078	−·049	−·069	+·020	+·096	+·073	−·016	+·036	−·032	−·006
	Agra	+·013	−·018	−·047	+·076	+·167?	+·153?	+·051	+·079	+·056	+·004	+·074	+·018	+·052?
Deccan	Belgaum	+·052	+·015	−·080	−·020	−·019	+·012	+·008	+·030	+·036	+·006	−·114	−·121	−·016
	Sholapur	+·039	+·050	−·062	+·025	−·071	−·009	−·008	−·007	+·044	+·006	−·161	−·149	−·025
	Poona	+·019	−·015	−·077	−·014	−·072	−·028	+·002	+·027	+·039	+·053	−·115	−·093	−·023
	Akola	+·097	−·029	−·046	+·067	+·158?	−·018	+·039	+·080	+·095	+·003	−·083	−·081	+·024
	Buldana	+·036	−·066	−·098	−·037	−·112	−·136	−·024	+·033	+·047	−·034	−·129	−·113	−·053
	Khandwa	+·033	−·072	−·088	−·047	−·086	−·117	+·005	+·057	+·089	+·018	−·060	−·073	−·028
	Hoshangabad	+·055	−·005	−·036	+·038	+·013	−·070	−·009	+·067	+·062	−·032	−·042	−·057	−·001
	Nagpur	+·165?	+·191?	+·096	+·022	−·049	−·071	+·007	+·051	+·080	+·019	−·033	−·043	+·036?
	Jubbulpore	+·081	+·040	+·005	+·071	−·015	−·028	+·020	+·060	+·061	+·030	+·012	−·017	+·027
	Saugor	+·031	−·019	?	?		?	−·024	+·026	+·025	−·053	−·037	−·057	?
	Sutna	+·048	+·028	−·016	+·021	−·008	−·023	+·026	+·073	+·058	+·026	+·030	−·016	+·021
	Raipur	+·065	+·042	−·035	+·036	−·107	−·086	−·020	+·027	+·045	+·007	−·010	−·058	−·008
	Hyderabad (Decan.)	+·044	+·093	+·071	+·068	+·042	−·003	+·002	+·025	+·059	0	−·104	−·107	+·016
West Coast	Bombay	−·019	−·054	−·051	−·003	0	−·011	−·001	+·012	+·027	−·006	−·081	−·076	−·022
	Ratnagiri	+·019	+·014	−·048	+·020	+·016	+·037	+·017	+·054	+·038	+·051	−·132	−·086	0
	Karwar	+·068	+·034	−·057	+·002	−·017	−·004	+·002	+·023	+·015	−·005	−·073	−·111	−·010
	Cochin	+·048	+·088	+·022	+·028	+·027	+·026	+·029	+·034	+·011	+·018	−·002	−·010	+·027
South India	Salem	+·042	+·100	+·075	+·018	+·036	−·004	+·024	+·036	+·047	+·013	+·024	+·011	+·035
	Mercara	+·022	+·094	−·033	−·055	+·019	+·013	+·023	+·029	+·019	+·007	−·047	−·082	+·001
	Chitaldroog	+·040	+·074	−·019	−·015	−·028	+·020	+·025	+·041	+·072	+·033	−·066	−·069	+·009
	Bangalore	+·014	+·058	−·043	−·069	−·023	−·007	+·002	+·018	+·051	+·017	−·062	−·067	−·009
	Hassan	+·021	+·087	−·054	−·077	−·019	+·024	+·040	+·044	+·050	+·015	−·095	−·110	−·006
	Mysore	−·001	+·102	+·015	−·043	+·015	+·021	+·033	+·023	+·055	+·020	−·068	−·057	+·010
	Trichinopoly	+·027	+·074	−·002	+·014	−·001	−·018	−·061	−·021	+·030	−·027	−·057	−·067	−·009
	Madras	+·089	+·117	+·057	+·036	+·048	+·030	+·028	+·055	+·101	+·050	+·012	−·001	+·052
	Bellary	+·016	+·052	−·015	−·084	−·146	−·142	−·107	−·073	−·034	−·068	−·163	−·172	−·078
	Cocanada	+·042	+·078	+·044	−·010	+·015	+·003	−·021	+·016	+·017	0	+·062	−·078	+·014
	Vizagapatam	+·067	+·116	+·063	−·012	+·069	+·051	+·048	+·025	+·055	+·042	+·005	−·053	+·040

TABLE VIII.—*Comparison of the monthly mean vapour pressure data of 1897, with the averages of past years*—concld.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		"	"	"	"	"	"	"	"	"	"	"	"	"
Hill Station, Baluchistan.	Quetta	+·003	0	−·068	−·035	+·016	−·063	+·012	+·008	+·035	−·037	+·005	+·019	−·009
	Leh	−·031	−·032	−·031	+·005	+·025	−·012	−·028	+·027	−·005	+·009	+·046	+·009	−·002
Hill Stations, Northern India.	Srinagar	−·010	−·001	+·022	+·028	+·031	+·004	+·104	+·136	+·066	?	?	+·015	?
	Murree	+·036	−·015	−·033	−·015	+·022	−·036	+·016	+·001	−·001	−·028	−·008	+·002	−·005
	Kailang	+·002	−·007	+·004	−·004	+·010	−·024	−·033	+·028	−·010	+·011	+·014	−·005	−·001
	Simla (Ridge)	+·009	−·018	−·034	−·026	−·045	−·058	−·020	+·002	+·001	+·014	+·018	−·017	−·015
	Chakrata	+·011	−·009	−·024	−·029	−·055	−·038	−·023	+·009	+·017	+·029	+·027	+·001	−·007
	Ranikhet	+·015	+·008	−·020	−·011	−·027	−·017	−·022	+·019	+·014	+·050	+·017	+·011	+·003
	Katmandu	+·002	−·011	−·042	−·031	−·010	+·035	−·003	+·013	+·008	+·055	−·008	−·015	−·001
	Darjeeling	+·021	+·015	−·019	+·017	+·016	+·020	?	?	+·015	?	−·017	+·005	?
Hill Stations, Central India.	Mount Abu	−·007	−·012	−·012	−·002	0	−·051	+·031	+·059	+·075	+·030	+·020	−·005	+·011
	Pachmarhi	+·124?	+·112?	+·069	?	+·102?	+·066?	+·010	+·035	+·067	+·014	−·027	−·044	?
	Chikalda	+·057	−·035	−·084	0	−·037	−·060	+·010	+·036	+·058	−·004	−·076	−·069	−·017
Hill Station Southern India.	Wellington	+·011	+·070	+·058	+·023	+·020	+·005	0	+·035	+·053	+·016	+·005	−·014	+·024
Extra Indian Stations.	Muscat	−·020	−·046	−·027	+·095	−·013	−·034	−·046	+·059	−·058	−·046	+·017	+·019	−·008
	Aden	−·052	+·010	−·053	−·043	−·026	−·017	+·017	−·021	−·001	−·043	−·021	+·014	−·020
	Perim	−·031	+·015	−·025	+·044	+·070	?	?	?	?	?	?	+·048	?
	Zanzibar	+·039	+·020	+·024	+·018	+·008	−·020	+·027	+·004	−·005	+·012	+·061	+·001	+·016
	Port Victoria (Seychelles).	+·035	?	+·054	+·022	+·013	+·062	+·072	+·032	+·018	−·018	−·029	−·007	?

TABLE IX.—*Comparison of the monthly mean relative humidity data of 1897, with the averages of past years.*

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Burma Coast and Bay Islands.	Port Blair	−1	−2	−2	−1	+1	−2	+1	0	+1	0	+3	+3	0
	Rangoon	+3	0	−2	−2	+5	−2	−2	0	0	+4	+2	−2	0
	Diamond Island	−1	−1	−2	0	+6	−1	0	0	−1	+1	+1	+1	0
	Cocos Island	0	+2	+4	?	−3	−3	−2	−2	0	+1	0	+4	?
	Akyab	+4	+5	+7	+7	+5?	+4?	+2	+4	+3	+5	+4	+6	+5
Assam	Silchar	−5	−4	0	−9	0	−2	−2	−1	+1	0	−6	−4	−3
	Sibsagar	−2	−2	−4	−5	+4	0	+5	+2	+5	+4	+1	−2	+1
	Dhubri	−3	−5	−1	−6	+1	−2	0	0	+2	+4	−1	−4	−1

TABLE IX.—*Comparison of the monthly mean relative humidity data of 1897, with the averages of past years*—contd.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Bengal and Orissa.	Chittagong	− 5	0	+ 1	− 4	− 4	− 2	+ 1	+ 3	+ 3	+ 5	?	?	?
	Narayanganj	− 3	− 2	− 3	− 5	− 4	− 3	− 3	− 2	0	+ 2	0	+ 1	−2
	Calcutta (Alipore)	− 8	− 2	− 5	−11	− 6	− 2	− 3	+ 1	−11	− 1	− 1	− 4	−4
	Saugor Island	− 6	+ 3	− 2	− 5	− 3	− 2	− 1	0	− 3	− 1	− 1	− 3	−2
	Burdwan	− 5	− 6	− 2	− 7	0	+ 2	− 1	+ 3	+ 1	+ 4	+ 4	+ 1	−1
	Berhampore	−10	−12	− 7	−15	− 5	− 3	− 5	− 1	− 2	− 1	− 3	− 5	−6
	False Point	− 3	− 2	− 2	− 6	− 2	− 1	0	+ 2	− 1	+ 1	+ 3	− 3	−1
	Cuttack	− 4	+ 2	+ 2	− 6	− 4	?	− 2	+ 3	+ 2	+ 3	+ 3	− 1	?
Gangetic Plain and Chota Nagpur.	Hazaribagh	+ 6	+ 8	+ 5	− 1	− 4	0	− 9	− 1	− 5	+ 5	+ 8	+ 3	+1
	Patna	− 6	−10	0	− 1	0	+ 4	− 3	+ 2	0	+ 6	+ 4	0	0
	Darbhanga	− 4	− 7	− 4	− 4	0	− 4	− 2	− 1	0	+ 3	0	− 4	−2
	Allahabad	− 7	−16	− 8	− 9	− 4	− 4	− 7	+ 2	− 4	0	+ 2	− 5	−5
	Lucknow	+ 5	− 7	+ 4	− 5	− 6	− 2	− 4	+ 8	0	?	+ 3	+11	?
Upper Sub-Himalayas.	Dehra Dun	+ 1	− 5	− 4	− 2	− 8	−11	− 6	− 1	+ 2	− 2	− 1	− 4	−3
	Roorkee	+ 3	− 6	− 5	− 1	− 5	− 6	− 4	+ 5	+ 4	+ 2	+ 4	− 1	−1
	Meerut	− 4	−11	−11	− 5	− 7	− 7	− 1	+ 5	+ 3	− 6	+ 4	− 4	−4
	Lahore	+ 3	+ 2	− 2	+ 5	− 2	+ 2	− 3	+10	+ 4	− 2	+ 5	+ 8	+3
	Ludhiana	+ 1	0	− 2	− 2	−15?	− 9	− 3	+ 4	− 3	−10	− 3	− 5	−4
Indus Valley and North-West Rajputana.	Peshawar	+ 5	+ 4	+ 2	+10	− 1	− 2	− 4	+ 6	+ 4	− 5	− 3	+ 1	+1
	Mooltan	− 6	− 2	−12	− 6	−15	− 9	− 4	+ 4	− 2	− 7	− 4	+ 8	−5
	Jacobabad	− 3	+ 4	−11	− 1	− 3	−12	− 1	+ 5	+11	0	+ 7	+11	+1
	Kurrachee	− 7	− 4	− 5	− 1	+ 4	− 1	− 2	− 2	− 5	+ 7	+ 9	+ 3	0
East Rajputana, Central India and Gujarat.	Jeypore	+ 2	− 2	0	+ 1	− 2	−12	− 6	+ 2	0	− 6	0	− 6	−2
	Ajmere	+ 1	− 3	− 5	0	− 3	− 6	+ 3	+ 7	+ 8	+ 4	+ 4	0	+1
	Deesa	+ 2	+ 1	0	− 3	+ 3	− 9	− 3	+ 8	+12	+14	+ 8	+ 1	+3
	Nowgong	+ 6	− 3	−12	− 8	− 8	− 7	− 4	+ 7	+ 4	− 4	+ 2	− 6	−3
	Agra	− 1	− 5	− 6	+ 4	+ 6?	+10?	0	+ 6	0	− 2	+ 5	− 1	+1
Deccan	Belgaum	+ 6	+ 4	− 5	− 1	− 3	− 4	− 1	0	+ 1	+ 2	+12	−12	−2
	Sholapur	0	+ 1	− 7	+ 1	− 6	− 4	− 6	− 7	+ 3	− 1	−16	−16	−5
	Poona	+ 3	+ 1	− 2	+ 1	− 6	− 7	− 4	+ 1	+ 1	+ 8	− 5	− 5	−1
	Akola	+ 4	− 8	− 6	+ 1	+ 5?	−12	− 3	+ 5	+ 5	− 3	− 9	−10	−3
	Buldana	+ 2	− 9	− 9	− 4	−11	−21	− 8	0	+ 2	− 7	−15	−15	−8
	Khandwa	− 1	−12	−10	− 5	− 9	−16	− 8	+ 2	+ 4	− 1	− 6	−10	−6
	Hoshangabad	+ 4	− 5	− 6	− 1	− 4	−13	− 9	+ 4	+ 3	− 4	− 3	− 5	−3
	Nagpur	+14?	+11?	+ 5	+ 1	− 5	−12	− 5	+ 4	+ 4	0	− 4	− 3	+1
	Jubbulpore	+ 6	+ 1	+ 1	+ 6	− 3	− 6	− 4	+ 4	+ 2	+ 1	+ 2	− 1	+1
	Saugor	+ 2	− 8	+ 7	?	?	− 1	− 9	− 1	− 1	− 9	− 6	−11	?

TABLE IX.—*Comparison of the monthly mean relative humidity data of 1897, with the averages of past years*—concld.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Deccan—*concld.*	Sutna	+ 2	− 2	− 6	+ 2	− 5	− 6	− 4	+ 6	+ 1	+ 1	+ 2	− 3	− 1
	Raipur	+ 6	+ 1	− 3	0	− 8	−13	− 8	+ 2	+ 1	0	− 1	− 6	− 2
	Hyderabad (Deccan).	− 2	+ 2	+ 1	+ 1	0	− 8	− 5	− 3	+ 4	− 3	−13	−13	− 3
West Coast	Bombay	− 2	− 3	− 1	− 1	− 1	− 5	+ 1	− 2	0	− 3	− 7	− 7	− 3
	Ratnagiri	+ 1	− 1	− 1	0	− 1	− 4	+ 3	+ 2	+ 1	+ 5	−10	− 7	− 1
	Karwar	+ 2	+ 1	− 3	0	− 4	− 6	− 1	− 4	− 1	− 3	− 7	− 9	− 3
	Cochin	− 1	+ 2	− 4	0	− 4	− 1	− 1	+ 1	0	− 3	− 4	− 5	− 2
South India	Salem	+ 2	+ 8	+ 5	+ 1	+ 3	− 4	− 1	+ 1	+ 6	− 2	− 4	− 1	+ 1
	Mercara	+ 3	+ 7	− 7	− 9	− 1	0	0	+ 1	0	+ 1	−11	−14	− 3
	Chitaldroog	0	+ 4	− 3	− 5	− 7	− 1	0	+ 1	+ 8	+ 4	−13	− 7	− 2
	Bangalore	− 2	+ 2	− 7	− 7	− 5	− 4	− 3	− 1	+ 6	0	−11	−10	− 4
	Hassan	+ 2	+ 6	− 8	− 8	− 7	− 1	+ 3	+ 3	+ 6	0	−12	−11	− 2
	Mysore	− 3	+ 6	0	− 7	− 4	0	+ 3	+ 2	+ 6	+ 3	− 6	− 7	− 1
	Trichinopoly	− 2	+ 5	− 3	+ 2	− 1	− 2	− 8	− 4	+ 5	− 7	− 9	−10	− 3
	Madras	+ 6	+ 3	+ 2	+ 3	+ 1	− 2	− 2	+ 3	+12	− 2	− 2	+ 4	+ 2
	Bellary	− 3	0	− 3	− 5	−12	−14	−14	−10	− 1	− 8	−19	−18	− 9
	Cocanada	− 2	+ 1	+ 3	− 2	+ 2	− 6	− 6	+ 1	+ 3	− 3	− 8	− 8	− 2
	Vizagapatam	+ 5	+ 7	+ 5	0	+ 4	0	+ 2	+ 1	+ 9	+ 3	+ 2	− 3	+ 3
Hill Station, Baluchistan.	Quetta	0	− 9	−15	− 3	0	− 3	− 1	− 1	+ 2	− 7	− 8	+ 3	− 4
Hill Stations, Northern India.	Leh	−10	−15	− 8	+ 5	+18	+ 4	− 1	+ 3	+ 1	+ 4	+14	− 2	+ 1
	Srinagar	+ 8	+ 8	+ 9	+17	+14	+12	+ 9	+12	+ 7	?	?	− 3	?
	Murree	+18	− 7?	− 3	+ 6	− 5	− 3	− 5	+ 2	0	− 9	−10	0	− 1
	Kailang	+ 7	+ 1	+ 8	+10	+13	+ 3	− 4	+ 4	0	+ 1	− 2	− 4	+ 3
	Simla (Ridge)	+ 5	− 6	− 3	+ 1	− 8	− 8	− 2	+ 1	+ 5	+ 4	+ 3	− 2	− 1
	Chakrata	+ 4	− 6	0	− 1	−12	− 6	− 3	+ 3	+ 3	+ 1	+ 6	0	− 1
	Ranikhet	+ 4	− 1	− 1	0	− 9	− 4	− 3	+ 2	+ 1	+ 4	+ 4	+ 3	0
	Katmandu	− 2	− 6	− 5	− 7	− 5	0	− 1	− 2	0	+ 4	− 3	− 3	− 3
	Darjeeling	+ 7	+ 3	− 6	+ 1	− 1	0	?	?	+ 1	?	− 9	+ 1	?
Hill Stations, Central India.	Mount Abu	0	− 1	− 1	− 1	− 6	−12	− 2	+ 2	+ 9	+ 6	+ 4	− 2	0
	Pachmarhi	+16?	+11?	+ 5	?	+ 3?	0	− 6	+ 2	+ 5	+ 1	− 2	− 4	?
	Chikalda	+ 6	− 8	− 9	0	− 6	−14	− 7	0	+ 1	− 2	−11	−10	− 5
Hill Station, South India.	Wellington	− 5	+ 6	+ 5	+ 3	0	− 2	− 3	+ 4	+ 7	− 2	0	− 8	0
Extra Indian Stations.	Muscat	+ 1	− 4	− 1	+10	− 3	− 2	− 8	0	−12	− 8	− 2	− 2	− 3
	Aden	− 6	0	− 5	− 4	− 3	− 1	− 4	− 1	− 2	− 7	− 3	0	− 3
	Perim	− 2	+ 2	− 2	+ 3	+ 6	?	?	?	?	?	?	+ 3	?
	Zanzibar	+ 2	+ 2	+ 2	+ 3	− 1	− 1	+ 1	− 2	− 2	+ 1	− 1	− 4	0
	Port Victoria (Seychelles).	0	?	0	− 2	0	+ 2	+ 3	0	+ 1	− 3	− 7	− 2	?

TABLE X.—*Geographical summary of the aqueous vapour pressure data of Table II in the monthly weather reviews of 1897.*

METEOROLOGICAL AREA.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
		"	"	"	"	"	"	"	"	"	"	"	"	"
North-West Himalaya.	6–7	+·005	−·011	−·017	−·007	−·006	−·026	−·001	+·032	+·012	+·014	+·019	+·004	−·002
Sikkim Himalaya and Nepal.	1–2	+·012	+·002	−·031	−·007	+·003	+·028	−·003	+·013	+·012	+·055	−·013	−·005	+·006
Punjab Plains . .	4	−·002	+·006	−·039	−·015	−·086	−·084	−·031	+·036	+·008	−·049	+·005	+·014	−·020
Gangetic Plain . .	7–8	+·009	−·039	−·037	−·025	+·010	−·004	−·011	+·049	+·038	+·015	+·048	+·002	+·005
Western Rajputana .	4	−·022	−·011	−·056	−·024	+·016	−·059	+·034	+·078	+·106	+·050	+·063	+·024	+·017
Eastern Rajputana and Central India.	4–5	+·030	−·001	−·040	−·009	+·003	−·048	+·022	+·074	+·056	−·015	+·014	−·029	+·005
Nerbudda Valley .	3	+·056	−·012	−·040	+·021	−·029	−·072	+·005	+·061	+·071	+·005	−·030	−·049	−·001
Chota Nagpur . .	1	+·057	+·070	+·033	−·006	−·015	+·012	−·032	−·015	+·010	−·054	+·067	+·006	+·020
Lower Bengal . .	5	−·002	+·012	−·026	−·079	+·018	+·005	0	+·001	+·006	+·041	+·017	−·009	−·001
Assam and Cachar .	3	+·005	−·002	−·018	−·025	−·005	+·017	−·001	+·032	+·011	+·081	−·024	−·014	+·005
Orissa . . .	1–2	+·031	+·098	+·029	−·039	+·028	+·039	+·010	+·017	+·029	+·029	+·011	−·038	+·020
Central Provinces, (South) and Berar.	5–6	+·091	+·036	−·016	+·018	−·008	−·051	+·004	+·044	+·065	+·001	−·060	−·068	+·005
Konkan . . .	3	+·023	−·002	−·052	+·006	0	+·007	+·006	+·030	+·027	+·013	−·095	−·091	−·011
Malabar Coast . .	1	+·048	+·088	+·022	+·028	+·027	+·026	+·029	+·034	+·011	+·018	−·002	−·010	+·027
Deccan, Hyderabad and Mysore.	10	+·027	+·061	−·030	−·028	−·030	−·010	+·002	+·016	+·039	+·009	−·100	−·103	−·012
East Coast and Carnatic.	5	+·053	+·097	+·047	+·009	+·035	+·012	+·004	+·022	+·050	+·016	+·009	−·030	+·026
Arakan and Pegu .	3–4	+·044	+·070	+·025	+·031	+·051	+·045	+·018	+·029	+·040	+·071	+·020	+·030	+·040
Bay Islands. . .	1–2	+·032	+·053	+·006	+·037	+·021	+·029	−·008	+·023	+·013	+·024	−·001	+·061	+·024
Extra-Tropical India .	39–42	+·010	−·007	−·031	−·018	−·006	−·025	0	+·042	+·034	+·018	−·020	−·005	+·003
Tropical India . .	31–33	+·045	+·060	−·004	−·001	+·004	−·001	+·005	+·026	+·041	+·019	−·047	−·055	+·008
Whole India . .	72–75	+·025	+·022	−·019	−·012	−·001	−·015	+·003	+·035	+·037	+·018	−·010	−·027	+·005

TABLE XI.—*Geographical summary of the humidity data of Table II in the monthly weather reviews of 1897.*

METEOROLOGICAL AREA.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
North-West Himalaya	6–7	+5	−4	0	+5	+2	0	−1	+4	+2	+1	+3	−1	+1
Sikkim Himalaya and Nepal.	1–2	+3	−2	−6	−3	−3	0	−1	−2	+1	+4	−6	−1	−1
Punjab Plains . .	4	+1	+1	−4	+2	−8	−5	−4	+6	+1	−6	−1	+3	−1
Gangetic Plain . .	7–8	−2	−8	−4	−3	−3	−3	−3	+3	+1	0	+3	−1	−2
Western Rajputana .	4	−2	0	−4	−2	−1	−9	−2	+3	+7	+7	+7	+3	+1
Eastern Rajputana and Central India.	4–5	+3	−4	−3	−1	−5	−6	−4	+4	+2	−3	0	−5	−2
Nerbudda Valley .	3	+3	−5	−5	0	−5	−12	−7	+3	+3	−1	−2	−5	−3
Chota Nagpur . .	1	+6	+8	+5	−1	−4	0	−9	−1	−5	+5	+8	+3	+1
Lower Bengal . .	5	−6	−4	−4	−9	−4	−2	−3	0	−1	+1	0	−2	−3
Assam and Cachar .	3	−3	−4	−2	−7	+2	−1	+1	0	+3	+3	−2	−3	−1
Orissa . . .	1–2	−4	0	0	−6	−3	−1	−1	+3	+1	+2	+3	−2	−1
Central Provinces (south) and Berar	5–6	+8	0	−3	0	−4	−12	−6	+2	+3	−2	−7	−8	−2

TABLE XI.—*Geographical summary of the humidity data of Table II in the monthly weather reviews of 1897.*—concld.

METEOROLOGICAL AREA.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Konkan	3	0	−1	−2	0	−2	−5	+1	−1	0	0	−8	−8	−2
Malabar Coast	1	−1	+2	−4	0	−4	−1	−1	+1	0	−3	−4	−5	−2
Deccan, Hyderabad and Mysore.	10	0	+3	−4	−4	−5	−4	−3	−1	+3	+1	−12	−11	−3
East Coast and Carnatic.	5	+2	+5	+2	+1	+2	−3	−3	0	+7	−2	−4	−4	0
Arakan and Pegu	3—4	0	+1	+1	0	+3	0	0	+2	+1	+4	+2	+2	+1
Bay Islands	1—2	−1	0	+1	−1	−1	−3	−1	−1	+1	+1	+2	+4	0
Extra-Tropical India	39—42	0		−3	−1	−3	−4	−3	+3	+2	0	+1	−1	−1
Tropical India	31—33	+2	+2	−1	−2	−2	−5	−2	0	+3	0	−6	−6	−1
Whole India	72—75	+1	−1	−2	−2	−2	−4	−3	+2	+2	0	−2	−3	−1

TABLE XII.—*Variations of the mean monthly aqueous vapour pressure from the normal in ten meteorological provinces of India in 1897.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
	"	"	"	"	"	"	"	"	"	"	"	"	"
Burma Coast and Bay Islands	+·047	+·062	+·016	+·028	+·022	+·039	+·015	+·026	+·038	+·044	+·010	+·042	+·032
Assam	+·005	−·002	−·018	−·025	−·005	+·017	−·001	+·032	+·011	+·081	−·024	−·014	+·005
Bengal and Orissa	+·007	+·040	−·005	−·062	+·023	+·018	+·005	+·008	+·016	+·046	+·016	−·017	+·008
Gangetic Plain and Chota Nagpur.	+·016	−·022	−·014	−·037	+·011	+·011	−·011	+·025	+·027	+·042	+·057	+·011	+·010
Upper Sub-Himalayas	+·011	−·021	−·036	−·020	−·042	−·067	−·033	+·054	+·029	−·024	+·027	−·011	−·011
Indus Valley and North-West Rajputana.	−·023	−·001	−·072	−·032	+·011	−·082	−·001	+·045	+·056	−·009	+·043	+·044	−·002
East Rajputana, Central India and Gujarat.	+·014	−·008	−·047	−·008	+·007	−·019	+·038	+·093	+·078	+·014	+·038	−·014	+·016
Deccan	+·059	+·023	−·026	+·019	−·044	−·040	−·001	+·049	+·057	+·004	−·065	−·076	−·003
West Coast	+·029	+·021	−·034	+·012	+·007	+·012	+·012	+·031	+·023	+·015	−·072	−·071	−·001
South India	+·034	+·087	+·006	−·037	−·001	−·001	+·009	+·023	+·042	+·009	−·053	−·068	+·004

TABLE XIII.—*Variations of the mean monthly humidity from the normal in ten meteorological provinces of India in 1897.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Burma Coast and Bay Islands	+1	+1	+1	−1	+4	0	0	0	+1	+2	+3	+2	+1
Assam	−3	−4	−2	−7	+2	−1	+1	0	+3	+3	−2	−3	−1
Bengal and Orissa	−6	−3	−2	−7	−4	−2	−2	+1	0	+2	+1	−2	−2
Gangetic Plain and Chota Nagpur.	−1	−6	−1	−4	−3	−1	−5	+2	−2	+4	+3	+1	−1
Upper Sub-Himalayas	+1	−4	−5	−1	−6	−6	−3	+5	+2	−4	+2	−1	−2
Indus Valley and North-West Rajputana.	−3	+1	−7	+1	0	−6	−3	+3	+2	−1	+2	+6	0
East Rajputana, Central India and Gujarat.	+2	−2	−5	−1	−3	−5	−2	+6	+5	+1	+4	−2	0
Deccan	+4	−1	−3	0	−5	−9	−6	+1	+2	−1	−7	−8	−3
West Coast	0	0	−2	0	−3	−4	+1	−1	0	−1	−7	−7	−2
South India	+1	+4	−1	−3	−2	−3	−2	0	+5	−1	−8	−8	−2

I.—The cold weather period.—Weather was somewhat less disturbed by storms than usual in this period. The variations of the humidity conditions from the normal were generally small in amount. The following give the more important features :—

(1) The air was drier than usual throughout the period in Assam, Bengal, Bihar and the North-Western Provinces.

The following gives comparative data for these area :—

Division or Province.	Variation of mean absolute Humidity from normal in		Mean of period, January and February 1897.	Variation of mean relative humidity from normal in		Mean of period, January and February 1897.
	January 1897.	February 1897.		January 1897.	February 1897.	
	"	"	"			
Assam	+·005	—·002	+·002	—3	—4	—4
Bengal	—·001	+·021	+·010	—6	—3	—5
Bihar	—·007	—·037	—·022	—5	—9	—7
North-Western Provinces and Oudh.	+·014	—·039	—·013	—1	—8	—5

The deficiency was, on the whole, most marked in West and Central Bengal, Central Bihar and the eastern districts of the North-Western Provinces, as is shown by the following data :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, January and February 1897.	Variation of mean relative humidity from normal in		Mean of period, January and February 1897.
	January, 1897.	February 1897.		January, 1897.	February 1897.	
	"	"	"			
Burdwan	+·006	—·011	—·003	—5	—6	—6
Berhampore . .	—·019	—·037	—·028	—10	—12	—11
Patna	—·001	—·037	—·019	—6	—10	—8
Allahabad . . .	0	—·073	—·037	—7	—16	—12

(2) The air was throughout the period damper than usual in the Punjab and the hill districts to the north. The following gives data for the Punjab and five hill stations :—

Province or Station.	Variation of mean absolute humidity from normal in		Mean of period, January and February 1897.	Variation of mean relative humidity from normal in		Mean of period, January and February 1897.
	January 1897.	February 1897.		January, 1897.	February 1897.	
	"	"	"			
Punjab	—·002	+·006	+·002	+1	+1	+1
Murree	+·036	—·015	+·011	+18	—7?	+6
Srinagar	—·010	—·001	—·006	+8	+8	+8
Simla	+·009	—·018	—·0	+5	—6	—1
Chakrata	+·011	—·009	+·001	+4	—6	—1
Ranikhet	+·015	+·008	+·012	+4	—1	+2

(3) The air was drier than usual in Persia, Arabia and Baluchistan, but slightly damper at Baghdad, as is shown by the following comparative data :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, January and February 1897.	Variation of mean relative humidity from normal in		Mean of period, January and February 1897
	January 1897.	February 1897.		January, 1897.	February 1897.	
Quetta	+·003	—·008	—·003	0	—9	—5
Muscat	—·020	—·046	—·033	+1	—4	—2
Aden	—·052	+·010	—·021	—6	0	—3
Bushire	—·039	—·037	—·038	—7	—5	—6
Baghdad	—·001	—·016	—·009	+4	+6	+5

(4) Over the remainder of India the variations of the humidity conditions were on the mean of the period small. They were generally small in both months. In Berar, the Central Provinces and Central India the air was considerably damper than usual in January and much drier in February. The following gives comparative data for nine provinces or areas :—

Province.	Variation of mean absolute humidity from normal in		Mean of period January and February 1897	Variation of mean relative humidity from normal in		Mean of period, January and February 1897.
	January 1897.	February 1897.		January 1897.	February 1897.	
	"	"	"			
Burma	+·057	+·073	+·065	+2	+1	+2
Rajputana . . .	+·002	—·009	—·004	+2	—1	+1
Central India . .	+·057	+·016	+·037	+6	—3	+2
Central Provinces. .	+·069	—·003	+·033	+3	—5	—1
Berar	+·067	—·048	+·010	+3	—9	—3
Bombay Coast . .	+·029	+·021	+·025	0	0	0
Deccan	+·028	+·039	+·034	+1	+2	+2
Madras Coast . .	+·066	+·104	+·085	+3	+4	+4
South India . .	+·035	+·087	+·061	0	+7	+4

II.—The hot weather period.—The hot weather season of 1897, as that of 1896, was even drier than usual over nearly the whole of India. Two storms of the cold weather type passed across Northern India in March. Each storm was followed by a cool and dry wave. The cool wave in the rear of the first storm reduced temperature by amounts ranging from 15° in Baluchistan to 9° in Bengal. The wave diminished by large amounts the quantity of aqueous vapour present in the air, and notwithstanding the great reduction of temperature the lowest humidities of the month were registered during the passage of this cool wave from the 9th to the 13th. The air was also exceedingly dry during this period in the Deccan. The following gives the more noteworthy humidities during this period :—

Station.	Date.	Humidity at 4 P.M.
		%
Jacobabad	9th	3
Poona	13th	3
Khandwa	4th and 16th	4
Buldana	13th	4
Deesa	12th	5
Sholapur	9th	6
Chikalda	11th	8

The second wave advanced across Northern India during the period from the 20th to the 25th March. It caused a large decrease of humidity, but not to so marked an extent as the first wave.

Very low humidities were recorded in the Gangetic Plain during a very hot period extending from the 13th to the 20th April. The following gives the lowest humidities recorded during this period :—

Station.	Date.	Humidity at 4 P.M.
		%
Allahabad	18th	4
Sutna	18th	4
Hazaribagh	18th	10

The latter half of April and the first week of May were disturbed by series of thunderstorms and dust storms, chiefly in the Punjab, Bengal and Burma. Very dry hot weather set in over the whole of Northern and Central India on the 7th and continued until the 15th. The lowest humidities of the month of May were recorded during this period. The following gives the most noteworthy examples :—

Station.	Date.	Relative humidity at 4 P.M.
		%
Roorkee	8th	5
Raipur	,,	6
Nowgong	,,	6
Buldana	,,	7
Raipur	9th	4
Roorkee	,,	4
Nowgong	,,	5
Sutna	,,	5
Lucknow	,,	5
Raipur	10th	5
Jubbulpore	,,	6
Raipur	11th	6
Buldana	12th	6
Sholapur	13th	4
Raipur	,,	5
Buldana	,,	7
Raipur	14th	7
Do.	15th	6
Roorkee	,,	6
Sutna	,,	6
Meerut	,,	6

A brief period of disturbed weather followed lasting from the 13th to the 19th or 20th, after which very dry hot weather again set in and continued until the end of the month. The following gives the lowest humidities recorded during this period :—

Station.	Date.	Hour.	Relative humidity.
			%
Jacobabad	21st	4 P.M.	6
Do.	22nd	,,	6
Khandwa	22nd	,,	7
Do.	23rd	,,	9
Do.	24th	,,	10
Sutna	25th	,,	11
Nowgong	25th	,,	11
Meerut	26th	,,	9
Ludhiana	26th	,,	10
Roorkee	26th	,,	10
Ludhiana	27th	10 A.M.	7
Nowgong	28th	4 P.M.	6
Roorkee	28th	,,	9
Deesa	29th	,,	8
Khandwa	29th	,,	8
Nowgong	30th	10 A.M. and 4 P.M.	8
Do.	31st	4 P.M.	10

Very low humidities were recorded during the very hot period in the second week of June. The following were the most remarkable :—

Station.	Date.	Hour.	Lowest humidity recorded during June 1897.
			%
Meerut	7th	4 P.M.	4
Jacobabad	13th	10 A.M.	5
Sutna	8th	,,	5
Allahabad	7th	4 P.M.	6
Deesa	7th	,,	7
Nowgong	10th	,,	9
Khandwa	5th	,,	9

The following gives the chief features of the humidity conditions of the period :—

(1) The conditions were practically normal at Port Blair and in Burma, and Assam throughout the period The following gives data for that area :—

Province or Station.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Port Blair	+·015	+·037	+·015	+·022	−2	−1	+1	−1
Burma	+·023	+·049	+·056	+·043	+1	+2	+5	+3
Assam	−·018	−·025	−·005	−·016	−2	−7	+2	−2

(2) The air was drier than usual over the greater part of Bengal and in Bihar and Orissa. The increased dryness of the air was most marked in this area in April. The following table gives variation data in illustration :—

Province or Division.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Bengal	−·017	−·069	+·021	−·022	−3	−8	−4	−5
Orissa	+·029	−·040	+·024	+·004	0	−6	−4	−3
Chota Nagpur	+·033	−·006	−·015	+·004	+5	−1	−4	0
Bihar	−·016	−·002	+·030	+·004	−2	−3	0	−2

(3) The air was throughout the whole period very dry over the large area including the North-Western Provinces, Central India, the Central Provinces and Berar, as is shown by the following comparative data :—

Province.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
North-Western Provinces and Oudh.	−·044	−·033	−·029	−·035	−5	−3	−6	−5
Rajputana	−·030	−·013	+·025	−·006	−2	−1	−1	−1
Central India	−·058	−·021	−·029	−·036	−9	−4	−7	−7
Central Provinces	−·061	+·021	−·049	−·030	−5	+1	−6	−3
Berar	−·072	+·015	−·112	−·056	−8	−2	−11	−7

The abnormal dryness of the air was, on the whole, most strongly exhibited at the stations for which comparative data are given below :—

Station.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Calcutta	−·031	−·127	−·008	−·055	−5	−11	−6	−7
Berhampore	−·044	−·108	+·018	−·045	−7	−15	−5	−9
Allahabad	−·056	−·108	+·045	−·040	−8	−9	−4	−7
Meerut	−·081	−·059	−·048	−·063	−11	−5	−7	−8
Mooltan	−·110	−·089	−·173?	−·124?	−12	−6	−15?	−11?
Jacobabad	−·099	−·034	+·006	−·042	−11	−1	−3	−5
Nowgong	−·100	−·078	−·049	−·076	−12	−8	−8	−9
Khandwa	−·088	−·047	−·086	−·074	−10	−5	−9	−8
Buldana	−·098	−·037	−·112	−·082	−9	−4	−11	−8
Bangalore	−·043	−·069	−·023	−·045	−7	−7	−5	−6
Bellary	−·015	−·084	−·146	−·082	−3	−5	−12	−7
Quetta	−·068	−·035	+·016	−·029	−15	−3	0	−6
Chikalda	−·084	0	−·037	−·040	−9	0	−6	−5

(4) The air contained, on the mean of the period slightly less aqueous vapour than usual in the Punjab and,

Baluchistan and humidity was considerably below the normal in the latter area. The following gives data for these areas :—

Province.	Variation of mean absolute humidty from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Baluchistan (Quetta) .	—·068	—·035	+·016	—·029	—15	— 3	0	—6
Punjab	—·039	—·015	—·018	—·024	— 3	+ 2	— 2	—1

(5) The air was unusually damp throughout the whole period at the more elevated hill stations in the interior of the mountain districts of Upper India. The increased humidity at these stations was almost solely due to local conditions, *viz.*, increased amount of aqueous vapour and decreased temperature. The air was, on the other hand, drier at the hill stations on the outer ranges as was also the case at the neighbouring plains stations. The following table gives comparative data for six stations :—

Station.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Leh	—·031	+·005	+·025	0	—8	+ 5	+18	+ 5
Kailang	+·004	—·004	+·010	+·003	+8	+10	+13	+10
Murree	—·033	—·015	—·022	—·023	—3	+ 6	— 5	— 1
Simla	—·034	—·026	—·045	—·035	—3	+ 1	— 8	— 3
Chakrata . . .	—·024	—·029	—·055	—·036	0	—1	—12	— 4
Ranikhet . . .	—·020	—·011	—·027	—·019	—1	0	— 9	— 3

(6) The air was drier than usual over the north and centre of the Peninsula, *i.e.*, in the Deccan, Mysore and the west coast districts. The reduction of the relative humidity below the normal was almost as marked in the interior of the Peninsula in March and May as in Northern India, and was chiefly a result of the high temperature of the period. The following gives comparative data :—

Division.	Variation of mean absolute humidity from normal in			Mean of period, March to May 1897.	Variation of mean relative humidity from normal in			Mean of period, March to May 1897.
	March 1897.	April 1897.	May 1897.		March 1897.	April 1897.	May 1897.	
	"	"	"	"				
Konkan . .	—·052	+·006	0	—·015	—2	0	—2	—1
Malabar . .	+·022	+·028	+·027	+·026	—4	0	—4	—3
Bombay Deccan .	—·073	—·003	—·054	—·043	—5	0	—5	—3
Madras Deccan .	—·015	—·084	—·146	—·082	—3	—5	—12	—7
Mysore . .	—·025	—·0 1	—·014	—·030	—5	—7	—6	—6
Madras Coast .	+·058	+·004	+·044	+·034	+3	0	+2	+2
Madras South Central . .	+·075	+·018	+·036	+·043	+5	+1	+3	+3

The driest periods during the hot weather season in Northern and Central India were the 9th to the 13th March, the 20th to the 25th March, the 13th to the 20th April the 7th to the 15th of May and the 21st to the 31st of May. The lowest humidities recorded during the season were as follows :—

Station.	Date and month.	Hour.	Lowest relative humidity.
			%
Jacobabad	9th Mar. 1897.	4 P. M.	3
Deesa	12th " "	"	5
Poona	13th " "	"	3
Buldana	" " "	"	4
Khandwa	16th " "	"	4
Allahabad	18th April "	"	4
Sutna	" " "	"	4
Roorkee	8th May "	"	5
Raipur	9th " "	"	4
Roorkee	" " "	"	4
Nowgong	" " "	"	5
Sutna	" " "	"	5
Lucknow	" " "	"	5
Raipur	10th " "	"	5
Sholapur	13th " "	"	4
Raipur	" " "	"	5

Humidities as low as 10 per cent are of frequent occurrence in the hot weather and as low as 5 per cent of occasional occurrence. At the driest stations, more especially Deesa, Pachmarhi, Khandwa, Nowgong

Pachpadra, Bickaneer and Jacobabad humidities of 2 and 3 per cent are usually registered on one or two occasions in each year.

III.—The south-west monsoon period.—The monsoon currents were not only feeble during the months of June and July but wre later in setting in than usual. An almost complete break in the rains obtained over Northern and Central India and the Central Provinces from the 24th of June to the 7th of July and from the 25th or 26th to 29th July. The air was hence drier than usual in the months of June and July over the whole of India. The following gives the chief features of the mean humidity conditions in these two months :—

(1) The mean humidity of this period was in slight defect in Burma, North-Eastern India and Southern India, as is shown by the following data :—

Province.	Variation of mean absolute humidity from normal in		Mean of period, June and July 1897.	Variation of mean relative humidity from normal in		Mean of period, June and July 1897.
	June 1897.	July 1897.		June 1897.	July 1897.	
	"	"	"			
Burma . . .	+·024	+·003	+·014	—2	—1	—2
Assam . . .	+·017	—·001	+·008	—1	+1	0
Bengal . . .	+·015	+·002	+·009	—2	—2	—2
Bihar . . .	+·018	+·008	+·013	0	—3	—2
Orissa . . .	+·039	+·012	+.026	—1	—1	—1
South India . .	—·011	—·019	—·015	—3	—5	—4

(2) Humidity was, on the other hand, in considerable to large defect over the remainder of India, as is shown by the following data :—

Province.	Variation of mean absolute humidity from normal in		Mean of period, June and July 1897.	Variation of mean relative humidity from normal in		Mean of period, June and July 1897.
	June 1897.	July 1897.		June 1897.	July 1897.	
	"	"	"			
North-Western Provinces and Oudh,	—·044	—·018	—·031	— 6	—4	— 5
Punjab. . . .	—·084	—·031	—·058	— 5	—4	— 5
Sind	—·052	+·036	—·008	— 7	—2	— 5
Rajputana . . .	—·059	+·040	—·010	— 9	—2	— 6
Central India . .	—·046	+·023	—·012	— 7	—4	— 6
Berar	—·077	+·008	—·035	—17	—6	—12
Central Provinces .	—·052	—·004	—·028	—10	—7	— 9
Deccan . . .	—·034	—·026	—·030	— 7	—6	— 7

The deficiency was greatest in the Central Provinces and Berar. Comparative data of six stations in these two areas are given below :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, June and July 1897.	Variation of mean relative humidity from normal in		Mean of period, June and July 1897.
	June 1897.	July 1897.		June 1897.	July 1897.	
	"	"	"			
Buldana . . .	—·136	—·024	—·080	—21	—8	—15
Khandwa . . .	—·117	+·005	—·056	—16	—8	—12
Nagpur . . .	—·071	+·007	—·032	—12	—5	— 9
Raipur . . .	—·086	—·020	—·053	—13	—8	—11
Hoshangabad . .	—·070	—·009	—·040	—13	—9	—11
Chikalda . . .	—·060	+·010	—·025	—14	—7	—11

(3) The air was also drier than usual in this period on the outer ranges of the North-Western Himalayas, but was damper at Leh and Srinagar, as is shown below :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, June and July 1897.	Variation of mean relative humidity from normal in		Mean of period, June and July 1897.
	June 1897.	July 1897.		June 1897.	July 1897.	
	"	"	"			
Leh	—·012	—·028	—·020	+ 4	—1	+ 2
Kailang . . .	—·024	—·033	—·029	+ 3	—4	— 1
Murree . . .	—·036	+·016	—·010	— 3	—5	— 4
Srinagar . . .	+·004	+·104	+·054	+12	+9	+11
Simla	—·058	—·020	—·039	— 8	—2	— 5
Chakrata . . .	—·038	—·023	—·031	— 6	—3	— 5
Ranikhet . . .	—·017	—·022	—·020	— 4	—3	— 4

The monsoon currents intensified at the end of July and extended during the month of August to their utmost limits in the Punjab. The air was hence damper than usual over practically the whole of India in August and September. The increased humidity was most strongly exhibited in North-Western and Central India in August and in the eastern half of the Peninsula, Upper Sind and South-West Rajputana in September. The

following gives comparative data for the larger provinces :—

Division.	Variation of mean absolute humidity from normal in		Mean of period, August and September 1897.	Variation of mean relative humidity from normal in		Mean of period, August and September 1897.
	August 1897.	September 1897.		August 1897.	September 1897.	
	"	"				
Burma	+·029	+·040	+·035	+1	+1	+1
Bengal	+·005	+·012	+·009	+1	0	+1
Assam	+·032	+·011	+·022	0	+3	+2
Bihar	+·019	+·031	+·025	+1	0	+1
Chota Nagpur	—·015	+·010	—·003	—1	—5	—3
North-Western Provinces and Oudh.	+·059	+·041	+·050	+4	+1	+3
Punjab	+·036	+·008	+·022	+6	+1	+4
Rajputana	+·096	+·094	+·095	+6	+7	+7
Central India	+·085	+·066	+·076	+7	+3	+5
Central Provinces	+·048	+·060	+·054	+3	+2	+3
Berar	+·057	+·071	+·064	+3	+4	+4
Deccan	+·018	+·029	+·024	—4	+2	—1
West Coast	+·031	+·023	+·027	—1	0	—1
Madras Coast	+·032	+·058	+·045	+2	+8	+5

The chief features of the whole period from June to September are given below.

(1) The air was much drier than usual during the first half of the monsoon period over the whole of India and damper during the second half and hence on the mean of the whole period very slightly drier. The following gives data :—

Area.	Absolute humidity, June to September.			Relative humidity, June to September.	
	Actual.	Variation from normal.	Percentage variation.	Actual.	Variation from normal.
	"	"		%	
Extra-Tropical India	·763	+·013	+1·7	73	—1
Tropical India	·784	+·018	+2·3	78	—1
Whole of India	·772	+·015	+2·0	75	—1

(2) The mean conditions for the whole period varied little from the normal in every part of India, as is shown by the data of the following table :—

Division.	Variation of mean absolute humidity from normal in		Mean of period, June to September 1897.	Variation of mean relative humidity from normal in		Mean of period, June to September 1897.
	Mean, June and July 1897.	Mean, August and September 1897.		Mean, June and July 1897.	Mean, August and September 1897	
	"	"	"			
Burma	+·014	+·035	+·025	—2	+1	—1
Bengal	+·009	+·009	+·009	—2	+1	—1
Assam	+·008	+·022	+·015	0	+2	+1
Bihar	+·013	+·025	+·019	—2	+1	—1
Chota Nagpur	—·010	—·003	—·007	—5	—3	—4
North-Western Provinces and Oudh.	—·031	+·050	+·010	—5	+3	—1
Punjab	—·058	+·022	—·018	—5	+4	—1
Rajputana	—·010	+·95	+·043	—6	+7	+1
Central India	—·012	+·076	+·032	—6	+5	—1
Central Provinces	—·028	+·054	+·013	—9	+3	—3
Berar	—·035	+·064	+·015	—12	+4	—4
Deccan	—·030	+·024	—·003	—7	—1	—4
West Coast	+·012	+·027	+·020	—2	—1	—2
Madras Coast	+·023	+·045	+·034	—3	+5	+1

The mean humidity of the whole period was hence generally slightly below the normal, and the deficiency was most marked in the large area including Chota Nagpur, the Central Provinces, Berar and the Deccan.

IV.—The retreating south-west monsoon period.—The conditions of this period were very abnormal. The monsoon currents withdrew from North-Western India at the end of September and from North-Eastern India in the third week of October. The greater part of the Peninsula, more especially the Madras Presidency, received unusually favourable rain in September and the first half of October. The general weather conditions then changed, and the humid currents and rainfall were chiefly determined to Lower Burma, Tenasserim and the south-east of the Bay in November and December. The rainfall of this period was hence very scanty over the Peninsula, and more especially in the Deccan and the greater part of Madras in November and December. The mean humidity conditions of Noveember and December were similar in general character to those of the second-half of October, but were more strongly marked.

(1) The chief feature of the period was the abnormal dryness of the air over the whole of the interior of the

Peninsula, most pronounced in the Deccan. The following gives comparative data :—

Division.	Variation of mean absolute humidity from normal in		Mean of eriod, November and December 1897.	Variation of mean relative humidity from normal in		Mean of period, November and December 1897.
	November 1897.	December 1897.		November 1897.	December 1897.	
	"	"	"			
Central Provinces	—·028	—·051	—·040	— 3	— 6	— 5
Berar	—·106	—·097	—·102	—12	—13	—13
Bombay Deccan	—·130	—·121	—·126	—11	—11	—11
Madras Deccan	—·163	— 172	—·168	—19	—18	—19
Mysore	—·073	—·076	—·075	—11	— 9	—10

The deficiency was throughout most marked in the Deccan area. Comparative data are given below for the stations at which the deficiency was greatest—

Station.	Variation of mean absolute humidity from normal in		Mean of period, November and December 1897.	Variation of mean relative humidity from normal in		Mean of period, November and December 1897.
	November 1897.	December 1897.		November 1897.	December 1897.	
	"	"	"			
Bellary	—·163	—·172	—·168	—19	—18	—19
Sholapur	—·161	—·149	—·155	—16	—16	—16
Hyderabad (Deccan)	—·104	—·107	—·106	—13	—13	—13
Mercara	—·047	—·082	—·065	—11	—14	—13
Hassan	—·095	—·110	—·103	—12	—11	—12
Belgaum	—·114	—·121	—·118	—12	—12	—12
Buldana	—·129	—·113	—·121	—15	—15	—15

(2) The air was slightly damper throughout the period in Arakan, Burma, Tenasserim and the Andamans, as is shown below :—

Division.	Variation of mean absolute humditiy from normal in		Mean of period, November and December 1897.	Variation of mean relative humidity from normal in		Mean of period, November and December 1897.
	November 1897.	December 1897.		November 1897.	December 1897.	
	"	"	"			
Arakan	+·054	+·058	+·056	+4	+5	+5
Burma	+·003	+·015	+·009	+2	+1	+2
Andamans	—·020	+·044	+·012	+3	+3	+3

(3) The air was unusually damp in a part of North-Western India, including Sind, Cutch and South-West Rajputana. The following gives data of three stations representative of these areas :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, November and December 1897.	Variation of mean relative humidity from normal in		Mean of period, November and December 1897.
	November 1897.	December 1897.		November 1897.	December 1897.	
	"	"	"			
Jacobabad	+·081	+·069	+·075	+7	+11	+9
Kurrachee	+·114	+·049	+·082	+9	+ 3	+6
Deesa	+·037	—·016	+·011	+8	+ 1	+5

(4) The air was slightly damper than usual at almost all the hill stations in Northern India, as is shown by the following data :—

Station.	Variation of mean absolute humidity from normal in		Mean of period, November and December 1897.	Variation of mean relative humidity from normal in		Mean of period, November and December 1897.
	November 1897.	December 1897.		November 1897.	December 1897.	
	"	"	"			
Leh	+·046	+·009	+·028	+14	—2	+6 —5
Murree	—·008	+·002	—·003	—10	0	
Simla	+·018	—·017	+·001	+ 3	—2	+1
Chakrata	+·027	+·001	+·014	+ 6	0	+3
Ranikhet	+·017	+·011	+·014	+ 4	+3	+4

(5) The variations of the humidity conditions from the normal over the remainder of Northern India were small, and of no significance.

(6) The air contained less aqueous vapour than usual in the Persian area, as is shown by the following statement :—

Station.	8 A.M. absolute humidity.			
	Actual, November 1897.	Actual, December 1897.	Actual mean of period, November and December 1897.	Variation from normal of period, November and December 1897.
	"	"	"	
Baghdad	·259	·260	·255	—·043
Bushire	·401	·390	·396	—·034
Teheran	·209	·158	·184	+·005
Ispahan	·165	·133	·149	—·046
Muscat	·678	·589	·634	+·023
Kabul	·148	?	?	?

Humidity was also below the average to a moderate extent in that area, as is shown below :—

Station.	8 A.M. RELATIVE HUMIDITY.			
	Actual, November 1897.	Actual, December 1897.	Mean of period, November and December 1897.	Variation from normal of period, November and December 1897.
Baghdad	64	87	76	— 1
Bushire	58	75	67	— 4
Teheran	59	64	62	+ 1
Ispahan	59	70	65	—14
Muscat	70	69	70	0
Kabul	62	?	?	?

The year.—The means for the whole year are given in the final column of the Tables X and XI.

The following are the more important features of the humidity conditions of the year 1897 in India :—

1st.—The year was slightly drier than usual. The mean humidity of the whole of India for the year was one below the normal. The deficiency in 1897 was chiefly a result of the high temperature of the year, as the mean amount of aqueous vapour was ·005″ above the normal.

2nd.—On the mean of the year the aqueous vapour pressure was in moderate defect in the Punjab, the Konkan and the Deccan. The mean humidity of the year was 2 or upwards below the normal in the areas for which variation data are given below :—

Area.	Annual variation from normal of	
	Mean absolute humidity.	Mean relative humidity.
	″	
Eastern Rajputana and Central India	+·005	—2
Gangetic Plain	+·005	—2
Lower Bengal	—·001	—3
Central Provinces (South) and Berar	+·005	—2
Konkan	—·011	—2
Nerbudda Valley	—·001	—3
Malabar Coast	+·027	—2
Deccan, Hyderabad and Mysore	—·012	—3

3rd.—The mean aqueous vapour pressure of the air was ·020″ or more above the normal over the parts of India for which comparative data are given in the following table :—

Area.	Annual variation from normal of	
	Mean absolute humidity.	Mean relative humidity.
	″	
Chota Nagpur	+·020	+1
Orissa	+·020	—1
Malabar Coast	+·027	—2
East Coast and Carnatic	+·026	0
Arakan and Pegu	+·040	+1
Bay Islands	+·024	0

The variations were on the whole persistent throughout the year. Thus in Arakan and Pegu the mean relative humidity value was normal in four and above the normal in eight out of twelve months, and in Lower Bengal it was above the normal in only one month. The larger variations for the year hence represent abnormal conditions which were practically persistent throughout the whole year.

The following gives the mean annual variation of the mean aqueous vapour pressure and humidity of the whole of India from the normal for each year from 1875 to 1897 :—

Year.	Annual variation of pressure of vapour.	Annual variation of relative humidity.
	″	
1875	—·004	+1
1876	—·017	—1
1877	+·011	+1
1878	+·020	0
1879	—·014	—1
1880	—·004	0
1881	+·001	0
1882	—·008	0
1883	—·013	—1
1884	—·012	0
1885	+·001	0
1886	+·008	+1
1887	—·012	—1
1888	—·005	—1
1889	+·003	—1
1890	—·003	—1
1891	—·007	0
1892	—·002	—1
1893	+·007	+3
1894	+·013	+2
1895	+·003	0
1896	—·010	—3
1897	+·005	—1

Cloud.

Normal values of the mean monthly and annual amount of cloud at first and second class stations obtained from the whole of the available data up to the end of the year 1896 were given in Table XXI of the Annual Summary of 1896. These means are the means of the cloud amounts as registered at 10 A.M. and 4 P.M., and hence represent the mean amount during the day period rather than of the whole 24 hours. Corrections to reduce these means to true daily means have only been obtained in the case of a few stations.

Variation data of this element of meteorological observation for the year 1897 are given in Tables XIV, XV and XVI. Table XV gives the mean variation data for the eighteen meteorological areas adopted in the geographical summaries of meteorological data in the Annual Reports previous to 1891, and Table XVI gives similar data for ten meteorological provinces of India.

TABLE XIV.—*Comparison of the mean cloud proportion in each month of 1897, with the averages of past years.*

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Burma Coast and Bay Islands.	Port Blair	0	+0·5	0	0	+0·4	+1·1	+1·7	+1·1	+0·9	+2·0	+2·5	+2·6	+1·1
	Rangoon	0	—0·2	+1·0	0	+1·2	+0·1	0	+0·2	—0·6	+1·6	—0·2	+0·4	+0·3
	Diamond Island.	+1·2	+0·7	—0·4	—0·2	+1·5	+1·0	+1·1	+0·9	+0·1	+2·4	+0·7	+0·9	+0·8
	Cocos Island	+0·9	+0·1	+0·6	?	+0·3	+0·1	+0·7	+0·1	—0·2	+1·3	+0·5	+0·5	?
	Akyab	+0·3	+1·1	+2·3	+1·5	+1·6	+1·6	—0·3	+1·2	+0·6	+2·5	+2·1	+0·2	+1·2
Assam	Silchar	—0·1	+1·0	+1·0	—2·3	+0·1	—0·1	+0·3	+0·4	+0·7	+1·3	—0·3	—0·3	+0·1
	Sibsagar	—2·1	—0·3	—1·7	—1·9	+0·3	—1·9	—0·3	—0·9	0	+0·1	—0·1	+0·1	—0·7
	Dhubri	+0·4	—0·4	—0·5	—1·9	+0·5	—0·8	+0·6	—0·3	+0·5	+1·3	—0·3	—0·2	—0·1
Bengal and Orissa.	Chittagong	+0·2	+1·3	+1·0	—1·0	—0·3	+0·2	+0·8	+1·1	—0·2	+2·0	0	—0·4	+0·4
	Narayanganj	+0·8	+0·7	+0·5	—0·5	0	+0·4	+0·4	+0·6	+1·1	+2·1	+0·5	+1·3	+0·7
	Calcutta (Alipur).	+0·3	+1·1	+0·5	0	—0·5	—0·1	—0·6	+0·6	+0·7	+1·7	+0·1	0	+0·3
	Saugor Island	+0·3	+1·8	+0·4	—0·9	+0·4	+0·4	+0·2	+1·0	+1·2	+1·9	+1·0	+0·4	+0·7
	Burdwan	—0·1	+0·8	+0·3	0	—1·0	—0·4	—1·8	+0·3	—0·4	+1·5	—0·8	—0·7	—0·2
	Berhampore	—0·5	+0·3	—0·4	—1·2	—1·4	—1·5	—2·0	—0·5	—0·8	+0·7	—1·5	—0·9	—0·8
	False Point	+0·5	+1·5	+1·3	—0·2	+0·1	+0·5	0	+0·8	+0·7	+1·1	+0·2	+1·2	+0·6
	Cuttack	0	+0·9	+0·2	0	—0·2	—0·4	—0·3	+0·8	—0·3	+0·8	+0·2	+0·4	+0·2
Gangetic Plain and Chota Nagpur.	Hazaribagh	+1·1	+1·1	+0·3	+0·7	—0·5	0	—0·9	+0·9	+1·6	+2·6	+1·1	—0·8	+0·6
	Patna	+0·6	—0·8	—0·3	—0·4	—1·4	—0·2	0	—0·1	—0·8	+0·7	—0·8	—1·6	—0·4
	Darbhanga	+0·1	—0·4	+0·3	—0·4	—0·7	—0·1	0	+0·3	—0·3	+0·8	—0·3	—0·8	—0·1
	Allahabad	+1·0	—0·2	+0·3	+0·7	—0·9	+0·8	—0·2	+0·8	+0·5	+1·5	—0·6	—1·0	+0·2
	Lucknow	—0·4	—1·2	—0·2	—0·7	+1·0	+1·7	+0·9	+0·9	—1·5	—0·3	—0·6	—1·2	—0·1
Upper Sub-Himalayas.	Dehra Dun	+1·2	—1·4	+1·2	+0·4	—0·2	—0·6	—1·1	+1·0	+0·4	—0·5	—0·5	—0·3	0
	Roorkee	+0·1	—1·2	0	+0·2	+0·1	—1·3	—0·3	+0·9	—0·9	—0·4	—0·9	—0·7	—0·4
	Meerut	—0·4	—0·4	+0·4	+0·2	0	—1·4	+0·4	+1·2	—0·4	—0·2	—0·7	—0·9	—0·2
	Lahore	0	—1·4	+0·6	+1·4	+0·1	—1·4	—1·4	+2·2	—0·3	—0·3	—1·2	—0·8	—0·2
	Ludhiana	+0·3	—1·6	—0·2	—1·6	—0·8	—1·8	—0·1	+1·5	+0·1	—0·5	—1·7	—0·5	—0·6

TABLE XIV.—*Comparison of the mean cloud proprotion in each month of 1897, with the averages of past years*—contd.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Indus Valley and North-West Rajputana.	Peshawar	−0·4	+0·1	+1·1	+0·9	+0·5	+1·1	+0·6	+1·4	+0·4	−0·1	−1·6	+0·5	+0·4
	Mooltan	−0·4	−0·9	+0·4	+0·4	+0·1	0	−0·6	+1·9	+0·4	−0·4	−0·9	+0·1	
	Jacobabad	+0·5	−0·8	−0·2	−0·1	+0·2	−0·5	−0·6	+1·9	+0·5	−0·4	−1·0	+1·4	+0·1
	Kurrachee	−0.4	−1·6	−0·2	+0·2	−0·1	−1·8	−1·0	−0·2	−0·2	−0·2	−0·8	−0·9	−0·6
East Rajputana, Central India and Gujarat.	Jeypore	+0·2	−0·8	+0·9	+1·2	−0·3	−1·8	−0·6	+0·2	+1·4	−0·2	−1·3	−1·0	−0·2
	Ajmere	+0·6	−0·7	+0·6	+0·4	−0·7	−1·2	−0·7	+0·4	+1·3	+0·2	−1·0	−0·6	−0·1
	Deesa	−0·4	−1·8	−0·8	−0·7	−1·4	−2·6	−1·3	+0·1	+1·0	−0·9	−1·5	−1·3	−1·0
	Nowgong	+0·8	−1·1	−0·7	+0·2	+0·1	0	−0·9	+0·3	−0·1	−0·4	−1·3	−1·2	−0·4
	Agra	−0·4	−0·7	+0·2	−0·2	−0·3	−1·6	0	+1·2	−0·3	−0·3	−0.7	−1·1	−0·4
Deccan	Belgaum	0	−0·3	−1·4	+0·8	−1·5	−1·0	+0·3	+0·2	+1·1	−0·7	−2·6	−1·7	−0·6
	Sholapur	+0·1	−0·5	−1·2	+0·8	−0·1	−0·2	0	+0·6	+0·7	−0·3	−2·5	−2·1	−0·4
	Poona	+0·5	−0·7	−1·4	+0·4	−1·0	−0·3	−0·5	−0·2	+0·4	+0·2	−2·3	−1·6	−0·5
	Akola	+1·4	−0·3	−1·0	+1·6	+0·2	−0·1	−0·4	+0·7	+1·0	+0·5	−1·0	−1·1	+0·1
	Buldana	+1·1	−0·3	−1·4	+0·3	−0·9	−1·0	−0·8	+1·5	+1·4	−0·1	−1·8	−1·8	−0·3
	Khandwa	+0·4	−0·7	−1·0	−0·1	−0·9	−1·5	−0·1	+1·0	+1·3	−0·4	−1·4	−1·4	−0·4
	Hoshangabad	+0·5	+0·3	−0·7	0	−0·6	0	−1·4	+0·4	+0·6	+0·3	−1·1	−1·1	−0·2
	Nagpur	+1·3	+0·2	−0·6	+1·4	+0·3	−1·0	−0·8	−0·2	+0·3	+0·7	−1·4	−1·2	−0·1
	Jubbulpore	+0·9	−0·1	−1·0	+0·6	−0·3	−1·0	−1·1	+0·5	+0·5	+0·9	−1·2	−1·4	−0·2
	Saugor	+0·5	0	+0·1	+1·4	+0·9	+0·7	+0·7	−0·3	+0·9	+0·3	−1·1	−0·7	+0·3
	Sutna	+1·0	−0·3	−0·7	+1·0	−1·0	−0·7	−0·6	+0·5	−1·2	+0·2	−1·0	−1·2	−0·3
	Raipur	+0·5	+0·1	−0·3	−0·6	−0·3	−1·1	−0·5	+0·5	+0·3	+0·7	−0·4	−0·4	−0·1
	Hyderabad (Deccan).	−0·3	+0·1	−0·6	+0·4	−0·6	−1·2	−0·4	+1·1	+1·0	0	−1·5	−1·0	−0·3
West Coast	Bombay	+0·9	−0·2	−0·4	−0·7	−0·7	−0·5	−0·5	−0·2	−0·2	−0·7	−2·1	−1·3	−0·6
	Ratnagiri	+0·8	−0·1	−0·1	−0·4	+0·4	−0·5	+1·1	+1·0	+1·7	+0·9	−1·3	−0·3	+0·3
	Karwar	−0·2	+0·2	−1·1	+0·3	0	−1·0	+0·7	+0·3	+1·4	−0·5	−2·1	−0·2	−0·2
	Cochin	−0·1	+1·2	−0·6	+1·1	0	+0·7	+0·5	+2·0	+1·8	−0·6	−0·5	0	+0·5
South India	Salem	−0·6	+1·4	0	+0·7	−1·0	−0·3	+0·7	+1·2	+1·6	−0·4	−0·2	+0·9	+0·3
	Mercara	−0·1	+1·4	−1·7	+0·6	+0·2	+0·1	+0·1	+0·5	+0·3	+0·3	−1·7	+1·0	+0·1
	Chitaldroog	+0·3	+1·4	−1·0	+0·4	+0·1	−0·7	0	+0·5	+0·5	−0·1	−2·1	+0·4	0
	Bangalore	−0·6	+0·4	−1·4	+0·3	−0·5	+0·2	+1·3	+1·6	+1·2	+0·3	−1·9	−0·6	0
	Hassan	−0·1	+1·3	−1·3	+0·6	+0·2	+0·2	+0·4	+0·5	+1·0	0	−2·4	+0·3	+0·1
	Mysore	+0·2	+2·2	−0·1	+1·4	+0·2	+0·7	+0·6	+0·5	+0·7	+0·2	−2·5	+0·9	+0·4
	Trichinopoly	−0·5	+0·8	−1·0	0	−1·0	−0·4	−1·3	−0·9	+0·5	−1·9	−2·0	−0·1	−0·7
	Madras	0	+0·7	+0·9	+0·9	−0·3	−0·3	+0·8	+1·0	+0·7	−0·2	−1·2	+1·1	+0·3
	Ballary	+1·3	+2·1	+1·1	+2·9	+1·6	+0·6	+0·6	+1·0	+1·6	+0·2	−0·6	+1·1	+1·1
	Cocanada	+0·3	+1·9	+1·0	+0·1	−0·3	−1·9	+0·8	+0·2	−0·4	+0·5	−0·3	−0·1	+0·2
	Vizagapatam	+0·9	+1·3	+1·5	+0·6	+0·2	−0·2	+1·0	+1·5	+1·7	+1·2	+0·5	+1·0	+0·9

TABLE XIV.—*Comparison of the mean cloud proportion in each month of 1897, with the averages of past years*—concld.

Meteorological Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Year.
Hill Station, Baluchistan.	Quetta	+0·5	−0·3	0	+0·4	+1·5	0	+1·1	+1·3	+0·6	−0·5	−1·2	+1·0	+0·4
Hill Stations, Northern India.	Leh	+1·9	−1·4	+1·5	+1·1	+1·9	+0·7	−0·1	+0·9	+0·1	−1·3	−2·7	−0·2	+0·1
	Srinagar	−1·5	−0·3	+0·7	+1·9	+1·3	+0·6	−0·9	+1·2	−0·6	−0·6	−2·8	−0·2	−0·1
	Murree	+0·3	+0·2	+0·5	+1·0	+0·7	−0·3	−3·3	−3·4	+1·0	−0·4	−2·2	−0·1	−0·5
	Kailang	+1·6	−1·3	+1·0	+0·4	+1·0	0	−0·4	+1·5	+0·8	−0·8	−3·1	−1·0	0
	Simla (Ridge)	+1·6	−1·8	+1·5	+1·6	+0·6	−1·1	−0·1	+1·0	+0·7	0	−2·0	−0·9	+0·1
	Chakrata	+1·4	−1·3	+1·8	+1·2	+0·1	−0·5	+0·4	+1·1	+0·2	−0·7	−0·9	−0·9	+0·2
	Ranikhet	+0·4	−1·3	+0·7	0	−1·0	−1·3	−0·3	+0·8	+0·1	+0·4	0	−1·1	−0·2
	Katmandu	0	−1·0	−0·2	−1·9	−1·1	−0·2	−0·3	−0·2	+0·1	+1·8	+0·1	+0·1	−0·2
	Darjeeling	−1·6	0	−1·3	−0·8	−1·1	−0·2	+0·4	+0·7	+0·3	+0·7	−1·5	+1·8	−0·2
Hill Stations, Central India.	Mount Abu	+0·2	−1·6	−0·5	−0·7	−1·3	−2·6	−0·8	+0·6	+1·2	−0·7	−1·5	−1·2	−0·7
	Pachmarhi	+1·4	+0·3	−0·3	+1·2	−0·1	−0·7	−1·2	+0·2	+0·5	+1·1	−1·3	−1·2	0
	Chikalda	+0·6	+0·2	−0·9	+0·9	0	−1·1	−0·9	+0·2	+0·8	+0·5	−1·6	−1·8	−0·3
Hill Station, South India	Wellington	−0·5	+1·1	+0·4	+0·9	−0·6	+0·8	+0·8	+1·6	+1·6	+0·9	−0·2	−0·5	+0·5
Extra India	Muscat	−0·5	−1·1	+0·3	−0·3	−0·1	−0·6	−0·3	+0·3	+0·2	−0·3	−1·1	−0·7	−0·4
	Aden	+0·7	0	−0·3	−1·2	+0·2	+0·8	+1·7	+0·4	−0·2	−1·3	−0·3	−0·1	0
	Perim	+0·1	+1·0	+1·1	+0·7	+1·8	+0·3	−0·4	−0·5	−0·6	−0·4	−0·5	+2·2	+0·4
	Zanzibar	−1·3	+0·1	−0·8	−0·1	−1·0	−0·9	+0·3	−1·9	−1·7	+0·9	−2·8	−1·5	−0·9
	Port Victoria (Seychelles).	−0·5	?	−0·1	+0·6	+0·9	−0·1	+0·6	−0·8	+1·0	+0·2	−1·2	−0·1	?

TABLE XV—*Geographical summary of the cloud data of Table II in the monthly weather reviews of 1897.*

Meteorological area.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
North-West Himalaya	7	+0·8	−1·0	+1·1	+1·0	+0·5	−0·3	−0·7	+0·4	+0·3	−0·5	−2·0	−0·6	−0·1
Sikkim Himalaya and Nepal.	2	−0·8	−0·5	−0·8	−1·4	−1·1	−0·2	+0·1	+0·3	+0·2	+1·3	−0·7	+1·0	−0·2
Punjab Plains	4	−0·1	−1·0	+0·5	+0·3	0	−0·5	−0·4	+1·8	+0·2	−0·3	−1·4	−0·2	−0·1
Gangetic Plain	8	+0·2	−0·8	+0·2	0	−0·3	−0·3	0	+0·8	−0·4	+0·2	−0·6	−1·0	−0·2
Western Rajputana	4	0	−1·5	−0·4	−0·3	−0·7	−1·9	−0·9	+0·6	+0·6	−0·6	−1·2	−0.5	−0·6
Eastern Rajputana and Central India.	5	+0·6	−0·6	0	+0·8	−0·2	−0·6	−0·4	+0·2	+0·5	0	−1·1	−0·9	−0·1
Nerbudda Valley	3	+0·6	−0·2	−0·9	+0·2	−0·6	−0·8	−0·9	+0·6	+0·8	+0·3	−1·2	−1·3	−0·3
Chota Nagpur	1	+1·1	+1·1	+0·3	+0·7	−0·5	0	−0·9	+0·9	+1·6	+2·6	+1·1	−0·8	+0·6
Lower Bengal	5	+0·2	+0·9	+0·3	+0·5	−0·5	−0·2	−0·8	+0·4	+0·4	+1·6	−0·1	0	+0·1
Assam and Cachar	3	−0·6	+0·1	−0·4	−2·0	+0·3	−0·9	+0·2	−0·3	+0·4	+0·9	−0·2	−0·1	−0·2
Orissa and Sambalpur	2	+0·3	+1·2	+0·8	−0·1	−0·1	+0·1	−0·2	+0·8	+0·2	+1·0	+0·2	+0·8	+0·4

TABLE XV.—*Geographical summary of the cloud data of Table II in the monthly weather reviews of 1897*—concld.

METEOROLOGICAL AREA.	Number of stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
Central Provinces (South) and Berar.	6	+1·1	0	−0·8	+0·8	−0·1	−0·8	−0·8	+0·5	+0·7	+0·6	−1·3	−1·3	−0·1
Konkan . . .	3	+0·5	0	−0·5	−0·3	−0·1	−0·7	+0·4	+0·4	+1·0	−0·1	−1·8	−0·6	−0·2
Malabar Coast . .	1	−0·1	+1·2	−0·6	+1·1	0	+0·7	+0·5	+2·0	+1·8	−0·6	−0·5	0	+0·5
Deccan, Hyderabad and Mysore.	10	+0·1	+0·7	−0·9	+0·9	−0·1	−0·2	+0·2	+0·6	+0·9	0	−2·0	−1·0	−0·1
East Coast and Carnatic	5	0	+1·2	+0·5	+0·5	−0·5	−0·6	+0·4	+0·6	+0·8	−0·2	−0·6	+0·6	+0·2
Arakan and Pegu .	4	+0·4	+0·7	+1·0	+0·1	+1·0	+0·7	+0·4	+0·9	0	+2·1	+0·7	+0·3	+0·7
Bay Islands . .	1—2	+0·5	+0·3	+0·3	0	+0·4	+0·6	+1·2	+0·6	+0·4	+1·7	+1·5	+1·6	+0·7
Extra-Tropical India .	41—42	+0·2	−0·5	+0·1	0	−0·2	−0·6	−0·5	+0·6	+0·3	+0·3	−1·0	−0·5	−0·2
Tropical India . .	32—33	+0·4	+0·6	−0·2	+0·5	0	−0·2	+0·2	+0·7	+0·7	+0·5	−0·9	−0·1	+0·2
Whole India . .	74—75	+0·3	0	0	+0·2	−0·1	−0·4	−0·2	+0·6	+0·5	+0·4	−0·9	−0·3	0

TABLE XVI.—*Variations of the mean cloud amount from the normal in ten meteorological provinces of India in 1897.*

METEOROLOGICAL PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	YEAR.
Burma Coast and Bay Islands .	+0·5	+0·5	+0·7	−0·1	+1·2	+1·0	+0·6	+0·7	+0·3	+2·0	+1·3	+0·9	+0·8
Assam	−0·6	+0·1	−0·4	−2·0	+0·3	−0·9	+0·2	−0·3	+0·4	+0·9	−0·2	−0·1	−0·2
Bengal and Orissa . . .	+0·2	+1·1	+0·5	−0·5	−0·4	−0·1	−0·4	+0·6	+0·3	+1·5	0	+0·2	+0·3
Gangetic Plain and Chota Nagpur.	+0·5	−0·3	+0·1	0	−0·5	+0·4	0	+0·6	−0·1	+1·1	−0·2	−1·1	0
Upper Sub-Himalayas . .	+0·3	−1·2	+0·4	+0·1	−0·2	−1·3	−0·5	+1·4	−0·2	−0·4	+1·0	−0·6	−0·1
Indus Valley and North-West Rajputana.	−0·2	−0·8	+0·3	+0·4	+0·2	−0·3	−0·4	+1·3	+0·3	−0·3	−1·1	+0·3	0
East Rajputana, Central India and Gujarat.	+0·2	−1·0	0	+0·2	−0·5	−1·4	−0·7	+0·4	+0·7	−0·3	−1·2	−1·0	−0·4
Deccan	+0·6	−0·3	−0·9	+0·6	−0·4	−0·6	−0·4	+0·5	+0·6	+0·2	−1·5	−1·3	−0·2
West Coast	+0·4	+0·3	−0·6	+0·1	−0·1	−0·3	+0·5	+0·8	+1·2	−0·2	−1·5	−0·5	0
South India	+0·1	+1·4	−0·2	+0·8	−0·1	−0·2	+0·5	+0·7	+0·9	0	−1·3	+0·4	+0·3

I.—Cold weather period.—The mean cloud amount of the period differed to a slight extent from the normal. There was less cloud than usual in North-Western India and a slight excess of cloud in Burma, South Bengal, Orissa and Madras.

The following gives the chief features :—

(1) Cloud was on the mean of the period in defect in the plains of North-Western India. The deficiency was large in February, as is shown by the following data :—

PROVINCE.	VARIATION OF MEAN CLOUD AMOUNT FROM NORMAL IN		Mean of period, January and February 1897.
	January 1897.	February 1897.	
Punjab	0	−1·0	−0·5
North-Western Provinces and Oudh .	+0·2	−0·9	−0·4
Sind	+0·1	−1·2	−0·6
Rajputana	+0·1	−1·1	−0·5

(2) Cloud was in large excess in the hill districts of Upper India in January and in equally large defect in February, and was hence practically normal on the mean of the period. This is shown by data for the five stations given below :—

Station.	Variation of mean cloud amount from normal in		Mean of period, January and February 1897.
	January 1897.	February 1897.	
Quetta	+0·5	—0·3	+0·1
Leh	+1·9	—1·4	+0·3
Kailang	+1·6	—1·3	+0·2
Simla	+1·6	—1·8	—0·1
Ranikhet	+0·4	—1·3	—0·5

There was, on the other hand, a slight excess on the mean of the period at the stations in and near the area of more disturbed weather and heavier snowfall than usual in the hill districts of Upper India including Chitral and Kashmir. The following gives data :—

Station.	Variation of mean cloud amount from normal in		Mean of period, January and February, 1897.
	January, 1897.	February, 1897.	
Murree	+0·3	+0·2	+0·3

(3) Cloud was in slight excess at the Andamans and in Burma, Bengal and the greater part of Madras, as is shown by the following data :—

Province.	Variation of mean cloud amount from normal in		Mean of period, January and February, 1897.
	January, 1897.	February, 1897.	
Andamans (Port Blair)	0	+0·5	+0·3
Burma	+0·5	+0·5	+0·5
Bengal	+0·2	+1·0	+0·6
Madras	+0·2	+1·4	+0·8

(4) Over the remainder of the country the variations in the cloud amount were generally opposite in character in the two months of the period, and were small but generally positive for the whole period. The following gives data in illustration :—

Area.	Variation of mean cloud amount from normal in		Mean of period, January and February, 1897.
	January, 1897.	February, 1897.	
Bihar	+0·4	—0·6	—0·1
Chota Nagpur	+1·1	+1·1	+1·1
Central India	+0·9	—0·7	+0·1
Central Provinces	+0·8	0	+0·4
Berar	+1·3	—0·3	+0·5
Deccan	+0·3	—0·1	+0·1
Bombay Coast	+0·4	+0·3	+0·4
Mysore	—0·1	+1·3	+0·6

II.—The hot weather period.—March and April were more disturbed than usual in North-Western India. Two storms of the cold weather type crossed Northern India in March. Numerous series of thunderstorms occurred in North-Western India in April. May was an unusually dry and hot month over the whole of India, and skies were very free from cloud except in those districts which were directly under the influence of the local sea breezes and winds of the month, *viz.*, Lower Burma and Assam, which received heavier rain than usual.

The following is a summary of the chief abnormal features of the distribution of cloud during this season :—

(1) There was more cloud than usual in the first two months of the period in Upper India. The excess was most marked in March. The following gives data :—

Province.	Variation of mean cloud amount from normal in			Mean of period, March to May, 1897.
	March, 1897.	April, 1897.	May, 1897.	
Punjab	+0·5	+0·3	0	+0·3
Rajputana	+0·2	+0·3	—0·8	—0·1

Cloud was throughout the period in excess in the hill districts of Upper India as is shown by the following data :—

Station.	Variation of mean cloud amount from normal in			Mean of period, March to May, 1897.
	March, 1897.	April, 1897.	May, 1897.	
Quetta	0	+0·4	+1·5	+0·6
Leh	+1·5	+1·1	+1·0	+1·2
Kailang	+1·0	+0·4	+1·0	+0·8
Srinagar	+0·7	+1·9	+1·3	+1·3
Murree	+0·5	+1·0	+0·7	+0·7
Simla	+1·5	+1·6	+0·6	+1·2
Chakrata	+1·8	+1·2	+0·1	+1·0
Ranikhet	+0·7	0	—1·0	—0·1

(2) Cloud was in considerable to large defect in Assam and East Bengal in April and was normal or in moderate excess in the same areas in March and May. It was, on the other hand normal or in excess during the whole period in Burma and the Bay Islands. The following gives data :—

Province.	Variation of mean cloud amount from normal in			Mean of period, March to May, 1897.
	March, 1897.	April, 1897.	May, 1897.	
Andamans (Port Blair)	0	0	+0·4	+0·1
Burma	+1·0	+0·4	+1·4	+0·9
East Bengal	+0·8	—0·8	—0·2	—0·1
Assam	—0·4	—2·0	+0·3	—0·7

(3) Cloud was in moderate to considerable excess in the Deccan, Berar, the Central Provinces and Mysore in April, and was normal or in moderate defect in March and May. It was hence on the mean of the period normal in amount, as is shown below :—

Division.	Variation of mean cloud amount from normal in			Mean of period, March to May, 1897.
	March, 1897.	April, 1897.	May, 1897.	
Central Provinces	—0·6	+0·7	—0·2	0
Berar	—1·2	+1·0	—0·4	—0·2
Deccan	—0·7	+1·2	—0·3	+0·1
Mysore	—1·0	+0·7	0	—0·1

(4) The variations of the cloud distribution from the normal were small over the remainder of India. The following gives data :—

Division.	Variation of mean cloud amount from normal in			Mean of period, March to May, 1897.
	March, 1897.	April, 1897.	May, 1897.	
Bihar	0	—0·4	—1·1	—0·5
Chota Nagpur	+0·3	+0·7	—0·5	+0·2
North-Western Provinces and Oudh	+0·3	+0·1	—0·1	+0·1
Central India	—0·7	+0·6	—0·5	—0·2
Bombay Coast	—0·6	+0·1	—0·1	—0·2
Madras Coast	+1·1	+0·5	—0·1	+0·5

III.—The south-west monsoon period.—The variations in the distribution of cloud during this period were very marked, and were due to the variations in the strength of the monsoon currents. These currents were weaker than usual in June and July, and their establishment was also considerably delayed. Both currents, but more especially the Bombay current, were strong and of at least normal strength as rain-giving currents in August September and the first half of October. The following gives the chief abnormal features of the distribution of cloud in this season :—

(1) There was less cloud than usual on the mean of the whole Indian area in June and July, and more in August and September. The following gives data for the whole of India :—

Area.	Variation of mean cloud amount from normal in				Mean of period, June to September, 1897.
	June, 1897.	July, 1897.	August, 1897.	September, 1897.	
Extra-Tropical India	—0·6	—0·5	+0·6	+0·3	—0·1
Tropical India	—0·2	+0·2	+0·7	+0·7	+0·4
Whole India	—0·4	—0·2	+0·6	+0·5	+0·1

(2) Cloud was in moderate excess in June and July over the Andamans and Burma, and also in Baluchistan and the North-West Punjab. The following gives data :—

Area.	Variation of mean cloud amount from normal in		Mean of period, June and July, 1897.
	June, 1897.	July, 1897.	
Burma	+0·9	+0·6	+0·8
Andamans (Port Blair)	+1·1	+1·7	+1·4
Baluchistan (Quetta)	0	+1·1	+0·6
North-West Punjab (Peshawar)	+1·1	+0·6	+0·9

The excess in the first two areas is such as usually occurs when the monsoon is weak and rainfall deficient in the interior of India.

(3) Cloud was more or less in defect over the remainder of India during this period, as is shown below :—

Province.	Variation of mean cloud amount from normal in		Mean Cloud amount during period June and July, 1897.		
	June, 1897.	July, 1897.	Mean actual.	Mean normal.	Variation from normal.
Punjab	—0·5	—0·4	2·7	3·1	—0·4
Rajputana	—1·9	—0·9	4·4	5·8	—1·4
North-Western Provinces and Oudh.	—0·4	—0·1	5·3	5·6	—0·3
Bihar	—0·2	0	6·3	6·4	—0·1
Chota Nagpur	0	—0·9	8·0	8·4	—0·4
Bengal	—0·2	—0·5	7·5	7·9	—0·4
North Bombay	—0·5	—0·5	8·0	8·5	—0·5
Central India	—0·4	—0·8	6·0	6·6	—0·6
Berar	—0·6	—0·6	6·8	7·4	—0·6
Central Provinces	—0·7	—0·5	6·6	7·2	—0·6
Deccan	—0·4	0	7·6	7·8	—0·2
Southern India	—0·4	—0·3	6·3	6·7	—0·4

The deficiency was hence very uniform in amount over the whole area.

(4) Cloud was in general excess in August and September. There was a small local deficiency in Assam in August and in the North-Western Provinces, Bihar and Central India in September. Cloud was most largely in excess during the month of August in the Punjab due to the full extension of the monsoon currents to their limits in that area. It was most largely in excess in Rajputana, Chota Nagpur, Berar, the Deccan and the South Konkan in September. The following gives comparative data :—

Area.	Variation of mean cloud amount from normal in		Mean Cloud amount during period August and September, 1897.		
	August, 1897.	September, 1897.	Actual.	Normal.	Variation from normal.
Burma	+0·8	0	8·4	8·0	+0·4
Bengal	+0·5	+0·3	8·1	7·7	+0·4
Assam	—0·3	+0·4	7·7	7·6	+0·1
Chota Nagpur	+0·9	+1·6	9·8	8·5	+1·3
Bihar	+0·1	—0·6	6·4	6·7	—0·3
North-Western Provinces and Oudh	+1·0	—0·4	6·1	5·8	+0·3
Punjab	+1·8	+0·2	3·7	2·7	+1·0
Rajputana	+0·2	+1·2	6·4	5·7	+0·7
Central India	+0·4	—0·7	6·4	6·6	—0·2
Central Provinces	+0·3	+0·7	7·5	7·0	+0·5
Berar	+1·1	+1·2	8·5	7·3	+1·2
Deccan	+0·5	+1·0	8·6	7·8	+0·8
Bombay Coast	+0·8	+1·2	7·8	6·8	+1·0
Madras Coast	+0·9	+0·7	7·2	6·4	+0·8

(5) Cloud on the mean of the whole period differed little from the normal over the whole of India, the excess in the two latter months balancing the deficiency in the first two months over by far the greater part of India. The following gives comparative data :—

Area.	Variation of mean cloud amount from normal in		Mean of period, June to September, 1897.
	June and July, 1897.	August and September, 1897.	
Burma	+0·8	+0·4	+0·6
Bengal	—0·4	+0·4	0
Assam	—0·4	+0·1	—0·2
Chota Nagpur	—0·5	+1·3	+0·4
Bihar	—0·1	—0·3	—0·2
North-Western Provinces and Oudh	—0·3	+0·3	0
Punjab	—0·5	+1·0	+0·3
Rajputana	—1·4	+0·7	—0·4
Central India	—0·6	—0·2	—0·4
Central Provinces	—0·6	+0·5	—0·1
Berar	—0·6	+1·2	+0·3
Deccan	—0·2	+0·8	+0·3
Bombay Coast	+0·1	+1·0	+0·6
Madras Coast	+0·1	+0·8	+0·5

IV.—The retreating south-west monsoon period.—The conditions in this period were very marked. From the 15th of October up to the end of November the retreating monsoon current was chiefly directed to the south-east and east of the Bay. In December, north-easterly winds prevailed generally in the Bay. They gave occasional rain in the Coromandel Coast districts. The chief features of the period were increased cloud in Burma, Arakan, South Bengal, Orissa and the east of the Bay as represented by Port Blair and deficient cloud over nearly the whole of the Peninsula. The following gives a summary with data of the chief features of the cloud distribution of the period.

1st.—Cloud was throughout in excess in the Andamans, Burma, South Bengal and Orissa. The following gives data :—

Area.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897.
	October, 1897.	November, 1897.	December, 1897.	
Andamans (Port Blair)	+2·0	+2·5	+2·6	+2·4
Burma	+2·2	+0·9	+0·5	+1·2
South Bengal	+1·8	+0·6	+0·2	+0·9
Orissa	+1·0	+0·2	+0·8	+0·7

(2) Cloud was below the normal in Southern India in October and November, but above it in December, as is shown below :—

Area.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897.
	October, 1897.	November, 1897.	December, 1897.	
Mysore	+0·1	—2·2	+0·3	—0·6
Coorg	+0·3	—1·7	—1·0	—0·8
South India	—1·2	—1·1	+0·4	—0·6
Madras East Coast South	—0·2	—1·2	+1·1	—0·1

(3) Cloud was largely below the normal during the last fortnight of October and the months of November and December in the Deccan, Berar, the Central Provinces, Khandesh and Central India. The following gives data :—

Division.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897.
	October, 1897.	November, 1897.	December, 1897.	
Deccan	—0·1	—2·2	—1·1	—1·1
Berar	+0·2	—1·4	—1·5	—0·9
Central Provinces	+0·6	—1·1	—1·0	—0·5
Central India	—0·1	—1·2	—1·2	—0·8

The deficiency was most marked in the West Deccan, as represented by the stations for which data are given below :—

Station.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897.
	October, 1897.	November 1897.	December, 1897.	
Belgaum	—0·7	—2·6	—1·7	—1·7
Sholapur	—0·3	—2·5	—2·1	—1·6
Poona	+0·2	—2·3	—1·6	—1·2

(4) There was less cloud than usual during the period in North-Western India. The following gives data :—

Province.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897
	October, 1897.	November, 1897.	December, 1897.	
Punjab	—0·3	—1·4	—0·2	—0·6
North-Western Provinces and Oudh.	0	—0·7	—0·9	—0·5
Rajputana	—0·3	—1·3	—1·0	—0·9
Sind	—0·3	—0·9	+0·3	—0·3

The deficiency was hence marked in this area in the month of November.

(5) The deficiency in the amount of cloud was very large in November and slight to moderate in October and December in the Upper India hill districts as is shown by the following statement :—

Station.	Variation of mean cloud amount from normal in			Mean of period, October to December, 1897.
	October, 1897.	November, 1897.	December, 1897.	
Leh	—1·3	—2·7	—0·2	—1·4
Kailang	—0·8	—3·1	—1·0	—1·6
Murree	—0·4	—2·2	—0·1	—0·9
Srinagar	—0·6	—2·8	—0·2	—1·2
Simla	0	—2·0	—0·9	—1·0
Chakrata	—0·7	—0·9	—0·9	—0·8
Ranikhet	+0·4	0	—1·1	—0·2
Quetta	—0·5	—1·2	+1·0	—0·2

There was a local excess of cloud in Baluchistan and Upper Sind in December, due chiefly to an early cold weather disturbance in the latter half of the month, as shown below :—

Station.	Variation of mean cloud amount from normal in			Mean of period, October to December 1897.
	October, 1897.	November, 1897.	December, 1897.	
Baluchistan (Quetta)	—0·5	—1·2	+1·0	—0·2
Upper Sind (Jacobabad)	—0·4	—1·0	+1·4	0

(6) Cloud was considerably below the normal in Persia and at Baghdad, Aden and Muscat, as is shown below :—

Station.	Variation of mean cloud amount from normal in			Mean of period, October to December 1897.
	October, 1897.	November, 1897.	December, 1897.	
Baghdad	—0·4	—0·4	0	—0·3
Aden	—1·3	—0·3	—0·1	—0·6
Muscat	—0·3	—1·1	—0·7	—0·7

The year.—The mean cloud amount of the year in India was normal. The variations in Tropical India and Extra-Tropical India and also of the whole of India for each of the four periods of the year are given below :—

Area.	Variation of mean cloud amount from normal in				
	I Period.	II Period.	III Period.	IV Period.	Whole year.
Extra-Tropical India	—0·2	0	—0·1	—0·4	—0·2
Tropical India	+0·5	+0·1	+0·4	—0·2	+0·2
Whole India	+0·2	0	+0·1	—0·3	0

The following table gives the variation of the mean amount of cloud from the normal in the Indian area, year by year, from 1875 to 1897 :—

Year.	Amount of variation.	Year.	Amount of variation.
1875	0	1886	+0·2
1876	—0·2	1887	—0·1
1877	+0·3	1888	—0·1
1878	+0·1	1889	+0·1
1879	—0·1	1890	+0·2
1880	—0·1	1891	+0·1
1881	—0·1	1892	+0·1
1882	0	1893	+0·5
1883	+0·1	1894	+0·5
1884	—0·1	1895	+0·1
1885	+0·2	1896	—0·2
		1897	0

Rainfall.

The rainfall data of India are now issued in a separate volume. The fifth volume, that of 1897, contains the rainfall data of 2,220 stations, which are classified under their respective administrative divisions according to the following scheme :—

Province.	Number of Stations.
Burma	142
Assam	106
Bengal, Bihar, Chota Nagpur and Orissa	318
North-Western Provinces and Oudh	277
Punjab	208
Bombay	280
Madras	361
Coorg	10
Central Provinces	66
Berar	44
Mysore	76
Baluchistan	45
Kashmir	20
Rajputana	128
Central India	62
Hyderabad (Deccan)	24
Travancore	39
Cochin	3
Pudukota	11

The volume contains the whole of the available information for the year 1897 of this important element of meteorological observation.

The information includes monthly statements of—

(*a*) the actual rainfall day by day of all the rainfall stations;

(*b*) the total rainfall of the month;

(*c*) the number of rainy days during the month;

(*d*) the average or normal rainfall of the month for all stations for which rainfall data of at least five years are available;

(*e*) the average or normal number of rainy days of the month for all stations for which rainfall data of five years or upwards are available;

(*f*) the accumulated rainfall (up to the date of each statement) throughout each of the seasons into which the year is divided.

Symons's rain-gauges are now used at all rain-gauge stations, with the exception of those in Mysore. The hour of measuring rainfall is 8 A.M. throughout India, and the amounts registered give the rainfall of the previous 24 hours, and hence generally of the rainfall of the previous civil day.

In Table XXV of the Annual Summary for 1896 are given the normal means of rainfall for 535 stations determined from the whole of the available data down to December 1896. The stations for which the means are given were selected by Mr. Blanford, and normal means were given in the rainfall sections of the Annual Reports on the meteorology of India. The last series of means were given in the Annual Report on the meteorology of India for 1890. The normal means in Table XXV of the Annual Summary for 1896 are hence based on six years' additional data. This period, however, includes the three years 1892—94 of abnormally heavy rainfall, and hence the means given in this table are in almost all cases higher than those given in Table XXXI of the Annual Report on the Meteorology of India for 1890. The following gives six instances of the considerable apparent increase in the mean rainfall:—

Province.	Station.	Average annual rainfall based on data up to 1890.	Average annual rainfall based on data up to 1896.	Increase in average result.
		Inches.	Inches.	Inches.
Bombay . .	Lanavla . .	164·24	172·75	+8·51
Do. . .	Jetalsar . .	23·60	30·39	+6·79
Bengal and Orissa	Keonjhar. .	31·29	37·98	+6·69
Do. . .	Narsingpur .	39·02	44·72	+5·70
Do. . .	Bispara . .	49·69	55·07	+5·38
Central Provinces.	Sarangarh .	50·50	55·84	+5·34

Table XVII gives the variations of the monthly and annual rainfall in 1897, of 531 stations in India, Baluchistan, and Burma.

The following four tables (Tables XVIII to XXI) give summaries of the rainfall data of the year. In the first two tables (Tables XVIII and XIX) the summaries are drawn up in the form that was used for many years in the Annual Reports issued by the Department and are based on the rainfall returns of 386 selected stations. In the two succeeding tables (Tables XX and XXI) the actual average rainfall data (derived from the returns of 2,220 rain-gauge stations in India) are given for the 57 meteorological districts into which the Empire is divided for the comparison of crops and rainfall for the four periods into which the year may be divided. The four periods are as follows:—

1st.—From January 1st to February 28th, which forms the period of the cold-weather rains of Upper India.

2nd.—From March 1st to May 31st, which includes the hot season, when rain occurs mainly in the coast districts, and in Assam during thunderstorms.

3rd.—From June 1st to October 31st, which forms the period of the south-west monsoon rains proper.

4th.—From November 1st to December 31st, which includes the period of the so-called north-east monsoon rains of Southern India, more especially of the Coromandel coast districts.

Table XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years.*

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Baluchistan.	Kalat . .	−0·28	−1·42	−0·76	−0·02	−0·13	−0·21	−0·19	−0·52	−0·05	−0·07	−0·35	+0·42	−3·58
	Pishin . .	+0·48	−0·07	−0·12	+1·44	−0·18	−0·06	−0·21	−0·21	−0·01	−0·06	−0·75	+0·75	+1·00
	Chaman . .	+3·04	+0·36	−0·93	+0·99	0	−0·22	−0·29	0	0	−0·09	−0·88	+1·12	+3·10
	Quetta . .	+0·61	−0·54	−0·40	+1·20	−0·30	+0·13	−0·48	−0·62	−0·13	−0·09	−0·31	+0·41	−0·52
	Mach . .	−1·56	−0·66	−0·81	+1·11	+0·07	−1·25	−0·59	+2·71	−0·05	−0·62	−0·21	−0·62	−2·48
	Beleli . .	−0·17	−1·23	+0·07	+1·81	−0·32	−0·22	−0·11	−0·56	−0·04	−0·10	−0·93	−0·35	−2·15
	Kuchlak . .	+0·49	−0·86	−0·01	+1·47	−0·18	−0·13	−0·19	−0·25	−0·19	−0·13	−0·89	−0·69	−1·56
	Fort Sandeman .	+0·13	−0·47	−0·44	+1·81	+0·67	−0·39	+1·66	+0·22	+0·27	−0·10	−0·56	+0·46	+3·26
	Bostan . .	+1·88	−1·68	+0·08	−0·77	−0·07	−0·29	−0·44	−0·26	−0·04	−0·12	−0·76	−1·33	−3·80
	Yarookarez .	+1·17	−1·67	−0·20	+2·02	0	−0·08	−0·02	−0·23	0	−0·07	−0·46	−0·72	−0·26

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Baluchistan—*concld.*	Syad Hamed	+0·71	−0·35	−0·33	+1·42	0	−0·01	0	−0·13	0	−0·10	−1·06	−0·62	−0·47
	Gulistan	+0·96	+0·68	−1·00	+0·76	+0·04	−0·07	−0·05	0	−0·06	−0·10	−0·91	−0·71	−0·46
	Kilha Abdulla	+0·33	+0·34	−0·35	+0·77	−0·05	−0·05	−0·13	−0·04	−0·03	−0·15	−1·29	−0·77	−1·42
	Khanai	+4·37	−1·52	+0·57	+1·99	0	−0·28	−0·25	−0·30	0	−0·11	−0·71	−1·07	+2·69
	Fuller's Camp	+0·10	−1·45	−1·15	+1·80	−0·40	+0·09	+0·26	−0·22	−0·09	−0·13	−0·96	−0·42	−2·57
	Kachh	+0·54	−0·05	+0·04	+1·94	−0·15	−0·01	−0·05	−0·23	+0·12	−0·10	−0·97	−0·10	+0·98
	Kachkotal	+6·97	−1·58	+0·09	+3·47	−0·09	+0·11	−0·18	−0·42	0	−0·13	−0·84	−0·21	+7·19
	Mudgorge	−0·84	−0·22	−0·78	+1·71	+0·55	−0·18	+0·12	−0·33	+0·04	−0·13	−1·23	+0·16	−1·13
	Mangi	+0·93	−0·14	−0·99	+0·66	+0·15	−0·57	−0·20	+0·13	+0·01	−0·13	−0·99	−0·65	−1·79
	Dirgi	+0·26	+0·65	−0·67	+0·68	+0·25	−0·26	−0·72	−0·48	+0·11	−0·09	−0·78	−0·99	−2·04
	Khost	−1·10	−0·27	−0·69	+1·42	+0·56	−0·67	+1·13	+0·24	+0·08	−0·29	−1·34	−1·14	−2·07
	Shahrig	+0·41	−0·09	−0·90	+0·88	−0·48	−1·25	−0·80	+4·37	+0·46	−0·17	−0·98	−0·83	+0·62
	Nasak	−0·90	−0·81	−0·94	+0·81	−0·38	−1·69	+3·82	+3·29	−0·54	−0·13	−1·00	−0·76	+0·77
	Harnai	−1·40	−1·61	−0·75	+1·93	+0·44	−1·67	+1·18	+8·26	−0·48	−0·12	−0·80	−1·22	+3·76
	Sunari	−0·77	−0·44	−0·36	+0·71	−0·13	−1·39	−0·38	+8·77	−0·47	−0·12	−0·70	−0·73	+3·89
	Spintangi	−0·50	−0·81	−0·57	+0·15	−0·20	−0·99	+0·81	+4·90	−0·31	0	−0·57	−0·43	+1·48
	Dalugal	−0·89	+1·15	+0·04				Closed						?
	Kuchali	−0·61	−0·82	−0·15				Closed						?
	Mushkaf	?	+0·65	−0·41	−0·01	+0·14	−0·11	+0·10	+6·13	+0·35	0	−0·17	−0·02	?
	Baber Kach	−0·87	−0·20	−0·40	+0·89	−0·16	−0·49	+0·19	+3·91	−0·34	−0·04	−0·41	−0·02	+2·06
	Loralai (Hospital)	−0·49	−0·74	+0·21	+2·04	+1·56	−0·53	−1·29	+5·24	−0·11	−0·19	−0·40	+0·19	+5·49
	Tanduri	−0·81	−0·69	−0·14				Closed						?
	Nari	−0·62	−0·07	−0·23	+0·58	−0·05	−0·08	−1·61	+4·07	−0·17	−0·01	−0·32	−0·12	+1·37
	Sibi	−0·83	+0·02	−0·34	+0·08	−0·04	−0·04	−0·93	+3·83	+0·10	0	−0·26	−0·56	+1·03
	Kolepur	−0·01	−0·44	−0·56	+0·99	+0·21	−0·16	−1·37	−0·76	−0·21	−0·06	−0·34	−0·63	−3·34
	Chaderzi	−0·74	−0·30	−0·63				Closed						?
	Herok	−1·97	−0·81	−0·53	+0·32	−0·01	−0·56	−0·97	−0·80	−0·33	−0·11	−1·48	−0·85	−8·10
	Mihtri	−0·69	−0·18	−0·29	+1·95	0	−0·28	+0·10	+3·72	0	−0·03	−0·23	−0·40	+3·67
	Lindsay	−0·51	−0·53	−0·16	−0·11	−0·02	−0·13	−1·03	+1·00	−0·12	0	−0·19	−0·31	−2·11
	Bellput	−0·41	+0·10	−0·14	+0·06	−0·03	−0·12	−0·24	+2·23	+0·47	0	−0·28	−0·16	+1·48
	Nuttal	−0·59	−0·01	−0·19	+0·16	−0·17	−0·11	+0·10	+0·34	−0·20	0	−0·56	−0·26	−1·49
	Temple Derei	−0·58	−0·30	−0·11	−0·07	−0·06	−0·33	−0·65	+0·71	+0·18	0	−0·33	+0·04	−1·50
	Jhatput	−0·37	+0·04	−0·11	−0·03	−0·10	−0·16	+0·90	+2·73	−0·17	0	−0·29	+0·11	+2·55
	Sangal	+2·28	−0·10	−0·43	+1·79	0	−0·02	−0·38	−0·09	0	−0·19	−0·74	+0·62	+2·74
	Shalabagh	+0·84	−0·44	+0·21	+2·46	−0·02	−0·04	−0·71	0	0	−0·16	−0·69	+0·27	+1·72
	Panir	−1·02	+0·34	−0·73	+0·20	0	−0·31	−0·15	+2·78	+0·03	−0·01	−0·14	−0·04	+0·95
	Dazan	−0·26	+0·67	−1·17				Closed						?

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

PROVINCE.	STATION.	January.	February.	March.	April.	May.	June.	July	August.	September.	October.	November.	December.	TOTAL.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
PUNJAB.	Abbottabad	+2·48	−1·12	+2·38	+4·29	+0·18	+0·18	−5·69	+4·58	−0·81	−0·85	−1·01	−0·52	+ 4·09
	Murree (Obsy.)	+0·25	−1·22	+2·07	+1·17	−0·34	−1·37	−6·86	+4·40	−2·15	−1·42	−1·49	−0·06	− 7·02
	Dharmsala	−0·83	−0·54	+3·48	+2·35	−1·19	−6·60	−9·14	+13·44	−3·50	−0·94	−0·38	−2·07	− 5·92
	Kailang	+2·55	−2·03	+5·01	+2·53	+3·88	−0·10	−0·83	+0·80	+1·34	−0·25	−0·61	−0·58	+11·71
	Kilba	−0·94	−0·39	+0·65	+0·63	−0·20	+0·08	−1·00	+0·29	−1·34	−1·21	−1·98	−0·74	− 6·15
	Simla (Obsy.)	+1·90	−1·40	−0·40	−0·75	−2·94	−4·63	−8·61	+1·50	−1·34	−1·01	−0·45	−0·47	−18·60
	Peshawar (Obsy.)	+1·66	−0·09	+0·19	+0·94	+0·84	+0·19	−1·16	+2·55	−0·26	−0·20	−0·64	+0·71	+ 4·73
	Kohat	+0·94	+0·61	−0·68	+2·57	+0·36	+0·25	−2·33	+1·12	−1·23	−0·36	−0·70	+0·50	+ 1·05
	Bannu	+1·06	+0·31	+0·58	+2·10	−0·20	−0·75	+1·07	+3·43	−0·07	−0·15	−0·30	+0·55	+ 7·63
	Dera Ismail Khan	−0·13	+0·26	−0·20	−0·09	−0·35	−0·48	−1·40	+3·58	+0·50	−0·11	−0·16	−0·08	+ 1·34
	Dera Ghazi Khan	−0·21	−0·21	−0·53	+0·70	−0·29	−0·05	−0·44	+0·15	−0·35	−0·05	−0·13	+0·20	− 1·21
	Muzaffargarh	−0·31	−0·11	−0·18	+0·08	−0·37	+0·02	+2·53	+1·17	−0·47	−0·08	−0·09	+0·17	+ 2·36
	Mooltan (Obsy.)	−0·31	−0·09	−0·31	+0·38	−0·42	−0·34	−0·37	+7·20	−0·65	−0·08	−0·07	+0·34	+ 5·28
	Jhang	+0·12	−0·28	+0·06	−0·36	−0·20	−0·04	−1·74	+8·53	−0·22	−0·08	−0·06	+0·64	+ 6·37
	Montgomery	+0·15	−0·08	−0·47	−0·11	−0·07	−0·79	−2·49	+2·09	+0·07	+0·11	−0·06	+0·20	− 1·45
	Shahpur	+0·18	−0·68	−0·03	+0·25	−0·46	+0·46	+3·69	+2·54	−0·71	−0·06	−0·25	+1·24	+ 6·17
	Rawalpindi	−0·02	−0·96	+1·30	−0·33	−0·39	−1·14	+0·24	+1·09	−1·17	−0·47	−0·71	+0·44	− 2·12
	Jhelum	+0·49	−0·85	+0·59	+0·09	−0·57	−1·44	−1·73	+1·16	+0·38	−0·28	−0·27	+0·66	− 1·77
	Gujrat	−0·32	−0·89	−0·42	−0·09	−0·75	−1·54	−6·95	−2·13	−1·18	−0·47	−0·24	+0·21	−14·77
	Sialkot (Obsy.)	+0·08	−1·21	−0·75	−0·91	−0·74	−2·34	−7·07	−3·00	−1·63	−0·43	−0·29	−0·34	−18·63
	Gujranwala	+0·44	−0·93	−0·59	−0·56	−0·61	+0·34	−4·63	−2·18	−0·85	−0·46	−0·22	+0·11	−10·14
	Gurdaspur	+0·17	−0·99	−0·80	+1·41	−0·02	−3·14	+0·84	+7·43	−2·10	−0·54	−0·15	−0·42	+ 1·69
	Lahore	+0·52	−0·35	−0·52	−0·44	−0·42	+0·53	−3·50	+4·92	−1·77	−0·46	−0·13	+0·77	− 0·85
	Amritsar	−0·01	−0·42	−0·17	+0·08	−0·60	−1·15	−4·02	−0·62	−2·30	−0·45	−0·20	+0·01	− 9·85
	Ferozepore	+0·55	−0·48	−0·66	+1·07	−0·12	−1·00	−5·01	−1·60	−2·23	−0·53	−0·06	+0·12	− 9·95
	Jullundur	−0·40	−0·26	+0·14	+1·42	−0·47	−2·27	−0·22	+0·54	−2·78	−0·41	−0·10	−0·67	− 5·48
	Hoshiarpur	−0·52	−0·38	+0·10	+1·72	−0·58	−1·33	−6·01	−4·71	−2·79	−0·27	−0·15	−1·10	−16·02
	Ludhiana	−0·70	−0·10	−1·17	+0·70	−1·01	−0·07	−0·06	−1·05	−2·69	−0·90	0·09	−0·88	− 8·02
	Umballa	−1·36	−1·13	−0·67	−0·23	−0·23	−3·49	+0·15	−2·69	+0·05	−0·48	−0·26	−0·45	−10·79
	Sirsa	−0·42	−0·08	−0·45	+0·15	−0·65	−1·19	+0·62	+1·85	+0·33	−0·10	−0·03	−0·35	− 0·32
	Hissar	−0·56	−0·42	−0·47	+0·03	−0·57	−0·48	−1·39	+9·01	+3·03	−0·01	−0·08	−0·43	+ 7·66
	Rohtak	−0·90	−0·58	−0·48	−0·06	+0·25	−1·31	−0·03	+1·33	+0·50	−0·37	−0·04	−0·50	− 2·19
	Delhi (Obsy.)	−0·98	−0·60	−0·29	−0·32	−0·21	−1·33	−2·99	+0·96	−0·31	−0·42	−0·10	−0·43	− 7·02
	Gurgaon	−0·89	−0·40	−0·29	−0·14	−0·16	−0·53	−1·43	−1·82	−2·55	−0·37	−0·04	−0·34	− 8·96
	Karnal	−1·27	−1·10	−0·60	−0·15	−0·12	−2·11	−1·20	−4·46	+1·71	−0·38	−0·13	−0·47	−10·28
SIND	Kurrachee	−0·63	−0·15	−0·16	−0·14	−0·04	−0·51	+0·55	+4·74	+0·94	−0·05	−0·18	−0·19	+ 4·18
	Sehwan	−0·44	−0·12	−0·19	+0·26	+1·02	−0·32	−1·15	−0·47	+0·90	−0·03	−0·13	−0·08	− 0·75

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches	Inches.	Inches.	Inches.	Inches.
Sind—*concld.*	Tatta	—0·25	+0·20	—0·11	+0·06	—0·02	—1·01	—1·41	+5·49	—0·62	0	—0·22	—0·09	+2·02
	Hyderabad (Obsy.)	—0·29	—0·18	—0·12	+0·21	—0·13	—0·45	+1·00	+3·38	—0·33	0	—0·12	—0·04	+2·93
	Umarkot	—0·12	—0·08	—0·12	—0·05	—0·10	—0·88	—2·57	+3·01	+1·69	—0·16	—0·06	—0·02	+0·54
	Shikarpur	—0·36	—0·09	—0·37	+0·17	—0·07	+0·05	—0·37	+1·03	+0·18	0	—0·14	+0·38	+0·41
	Rohri	—0·35	—0·21	—0·38	+0·04	—0·17	+0·01	—0·29	+2·53	—0·12	—0·01	—0·12	+0·27	+1·20
	Jacobabad	—0·26	+0·03	—0·27	+0·07	—0·11	—0·07	—0·07	+1·22	+0·20	—0·01	—0·13	+0·25	+0·85
Cutch	Bhuj	+0·03	—0·13	—0·08	—0·10	—0·15	—2·35	—1·68	+2·09	+1·42	—0·53	—0·09	—0·06	—1·53
	Bhahpur	+0·19	—0·10	—0·06	—0·06	—0·15	—0·99	—3·97	+6·01	+7·47	—0·13	—0·20	—0·01	+8·00
	Nagar	+0·03	—0·10	—0·05	—0·01	—0·43	—1·29	—1·80	+4·35	+2·59	—0·27	—0·05	—0·02	+2·95
Rajputana.	Jeysulmere	—0·19	—0·13	—0·12	+0·86	—0·26	—0·70	—0·58	+2·98	+2·04	0	—0·03	—0·11	+3·76
	Phalodi	—0·02	—0·07	—0·12	—0·02	—0·33	—0·89	—1·42	+3·54	—0·62	0	0	—0·03	+0·02
	Bickaneer	—0·12	—0·21	+0·11	—0·16	—0·80	—1·80	+1·79	+7·49	—0·55	+0·07	—0·07	—0·18	+5·57
	Nagar	—0·25	—0·10	—0·08	+0·25	+0·84	—2·42	+1·05	+1·37	—0·16	+0·03	—0·09	—0·32	+0·12
	Didwana	—0·42	—0·16	—0·22	+0·04	—0·34	+0·56	+2·41	+5·56	—0·59	+0·07	—0·17	—0·25	+6·49
	Jhunjhunu	—0·94	—0·24	—0·08	—0·11	—0·03	—2·91	—1·62	+0·05	—1·79	—0·17	—0·06	—0·25	—8·15
	Khetri	—1·02	—0·71	+0·68	—0·14	+0·10	—1·18	+0·53	+1·20	—1·12	—0·30	—0·12	—0·27	—2·95
	Sikar	—0·65	—0·16	—0·13	+0·05	+0·47	—2·24	+5·89	+0·77	—0·93	+0·12	—0·14	—0·31	+2·74
	Sri Madhopur	—0·69	—0·50	—0·18	—0·09	—0·35	—1·61	+0·41	+1·80	—1·62	+0·01	—0·23	—0·58	—3·57
	Ulwar	—0·64	—0·40	—0·30	—0·09	—0·81	—1·85	+3·31	+3·97	—3·19	—0·80	—0·20	—0·45	—1·45
	Bhurtpore	—0·47	—0·20	—0·27	—0·11	—0·54	—1·02	+0·26	+2·83	—1·24	—0·39	—0·06	—0·29	—1·50
	Bandikui	—0·39	—0·17	—0·40	—0·04	—0·18	—1·31	+3·96	—0·43	—1·56	—0·12	—0·22	—0·45	—1·31
	Jeypore	—0·49	—0·20	—0·34	—0·02	+0·11	—2·82	—3·17	—0·64	—1·45	—0·17	—0·18	—0·36	—9·73
	Sambhar	—0·35	—0·15	—0·22	+0·02	—0·81	—1·60	—0·82	—0·46	—2·24	+0·12	—0·25	—0·42	—7·18
	Kerowlee	—0·38	—0·14	—0·19	—0·05	—0·20	—0·61	—0·30	—4·15	—3·12	—0·15	—0·11	—0·33	—9·73
	Lalsot	—0·41	—0·07	—0·17	—0·01	+0·52	—3·20	+0·99	—1·12	—0·49	—0·19	—0·13	—0·20	—4·48
	Tonk	—0·22	—0·22	—0·20	—0·04	—0·31	—2·55	+0·26	—1·40	—0·30	—0·01	—0·08	—0·23	—5·30
	Siwai Madhopur	—0·40	—0·13	—0·25	—0·03	+0·10	—3·64	—3·07	+5·59	—2·29	+0·10	—0·14	—0·18	—4·34
	Deoli	—0·27	—0·17	—0·16	—0·05	—0·43	—3·17	—1·09	—3·13	—1·25	+0·03	—0·14	—0·18	—10·01
	Kotah	—0·28	—0·21	—0·10	—0·02	—0·31	—0·95	+1·53	—1·29	—1·77	—0·30	—0·17	—0·25	—4·12
	Jhalrapatan	+0·19	—0·31	—0·15	+0·02	—0·48	—0·41	—8·89	+5·11	—1·35	—0·97	—0·26	—0·47	—7·97
	Ajmere	—0·35	—0·31	—0·35	+0·12	—0·36	—2·40	+1·10	+4·93	—2·06	+0·63	—0·21	—0·29	+0·45
	Nusseerabad	—0·19	—0·33	—0·12	0	—0·47	—1·61	—1·23	+3·55	—0·84	+0·16	—0·19	—0·31	—1·58
	Malpura	—0·43	—0·04	—0·31	—0·01	—0·19	—0·76	+2·19	—1·04	+0·16	—0·02	—0·03	—0·28	—0·76
	Beawar	—0·24	—0·11	—0·17	—0·10	—0·38	—1·54	+5·16	+1·07	—0·76	—0·02	—0·19	—0·24	+2·48
	Jodhpore	—0·18	—0·16	—0·03	—0·05	—0·47	—1·42	—1·03	+3·10	+0·17	+1·84	—0·12	—0·13	+1·52
	Pachpadra	—0·26	—0·07	—0·12	+0·01	—0·78	—1·73	+3·85	—1·15	—0·46	+0·29	—0·09	—0·11	—0·62
	Jasol	—0·11	—0·05	—0·10	0	—0·56	—1·77	+1·48	—1·33	+0·39	—0·01	—0·21	—0·05	—2·32

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Provinces.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Rajputana—*concld.*	Barmer	−0·20	−0·07	−0·09	−0·01	−0·51	−1·81	−0·86	+5·43	−0·74	−0·04	−0·14	−0·05	+0·91
	Pali	−0·15	−0·03	−0·12	0	−0·31	−2·33	−0·98	+0·10	−0·78	−0·11	−0·29	−0·10	−5·10
	Shahpoora	−0·14	−0·17	−0·17	+0·09	−0·73	−2·86	+3·68	+0·70	+2·10	+0·61	−0·12	−0·23	+2·76
	Erinpura	−0·19	−0·23	−0·11	−0·03	−0·46	+0·26	+3·34	+0·95	+0·92	+0·02	−0·20	−0·13	+4·14
	Sirohee	−0·08	−0·15	−0·11	−0·02	−0·77	−3·66	−0·49	−1·02	+2·91	+0·70	−0·25	−0·06	−3·00
	Mount Abu	+0·08	−0·33	−0·17	+0·03	−1·02	−5·56	−2·88	−1·79	+3·99	+0·99	−0·31	−0·21	−7·18
	Kotra	−0·13	−0·22	−0·04	+0·02	−0·70	−3·51	+0·06	+6·10	+2·43	+0·28	−0·20	−0·14	+3·95
	Oodeypore	−0·07	−0·15	−0·08	−0·09	−0·51	−2·95	+0·09	+1·89	+0·23	−0·42	−0·21	−0·16	−2·43
	Partabgarh	−0·23	−0·08	−0·03	+0·02	−0·50	−2·63	−0·14	−2·46	−2·35	+0·16	−0·31	−0·27	−8·82
	Kherwara	−0·10	−0·17	−0·06	−0·02	−0·40	−4·20	+0·42	+1·00	−1·70	−0·54	−0·16	−0·10	−6·03
	Banswara	−0·30	−0·11	−0·01	−0·01	−0·32	−4·32	+1·92	+1·97	−4·02	−0·68	−0·26	−0·35	−6·49
Central India.	Neemuch (Obsy.)	−0·22	−0·15	−0·10	−0·13	−0·46	−1·90	+2·73	−2·08	−1·40	−0·63	−0·18	−0·27	−4·79
	Sirdarpore	−0·18	−0·18	−0·03	+0·07	−0·27	−4·09	−3·32	+0·58	+0·80	−0·06	−0·23	−0·16	−7·07
	Agar	+0·10	−0·30	−0·04	0	−0·47	+2·90	−3·16	−2·18	−3·76	−0·70	−0·20	−0·41	−8·22
	Rutlam	−0·19	−0·17	−0·03	−0·02	−0·41	−3·91	−2·06	+4·37	−0·43	−0·65	−0·28	−0·23	−3·81
	Indore	−0·21	−0·26	−0·05	−0·16	−0·51	−4·67	−0·46	+0·70	+3·24	−0·82	−0·28	−0·20	−3·68
	Bhopal (Sehore)	+0·59	−0·24	−0·16	−0·06	−0·35	+2·57	−10·15	+2·86	−0·87	−1·26	−0·43	−0·84	−8·34
	Goona	+2·32	−0·25	−0·17	−0·08	−0·36	+3·63	−0·45	+0·35	−0·91	−0·50	−0·39	−0·34	+2·85
	Morar	+0·79	−0·31	−0·17	−0·10	−0·40	+1·56	+0·86	+5·23	−0·75	−0·50	−0·04	−0·33	+5·84
	Nowgong	+1·39	−0·39	−0·08	−0·01	−0·21	+15·51	−4·64	−2·54	−2·71	−1·16	−0·19	−0·48	+4·49
	Surna	+0·78	−0·69	−0·20	0	+0·10	−1·00	−4·02	+3·96	−1·95	−0·24	−0·30	−0·37	−3·93
	Nagode	+0·71	−0·41	−0·31	−0·01	+0·47	−0·45	−7·73	+0·46	−3·62	−1·50	−0·19	−0·47	−13·05
	Maihar	+0·92	+0·08	−0·24	+0·65	+0·33	−2·22	−2·60	+2·40	−2·49	−0·50	−0·53	−0·54	−4·74
	Rewah	+0·16	−0·22	−0·09	+1·09	−0·42	−1·29	+0·64	+0·31	−2·75	+1·17	−0·33	−0·33	−2·06
	Chandia	+0·73	+0·53	−0·16	+0·11	−0·64	−7·09	−8·41	+0·37	−2·43	−1·53	−0·31	−0·41	−18·64
	Ramnagar	+1·08	+0·21	−0·14	−0·06	−0·39	−4·87	−3·82	+6·53	−3·40	+0·08	−0·37	−0·59	−5·74
	Sihawal (Bardi)	−0·39	+0·60	+0·61	−0·07	−0·24	−2·71	−4·47	+1·96	−3·71	+0·65	−0·60	−0·45	−8·82
	Tyonthar	−0·31	−0·47	−0·17	+0·24	+0·08	−0·13	−4·89	−1·43	−2·49	−0·01	−0·22	−0·43	−10·23
	Sohagpur	+0·86	+0·92	−0·57	+0·72	−0·06	−7·01	−2·04	+4·13	−2·01	+1·20	−0·97	−0·54	−5·37
North-Western Provinces.	Chakrata	+2·90	+0·41	+1·78	+0·55	−1·36	−4·28	+6·20	+10·98	−2·15	−0·85	−0·38	−0·63	+13·17
	Mussooree	+1·58	−0·79	−0·38	+0·13	−0·43	−4·12	+4·01	+11·74	−3·50	−1·04	−0·40	−0·86	+5·94
	Srinagar	−0·52	−1·35	+0·05	+0·26	−0·57	−2·31	−0·41	+3·36	−0·89	−0·79	−0·26	−0·67	−4·10
	Pauri	−0·41	−0·67	+0·94	+0·42	−0·30	−3·80	+2·04	+7·24	−0·88	−0·83	−0·31	−0·71	+4·49
	Ranikhet	−0·63	+0·20	+0·53	+0·09	−1·38	−2·02	+5·87	+3·96	+1·74	−1·40	−0·28	−0·85	+5·83
	Almora	−0·79	+0·80	+1·46	−0·42	−1·33	−1·53	+6·73	+4·73	+3·55	−1·01	−0·21	−0·58	+11·40
	Pithoragarh	−0·61	−0·15	+0·25	−1·29	−2·06	+0·51	+11·76	+4·42	+11·35	−1·33	−0·15	−0·65	+22·05
	Naini Tal	−1·22	−2·18	+0·40	−0·91	−1·73	−6·93	+26·79	−4·07	+20·18	−2·18	−0·24	−1·12	+26·79

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
North-Western Provinces—concld.	Dehra Dun	+0·15	−0·69	−0·47	+0·16	−0·74	−5·77	− 2·80	+ 4·32	+ 0·61	−0·89	−0·21	−0·53	− 6·86
	Saharanpur	+0·14	−1·12	−0·85	−0·10	−0·11	−3·49	+ 1·53	− 3·81	− 1·33	−0·45	−0·23	−0·56	−10·38
	Roorkee	−1·46	−0·43	+0·14	−0·24	−0·47	−1·92	+ 1·19	− 1·39	− 0·73	−0·60	−0·25	−0·44	− 6·60
	Muzaffarnagar	−1·06	−0·77	−0·64	−0·32	+0·43	−1·17	− 0·68	+ 2·69	− 2·68	−0·36	−0·12	−0·38	− 5·06
	Bijnor	−1·12	−0·78	−0·67	−0·17	−0·55	−4·28	+ 5·50	+ 1·98	− 0·34	−0·48	−0·14	−0·37	− 1·42
	Meerut	−0·92	−0·72	−0·32	−0·31	−0·55	−1·09	+ 5·48	− 1·86	− 1·36	−0·46	−0·09	−0·39	− 2·59
	Moradabad	−1·18	−0·94	−0·54	−0·24	−0·88	−3·21	+12·70	+ 3·31	+ 0·31	−0·87	−0·11	−0·39	+ 7·96
	Rudarpur	−1·15	−0·61	+0·13	+0·11	−1·00	−3·20	+16·60	+ 2·00	+14·86	−1·09	−0·08	−0·44	+26·13
	Pilibhit	−0·30	−0·55	−0·09	−0·29	−0·95	−4·68	+20·95	− 2·30	+10·87	−1·21	−0·10	−0·46	+20·89
	Bulandshahr	−0·85	−0·83	−0·11	−0·21	−0·51	+0·08	+ 8·39	+10·07	− 0·62	−0·45	−0·08	−0·44	+14·44
	Bareilly	−0·72	−0·66	−0·21	−0·24	−0·11	−5·12	+12·95	+ 6·57	+ 2·10	−1·26	−0·11	−0·30	+12·89
	Budaun	−0·71	−0·55	−0·19	−0·14	−0·44	−0·46	+ 0·94	+ 8·18	− 0·04	−0·90	−0·11	−0·31	+ 5·27
	Shahjahanpur	−0·34	−0·54	−0·48	−0·15	−1·03	−1·97	+ 3·37	+ 3·94	+ 3·99	−1·23	−0·14	−0·28	+ 5·14
	Aligarh	−0·81	−0·49	−0·27	−0·17	−0·46	−1·14	+ 1·31	+ 5·31	+ 0·36	−0·48	−0·04	−0·34	+ 2·78
	Muttra	−0·57	−0·30	−0·25	−0·14	−0·51	+0·34	+ 3·94	+ 1·15	+ 0·27	−0·34	−0·06	−0·27	+ 3·26
	Agra	−0·20	−0·29	−0·23	−0·09	+0·13	+0·96	+ 4·81	+ 6·92	+ 1·86	−0·36	−0·06	−0·27	+13·18
	Etah	−0·41	−0·28	−0·50	−0·08	−0·43	+0·27	+ 3·84	+ 2·51	− 1·52	−0·84	−0·05	−0·27	+ 2·24
	Mainpuri	−0·21	−0·32	−0·29	−0·11	−0·47	+0·01	+ 0·31	+ 3·98	+ 0·30	−0·84	−0·11	−0·34	+ 1·91
	Farrukhabad	+0·20	−0·34	−0·37	−0·09	−0·54	+1·56	+ 8·23	+ 8·33	+ 1·65	−1·01	−0·09	−0·31	+17·22
	Etawah	−0·06	−0·25	−0·40	−0·12	−0·38	+0·02	+ 1·74	+ 2·37	+ 0·88	−0·97	−0·09	−0·26	+ 2·48
	Cawnpore	+0·36	−0·45	−0·25	−0·13	−0·45	−0·90	− 5·75	+ 3·19	− 0·51	−0·86	−0·14	−0·22	− 6·11
	Fatehpur	+1·11	−0·43	−0·28	−0·01	−0·37	−1·98	− 2·73	+ 4·28	− 2·66	−0·74	−0·18	−0·26	− 4·25
	Jalaun (Orai	+0·97	−0·25	−0·22	−0·05	−0·27	+2·55	+ 8·60	− 0·56	+ 0·20	−0·66	−0·05	−0·23	+10·03
	Hamirpur	+1·09	−0·30	−0·23	−0·09	−0·35	−0·89	− 2·96	+ 2·58	− 2·95	−0·67	−0·18	−0·30	− 5·25
	Banda	+0·92	−0·37	−0·29	−0·11	−0·37	+0·01	− 2·84	+ 7·15	− 2·94	−0·71	−0·39	−0·24	− 0·18
	Allahabad	+0·05	−0·43	−0·25	−0·11	−0·31	+0·33	− 2·69	+12·64	− 3·77	+1·84	−0·26	−0·22	+ 6·82
	Basti	+0·59	−0·44	+0·76	−0·23	−0·90	−0·94	− 2·15	+ 4·15	+ 5·85	+1·23	−0·06	−0·11	+ 7·75
	Gorakhpur	+0·18	−0·45	+0·18	−0·35	−0·04	−2·25	− 5·36	+ 0·40	− 2·43	+5·83	−0·18	−0·12	− 4·59
	Azamgarh	+0·04	0	+0·23	−0·14	−0·85	+2·86	− 1·14	+ 5·49	− 0·98	+5·04	−0·11	−0·14	+10·30
	Jaunpur	−0·51	−0·34	+0·03	−0·13	−0·60	+0·03	+ 0·44	+ 4·93	− 3·13	+4·46	−0·16	−0·12	+ 4·90
	Benares	−0·53	+0·17	+0·35	−0·06	−0·55	+3·12	− 2·55	+10·05	− 4·28	+4·72	−0·19	−0·14	+10·11
	Mirzapur	−0·38	+0·02	−0·02	+0·29	−0·54	+0·94	− 3·03	+ 6·64	− 3·82	+10·10	−0·29	−0·15	+ 9·76
	Ballia	−0·42	+0·22	+0·33	−0·24	−0·91	+1·22	+ 8·13	− 2·58	− 2·55	+3·39	−0·20	−0·12	+ 6·27
	Dudhi	+0·38	+1·63	−0·16	+0·48	−0·14	+1·84	+ 1·49	+ 3·12	− 1·95	+8·69	−0·31	−0·28	+14·79
	Robertsganj	−0·32	+1·14	+0·27	+0·13	−0·58	−0·96	− 4·67	+15·91	− 3·34	+8·45	−0·42	−0·23	+15·38
	Jhansi	+1·27	−0·28	−0·37	−0·11	−0·17	+1·47	− 5·05	− 2·62	− 3·98	−0·58	−0·07	−0·24	−10·73
	Lalitpur	+1·95	−0·27	−0·34	−0·11	−0·55	+1·78	− 0·05	+ 5·35	− 1·77	−0·26	−0·19	−0·38	+ 5·16

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Oudh.	Kheri	−0·64	+0·03	−0·30	−0·19	−1·14	− 3·76	−0·32	− 0·61	−0·51	−1·48	−0·17	−0·39	− 9·48
	Sitapur	+0·34	−0·46	−0·41	−0·28	−0·47	− 3·25	+1·44	− 2·77	−1·04	−1·47	−0·17	−0·32	− 8·86
	Bahraich	+0·17	−0·72	+0·66	−0·33	−1·34	− 2·87	+0·66	+ 9·34	+3·91	−1·33	−0·13	−0·40	+ 7·62
	Gonda	+0·15	−0·56	+0·09	−0·15	−0·55	+ 0·69	+2·73	+ 2·86	+2·25	−1·30	−0·10	−0·28	+ 5·83
	Hardoi	+0·74	−0·34	−0·51	−0·16	−0·17	− 3·17	−0·07	− 0·31	+2·04	−1·29	−0·13	−0·36	− 3·73
	Nawabganj (Bara Banki).	0	−0·36	+0·68	−0·17	−0·33	− 2·89	−0·01	− 2·25	−2·73	−1·20	−0·08	−0·48	− 9·82
	Lucknow	+0·22	−0·36	+0·49	−0·12	−0·19	− 3·68	+2·24	− 1·50	−4·30	−1·38	−0·09	−0·45	− 9·12
	Unao	+0·09	−0·33	−0·31	−0·08	−0·67	− 0·47	+0·71	+ 5·59	−0·01	−1·23	−0·10	−0·36	+ 2·83
	Fyzabad	+1·21	−0·40	−0·32	−0·17	−0·85	− 3·12	+3·72	+ 0·46	−5·20	−1·07	−0·09	−0·22	− 6·05
	Sultanpur	+1·08	−0·41	+0·15	−0·20	−0·64	− 1·08	−2·90	+ 6·51	−3·70	−1·03	−0·17	−0·23	− 2·62
	Rae Bareli	+0·91	−0·43	−0·26	−0·06	−0·39	− 2·60	−0·29	+15·10	−3·05	−0·60	−0·12	−0·22	+ 7·99
	Fartabgarh	+0·43	−0·41	−0·11	−0·04	−0·45	+ 3·00	−2·59	+13·76	−5·20	−0·53	−0·24	−0·28	+ 7·34
Bengal.	Motihari	−0·26	−0·22	+0·88	+0·93	−1·84	− 0·22	−5·55	− 6·02	+1·11	+3·26	−0·13	−0·13	− 8·19
	Darbhanga	−0·59	−0·16	+1·92	+0·68	+1·04	− 0·43	−5·43	− 0·35	+0·91	+4·45	−0·08	−0·12	+ 1·84
	Siwan	−0·65	−0·09	+0·44	−0·19	−0·32	+ 4·53	−0·79	− 0·09	+1·99	+0·59	−0·19	−0·11	+ 5·12
	Buxar	−0·70	+0·43	+0·18	−0·08	−0·74	− 0·02	+0·18	+ 3·33	−2·81	+1·06	−0·43	−0·18	+ 0·22
	Chapra	−0·69	−0·10	−0·13	−0·14	−1·11	+12·32	+1·83	− 2·94	−4·60	+1·59	−0·27	−0·09	+ 5·67
	Arrah	−0·75	+0·17	+0·59	+0·19	−1·18	+18·27	+4·96	− 5·71	−2·46	+1·73	−0·24	−0·13	+15·44
	Patna (Bankipore)	−0·68	−0·06	+0·49	+0·67	−1·48	+21·58	−1·34	− 2·00	−4·53	+4·26	−0·22	−0·15	+16·54
	Muzaffarpur	−0·72	−0·02	+0·83	−0·41	−0·14	+ 1·37	−2·21	+ 1·44	−1·47	+8·44	−0·13	−0·07	+ 6·91
	Barh	−0·32	+0·13	+0·73	+0·18	−1·84	+ 2·94	+1·33	+ 0·10	−3·55	+0·84	−0·21	−0·09	+ 0·24
	Sasaram	−0·49	+0·86	+0·57	+0·19	−1·01	+ 2·36	+1·78	+ 2·22	−0·96	+0·50	−0·31	−0·21	+ 5·50
	Gaya	−0·64	+0·64	+0·78	−0·13	−1·12	+ 7·05	+1·47	+ 3·41	+0·56	+4·52	−0·29	−0·16	+16·09
	Jamui	+0·02	+0·10	+1·61	+1·08	−1·85	+ 1·83	+3·28	+ 1·79	+3·52	+1·46	+1·01	−0·07	+13·78
	Madhipura	−0·43	−0·51	+1·50	+1·66	−1·56	− 3·79	−7·60	− 0·85	−1·82	+3·61	−0·06	−0·06	− 9·91
	Monghyr	−0·40	+0·05	+0·39	+0·45	−1·04	+ 4·36	−0·03	+ 3·82	−1·05	+4·24	−0·21	−0·08	+10·50
	Bhagalpur	−0·14	+0·21	+1·90	+0·10	−0·87	+ 1·68	−8·83	+ 3·84	+5·50	+ 4·03	−0·19	−0·08	+ 7·15
	Godda	+0·10	−0·40	+1·11	+0·49	−2·77	+ 1·81	−9·07	+ 0·69	+1·73	+4·03	+0·31	−0·10	− 2·07
	Palamau	−0·26	+1·04	+0·81	+0·33	−0·74	− 3·96	−3·98	+ 2·44	+1·34	+4·43	−0·40	−0·26	+ 0·79
	Hazaribagh	−0·15	+1·37	+1·30	+0·08	+0·02	+ 2·56	−0·74	− 3·53	−0·02	+2·13	−0·32	−0·20	+ 2·50
	Ranchi	−0·22	+1·43	+0·11	+0·14	−0·94	− 2·59	−2·05	− 0·48	−2·14	+2·84	−0·35	−0·18	− 4·43
	Lohardaga	−0·04	+0·69	+0·98	+0·43	−1·53	− 0·47	+0·03	− 1·06	+3·91	+1·83	+0·35	−0·39	+ 4·73
	Naya Dumka	−0·52	−0·28	+1·31	−0·05	−2·14	− 0·23	−1·77	+ 2·50	+1·68	+4·32	−0·36	−0·18	+ 4·28
	Gobindpur	−0·35	−0·35	+0·56	+0·30	−1·31	− 0·37	+3·24	+ 4·18	+0·57	+1·46	−0·19	−0·16	+ 7·58
	Purulia	−0·20	+0·48	+1·46	+0·16	−0·35	+ 1·16	−3·00	+ 0·22	+1·75	+2·76	−0·27	−0·20	+ 3·97
	Sirguja	−0·57	+1·14	+0·84	+0·64	−0·78	− 3·04	+6·98	+13·33	+1·77	+10·37	−0·65	−0·37	+29·00
	Jushpore	−0·60	+1·75	−0·18	+1·10	−0·45	− 6·69	−1·09	+ 9·13	+4·26	+ 1·42	−0·52	−0·31	+ 7·82

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Bengal—*contd.*	Gangpur	+0·06	+6·77	+0·65	+2·23	+0·62	−3·29	+6·61	+13·04	−3·58	+3·15	−0·42	−0·36	+25·48
	Chaibassa	−0·35	+2·19	+0·20	+1·18	+0·29	−3·36	−6·04	+2·22	−3·56	−0·11	−0·45	−0·27	− 8·06
	Barreepudda	−0·19	+1·18	+2·75	−0·73	−2·01	−2·75	−7·29	−2·05	−4·18	+6·89	−0·99	−0·13	− 9·50
	Keonjhar	+0·23	+1·40	+4·64	+3·18	−1·07	−0·54	−4·87	+2·97	+0·89	+2·04	−0·11	−0·18	+ 8·58
	Jellasore	−0·49	+0·74	+4·24	−0·02	+0·54	+7·11	−2·17	−0·79	−6·52	+4·90	−0·67	−0·11	+ 6·76
	Balasore	−0·60	+0·64	+4·27	−0·77	−2·47	−0·90	−3·62	+0·87	−6·80	+8·25	−0·91	−0·20	− 2·24
	Bhadrak	−0·35	+3·10	+3·78	+0·47	−3·63	−3·46	−2·14	−0·58	−5·95	+7·17	−0·99	−0·22	− 2·80
	Talcher	−0·21	−0·48	+2·49	+1·25	+0·98	−2·85	−4·64	+7·26	−2·54	+0·42	−0·83	−0·22	+ 0·63
	Narsinghpur	−0·13	−0·03	−0·01	+0·59	−0·88	−1·28	+0·48	+2·87	−2·08	+1·58	+0·41	−0·07	+ 1·45
	Angul	−0·21	−0·13	+0·94	+2·88	−0·39	−2·17	−2·01	+0·97	−1·61	−1·65	−0·38	−0·39	− 4·15
	Dhenkanal	−0·30	+0·12	+3·96	+1·57	−2·64	−4·20	−3·33	−1·33	−3·63	+1·43	+0·26	−0·30	− 8·39
	Bispara	−0·32	+0·83	−0·37	+0·79	+1·21	−5·69	−6·11	+3·13	+4·35	+3·69	+0·64	−0·30	+ 1·85
	Kunjabangar	−0·23	+0·72	−1·15	−0·37	−1·74	−4·75	−3·70	−6·18	−5·12	+0·36	−0·82	−0·13	−23·11
	Banki (Charchika)	−0·21	+0·52	+0·39	+0·09	−2·06	−5·46	−0·41	−0·54	+0·50	+1·15	+0·15	−0·36	− 6·24
	Cuttack	−0·36	+0·12	+4·51	+0·67	−3·48	−2·41	−0·98	+5·56	−3·47	+1·33	+0·80	−0·27	+ 2·02
	False Point	−0·55	+2·97	+3·05	−1·75	−1·64	−3·08	+8·33	−1·03	−4·71	+1·28	+1·29	−0·12	+ 4·14
	Puri	−0·27	+3·26	+1·95	−0·65	−1·49	−2·85	+10·22	−1·87	−3·55	+0·17	+4·84	−0·46	+ 9·30
	Darjeeling	−0·30	−1·06	+0·61	−1·20	−2·47	−9·85	−7·75	+1·28	−9·10	+7·55	+0·26	−0·10	−22·13
	Pedong	−0·81	−1·02	+0·01	−2·88	−4·02	−0·57	−7·22	+5·75	+3·02	+4·76	+0·59	+0·24	− 2·15
	Buxa	−0·90	−0·82	+1·12	−2·91	−2·15	−9·64	+0·86	−23·76	+17·86	−2·39	−0·15	0	−22·88
	Jalpaiguri	−0·45	−0·29	+0·77	−3·21	−1·88	−12·58	+7·89	−6·37	+1·52	+0·53	−0·11	−0·08	−14·26
	Cooch Behar	−0·47	−0·11	+0·83	−4·21	+8·08	−17·97	−1·23	−8·25	+14·97	+1·56	−0·10	−0·07	− 6·97
	Kishanganj	−0·58	−0·27	+2·02	−0·12	−2·33	−1·11	+1·00	−1·92	+5·67	+2·70	+0·26	−0·11	+ 5·21
	Purnea	−0·41	−0·27	+1·19	+0·07	−2·25	−4·82	−7·78	+4·33	+0·30	+6·97	−0·06	−0·11	− 2·84
	Rangpur	−0·23	−0·24	+1·87	−0·85	−0·75	+2·03	−5·19	+6·62	+8·23	+3·36	−0·26	−0·09	+14·50
	Dinajpur	−0·05	−0·33	+2·77	−1·53	−2·01	−8·31	−5·98	−2·59	+1·29	+3·90	−0·18	−0·08	−13·10
	Malda	−0·24	−0·66	+0·87	−0·67	−1·40	−0·13	−7·35	+2·71	+0·97	+2·75	+0·65	−0·27	− 2·77
	Bogra	−0·42	−0·68	+1·46	−1·43	−0·66	−11·10	−8·60	+0·40	+2·48	+3·88	−0·86	−0·09	−15·62
	Rampur Boalia	−0·31	−0·74	−0·45	+0·50	−0·40	−1·53	+0·68	+4·62	−3·64	+0·33	−0·34	−0·07	− 1·35
	Pabna	−0·35	−0·59	−0·61	−1·37	−0·28	+0·09	−4·04	−2·88	−3·56	+3·41	−0·63	−0·08	−10·89
	Suri	−0·41	−0·77	+1·40	+0·48	−0·62	−2·46	−3·70	−1·60	−1·08	+3·58	−0·24	−0·13	− 5·55
	Bankura	−0·32	−0·19	+3·50	−0·38	−0·82	−1·56	+5·03	−0·73	+2·09	+0·58	−0·18	−0·08	+ 6·94
	Burdwan	−0·30	+0·09	+0·19	+2·81	+1·78	+1·34	−0·73	+3·40	+0·13	+2·37	−0·44	−0·13	+10·51
	Hooghly	−0·40	−0·92	+3·81	+0·79	+0·26	+10·44	−4·30	−1·17	+0·85	+3·17	−0·50	−0·20	+11·83
	Howrah	−0·46	+0·11	−0·11	−0·67	−1·81	+0·01	+1·94	−3·08	−0·79	+4·07	−0·56	−0·20	− 1·55
	Midnapore	−0·58	+0·05	+1·02	+0·92	+1·16	+4·36	−5·37	0	−1·60	+2·06	−0·58	−0·21	+ 1·23
	Tamluk	−0·29	−0·29	0	+0·25	−3·53	−1·75	−4·23	−0·56	−2·82	+0·62	−0·49	−0·20	−13·29

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Bengal—*contd.*	Barhampore	—0·42	—0·72	+0·17	—0·85	+2·00	—2·84	—4·94	+3·29	—1·45	+1·51	—0·44	—0·16	—4·79
	Krishnagar	—0·37	—0·69	+1·43	+0·69	—1·30	+1·64	—2·74	+0·93	—0·06	—0·81	—0·18	—0·12	—1·58
	Faridpur	—0·37	—1·29	—0·77	—1·35	—4·42	+4·83	—2·12	+5·88	—1·57	+0·04	—0·51	—0·09	—1·74
	Jessore	—0·47	—0·30	—0·29	—2·37	—3·47	+7·50	—0·71	—1·09	—2·44	+2·74	—0·67	—0·15	—1·72
	Basirhat	—0·39	—0·97	+0·27	—0·39	—0·17	+2·78	+0·67	+5·59	—1·82	+3·54	—0·44	—0·16	+8·51
	Khulna	—0·47	—0·58	—0·57	+0·40	—3·69	+11·11	+2·40	+7·92	—1·28	+3·56	—0·83	—0·23	+17·68
	Barisal	—0·56	+0·13	—1·37	—1·58	—2·12	+0·19	—4·78	+1·09	—0·56	+5·24	—1·15	—0·32	—5·79
	Calcutta (Chow.)	—0·33	+0·99	+0·23	—0·32	—0·89	—0·84	+2·37	—0·86	—2·02	+3·74	—0·87	—0·26	+0·94
	Alipore (Obsy.)	—0·28	+0·48	+0·07	—0·65	—1·85	+0·09	+1·50	—0·76	—3·12	+4·91	—0·74	—0·37	—0·72
	Saugor Island	—0·23	+1·86	+0·45	—0·10	—2·62	—1·97	+3·68	—4·63	—6·57	+6·10	—1·37	—0·15	—5·55
	Mymensingh	—0·37	+0·10	+1·71	—2·32	+1·77	—12·28	—6·69	+0·57	+6·67	—1·40	—0·52	—0·09	—12·85
	Kishorganj	—0·52	—0·17	+0·85	—2·31	+2·17	—8·03	+3·81	+8·00	+9·04	—1·98	—0·49	—0·23	+10·14
	Atia (Tangail)	—0·41	—0·77	+0·29	—2·02	+1·03	—0·86	—3·60	+0·08	—2·01	+0·33	+0·35	—0·09	—7·68
	Dacca	—0·22	—0·83	+0·20	—2·57	+1·37	—5·42	—4·71	+4·89	+0·48	+1·93	—0·14	—0·19	—5·21
	Comilla	—0·52	—0·84	+1·72	—5·07	—0·64	+0·82	—10·28	+5·45	+6·30	—3·66	—1·31	—0·24	—8·27
	Agartalla	—0·62	—1·09	+1·25	—5·07	+4·83	+3·79	+14·11	+1·07	+6·87	—2·90	—1·45	—0·34	+20·45
	Noakhali	—0·48	—0·34	—0·83	—3·04	—4·48	+0·02	—4·28	+5·62	+4·28	—1·69	—1·49	—0·34	—7·05
	Demagiri	—0·47	—1·40	—2·67	—3·66	—7·01	—2·17	+3·55	+11·58	—5·41	+3·84	—0·47	—0·45	—4·74
	Rangamatia Hills	—0·48	—1·15	—1·41	—2·09	—2·62	—0·25	+1·92	+1·83	+2·51	+4·72	—1·08	—0·22	+1·68
	Chittagong	—0·44	—1·23	+0·24	—4·51	—5·68	—0·92	—0·75	+2·08	+1·79	+5·69	—1·22	—0·24	—5·19
	Cox's Bazar	—0·54	—0·41	—0·26	—1·67	—6·47	+16·17	—12·51	+8·67	+2·30	+4·99	—1·20	—0·12	+8·95
Assam.	Sylhet	—0·36	—1·17	+6·10	—11·76	+0·25	+5·83	—6·37	+0·71	+5·13	—0·47	—1·03	—0·27	—3·41
	Silchar	+0·33	—1·96	+2·96	—11·02	—3·32	+7·25	—1·14	+3·01	—0·13	—3·66	+1·22	—0·58	—7·04
	Cherra Poonjee	—0·79	—1·48	+0·37	—24·48	+31·50	—39·72	—24·12	—14·83	+69·64	+8·56	—1·19	—0·26	+3·20
	Tura	—0·47	—0·73	+3·15	—3·05	+17·44	+0·59	—9·51	—3·24	—1·16	+2·65	+0·17	—0·13	+5·77
	Shillong	—0·44	—0·80	+1·94	—0·27	—0·82	?	—7·48	—1·71	+25·69	+1·32	—0·84	—0·27	?
	Dhubri	—0·31	—0·39	+2·68	—3·99	+19·47	—12·41	—2·63	—4·90	+11·96	+2·06	—0·16	—0·15	+11·23
	Goalpara	—0·35	—0·36	+2·78	—4·03	+3·17	—8·18	—1·39	+1·68	+3·77	+4·84	—0·19	—0·22	+1·52
	Kulsi	—0·36	—0·53	+2·08	—4·68	—0·06	—2·62	—4·98	+1·87	+6·94	—0·17	+0·02	—0·37	—2·86
	Gauhati	—0·51	—0·89	+6·26	—3·66	—0·21	—2·62	—2·30	+0·93	+2·42	+0·20	—0·12	—0·25	—0·75
	Nowgong	—0·73	—0·98	+2·38	—3·15	—1·76	—7·93	—3·45	—5·54	+2·57	—0·92	+0·14	—0·28	—19·65
	Tezpur	—0·28	—0·38	+2·47	—2·76	+1·35	—6·96	+0·03	—4·12	+2·08	+5·47	—0·58	—0·48	—4·16
	Chardner	—0·74	—0·62	+0·16	—2·15	+0·85	—0·55	+9·50	—1·96	+18·42	+0·92	+0·25	—0·84	+23·24
	Sibsagar	—1·06	—0·81	+1·92	—2·10	+2·64	—2·04	+3·78	+6·65	—0·20	+7·40	+0·41	—0·54	+16·05
	Dibrugarh	—0·33	+0·04	—0·16	—5·22	+2·74	+3·21	+4·24	—5·03	—4·77	+1·46	—0·96	—0·81	—5·59
	Kohima	—0·51	+0·38	+0·86	—3·00	—1·62	—5·90	—6·66	+0·24	—4·25	+3·65	—0·17	—0·47	—17·45

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Central Provinces.	Saugor	+1·13	−0·52	−0·24	−0·08	−0·56	+1·13	−5·79	+1·69	−2·50	−0·29	−0·36	−0·57	−6·96
	Damoh	+0·38	−0·54	−0·22	−0·06	−0·23	−3·27	−8·19	−1·04	−1·98	−1·63	−0·34	−0·45	−17·57
	Jubbulpore	+1·42	+0·02	−0·35	+0·51	−0·25	−0·85	−9·23	+4·78	−0·15	−1·02	−0·40	−0·26	−5·78
	Narsinghpur	+1·38	−0·12	−0·27	+0·02	−0·35	−4·16	−6·35	−0·71	−1·75	−0·70	−0·27	−0·38	−13·66
	Hoshangabad	+0·44	−0·16	−0·23	−0·03	−0·56	−0·72	−1·06	+11·91	−7·29	−1·25	−0·43	−0·47	+0·15
	Khandwa	+0·08	−0·22	−0·10	−0·12	−0·31	−5·44	−2·52	+5·03	−1·74	−0·69	−0·17	−0·42	−6·62
	Badnur (Betul)	+1·34	−0·20	−0·61	−0·25	−0·41	−3·48	+3·56	+6·93	+0·54	−1·74	−0·42	−0·52	+4·74
	Pachmarhi	+3·84	−0·36	−0·37	−0·19	−0·48	+1·26	−10·00	+11·47	−2·33	−1·26	−0·47	−0·58	+0·53
	Chhindwara	+1·44	−0·12	−0·45	−0·12	−0·55	−5·25	+0·22	−2·21	−1·12	−0·72	−0·46	−0·36	−9·70
	Seoni	+1·02	+0·10	−0·35	+0·13	−0·02	−6·80	+0·09	−1·50	+1·29	−1·37	−0·45	−0·61	−8·47
	Balaghat	+0·57	−0·50	−0·06	+0·19	+0·40	−9·08	−6·83	+9·17	−1·06	−0·10	−0·55	−0·25	−8·10
	Mandla	+1·66	+1·02	−0·59	+0·09	−0·34	−6·42	−1·59	+16·95	+1·96	+1·00	−0·31	−0·34	+13·09
	Bilaspur	+0·07	+1·47	+1·55	+4·16	−0·11	−1·67	−2·06	+8·73	+1·89	+8·09	−0·64	−0·29	+21·19
	Chappa	+0·79	+1·35	+1·79	+0·64				Closed.					
	Sarangarh	+0·26	+0·65	+0·64	+1·61	+0·53	−5·58	−12·84	+2·99	−2·31	+1·15	−0·79	−0·16	−13·85
	Raigarh	−0·20	+0·87	+0·96	+1·33	+0·62	−1·01	−11·69	−0·67	−4·43	+3·20	−0·68	−0·23	−11·93
	Sambalpur	+0·43	+0·37	+1·47	+1·74	−0·15	−4·26	−3·85	+11·06	+0·79	+1·23	−0·26	−0·27	+8·30
	Raipur	+0·51	+0·54	−0·07	+0·19	−0·11	−6·10	−6·15	+0·40	−2·06	+0·83	−0·69	−0·22	−12·93
	Dhamtari	−0·21	+1·54	+0·68	+1·46	−0·11	−7·13	−10·15	+4·99	+2·52	+0·27	−0·41	−0·13	−6·68
	Bhandara	−0·52	−0·36	−0·63	+0·21	−0·79	−4·47	−7·84	+14·48	−1·17	−0·70	−0·77	−0·36	−2·92
	Nagpur	+0·05	−0·19	−0·46	+0·11	−0·53	−3·78	−1·01	+3·45	−2·87	−1·38	−0·55	−0·46	−7·62
	Arvi	+1·11	−0·26	−0·51	−0·18	−0·63	−4·54	−7·10	−2·42	−4·33	−1·07	−0·40	−0·42	−20·75
	Wardha	+0·23	+0·11	+0·03	−0·26	+0·14	−4·62	+3·24	+6·26	+0·42	−0·59	−0·63	−0·38	+3·95
	Brahmapuri	−0·42	0	−0·69	+0·25	−0·20	−4·42	−6·91	+8·26	−0·76	−0·57	−0·62	−0·41	−6·49
	Chanda	−0·25	−0·55	+0·27	+1·56	−1·52	−5·44	−2·47	+3·68	+2·00	+1·21	−0·82	−0·33	−2·66
	Sironcha	−0·30	+0·11	−0·67	−0·08	−0·67	−4·58	−6·19	+4·40	+4·30	−1·69	−0·70	−0·26	−6·33
	Bastar (Jagadalpore).	+0·34	−0·21	−0·62	−0·68	−1·06	−5·19	−2·82	−1·30	+5·18	+3·35	−0·81	−0·23	−4·05
Berar.	Chikalda	+0·92	−0·27	−0·52	−0·02	−0·62	−5·84	−6·55	+10·51	−1·76	−4·07	−0·74	−0·87	−9·83
	Ellichpur	+0·18	−0·24	−0·40	−0·23	−0·33	−3·02	+4·97	+5·13	+4·74	−2·21	−0·62	−0·56	+7·41
	Amraoti	+1·11	−0·22	−0·37	−0·26	−0·39	−2·91	−5·20	+1·71	+1·85	−1·18	−0·33	−0·49	−6·68
	Akola	−0·02	−0·19	−0·48	−0·11	−0·34	−4·37	+0·72	−0·54	+0·36	−2·32	−0·49	−0·65	−8·43
	Buldana	−0·33	−0·24	−0·27	−0·23	−0·31	−5·19	+2·84	+0·61	+1·48	−1·96	−0·53	−0·50	−4·63
	Basim	−0·08	−0·21	−0·28	−0·18	−0·49	−4·28	−2·40	+1·90	−1·70	−1·26	−0·85	−0·50	−10·33
	Yeotmal	+0·65	−0·17	−0·01	−0·03	−0·65	−5·69	−1·65	−0·35	−0·33	−0·64	−0·63	−0·43	−9·93
	Wun	−0·24	−0·17	−0·58	+1·17	−0·20	−5·23	−1·60	+6·50	+1·76	−0·49	−0·82	−0·33	−0·23
Bombay	Dhulia	−0·30	−0·06	−0·04	−0·06	−0·31	−3·08	+1·66	+2·61	+8·68	−0·23	−0·69	−0·35	+7·83
	Nasik	−0·08	−0·04	−0·04	+0·57	−0·19	−3·73	−1·18	+1·24	+4·17	−1·13	−0·53	−0·24	−1·18

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Bombay—*contd.*	Igatpuri . .	—0·16	—0·08	—0·03	—0·07	—0·88	—12·15	—6·84	+12·48	+3·01	—1·16	—0·43	—0·19	— 6·50
	Malegaon .	—0·22	—0·12	—0·04	+0·17	—0·74	—3·21	+0·41	+2·61	—0·71	+0·29	—0·49	—0·39	— 2·44
	Ahmednagar .	—0·30	—0·14	—0·16	+0·02	—1·01	—3·33	—1·61	—2·85	+3·39	+0·12	—0·97	—0·48	— 7·32
	Poona . .	—0·20	—0·05	—0·14	—0·30	—1·51	—1·19	—3·09	+1·06	+0·08	+2·08	—0·90	—0·22	— 4·38
	Lonavla . .	—0·07	—0·05	—0·07	—0·07	—0·76	—1·96	—13·94	+25·21	—7·42	—0·09	—0·85	—0·18	— 0·25
	Satara . .	—0·30	—0·10	—0·11	—0·11	+0·93	+0·03	—0·59	+3·06	+0·75	+3·11	—1·48	—0·45	+ 4·74
	Mahabaleshvar.	—0·34	—0·04	—0·33	+1·72	—0·76	—2·48	—14·70	+25·52	—10·50	+2·02	—1·34	—0·34	— 1·57
	Sholapur . .	—0·07	—0·08	—0·30	—0·58	—0·56	—1·62	—2·13	—4·20	+2·67	—0·85	—0·94	—0·33	— 8·99
	Kolhapur . .	—0·07	—0·08	—0·11	+1·42	+0·92	—5·10	+3·00	+3·10	+0·14	+1·32	—0·91	—0·21	+ 3·42
	Belgaum . .	—0·07	—0·03	—0·48	+0·17	+1·46	—3·96	+1·30	+3·46	—0·10	—1·73	—1·40	—0·26	— 1·64
	Gokak . .	—0·08	—0·01	—0·41	+1·36	+2·72	+3·67	—0·37	—0·38	+1·87	+1·18	—1·09	—0·64	+ 7·82
	Dharwar . .	—0·13	—0·02	—0·30	+0·95	+1·08	+4·14	—1·18	+1·09	+5·32	—0·47	—1·89	—0·41	+ 8·18
	Hubli . .	—0·10	—0·02	—0·34	+0·97	+0·74	+0·07	—0·88	+1·49	+1·54	—0·03	—1·26	—0·22	+ 1·96
	Nargund . .	—0·19	—0·09	—0·26	+4·85	—0·61	+0·87	—0·90	+0·89	+7·25	—2·63	—0·94	—0·29	+ 7·95
	Mundargi . .	—0·22	•	—0·14	+0·53	+2·26	+1·70	+0·41	—1·00	+6·89	—2·06	—1·40	—0·10	+ 6·87
	Kalghatgi .	—0·09	0	—0·35	+1·78	+2·25	+0·64	+1·01	+1·14	+0·94	+1·51	—1·22	—0·21	+ 7·40
	Bijapur . .	—0·06	—0·05	—0·27	+0·42	+0·90	+5·57	—0·52	—2·54	+1·61	+0·70	—1·35	—0·63	+ 3·78
	Honavar . .	—0·18	0	—0·11	—0·04	—2·98	+12·46	+10·33	—7·60	+10·33	+5·25	—1·22	—0·13	+26·11
	Karwar . .	—0·13	+0·05	—0·04	+0·06	—2·44	+7·92	+14·40	—11·14	+5·04	+5·02	—1·56	—0·12	+17·06
	Goa . .	—0·18	0	—0·02	—0·22	+0·78	+1·99	+17·59	—8·66	+4·59	—2·52	—1·16	—0·09	+12·10
	Vengurla . .	—0·21	0	—0·06	—0·14	—0·32	+0·70	+23·16	—7·60	+8·01	—0·90	—0·94	—0·17	+21·53
	Ratnagiri .	—0·69	—0·01	—0·01	—0·12	—1·30	—15·81	+35·94	—3·22	+7·17	+10·79	—0·71	—0·07	+31·96
	Colaba (Obsy.).	—0·12	—0·02	—0·01	—0·03	—0·59	—6·78	+5·94	—1·24	+9·67	+0·81	—0·50	—0·05	+ 7·08
	Byculla (J. J. Hospital).	—0·17	—0·01	—0·01	0	—0·43	—9·23	+4·29	—1·27	+6·43	—0·45	—0·21	—0·04	— 1·10
	Thana . .	—0·20	—0·05	—0·06	0	—0·38	—9·33	+18·99	+11·59	+0·51	+0·27	—0·25	—0·05	+21·04
	Matheran . .	—0·09	—0·01	—0·01	—0·02	—0·79	—2·11	—8·13	+22·51	—8·36	+5·11	—1·00	—0·05	+ 7·05
	Surat . .	—0·04	—0·02	0	—0·01	—0·16	—8·05	—3·78	+7·25	+0·85	—0·40	—0·17	—0·03	— 4·56
	Broach . .	—0·05	—0·02	—0·02	—0·01	—0·13	—5·98	+1·86	+6·18	—0·29	+0·09	—0·18	—0·04	+ 1·41
	Kaira . .	—0·03	—0·15	—0·02	—0·02	—0·33	—3·68	—5·04	—1·65	+0·98	—0·57	—0·35	—0·05	—10·91
	Bariya . .	—0·05	—0·23	0	0	—0·26	—1·03	—6·54	+0·44	—5·43	—0·53	—0·19	—0·11	—13·93
	Godhra . .	—0·04	—0·13	—0·01	—0·01	—0·42	0	—4·87	+2·86	—2·73	—0·96	—0·16	—0·09	— 6·56
	Dohad . .	—0·07	—0·17	—0·01	—0·01	—0·50	—1·19	—2·36	—1·29	—1·17	—1·19	—0·19	—0·14	— 8·29
	Ahmedabad .	—0·03	—0·08	—0·01	—0·02	—0·51	—1·04	—1·39	+2·49	+2·29	—0·60	—0·21	—0·03	+ 0·86
	Idar . .	—0·05	—0·14	—0·03	—0·02	—0·61	—3·95	—6·07	+6·86	+4·49	—0·29	—0·25	—0·07	— 0·13
	Deesa . .	—0·09	—0·15	—0·09	+0·01	—0·17	—1·96	—0·58	—0·57	+0·82	—0·08	—0·15	—0·04	— 3·05
	Wadhwan .	—0·05	—0·06	—0·04	—0·01	—0·19	—2·25	—2·28	+8·16	+4·20	+1·07	—0·53	—0·03	+ 7·99
	Palanpur .	—0·08	—0·20	—0·07	+0·15	—0·59	—2·77	—0·57	+3·00	+3·22	+0·07	—0·11	—0·09	+ 1·96

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Bombay—*concld.*	Rajkot	+0·06	−0·10	−0·01	−0·01	−0·33	−5·53	+0·90	+2·24	+5·05	+0·79	−0·37	−0·06	+2·63
	Songad	−0·04	−0·08	−0·06	−0·04	−0·22	−2·40	+1·20	+9·09	−0·69	−0·93	−0·25	−0·03	+5·55
	Jetalsar	−0·02	−0·12	0	0	−0·02	−7·92	−3·28	+8·92	+4·50	+7·98	−0·94	−0·01	+9·09
Hyderabad.	Aurangabad (Cantt.)	+0·10	−0·11	−0·08	+0·04	−0·84	−3·27	−1·12	+1·98	+2·60	−2·33	−1·15	−0·70	−4·88
	Hingoli	−0·19	−0·27	−0·29	−0·40	−0·58	−1·77	−2·77	+2·33	+2·72	−1·93	−1·00	−0·43	−4·58
	Parbhani	0	−0·06	−0·16	0	−0·59	−0·38	+0·36	−1·02	+5·26	−1·10	−0·74	−0·27	+1·30
	Nanded	−0·11	−0·24	−0·48	+0·42	−0·65	−3·57	+3·48	−2·18	+2·54	−2·21	−0·81	−0·63	−4·44
	Bheer	−0·02	−0·05	−0·24	−0·23	−0·58	−0·71	−2·69	−2·22	+5·68	−2·95	−1·15	−0·65	−5·81
	Mominabad	−0·11	−0·15	−0·25	−0·11	−0·31	−2·61	−3·51	−4·08	+0·24	−1·54	−1·42	−0·97	−14·82
	Indur (Indur)	−0·06	+0·31	−0·58	+1·14	−0·36	−2·50	−5·09	+4·84	+0·08	−0·22	−1·08	−0·39	−3·91
	Karimnagar (Yelgandal).	−0·23	+0·61	−0·36	+0·15	−0·34	−3·70	−3·97	+1·21	+1·48	−1·21	−1·10	−0·33	−7·79
	Kandi (Medak)	−0·06	+0·03	−0·54	+0·63	+0·61	+1·89	−2·32	−4·00	−0·50	−1·06	−1·18	−0·20	−6·70
	Shumsabad (Ibrahimpatan).	−0·07	+0·28	−0·58	−0·51	+0·03	−1·11	+0·52	−2·77	+1·73	−1·65	−1·60	−0·18	−5·91
	Sundanully (Ibrahimpatan).	−0·03	+0·55	−0·72	−0·54	−0·21	+2·99	+0·60	+0·36	+0·54	−1·33	−1·44	−0·08	+0·69
	Dharasev (Naldurg).	−0·02	−0·03	−0·30	+0·16	−1·13	−3·20	−0·68	−4·42	+2·27	+2·87	−0·91	−0·41	−5·80
	Bidar (Bidar)	−0·02	+0·25	−0·54	−0·38	+0·75	−4·95	−0·45	−3·94	−2·66	−3·20	−1·52	−0·62	−17·28
	Gulbarga (Gulbarga).	−0·09	+0·69	−0·32	−0·06	−0·66	−0·60	+2·12	−5·18	+1·61	+0·27	−0·71	−0·28	−3·21
	Bolaram	−0·12	+0·13	−0·61	−0·13	−0·51	−2·84	−0·32	+0·41	+0·07	−2·69	−1·06	−0·35	−8·02
	Secunderabad	−0·25	−0·06	−0·76	−0·59	−1·01	−2·73	+3·21	−2·58	−0·38	−1·20	−0·98	−0·23	−7·56
	Hyderabad (Residency).	−0·11	−0·02	−0·60	−0·44	−0·46	−2·89	+0·01	−3·25	−1·74	+1·49	−1·30	−0·45	−9·76
	Zanawada (Hyderabad).	−0·08	+0·06	−0·86	−0·55	−0·16	−1·04	+3·56	−6·36	−1·10	+3·69	−1·18	−0·01	−4·03
	Bhongir (Nalgunda).	−0·16	+0·04	−0·49	+0·68	−0·49	−1·96	+0·05	+1·46	−0·21	−2·61	−1·98	−0·13	−5·80
	Hanumkonda (Warangal).	−0·28	+0·56	−0·95	−0·40	+0·14	−1·47	+3·51	−0·54	+2·09	−1·10	−1·22	0	+0·34
	Sirpur Tandur	−0·04	−0·05	−0·48	−0·09	−0·10	−5·81	−5·87	+2·98	−2·08	+0·14	−1·19	−0·76	−13·35
	Palmoor (Mahbubnagar).	0	−0·16	−0·89	+0·45	−0·02	+0·77	−1·62	−4·48	+0·63	−1·34	−1·02	0	−7·68
	Raichur	−0·03	−0·06	−0·36	+0·54	+0·63	+0·52	+1·44	−4·31	+5·12	+1·96	−1·12	−0·12	+4·21
	Raichur (Cantt.)	0	−0·11	−0·40	+1·29	−0·19	−1·37	+0·64	−1·97	+7·02	−1·56	−1·13	−0·17	+2·05
Madras.	Rambha	−0·20	+3·69	+0·13	−0·74	−1·64	−1·71	+1·55	+1·17	+1·43	+8·42	+3·04	−0·89	+14·25
	Gopalpur	−0·15	+0·02	+0·24	−0·55	−1·81	−0·09	−2·11	+0·28	+5·48	+4·23	+0·27	−0·50	+5·31
	Aska	−0·23	+2·30	−0·50	−0·05	−1·03	−3·46	+2·50	+0·54	+3·73	+2·63	+2·10	−0·52	+8·01
	Vizianagram	−0·13	+1·23	+4·33	−0·11	+4·52	−1·82	−1·78	+0·21	+6·64	+3·11	+0·23	−1·16	+15·27
	Bimlipatam	+0·05	−0·40	+2·07	+0·14	+1·31	−0·75	−0·12	+0·83	+1·87	+0·85	+2·10	−1·00	+6·95
	Rayaghadda	−0·14	+0·73	+0·30	−1·59	−1·14	−0·34	+1·03	−3·06	+2·81	+2·29	−0·66	−0·38	−0·15
	Nourangapur	−0·14	−0·28	+0·99	+2·59	−0·41	−2·64	−10·18	−3·48	+12·90	+8·36	−0·20	−0·08	+7·43
	Gunipur	−0·08	−0·33	+0·35	−0·20	+0·05	−1·51	−3·30	+2·75	+3·57	+0·61	−1·83	−0·33	−0·25
	Jeypore	−0·07	−0·20	+2·28	+0·76	−1·25	−5·12	−4·39	−6·24	+2·23	+3·08	−0·64	−0·05	−9·61
	Koraput	+0·05	0	+0·96	+0·11	+0·95	−3·68	−1·65	−1·94	+1·98	+3·37	−1·20	−0·19	−1·24

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Madras—*contd.*	Malkanagiri	—0·07	—0·14	+1·61	—0·56	—1·39	—6·09	—9·91	+8·54	+4·16	+3·24	+0·52	—0·05	—0·14
	Narsapatnam	—0·23	+2·11	+0·92	—0·04	+0·72	—2·11	+1·66	+0·94	+6·88	+9·07	—2·55	—0·82	+16·63
	Vizagapatam	—0·13	—0·20	+0·88	—0·45	+1·57	—3·45	—3·18	—3·24	—1·20	—3·73	+2·17	—1·50	—12·46
	Cocanada	—0·18	+1·31	+2·94	—0·40	—1·02	—0·96	—2·67	+2·82	+2·98	+0·11	—3·50	—0·79	+0·64
	Rajahmundry	—0·16	+0·52	+2·23	—0·75	+0·69	—3·69	+1·04	+3·40	+2·07	+4·93	+0·44	—0·17	+10·55
	Ellore	—0·17	+1·84	+0·71	+0·14	+0·80	—3·17	—1·29	+0·08	+3·28	+0·77	—1·53	—0·32	+1·14
	Masulipatam	—0·20	—0·04	+0·54	—0·20	—0·48	—3·45	—1·43	—1·46	—0·59	—5·35	—4·57	—0·59	—17·82
	Guntur	—0·26	+0·40	+0·21	—0·47	—0·18	+0·06	+0·40	+1·48	+0·08	—3·75	—1·56	—0·41	—4·00
	Vinukonda	—0·13	+2·35	—0·51	—0·41	+0·69	—0·59	—0·57	—1·40	+4·57	—5·55	—2·99	—0·59	—5·13
	Ongole	+0·45	+0·08	—0·24	—0·29	+0·47	—1·67	+1·86	—0·80	+8·69	—5·95	—5·37	—1·01	—3·78
	Nellore	+2·86	+0·22	—0·20	—0·11	—0·17	—1·08	—0·74	+0·72	+1·66	—6·44	—6·68	—2·41	—12·37
	Udayagiri	—0·20	—0·10	—0·19	—0·54	—0·80	—1·16	+0·12	+1·04	+5·31	—5·90	—6·70	—1·87	—10·99
	Tada	+0·02	+1·58	—0·21	—0·01	—0·86	+0·24	—1·51	+1·40	+7·69	—5·35	—6·70	—4·06	—7·77
	Kurnool	—0·05	+0·09	—0·45	+0·41	—0·91	—0·73	—0·03	+0·84	+3·39	—2·38	—0·96	—0·16	—0·94
	Nandyal	—0·08	+0·27	—0·17	—0·44	—0·86	—1·28	+1·17	—6·34	—1·62	—2·17	—1·07	—0·20	—12·79
	Bellary	—0·11	—0·03	—0·46	—0·69	—0·89	+0·80	—1·13	—1·06	+9·45	—0·16	—1·11	—0·22	+4·39
	Gooty	—0·04	—0·05	—0·08	—0·44	+0·65	+0·81	+1·00	+1·03	+8·63	—3·47	—1·08	—0·12	+6·84
	Adoni	—0·04	0	—0·29	—0·22	—0·10	—1·89	—1·65	—3·35	+11·68	—2·53	—0·68	—0·17	+0·76
	Dharmavaram	—0·01	—0·11	—0·18	—0·47	—0·51	+3·41	—1·70	—1·25	+8·12	—3·69	—1·96	—0·26	+1·39
	Cuddapah	—0·08	—0·01	—0·14	—0·31	—0·22	—2·18	+0·41	+1·62	+3·53	—0·35	—1·50	+0·72	+1·49
	Madanapalle	—0·10	+0·28	—0·35	—0·76	—0·38	+0·10	—0·68	+1·99	+5·25	—4·74	—3·04	—1·10	—3·53
	Chittoor	—0·07	+0·57	+0·31	—0·59	—0·30	—1·48	—1·27	+2·08	+9·27	—5·46	—3·95	—2·10	—2·99
	Vellore	+0·16	+0·90	+0·95	—0·39	+0·36	—0·17	—0·62	+3·85	+4·05	—2·97	—4·72	—2·79	—1·39
	Chandragiri	—0·14	+0·16	—0·24	—0·40	+0·19	—0·94	0	+1·74	+4·55	—3·97	—5·34	—2·53	—6·92
	Arcot	+1·09	+0·96	+1·86	+0·15	—2·10	—0·72	+2·73	+0·54	+3·51	+0·27	—4·05	—2·61	+1·63
	Madras	—0·40	+0·25	—0·33	—0·54	—1·85	+1·14	—1·47	+3·18	+6·31	—7·28	—6·05	—3·63	—10·67
	Palmaner	—0·11	+1·18	+0·44	—0·66	+1·27	—0·71	+0·54	+6·04	+4·54	—2·37	—3·96	—1·63	+4·57
	Saidapet	—0·01	+0·03	—0·15	+0·07	+0·25	—0·77	—1·51	+2·48	+11·01	—8·75	—7·79	—4·48	—9·62
	Chingleput	—0·44	+1·19	+0·30	+0·30	—1·50	—1·21	+2·59	+4·15	+0·07	—6·78	—5·67	—1·72	—8·72
	Conjeeveram	+0·69	—0·30	—0·12	—0·36	—0·84	—0·90	+6·81	+0·65	—0·07	—5·45	—6·45	—2·46	—8·80
	Tindivanam	—0·24	+1·35	—0·27	—0·19	—1·49	—0·70	—0·84	—0·34	+4·33	—6·10	—2·86	—2·46	—9·81
	Cuddalore	—0·93	+3·21	—0·38	—0·36	—1·49	+0·48	+0·10	+1·65	+3·12	—2·06	—9·52	—5·43	—11·61
	Vriddhachalam	—0·38	+0·76	—0·20	+0·37	—0·09	+2·28	+0·16	+5·84	+5·58	—3·24	—3·86	—3·51	+3·71
	Udayarpalaiyam	—0·67	+5·54	—0·22	—0·78	—1·39	—1·59	—1·82	+0·28	+10·40	—5·83	—4·05	—3·83	—3·96
	Salem	—0·24	+1·20	—0·13	—1·33	+1·02	—1·64	—1·77	—1·36	+6·32	—0·83	—0·89	—0·53	—0·18
	Atur	—0·32	+1·7	—0·46	—0·88	—1·49	—0·31	—2·27	+0·87	+6·82	—5·38	—1·35	—0·83	—3·81
	Shevaroy Hills	—0·34	+2·43	—0·56	—1·86	+4·07	—2·22	+0·90	+2·89	+9·74	+2·21	—3·00	—2·75	+1·51

TABLE XVII.—*Comparison of monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Madras—*concld.*	Kumbakonam	—1·59	+4·57	+1·24	—0·26	+1·25	—2·06	—1·98	—0·23	+9·06	—2·42	—6·65	—4·06	—2·13
	Tirupatur	—0·15	+2·09	—0·50	+0·14	—3·82	—1·81	—1·65	+2·67	+1·70	—4·19	+2·60	—0·71	—2·63
	Hosur	—0·20	+0·97	—0·49	—1·15	—1·27	—1·37	—1·67	+1·11	+10·15	—3·09	—2·84	—0·97	—0·82
	Tranquebar	—1·00	+2·27	—0·13	—0·93	—1·59	—1·29	—1·80	+4·95	+2·51	—9·12	—11·46	—3·57	—21·16
	Negapatam	—1·21	+2·54	—0·35	—0·63	—1·89	—1·34	—1·71	+0·47	+0·73	—6·2	—12·65	—4·69	—26·98
	Tanjore	—0·56	+2·36	—0·46	—0·19	+0·60	+1·11	—1·24	+3·34	+6·65	—0·55	—5·52	—2·99	+2·55
	Patukota	—0·84	+2·79	—0·48	—0·02	—1·67	+1·57	+0·54	—0·50	+3·43	—3·45	—7·44	—3·18	—9·25
	Trichinopoly	—0·77	+1·66	—0·62	—0·60	+1·13	+1·31	—1·74	+0·20	+9·51	—2·75	—3·29	—2·41	+1·63
	Karur	—0·22	+1·87	—0·33	+0·10	—0·70	+0·76	—1·17	—1·36	+11·43	—2·35	—1·74	—1·48	+5·43
	Coimbatore	—0·22	+1·51	—0·52	—0·81	—0·33	+2·60	+0·43	+0·91	+0·29	—5·46	—0·27	—0·93	—2·80
	Kollegal	—0·14	+0·61	—0·76	—1·21	—0·57	+2·33	—0·92	+8·76	+6·58	—2·32	—0·18	—0·54	+11·64
	Dindigul	—0·45	+1·48	—0·47	—0·49	+1·77	+0·60	—1·03	+2·71	+6·27	—5·91	—3·00	—1·98	—0·50
	Madura (Obsy.)	—0·53	+2·76	—0·70	—0·21	—1·75	—0·83	—1·43	—0·30	+3·46	—4·43	+1·34	—2·07	—4·69
	Vattanum	—0·93	+4·62	+0·10	+1·70	—1·50	+0·04	—0·73	+1·33	+2·91	—6·84	—6·30	—3·86	—9·46
	Periyakulum	—0·64	+0·99	+0·30	+0·03	+0·95	+0·12	—0·53	+4·60	+1·19	—2·10	+2·20	—1·42	+5·69
	Tinnevelly	—0·84	+1·70	—1·25	+3·21	—0·72	+0·21	—0·05	+1·10	+0·49	—3·37	—5·33	—2·56	—7·41
	Tuticorin	—0·78	+2·22	—0·94	+4·25	—0·65	+0·81	—0·14	+0·05	+0·86	+0·35	—3·93	—2·66	—0·56
	Satur	—0·29	+3·22	+0·41	+0·70	—0·13	—0·50	—1·01	+0·43	+6·04	—0·91	+0·33	—2·08	+6·21
	Cochin	—0·37	—0·13	—1·19	+4·90	—5·77	+12·30	+1·52	+11·60	+12·46	—1·84	—3·52	+1·41	+31·37
	Palghat	—0·06	+0·85	—0·84	—1·21	+3·08	+9·00	+4·46	+15·88	+1·13	—1·14	+0·79	—0·70	+31·24
	Wellington	—0·73	+1·70	+0·60	+1·74	+0·64	—0·91	—1·44	+3·30	+3·53	—9·08	—5·20	—2·85	—8·70
	Manantoddy	—0·20	+2·02	—1·28	+0·61	—1·06	+18·10	+7·35	+28·02	—0·98	—1·25	—1·74	—0·43	+49·16
	Calicut	—0·18	0	—0·85	+1·20	+3·78	+13·03	+15·70	+14·30	+5·85	—0·59	—1·79	—1·39	+49·06
	Tellicherry	—0·30	+2·38	—0·44	+0·59	—4·10	+4·03	+6·74	+17·47	—0·56	+0·84	—2·74	—0·87	+23·04
	Cannanore	—0·36	+0·41	+0·33	+0·41	—0·97	+4·86	+5·75	+13·21	+4·63	+0·02	—2·41	—0·49	+25·39
	Mangalore	—0·14	—0·03	—0·12	—1·02	—5·79	+6·87	+13·83	+12·06	+5·07	—1·70	—2·04	—0·52	+26·47
Mysore and Coorg.	Bangalore	—0·18	—0·12	+0·08	—1·27	+2·12	—2·16	—0·17	—1·14	+13·18	—1·50	—1·68	—0·60	+6·56
	Mysore	—0·08	+1·30	—0·68	+0·63	—0·06	+0·79	+1·81	+2·40	+2·71	+2·54	—0·74	—0·44	+10·18
	Shimoga	—0·06	—0·12	—0·36	—0·12	—1·90	+4·49	—0·26	+5·50	+0·67	—4·19	—1·43	—0·37	+1·85
	Mercara	—0·21	+0·50	—1·01	—0·98	—0·57	+8·06	+2·23	+14·53	—0·70	—0·18	—2·30	—0·47	+18·90
	Kolar	—0·18	+0·13	—0·37	—0·65	—0·52	—0·52	+0·48	+4·84	+4·34	—5·14	—2·84	—0·87	—1·30
	Tumkur	—0·16	+0·10	—0·36	—1·07	+4·10	—2·27	+2·29	+1·92	+14·37	—5·05	—1·67	—0·39	+11·81
	Chitaldroog	—0·19	0	—0·29	+0·49	—2·47	+3·83	+0·40	+0·95	+8·47	—1·94	—2·33	—0·41	+6·51
	Chikmagalur	—0·18	+1·24	—0·72	—0·52	—0·15	+2·21	+0·38	+2·37	+4·62	—3·18	—2·47	—0·24	+3·36
	Hassan	—0·70	+0·13	—0·51	+1·15	—2·26	+0·50	+0·55	+6·21	+5·97	—3·44	—1·93	—0·58	+5·09
Ceylon	Trincomalee	+1·91	+4·03	—0·22	+2·62	—1·20	—1·12	—0·89	+4·28	+3·63	—5·48	—8·90	+14·98	+13·64
	Colombo	+0·71	—0·29	—1·30	—0·29	—4·06	+1·97	+0·78	+5·51	—0·28	—9·93	—0·73	+2·60	—5·31

TABLE XVII.—*Comparison of the monthly and total rainfall (in inches) in 1897, with the averages of past years*—contd.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Burma.	Akyab	−0·14	−0·19	+4·47	−0·62	−2·71	+0·15	−11·53	+6·49	+ 4·04	+7·48	−1·20	−0·48	+ 5·76
	Kyaukpyu	−0·12	−0·05	+0·81	−0·94	+0·54	+9·80	−2·48	−8·20	− 4·39	+6·66	−0·29	−0·54	+ 0·80
	Sandoway	−0·08	+0·77	+0·21	−1·17	−2·24	+5·44	−14·13	+2·94	− 7·52	+0·20	−1·08	−0·31	−16·97
	Rangoon	−0·12	−0·27	−0·06	−1·80	+2·24	−3·17	−4·68	+4·56	− 3·82	+3·95	−1·05	+0·31	− 3·91
	Bassein	−0·18	−0·23	+0·05	−1·49	+6·83	+14·54	−11·01	+4·71	− 8·60	+2·91	−1·86	−0·06	+ 5·61
	Diamond Island	−0·22	−0·07	+0·81	−1·61	+7·94	+4·18	−1·61	+3·84	− 8·51	−1·06	−4·50	−0·54	− 1·35
	Henzada	−0·07	−0·21	+0·08	+1·08	+2·00	−2·24	−6·10	+7·18	− 5·62	+0·91	−1·74	−0·07	− 4·80
	Myanaung	−0·06	−0·03	+0·03	+0·06	+8·52	−2·22	−2·63	+2·62	− 4·13	+8·54	−0·17	−0·12	+10·41
	Prome	−0·02	−0·01	−0·02	−0·59	+5·63	−3·51	−3·11	−2·39	− 1·58	+3·16	−1·94	−0·08	− 4·46
	Thayetmyo	−0·01	+0·32	−0·01	−0·78	+4·07	−0·74	+0·10	−1·40	− 3·07	+6·13	−1·70	−0·13	+ 2·78
	Mandalay	−0·08	−0·07	0	−1·11	+0·68	−0·81	+0·57	+0·19	− 1·82	−1·04	+0·23	+0·50	− 2·76
	Saweybo	−0·09	−0·08	−0·05	−0·45	+0·75	+0·33	−0·17	+2·40	− 4·18	−0·38	+0·62	−0·13	− 1·43
	Ye-u	−0·10	−0·09	−0·37	−0·50	+1·38	+1·56	−0·84	+4·16	− 4·40	−2·14	+0·54	−0·25	− 1·05
	Minbu	−0·05	−0·02	+0·29	−0·68	−0·93	−0·95	−0·56	+1·76	− 1·93	+5·47	−0·79	−0·35	+ 1·26
	Pyinmana	−0·06	−0·07	+0·09	−0·66	+1·50	−1·80	−5·39	−1·83	− 1·45	+3·20	+0·87	−0·11	− 5·71
	Pagan	−0·04	−0·05	+0·04	−0·72	−1·23	−2·38	−1·82	−1·28	− 4·47	−2·09	+0·21	−0·16	−13·99
	Kyauksai	−0·21	+0·47	+0·04	−0·68	+1·83	−2·04	−1·43	+4·52	− 4·17	−0·04	−0·02	+0·04	− 1·69
	Bhamo	−0·83	−0·07	+0·06	−1·64	−0·50	+2·08	−4·90	+1·55	− 5·56	−1·13	+1·94	+0·21	− 8·79
	Keendat	−0·31	−0·22	−0·84	−1·65	−3·50	−5·67	+0·13	+2·99	+ 3·29	−1·14	+1·10	−0·08	− 5·90
	Magwe	0	−0·04	+0·29	−1·07	−0·67	−2·82	+1·33	−0·63	+ 0·15	+4·38	−0·51	−0·55	− 0·14
	Yemethen	−0·02	+1·47	+0·80	+1·26	+6·91	−1·30	−3·24	−0·30	− 0·48	−0·94	−0·93	−0·46	+ 2·77
	Fort Sagaing	−0·05	−0·06	−0·23	−0·27	+0·13	−0·76	−1·86	−1·49	− 2·02	+1·33	+0·16	+1·23	− 3·89
	Mingin	−0·14	−0·04	−0·38	−1·71	+0·27	+1·96	+4·34	+7·85	− 5·29	+1·00	−0·82	+0·29	+ 7·33
	Toungoo	−0·07	−0·13	+1·20	−0·82	+4·21	−0·93	−0·68	−0·14	− 2·82	+0·67	−1·26	−0·17	− 0·94
	Shwegyin	−0·12	−0·39	+0·63	−0·41	+1·29	−7·47	−12·47	+6·19	− 4·11	+10·51	+1·40	−0·08	− 5·03
	Moulmein	−0·18	−0·04	+0·01	−1·55	−2·89	−1·02	−5·24	−1·67	−12·53	+1·89	−0·35	+0·62	−22·95
	Tavoy	−0·19	−0·58	−0·90	−3·52	+10·13	+28·95	+1·20	−0·48	−10·08	+1·70	+3·25	−0·11	+29·37
	Mergue	−0·75	−1·32	+2·13	−4·27	+7·95	+9·53	+0·12	+0·87	− 1·30	+1·16	+1·95	−0·46	+15·61
	Myingyan	−0·06	−0·07	−0·09	−0·44	−1·59	−1·24	−0·50	+0·94	− 3·58	−2·05	−0·39	−0·16	− 9·23
	Monywn	0	−0·01	−0·36	−1·18	−1·05	−1·79	+0·83	+0·58	− 2·97	+1·07	+0·14	−0·22	− 4·96
Bay Islands.	Port Blair	−0·83	−1·02	−0·26	−2·08	−2·80	−3·05	+15·40	+0·39	− 1·10	+1·10	+9·01	+6·15	+20·91
	Cocos Island	−0·33	−0·08	−0·01	−1·02	+3·15	+6·18	+2·86	+1·97	− 0·84	−1·04	−2·84	−1·36	+ 6·64
Kashmir.	Leh	+0·58	−0·11	+0·71	−0·14	+2·25	−0·22	+3·27	−0·16	+ 0·07	−0·17	−0·10	−0·12	+ 5·86
Nepal	Katmandu	+0·34	−1·08	+0·99	−1·24	+0·62	−4·40	−5·12	−4·36	− 0·13	+5·41	+0·16	−0·18	− 8·99
Extra Indian Stations.	Bushire	+1·02	−1·30	−0·56	−0·52	−0·02	0	0	0	0	−0·10	−2·16	−2·79	− 6·43
	Muscat	−1·82	−0·51	−1·06	−0·05	0	0	−0·08	0	0	−0·04	−0·94	−0·44	− 4·94
	Aden	−0·25	−0·12	−0·93	−0·31	−0·04	−0·05	+0·61	−0·16	− 0·14	−0·01	−0·03	−0·01	− 1·44

TABLE XVII.—*Comparison of monthly and total rainfall (in inches) in 1897, with the averages of past years.*—concld.

Province.	Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Total.
		Inches.	Inch.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Extra Indian Stations—*concld.*	Perim . .	−0·25	+0·19	−0·13	−0·03	−0·15	0	−0·02	−0·38	0	−0·09	−0·06	−0·10	− 1·02
	Zanzibar . .	−1·35	−0·27	+3·69	+7·46	+3·37	+2·62	+2·30	+0·41	+ 1·76	+1·04	−4·53	−4·76	+11·74
	Port Victoria (Seychelles).	−2·86	+0·03	+6·11	+0·79	−1·45	+6·73	+4·16	−2·61	− 2·29	−0·72	−7·82	+7·27	+ 7·34
	Baghdad . .	−0·84	−0·18	−1·28	−0·74	+0·01	−0·01	0	−0·13	0	−0·04	−0·29	−0·49	− 3·99

TABLE XVIII.—*Geographical summary of rainfall anomalies in 1897.*

Meteorological Division.	Area, square miles.	Number of stations.	Normal rainfall.	Actual rainfall, 1897.	Mean excess or defect.	Total excess square miles, × 1 inch.	Total defect square miles, × 1 inch.
			Inches.	Inches.	Inches.		
I.—Punjab Plains	120,000	29	21·52	18·41	− 3·11	...	373,200
II.—North-Western Provinces and Oudh . .	83,500	44	37·49	41·39	+ 3·90	325,650	...
III.—Rajputana	67,000	19	28·42	24·43	− 3·99	...	267,330
IV.—Central India States	91,000	20	42·01	37·53	− 4·48	...	407,680
V.—Bihar	30,000	15	45·01	50·48	+ 5·47	164,100	...
VI.—Western Bengal.	38,000	10	49·39	52·50	+ 3·11	118,180	...
VII.—Lower Bengal	54,000	28	66·64	64·53	− 2·11	...	113,940
VIII.—Assam and Cachar	61,000	16	96·39	94·48	− 1·91	...	116,510
IX.— Orissa and Northern Circars . . .	27,000	16	48·00	52·10	+ 4·10	110,700	...
X.—Central Provinces, South	61,000	17	51·38	50·21	− 1·17	...	71,370
XI.—Berar and Khandesh	43,000	13	35·96	32·72	− 3·24	...	139,320
XII.—Gujarat	54,500	13	33·03	33·08	+ 0·05	2,725	...
XIII.—Sind and Cutch	68,000	10	8·49	9·87	+ 1·38	93,840	...
XIV.—North Deccan	48,000	13	30·54	33·12	+ 2·58	123,840	...
XV.—Konkan and Ghats	16,000	11	138·92	152·28	+13·36	213,760	...
XVI.—Malabar and Ghats	18,000	8	113·89	146·33	+32·44	583,920	...
XVII.—Hyderabad	74,000	16	32·71	28·72	− 3·99	...	295,260
XVIII.—Mysore and Bellary	58,000	18	29·52	32·19	+ 2·67	154,860	...
XIX.—Carnatic	72,000	37	36·06	32·25	− 3·81	...	274,320
XX.—Arakan	11,000	7	148·04	144·47	− 3·57	...	39,270
XXI.—Pegu	32,500	7	71·95	72·91	+ 0·96	31,200	...
XXII.—Tenasserim	10,500	4	172·38	177·55	+ 5·17	54,285	...
XXIII.—Upper Burma	?	13	38·73	35·67	− 3·06	...	...

On the mean of the whole area represented in the above table there was a defect of 0·11 inch or excluding the Burmese Peninsula, of 0·15 inch.

TABLE XIX.—*Geographical Summary of the distribution of rainfall in 1897, according to seasons.*

Meteorological Division.	January and February.			March to May.			June to October.			November and December.		
	Normal average.	Actual average, 1897.	Difference.	Normal average.	Actual average, 1897.	Difference.	Normal average.	Actual average, 1897.	Difference.	Normal average.	Actual average, 1897.	Difference.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
North-West Himalayas	6·43	5·75	—0·68	7·21	8·45	+1·24	41·54	47·16	+ 5·62	1·74	0·38	—1·36
Punjab Plains	2·24	1·71	—0·53	2·75	2·26	—0·49	16·22	13·89	— 2·33	0·75	0·56	—0·19
North-Western Provinces and Oudh.	1·48	1·00	—0·48	1·41	0·63	—0·78	35·69	40·57	+ 4·88	0·45	...	—0·45
Rajputana	0·55	0·05	—0·50	0·76	0·30	—0·46	21·59	20·69	— 0·90	0·39	...	—0·39
Central India States	0·97	1·48	+0·51	0·80	0·47	—0·33	41·76	36·52	— 5·24	0·73	...	—0·73
Bihar	1·19	0·79	—0·40	2·51	2·51	0	40·34	47·87	+ 7·53	0·34	0·09	—0·25
Western Bengal and Chota Nagpur.	1·38	2·44	+1·06	3·59	4·12	+0·53	47·13	52·80	+ 5·67	0·65	0·14	—0·51
Lower Bengal	1·41	0·75	—0·66	10·64	9·90	—0·74	52·25	52·84	+ 0·59	0·79	0·24	—0·55
Eastern Himalayas	1·65	0·42	—1·23	18·38	16·35	—2·03	104·53	95·76	— 8·77	0·50	0·52	+0·02
Assam and Eastern Bengal.	1·83	0·70	—1·13	22·77	22·98	+0·21	69·30	71·38	+ 2·08	1·27	0·53	—0·74
Orissa and Northern Circars.	0·74	1·36	+0·62	4·75	5·89	+1·14	44·68	43·77	— 0·91	2·42	1·97	—0·45
Central Provinces, South	0·86	1·71	+0·85	1·84	2·33	+0·49	49·58	46·02	— 3·56	0·90	0·01	—0·89
Berar and Khandesh	0·53	0·47	—0·06	1·13	0·44	—0·69	33·56	31·82	— 1·74	1·19	0·01	—1·18
Gujarat	0·18	0·02	—0·16	0·37	0·02	—0·35	32·72	32·30	— 0·42	0·35	...	—0·35
Sind and Cutch	0·53	0·22	—0·31	0·46	0·29	—0·17	8·22	10·68	+ 2·46	0·22	0·13	—0·09
North Deccan	0·19	...	—0·19	3·36	4·72	+1·36	25·71	28·41	+ 2·70	1·55	...	—1·55
Konkan and Ghats	0·23	...	—0·23	1·71	0·83	—0·88	132·38	145·66	+13·28	0·97	...	—0·97
Malabar and Ghats	0·50	1·02	+0·52	11·39	9·84	—1·55	98·53	133·78	+35·25	4·09	1·69	—2·40
Hyderabad	0·27	0·32	+0·05	1·95	1·25	—0·70	30·80	27·51	— 3·29	1·49	0·01	—1·48
Ceded Districts and Mysore.	0·25	0·37	+0·12	4·82	3·75	—1·07	21·63	27·54	+ 5·91	2·57	0·56	—2·01
Carnatic	0·89	2·33	+1·44	3·97	3·38	—0·59	21·05	22·62	+ 1·57	10·97	4·16	—6·81
Nilgiris	2·05	3·02	+0·97	9·56	12·54	+2·98	26·85	22·25	— 4·60	11·91	3·86	—8·05
Arakan	0·97	0·13	—0·84	16·37	10·74	—5·63	125·56	131·95	+ 6·39	2·95	1·67	—1·28
Pegu	0·22	0·05	—0·17	8·46	13·15	+4·69	66·57	64·34	— 2·23	2·89	1·00	—1·89
Tenasserim	1·02	0·13	—0·89	22·02	24·18	+2·16	147·95	149·41	+ 1·46	2·32	3·88	+1·56
Upper Burma	0·24	0·17	—0·07	6·12	5·58	—0·54	29·78	27·05	— 2·73	1·56	1·66	+0·10
Bay Islands	1·17	0·04	—1·13	15·03	13·53	—1·50	69·08	80·01	+10·93	11·73	17·22	+5·49

TABLE XX.—*Average actual and normal rainfall data of the 57 meteorological divisions in India for the four seasons of the year 1897 and for the whole year.*

Province.	Division.	January and February.			March to May.			June to October.			November and December.			Whole year.		
		Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Burma	1. Tennasserim	0·12	0·07	+0·05	27·99	31·07	−3·08	173·37	150·02	+23·35	3·72	1·79	+1·93	205·20	182·95	+22·25
	2. Lower Burma Deltaic.	0·16	0·32	−0·16	13·43	11·96	+1·47	86·39	77·29	+9·10	1·74	4·14	−2·40	101·72	93·71	+8·01
	3. Central do.	0·03	0·19	−0·16	10·22	5·94	+4·28	47·40	50·83	−3·43	0·40	2·15	−1·75	58·05	59·11	−1·06
	4. Upper do.	0·12	0·24	−0·12	6·23	6·12	+0·11	31·62	36·99	−5·37	2·16	2·32	−0·16	40·13	45·67	−5·54
	5. Arakan	0·28	0·22	+0·06	10·44	19·34	−8·90	154·17	154·08	+0·09	1·59	4·40	−2·81	166·48	178·04	−11·56
Bengal and Assam.	6. Eastern Bengal	0·36	1·42	−1·06	13·75	17·23	−3·48	72·69	67·46	+5·23	0·46	1·58	−1·12	87·26	87·69	−0·43
	7. Assam Surma	1·60	1·96	−0·36	34·20	37·95	−3·75	92·64	85·31	+7·33	1·25	1·59	−0·34	129·69	126·81	+2·88
	8. Do. Hills	0·70	2·27	−1·57	33·26	25·41	+7·85	113·76	109·25	+4·51	1·11	1·58	−0·47	148·83	138·51	+10·32
	9. Do. Brahmaputra.	0·84	2·39	−1·55	24·08	24·05	+0·03	69·77	60·80	+8·97	0·55	1·01	−0·46	95·24	88·25	+6·99
	10. Deltaic Bengal	0·77	1·64	−0·87	8·57	10·27	−1·70	52·25	47·67	+4·58	0·17	1·09	−0·92	61·76	60·67	+1·09
	11. Central do.	0·56	1·28	−0·72	7·17	7·69	−0·52	47·20	46·41	+0·79	0·23	0·68	−0·45	55·16	56·06	−0·90
	12. North do.	0·31	1·02	−0·71	16·61	15·57	+1·04	76·63	77·52	−0·89	0·09	0·25	−0·16	93·64	94·36	−0·72
	13. Bengal Hills	0·21	1·69	−1·48	14·18	20·02	−5·84	101·85	119·51	−17·66	0·73	0·63	+0·10	116·97	141·85	−24·88
	14. Orissa	2·77	1·19	+1·58	6·18	6·88	−0·70	51·11	49·40	+1·71	2·32	2·41	−0·09	62·38	59·88	+2·50
	15. Chota Nagpur	2·21	1·42	+0·79	4·13	4·16	−0·03	48·55	47·45	+1·10	0·23	0·70	−0·47	55·12	53·73	+1·39
	16. South Bihar	1·11	1·29	−0·18	1·88	2·42	−0·54	49·91	39·71	+10·20	0·03	0·39	−0·36	52·93	43·81	+9·12
	17. North do.	0·49	1·19	−0·70	4·63	4·45	+0·18	48·60	47·38	+1·22	0·08	0·23	−0·15	53·80	53·25	+0·55
North-Western Provinces and Oudh.	18. North-Western Provinces East	1·03	0·99	+0·04	0·69	0·91	−0·22	46·58	35·98	+10·60	0	0·37	−0·37	48·30	38·25	+10·05
	19. South Oudh	1·33	0·95	+0·38	0·32	0·99	−0·67	37·40	33·73	+3·67	0	0·43	−0·43	39·05	36·10	+2·95
	20. North do.	1·15	1·09	+0·06	1·17	1·55	−0·38	39·76	35·89	+3·87	0	0·42	−0·42	42·08	38·95	+3·13
	21. North-Western Provinces, Central.	1·34	0·79	+0·55	0·07	0·75	−0·68	31·38	32·42	−1·04	0	0·39	−0·39	32·79	34·35	−1·56
	22. North-Western Provinces, West.	0·17	0·88	−0·71	0·39	1·04	−0·65	29·61	24·06	+5·55	0	0·35	−0·35	30·17	26·33	+3·84
	23. North-Western Provinces, East Submontane.	0·88	1·01	−0·13	0·98	1·75	−0·77	45·97	39·60	+6·37	0	0·27	−0·27	47·83	42·63	+5·20
	24. North-Western Provinces, West Submontane.	1·50	2·43	−0·93	1·22	2·12	−0·90	46·47	41·07	+5·40	0·03	0·60	−0·57	49·22	46·22	+3·00
	25. North-Western Provinces Hills.	3·26	4·57	−1·31	3·84	5·10	−1·26	67·36	50·57	+16·79	0·02	0·73	−0·71	74·48	60·97	+13·51
Punjab	26. South-East Punjab.	0·09	1·07	−0·98	0·77	1·31	−0·54	18·34	20·64	−2·30	0·01	0·33	−0·32	19·21	23·35	−4·14
	27. South Punjab	0·91	1·08	−0·17	1·01	1·40	−0·39	12·27	13·21	−0·94	0·08	0·33	−0·25	14·27	16·02	−1·75
	28. Central do.	2·29	2·00	+0·29	1·59	2·36	−0·77	11·86	14·00	−2·14	1·06	0·52	+0·54	16·80	18·88	−2·08
	29. Punjab Submontane.	2·74	2·96	−0·22	2·35	2·69	−0·34	19·32	24·48	−5·16	0·31	0·74	−0·43	24·72	30·87	−6·15

TABLE XX.—*Average actual and normal rainfall data of the 57 meteorological divisions in India for the four seasons of the year 1897 and for the whole year*—concluded.

Province.	Division.	January and February.			March to May.			June to October.			November and December.			Whole year.		
		Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.	Average actual rainfall.	Average normal rainfall.	Variation of actual from normal.
		Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Punjab—*concld.*	30. Punjab Hills	7·67	6·55	+1·12	8·57	8·43	+0·14	41·86	45·43	— 3·57	0·67	1·60	−0·93	58·77	62·01	— 3·24
	31. North Punjab	4·85	3·23	+1·62	6·88	4·56	+2·32	14·29	12·07	+ 2·22	1·14	1·21	−0·07	27·16	21·07	+ 6·09
	32. West do.	0·86	1·01	−0·15	1·37	1·40	−0·03	9·75	6·36	+ 3·39	0·69	0·25	+0·44	12·67	9·02	+ 3·65
Bombay and Malabar Coast Districts (Madras).	33. Malabar	0.88	0·35	+0·53	8·55	9·88	−1·33	149·55	111·65	+37·90	1·77	4·81	−3·04	160·75	126·69	+34·06
	33A. Travancore	2·73	?	?	9·85	?	?	80·42	?	?	8·06	?	?	101·06	?	?
	34. Madras South Central.	1·43	0·25	+1·18	5·81	6·06	—0·25	23·28	18·12	+ 5·16	2·95	5·16	−2·21	33·47	29·59	+ 3·88
	35. Coorg	0·84	?	?	6.71	?	?	109·51	?	?	0·97	?	?	118·03	?	?
	36. Mysore	0·23	0·18	+0·05	4·60	5·18	−0·58	35·70	25·99	+ 9·71	0·30	3·18	—2·88	40·83	34·53	+ 6·30
	37. Konkan	0	0·12	−0·12	0·93	2·08	—1·15	125·55	111·63	+13·92	0·01	1·24	−1·23	126·49	115·07	+11·42
	38. Bombay Deccan	0·02	0·10	−0·08	3·01	2·78	+0·23	33·80	31·86	+ 1·94	0	1·84	−1·84	36·83	36·58	+ 0·25
	39. Hyderabad, North.	0·27	0·16	+0·11	1·02	1·58	—0·56	28·92	32·53	— 3·61	0	1·91	—1·91	30·21	36·18	— 5·97
	40. Khandesh	0·01	0·13	−0·12	0·23	1·22	—0·99	31·11	29·99	+ 1·12	0	1·48	−1·48	31·35	32·82	— 1·47
Central Provinces and Berar.	41. Berar	0·77	0·65	+0·12	0·20	1·25	−1·05	29·94	37·48	— 7·54	0·01	1·18	−1·17	30·92	40·56	— 9·64
	42. Central Provinces, West.	1·39	0·77	+0·62	0·55	0·96	−0·41	41·45	42·08	— 0·63	0	0·90	—0·90	43·39	44·71	— 1·32
	43. Central Provinces, Central.	1·60	0·77	+0·83	1·07	1·26	−0·19	42·52	48·90	— 6·38	0	0·70	−0·70	45·19	51·63	— 6·44
	44. Central Provinces, East.	1·78	0·79	+0·99	4·24	1·91	+2·33	47·52	46·55	+ 0·97	0·05	0·77	—0·72	53·59	50·02	+ 3·57
Bombay (North).	45. Gujarat	0	0·08	−0·08	0	0·32	−0·32	34·88	43·57	— 8·69	0	0·24	—0·24	34·88	44·21	— 9·33
	46. Kathiawar	0.04	0·13	—0·09	0·01	0·37	−0·36	29·04	26·20	+ 2·84	0	0·37	−0·37	29·09	27·07	+ 2·02
	47. Sind	0·17	0·71	−0·54	0·26	0·60	—0·34	8·58	4·52	+ 4·06	0·12	0·20	—0·08	9·13	6·03	+ 3·10
	48. Baluchistan Hills	3·10	3·55	−0·45	2·40	1·65	+0·75	3·28	2·43	+ 0·85	0·69	1·66	—0·97	9·47	9·29	— 0·18
Rajputana and Central India.	49. Central India, East.	1·01	0·94	+0·07	0·24	0·76	−0·52	34·96	41·13	— 6·17	0	0·72	−0·72	36·21	43·55	— 7·34
	50. Rajputana, East, Central India, West.	0·09	0·60	—0·51	0·27	0·77	−0·50	22·22	26·17	— 3·95	0	0·49	—0·49	22·58	28·03	— 5·45
	51. West Rajputana	0·09	0·43	−0·34	0·18	0·72	−0·54	13·70	11·12	+ 2·58	0	0·25	—0·25	13·97	12·52	+ 1·45
Madras	52. East Coast, North	0·86	0·41	+0·45	4·57	3·30	+1·27	40·15	31·47	+ 8·68	1·84	4·27	−2·43	47·42	39·45	+ 7·97
	52A. Do. do. (*a*)	0·33	0·26	+0·07	7·90	4·88	+3·02	54·77	51·93	+ 2·84	2·01	3·14	—1·13	65·01	60·21	+ 4·80
	53. Hyderabad, South.	0·35	0·26	+0·09	1·24	2·25	—1·01	25·62	24·86	+ 0·76	0·01	1·44	−1·43	27·22	28·81	— 1·59
	54. Madras Central	0·15	0·08	+0·07	1·98	2·49	−0·51	23·20	20·99	+ 2·21	0·62	2·74	−2·12	25·95	26·30	— 0·35
	55. East Coast, Central.	2·00	0·67	+1·33	1·56	2·06	—0·50	19·36	20·52	— 1·16	3·42	11·94	—8·52	26·34	35·19	— 8·85
	56. East Coast, South.	2·36	0·77	+1·59	2·75	4·19	—1·44	24·25	23·64	+ 0·61	5·18	13·80	−8·62	34·54	42·40	— 7·86
	57. Madras, South	3·39	1·18	+2·21	5·19	5·12	+0·07	13·17	12·43	+ 0·74	5·67	10·14	−4·47	27·42	28·8	— 1·45

TABLE XXI.—*Average actual and normal number of rainy days in the 57 meteorological divisions of India for the four seasons of the year 1897, and for the whole year.*

Province.	Division.	January and February.			March to May.			June to October.			November and December.			Whole Year.		
		Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.
Burma	1. Tenasserim	0·5	?	?	21·2	?	?	119·5	?	?	6·0	?	?	147·2	?	?
	2. Lower Burma Deltaic.	0·2	?	?	16·8	?	?	104·2	?	?	3·3	?	?	124·5	?	?
	3. Central Burma Deltaic.	0·1	?	?	10·2	?	?	81·0	?	?	1·0	?	?	92·3	?	?
	4. Upper Burma Deltaic.	0·3	?	?	10·4	?	?	45·1	?	?	4·5	?	?	60·3	?	?
	5. Arakan	0·4	?	?	13·9	?	?	109·2	?	?	3·1	?	?	126·6	?	?
Bengal and Assam	6. Eastern Bengal	1·0	2·5	—1·5	15·6	19·2	—3·6	74·9	70·8	+ 4·1	1·1	2·0	—0·9	92·6	94·5	—1·9
	7. Assam Surma	2·3	4·2	—1·9	37·0	37·7	—0·7	94·2	84·1	+ 10·1	2·3	2·1	+ 0·2	135·8	128·1	+ 7·7
	8. Do. Hills	1·7	5·4	—3·7	31·5	32·0	—0·5	86·3	90·9	— 4·6	3·3	2·6	+ 0·7	122·8	130·9	—8·1
	9. Do. Brahmaputra.	2·5	6·6	—4·1	33·9	34·8	—0·9	76·2	68·6	+ 7·6	1·6	2·4	—0·8	114·2	112·4	+ 1·8
	10. Deltaic Bengal	1·8	2·6	—0·8	13·7	14·0	—0·3	66·8	62·4	+ 4·4	0·6	1·4	—0·8	82·9	80·4	+ 2·5
	11. Central do.	1·6	2·3	—0·7	11·8	10·9	+ 0·9	59·7	58·7	+ 1·0	0·5	1·0	—0·5	73·6	72·9	+ 0·7
	12. North do.	1·3	2·1	—0·8	20·4	17·7	+ 2·7	68·1	64·9	+ 3·2	0·3	0·5	—0·2	90·1	85·2	+ 4·9
	13. Bengal Hills	0·7	3·6	—2·9	25·3	25·3	0	93·8	91·4	+ 2·4	1·8	1·7	+ 0·1	121·6	122·0	—0·4
	14. Orissa	2·9	2·0	+ 0·9	8·0	9·3	—1·3	62·3	59·5	+ 2·8	3·1	2·5	+ 0·6	76·3	73·3	+ 3·0
	15. Chota Nagpur	4·8	2·8	+ 2.0	9·4	6·7	+ 2·7	63·4	58·3	+ 5·1	0·4	1·1	—0·7	78·0	68·9	+ 9·1
	16. South Bihar	2·3	2·5	—0·2	4·6	3·7	+ 0·9	52·5	46·6	+ 5·9	0	0·6	—0·6	59·4	53·4	+ 6·0
	17. North do.	1·6	2·4	—0·8	7·6	6·5	+ 1·1	52·7	49·7	+ 3·0	0·1	0·6	—0·5	62·0	59·2	+ 2·8
North-Western Provinces and Oudh.	18. North-Western Provinces, East.	2·8	2·2	+ 0·6	2·1	2·1	0	48·8	41·0	+ 7·8	0	0·6	—0·6	53·7	45·9	+ ·78
	19. South Oudh	2·1	2·0	+ 0·1	0·7	2·2	—1·5	39·8	37·8	+ 2·0	0	0·7	—0·7	42·6	42·7	—0·1
	20. North do.	2·3	2·1	+ 0·2	2·0	3·1	—1·1	40·8	38·1	+ 2·7	0	0·7	—0·7	45·1	44·0	+ 1·1
	21. North-Western Provinces, Central.	2·1	1·9	+ 0·2	0·3	1·9	—1·6	36·7	36·2	+ 0·5	0	0·6	—0·6	39·1	40·6	—1·5
	22. North-Western Provinces, West.	0·8	2·2	—1·4	1·6	2·7	—1·1	31·2	27·6	+ 3·6	0	0·5	—0·5	33·6	33·0	+ 0·6
	23. North-Western Provinces, East Submontane.	2·1	2·2	—0·1	2·3	3·1	—0·8	45·6	41·4	+ 4·2	0	0·6	—0·6	50·0	47·3	+ 2·7
	24. North-Western Provinces, West Submontane.	3·4	4·3	—0·9	3·1	4·3	—1·2	40·7	37·7	+ 3·0	0·1	1·1	—1·0	47·3	47·4	—0·1
	25. North-Western Provinces Hills.	6·5	6·2	+ 0·3	8·2	11·3	—3·1	56·9	58·6	— 1·7	0·1	1·7	—1·6	71·7	77·8	—6·1
Punjab	26. South-East Punjab.	0·4	2·5	—2·1	2·3	3·0	—0·7	22·2	22·8	— 0·6	0	0·8	—0·8	24·9	29·1	—4·2
	27. South Punjab	2·0	2·4	—0·4	2·3	2·9	—0·6	17·0	15·5	+ 1·5	0·3	0·6	—0·3	21·6	21·4	+ 0·2
	28. Central Punjab	4·5	4·1	+ 0·4	4·7	4·8	—0·1	16·4	15·9	+ 0·5	1·3	0·8	+ 0·5	26·9	25·6	+ 1·3
	29. Punjab Submontane.	5·8	4·9	+ 0·9	5·1	4·9	+ 0·2	25·2	23·6	+ 1·6	0·9	1·1	—0·2	37·0	34·5	+ 2·5
	30. Punjab Hills	11·8	8·7	+ 3·1	16·0	13·2	+ 2·8	45·5	46·0	— 0·5	1·3	2·2	—0·9	74·6	70·1	+ 4·5

TABLE XXI.—*Average actual and normal number of rainy days in the 57 meteorological divisions of India for the four seasons of the year 1897, and for the whole year*—concluded.

Province.	Division.	January and February.			March to May.			June to October.			November and December.			Whole year.		
		Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.	Average actual number of rainy days.	Average normal number of rainy days.	Variation of actual from normal.
Punjab—concld.	31. North Punjab	7·9	5·4	+2·5	14·6	7·7	+6·9	18·4	15·4	+ 3·0	2·2	1·6	+0·6	43·1	30·1	+13·0
	32. West do.	1·9	2·4	—0·5	3·8	2·9	+0·9	13·9	8·6	+ 5·3	1·3	0·4	+0·9	20·9	14·3	+ 6·6
Bombay and Malabar Coast Districts (Madras).	33. Malabar	1·4	0·5	+0·9	10·8	12·4	—1·6	99·7	99·8	— 0·1	3·0	7·0	—4·0	114·9	119·7	— 4·8
	33A. Travancore	4·7	?	?	15·4	?	?	76·4	?	?	9·4	?	?	105·9	?	?
	34. Madras, South Central.	2·5	0·5	+2·0	10·0	8·9	+1·1	31·2	27·8	+ 3·4	4·9	8·5	—3·6	48·6	45·7	+ 2·9
	35. Coorg	2·5	?	?	12·6	?	?	93·3	?	?	2·2	?	?	110·6	?	?
	36. Mysore	0·6	0·3	+0·3	7·6	8·7	—1·1	48·3	39·4	+ 8·9	0·7	4·9	—4·2	57·2	53·3	+ 3·9
	37. Konkan	0	0·2	—0·2	1·8	3·2	—1·4	95·3	94·3	+ 1·0	0	2·0	—2·0	97·1	99·7	— 2·6
	38. Bombay, Deccan	0	0·3	—0·3	5·6	5·6	0	47·3	46·3	+ 1·0	0	3·1	—3·1	52·9	55·3	— 2·4
	39. Hyderabad North	0·8	?	?	3·3	?	?	43·9	?	?	0	?	?	48·0	?	?
	40. Khandesh	0·1	0·2	—0·1	0·6	2·1	—1·5	42·3	42·1	+ 0·2	0	2·2	—2·2	43·0	46·6	— 3·6
Central Provinces and Berar.	41. Berar	1·8	?	?	0·5	?	?	44·1	?	?	0	?	?	46·4	?	?
	42. Central Provinces West.	3·3	1·4	+1·9	1·1	2·2	—1·1	47·1	49·2	2·1	0	1·2	—1·2	51·5	54·0	— 2·5
	43. Central Provinces, Central.	3·5	1·7	+1·8	3·0	2·8	+0·2	52·3	52·4	—0·1	0	1·1	—1·1	58·8	58·0	+ 0·8
	44. Central Provinces, East.	4·2	1·6	+ 2·6	7·3	3·7	+3·6	55·2	49·5	+ 5·7	0·1	1·3	—1·2	66·8	56·1	+10·7
Bombay (North).	45. Gujarat	0	0·2	—0·2	0	0·5	—0·5	47·6	47·5	+ 0·1	0	0·5	—0·5	47·6	48·7	— 1·1
	46. Kathiawar	0·1	0·2	—0·1	0·1	0·6	—0·5	38·2	27·4	+10·8	0	0·3	—0·3	38·4	28·5	+ 9·9
	47. Sind	0·4	?	?	0·5	?	?	10·4	?	?	0·4	?	?	11·7	?	?
	48. Baluchistan Hills	6·6	?	?	5·6	?	?	4·7	?	?	2·2	?	?	19·1	?	?
Rajputana and Central India.	49. Central India, East.	2·1	?	?	0·7	?	?	40·7	?	?	0	?	?	43·5	?	?
	50. Rajputana East, Central India, West.	0·3	?	?	0·8	?	?	29·9	?	?	0	?	?	31·0	?	?
	51. West Rajputana	0·5	?	?	0·6	?	?	18·8	?	?	0	?	?	19·9	?	?
Madras	52. East Coast, North.	1·5	0·7	+0·8	7·3	5·2	+2·1	53·5	43·4	+10·1	2·6	4·3	—1·7	64·9	53·6	+11·3
	52A. Do. do. (a)	1·0	0·7	+0·3	17·5	9·7	+7·8	73·5	67·6	+ 5·9	2·0	5·3	—3·3	94·0	83·3	+10·7
	53. Hyderabad, South	1·1	?	?	3·2	?	?	39·9	?	?	0·1	?	?	44·3	?	?
	54. Madras, Central	0·4	0·2	+0·2	3·9	4·2	—0·3	34·4	30·7	+ 3·7	1·3	4·2	—2·9	40·0	39·3	+ 0·7
	55. East Coast, Central.	2·5	0·8	+1·7	2·1	2·5	—0·4	30·4	27·1	+ 3·3	4·5	10·5	—6·0	39·5	40·9	—1·4
	56. East Coast, South	2·9	1·0	+1·9	4·3	4·8	—0·5	32·0	31·4	+ 0·6	7·9	14·0	—6·1	47·1	51·2	— 4·1
	57. Madras, South	3·5	1·8	+1·7	8·1	7·5	+0·6	21·9	19·2	+ 2·7	8·2	13·1	—4·9	41·7	41·6	+ 0·1

I. The cold weather period.—The rainfall of this period was scanty and in defect, relatively to the normal, over nearly the whole of Northern India and Burma. Three cold weather storms of moderate intensity affected the weather in Northern India. The precipitation due to these storms occurred chiefly in North-Western India, where it was for the whole period normal or in slight defect. The most noteworthy feature of these storms in the Himalayan area was that the accompanying snowfall was confined to considerably greater elevations than usual, and was hence small in amount except perhaps on the interior and higher ranges. Heavy snow fell locally in Chamba, Chitral and Kashmir.

The following data show that the precipitation was generally normal in amount at the hill stations in Upper India :—

Station.	Rainfall.					
	Average actual, January 1897.	Average actual, February 1897.	Average actual, of period January and February 1897.	Average normal, January and February.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	Inches.	Inches.	
Murree . . .	4·15	3·13	7·28	7·25	+ 0·03	0
Simla	5·19	1·69	6·88	5·03	+ 1·85	+ 37
Dalhousie . . .	9·79	7·26	17·05	5·80	+11·25	+194
Dharmsalá . . .	4·24	4·32	8·56	8·95	— 0·39	— 4
Mussooree . . .	4·68	2·10	6·78	4·26	+ 2·52	+ 59
Ranikhet . . .	2·00	2·33	4·33	4·89	— 0·56	— 11
Kailang . . .	5·62	1·17	6·79	7·94	— 1·15	— 14

Accurate snowfall measurements are now made at several stations in the Punjab Himalayas. The following gives the amounts registered at six of these stations where the measurements are believed to be carefully taken :—

District or State.	Station.	Height in feet above sea level.	Total snowfall in the month of		Total.	Approximate normal snowfall of period.
			January 1897.	February 1897.		
			Ft. In.	Ft. In.	Ft. In.	Ft. In.
Punjab .	Murree . .	6,344	6 6	2 11	9 5	12 9
Chamba .	Tisa . . .	5,000	1 0	0 3½	1 3½	...
	Thanela . .	7,000	6 3	5 8	11 11	...
	Kalatop . .	8,000	3 8	4 6	8 2	...
Garhwal	Malla Danpur .	...	13 6	3 0	16 6	...
	Malla Johar .	...	17 9	24 6	42 3	...

The accumulation of snow at the end of the winter was not so large as in 1896, and was probably below the normal except in Chitral and Kashmir.

The rainfall of the period was normal in the North-Western Provinces, Central India and the Punjab, but was more or less in defect in Rajputana, Baluchistan and Sind. The following gives comparative data for those provinces derived from the whole of the available data employed in the preparation of Table XX :—

Province.	Rainfall of period, January and February.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Baluchistan Hills .	3·10	3·55	—0·45	—13
Punjab . . .	1·96	1·89	+0·07	+ 4
North-Western Provinces and Oudh.	1·06	1·16	—0·10	— 9
Sind	0·17	0·71	—0·54	—76
Rajputana . . .	0·09	0·52	—0·43	—83
Central India . .	1·01	0·94	+0·07	+ 7

The rainfall of the period was very scanty and much below the normal in Assam, Bengal and Bihar, as is shown by the following data :—

Province.	Rainfall of period, January and February.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Assam	1·22	2·18	—0·96	—44
Bengal . . .	0·50	1·34	—0·84	—63
Bihar	0·80	1·24	—0·44	—35

The rainfall of the period was very scanty and less than the small normal of the period in the Konkan and the Bombay Deccan, and more or less in excess in Berar, the Central Provinces, the Central and South Deccan and Mysore. The following gives data :—

Division or Province.	Rainfall of period, January and February.					
	Average actual, January 1897.	Average actual, February 1897.	Average actual of period, January and February 1897.	Average normal, January and February.	Variation from normal of period.	Percentage variation.
	Inches.	Inch.	Inches.	Inch.	Inch.	
Mysore . . .	0	0·23	0·23	0·18	+0·05	+ 28
Hyderabad . . .	0·01	0·30	0·31	0·21	+0·10	+ 48
Konkan . . .	0	0	0	0·12	—0·12	—100
Madras Deccan . .	0·05	0·10	0·15	0·08	+0·07	+ 88
Bombay Deccan . .	0	0·02	0·02	0·10	—0·08	— 80
Central Provinces .	1·01	0·58	1·59	0·78	+0·81	+104
Berar	0·74	0·03	0·77	0·65	+0·12	+ 18

The rainfall of the period was in considerable excess in Southern India, the Madras coast districts, Orissa and Chota Nagpur, in all of which areas more frequent rain than usual was received from thunderstorms. Some of the thundershowers were very heavy in Southern India. The following gives examples :—

Date and Month.	District.	Station.	Rainfall in 24 hours, preceding 8 A.M. of date.
			Inches.
2nd Jan. 1897	Nellore . . .	Nellore . . .	3·28
" .	" . . .	Dugarajapatam . .	3·50
15th Feb. 1897	Tanjore . . .	Nidamangalam . .	4·63
" .	" . . .	Shuiyali . . .	4·34
" .	" . . .	Mayavaram . . .	4·05
" .	Trichinopoly . .	Jayankondasolapuram .	5·30
" .	" . . .	Ariyalur . . .	5·00
" .	Madura . . .	Sivagunga . . .	4·55
" .	South Arcot . .	Manuargudi . .	5·00

The following gives comparative data for these four areas :—

Division.	Rainfall of period, January and February.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Chota Nagpur . .	2·21	1·42	+0·79	+ 56
Orissa	2·77	1·19	+1·58	+133
Madras, East Coast, North	0·86	0·41	+0·45	+110
Madras South . .	3·39	1·18	+2·21	+187

II.—The hot weather period.—The distribution of the rainfall of this period was very similar in general character to that of the corresponding period of the three previous years. Weather was more disturbed than usual in Northern India in the month of March, and three depressions belonging to the class of cold-weather storms advanced across Northern India in that month. Kashmir and the Punjab hill districts received frequent and heavy snow during the month, and the Punjab, more especially the northern districts, moderate rain. One of the storms gave rise to an unusually general and heavy burst of rain in North-Eastern India.

Series of thunderstorms occurred, chiefly in the Punjab and North-Eastern India, in April, and the rainfall of the month was very irregularly distributed. The deficiency was large in Assam, North and East Bengal, Burma and Sikkim and the excess was considerable to large in the Punjab and Kashmir Himalayas, Baluchistan Hills, the North Punjab, the eastern districts of the Central Provinces and South Madras.

May was hotter and drier than usual over nearly the whole of India. Burma obtained moderate rain in May from a slight disturbance which initiated feeble monsoon conditions in that area. Also, as almost invariably occurs when hot weather conditions are more pronounced than usual in Northern and Central India, North Bengal and Assam received frequent thundershowers during the period and hence the rainfall of the period was in slight excess in the former area, in considerable excess in the hill districts of Assam, and normal in the Assam Valley.

The following gives data for these areas and for Burma in which the rainfall of the period was more or less in excess :—

Division.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Burma, Lower . .	13·43	11·96	+1·47	+12
" Central . .	10·22	5·94	+4·28	+72
" Upper . .	6·23	6·12	+0·11	+ 2
Bengal (North) . .	16·61	15·57	+1·04	+ 7
Assam (Brahmaputra) .	24·08	24·05	+0·03	0
" (Hills) . .	33·26	25·41	+7·85	+31

Weather was drier than usual in Tenasserim, Assam Surma, Orissa, West and Central Bengal and Bihar, and the rainfall of the whole period was in slight to considerable defect over the greater part of the above areas and in Arakan. The following gives comparative data of the period for these areas :—

Division.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Arakan . . .	10·44	19·34	—8·90	—46
Tenasserim . . .	27·99	31·07	—3·08	—10
Assam (Surma) . .	34·20	37·95	—3·75	—10
Bengal (Deltaic) . .	8·57	10·27	—1·70	—17
" (Central) . .	7·17	7·69	—0·52	— 7
Chota Nagpur . .	4·13	4·16	—0·03	— 1
Bihar	3·26	3·44	—0·18	— 5
Orissa	6·18	6·88	—0·70	—10

The rainfall was also more or less below the small normal of the period in the North-Western Provinces, parts of the Punjab, Sind, Rajputana,

Central India and Berar. The deficiency was small in actual amount in Sind, Rajputana, the North-Western Provinces and Central India, but was large, relatively to the normal, in all these districts. It exceeded one inch in Berar. The following gives comparative data :—

Division or Province.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
North-Western Provinces and Oudh.	0·69	1·30	—0·61	—47
Punjab . . .	2·33	2·29	+0·04	+ 2
Sind	0·26	0·60	—0·34	—57
Rajputana . . .	0·23	0·75	—0·52	—69
Central India . .	0·24	0·76	—0·52	—68
Berar	0·20	1·25	—1·05	—84

The rainfall of the period was in large excess in the North Punjab and in slight to considerable excess in the Central Provinces, the Punjab Hills and Baluchistan, as is shown by the data of the following table :—

Division.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
North Punjab . .	6·88	4·56	+ 2·32	+ 51
Punjab Hills . .	8·57	8·43	+ 0·14	+ 2
Baluchistan Hills . .	2·40	1·65	+ 0·75	+ 45
Kashmir . .	14·43	?	?	?
Central Provinces .	1·95	1·38	+ 0·57	+ 41

The rainfall of the period was normal or in slight to large defect over the greater part of Southern India and the Deccan.

The following gives data in illustration :—

Division.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Mysore . . .	4·60	5·18	—0·58	—11
Madras (South Central).	5·81	6·06	—0·25	— 4
Madras Coast . .	2·96	3·18	—0·22	— 7
Madras (South) . .	5·19	5·12	+0·07	+ 1
Madras (Central) . .	1·98	2·49	—0·51	—20
Bombay Deccan . .	3·01	2·78	+0·23	+ 8
Malabar . . .	8·55	9·88	—1·33	—13
Konkan . . .	0·93	2·08	—1·15	—55

The rainfall of the period was in largish local excess in two rainfall divisions of the Peninsula, as is shown by the following data :—

Division.	Rainfall of period, March to May.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Madras East Coast North	4·57	3·30	+1·27	+39
Madras East Coast, North (*a*).	7·90	4·88	+3·02	+62

III.—The south-west monsoon period.—The rainfall of the period was somewhat larger in amount than usual, and was very favourably distributed over the greater part of India. The monsoon currents were below their normal strength in June and July, and were practically of normal strength in August and September and the rainfall of these two months was unusually well distributed and favourable for the crops. The monsoon currents withdrew from Upper India in the fourth week of September.

The burst of heavy continuous rain which initiates the south-west monsoon proper occurred somewhat later than usual in the second week of June and commenced on practically the same date over the whole of the West Coast to the south of Bombay, *viz.*, on the 12th and 13th. The Arabian Sea monsoon current advanced rapidly into the interior, and more or less general rain was received in Berar, the Central Provinces, Central India, Rajputana and the East Punjab, from the 13th to the 24th.

The Bay current was established about the normal date. The advance over the Bay initiated a cyclonic storm in the north-west of the Bay which crossed the Orissa Coast on the 17th and advanced to Bundelkhand carrying the monsoon current with it. The following gives the dates of the establishment of the monsoon (*i.e.*, of the commencement of the heavy rainfall which marked the first burst of the monsoon) in different parts of India in 1897 :—

Province.	Date of commencement of the monsoon rains in 1897.
Bengal	June 13th
Bihar	„ 17th
Chota Nagpur	„ 17th
North-Western Provinces and Oudh	„ 18th
East Punjab	„ 14th & 15th
Malabar	„ 12th
Konkan	„ 13th
Deccan	„ 13th
Central Provinces	„ 14th
Central India	„ 14th
Rajputana	„ 14th & 15th

The monsoon currents withdrew gradually from Northern and Central India during the period between the

24th and 26th June, and an almost complete break in the rains obtained until the 6th or 7th of July when heavy rain again began to fall in the coast districts and rapidly extended into the interior. A second break in the rains, somewhat less pronounced than the previous, held from the 25th to the 29th of July.

The rains held with remarkable steadiness during the months of August and September, and gave frequent and moderate rain to nearly the whole of India.

The following gives the approximate dates of the termination of the rains in Northern and Central India:—

PROVINCES.	Date of termination of the monsoon rains in 1897.
East Punjab	26th September
North-Western Provinces, West and Central	26th September
North-Western Provinces East	20th October.
Bihar	20th October
Bengal	25th October
Rajputana	26th September
Central India	27th September
Central Provinces	25th September
Bombay	6th October

The following is a brief statement of the more important features of the rainfall, firstly, for the two periods into which the whole period may be divided, *viz.*, June and July and August and September, and secondly, for the whole period:—

Rainfall of the months of June and July 1897. *June.*—The advance of the monsoon current over the Arabian Sea was considerably retarded—almost as much as in June 1895 and 1896. Ordinary hot weather conditions obtained at the commencement of the month. Weather was unsettled in the North-West Himalayas and the Punjab on the 1st and 2nd, and temperature was hence reduced for a brief period (from the 3rd to the 7th) very largely below the normal in Upper India.

The advancing monsoon gave very disturbed weather on the 7th and following days in the centre of the Arabian Sea. A cyclonic storm of considerable intensity formed and passed northwards. The S. S. *Sultan* and *Aden* were wrecked off the east coast of Socotra during this storm. The west coast districts of India received moderate rain during the existence of this storm. Very hot and dry weather prevailed in the interior, and the 9th, 10th, 12th and 13th were excessively hot days in Upper India. Higher maximum temperatures were recorded in Sind, the South-West Punjab and West Rajputana than have been previously registered. Jacobabad recorded the exceptionally high maximum of 126° on the 13th, 2°·3 higher than had been previously registered at that station. The mean temperature of the 13th averaged 9° above the normal in Sind and Rajputana. The Bombay monsoon current gave moderate to heavy rain over the greater part of the Peninsula in the third week of the month.

The current in the Bay advanced to the neighbourhood of the Bengal Coast on the 14th. A small storm formed in the north of the Bay on the 14th and 15th. It advanced west-north-westwards, across Orissa, Chota Nagpur, and Baghelkhand into Bundelkhand. Its march gave moderate to heavy rain in Bengal and the Gangetic Plain.

A shallow depression formed in Bihar on the 22nd. It shifted slightly in position during the next five days and filled up on the 28th. This storm gave general and heavy rain in North-Eastern India during this period. Meanwhile the Bombay current had fallen off very rapidly in strength and ceased to give rain over the interior on the 24th. A complete break obtained in North-Western and Central India and the Deccan from the 24th June to the 8th July.

Weather was very disturbed in the Chitral and Kashmir mountain districts on the 22nd, 23rd, 24th and 25th. This was followed by an extension of cool northerly winds over the Punjab from the 24th to the 27th.

The rainfall of the month was in very large defect in Rajputana, Kathiawar, Gujarat, Berar, Khandesh, the Central Provinces (West) and Hyderabad. It was favourable and above the normal in Burma, Bihar, Central India, Malabar and the greater part of Bengal.

July.—The break in the rains which had set in over North-Western and Central India on the 24th June, extended to Bengal on the 29th and continued until the 8th July over India generally. Heavy rain recommenced in the west coast districts on the 6th, and showery weather set in on the same date in Bengal. Conditions continued to improve and the rainfall extended again to the interior of India on the 9th, thus terminating the break in the Central Provinces, Central India and the North-Western Provinces. The period from the 24th June to the 8th July was hence characterized by excessive temperature, abnormal dryness of the air and the prevalence of hot westerly winds over these areas.

The distribution of the rainfall from the 9th to the 20th was largely determined by a series of small land-formed depressions, chiefly in the Gangetic Plain.

The Bombay current was feebler than usual from the 15th to the 21st, and the rainfall over the greater part of the Peninsula was scanty. Moderate and fairly general rain fell between the 22nd and 25th. The Bombay current increased in strength on the 26th, and gave heavy rain to the west coast districts during the remainder of the month. The rainfall in the interior of India was small in amount from the 26th to the 29th, but increased rapidly on the 30th and 31st, on which days heavy rain was received in the Central Provinces and the greater part of the North-Western Provinces.

The rainfall of the two months was, on the average of

the whole of India, below the normal to a slight extent. The greater part of the area which mainly receives its rainfall from the Bay of Bengal current obtained normal or excess rainfall, whereas the areas chiefly dependent upon the Bombay current had deficient rainfall.

The rainfall of the period was practically normal in amount over the greater part of Burma, Assam, Deltaic Bengal, Orissa, Chota Nagpur and North Bihar and in largish excess in South Bihar, as shown below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Tenasserim . . .	93·41	77·40	+16·01	+21
Lower Burma . .	39·07	33·68	+5·39	+16
Central do. . .	19·48	21·92	—2·44	—11
Arakan . . .	80·88	89·37	—8·49	— 9
Assam (Surma) . .	46·67	42·26	+4·41	+10
Do. (Hill Tracts) .	42·78	57·81	—15·03	—26
Do. (Brahmaputra) .	31·44	31·85	—0·41	— 1
Deltaic Bengal . .	23·81	22·47	+1·34	+ 6
Orissa	21·05	20·87	+0·18	+ 1
Chota Nagpur . .	20·19	22·49	—2·30	—10
Bihar (North) . .	19·52	22·49	—2·97	—13
Do. (South) . .	25·48	18·41	+7·07	+38

It was also normal in amount over the greater part of the North-Western Provinces, but was in largish excess in the western and hills divisions of the North-Western Provinces, as is shown below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
North-Western Provinces (East).	15·80	16·12	—0·32	— 2
Oudh (South) . .	13·65	15·14	—1·49	—10
Do. (North) . .	17·73	16·62	+1·11	+ 7
North-Western Provinces (Central).	14·52	15·33	—0·81	— 5
North-Western Provinces (West).	15·84	11·20	+4·64	+41
North-Western Provinces (Submontane East).	18·88	18·04	+0·84	+ 5
North-Western Provinces (Submontane West).	22·38	19·83	+2·55	+13
North-Western Provinces Hills.	32·86	24·59	+8·27	+34

It was in slight to moderate defect in Central India and Rajputana, as shown below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Central India (East) .	14·93	20·23	—5·30	—26
Rajputana (East) and Central India (West).	10·74	12·36	—1·62	—13
Rajputana (West). .	5·12	5·66	—0·54	—10

It was in considerable to large defect in the south, central, submontane and hills districts of the Punjab, but normal over the remainder of the province, as is shown below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Punjab (Central) . .	4·19	6·57	—2·38	—36
Do. (Submontane) .	7·89	12·09	—4·20	—35
Do. (Hill Districts) .	15·76	21·46	—5·70	—27
Do. South-East .	9·17	10·17	—1·00	—10
Do. South . .	4·85	6·49	—1·64	—25
Do. North . .	4·86	4·89	—0·03	— 1
Do. West . .	3·34	3·24	+0·10	+ 3

The rainfall of the period was in moderate to largish defect in North Hyderabad, the Central Provinces, Berar, Khandesh and Gujarat. The following gives comparative data :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Hyderabad (North) . . .	10·12	14·23	— 4·11	—29
Berar	11·95	18·76	— 6·81	—36
Khandesh	10·54	13·32	— 2·78	—21
Central Provinces (West) . .	17·16	21·30	— 4·14	—19
Do. (Central). .	16·09	26·24	—10·15	—39
Do. (East) . .	17·70	24·38	— 6·68	—27
Gujarat	14·16	24·72	—10·56	—43

It was practically normal in Madras (except Malabar and Mysore, in which it was in moderate to large

excess), the Konkan and the Bombay Deccan, as is shown below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Madras (Central) . . .	5·44	5·78	— 0·34	— 6
East Coast (Central) . . .	4·02	4·10	— 0·08	— 2
Do. (South) . . .	3·88	5·27	— 1·39	—26
Madras (South)	2·14	2·14	0	0
Do. (South Central) . .	3·54	4·39	— 0·85	—19
Mysore	12·89	10·56	+ 2·33	+22
Konkan	74·04	67·18	+ 6·86	+10
Bombay Deccan. . . .	13·74	15·19	— 1·45	—10
Malabar	93·28	71·72	+21·56	+30

Of the fifty-five rainfall divisions or districts into which the plains of India is divided, the rainfall of the two months of June and July was above the normal in fifteen divisions and from 0 to 10 per cent. in defect (or practically normal) in fifteen divisions. In eight of the remaining divisions it was between 11 and 24 per cent. below the normal and hence in moderate defect. It was 25 per cent. or over in defect in seventeen divisions, for which comparative data are given below :—

Division.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Gujarat	14·16	24·72	—10·56	—43
Central Provinces (Central)	16·09	26·24	—10·15	—39
Berar	11·95	18·76	— 6·81	—36
Central Punjab . .	4·19	6·57	— 2·38	—36
Punjab Submontane . .	7·89	12·09	— 4·20	—35
Baluchistan Hills . .	0·94	1·43	— 0·49	—34
Madras East Coast North(a)	17·89	25·79	— 7·90	—31
Bengal Hills . . .	47·05	65·84	—18·79	—29
Hyderabad North . .	10·12	14·23	— 4·11	—29
Kathiawar . . .	10·47	14·53	— 4·06	—28
Punjab Hills . . .	15·76	21·46	— 5·70	—27
Central Provinces East	17·70	24·38	— 6·68	—27
North Bengal . . .	30·22	40·82	—10·60	—26
Assam Hills . . .	42·78	57·81	—15·03	—26
Central India East . .	14·93	20·23	— 5·30	—26
Madras East Coast South .	3·88	5·27	— 1·39	—26
South Punjab . . .	4·85	6·49	— 1·64	—25

The following table gives data showing the variations of the rainfall of the period from the normal in the larger provinces :—

Province.	Rainfall, June and July.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Punjab	5·72	7·24	—1·52	—21
Rajputana	7·93	9·01	—1·08	—12
North-Western Provinces and Oudh.	16·97	16·04	+0·93	+ 6
Central India	14·93	20·23	—5·30	—26
Central Provinces . . .	16·98	23·97	—6·99	—29
Berar	11·95	18·76	—6·81	—36
Chota Nagpur	20·19	22·49	—2·30	—10
Bihar	22·50	20·45	+2·05	+10
Orissa	21·05	20·87	+0·18	+ 1
Bengal	25·75	30·16	—4·41	—15
Assam	39·06	37·06	+2·00	+ 5
Burma	49·00	47·02	+1·98	+ 4
Bombay	24·59	26·99	—2·40	— 9
Madras	17·44	15·01	+2·43	+16

A noteworthy feature of the months of June and July 1897 was the absence of cyclonic storms in the Bay. One formed in the Bay of Bengal at the commencement of the monsoon and a second in the second week of July, but with these exceptions there were no cyclonic storms in the Bay. In June and July 1896, five cyclonic storms of moderate to considerable intensity formed in the Bay and gave heavy cyclonic downpours in the districts over which they passed. The rainfall of the period was hence favourably distributed and far more favourable to agriculture than the rainfall of the corresponding period of the preceding year.

Another noteworthy feature was the prevalence of disturbed weather with a tendency to the formation of cyclonic storms in the Arabian Sea in July, where cyclonic storms rarely, if ever, occur in that month. This is an indication that the currents in that area were not only feebler, but more unsteady than usual. Hence also the deficient rainfall over the greater part of the Peninsula.

Rainfall of the months of August and September 1897.—*August.*—At the commencement of the month a depression formed in the Gangetic Plain and was stationary from the 2nd to the 5th. It gave moderate to heavy rain over the whole of Northern India. It filled up on the 5th and on the next day a diffused depression began to form in the north-west angle of the Bay and the neighbouring land area. It moved westward across Orissa into the Central Provinces between the 7th and 10th and gave moderately heavy rain to these two provinces. A

second depression formed in the same part of the Bay between the 10th and 13th and advanced between the 13th and 19th by a curved path into the Central Punjab. It gave general rainfall over the whole of Northern and Central India during its existence.

A shallow depression formed in Central Bihar on the 19th and drifted slowly westwards into Oudh and filled up on the 24th. Heavy rain fell during this period in Bengal, the North-Western Provinces and Central Provinces. A strong advance of monsoon winds across the Sind and Kathiawar coasts occurred between the 15th and 19th which gave heavy rain in the driest districts of Upper India. The rainfall was light in the last week of the month in Northern India. The south and centre of the Peninsula and the Malabar Coast obtained a general burst of rain during this period. The rainfall of the month was in general excess and was below the normal in only eight rainfall divisions. It was more than 50 per cent. in excess in 12 divisions. It was hence abundant and very favourably distributed.

September.—The rainfall of this month was chiefly determined by a series of cyclonic storms of slight intensity. The first depression and storm formed on the 5th and 6th in the north-west of the Bay and advanced west-north-westwards through the Central Provinces and Berar. A depression formed off Kathiawar on the 10th when the previous storm was breaking up. The two disturbances gave moderate to heavy rain over the greater part of the Central Provinces, Berar, Gujarat, Kathiawar, Central India and Rajputana. A break in the rains set in over North-Western and Central India on the 16th and lasted until the 24th. During this period a storm advanced from the Bay across the Ganjam Coast and passed by a curved path through the Central Provinces, Central India into the western districts of the North-Western Provinces. It gave general rain over the whole area affected by it, but was chiefly remarkable for the heavy downpour it gave to the Almora and Naini Tal districts.

The rainfall of the month was very favourably distributed. The variations were nowhere large except in Southern India, and the rainfall was more especially in excess in the areas in which it was in marked defect in June and July. It was in excess in thirty rainfall divisions. It was in moderate defect in Burma and in slight defect over the greater part of the North-Western Provinces, the Punjab, Rajputana, Central India and Chota Nagpur. It was in excess over nearly the whole of the peninsula, the excess increasing in percentage amount, relatively to the normal, southwards. The following summarizes the chief features of the rainfall of the period:—

(1) The rainfall of this period was practically normal or in excess over the whole of Burma (except Upper Burma where it was in considerable defect), Bengal, Assam, Bihar, Chota Nagpur and Orissa, as shown below:—

Division.	Rainfall of period August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Tenasserim	64·65	63·79	+ 0·86	+ 1
Lower Burma	37·10	34·67	+ 2·43	+ 7
Upper do	14·26	19·04	— 4·78	—25
Central do.	18·50	22·51	— 4·01	—18
Arakan	60·78	54·49	+ 6·29	+12
Eastern Bengal	34·36	26·86	+ 7·50	+28
Assam (Surma)	41·67	37·19	+ 4·48	+12
Do. (Hill Tracts)	61·83	43·62	+18·21	+42
Do. (Brahmaputra)	31·93	24·99	+ 6·94	+28
Deltaic Bengal	20·86	20·69	+ 0·17	+ 1
Central do.	22·12	20·54	+ 1·58	+ 8
North do.	38·50	32·16	+ 6·34	+20
Bengal Hills	45·37	47·51	— 2·14	— 5
Orissa	19·56	22·68	— 3·12	—14
Chota Nagpur	22·57	22·07	+ 0·50	+ 2
Bihar (South)	18·55	18·70	— 0·15	— 1
Do. (North)	21·32	22·05	— 0·73	— 3

(2) It was more or less in excess in thirteen out of fifteen divisions in the North-Western Provinces and the Punjab, and was normal in the remaining two divisions. The following gives data:—

Division.	Rainfall of period August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
North Western Provinces (East)	24·01	17·68	+6·33	+36
Oudh (South)	23·03	16·99	+6·04	+36
Do. (North)	20·89	17·66	+3·23	+18
North-Western Provinces (Central)	16·54	16·05	+0·49	+ 3
Do. (West)	13·69	12·32	+1·37	+11
Do. (Submontane East)	20·41	18·69	+1·72	+ 9
Do. (do. West)	24·03	20·41	+3·62	+18
Do. (Hills)	34·15	24·47	+9·68	+40
Punjab (South-East)	9·11	10·11	—1·00	—10
Do. (South)	7·26	6·51	+0·75	+11
Do. (Central)	7·66	7·08	+0·58	+ 8
Do. (Submontane)	11·38	12·01	—0·63	— 5
Do. (Hill districts)	25·98	23·07	+2·91	+13
Do. (North-West)	9·35	6·72	+2·63	+39
Do. (West)	6·39	3·01	+3·38	+112

(3) It was more or less above the normal in Sind, West Rajputana, Gujarat and Kathiawar and normal in Central India. The following gives data in illustration :—

Division.	Rainfall of period August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Gujarat	20·04	17·49	+2·55	+15
Kathiawar	17·49	10·98	+6·51	+59
Sind	6·06	2·43	+3·63	+149
Central India (East)	19·36	19·35	+0·01	0
Rajputana (East) and Central India (West).	11·27	13·47	—2·20	—16
Rajputana (West)	8·18	5·39	+2·79	+52

(4) It was in slight to moderate excess in the Central Provinces and normal in Berar, as is shown by the following data :—

Division.	Rainfall, August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Berar	17·27	16·23	+1·04	+ 6
Central Provinces (West)	23·30	18·70	+4·60	+25
Do. (Central)	25·18	20·81	+4·37	+21
Do. (East)	25·15	20·11	+5·04	+25

(5) It was more or less considerably in excess over nearly the whole of the peninsula, including Mysore, Madras, and Bombay and normal in South Hyderabad, as shown below :—

Division.	Rainfall, August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Madras East Coast (North)	21·41	14·08	+7·33	+52
Do. do. (*a*)	27·51	21·38	+6·13	+29
Hyderabad (South)	11·70	11·75	—0·05	0
Madras (Central)	15·28	9·66	+5·62	+58
East Coast (Central)	12·92	6·67	+6·25	+94
Do. (South)	16·55	10·03	+6·52	+65
Madras (South)	7·66	4·25	+3·41	+80
Mysore	19·21	9·92	+9·29	+94
Bombay	23·23	18·43	+4·80	+26

(6) The rainfall of the period was below the normal in ten rainfall divisions. The deficiency in these was generally small in amount, and only exceeded 24 per cent. in one division, *viz.*, Upper Burma (25 per cent.), as shown below :—

Division.	Rainfall, August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Central Burma	18·50	22·51	—4·01	—18
Upper do.	14·26	19·04	—4·78	—25
Bengal Hills	45·37	47·51	—2·14	— 5
Orissa	19·56	22·68	—3·12	—14
Bihar North	21·32	22·05	—0·73	— 3
Punjab (South-East)	9·11	10·11	—1·00	—10
Do. (Submontane)	11·38	12·01	—0·63	— 3
Central India (West)	11·27	13·47	—2·20	—16
South Bihar	18·55	18·70	—0·15	— 1
Rajputana (East) and Central India (West).	11·27	13·47	—2·20	—16

(7) The rainfall was more than 50 per cent. in excess in thirteen rainfall divisions. The following gives comparative data :—

Division.	Rainfall, August and September.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.	
Punjab (West)	6·39	3·01	+3·38	+112
Malabar Coast	47·79	29·89	+17·90	+ 60
Madras South Central	15·60	7·81	+7·79	+100
Mysore	19·21	9·92	+9·29	+ 94
Kathiawar	17·49	10·98	+6·51	+ 59
Sind	6·06	2·43	+3·63	+149
Baluchistan Hills	2 34	0·90	+1·44	+160
Rajputana (West)	8·18	5·39	+2·79	+ 52
Madras East Coast (North)	21·41	14·08	+7·33	+ 52
Madras Central	05·28	9·66	+5·62	+ 58
Do. East Coast Central	12·92	6·67	+6·25	+ 94
Do. do. South	16·55	10·03	+6·52	+ 65
Do. South	7·66	4·25	+3·41	+ 80

The following gives the chief features of the distribution of rainfall for the whole monsoon period, June to September and also June to October, in India.

(1) The rainfall of the whole period, June to September,

was practically normal, on the whole, in Burma, as shown below :—

Division.	Rainfall of period. June to September. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	June to October. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
Tenasserim . .	158·06	141·19	+16·87	+12	173·37	150·02	+23·35	+16
Lower Burma .	76·17	68·35	+7·82	+11	86·39	77·29	+9·10	+12
Central „ .	37·98	44·43	—6·45	—15	47·40	50·83	—3·43	— 7
Upper „ .	26·41	31·75	—5·34	—17	31·62	36·99	—5·37	—15
Arakan . .	141·66	143·86	—2·20	— 2	154·17	154·08	+0·09	0

(2) It was practically normal (differing by less than 10 per cent. from the normal) in eight divisions of Assam and Bengal, and was slight to moderate excess in three divisions (South Bihar, Assam Surma and Assam Valley) and in moderate defect in one (Bengal Hills). Comparative data are given below :—

Division.	Rainfall of period. June to September. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	June to October. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
Assam Surma .	88·34	79·45	+ 8·89	+11	92·64	85·31	+ 7·33	+ 9
Do. Hills .	104·61	101·43	+ 3·18	+ 3	113·76	109·25	+ 4·51	+ 4
Do. Brahmaputra.	63·37	56·84	+ 6·53	+11	69·77	60·80	+ 8·97	+15
Eastern Bengal .	65·40	61·90	+ 3·49	+ 5	72·69	67·46	+ 5·23	+ 8
Deltaic do .	44·67	43·16	+ 1·51	+ 3	52·25	47·67	+ 4·58	+ 9
Central do .	39·95	42·85	— 2·90	— 7	47·20	46·41	+ 0·79	+ 2
North do .	68·72	72·98	— 4·26	— 6	76·63	77·52	— 0·89	— 1
Bengal Hills .	92·42	113·35	—20·93	—18	101·85	119·51	—17·66	—15
Orissa . .	40·61	43·55	— 2·94	— 7	51·11	49·40	+ 1·71	+ 3
Chota Nagpur .	42·76	44·56	— 1·80	— 4	48·55	47·45	+ 1·10	+ 2
South Bihar .	44·03	37·56	+ 6·47	+17	49·91	39·71	+10·20	+26
North do . .	40·84	44·54	— 3·70	— 8	48·60	47·38	+ 1·22	+ 3

(3) The rainfall of the period was normal in one division of the North-West Provinces, in slight to moderate excess in five divisions and in considerable excess (over 25 per cent.) in two divisions. It was on the mean of the whole province about 16 per cent. above the normal. The following gives comparative data :—

Division.	Rainfall of period. June to September. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	June to October. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
N.-W. Provinces (East).	39·81	33·80	+ 6·01	+19	46·58	35·98	+10·60	+29
Oudh South .	36·68	32·13	+ 4·55	+14	37·40	33·73	+ 3·67	+11
Do. North .	38·62	34·28	+ 4·34	+13	39·76	35·89	+ 3·87	+11
N.-W. Provinces (Central).	31·06	31·38	— 0·32	— 1	31·38	32·42	— 1·04	— 3
N.-W. Provinces (West).	29·53	23·52	+ 6·01	+26	29·61	24·06	+ 5·55	+23
N.-W. Provinces East Submontane.	39·29	36·73	+ 2·56	+ 7	45·97	39·60	+ 6·37	+16
N.-W. Provinces West Submontane.	46·41	40·24	+ 6·17	+15	46·47	41·07	+ 5·40	+13
N.-W. Provinces Hills.	67·01	49·06	+17·95	+36	67·36	50·57	+16·79	+33

(4) The rainfall of the period was, relatively to the normal, in moderate excess in West Rajputana and the North Punjab, in large excess in Sind, Baluchistan, the western division of the Punjab and normal or in slight to moderate defect in Central India, East Rajputana and the greater part of the Punjab. The following gives comparative data :—

Division.	Rainfall of period. June to September. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	June to October. Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
South-East Punjab	18·28	20·28	—2·00	—10	18·34	20·64	—2·30	—11
South do .	12·11	11·05	+1·06	+10	12·27	13·21	—0·94	— 7
Central do .	11·85	13·65	—1·80	—13	11·86	14·00	—2·14	—15
Punjab Submontane.	19·27	24·10	—4·83	—20	19·32	24·48	—5·16	—21
Do. Hills .	41·74	44·53	—2·79	— 6	41·86	45·43	—3·57	— 8
North Punjab .	14·21	11·61	+2·60	+23	14·29	12·07	+2·22	+18
West do. . .	9·73	6·25	+3·48	+56	9·75	6·36	+3·39	+53
Sind . . .	8·58	4·49	+4·09	+91	8·58	4·52	+4·06	+90
Baluchistan Hills .	3·28	2·33	+0·95	+41	3·28	2·43	+0·85	+35
Central India East	34·29	39·58	—5·29	—13	34·96	41·13	—6·17	—15
Rajputana East / Central India West.	22·01	25·83	—3·82	—15	22·22	26·17	—3·95	—15
West Rajputana .	13·30	11·05	+2·25	+20	13·70	11·12	+2·58	+23

(5) The rainfall was normal in Khandesh, and the eastern and western divisions of the Central Provinces, and in slight defect in the central division of the Central Provinces and Berar, as shown below :—

Division.	Rainfall of Period.							
	June to September.				June to October.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
Berar . . .	29·22	34·99	—5·77	—18	29·94	37·48	—7·54	—20
Central Provinces West.	40·46	40·00	+0·46	+ 1	41·45	42·08	—0·63	— 1
Central Provinces Central.	41·27	47·05	—5·78	—12	42·52	48·90	—6·38	—13
Central Provinces East.	42·85	44·49	—1·64	— 4	47·52	46·55	+0·97	+ 2
Khandesh . .	29·03	26·38	+ 2·65	+10	31·11	29·99	+1·12	+ 4

(6) It was in slight to large excess generally in Madras, Mysore, and the Konkan and normal in the Bombay Deccan. The following gives comparative data :—

Division.	Rainfall of Period.							
	June to September				June to October.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
Madras South Central.	19·14	12·20	+ 6·94	+58	23·28	18·12	+ 5·16	+28
Madras East Coast North.	31·20	25·72	+ 5·48	+22	40·15	31·47	+ 8·68	+28
Madras Central .	20·72	15·44	+ 5·28	+35	23·20	20·99	+ 2·21	+11
Madras East Coast Central.	16·94	10·77	+ 6·17	+57	19·36	20·52	— 1·16	— 6
Madras East Coast South.	20·43	15·30	+ 5·13	+34	24·25	23·64	+ 0·61	+ 3
Madras South .	9·80	6·39	+ 3·41	+53	13·17	12·43	+ 0·74	+ 6
Bombay Deccan .	28·93	26·86	+ 2·07	+ 8	33·80	31·86	+ 1·94	+ 6
Konkan . .	118·98	106·11	+12·87	+12	125·55	111·63	+13·92	+12
Mysore . .	32·10	20·48	+11·62	+57	35·70	25·99	+ 9·71	+37

The rainfall of the whole period June to October varied by less than 10 per cent. from the normal in 23 divisions out of the 57 rainfall divisions.

It was more than 25 per cent. in excess during the period June to September in twelve divisions and for the period June to October in ten divisions. Data in illustrations are given below :—

Division.	Rainfall of Period.							
	June to September.				June to October.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation from normal.
	Inches.	Inches.	Inches.		Inches.	Inches.	Inches.	
South Bihar .	44·03	37·50	+ 6·47	+17	49·91	39·71	+10·28	+26
N.-W. Provinces (East).	39·81	33·80	+ 6·01	+19	46·58	35·98	+10·60	+29
N.-W. Provinces (West).	29·53	23·52	+ 6·01	+26	29·61	24·06	+ 5·55	+23
N.-W. Provinces (Hills).	67·01	49·06	+17·95	+36	67·36	50·57	+16·79	+33
Punjab (West) .	9·73	6·25	+ 3·48	+56	9·75	6·36	+ 3·39	+53
Sind . . .	8·58	4·49	+ 4·09	+91	8·58	4·52	+ 4·06	+90
Malabar Coast .	141·07	101·61	+39·46	+39	149·55	111·65	+37·90	+34
Madras (South Central).	19·14	12·20	+ 6·94	+58	23·28	18·12	+ 5·16	+28
Mysore . .	28·53	22·21	+ 6·32	+29	35·70	25·99	+ 9·71	+37
Baluchistan Hills	3·28	2·33	+ 0·95	+41	3·28	2·43	+ 0·85	+35
Madras (Central)	20·72	15·44	+ 5·28	+35	23·20	20·99	+ 2·21	+11
" East Coast (Central).	16·94	10·77	+ 6·17	+57	19·36	20·52	— 1·16	— 6
Madras East Coast (South).	20·43	15·30	+ 5·13	+34	24·25	23·64	+ 0·61	+ 3
Madras (South) .	9·80	6·39	+ 3·41	+53	13·17	12·43	+ 0·74	+ 6
Madras East Coast (North).	31·20	25·72	+ 5·48	+22	40·15	31·47	+ 8·68	+28

IV. The retreating south-west monsoon period.—The monsoon currents, as already stated, withdrew from Upper India and the western half of the Gangetic Plain in the fourth week of September, and from Bihar, Bengal, and the Deccan in the third or fourth week of October.

The humid south-west current in the Bay was weaker than usual in October and November and was chiefly determined by the pressure conditions to the east of the Bay, Tenasserim and Lower Burma. The chief feature of the period was the comparative absence of cyclonic storms. A storm of moderate intensity formed off the Circars Coast on the 1st of October and marching by a curved path passed into Bihar on the 5th. It occasioned heavy rain over North Madras and North-Eastern India. A small cyclone of great intensity passed northwards from the neighbourhood of the Andamans to the Chittagong coast and gave very heavy rain in the Chittagong district and South Lushai Hills on the 24th October. A diffused cyclonic disturbance advanced westwards across the centre of the Bay to the Madras coast in the third and fourth weeks of November and was followed by light to moderate general rain over the centre and south of the peninsula from the 25th to the end of the month. Finally a cyclonic storm of great intensity formed in the centre

of the Bay on the 24th December and advanced northwards to Lat. 16°N and Long. 86°E, where it filled up without reaching land. It gove cloudy weather, but little rain, in the coast districts of the Bay.

The pressure conditions were throughout unfavourable to the diversion of the south-west monsoon currents towards the Madras coast and the chief feature of the season was the very deficient rainfall over nearly the whole of Madras and Mysore. North-east winds prevailed with unusual steadiness in the north and west of the Bay. They were much stronger than usual in the south-west of the Bay, and gave occasional light to moderate showers in a narrow belt of the South Madras or Coromandel coast districts.

A feeble cold-weather storm affected Upper India in the second week of December. It gave light to moderate rain in Baluchistan and the Punjab, and moderate to heavy snow in the Kashmir and Punjab Himalayas.

The rains practically ceased in Burma during the fourth week of November. Burma, however, had occasional thundershowers during December. Southern India obtained frequent heavy showers from the 14th to the 20th when fine dry weather set in.

The following is a summary of the more important features of the rainfall of the period:—

(1) The rainfall of the period was in moderate excess in Tenasserim and in slight excess in Central Burma, and was in defect in Lower and Upper Burma and Arakan, as is shown by the following data :—

Division.	Variation of rainfall during			
	October 1897.	November 1897.	December 1897.	Period.
	Inches.	Inches.	Inch.	Inches.
Tenasserim	+6·48	+1·75	+0·18	+8·41
Lower Burma	+1·28	—2·25	—0·15	—1·12
Central do.	+3·02	—1·60	—0·15	+1·27
Upper do.	—0·03	+0·11	—0·27	—0·19
Arakan	+2·29	—2·44	—0·37	—0·52

(2) The total rainfall of the period was in considerable to large defect in Burma, Assam and Bengal in November and December. The following gives data :—

Province.	Rainfall of period, November and December.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage, variation.
	Inches.	Inches.	Inches.	
Burma	1·92	2·96	—1·04	—35
Assam	0·90	1·30	—0·40	—31
Bengal	0·24	0·90	—0·66	—73

(3) The rainfall of the whole period, October to December, was more or less in defect in the Punjab, Rajputana, Central India, the Central Provinces and Berar, and was practically *nil* in all these areas except the Punjab in November and December. The rainfall of the period was, on the other hand, in excess in the North-Western Provinces. The following gives comparative data :—

Area.	Variation of rainfall during			
	October 1897.	November 1897.	December 1897.	Period. October to December 1897.
	Inches.	Inch.	Inch.	Inches.
Punjab	—0·25	—0·22	+0·20	—0·27
North-Western Provinces and Oudh.	+0·73	—0·06	—0·35	+0·32
Rajputana	+0·10	—0·16	—0·22	—0·28
Central India	—0·88	—0·33	—0·39	—1·60
Berar	—1·77	—0·63	—0·54	—2·94
Central Provinces	+0·30	—0·39	—0·38	—0·47

(4) Bengal, Assam, Bihar, Chota Nagpur and the eastern districts of the North-Western Provinces had heavier rain than usual in October (chiefly occurring during the first fortnight). The precipitation was small in amount over the whole of that area in November and December. The following table gives comparative data for these areas for the period :—

Division.	Variation of rainfall during			
	October 1897.	November 1897.	December 1897.	Period.
	Inches.	Inch.	Inch.	Inches.
North-Western Provinces (East)	+4·59	—0·11	—0·26	+4·22
Do. do. (East Submontane).	+3·81	—0·07	—0·20	+3·54
North Bihar	+4·92	—0·05	—0·10	+4·77
South Bihar	+3·28	—0·21	—0·15	+2·92
Chota Nagpur	+2·90	—0·24	—0·23	+2·43
Orissa	+4·65	+0·11	—0·20	+4·56
Bengal	+2·94	—0·52	—0·15	+2·27
Assam	+0·44	+0·16	—0·56	+0·04

(5) The Central and South Deccan obtained light to moderate rain during the first-half of October and the fourth week of November, but the rainfall of the period was

in considerable to large defect in the above areas, as is shown below :—

Division.	Variation from normal rainfall of			
	October 1897.	November 1897.	December 1897.	Period.
	Inches.	Inches.	Inch.	Inches.
Berar	—1·77	—0·63	—0·54	—2·94
Central Provinces (Central)	—0·60	—0·37	—0·33	—1·30
Hyderabad (North)	—0·97	—1·27	—0·64	—2·88
Do. (South)	+0·74	—1·11	—0·32	—0·69
Bombay (Deccan)	—0·13	—1·43	—0·41	—1·97

(6) The rainfall of the period was in large and marked defect in the Central and South Madras coast districts and in Mysore and Southern India generally. The following gives data in illustration :—

Division.	Variation of rainfall during			
	October 1897.	November 1897.	December 1897.	Period.
	Inches.	Inches.	Inches.	Inches.
Madras (South)	—2·67	—1·40	—3·07	— 7·14
Do. East Coast (South)	—4·52	—5·19	—3·43	—13·14
Do. do. (Central)	—7·33	—6·19	—2·33	—15·85
Do. (Central)	—3·07	—1·83	—0·29	— 5·19
Do. (South-Central)	—1·78	—1·09	—1·12	— 3·99
Mysore	—1·91	—2·30	—0·58	— 4·79
Malabar	—1·56	—2·40	—0·64	— 4·60

The following gives a statement of the most remarkable rainfall in 24 hours during the year (exceeding 12 inches in amount) :—

Division or district.	Station.	Date.	Rainfall during 24 hours preceding 8 A.M. of date.
			Inches.
North Canara	Karwar	16th June.	13·17
	Honovar	,,	13·30
	Ankola	,,	13·73
	Kumta	,,	14·87
	Do.	17th June.	14·70
	Honovar	,,	12·20
	Bhatkal	,,	12·31
	Savantvadi	,,	12·10
Bundelkhand	Nowgong	20th June.	18·22
Patna	Patna	25th June.	13·80
	Dinapore	,,	19·64
Shahabad	Ageaon	,,	14·00
Naini Tal	Naini Tal	15th July.	14·59
	Haldwani	,,	12·10
	Kathgodam	,,	12·07
Almora	Tamakpur	23rd July.	12·90
Hoshangabad	Seoni	15th August.	13·04

Year.—The following is a brief statement of the variation of the rainfall of the year from the normal.

The rainfall of the year averaged 0·15 inch below the normal for the whole of India. The rainfall was in defect over the areas, including the whole of the Deccan, Central India, Gujarat, East Rajputana, Madras, Central and Upper Burma, Arakan, the greater part of the Punjab, and the hill districts of Bengal. The following gives comparative data for the areas in which the rainfall was less than 10 per cent. in defect :—

Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
Arakan	166·48	178·04	—11·56	—6
Central Burma	58·05	59·11	— 1·06	—2
Eastern Bengal	87·26	87·69	— 0·43	0
Central ,,	55·16	56·06	— 0·90	—2
North ,,	93·64	94·36	— 0·72	—1
North-Western Provinces (Central)	32·79	34·35	— 1·56	—5
Punjab Hills	58·77	62·01	— 3·24	—5
Khandesh	31·35	32·82	— 1·47	—4
Central Provinces (West)	43·39	44·71	— 1·32	—3
Hyderabad (South)	27·22	28·81	— 1·59	—6
Madras (Central)	25·95	26·30	— 0·35	—1
Do. (South)	27·42	28·87	— 1·45	—5

The rainfall was between 10 and 20 per cent. in defect in eleven out of 57 rainfall divisions, as is shown below :—

Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
Upper Burma	40·13	45·67	— 5·54	—12
Bengal Hills	116·97	141·85	—24·88	—18
South-East Punjab	19·21	23·35	— 4·14	—18
Central Punjab	16·80	18·88	— 2·08	—11
Punjab Submontane	24·72	30·87	— 6·15	—20
South Punjab	14·27	16·02	— 1·75	—11
Rajputana East, Central India West.	22·58	28·03	— 5·45	—19
Hyderabad (North)	30·21	36·18	— 5·97	—17
Central Provinces (Central)	45·19	51·63	— 6·44	—12
Central India (East)	36·21	43·55	— 7·34	—17
Madras East Coast (South)	34·54	42·40	— 7·86	—19

The rainfall was between 20 and 25 per cent. in defect in the three divisions, for which data are given below :—

Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
Berar	30·92	40·56	— 9·64	—24
Gujarat	34·88	44·21	— 9·33	—21
Madras East Coast (Central)	26·34	35·19	— 8·85	—25

The rainfall was in excess in the divisions or areas for which the comparative data are given below :—

1st.—The areas in which the rainfall was between 1 and 10 per cent. in excess are as follows :—

Province or Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
Lower Burma	101·72	93·71	+ 8·01	+ 9
Assam	112·47	107·53	+ 4·94	+ 5
Deltaic Bengal	61·76	60·67	+ 1·09	+ 2
Orissa	62·38	59·88	+ 2·50	+ 4
Chota Nagpur	55·12	53·73	+ 1·39	+ 3
Bihar	53·37	48·53	+ 4·84	+ 10
Bombay (Deccan)	36·83	36·58	+ 0·25	+ 1
Konkan	126·49	115·07	+ 11·42	+ 10
Central Provinces (East)	53·59	50·02	+ 3·57	+ 7
Kathiawar	29·09	27·07	+ 2·02	+ 7
Baluchistan Hills	9·47	9·29	+ 0·18	+ 2
East Coast (North) (*a*)	65·01	60·21	+ 4·80	+ 8

2nd.—The following gives data for the six divisions or provinces in which the rainfall was between 10 and 25 per cent. in excess :—

Province or Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
Tenasserim	205·20	182·95	+ 22·25	+ 12
North-Western Provinces and Oudh.	45·49	40·48	+ 5·01	+ 12
Madras (South-Central)	33·47	29·59	+ 3·88	+ 13
Madras East Coast (North)	47·42	39·45	+ 7·97	+ 20
Mysore	40·83	34·53	+ 6·30	+ 18
Rajputana (West)	13·97	12·52	+ 1·45	+ 11

3rd.—The following gives data for the four divisions in which the excess was between 25 and 55 per cent. :—

Division.	Average total rainfall during the year.			
	Actual, 1897.	Normal.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	Inches.	
North Punjab	27·16	21·07	+ 6·09	+ 29
West Punjab	12·67	9·02	+ 3·65	+ 40
Malabar	160·75	126·69	+ 34·06	+ 27
Sind	9·13	6·03	+ 3·10	+ 51

The following gives a statement of the variation of the

mean rainfall of India (excluding Burma) during the past 23 years :—

Year.	Number of divisions.			Rainfall.			
	Fall excessive.	Fall normal.	Fall deficient.	Average actual.	Average normal.	Variation from normal.	Percentage variation.
				Inches.	Inches.	Inches.	
1875 . . .	16	...	8	43·47	41·09	+2·38	+ 6
1876 . . .	6	...	18	36·60	41·09	—4·49	—11
1877 . . .	10	...	14	36·81	41·09	—4·28	—10
1878 . . .	17	1	6	47·43	41·09	+6·34	+15
1879 . . .	16	2	6	42·78	41·09	+1·69	+ 4
1880 . . .	13	1	10	39·53	41·09	—1·56	— 4
1881 . . .	15	...	9	41·19	41·09	+0·10	0
1882 . . .	17	1	6	43·73	41·09	+2·64	+ 6
1883 . . .	11	1	12	40·97	41·09	—0·12	0
1884 . . .	12	...	10	42·82	41·09	+1·73	+ 4
1885 . . .	15	...	7	42·14	41·09	+1·05	+ 3
1886 . . .	14	...	8	44·11	41·09	+3·02	+ 7
1887 . . .	11	...	11	43·51	41·09	+2·42	+ 6
1888 . . .	10	..	12	39·55	41·09	—1·54	— 4
1889 . . .	15	...	8	43·50	41·09	+2·41	+ 6
1890 . . .	14	1	8	41·77	41·09	+0·68	+ 2
1891 . . .	6	...	17	37·55	41·09	—3·54	— 9
1892 . . .	15	...	8	46·18	41·09	+5·09	+12
1893 . . .	22	...	1	50·16	41·09	+9·07	+22
1894 . . .	17	...	6	47·56	41·09	+6·47	+16
1895 . . .	5	...	17	38·90	41·09	—2·19	— 7
1896 . . .	7	2	14	36·26	41·09	—4·83	—12
1897 . . .	10	2	11	40·94	41·09	—0·15	0

Concluding Summary.

The year was characterized by a very slight deficiency of rainfall, and was the last year of a series of six years characterized by a remarkable cyclical variation in the mean amount of the rainfall in India.

Cold weather period, January and February 1897.—The following table gives mean variation data of the more important meteorological elements for the cold weather period, January and February 1897 :—

Meteorological Province.	January and February 1897.						
	Variation from normal of mean monthly pressure.	Variation from normal of mean maximum temperature.	Variation from normal of mean minimum temperature.	Variation from normal of mean aqueous vapour pressure.	Variation from normal of mean humidity.	Variation from normal of mean cloud amount.	Total variation from normal of average actual rainfall.
	"	°	°	"			Inches.
Burma Coast and Bay Islands.	—·022	+1·5	+3·3	+·055	+1	+0·5	—0·74
Burma Inland . .	?	+3·6	+2·4	?	?	?	—0·17
Assam	—·028	+2·1	+0·8	+·002	—4	—0·3	—1·35
Bengal and Orissa . .	—·026	+2·5	+2·4	+·024	—4	+0·7	—0·45
Gangetic Plain and Chota-Nagpur	—·021	+2·1	+2·5	—·003	—4	+0·1	—0·01
Upper Sub-Himalayas .	—·016	+0·2	+1·6	—·005	—2	—0·5	—1·20
Indus Valley and North-West Rajputana	—·012	—0·3	+0·5	—·012	—1	—0·5	—0·06
East Rajputana, Central India and Gujarat.	—·010	—0·2	+0·2	+·003	0	—0·4	—0·16
Deccan . . .	—·025	+2·6	+4·3	+·041	+2	+0·2	+0·34
West Coast . .	—·009	+0·1	+2·1	+·025	0	+0·4	—0·13
South India	—·023	+2·2	+4·1	+·061	+3	+0·8	+0·57

The pressure variations were slight to moderate in amount. Pressure was, relatively to the general condition, in slight defect in North Eastern and Southern India, the Deccan and Burma and in excess in North-Western India and the West Coast. This was mainly a direct effect of the higher temperature than usual which prevailed throughout the period.

The mean maximum temperature of the period was in general excess in India by amounts averaging 1°·5 for the whole area. The excess was most marked in Berar, the Central Provinces, the Deccan and Madras, where it was 3° in average amount. The mean minimum temperature of the period was generally in excess by larger amounts than the day temperature.

The air contained more aqueous vapour over the whole of India except Upper India and the Gangetic Plain. The excess was greatest in Lower Burma and Southern India. In consequence of the prevailing high temperature conditions humidity was generally below the normal. The decreased humidity was most marked in the Gangetic Plain, Bengal and Assam. There was also less cloud than usual in Assam and Upper India. The rainfall of the period was more or less in defect over the whole of India, with the exception of the Deccan and Southern India, in which areas it was in slight excess.

The chief feature of the cold weather season was the prevalence of less disturbed weather than usual. The number of cold weather storms was considerably below the normal and the disturbances were almost without exception feeble. The scanty rainfall, diminished humidity and

increased temperature of the period were due to the abnormal character of the cold weather storms.

A reference to the monthly weather summaries for the year 1897 will show that there was a considerable resemblance between the cold weather period of that year and those of the years 1896 and 1892. These periods were all marked by a considerable excess of temperature and by decreased humidity, cloud and rain in North-Western India. The following gives comparative data for the cold weather periods of the years 1892 to 1897 for the area including the Punjab, Rajputana, the North-Western Provinces and Bihar :—

Cold Weather Period of	Variation from normal in North-Western India of			
	Temperature.	Humidity.	Cloud.	Rainfall.
	°			Inches.
1897	+1·2	— 2	—0·4	—0·12
1896	+2·0	— 3	—0·5	—0·72
1895	+0·8	+ 5	—0·2	+0·43
1894	+0·6	+10	+1·3	+0·92
1893	—4·2	+11	+1·4	+2·04
1892	+2·5	— 2	—0·2	—0·37

The variations of the temperature and humidity conditions in the cold weather of 1896-97 were determined by the distribution of the rainfall during the period, and hence by the distribution and character of the cold weather storms of December 1896 and of January and February 1897. The chief characteristics of the storms of that period were as follows :—

(1) The number of depressions and cold weather disturbances was less than the normal.

(2) The disturbances were (with one exception) feeble and ill-defined, and did not give rise to deep secondary depressions in the Punjab.

(3) The precipitation accompanying these disturbances in the Afghan and Himalayan areas fell as rain to much higher levels than in normal cold weather periods.

(4) The precipitation accompanying these disturbances was practically restricted to North-Western India.

The preceding remarks indicate that the chief features of the cold weather storms of 1896-97 were persistent throughout the season.

An examination of the pressure and other conditions obtaining in India before and during the cold weather periods of these two years, throws little or no light on the abnormal features of these storms. This suggests that they were related either to conditions in the upper atmosphere over Northern India or to conditions outside of India.

The following tables give vertical pressure anomalies for the cold weather period of 1896-97 :—

Pair of Stations.	Vertical pressure anomaly.						
	September 1896.	October 1896.	November 1899.	December 1896.	January. 1897.	February 1897.	Mean of period November 1896 to February 1897.
	"	"	"	"	"	"	"
Leh and Lahore. .	—·020	0	+·049	—·030	—·026	+·059	+·013
Quetta and Jacobabad.	+·001	—·006	—·007	+·007	—·018	—·010	—·007
Murree and Peshawar.	+·002	—·012	+·010?	—·006	—·018	+·036	+·006?
Simla and Ludhiana.	+·011	+·006	+·005	—·026	—·004	+·015	—·003
Chakrata and Roorkee.	+·017	+·037	+·029	—·003	+·030	+·034	+·023
Ranikhet and Bareilly	+·001	+·026	+·024	+·001	+·028	+·031	+·021
Darjeeling and Dhubri	—·019	—·022	—·008	—·021	+·024	+·019	+·004
Mount Abu and Deesa.	—·028	—·013	+·006	—·005	—·020	—·011	—·008
Pachmarhi and Hoshangabad.	—·003	+·007	+·028	+·002	+·012	+·010	+·013

The following table gives the mean vertical pressure anomalies for the cold weather periods of the past seven years for comparison :—

Pair of Stations.	Vertical pressure anomaly.						
	1896-97.	1895-96.	1894-95.	1893-94.	1892-93.	1891-92.	1890-91.
	"	"	"	"	"	"	"
Leh and Lahore . .	+·013	+·041	+·009	—·004	—·046	+·040	—·025
Quetta and Jacobabad .	—·007	+·019	+·001	+·006	—·007	+·063	—·038
Murree and Rawalpindi .	?	?	—·008	—·012	—·032	+·037	?
Simla and Ludhiana .	—·003	+·012	—·017	—·015	—·049	+·017	—·020
Chakrata and Roorkee .	+·023	+·030	+·010	—·010	—·022	+·039	+·015
Ranikhet and Bareilly .	+·021	+·025	+·003	+·011?	+·013?	+·030	?
Darjeeling and Dhubri .	+·004	+·007	+·001	+·017	—·008	+·026	—·004
Mount Abu and Deesa .	—·008	+·005	—·007	+·003	?	+·027	+·016
Pachmarhi and Hoshangabad . . .	+·013	?	+·013	?	+·005	+·024	?

Hence in the cold weather of 1896-97, as in that of 1895-96 and of 1891-92, the vertical pressure anomalies were positive, indicating increased pressure in the middle atmospheric strata relatively to the lower strata. This feature was very slightly exhibited in September and October 1896. The relative excess of pressure was moderate in November 1896 and moderately large in February 1897. The anomalies, although positive, were not so large in 1896-97 as in 1895-96 and 1891-92.

The rainfall of each of these cold weather seasons in Upper India was below the normal, but the deficiency was least in 1896-97. The meteorology of the cold weather of 1896-97 is hence in accordance with and confirms the conclusions given in page 574 of the Annual Summary for the year 1893, *viz.*—

(1) Pressure is invariably in defect at the hill stations relatively to the adjacent plains stations in Northern India

and hence in the middle atmospheric strata in Northern India in cold weather seasons of abundant rainfall.

(2) Pressure is invariably in excess in the middle atmospheric strata over Northern India (*i.e.*, vertical pressure anomalies are positive) in cold weather seasons of deficient rainfall.

(3) The mean variations in the cold weather rainfall over Northern India from season to season are, roughly speaking, proportional to the magnitude of the vertical pressure anomalies of the period.

(4) The character of the vertical pressure anomalies during the cold weather, and hence of the probable cold weather rainfall, is usually indicated in the preceding months of November and December, more especially when considered in combination with the character of the rainfall of the preceding south-west monsoon.

An examination of the Indian monsoon area charts and of the charts in the weekly weather reports issued by the English Meteorological Office, indicates the conditions which obtained in Europe during the inception of the storms of the period.

The following table gives a list of the cold weather storms of 1896-97, and of the conditions obtaining in South-East and South Europe during their formation.

Date and character of storm.	Area of formation.	Weather conditions in East, South-East and South Europe prior to and during formation of storm.
Cold weather storm of the 7th to the 11th in Persia and the 12th to the 16th January in India.	West Persia . .	Pressure was high and anti-cyclonic conditions prevailed in South and East Europe and in Persia from the 1st to the 7th. The Russian anti-cyclone intensified on the 8th and 9th, and a depression appeared in West Europe, which gradually extended south-eastwards across Central Europe into the West Mediterranean, and gave disturbed weather in that area from the 13th to the 18th. Pressure gave way slowly in the Persian area on the 6th, 7th and 8th, and a shallow depression lay over West Persia on the 8th and 9th.
Cold weather storm of the 20th to the 22nd in Persia and the 23rd to the 25th February in India.	East Persia . .	High pressure conditions held steadily during the period from the 13th to the end of the month in the Mediterranean, South Europe and South Russia. Pressure gave way briskly to rapidly at Baghdad and Bushire on the 20th, and feebly unsettled weather prevailed in that area.
Feeble cold weather storm of the 5th to the 7th March.	Ditto . .	High pressure conditions held steadily in South East Europe throughout the first week of March.
Cold weather storm of the 8th to the 12th March.	Baluchistan plateau .	High pressure conditions obtained in Persia and Asiatic Turkey from the 6th to the 10th March.
Disturbance of the 18th to the 25th March.	East Persia . .	Anti-cyclonic or high pressure conditions held steadily from the 10th to the 19th March in South-Eastern and Eastern Europe.
Cold weather storm of the 23rd to the 25th March in Persia and the 26th to the 29th of March in India.	West Persia (?) .	Anti-cyclonic conditions prevailed in East Russia from the 20th to the end of the month.

The preceding data indicate clearly that the cold weather storms of 1896-97 in India were not the continuation of European storms, and that anti-cyclonic conditions prevailed to the north and north-west of Baluchistan or Persia during their initiation.

Hot weather period, March to May 1897.—The following table gives the mean variations of the more important meteorological elements in the eleven meteorological provinces of India for the hot weather period, March to May 1897:—

Meteorological Province.	Hot weather period 1897.						
	Variation from normal of pressure.	Variation from normal of mean maximum temperature.	Variation from normal of mean minimum temperature.	Variation from normal of aqueous vapour pressure.	Variation from normal of mean humidity.	Variation from normal of cloud amount.	Variation of average actual rainfall of period from normal.
	"	°	°	"			Inches.
Burma Coast and Bay Islands	+·002	−0·1	+1·8	+·022	+1	+0·6	+2·67
Burma Inland . . .	?	+1·9	+1·0	?	?	?	−0·19
Assam	+·006	+0·7	−0·5	−·016	−2	−0·7	+2·65
Bengal and Orissa . .	+·005	+0·8	+0·6	−·015	−4	−0·1	−1·19
Gangetic Plain and Chota Nagpur	−·002	+1·1	+1·0	−·013	−3	−0·1	−0·03
Upper Sub-Himalayas .	0	−0·4	+1·2	−·033	−4	+0·1	−0·85
Indus Valley and North-West Rajputana	+·008	−0·3	+0·1	−·031	−2	+0·3	−0·13
East Rajputana, Central India and Gujarat.	+·008	+0·3	+0·8	−·016	−3	−0·1	−0·47
Deccan	+·009	+1·3	+1·5	−·017	−3	−0·2	−0·45
West Coast . . .	+·010	+0·5	+0·6	−·005	−2	−0·2	−2·24
South India . . .	+·002	+0·7	+1·6	−·011	−2	+0·2	−0·79

The previous table gives mean data for the whole period and indicates that on the average of the period pressure was in slight excess, temperature generally in slight excess, humidity slightly below the normal and cloud normal in India. he mean pressure of the Indian land area was ·020″ in defect in March, and ·039″ in excess in April and ·005″ in defect in May and hence averaged ·005″ in excess for the hot weather period. Series of thunderstorms

occurred, chiefly in the Punjab and North-Eastern India, and temperature was in defect in Upper India, more especially in the hill districts, but was generally above the normal to a slight extent over the remainder of India. The local variations of pressure from the general condition in these months were small and apparently of little importance. The month of May was abnormally hot over the whole of Northern and Central India, the area of greatest excess of temperature including Upper Sind, North-West Rajputana, the South-West Punjab and the North-Western Provinces. The exaggerated hot weather conditions of May gave rise to the following abnormal features of the pressure distribution in that month:—

(1) General deficiency, relatively to the mean condition, over the whole of Northern India, the deficiency being most marked in Upper Sind, the Punjab and the greater part of the North-Western Provinces, and hence included the area of greatest excess of temperature.

(2) General excess of pressure in the Peninsula, greatest in the West Coast districts from Kathiawar to North Malabar.

(3) Excess of pressure at the level of the hill stations as compared with the neighbouring plains.

It is interesting to compare the meteorology of May 1897 with the meteorology of the corresponding months of the years 1879, 1880, 1890, 1892, 1894, 1895 and 1896. The winter snowfall of these years was (with the exception of the year 1894) considerably or largely in defect and (with two exceptions) the hot weather characterized by excessive temperature, more especially in May. The following gives data showing the variations of the mean pressure, temperature and aqueous vapour amount (as measured by its pressure) of the whole of India from the normal in this month:—

Month and Year.	Variation from normal of		
	Mean pressure of month.	Mean temperature of month.	Mean aqueous vapour pressure of month.
	"	°	"
May 1879	—·045	+1·3	—·010
„ 1880	—·022	+0·2	—·001
„ 1890	—·022	+0·6	—·011
„ 1892	—·027	+1·8	—·002
„ 1894	—·023	+1·5	—·011
„ 1895	—·007	+2·4	+·027
„ 1896	+·013	+2·3	—·005
„ 1897	—·004	+1·7	—·001

The following gives mean temperature variation data of Northern India (including the Punjab, Upper Sind, the North-Western Provinces, Bihar and Rajputana), for the month of May of nine years resembling May 1897 in their chief features.

Month and Year.	Variation of mean temperature in Northern India.	Area of greatest variation.	Amount of greatest variation.
May 1879	+4·0	North-Western Provinces.	+5·0
„ 1880	+2·0	South Punjab	+5·6
„ 1881	+0·8	South Punjab	+2·9
„ 1882	—0·5	North Punjab	+2·1
„ 1890	+1·5	Punjab	+2·5
„ 1892	+3·0	West Punjab	+5·5
„ 1894	+3·0	Chota Nagpur	+5·0
„ 1895	+4·0	Punjab	+6·0
„ 1896	+3·1	Punjab	+4·8
„ 1897	+3·6	North-West Rajputana	+5·5

The data of the preceding table show that the temperature conditions of May 1881 and 1882 were practically normal. In each of the months of May 1879, 1880, 1890, 1892, 1894, 1895, 1896 and 1897, temperature was considerably above the normal, due largely, if not solely, to deficient precipitation in the cold-weather period over the plains and adjacent mountain areas of Northern India. In each of these months, except that of May 1896, the mean pressure of the Indian area was in defect, the deficiency averaging—·028" for the first five years and almost identical in amount with this in four out of these five years. It may be noted that the temperature conditions of May 1897 were practically identical with those of 1892 and 1895.

Excessive temperature in the month of May generally gives rise to a larger diminution of pressure over the Indian area than that normal to the month, and hence to a deficiency of pressure (as compared with the normal). This decrease of pressure is chiefly, if not solely, a temperature effect

This is confirmed by the fact that in each of these months (*viz.*, May 1879, 1880, 1890, 1892, 1894, 1895, 1896 and 1897) pressure was in relative excess or the vertical pressure anomalies were positive at the hill stations in Northern India. This is established by the following data for six pairs of stations:—

Pair of stations	Vertical pressure anomaly in May.							
	1879	1880	1890	1892	1894	1895	1896	1897
Quetta and Jacobabad	?	?	+·006	+·050	+·037	+·063	+·046	+·050
Leh and Lahore	?	+·069	+·063	+·125	+·082	+·101	+·085	?
Murree and Rawalpindi	+·040	+·038	+·041	+·035	+·028	+·057	?	+·017
Simla and Ludhiana	?	?	+·033	+·049	+·042	+·060	+·050	+·054
Chakrata and Roorkee	+·044	+·015	+·022	+·040	+·035	+·045	+·038	+·058
Darjeeling and Calcutta	+·032	+·007	+·002	+·003	+·023	+·033	+·011	+·028
Mean.	+·039	+·032	+·028	+·050	+·041	+·060	+·046	+·014

The large positive vertical anomalies were evidently in each case the result of the excessive temperature conditions of the month in Northern India, which, by the various air movements which it either strengthened or initiated, diminished pressure very largely at the level of the plains in Northern India and to a much smaller extent at the level of the hills, thus giving positive vertical pressure anomalies, which increased with elevation and were hence greatest for Leh.

A second interesting feature of the meteorology of the month of May in each of these years except 1879 is that pressure was in local excess in the Peninsula, more especially in the West Coast districts, and in local defect in Northern India. The following table gives data in illustration :—

Area.	Station.	Pressure anomaly of May.							
		1879.	1880.	1890.	1892.	1894.	1895.	1896.	1897.
		"	"	"	"	"	"	"	"
Northern India.	Calcutta .	+·003	+·002	−·001	−·019	−·035	−·024	−·010	−·007
	Patna .	−·014	+·019	−·013	−·037	−·055	−·030	−·023	−·029
	Allahabad	−·012	0	0	−·030	−·037	−·040	−·026	−·028
	Lahore .	−·003	−·030	−·019	−·036	−·031	−·038	−·019	−·020
	Mooltan .	+·013	−·027	−·016	−·045	−·036	−·048	−·031?	−·027
	Peshawar.	+·026	−·036	−·005	−·029	−·014	−·022	−·014	+·011
Western India and Malabar.	Rajkot .	−·014	+·005	+·044	+·050	+·059	+·044	+·041	+·027
	Bombay .	−·040	+·012	+·025	+·021	+·050	+·043	+·031	+·024
	Karwar .	?	+·030	+·031	+·015	+·050	+·049	+·033	+·028
	Poona .	+·016	+·012	+·027	+·035	+·044	+·030	+·029	+·019
	Belgaum .	−·022	−·005	+·014	+·027	+·047	+·036	+·035	+·020
	Cochin .	−·007	−·010	?	+·036	+·035	+·034	+·031	+·007
	Calicut .	?	?	?	+·022	+·035	+·032	+·027	+·007

The preceding data establish that generally, if not invariably, exaggerated hot weather conditions in Northern India in May tend to give a larger deficiency of pressure in Northern India than the mean deficiency of the whole of India and a smaller deficiency in the Peninsula (more especially in the West Coast districts), or in other words to give negative pressure anomalies in Northern India and positive anomalies in the Peninsula. This is mainly, if not entirely, a result of the abnormal temperature conditions of the period.

It may hence be laid down as a general rule that more strongly marked hot weather conditions than usual (*i.e.*, increased temperature and great dryness of the air) in Northern India in the month of May accompany or initiate the following pressure conditions.—

(1) General deficiency of pressure over India.

(2) Relative excess of pressure at the level of the hill stations in Northern India as compared with that at the level of the plains.

(3) Relative deficiency of pressure in Northern India, usually most marked in or near the area of greatest excess of temperate.

(4) Relative excess of pressure in the Peninsula, greatest in amount in the West Coast districts, Gujarat and Kathiawar.

The highest temperatures of the year were registered during the second week of June, and hence nearly a fortnight later than usual. The pressure abnormals or variations during this period were similar to those of the month of May, but were very strongly marked.

The following table gives vertical pressure anomalies for each month of the hot weather period of 1897 in Northern India determined from the variation data of six pairs of stations. It will be seen that the vertical pressure anomalies in Upper India, which were small in March and April, were positive and large in amount in May :—

Pair of Stations.	Vertical pressure anomaly in		
	March 1897.	April 1897.	May 1897.
	"	"	"
Quetta and Jacobabad . . .	−·003	−·013	+·050
Kailang and Lahore	−·032	−·053	+·034
Murree and Peshawar . . .	−·018	−·050	+·005
Simla and Ludhiana	+·002	−·019	+·054
Darjeeling and Dhubri . . .	+·001	+·014	+·025
Mount Abu and Deesa . . .	−·022	−·005	−·002

The meteorology of India during the hot weather of 1897 was determined mainly, if not entirely, by meteorological actions and conditions in India itself and by the distribution of the snowfall in the Himalayan area.

The cold weather snowfall of 1897 was undoubtedly not above the normal in Northern India although it was locally heavy in Chitral and Kashmir. The extent of the snow-clad surface during the hot weather and more especially in May was probably below the normal.

March and April were more disturbed than usual in North-Western India, numerous series of thunderstorms occurring in April. May was unusually dry and hot over the whole of India, and skies were free from cloud except in those areas which were directly under the influence of the local sea breezes. Lower and Central Burma, Assam and North Bengal received heavier rain than usual. The intensified hot westerly winds of the Gangetic Plain extended eastwards across South Bihar and Chota Nagpur further than usual.

The larger features of this period were hence directly related to the snowfall of the previous cold weather season in North-West India.

South-West monsoon period, June to September 1897.—The meteorological conditions in the Indian

land area antecedent to the establishment of the south-west monsoon were favourable to a normal monsoon and also to its rapid extension over nearly the whole of India. The following gives the most prominent and important of these antecedent conditions :—

(1) The snowfall of the past winter was normal or in slight defect in amount and distribution in the Eastern and Central Himalayas. The winter was more prolonged than usual in the Punjab Himalayas. The snowfall was slightly below the normal in December, January and February, but was frequent and heavy in March and April. This, however, tended to increase the snow accumulation on the higher ranges, but not to give an abnormal extension of snow-clad surface. The snowfall was unusually heavy in North Kashmir and Central and North Afghanistan throughout the whole season, but the chief feature was the excessive fall from the beginning of March to May in Chitral and Kashmir.

(2) The pressure conditions in India were generally favourable. There was throughout the cold and hot weather periods a tendency to higher pressure in the Punjab, West Rajputana, Sind and Gujarat. It was very slightly shown in January, February and March, but became prominent in April. It was less marked in the Punjab in May, a favourable change for rainfall in the East Punjab. This accumulation of pressure was in part at least a result of the excessive snow to the north of the Punjab and undoubtedly tended to divert the monsoon currents away from Upper India at the commencement of the monsoon.

(3) The temperature conditions in India were favourable and indicated that the influence of the winter snowfall was slight, and was in April restricted to Upper India and in May to the Kashmir and Chitral hill districts and the northern districts of the Punjab.

(4) This distribution of the rainfall in India during the period from January to May 1897 was, on the whole, favourable, as were also the humidity conditions.

(5) The air movement was more vigorous than usual, due to the intensified thermal conditions of the period in the interior of India, thus further confirming the inference given above that the heavy snowfall in the north of the Punjab exercised no large influence on the meteorology of India during the past two months.

(6) Hence, the snowfall in the Himalayan area was of such a character as not to impress any marked features upon the pressure and temperature conditions and the air movement in Northern and Central India unfavourable to the early or full extension of the monsoon currents in their progress northwards from the equator.

It was, however, pointed out in last year's annual summary that the rainfall data of the previous five years showed that India was passing through a cycle of very marked meteorological conditions, and that the year 1897 would probably be the last year of that cycle. In the forecast of the monsoon of 1897 published in the first week of June it was further pointed out that the year 1897 would be, probably, the last year of the cycle of variation, and that the rainfall of the season would probably be in small defect, but by amounts not exceeding 5 per cent. for the whole of India.

These inferences were fully borne out by experience. The monsoon currents were weaker than usual in the first-half of the season and stronger during the second-half, the rainfall showing a similar variation. On the average of the whole period the rainfall in India was normal.

It may be noted that the chief features establishing the decreased intensity and volume of the currents in June and July were :—

1st.—The delay in the advance of southerly humid wind in the Arabian sea in June.

2nd.—The decreased strength of the lower air movement in India and in the Arabian sea during the first-half of the monsoon period, June and July.

3rd.—The decreased rainfall over nearly the whole of Northern and Central India in these months, the decrease, relatively to the normal precipitation of the period, increasing from the coast districts to the more distant interior districts, *viz.*, Central India, Rajputana, the North-West Provinces and the Punjab.

The following gives a very brief summary of the chief features of the south-west monsoon period of 1897 :—

Meteorological Province.	Mean variation from normal during south-west monsoon period, June to September 1897 of						
	Mean pressure.	Mean maximum temperature.	Mean minimum temperature.	Mean aqueous vapour pressure.	Mean humidity.	Mean cloud amount.	Total rainfall.
	"	°	°	"			Inches.
Burma Coast and Bay Islands.	+·006	+1·1	+0·6	+·030	0	+0·7	+ 1·19
Burma Inland . .	+·008	+0·8	+1·0	?	?	?	− 3·16
Assam . . .	+·009	+0·2	+0·6	+·015	+1	−0·2	+ 2·48
Bengal and Orissa .	+·009	+0·6	+0·6	+·012	−1	+0·1	− 0·28
Gangetic Plain and Chota-Nagpur.	−·001	+1·2	+1·0	+·013	−2	+0·2	+ 0·77
Upper Sub-Himalayas .	+·005	+0·2	+0·7	−·004	−1	−0·2	− 3·68
Indus Valley and North-West Rajputana.	+·004	+0·5	+0·8	+·005	−1	+0·2	+ 3·50
East Rajputana, Central India and Gujarat.	−·006	+1·9	+2·0	+·048	+1	−0·3	− ·19
Deccan . . .	0	+2·8	+2·0	+·016	−3	0	− 4·69
West Coast . .	−·018	+1·1	+1·3	+·020	−1	+0·6	+23·66
South India . .	−·009	+1·1	+1·2	+·018	0	+0·5	+ 4·28

The large abnormal conditions of the period were mainly dependent upon the distribution of the rainfall during the period in Northern India. They were as follows:—

(1) Pressure was in slight excess, on the mean of the period in Northern India and in slight defect in the Peninsula.

(2) Temperature was in excess over the whole Indian area, the increase being generally as large in the night as in the day temperature.

(3) There was, on the whole, somewhat less cloud than usual in North-Western India and more cloud in the Peninsula and North-Eastern India (except Assam), and the humidity was generally below the normal, chiefly due to increased temperature.

The following gives comparative rainfall data of thirteen large areas for the period, June to October 1897:—

Province or division.	Rainfall during the south-west monsoon period, June to October.			
	Average actual, 1897.	Average normal.	Variation from normal.	Percentage variation.
	Inches.	Inches.	Inches.	
Punjab	14·31	15·13	—0·82	— 5
Rajputana	17·96	18·65	—0·69	— 4
Central India	34·96	41·13	—6·17	—15
North-Western Provinces and Oudh.	39·60	34·68	+4·92	+14
Bihar	49·26	43·55	+5·71	+13
Chota Nagpur	48·55	47·45	+1·10	+ 2
Bengal	62·19	59·77	+2·42	+ 4
Assam	81·21	73·06	+8·15	+11
Berar	29·94	37·48	—7·54	—20
Central Provinces	43·83	45·84	—2·01	— 4
Madras	41·85	34·12	+7·73	+23
Bombay	43·73	40·99	+2·74	+ 7
Burma	98·59	93·84	+4·75	+ 5

The chief features of the rainfall of the whole period were as follows:—

(1) The rainfall was practically normal over the Indian area. It was below the normal during the first two months and above it in August and September.

(2) Rainfall was more or less below the normal over the South-East, Central and East Punjab, the Punjab Hills, East Rajputana, Central India, Berar, Central and Upper Burma, North Bengal, Bengal Hills, the North-Western Provinces Central, the Central Provinces West and Central, Madras East Coast Central and Gujarat.

(3) It was most largely in defect, relatively to the normal, in the East Punjab, Berar, Central India, East Rajputana and Upper Burma.

(4) It was in moderate to largish excess in the belt of country, including South Bihar and the greater part of the North Western Provinces. A succession of storms passed across the belt in July and August giving frequent cyclonic downpours.

(5) Rainfall was in considerable excess in the West Punjab, Sind, Baluchistan Hills, Mysore, Malabar and the North-Western Provinces Hills.

(6) Rainfall was in moderate excess over the central and southern districts of the Peninsula.

The combination of a south-east trades circulation feebler than usual at the commencement of the monsoon and of favourable conditions in India during the hot weather month of May 1897, appears to be sufficient to account for the following features of the rainfall of the first two months of the south-west monsoon period:—

(1) The delay in the establishment of the monsoon currents over the Indian seas and the coast districts of India in the beginning of June.

(2) Their rapid extension over the Indian land area to the limits of the Punjab in the third week of June.

(3) The unsteadiness of the monsoon currents in the months of June and July.

The occurrence of favourable rain in August and September was apparently due to the prevalence of a steadier and stronger monsoon than usual in these months, thus suggesting that probably the south-east winds were also stronger than the normal during that period. This is confirmed by the observations recorded at the Seychelles, Zanzibar and Mauritius.

The information at present available for discussing the meteorology of the south-east trades region of the Indian Ocean is very limited.

The following gives variation data of the Royal Alfred Observatory, Mauritius, for nine months of the year, deduced from a comparison of the means of 1897 with normal means based on the observations of the previous 22 years:—

Month.	Variation from normal of				
	Pressure.	Rainfall.	Percentage variation of rainfall.	Hourly wind velocity in miles.	Percentage variation of wind velocity.
	"	Inches.			
January 1897	—·022	—0·94	—13	—2·8	—25
February "	—·028	—3·84	—55	+4·6	+40
March "	—·020	—7·28	—89	+0·1	+ 1
April "	+·037	—3·47	—66	+2·3	+22

Month.	Variation from normal of				
	Pressure.	Rainfall.	Percentage variation of rainfall.	Hourly wind velocity in miles.	Percentage variation of wind velocity.
		Inches.			
May 1897 . .	+·012	—3·62	—85	+1·5	+15
June ,, . .	—·029	+0·49	+24	+0·6	+ 5
July ,, . .	—·022	—0·76	—34	+0·3	+ 3
August ,, . .	—·002	—0·52	—23	+1·8	+15
September,. . .	—·004	+0·33	+23	+2·7	+23

The most remarkable features of the meteorology of the period at the Mauritius were deficient rainfall and increased air movement. Winds were normal in June and July, but were nearly 20 per cent. stronger than the normal in August and September.

In the following table a similar comparison is given for Zanzibar, the normal means being deduced from the observation of 6 years :—

Month.	Variation from normal of				
	Pressure.	Rainfall.	Percentage variation of rainfall.	Hourly wind velocity in miles.	Percentage variation of wind velocity.
	"	Inches.			
January 1897 . .	+·026	—1·35	— 46	—1·6	—20
February ,, . .	+·016	—0·27	— 9	—0·1	— 2
March ,, . .	+·035	+3·69	+ 72	—2·2	—37
April ,, . .	+·076	+7·46	+ 63	—0·8	—11
May ,, . .	+·009	+3·37	+ 38	—1·6	—20
June ,, . .	+·031	+2·62	+211	—1·0	—11
July ,, . .	—·016	+2·30	+108	—2·3	—27
August ,, . .	—·007	+0·41	+ 22	—0·4	— 6
September ,, . .	+·002	+1·76	+113	—0·8	—14

The preceding data indicate that the meteorology of Zanzibar in 1897 was characterized by unusual lightness of the winds. The rainfall was in large excess. The variations of the meteorological conditions from the normal were hence opposite in character to those which obtained at the Mauritius. It is noteworthy that although the winds were largely below the normal in June and July, they were only slightly below it in August and September.

Hence as at Mauritius there was a relative increase of wind in the second-half of monsoon period, as compared with the first-half.

The Port Victoria (Seychelles) Observatory was established in 1894. The following gives a comparison between the mean pressure of the first nine months of the years 1895-96 and 1896-97 at the Seychelles, Zanzibar and Mauritius :—

Month.	Difference of pressure between the corresponding months of the years					
	1895 and 1896 (*i.e.*, 1895 *minus* 1896).			1896 and 1897 (*i.e.*, 1896 *minus* 1897).		
	Port Victoria (Seychelles).	Zanzibar.	Mauritius.	Port Victoria (Seychelles.)	Zanzibar.	Mauritius.
	"	"	"	"	"	"
January . . .	—·001	+·004	—·084	+·006	—·024	+·025
February . . .	—·016	—·013	+·053	+·040	+·006	—·042
March	—·013	—·023	—·041	—·004	—·026	+·041
April	+·013	+·009	—·034	—·030	—·084	—·048
May	—·023	—·003	+·011	+·041	—·006	—·010
June	—·004	+·038	0	+·015	—·040	+·019
July	—·021	—·018	—·036	+·075	+·042	+·047
August . . .	—·040	—·044	—·091	+·042	+·021	+·053
September . . .	+·017	+·015	—·009	+·008	—·003	+·001

In the following table the pressure differences are given in another and more useful form :—

Month.	Pressure difference.							
	Mauritius *minus* Zanzibar				Mauritius *minus* Seychelles.			
	1894.	1895.	1896.	1897.	1894.	1895.	1896.	1897.
	"	"	"	"	"	"	"	"
March . .	+·037	+·065	+·083	+·016	+·050	+·063	+·091	+·046
April . .	+·063	+·035	+·078	+·042	+·102	+·072	+·119	+·137
May . .	+·044	+·075	+·061	+·065	+·142	+·179	+·145	+·196
June . .	+·051	+·041	+·079	+·020	+·209	+·227	+·223	+·219
July . .	+·070	+·064	+·082	+·077	+·218	+·204	+·219	+·247
August . .	+·113	+·089	+·136	+·104	+·245	+·214	+·265	+·254
September .	+·112	+·101	+·125	+·121	+·202	+·203	+·229	+·236
Mean of whole period.	+·070	+·068	+·092	+·064	+·167	+·166	+·184	+·198
Mean of June to September.	+·087	+·074	+·105	+·081	+·219	+·212	+·234	+·239

The preceding data establish that the pressure differences or total gradient between Mauritius and the Equatorial belt as represented by the Seychelles were greater in the south-west monsoon of 1897 than in those of 1894, 1895 and 1896.

In the following table is given a comparison of the velocity of the air movement at these three stations:—

Month.	1896.						1897.					
	Port Victoria (Seychelles.)		Zanzibar.		Mauritius.		Port Victoria (Seychelles).		Zanzibar.		Mauritius.	
	Mean hourly velocity.	Percentage variation.	Mean hourly velocity.	Percentage variation.	Mean hourly velocity.	Percentage variation.	Mean hourly velocity.	Percentage variation.	Mean hourly velocity.	Percentage variation.	Mean hourly velocity.	Percentage variation.
January	6·0	0	6·1	—26	10·2	—10	5·7	— 5	6·6	—20	8·4	—25
February	5·8	— 3	5·4	—18	13·0	+15	6·3	+ 5	6·5	— 2	16·1	+40
March	5·5	+ 4	4·2	—29	10·0	0	5·5	+ 4	3·7	—37	10·1	+ 1
April	3·1	—28	5·3	—27	9·4	—10	5·7	+33	6·5	—11	12·8	+22
May	8·4	+17	6·3	—22	11·3	+12	6·3	—13	6·5	—20	11·7	+15
June	10·3	—11	7·8	—13	10·9	— 4	7·1	—39	8·0	—11	12·0	+ 5
July	12·2	+ 2	7·3	—15	11·4	— 3	11·0	— 8	6·3	—27	12·1	+ 3
August	14·9	+10	5·7	—19	12·5	+ 2	11·3	—16	6·6	— 6	14·1	+15
September	12·5	+ 2	4·7	—19	11·3	— 5	12·7	+ 4	5·0	—14	14·7	+23
October	6·4	—16	4·0	—20	9·8	—12	8·0	+ 5	4·0	—20	10·6	— 5
November	7·4	+28	4·3	—10	11·0	+ 1	4·6	—20	4·1	—15	10·3	— 5
December	7·4	+ 1	4·5	—29	10·9	0	6·3	— 3	7·2	+14	11·4	+ 4

The preceding data show that the air movement at the Seychelles in the month of May 1897 was less than in May 1896, and was probably below the normal to some extent in June. This is shown even more clearly by the following comparison, week by week, from the 1st of May to the end of June, of the air pressure and velocity of the air movement at Port Victoria, Seychelles, in the three years 1895, 1896 and 1897:—

Weekly means of pressure and wind velocity at Port Victoria, (Seychelles.)

Week.	1895.		1896.		1897.	
	10 A.M. pressure reduced to Sea-level and constant gravity at Lat. 45°.	Hourly wind velocity in miles.	10 A.M. pressure reduced to Sea-level and constant gravity at Lat. 45°.	Hourly wind velocity in miles.	10 A.M. pressure reduced to Sea-level and constant gravity at Lat. 45°.	Hourly wind velocity in miles.
	"		"			
1st to 7th May	29·899	5·9	29·915	5·3	29·886	7·1
8th „ 14th „	·912	3·6	·957	8·3	931	6·4
15th „ 21st „	·899	3·7	·921	10·1	·906	6·2
22nd to 28th May	29·925	6·4	29·955	9·4	29·875	6·9
29th May to 4th June	·895	9·9	·923	9·4	·852	4·5
5th June to 11th „	·863	12·9	·913	9·5	·864	7·3
12th „ 18th „	·886	11·6	·876	11·8	·916	7·8
19th „ 25th „	·976	10·3	·951	9·9	·934	9·0

The hot weather conditions of pressure and temperature were strongly marked in May 1897, and the delay in the strengthening of the winds at the Seychelles immediately antecedent to the monsoon was not due to conditions in either the Indian land or sea area, but was due to conditions outside of India, and probably present in the Indian Ocean, an important result of which was the delay in the establishment of the monsoon in India in June 1897.

The comparison of the mean monthly pressures at

Mauritius, Zanzibar and the Seychelles has established the following facts :—

(1) Pressure was slightly below the normal at Mauritius and the Seychelles in June or at the commencement of the monsoon period of 1897, and the deficiency was greater at Mauritius than the Seychelles.

(2) In consequence of these variations of the pressure from the normal, the pressure differences over the permanent South Trades area (as measured by the differences of pressure between Mauritius and the Seychelles) were probably less than usual at the commencement of the monsoon in June 1897.

(3) Winds were weaker and less steady than usual during the greater part of the year, more especially at the Seychelles and Zanzibar.

These facts hence indicate that the south-east trade winds were probably lighter than usual in June and July 1897 and hence that the volume and mass of the air movement across the Equator giving rise to the south-west monsoon winds in India during those months were probably less than usual.

The data also shew that the gradients increased above the normal in July and were greater than usual in August and September.

The air movement also increased in July and was as shown by the data of Mauritius and the Seychelles almost certainly stronger than usual during August and September more especially at the former station.

IV.—The retreating south-west monsoon period.—The following gives mean variation data of this period for eleven meteorological provinces :—

Meteorological Province.	Variation from normal during the period, October to December 1897 of						
	Mean pressure.	Mean maximum temperature.	Mean minimum temperature.	Mean aqueous vapour pressure.	Mean humidity.	Mean cloud amount.	Total rainfall.
	"	°	°	"			Inches.
Burma Coast and Bay Islands.	—·008	—0·3	+1·1	+·029	+2	+1·4	+2·69
Burma Inland . .	—·013	+0·1	+1·5	?	?	?	+0·90
Assam . . .	—·014	+0·3	+0·3	+·014	—1	+0·2	+2·18
Bengal and Orissa .	—·018	—0·1	+0·8	+·015	0	+0·6	+2·10
Gangetic Plain and Chota Nagpur.	—·020	+0·2	+1·0	+·037	+3	—0·1	+2·09
Upper Sub-Himalayas .	—·012	+0·8	+1·5	—·003	—1	0	—0·70
Indus Valley and North-West Rajputana.	—·013	+1·5	+1·1	+·026	+2	—0·4	+0·23
East Rajputana, Central India and Gujarat.	+·005	+0·9	0	+·013	+1	—0·8	—0·66
Deccan . . .	+·003	+1·1	—0·8	—·046	—5	—0·9	—1·83
West Coast . . .	+·008	+1·0	—0·2	—·043	—5	—0·7	—2·20
South India . . .	—·003	+1·6	+0·2	—·037	—6	—0·3	—7·62

The following summarizes the chief features of the period.

(1) The mean air pressure was below the normal in Burma, Northern India and the eastern half of Central India and above it in the greater part of the Peninsula. The deficiency was most marked in the Gangetic Plain and the excess in the West Coast.

(2) The maximum temperature of the period was in excess in all divisions except Lower Burma and Bengal. The excess was largest in South India (+1°·6). The minimum temperature was slightly below the normal in the Deccan and West Coast and normal or in excess elsewhere. The excess was greatest in Burma Inland and Upper Sub-Himalayas (+1°·5). The mean temperature of the period was above the normal over the whole area, the excess being greatest in Upper India.

(3) The mean relative and absolute humidities were more or less below the normal in the Peninsula and slightly above it in Burma and North-Eastern India. The mean relative humidity was most largely below the normal in Southern India (—6).

(4) The rainfall of the period was in moderate excess in Burma and North-Eastern India. The following gives data in illustration :—

Meteorological Province.	Rainfall.		
	Average actual, October to December 1897.	Variation from normal during period, October to December 1897.	Percentage variation.
	Inches.	Inches.	
Burma Coast and Bay Islands . .	19·78	+2·69	+ 16
Burma Inland	7·35	+0·90	+ 14
Assam	8·42	+2·18	+ 35
Bengal and Orissa	8·72	+2·10	+ 32
Gangetic Plain and Chota-Nagpur .	5·09	+2·09	+ 70

(5) The rainfall was very scanty in Berar, the Central Provinces, the Bombay Deccan and North Hyderabad—areas which usually receive moderate rain during this period. The following gives data :—

Division.	Rainfall.		
	Average actual, October to December 1897.	Variation from normal during period, October to December 1897.	Percentage variation.
	Inches.	Inches.	
Berar	0·73	—2·94	—80
Central Provinces	2·32	—0·47	—17
Hyderabad (North)	1·78	—2·88	—62
Bombay Deccan	4·87	—1·97	—29

(6) The rainfall of the period was also more or less in

defect in South Madras, Mysore, the Coromandel coast districts and the Madras Deccan as is shown by the following data :—

Division.	Rainfall.		
	Average actual, October to December 1897.	Variation from normal during period, October to December 1897.	Percentage variation.
	Inches.	Inches.	
Madras, East Coast, Central . .	5·84	—15·85	—73
Ditto Ditto South . .	9·00	—13·14	—59
Madras, South	9·04	— 7·14	—44
Ditto Central	3·10	— 6·03	—66
Mysore	3·90	— 4·79	—55

The larger features of the meteorology of the period were very marked. The most important was the contrast between the deficient rainfall in the Peninsula and the abundant rainfall in Burma, Assam and Bengal during the period.

The monsoon currents, as already pointed out, withdrew from Upper India in the fourth week of September. The tracks of the cyclonic storms of October were further east than usual, due to the abnormal pressure conditions of the period which also determined the distribution of the rainfall of the period.

The termination of the rains in Upper India in the fourth week of September was followed by a large increase of pressure in that area similar in character to that which always occurs in North-Western India on the termination of the south-west monsoon, but more pronounced than usual. This gave a local excess of pressure in Western India and the North Deccan in the latter half of October, November and December. This feature was brought into greater prominence by an equally persistent deficiency of pressure in Lower Burma, Tenasserim and the Andaman Sea.

The following table gives the pressure anomalies of the eleven meteorological provinces of India for the months of September, October, November and December. It illustrates the more important abnormal pressure conditions of the period :—

Meteorological Province.	Pressure anomaly.					
	September 1897.	October 1897.	November 1897.	December 1897.	Mean of October to December 1897.	Mean of November and December 1897.
	"	"	"	"	"	"
Burma Coast and Bay Islands.	+·015	+·010	—·001	—·012	—·001	—·007
Burma Inland . .	+·020	—·005	—·001	—·011	—·006	—·006
Assam	+·012	—·016	0	—·004	—·007	—·002
Bengal and Orissa .	+·020	—·023	—·007	—·004	—·011	—·006
Gangetic Plain and Chota Nagpur.	+·018	—·021	—·013	—·005	—·013	—·009
Upper Sub-Himalayas .	0	—·011	—·012	+·008	—·005	—·002
Indus Valley and North-West Rajputana.	—·010	—·004	—·019	+·006	—·006	—·007
East Rajputana, Central India and Gujarat.	—·007	+·011	+·010	+·014	+·012	+·012
Deccan . . .	+·005	+·008	+·010	+·012	+·010	+·011
West Coast . . .	—·041	+·033	+·016	—·004	+·015	+·006
South India . . .	—·023	+·013	+·008	—·009	+·004	—·001

The data of the preceding table show a marked tendency to excessive pressure during the whole period, September to December, in the West Coast, the Deccan, Central Provinces and Central India. It was marked in October when the monsoon currents were withdrawing from North-Eastern India, and persisetnt during the remainder of the period.

The distribution of the rainfall of this period in the Peninsula was similar in general character to that of the corresponding period of the year 1896. The pressure conditions of the period were unfavourable to the determination of the retreating south-west monsoon to the Madras Coast districts and Deccan, whilst they were favourable to its diversion to the Andaman Sea and Tenasserim. The rainfall of the period was favourable until the middle of October in the Peninsula, when the change in the pressure conditions stated above occurred. The rainfall in November and December was hence unusually scanty in the Deccan. A feeble storm in November gave moderate rain in the northern coast districts which saved the crops. In the southern coast districts north-east winds (with less easting than usual) held steadily throughout the period and gave occassional showers when they were stronger than usual in a narrow belt of the coast districts. The following table shows the large deficiency of the rainfall during this period in the Peninsula :—

Division.	Rainfall of period October to December.		
	Average actual, 1897.	Variation from normal, 1897.	Percentage, variation from normal, 1897.
	Inches.	Inches.	
Malabar Coast	10·75	— 4·60	—31
Madras (South-Central) . . .	7·09	— 3·99	—36
Mysore	3·90	— 4·79	—55
Konkan	6·58	— 0·18	—3

Division.	Rainfall of period, October to December		
	Average actual, 1897.	Variation from normal, 1897.	Percentage variation from normal, 1897.
	Inches.	Inches.	
Bombay Deccan	4·87	— 1·97	—29
Hyderabad (North)	1·78	— 2·88	—62
Khandesh	2·08	— 3·01	—59
Hyderabad (South)	3·82	— 0·69	—15
Madras (Central)	3·10	— 6·03	—66
Madras, East Coast (Central)	5·84	—15·85	—73
Madras, Eost Coast (South)	9·00	—13·14	—59
Madras (South)	9·04	— 7·14	—44

On the other hand, the rainfall was steadily in excess in Tenasserim and the Andamans. This is clearly indicated by the following data for three stations :—

Station.	Variation from normal Rainfall of				
	October 1897.	November 1897.	December 1897.	Total of period, October to December 1897.	Percentage variation from normal of period, October to December 1897.
	Inches.	Inches.	Inches.	Inches.	
Port Blair	+0·88	+8·69	+5·77	+15·34	+57
Tavoy	+1·64	+2·59	—0·06	+ 4·17	+34
Mergui	+0·62	+1·53	—0·57	+ 1·58	+ 9

The year.—The following gives a tabular summary of the meteorological data of the year 1897 for the eleven meteorological provinces of India :—

Mean provincial meteorological data for the year 1897.

Province.	Bar. variation.	Mean maximum of year.	Variation of year.	Mean minimum of year.	Variation of year.	Mean daily temperature of year.	Variation of year.	Mean daily range.	Absolute range during year.	Mean monthly absolute range.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.*
	″	°	°	°	°	°	°	°	°	°	Inches.	Inches.	Inches.
Burma Coast and Bay Islands	—·002	88·2	+0·4	73·9	+1·4	81·1	+0·9	14·3	38·8	23·4	145·02	138·92	+ 6·10
Burma Inland	—·002	91·3	+1·7	70·1	+1·4	80·7	+1·6	21·1	59·5	33·5	45·10	46·37	— 1·97
Assam	—·003	84·1	+1·0	67·3	+0·2	75·7	+0·6	16·8	51·4	28·5	110·87	104·92	+ 5·96
Bengal and Orissa	—·004	87·1	+0·8	70·2	+1·0	78·6	+0·9	16·9	57·7	29·6	72·51	73·34	— 0·83
Gangetic Plain and Chota Nagpur.	—·009	89·4	+1·1	68·2	+1·2	78·8	+1·1	21·2	72·0	36·2	47·51	44·76	+ 2·76
Upper Sub-Himalayas	—·004	87·5	+0·1	63·9	+1·2	75·7	+0·7	23·6	78·0	40·0	30·57	37·82	— 6·42
Indus Valley and North-Western Rajputana.	—·001	91·3	+0·5	65·4	+0·8	78·4	+0·7	25·9	84·8	43·4	13·07	9·65	+ 3·42
East Rajputana, Central India and Gujarat.	0	91·1	+0·9	67·4	+0·9	79·2	+0·9	23·7	74·6	38·6	26·90	30·84	— 2·79
Deccan	0	92·0	+2·0	68·4	+1·5	80·3	+1·9	23·6	68·0	36·4	34·31	41·25	— 6·95
West Coast	—·003	86·6	+0·8	74·8	+0·9	80·7	+0·9	11·7	31·1	19·6	122·68	103·45	+19·24
South India	—·008	90·6	+1·2	72·8	+1·5	81·7	+1·4	17·8	46·8	28·4	37·36	41·62	— 4·01
Mean of whole India from Table I.	—·003	89·0	+1·0	69·3	+1·1	79·2	+1·1	19·7	60·2	32·5	62·35	61·18	+ 1·32
Mean of whole India from Table II.	—·005	89·0	+1·0	69·3	+1·1	78·2	+0·9	19·7	60·2	...	...	...	...

* A reference to Table I will show that the means in columns 13 and 14 are derived from a smaller number of stations than the means in the twelfth column. The sum of the figures in columns 13 and 14 therefore will not agree with the figures in column 12.

The mean 8 A.M. pressure of the year was in slight defect over the whole of India by amounts averaging ·003″. It was in defect in all provinces except Central India Gujarat, East Rajputana and the Deccan, where it was normal. The mean maximum temperature was in excess in all provinces. The excess averaged 1°·0 for the whole of

India and was greatest in the Deccan (+ 2°·0). The mean night or minimum temperature was also in excess. The excess was most marked in the Deccan and South India (each + 1°·5) and Burma (+ 1°·4). The mean temperature of the whole Indian land area was, according to the data of Table I, 1°·1 above the normal and according to those of Table II, 0°·9 in excess. The variations for the year were less than 1° in seven divisions. The mean temperature of the year was 1°·9 in excess over the Deccan and 1°·6 in excess in Burma Inland. The mean rainfall for the whole of India was in very slight defect in the first and fourth divisions of the year, normal in the second and in excess in the third, and the deficiency for the whole year (taking into consideration the areas represented by the rainfall stations) was 0·15 inch. The rainfall of the year was more or less considerably in defect over a part of the Indian area. It was between 20 and 25 per cent. below the normal in Madras East-Coast Central (25 per cent.), Berar 24 per cent., and Gujarat 21 per cent. The rainfall of the year was more or less in excess over the remainder of the Indian area. It was between 25 and 55 per cent. above the normal in the Malabar (27 per cent.), the North Punjab (29 per cent.), the West Punjab (40 per cent.) and Sind (51 per cent.).

The meteorology of India during the five years, 1892-96, has been characterised by the largest and most marked periodic variation of rainfall during the past fifty years at least, and probably for a much longer period. The late Mr. Blanford's monograph on the rainfall of India gives a brief statement of the method he adopted for ascertaining the average rainfall of India year by year, and the normal average. According to this method the mean normal annual rainfall of India is, very approximately, 41 inches. The following gives a comparison of the actual mean rainfall of India with the normal mean for each year from 1875 to 1897, determined by Mr. Blanford's method:—

Year.	Mean actual rainfall.	Variation from normal.	Percentage variation.
	Inches.	Inches.	
1875	43·47	+2·38	+ 6
1876	36·60	—4·49	—11
1877	36·81	—4·28	—10
1878	47·43	+6·34	+15
1879	42·78	+1·69	+ 4
1880	39·53	—1·56	— 4
1881	41·19	+0·10	0
1882	43·73	+2·64	+ 6
1883	40·97	—0·12	0
1884	42·82	+1·73	+ 4
1885	42·14	+1·05	+ 3
1886	44·11	+3·02	+ 7
1887	43·51	+2·42	+ 6
1888	39·55	—1·54	— 4
1889	43·50	+2·41	+ 6
1890	41·77	+0·68	+ 2
1891	37·55	—3·54	— 9
1892	46·18	+5·09	+12
1893	50·16	+9·07	+22
1894	47·56	+6·47	+16
1895	38·90	—2·90	— 7
1896	36·26	—4·83	—12
1897	40·94	—0·15	0

Concluding Remarks.—The preceding statement indicates that there has been a cyclical variation of rainfall of India during the past six years which has formed the dominating feature of the meteorology of that period. The first three years (1892-94) of the period were characterised by excessive rain. The second year, *viz.*, 1893, was the culminating year of the excessive rainfall. The rainfall was in excess in each of the four periods of the year. The south-west monsoon commenced early and terminated unusually late in Northern India (at least a month after its normal date in the Gangetic Plain), and the excess was the largest on record (*viz.*, 22 per cent. for the whole year). This period of excessive rain was followed by two years of very deficient rainfall, and the second of these years (1896) was characterised by features opposite to those of 1893. In other words, the rainfall of that year was practically in defect in all seasons, the monsoon commenced late and withdrew unusually early from Northern and Central India, and the total rainfall of the year was very deficient (12 per cent.). A consideration of the figures shows clearly in the first place that the years 1895-97 were the opposite phase of a cyclical variation to that of the preceding three years.

It is also certain that the large cyclical variation—the dominating feature of the meteorology of the past five years—has been produced by some large and general persistent abnormal actions or features, probably over a much wider area than India. That the period has been very anomalous over a much larger area than India has been shown by the occurrence of drought in the Cape Colony, Western Australia and Mauritius, and by the remarkable northward extension of icebergs during the past

two years in the Antarctic Ocean, and their unusual prevalence to the east and south of South Africa.

Evidence on these points was given in last year's Annual Summary. The following gives additional information received indicating the abnormal character of the weather in the south-east trades region in the first-half of the year 1897.

Mr. Hutchins, who had pointed out in April 1896 the strong probability of a weak monsoon and the consequent partial failure of the rains in that year in India from the absence of strength in the south-east trades in South Africa at that time, telegraphed the following information at the end of the first week of May 1897, respecting the strength of the trades during the period, January to April:—

"The strength of the south-east trades was in excess of the normal up to the first or second week of January 1897. Thence to the middle of April the trades were below normal, but stronger than in the same period last year. From the middle of April to the 7th May the trades were steady and above the normal, increasing to gales on the 3rd, 4th and 5th, and giving heavy rains along the south-east coast and disastrous floods at Port Elizabeth. The rainfall of the Cape Penin sula and coast districts during the period was light and normal. The south-east trades rainfall was abundant up to Christmas 1896, but irregular from January to April 1897; deficient over considerable areas and in excess in others. There was continuous heavy rain during January in the eastern districts of the Orange Free State. The character of the rainfall in South Africa during the past four months appeared to be indicative of renewed strength in the south-east trades."

A later telegram, dated 26th May, stated that the south-east rainy season which lasted longer than usual had at length broken up, and that the general weather conditions were in Mr. Hutchins' opinion, distinctly favourable for a good monsoon in India.

Very extraordinary weather prevailed in South Africa during June 1897 due to the prevalence of very strongly marked anticyclonic conditions and the presence of icebergs near the Cape. Weather was as abnormal in July as in the preceding month. Heavy rain occurred during the month and gave rise to severe floods. The character of the weather during the remainder of the year is thus described by Mr. Hutchins in a letter dated the 12th July 1898:—"Since July 1897 we have had a late and unusually prolonged winter with curious wintry breaks occurring during the following summer. We had snow on the mountains and wintry rain at midsummer. The past spring has been unusually wintry with early heavy rains, and now in the middle of winter we are having a season such as we have not had since the last storm cycle year in 1888. We do not often see ice worthy of the name in South Africa. The range of mountains nearest the sea is snow-capped and a few miles inland at Dra Reustein the scenery is described as Alpine, the mountains being covered with snow down to about a thousand feet above sea-level. The break up of the long drought over that portion of South Africa watered by the south-east trades occurred here as it did in Australia."

It was stated in the fore-cast that a knowledge of the causes or actions originating this cyclical variation would assist materially in determining whether the cycle would persist to the end of the year 1897 or not. Calculation shows that it is very probable (independent of a knowledge of the cause) that the cyclical period would include the year 1897. The figures, however, show that the negative phase of the variation was much less marked than the positive phase, and suggest that the deficiency of the rainfall in the probable last year of the cycle will, as judged from the above, be small. Hence it was further stated in the forecast published in the *Gazette of India* on the 5th June 1897 that the present year is hence probably the last year of the negative phase of a period of large variations of rainfall, due to some general, but is yet unknown, causes affecting a much larger area than India. The consideration of the character of this cyclical variation, as disclosed by the figures, indicates that the present year will be much less unfavourable than last year, and that the rainfall of the year may be in defect, but at the utmost by a small amount, probably less than 5 per cent.

The meteorology of the year 1897 hence strengthens the conclusion in the Annual Summary for the year 1896, which are repeated below:—

"The main features of the rainfall during this period were hence not special to the south-west monsoon, but general and affecting the meteorology of the whole year. This fact indicates that the causes of the periodic variations are not only general, but due to more or less permanent and persistant meteorological conditions or actions affecting the meteorology of the whole period over a considerable portion of the earth's surface.

"It has apparently been established in the discussion that the variations of the rainfall in India during the past six years are parallel with, and in part at least due to, variations in the gradients, and the strength of the winds in the south-east trade regions of the Indian Ocean. The discussion has indicated that there are variations from year to year in the strength of the atmospheric circulation obtaining over the large area of Southern Asia and the Indian Ocean, and that these variarions are an important and large factor in determining the periodic variations in the rainfall of the whole area dependent on that circulation, and more especially in India. It has also been indicated that these variations which accompany, and are probably the result, in part, of abnormal temperature (and hence pressure), conditions in the Indian Ocean and Indian monsoon area may be in part due to conditions in the Antarctic Ocean, which also determine

the comparative prevalence or absence of icebergs in the northern portions of the Antarctic Ocean.

"There appear to be only two explanations possible of this periodicity. The first is that it represents large cumulative effects of opposite phases in different parts of the earth. So far as the whole Indian monsoon area is concerned, the variations in different parts have not been compensatory; and the rainfall in 1896 has almost certainly been below the normal on the mean of the whole monsoon area. It would be an interesting study for a Central International Weather Bureau to investigate. So far as can be judged from a brief examination of the weather reports of other countries, there appear to have been no large and marked periodic variations in other parts of the world corresponding to the variation in India—of either the same or opposite phase. It is hence, on the whole, probable that the periodic rainfall variation of the past five years in India has not been compensated by a similar variation of opposite phase elsewhere. If it were the case, it would be purely a question of meteorological investigation.

"The second explanation is that this periodic variation of rainfall in the Indian Ocean during the past five years may be one phase of general action in this earth's atmosphere, due to abnormal variations in the radiation and absorption of solar energy, and hence to some abnormal phase of the sunspot periodicity. Perhaps the observations recorded at Solar Physics Observatories during the past five years may throw light on the question: and if such be the result, it would furnish a powerful argument for India assisting in the work of Solar Observatories to a much larger extent than she has hitherto done."

Table

Abstract of observations taken at 8 A.M.

Number of District.	Meteorological Province or District.	Station.	Elevation of Bar Cistern above sea level in feet	Pressure at 8 A.M. in inches. Mean actual pressure (reduced to 32°.)	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Temperature of Air. Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year.	Mean daily temperature of year.	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
	I.—Burma Coast and Bay Islands		...	...	−·002	...	...	...	...	...	...	88·2	+0·4	73·9	+1·4	81·1	+0·9	14·3	...	...	38·8	23·4
1	Tenasserim and Bay Islands.	Port Blair	61	29·849	?	29·841	30·031	29·675	·356	·155	81·2	87·6	?	77·8	?	82·7	?	9·8	96·4	70·4	26·0	17·5
		Mergui	96	·844	?	·873	·018	·677	·341	·148	79·1	88·0	?	73·2	?	80·6	?	14·8	96·5	61·2	35·3	23·6
		Tavoy	26	·929	?	·886	·110	·749	·361	·145	76·3	88·6	?	71·5	?	80·1	?	17·1	100·2	56·2	44·0	26·6
		Moulmein	94	·840	+·002	·873	·035	·600	·435	·168	76·8	88·4	+0·4	73·6	+1·5	81·0	+1·0	14·8	99·4	60·9	38·5	24·3
2	Lower Burma	Rangoon	41	·868	?	·846	·094	·620	·474	·183	76·7	89·9	+0·7	73·4	+0·6	81·7	+0·7	16·5	105·1	57·7	47·4	26·0
		Bassein	27	·882	0	·844	·117	·611	·506	·184	77·5	88·5	+0·5	73·3	+1·5	80·9	+1·0	15·2	101·2	60·0	41·2	24·0
		Diamond Island	41	·864	−·006	·841	·096	·617	·479	·176	80·5	85·5	−0·2	77·1	+2·2	81·3	+1·0	8·4	93·6	68·4	25·2	15·9
5	Arakan	Akyab	20	·872	−·003	·835	·125	·534	·591	·203	77·0	86·2	−0·1	72·9	+0·7	79·6	+0·3	13·3	95·1	55·7	39·4	23·5
3	Central Burma	Toungoo	183	·715	−·005	·842	29·954	·426	·528	·188	76·5	90·9	+0·8	72·2	+1·8	81·6	+1·3	18·7	105·7	53·1	52·6	29·0
	II.—Burma Inland		...	...	−·002	...	...	...	...	...	...	91·3	+1·7	70·1	+1·4	80·7	+1·6	21·1	...	...	59·5	33·5
3	Central Burma	Thayetmyo	134	·755	−·002	·833	30·033	·473	·560	·194	77·1	92·6	+1·3	70·9	+1·4	81·8	+1·4	21·7	108·6	48·7	59·9	32·2
4	Upper Burma	Minbu	?	·723	?	?	·027	·418	·609	·211	77·1	92·9	?	72·7	?	82·8	?	20·2	110·1	54·0	56·1	31·2
		Yamethin	657	·238	?	·840	29·491	28·956	·535	·196	76·4	93·2	?	70·5	?	81·9	?	22·7	108·6	49·7	58·9	35·1
		Mandalay	250	·621	?	·821	·924	29·329	·595	·215	78·0	93·6	?	72·7	?	83·2	?	20·9	110·1	53·7	56·4	33·0
		Kindat	?	·477	?	?	·894	·117	·777	·264	72·4	88·3	+2·0	68·0	+1·3	78·2	+1·7	20·3	110·8	42·5	68·3	36·6
		Bhamo	?	·510	?	?	·832	·179	·653	·239	70·9	86·9	?	66·0	?	76·5	?	20·9	103·1	45·9	57·2	32·8
4(a)	Burma Hill Stations.	Taunggyi	?		Not	record	ed.				68·5	77·9	?	57·5	?	67·7	?	20·4	95·6	37·0	58·6	31·0
		Lashio	?	27·130	?	?	27·349	26·868	·481	·220	66·1	83·5	?	61·1	?	72·3	?	22·4	108·5	35·0	73·5	37·9
	III.—Assam		...	...	−·003	...	...	...	...	...	...	84·1	+1·0	67·3	+0·2	75·7	+0·6	16·8	...	...	51·4	28·5
7	Surma	Silchar	104	29·786	+·001	·845	30·082	29·404	·678	·237	72·8	87·4	+1·6	68·0	+0·6	77·7	+1·1	19·4	98·6	47·5	51·1	32·0
9	Brahmaputra	Sibsagar	333	·556	−·009	·855	29·898	·139	·759	·270	69·1	81·5	?	65·6	−0·2	73·6	?	15·9	96·2	43·9	52·3	27·3
		Dhubri	115	·753	−·001	·825	30·086	·336	·750	·274	72·1	83·3	+0·3	68·3	−0·1	75·8	+0·1	15·0	99·5	48·6	50·9	26·1
	IV.—Bengal and Orissa		...	...	−·004	...	...	...	...	...	...	87·1	+0·8	70·2	+1·0	78·6	+0·9	16·9	...	...	57·7	29·6
6	East Bengal	Chittagong	87	·789	−·006	·825	·056	·414	·642	·216	77·4	87·4	+1·9	72·4	+1·5	79·9	+1·7	15·0	98·2	49·1	49·1	26·0
		Lungleh	?		Not	record	ed.				66·8	74·8	?	62·6	?	68·8	?	12·2	90·8	48·0	42·8	23·3
		Noakhali	43	·820	?	·811	·093	·438	·655	·221	76·4	85·4	?	70·4	?	77·9	?	15·0	100·0	46·0	54·0	27·4
		Comilla	36	·830	?	·814	·129	·435	·694	·227	75·8	87·2	?	69·4	?	78·3	?	17·8	101·3	47·1	54·2	29·5
		Sirajganj	49	·799	?	·798	·125	·381	·744	·257	73·3	85·3	?	68·4	?	76·8	?	17·0	108·3	45·2	63·1	29·6
		Narayanganj	26	·830	−·007	·805	·129	·413	·716	·246	75·7	86·6	0	71·5	+1·2	79·1	+0·6	15·1	101·0	48·2	52·8	26·3
		Barisal	13	·839	−·005	·797	·130	·423	·707	·232	76·9	86·9	+1·9	70·6	+1·1	78·8	+1·5	16·3	101·8	48·0	53·8	27·2
		Mymensingh	59	·802	−·004	·814	·106	·405	·701	·244	73·0	85·0	+0·5	68·5	+0·6	76·8	+0·6	16·5	99·2	46·4	52·8	27·5
10	Deltaic Bengal	Faridpore	46	·814	?	·808	·143	·402	·741	·246	74·3	87·0	?	69·2	?	78·1	?	17·8	107·9	45·0	62·9	30·7
		Jessore	33	·819	−·005	·799	·144	·402	·742	·244	76·2	88·4	+0·6	70·6	+0·7	79·5	+0·7	17·8	107·5	46·4	61·1	31·4
		Calcutta	21	·828	−·004	·795	·157	·384	·773	·246	76·0	86·7	+0·4	71·3	+0·8	79·0	+0·6	15·5	104·4	49·2	55·2	28·5
		Saugor Islands	25	·814	−·014	·783	·140	·341	·799	·254	78·2	86·3	+0·9	74·5	+0·9	80·4	+0·9	11·8	95·9	51·2	44·7	23·1
		Krishnagar	47	·804	?	·801	·148	·385	·763	·251	76·1	89·1	?	69·3	?	79·2	?	19·9	109·7	41·5	68·2	33·8
		Midnapore	149	·693	?	·791	·032	·227	·805	·247	76·6	90·5	?	71·2	?	80·9	?	19·2	112·4	47·1	65·3	33·7
11	Central Bengal	Bankura	258	·516	?	·770	29·863	·096	·767	·249	75·6	90·1	?	70·6	?	80·4	?	19·5	112·5	46·3	66·2	34·2
		Raniganj	334	·509	?	·798	·868	·049	·819	·257	74·9	90·0	?	69·9	?	80·0	?	20·1	113·1	46·3	66·8	35·4

I.

at 210 stations in India, Burma, etc., in the year 1897.

Wind direction. Number of winds from: Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Wind velocity: Mean velocity in miles per hour.	Normal.	Percentage variation.	Hygrometry, 8 A.M.: Mean humidity of year.	Mean vapour tension of year.	Mean cloud amount of year.	Rainfall: Number of rainy days during year.	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.	Heaviest rainfall during year.	Station.	Meteorological Province or District.	Number of District.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	145·02	138·92	+6·10	...	**I.—Burma Coast and Bay Islands.**		
41	35	48	25	27	27	61	73	28	7·0	7·4	− 5	86	·916	6·1	151	?	?	136·40	116·98	+19·42	4·87	Port Blair . .	Tenasserim and Bay Islands.	1
...	85	24	22	19	21	41	39	114	1·8	1·8	0	85	·846	4·3	156	?	?	179·32	163·10	+16·22	4·70	Mergui.		
301	6	5	...	1	5	18	4	25	1·3	?	?	88	·817	3·7	138	?	?	226·34	198·57	+27·77	8·12	Tavoy.		
...	31	45	74	58	70	40	27	20	3·2	2·8	+14	87	·809	5·9	150	137·55	+12·45	165·75	181·34	−15·59	5·75	Moulmein.		
...	25	46	32	33	58	91	65	15	3·8	4·6	−17	89	·826	5·5	127	116·89	+10·11	94·29	95·27	− 0·98	3·86	Rangoon . .	Lower Burma.	2
73	10	43	21	33	39	43	22	81	5·1	3·7	+38	88	·843	4·7	123	131·54	−8·54	112·58	109·55	+ 3·03	12·35	Bassein.		
15	63	47	39	25	22	73	21	60	11·8	7·4	+59	81	·839	6·1	114	120·44	−6·44	117·99	118·66	− 0·67	5·26	Diamond Island.		
7	51	161	46	44	31	12	6	7	3·0	3·2	− 6	89	·851	6·1	132	120·09	+11·91	195·92	187·08	+ 8·84	6·25	Akyab . . .	Arakan.	5
21	53	33	22	126	55	9	5	41	4·1	3·1	+32	85	·800	5·2	102	112·63	−10·63	76·61	79·77	− 3·16	3·80	Toungoo.	Central Burma.	3
																		45·10	46·37	−1·97		**II.—Burma Inland.**		
...	58	28	7	55	54	12	22	29	3·0	5·1	−41	71	·678	4·6	77	76·08	+0·92	45·21	37·67	+ 7·54	5·03	Thavetmyo . .	Central Burma.	3
41	14	4	26	138	51	6	29	56	9·3	?	?	73	·705	4·7	57	?	?	28·64	29·91	− 1·56	2·13	Minbu . .	Upper Burma.	4
85	21	3	...	162	57	3	...	34	6·6	?	?	76	·703	4·2	50	?	?	36·82	34·96	− 0·65	3·84	Yamethin.		
80	36	18	6	16	161	30	8	10	5·6	?	?	75	·730	3·9	50	?	?	30·96	32·94	− 2·19	2·57	Mandalay.		
242	21	22	11	10	20	11	10	18	?	?	?	92	·763	4·6	76	?	?	63·96	70·88	− 6·92	6·17	Kindat.		
154	20	62	11	11	12	38	30	24	2·6	?	?	88	·692	4·5	98	?	?	65·01	71·86	− 8·06	3·80	Bhamo.		
85	3	6	6	56	96	81	23	9	?	?	?	75	·503	6·9	108	?	?	55·17	?	?	2·34	Taunggyi.	Burma Hill Stations.	4(a)
			Not	recor	ded.				?	?	?	86	·574	7·9	97	?	?	57·26	56·55	− 0·34	2·95	Lashio.		
...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	110·87	104·92	+5·96	...	**III.—Assam.**		
301	5	10	18	4	6	5	6	10	2·3	2·7	−15	87	·731	6·0	136	138·69	−2·69	115·62	125·33	− 9·71	5·61	Silchar . .	Surma.	7
142	3	113	20	34	9	38	2	4	3·5	2·4	+46	95	·708	7·3	129	129·16	−0·16	110·30	96·09	+14·21	4·79	Sibsagar . .	Brahmaputra.	8
16	23	107	71	18	15	32	18	4	5·7	4·7	+21	86	·706	4·5	106	92·14	+13·86	106·70	93·33	+13·37	6·05	Dhubri.		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72·51	73·34	−0·83	...	**IV.—Bengal and Orissa.**		
30	42	69	75	98	38	6	3	7	5·4	5·1	+ 6	85	·820	5·3	86	98·83	−12·83	95·90	105·25	− 9·35	9·48	Chittagong .	East Bengal.	6
			Not recorded.						?	?	?	80	·536	?	141	?	?	151·41	128·42	+22·99	7·65	Lungleh.		
...	56	57	49	73	43	59	13	15	4·6	?	?	87	·815	4·1	97	107·63	−10·63	105·07	118·92	−13·85	4·88	Noakhali.		
66	40	13	48	82	104	5	6	1	4·4	?	?	84	·767	4·9	91	101·97	−10·97	82·54	89·39	− 6·85	4·34	Comilla.		
			Not	recor	ded.				?	?	?	87	·748	4·5	87	78·65	+8·35	61·79	61·55	+ 0·24	4·27	Sirajganj.		
37	35	25	26	84	58	53	17	30	5·9	4·5	+31	87	·802	5·4	80	94·57	−14·57	66·98	73·70	− 6·72	6·00	Narayanganj.		
235	11	22	5	12	49	18	5	4	2·6	?	?	86	·825	5·2	93	99·81	−6·81	72·86	77·97	− 5·11	4·53	Barisal		
142	3	14	77	84	18	8	8	9	?	?	?	87	·738	?	108	104·27	+3·73	79·08	75·06	+ 4·02	6·98	Mymensing.		
205	18	3	8	31	74	15	4	3	2·0	?	?	89	·789	3·7	90	89·31	+0·69	66·73	68·54	− 1·81	3·13	Faridpur.	Deltaic Bengal.	10
206	22	8	8	34	34	24	7	22	1·8	3·2	−44	84	·790	4·9	88	88·78	−0·78	64·41	64·34	+ 0·07	5·70	Jessore.		
42	51	22	30	35	56	76	28	24	4·4	4·8	− 8	83	·776	4·8	91	85·32	+ 5·68	58·33	61·46	− 3·13	3·32	Calcutta.		
6	61	56	17	20	81	78	21	25	13·5	10·8	+25	82	·853	5·9	92	83·10	+ 8·90	66·62	70·98	− 4·36	4·60	Saugor Island.		
13	32	14	39	64	73	28	60	42	4·6	?	?	80	·750	4·2	81	74·27	+ 6·73	52·87	54·04	− 1·17	3·14	Krishnagar.		
85	85	18	6	20	113	19	3	15	2·3	?	?	77	·733	3·3	88	75·92	+12·08	58·32	55·91	+ 2·41	2·85	Midnapore.*		
139	8	4	43	29	36	13	80	12	4·0	?	?	75	·699	3·7	80	79·08	+0·92	63·11	56·26	+ 6·85	7·93	Bankura* . .	Central Bengal.	11
139	20	12	27	28	31	22	27	59	2·6	?	?	74	·675	3·6	82	73·07	+ 8·93	51·07	54·30	− 3·23	2·60	Raniganj.		

* Wind observations of 364 days.

Table

Abstract of observations taken at 8 A.M.

Number of District.	Meteorological Province or District.	Station.	Elevation of Bar Cistern above sea level in feet.	Pressure at 8 A.M. in inches. Mean actual pressure (reduced to 32°).	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Temperature of Air. Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year.	Mean daily temperature of year.	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
		Burdwan	99	29·750	−·003	29·798	30·092	29·323	·769	·254	76·4	90·0	+1·2	71·2	+0·7	80·6	+1·0	18·5	113·0	49·1	63·9	32·6
		Naya Dumka	489	·343	?	·799	29·695	28·926	·769	·261	75·3	88·2	?	69·0	?	78·6	?	19·3	109·9	45·0	64·9	34·5
		Berhampore	67	·779	−·008	·795	30·125	29·355	·770	·259	74·1	88·3	+0·6	69·9	+0·4	79·1	+0·5	18·4	110·4	45·1	65·3	31·3
		Rampur Boalia	70	·773	?	·793	·109	·355	·754	·266	75·3	87·8	?	69·4	?	78·6	?	18·4	108·5	43·1	65·4	32·1
		Malda	72	·764	?	·790	·119	·346	·773	·274	73·9	88·4	?	67·9	?	78·2	?	20·5	108·7	41·9	66·8	34·4
		Bogra	61	·781	?	·806	·098	·371	·727	·250	73·6	87·1	+1·1	68·6	+0·9	77·9	+1·0	18·5	108·8	46·2	62·6	31·0
12	North Bengal	Dinajpur	123	·726	+·001	·807	·075	·319	·756	·269	72·4	86·8	+0·9	66·9	?	76·9	?	19·9	105·3	43·0	62·3	32·6
		Rangur	123	·735	?	·816	·062	·386	·726	·265	72·7	85·4	?	67·5	?	76·5	?	17·9	102·4	43·8	58·6	30·1
		Jalpaiguri	284	·577	+·002	·826	29·907	·172	·735	·269	71·2	84·6	+1·0	66·0	+0·8	75·3	+0·9	18·6	96·9	45·6	51·3	29·3
		Cooch Behar (d)	156			Not recorded.					75·3	85·9	?	70·3	?	78·1	?	15·6	97·3	48·3	49·0	26·6
17	North Bihar	Purnea	125	·723	+·002	·806	30·072	·312	·760	·276	72·2	87·4	+0·6	67·4	+1·4	77·4	+1·0	20·0	107·3	43·5	63·8	33·3
14	Orissa	Balasore	46	·800	+·001	·793	·148	·281	·867	·265	76·6	89·1	+1·2	71·5	+1·3	80·3	+1·0	17·6	106·5	44·4	62·1	30·9
		False Point	21	·833	−·003	·796	·168	·330	·838	·261	78·7	86·2	+0·4	73·4	+1·4	79·8	+0·9	12·8	101·5	46·9	54·6	25·5
		Cuttack	80	·763	−·012	·786	·120	·248	·872	·267	76·9	91·3	−0·1	73·6	+1·2	82·5	+0·6	17·7	109·5	51·1	58·4	30·8
		Shortt's Island	?	·837	?	?	·191	·306	·888	·285	80·6	86·3	?	76·9	?	81·5	?	9·4	100·2	61·4	38·8	20·3
		Puri	20	·835	?	·798	·189	·375	·814	·256	78·9	87·0	?	75·1	?	81·1	?	11·9	100·7	53·6	47·1	23·8
	V.—Gangetic Plain and Chota Nagpur.		...	...	−·009	...	...	...	...	...	...	89·4	+1·1	68·2	+1·2	78·8	+1·1	21·2	...	...	72·0	36·2
15	Chota Nagpur	Hazaribagh	2,007	27·817	−·010	29·793	28·157	27·435	·722	·237	72·3	85·2	+0·8	66·5	+1·1	75·8	+1·0	18·7	110·6	42·2	68·4	33·8
		Ranchi	2,128	·734‡	?	·827‡	·032	·349	·683	·227					Not recorded.							
		Daltonganj	730?	29·113	?	·813	29·534	28·657	·877	·263	73·8	87·0‡	?	66·9	?	76·8‡	?	20·4	116·1	37·0	79·1	35·8
		Chaibassa	760	·072	?	·794	·414	·619	·795	·258	74·4	90·9	+1·1	69·2	+0·6‡	80·0	+0·7‡	21·7	114·7	42·9	71·8	36·2
16	South Bihar	Gaya	375	·459	−·012	·787	·843	29·026	·817	·269	75·7	91·0	+1·0	70·0	+1·6	80·5	+1·3	21·0	115·5	45·0	70·5	35·8
		Dehri	351	·441†	?	·750†	·848	·046	·802	·277	77·0‡	90·2‡	?	71·0‡	?	80·6‡	?	19·2	116·3	46·5	69·8	33·5
		Patna	183	·647	−·018	·786	30·027	·226	·801	·284	74·9	88·4	+0·7	69·5	+1·3	79·0	+1·0	18·9	112·6	42·9	69·7	34·1
		Arrah	190	·621‡	?	·767‡	·014	·218	·796	·288	74·2	91·1‡	?	70·1‡	?	80·6‡	?	21·1	112·9	43·8	69·1	36·1
		Buxar	239	·587	?	·785	29·977	·149	·828	·284	75·9	89·4	?	69·0	?	79·2	?	20·4	112·9	40·5	72·4	36·1
17	North Bihar	Bhagalpur	160	·673	?	·788	30·045	·253	·792	·274	75·7	88·7	?	68·7	?	78·7	?	19·9	110·8	43·7	67·1	34·7
		Darbhanga	166	·671	−·010	·795	·035	·262	·773	·274	73·6	86·7	+1·1	69·0	+0·4	77·9	+0·8	17·7	105·5	45·9	59·6	29·8
		Muzaffarpur	178	·654	?	·790	·024	·245	·779	·278	73·2	87·3	?	67·5	?	77·4	?	19·8	108·7	40·8	67·9	34·1
		Motihari	224	·609	?	·797	29·984	·197	·787	·286	70·8	87·8	?	65·5	?	76·7	?	22·3	108·0	38·0	70·0	37·2
		Chapra	181	·651	?	·789	30·036	·235	·801	·286	74·2	89·5	?	68·7	?	79·1	?	20·7	112·7	41·5	71·2	35·2
18	N.-W. Provinces (East).	Benares	267	·564	0	·792	29·945	·084	·861	·269	73·6	90·1	+0·7‡	67·7	+0·9‡	78·9	+0·9‡	22·4	115·3	38·6	76·7	38·5
		Allahabad	309	·518	−·007	·787	·913	·071	·842	·259	75·7	91·7	+1·8	68·4	+1·9	80·1	+1·8	23·3	117·2	38·4	78·8	39·6
23	N.-W. Provinces (East Submontane).	Gorakhpur	256	·559	−·011	·779	·931	·148	·783	·277	73·8	88·9	+0·8	68·4	+1·2	78·7	+1·0	20·6	111·3	42·8	68·5	34·4
19	South Oudh	Lucknow	368	·453	−·007	·788	·871	·013	·858	·268	74·0	91·4	+1·7‡	67·1	+1·8	79·3	+1·8‡	24·3	116·8	40·1	76·7	40·1
20	North Oudh	Bahraich	403	·410	?	·783	·810	·009	·801	·274	73·7	90·0	?	66·6	?	78·3	?	23·3	113·6	40·6	73·0	38·7
21	N.-W. Provinces (Central).	Cawnpore	416	·403	?	·782	·800	28·966	·834	·254	74·9	91·7	?	67·4	?	79·6	?	24·3	116·6	38·0	78·6	39·8
		Mainpuri	516	·299	?	·786	·732	·862	·870	·261	72·7	90·8	?	66·0	?	78·4	?	24·7	118·2	38·0	80·2	41·0
	VI.—Upper Sub-Himalayas		...	...	−·004	...	...	...	...	...	...	87·5	+0·1	63·9	+1·2	75·7	+0·7	23·6		...	78·0	40·0
24	N.-W. Provinces (West Submontane).	Bareilly	568	·242	−·002	·789	·657	·836	·821	·283	71·5	88·5	+0·9	65·8	+1·4	77·2	+1·2	22·6	113·5	39·2	74·3	37·2
		Dehra Dun	2,233	27·588	−·018‡	·809	27·940	27·223	·717	·274	66·6	82·1	+1·4	61·3	+0·4	71·8	+0·9	20·8	106·5	40·0	66·5	34·9
		Roorkee	887	28·915	−·011	·793	29·312	28·496	·816	·296	69·1	87·5	+0·4	62·7	+0·2	75·1	+0·3	24·8	113·2	35·3	77·9	40·6

(d) Observations of 10 months only. † Mean of 10 months. ‡ Mean of 11 months.

I—*contd.*

at 210 stations in India, Burma, etc., in the year 1897—contd.

Wind direction. Number of winds from									Wind velocity.			Hygrometry, 8 A.M.		Mean cloud amount of year.	Rainfall.						Heaviest rainfall during year.	Station.	Meteorological Province or District.	Number of Districts.
Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Mean velocity in miles per hour.	Normal.	Percentage variation.	Mean humidity of year.	Mean vapour tension of year.		Number of rainy days during year.	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.				
158	22	9	26	16	47	55	19	19	2·8	3·3	−15	77	·739	4·8	98	78·60	+19·50	67·40	55·13	+12·27	3·93	Burdwan.		
101	27	11	40	42	42	25	19	58	1·5	?	?	68	·622	4·7	81	80·15	+0·85	62·02	57·64	+ 4·38	3·77	Naya Dumka.		
169	14	...	40	22	63	35	10	12	2·6	3·5	−26	82	·738	4·5	75	79·22	−4·22	50·08	55·97	−5·89	2·71	Berhampore.		
94	57	22	37	43	42	33	21	16	3·4	?	?	81	·755	3·7	75	74·85	+0·15	57·26	56·50	+0·76	4·95	Rampur Boalia.		
...	36	20	29	45	50	61	87	43	2·3	?	?	81	·710	2·7	72	69·31	+2·69	51·13	55·37	− 4·24	3·06	Malda.		
					Not	recor	ded.		?	?	?	83	·725	?	87	81·51	+5·49	57·23	67·41	−10·18	4·35	Bogra.		
5	25	79	77	53	35	36	24	27	5·0	?	?	82	·690	4·2	85	76·91	+8·09	63·20	69·90	− 6·70	6·05	Dinajpur . .	North Bengal.	12
					Not	recor	ded		?	?	?	86	·726	4·3	92	80·33	+11·67	98·26	82·18	+16·08	7·30	Rungpur.		
...	62	87	75	53	15	13	22	38	2·8	?	?	85	·679	2·9	108	100·81	+7·19	118·39	127·76	−9·37	6·70	Jalpaiguri.		
78	12	36	108	48	17	4	2	1	?	?	?	87	·794	4·8	102	?	?	123·17	130·44	−7·27	8·24	Cooch Behar.		
76	11	52	117	27	16	30	26	10	4·4	2·4	+83	83	·684	5·1	70	70·60	−0·60	60·02	64·17	−4·15	4·16	Purnea . . .	North Bihar.	17
80	42	20	8	6	43	116	17	33	4·1	?	?	86	·821	3·4	77	82·32	−5·32	62·50	65·56	− 3·06	4·25	Balasore . .	Orissa.	14
21	41	10	7	17	64	74	60	71	9·1	9·1	0	85	·852	5·6	79	74·44	+4·56	74·03	69·87	+ 4·16	4·43	False Point.		
108	16	36	22	9	22	84	61	7	3·3	2·9	+14	80	·755	4·4	77	76·99	+0·01	55·12	63·42	− 8·30	3·94	Cuttack.		
2	62	32	11	12	68	100	41	34	13·9	?	?	78	·834	4·2	72	?	?	58·06	52·99	+ 5·07	3·44	Shortt's Island. (c)		
81	66	19	7	7	12	106	44	23	12·0‡	?	?	83	·849	4·0	64	66·23	−2·23	65·36	56·62	+ 8·74	5·51	Puri.		
																		47·51	44·76	+2·76		**V.—Gangetic Plain and Chota Nagpur.**		
36	22	5	24	21	54	82	63	58	8·0	6·8	+18	67	·539	4·5	92	76·10	+15·90	53·91	52·38	+1·53	3·61	Hazaribagh . .	Chota Nagpur.	15
64	13	18	20	20	43	79	40	66	7·3	?	?	?	?	3·2	95	82·99	+12·01	47·67	56·47	−8·80	3·09	Ranchi X . .		
...	29	14	46	26	81	115	34	20	4·3	?	?	71	·608	1·8	67	63·31	+3·69	46·04	45·48	+0·56	2·90	Daltonganj . .		
135	3	4	6	19	22	104	61	11	1·5	?	?	77	·692	3·8	78	76·20	+1·80	46·42	54·10	−7·68	3·36	Chaibassa .		
106	5	21	48	31	45	60	46	3	4·6	2·5	+84	66	·608	3·2	59	57·26	+1·74	58·34	44·95	+13·39	7·08	Gaya . . .	South Bihar.	16
35	3	4	42	38	54	123	27	4	6·8‡	?	?	69‡	·653‡	2·7‡	59*	53·67*	+5·33	52·78*	42·42*	+10·36	4·78	Dehri§ . . .		
48	2	35	95	37	14	32	83	19	3·9	3·0	+30	74	·684	3·4	58	55·23	+2·77	60·05	45·13	+14·92	3·80	Patna . . .		
16	13	46	65	44	27	63	70	20	3·5‡	?	?	74	·663	2·2	57	57·06	−0·06	59·31	43·88	+15·43	9·97	Arrah(a) . .		
26	11	12	109	31	16	36	114	10	5·3	?	?	67	·630	3·1	60	54·82	+5·18	41·16	41·89	−0·73	3·75	Buxar . .		
141	10	35	44	46	19	25	38	7	3·0	?	?	72	·676	3·8	64	61·01	+2·99	54·70	46·73	+7·97	4·20	Bhagalpur . .	North Bihar.	17
38	10	21	101	81	11	23	54	26	4·4	3·8	+16	77	·674	3·0	65	58·46	+6·54	50·38	48·98	+1·39	3·65	Darbhanga . .		
92	2	31	87	59	2	17	43	31	4·2	?	?	80	·689	2·7	68	56·07	+11·93	53·37	47·24	+6·13	5·86	Muzaffarpur (a) .		
...	20	52	150	17	24	36	31	35	5·7†	?	?	88	·707	1·3	55	56·43	−1·43	43·12	52·98	−9·86	3·68	Motihari . .		
105	2	7	89	40	14	58	35	14	3·5	?	?	76	·687	3·2	56	52·25	+3·75	45·96	42·43	+3·53	8·39	Chapra (a) . .		
93	6	22	54	22	17	65	75	11	4·3	3·9	+10	72	·623	3·5	58	50·54	+7·46	50·14	39·43	+10·71	4·78	Benares . .	N.-W. Provinces (East).	18
47	11	21	67	27	20	34	89	49	5·6	4·6	+22	65	·597	3·3	48	48·47	−0·47	45·94	39·44	+6·50	4·80	Allahabad . .		
42	37	96	48	17	27	30	35	33	2·2	2·5	−12	75	·651	3·0	57	52·29	+4·71	44·66	51·35	−6·69	6·86	Gorakhpur . .	N.-W. Provinces (East Submontane).	23
110	10	19	77	16	10	17	80	26	2·4	3·1	−23	68	·589	3·2	43	46·83	−3·83	30·46	38·80	−8·34	2·49	Lucknow . .	South, Oudh.	19
94	17	14	74	66	6	21	27	46	3·0	?	?	71	·634	1·6	48	?	?	53·29	40·94	+12·35	6·09	Bahraich . .	North, Oudh.	20
88	15	17	47	31	12	55	69	31	3·9	?	?	61	·560	2·2	42	41·40	+0·60	27·91	31·80	−3·89	2·47	Cawnpore . .	N.-W. Provinces (Central).	21
93	29	11	44	6	13	9	108	14	3·0	?	?	62	·527	3·6	44	?	?	32·18	33·09	−0·91	2·77	Mainpuri‖ . .		
...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	30·57	37·82	−6·42	...	**VI.—Upper Sub-Himalayas.**		
147	6	28	28	39	2	25	19	71	2·2	3·5	−37	68	·549	3·0	51	47·17	+3·83	56·04	49·61	+6·43	8·45	Bareilly . .	N.-W. Provinces (West Submontane).	24
205	5	11	7	13	3	8	8	5	1·2	1·8	−33	68	·471	4·0	72	79·59	−7·59	72·50	88·88	16·38	5·18	Dehra Dun.		
254	6	7	10	52	10	2	4	20	1·8	2·5	−28	69	·512	2·7	45	46·57	−1·57	36·59	43·82	−7·23	4·97	Roorkee.		

* For 11 months only.

(c) Wind observations of 362 days.

§ Wind observations of 330 days.
(a) " 364 "

X Wind observations of 363 days.
‖ " 327 "

Table

Abstract of observations taken at 8 A.M.

Number of District.	Meteorological Province or District.	Station.	Elevation of Bar Cistern above sea level in feet.	Pressure 8 A.M., in inches. Mean actual pressure (reduced to 32°).	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Temperature of air. Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year.	Mean daily temperature of year	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
22	N.-W. P., West	Meerut	738	29·072	0	29·795	29·468	28·636	·832	·289	70·4	88·2	+0·5	64·4	+0·9	76·3	+0·7	23·8	113·2	37·5	75·7	38·9
26	South-East Punjab	Delhi	718	·094	−·006	·791	·495	·648	·847	·280	72·7	88·7	−0·4	68·0	+1·1	78·4	?	20·7	114·7	37·9	76·8	37·2
28	Central Punjab	Lahore	702	·102	−·003	·795	·545	·593	·952	·355	69·6	87·4	−1·2†	64·7	+2·6†	76·4	?	22·7	118·1	36·2	81·9	40·1
27	South Punjab	Sirsa	662	·150	−·001	·795	·605	·603	1·002	·326	71·1	90·8	−0·6	64·7	+1·3	77·8	+0·3	26·1	118·3	36·2	82·1	43·6
		Patiala	818	28·985	?	·790	·384	·508	·876	·319	71·2	87·8	?	64·4	?	76·1	?	23·4	115·0	35·8	79·2	39·6
29	Punjab (Submontane).	Ludhiana	812	·990	−·008	·792	·438	·494	·944	·328	70·2	87·7	−0·9	64·8	+1·6	76·3	+0·4	22·9	116·3	36·8	79·5	40·1
		Sialkot	830	·976	+·009†	·800	·403	·461	·942	·349	70·0	88·1	+0·5	63·5	+1·4	75·8	+1·0	24·6	118·0	36·0	82·0	42·9
		Umballa	892	·915	?	·794	·319	·463	·856	·306	69·2	88·5	?	63·5	?	76·0	?	25·1	115·8	36·5	79·3	41·0
31	North Punjab	Rawalpindi	1,643	·147	?	·810	28·599	27·674	·925	·357	66·1	84·1	+0·1	58·4	+1·2	71·3	+0·6	25·8	115·0	33·9	81·1	43·4
	VII.—Indus Valley and North-West Rajputana.		...	...	−·001	...	...	...	...	...	...	91·3	+0·5	65·4	+0	78·4	+0·7	25·9	...	...	84·8	43·4
31	North Punjab	Peshawar	1,110	·736	+·001	·814	29·225	28·232	·993	·394	66·5	84·0	−1·6	58·7	−0·2	71·3	−0·9	25·3	114·5	32·4	82·1	43·3
32	West Punjab	Khushab	612	29·202	?	·803	·668	·659	1·009	·397	70·4	88·9	?	63·2	?	76·1	?	25·7	120·4	34·0	86·4	45·2
		Montgomery	558	·247	?	·787	·724	·684	1·040	·373	72·8	91·7	?	64·0	?	77·9	?	27·7	120·6	34·5	85·1	46·3
		D. I. Khan	594	·245	−·005	·804	·725	·699	1·026	·401	69·6	89·1	?	62·1	?	75·6	?	27·0	116·7	35·0	81·7	43·4
		Mooltan	420	·390	−·014*	·791	·882	·804	1·078	·386	71·6	92·3	+1·1	66·0	+1·4	79·1	+1·3	26·3	121·0	34·5	86·5	43·8
47	Sind	Jacobabad	186	·628	0	·780	30·124	29·105	1·019	·365	73·5	96·0	+1·0	66·1	+1·4	81·1	+1·2	30·0	126·0	30·5	95·5	48·9
		Hyderabad	96	·750	+·013	·801	·218	·275	·943	·307	77·8	94·3	+1·3	68·7	+0·4	81·5	+0·9	25·6	121·2	37·5	83·7	42·9
		Kurrachee	30	·846	+·001	·819	·304	·335	·969	·294	75·9	88·0	?	70·4	?	79·2	?	17·7	114·2	41·0	73·2	32·1
51	West Rajputana	Bickaneer	771	·049	?	·802	29·499	28·577	·922	·391	74·8	92·1	+0·6	68·7	+1·2	80·5	+0·9	23·4	119·8	38·6	81·2	41·6
		Pachpadra	380	·463†	?	·812†	·885	29·000	·885	·222	72·2	94·8	?	64·7	?	79·7	?	30·1	122·1	31·0	91·1	46·7
		Jodhpur	782	·049	?	·824	·457	28·611	·846	·266	73·7	93·1	?	67·1	?	80·1	?	26·0	121·3	34·6	86·7	43·5
	VIII.—East Rajputana, Central India and Gujarat.		...	...	0	...	...	...	...	...	...	91·1	+0·9	67·4	+0·9	79·2	+0·9	23·7	...	...	74·6	38·6
50	East Rajputana	Jeypore	1,431	28·416	−·001	·831	28·781	27·976	·805	·252	73·1	91·3	+1·3	65·8	+0·7	78·6	+1·0	25·5	117·5	36·2	81·3	41·4
		Sambhar	1,254	·579	0	·821	·959	28·135	·824	·259	71·8	90·6	+1·9	65·3	+0·7	78·0	+1·3	25·4	117·0	34·0	83·0	42·1
		Ajmere	1,611	·240	−·006	·848	·594	27·812	·782	·251	70·4	89·1	+0·6	64·7	+1·3	76·9	+1·0	24·4	116·1	35·9	80·2	41·7
		Deesa	466	29·396	−·004	·827	29·720	28·961	·759	·235	74·3	94·0	+0·8	66·5	−0·3	80·3	+0·3	27·4	119·4	38·0	81·4	41·9
46	Kathiawar and Cutch.	Bhuj	395	·479	+·011	·834	·819	29·002	·817	·244	75·8	91·2	+0·1	68·2	−0·5	79·8	−0·2	23·0	113·5	42·5	71·0	37·1
		Rajkot	429	·450	+·003	·839	·744	28·980	·764	·215	74·9	92·4	−0·2†	65·9	+0·1	79·2	0†	26·5	114·8	38·1	76·7	40·2
		Veraval	?	·864	?	·824	30·131	29·362	·769	·210	75·4	85·0	?	70·3	?	77·7	?	14·7	105·2	47·3	57·9	27·3
		Ghadechi	35	·845	?	·825	·130	·380	·750	·214	76·0	94·4	?	68·3	?	80·4	?	26·1	113·7	42·8	70·9	39·6
49	Central India	Nowgong	757	·079	−·007	·807	29·456	28·638	·818	·245	73·4	89·7	−0·2	67·2	+2·0	78·4	+0·9	22·5	117·0	40·0	77·0	38·6
		Indore	1,823	28·051	+·010	·847	28·339	·697	·642	·212	72·5	89·5	+2·0	64·3	+0·8	76·9	+1·4	25·2	112·5	37·6	74·9	38·9
		Neemuch	1,630	·244	+·022	·852	·560	27·849	·711	·226	73·3	89·8	+1·3	64·7	+0·5	77·2	+0·9	25·2	115·1	36·5	78·6	41·6
45	Gujarat	Surat	39	29·844	−·012*	·829	30·134	29·389	·745	·217	76·3	92·3	+0·9†	70·1	+1·5†	81·2	+1·4	22·2	111·5	48·7	62·8	36·3
		Ahmedabad	164	·717	?	·831	·033	·271	·762	·223	76·7	94·3	?	70·5	?	82·4	?	23·8	116·9	44·2	72·7	36·4
22	N.-W. P., West	Agra	555	·267	−·008*	·793	29·686	28·817	·869	·263	74·2	91·1	+0·3†	68·6	+1·2	79·8	+0·6†	22·5	117·0	39·9	77·1	37·8
21	N.-W. P., Central.	Jhansi	858	28·982	−·004	·808	·356	·534	·822	·246	77·3	92·2	+1·5	70·7	+2·5	81·5	+2·0	21·5	118·2	44·4	73·8	37·4
	IX.—Deccan.		...	...	0	...	...	...	...	...	...	92·0	+2·0	68·4	+1·5	80·3	+1·9	23·6	..	...	68·0	36·4
38	Bombay Deccan	Belgaum	2,524	27·383	+·001	·848	27·563	27·117	·446	·145	72·1	86·5	+2·2	64·4	+0·5	75·4	+1·4	22·1	104·2	52·9	51·3	31·5
		Sholapur	1,590	28·301	−·004	·847	28·552	·993	·559	·171	77·1	94·7	+2·1	69·4	+1·8	82·1	+2·0	25·3	112·2	45·0	67·2	36·7
		Poona	1,840	·061	+·003	·866	·312	·712	·600	·178	72·8	91·3	+2·6	64·7	−0·3	78·0	+1·2	26·6	109·3	43·0	66·3	38·4
		Bijapur	1,946	27·947	?	·843	·169	·456	·713	·179	75·4	92·1	?	67·8	?	80·0	?	24·4	108·7	43·6	65·1	35·2

* Mean of 11 months.
† Mean of 10 months.

I—*contd.*

at 210 stations in India, Burma, etc., in the year 1897—contd.

Wind Direction. Number of winds from									Wind velocity.			Hygrometry 8 A.M.			Rainfall.									
Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Mean velocity in miles per hour.	Normal.	Percentage variation.	Mean humidity of year.	Mean vapour tension of year.	Mean cloud amount of year.	Number of rainy days during year	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.	Heaviest rainfall during year.	Station.	Meteorological Province or District.	Number of District.
212	1	4	36	15	1	14	65	17	2·0	2·2	− 9	63	·492	2·8	27	39·18	−12·18	27·08	32·89	−5·81	4·30	Meerut.	N.-W. P., West.	22
91	6	7	16	59	2	14	117	50	4·7	3·6	+31	54	·469	3·7	31	33·74	−2·74	21·23	30·03	−8·80	3·12	Delhi	South-East Punjab.	26
173	32	21	32	47	18	4	22	16	2·4	2·5	− 4	67	·590	2·5	28	28·26	−0·26	20·25	21·95	− 1·70	3·85	Lahore	Central Punjab.	28
36	35	20	27	62	37	35	73	40	6·7	3·6	+86	58	·465	3·5	27	23·39	+3·61	14·66	15 55	− 0·89	2·80	Sirsa.	South Punjab.	27
125	13	80	2	7	33	86	17	2	4·6	?	?	72	·586	2·6	39	?	?	21·39	?	?	2·35	Patiala.		
211	10	29	5	46	15	9	10	30	1·9	1·5	+27	65	·504	3·1	33	37·00	−4·00	22·80	30·90	− 8·10	2·92	Ludhiana.	Punjab (Submontane).	29
133	44	61	56	27	9	7	8	20	2·5	1·8	+39	64	·489	2·0	39	38·36	+0·64	17·91	34·12	−16·21	2·45	Sialkot.		
242	1	1	28	29	3	2	11	48	1·8	?	?	72	·537	2·3	31	?	?	25·09	33·13	− 8·02	4·36	Umballa.		
221	19	15	30	10	8	5	39	17	2·9	2·0	+45	66	·461	3·2	51	46·81	+ 4·19	31·30	35·17	− 3·87	2·95	Rawalpindi.	North Punjab.	31
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13·07	9·65	+3·42	...	**VII—Indus Valley and North-West Rajputana.**		
168	36	13	5	20	42	32	15	34	3·1	3·4	− 9	66	·454	3·5	37	21·56	+15·44	18·02	13·54	+ 4·48	1·53	Peshawar	North Punjab.	31
107	36	76	64	11	24	15	24	8	4·7	?	?	55	·436	2·2	26	16·40	+9·60	19·83	10·39	+ 9·44	3·41	Khushab	West Punjab.	32
80	23	47	54	45	43	29	20	24	5·7	?	?	54	·455	2·4	16	15·70	+0·30	8·59	10·88	− 2·29	1·90	Montgomery.		
187	55	59	...	17	5	5	5	30	2·3	1·8	+28	70	·560	1·9	19	14·73	+4·27	9·75	8·42	+ 1·33	2·27	D. I. Khan.		
163	16	68	4	58	11	28	3	14	1·7	2·5	−32	62	·513	1·7	11	11·72	−0·72	12·57	7·56	+ 5·01	5·07	Mooltan		
124	34	17	66	56	30	6	7	25	4·3	3·4	+26	56	·506	2·1	10	6·63	+3·37	5·00	4·08	+ 0·92	1·32	Jacobabad	Sind.	47
56	44	11	3	6	50	136	12	37	12·7	10·1	+26	60	·554	2·0	10	10·14	−0·14	10·92	2·06	+ 3·86	2·43	Hyderabad.		
37	19	57	44	5	5	53	108	35	9·0	13·3	−32	73	·696	3·1	11	9·73	+1·27	12·07	7·92	+ 4·15	4·21	Kurrachee.		
33	28	17	19	24	39	109	55	39	6·1	4·8	+27	55	·514	2·7	24	?	?	17·30	11·95	+ 5·35	3·10	Bickaneer	West Rajputana.	51
...	56	56	29	18	104	76	9	14	10·2	5·8	+76	61	·547	1·7	21		?	13·56	10·28	+ 3·28	4·27	Pachpadra.(d)		
93	23	64	14	9	30	92	33	6	3·9	?	?	52	·475	2·8	27	?	?	16·14	14·02	+ 2·12	2·60	Jodhpur.(a)		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26·90	30·84	−2·79	...	**VIII—East Rajputana, Central India and Gujarat.**		
69	48	50	16	11	5	42	59	65	4·0	5·1	−22	58	·503	2·8	32	38·70	− 6·70	16·17	28·76	−12·59	1·83	Jeypore	East Rajputana.	50
157	38	12	23	3	11	6	103	12	5·8	6·7	−13	57	·492	2·9	23	32·56	− 9·56	14·47	22·91	− 8·44	1·83	Sambhar		
149	9	24	5	11	10	34	107	16	4·4	4·3	+ 2	65	·518	2·7	36	32·99	+ 3·01	23·29	22·18	+ 1·11	2·55	Ajmere.		
...	17	60	76	16	24	73	73	26	10·1	10·3	+ 2	61	·567	3·1	35	28·81	+ 6·19	21·89	26·73	− 4·84	2·85	Deesa.		
25	33	15	9	14	15	66	124	63	11·9	10·2	+17	62	·505	3·2	26	?	?	13·19	14·61	− 1·42	1·58	Bhuj	Kathiawar and Cutch.	46
52	26	40	29	5	12	47	101	53	8·7	9·2	− 5	64	·604	3·3	41	33·94	+ 7·06	30·91	28·67	+ 2·24	4·90	Rajkot.		
4	108	56	4	12	11	40	89	41	7·5	?	?	72	·671	3·3	29	?	?	18·66	?	?	3·23	Veraval.		
8	29	8	1	6	19	101	84	109	8·6	?	?	56	·552	2·9	32	?	?	20·14	?	?	1·80	Ghadechi.		
51	33	16	40	2	17	64	119	23	3·3	2·5	+32	63	·538	3·1	34	49·75	−15·75	48·60	44·43	+ 4·17	18·22	Nowgong	Central India	49
100	36	60	14	2	6	36	69	42	3·3	4·2	−21	60	·505	3·3	41	48·00	− 7·00	30·83	34·91	− 4·08	3·98	Indore.		
30	35	101	24	10	3	61	75	25	7·0	10·1	−31	53	·490	2·7	33	39·18	− 6·18	28·07	32 26	− 4·19	4·75	Neemuch.		
51	45	48	42	20	54	64	25	16	5·3	9·0	−41	68	·667	3·2	52	49·36	+ 2·64	39·02	46·34	− 7·32	3·45	Surat	Gujarat.	45
9	24	78	42	6	11	82	39	58	5·7	?	?	60	·584	3·4	43	?	?	31·80	30·32	+ 1·48	3·07	Ahmedabad.(b)		
33	1	37	...	50	...	103	...	140	5·3	4·2	+26	61	·556	2·4	40	38·91	+ 1·09	39·75	29·12	+10·63	5·71	Agra(a)	N.-W. P., West.	22
152	6	14	9	13	3	64	43	61	1·8	2·9	−38	51	·488	1·9	44	49·07	− 5·07	26·64	39·63	−12·99	2·75	Jhansi	N.-W. P., Central.	21
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34·31	41·25	−6·95	...	**IX—Deccan**		
104	16	26	35	15	7	46	76	41	14·1	15·7	−10	68	·522	4·1	81	53·08	− 2·08	48·05	48·74	− 0·69	3·43	Belgaum	Bombay, Deccan.	38
24	25	38	16	57	9	71	43	82	11·9	8·9	+34	50	·475	4·0	37	51·01	−14·01	20 42	33 90	−13·48	1 83	Sholapur.		
47	3	10	22	24	6	91	114	48	11·5	10·0	+15	61	·502	3·8	44	49·36	− 5·36	24·40	28·74	− 4·34	1·40	Poona.		
22	5	8	34	25	2	68	136	65	5·7	?	?	71	·627	3·6	43	43·5 2	− 0·52	27·82	24·69	+ 3·13	2·48	Bijapur.		

(Wind observations of 359 days (a) Wind observations 364 days. (d) Wind observations 362 days.

Table

Abstract of observations taken at 8 A. M.

Number of District.	Meteorological Province or District.	Station.	Elevation of Bar. Cistern above sea level in feet.	Pressure 8 A.M. in inches. Mean actual pressure (reduced to 32°).	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Temperature of air. Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year.	Mean daily temperature of year.	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
40	Khandesh	Malegaon	1,430	28·448	−·005?	29·846	28·693	28·074	·619	·195	75·0	93·0	+2·1	65·8	+0·9	79·4	+1·5	27·3	110·8	39·8	71·0	40·4
		Ahmednagar	2,152	27·746	?	·849	27·991	27·401	·590	·182	74·4	90·9	?	64·2	?	77·6	?	26·7	107·8	39·4	68·4	39·9
41	Berar	Akola	930	28·941	+·003	·881	29·268	28·580	·688	·204	76·7	95·0	+2·9	68·8	+2·1	81·9	+2·5	26·2	114·5	40·7	73·8	38·8
		Amraoti	1,215	·847	+·004	·838	28·959	·300	·659	·199	76·6	93·9	+2·3	70·5	+2·5*	82·2	+2·3*	23·4	115·5	47·4	68·1	36·3
42	Central Provinces, West.	Khandwa	1,014	·823	+·003	·839	29·120	·465	·655	·214	74·5	93·5	+2·4	68·0	+1·7	80·9	+2·1	25·4	113·7	39·2	74·5	39·4
		Hoshangabad	1,066	·849	0	·831	·170	·483	·687	·223	73·9	91·6	+1·4*	68·1	+1·4	79·9	+1·5*	23·5	115·1	40·8	74·3	37·0
		Nagpur	1,025	·830	?	·810	·126	·449	·677	·207	76·9	94·2	+2·6†	70·5	+2·6†	82·3	+2·6†	23·8	116·7	42·1	74·6	37·6
43	Central Provinces, Central.	Chanda	634	29·238	?	·824	·556	·884	·672	·199	77·6	94·5	+2·7†	69·4	+0·7†	82·0	+2·1†	25·1	119·2	41·1	78·1	39·7
		Seoni	2,033	27·826	+·001	·815	28·093	27·480	·618	·198	74·0	88·6	+1·1	65·3	+0·3†	77·0	+·07†	23·3	110·1	39·0	71·1	36·7
		Jubbulpore	1,327	28·518	−·002	·820	·850	28·118	·732	·215	73·7	89·7	+1·6	65·5	+1·2	77·6	+1·4	24·2	114·0	35·9	78·1	39·5
		Saugor	1,807	·035	?	·806	·353	27·574	·779	·225	75·1	88·6	+0·9*	68·1	+2·6	78·3	+1·8*	20·5	114·4	45·1	69·3	34·8
49	Central India	Sutna	1,040	·787	−·004	·803	29·180	28·314	·866	·241	74·9	89·5	+1·8	67·9	+2·8	78·8	+2·3	21·5	114·6	40·1	74·5	37·6
44	Central Provinces, East.	Raipur	970	·876	+·003	·808	·212	·483	·729	·213	76·0	91·7	+1·7	70·7	+2·0*	81·2	+1·9*	21·1	115·5	47·4	68·1	34·8
		Sambalpur	486	29·365	−·002*	·806	·717	·929	·788	·258	76·9	90·9	?	70·6	+0·6*	80·8	?	20·3	114·5	44·2	70·3	34·7
29	Hyderabad, North.	Aurangabad	1,965?	28·035	?	·850	28·278	27·715	·563	·170	77·2	93·7	?	66·4	?	80·0	?	27·3	111·1	41·1	70·0	39·0
		Indur	?			Not	recorde	d.			78·8	92·9	?	70 5	?	81·7	?	22·4	111·5	40·2	71·3	35·1
		Bidar	2,165?	27·728	?	·827	27·973	27·440	·533	·193	77·3	89·1	?	66·1	?	77·6	?	23·1	101·3	54·4	46·9	32·0
53	Hyderabad, South.	Gulbarga	1,502	28·394	?	·853	28·666	28·113	·553	·186	76·7	94·2	?	70·0	?	82·1	?	24·2	111·8	46·3	65·5	35·4
		Raichur	1,309	·579	?	·841	29·376?	·282	1·094?	·232	78·2	93·6	?	72·4	?	83·0	?	21·2	112·9?	52·7	60·2	34·2
		Hyderabad (Dp.)	1,690	·194	−·005*	·839	28·462	27·900	·562	·172	76·2	92·2	+2·2	70·8	+2·7*	81·5	+2·3*	21·6	111·9	50·3	61·6	32·3
		Secunderabad	1,787	·101	?	·845	·353	·805	·548	·173	74·9	93·0	?	70·0	?	81·5	?	23·0	112·3	49·7	62·6	34·9
		Khamamet	373	29·504	?	·825	29·811	29·173	·638	·202	79·2	94·3	?	73·6	?	84·0	?	20·7	114·2	48·6	65·6	32·8
	X.—West Coast.		...	...	−·003	...	...	...	...	...	...	86 6	+0 8	74 8	+0·9	80 7	+0·9	11 7	...	...	31·1	19 6
	Konkan	Bombay	37	·869	−·002	·846	30·104	·473	·631	·196	77·9	85·9	+0·4	74·7	0	80·3	+0·2	11·2	93·5	61·0	32·5	18·9
		Ratnagiri	110	·293	+·006	·842	29·985	·470	·515	·173	78·6	87·5	+0·2	73·6	+0·9	80·6	+0·6	13·9	95·4	61·9	33·5	22·5
		Mormugao	60	·864	?	·859	30·067	·600	·467	·170	78·3	86·2	?	75·0	?	80·6	?	11·2	95·1	65·3	29·8	19·3
		Goa	192	·712	+·005	·849	29·921	·439	·482	·169	78·7	84·5	?	75·4	?	80·0	?	9·1	100·5	61·0	39·5	19·3
		Karwar	44	·871	−·001	·851	30·041	·629	·412	·168	76·2	86·7	+0·7	73·1	+0·6	79·9	+0·7	13·6	94·3	58·5	35·8	22·7
32	Malabar	Cochin	10	·922	−·010	·860	·047	·789	·258	·136	79·6	88·8	+1·7	75·9	+1·4	82·4	+1·6	12·9	94·8	66·8	28·0	20·3
		Calicut	27	·902	−·014	·859	·028	·735	·293	·150	79·4	87·6	+0·8	75·1	+1·3	81·4	+1·1	12·5	94·4	65·0	29·4	19·6
		Mangalore	65	·866	−·006	·863	·006	·660	·346	·158	79·0	87·4	+0·8	75·1	+1·1	81·3	+1·0	12·3	93·8	65·5	28·3	19·7
		Trivandrum	198	·714	?	·844	29·841	·578	·263	·139	78·5	84·6	?	75·6	?	80·1	?	9·0	90·5	67·0	23·5	14·4
	XI.—South India.		...	...	−·008	...	...	...	...	...	...	90·6	+1·2	72·8	+1·5	81·7	+1·4	17·8	...	...	46·8	28·4
57	Madras, South	Pamban	37	·876	?	·840	30·063	·708	·355	·143	82·6	88·2	?	78·4	?	83·3	?	9·8	96·2	70·7	25·5	17·1
		Tinnevelly	168	·749	?	·847	29·922	·564	·358	·156	82·2	94·6	?	77·4	?	86·0	?	17·2	105·0	64·9	40·1	27·4
		Madura	447	·459	−·008	·844	·631	·268	·363	·152	81·1	93·6	−0·7†	74·7	+1·1	84·1	+0·1	18·9	104·5	62·7	41·8	29·1
34	Madras, South Central.	Salem	940	28·997	−·010	·802	·174	28·775	·399	·153	79·0	93·9	+1·3	72·3	+2·2	83·1	+1·7	21·6	104·4	58·9	45·5	31·6
		Coimbatore	1,348	·569	−·006	·870	28·746	·359	·387	·148	76·2	90·1	−0·1	70·6	+1·0	80·4	+0·5	19·5	100·4	57·5	42·9	29·0
35	Coorg	Mercara	3,781	26·233	+·002	?	26·359	26·058	·301	·137	67·3	77·1	+0·8	62·7	+1·7	69·9	+1·3	14·4	91·0	53·7	37·3	22·5
36	Mysore	Chitaldroog	2,405	27·519	?	·849	27·698	27·283	·415	·147	74·6	88·0	?	68·2	?	78·1	?	19·8	103·0	54·9	48·1	29·6
		Bangalore	3,021	26·939	−·008	·865	·086	26·728	·358	·141	71·2	85·8	+1·9	65·6	+1·7	75·7	+1·8	20·2	100·8	53·4	47·4	29·2
		Hassan	3,091	·878	?	·885	·017	·667	·350	·132	71·7	83·8	?	62·8	?	73·3	?	21·1	95·6	47·9	48·7	30·9
		Mysore	2,518	27·436	?	·880	·577	27·242	·335	·142	73·3	87·0	?	66·7	?	76·9	?	20·3	98·9	54·4	44·5	29·3

* Mean of 11 months. † Mean of 10 months.

I—*contd.*

at 210 stations in India, Burma, etc., in the year 1897—contd.

Wind direction. Number of winds from									Wind velocity.			Hygrometry 8 A.M.			Rainfall.								
Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W	Mean velocity in miles per hour.	Normal.	Percentage variation.	Mean humidity of year.	Mean vapour tension of year.	Mean cloud amount of year.	Number of rainy days during year.	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.	Heaviest rainfall during year.	Station.	Meteorological Province or District.	Number of District.
38	30	5	5	1	3	65	140	78	12·4	7·2	+72	64	·584	3·5	31	40·57	−9·57	21·81	25·60	− 3·79	4·54	Malegaon.	Khandesh.	
24	80	23	15	24	19	41	53	86	18·4	?	?	63	·549	3·4	31	?	?	18·42	25·55	− 7·13	3·15	Ahmednagar.		
53	5	21	39	23	5	44	91	84	6·6	5·5	+20	57	·542	3·6	43	50·58	−7·58	23·38	37·90	−14·52	3·39	Akola	Berar.	31
...	24	52	75	17	13	43	113	28	5·2	4·7	+11	62	·572	3·5	44	50·99	−6·99	27·18	37·41	−10·23	2·40	Amraoti.		
88	6	31	16	10	3	21	123	67	6·5	5·4	+20	56	·493	2·6	42	44·36	− 2·36	25·98	33·29	− 7·31	3·54	Khandwa	Central Provinces, West.	42
143	3	65	33	1	18	59	32	11	2·7	3·0	−10	62	·538	3·3	42	60·53	−18·53	49·45	56·58	− 7·13	9·09	Hoshangabad.		
155	53	24	8	9	15	29	36	36	6·2	6·4	− 3	62	·566	3·8	59	64·93	−5·93	38·53	50·91	−12·38	4·71	Nagpur.		
78	45	35	32	33	25	33	59	25	2·9	3·7	−22	65	·613	3·7	63	?	?	51·08	58·53	− 7·45	3·83	Chanda	Central Provinces Central.	42
1	54	93	17	26	18	58	31	57	3·6	3·9	− 8	63	·532	2·8	74	73·65	+0·35	44·19	58·89	−14·70	2·46	Seoni.		
90	11	27	6	57	47	51	58	18	2·5	3·3	−24	66	·550	3·3	66	65·62	+0·38	49·88	60·37	−10·49	4·93	Jubbulpore.		
10	28	58	38	36	17	53	93	31	6·3	3·5	+80	58	·536	2·8	49	56·93	− 7·93	41·71	48·93	− 7·22	3·47	Saugor. (a)		
48	55	16	33	14	29	19	90	61	6·4	6·1	− 5	61	·509	2·6	46	52·91	−6·91	41·25	46·48	− 5·23	3·60	Sutna	Central India.	42
132	12	29	24	17	24	92	27	8	7·0	5·6	+25	64	·573	3·9	63	65·61	−2·61	38·37	52·52	−14·15	2·15	Raipur	Central Provinces, East.	44
...	70	94	23	44	57	62	4	11	5·0	2·3	+117	71	·670	3·7	78	?	?	72·50	68·05	+ 4·45	5·72	Sambalpur.		
149	7	62	11	7	15	53	35	25	4·0	?	?	52	·476	3·1	46	?	?	23·15	32·27	− 9·12	2·71	Aurangabad (a)	Hyderabad, North	39
97	37	9	15	24	22	27	75	59	7·3	?	?	68	·676	3·7	50	?	?	36·64	37·40	− 0·76	3·47	Indur.		
...	53	46	46	22	20	73	70	34	8·2	?	?	72	·678	2·2	46	?	?	25·55	42·04	−16·49	2·20	Bidar (a)		
90	9	70	12	10	7	85	18	45	10·2	?	?	61	·565	3·8	43	?	?	27·54	29·19	− 1·65	4·27	Gulbarga (b)	Hyderabad, South.	53
38	40	22	37	18	48	40	92	30	10·2	?	?	65	·636	3·0	50	?	?	31·92	27·72	+ 4·20	2·44	Raichur.		
147	11	10	16	30	8	...	119	24	5·6	?	?	69	·631	3·2	43	?	?	22·86	33·72	−10·86	3·77	Hyderabad (Dn).		
66	5	35	51	34	6	25	91	52	7·4	6·5	+14	65	·572	3·4	41	?	?	21·68	33·72	−12·04	3·83	Secunderabad.		
175	28	...	5	68	20	12	40	17	7·0	?	?	77	·788	1·6	57	?	?	38·17	39·48	−1·31	3·32	Khamamet.		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	122·68	103·45	+19·24	...	**X.—West Coast.**		
3	53	76	61	25	32	29	62	24	10·7	12·2	−12	78	·770	4·3	81	76·63	+ 4·37	81·53	74·12	+ 7·41	5·21	Bombay	Konkan.	37
101	38	24	53	39	10	31	41	33	6·0	10·2	−41	73	·723	3·9	95	97·80	− 2·80	136·75	111·65	+25·10	6·87	Ratnagiri.		
9	74	23	57	53	14	19	21	95	9·7	?	?	82	·810	4·0	94	?	?	109·05	94·66	+14·39	4·35	Mormugao.		
30	48	47	95	7	26	48	30	31	?	?	?	77	·758	4·9	92	?	?	115·22	103·32	+11·90	8·31	Goa.		
28	71	60	88	4	...	38	54	22	5·2	?	?	81	·737	3·9	106	109·07	− 3·07	135·70	129·19	+ 6·51	8·31	Karwar.		
83	84	121	14	3	4	9	18	29	5·9	?	?	83	·844	5·2	141	132·16	+ 8·84	144·47	116·52	+27·95	6·10	Cochin	Malabar.	33
42	27	80	78	39	10	12	10	67	12·3	?	?	82	·821	5·3	113	132·90	− 0·90	164·45	113·13	+51·32	7·19	Calicut.		
81	17	18	108	66	10	8	23	32	2·9	3·4	− 15	80	·798	4·9	114	118·30	− 4·30	156·46	122·74	+33·72	9·92	Mangalore.		
103	121	46	37	6	1	3	5	43	5·2	?	?	83	·812	5·9	93	?	?	60·52	65·69	− 5·17	4·68	Trivandrum.		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37·36	41·62	−4·01	...	**XI.—South India.**		
19	33	79	40	26	31	102	18	16	9·5*	?	?	77	·887	2·9	38	33·10	+ 4·90	27·35	37·00	− 9·65	2·65	Pamban (a)	Madras (South).	17
...	66	28	6	8	8	39	77	133	5·1	?	?	70	·776	4·9	43	43·00	0	21·08	28·73	−7·65	2·45	Tinnevelly.		
32	114	37	5	14	8	17	12	136	3·5*	4·2	−17	71	·764	3·9	48	43·71	+ 4·29	29·65	32·69	− 3·04	3·43	Madura.		
62	5	48	53	7	35	92	45	18	4·9	4·4	+11	75	·763	4·1	60	66·50	− 6·50	37·63	41·44	− 3·81	5·14	Salem	Madras (South Central).	34
...	12	4	139	3	16	121	65	6	3·4	4·8	−29	83	·753	5·3	47	45·20	+ 1·80	18·03	21·24	− 3·21	1·11	Coimbatore.		
152	9	39	32	6	5	9	79	34	5·9	5·8	+2	81	·545	6·2	126	137·20	−11·20	134·04	129·37	+ 4·67	5·12	Mercara	Coorg.	35
9	7	14	44	36	7	95	115	38	8·8	?	?	67	·573	5·1	38	?	?	31·76	?	?	4·66	Chitaldroog.	Mysore.	36
2	5	38	48	27	26	110	84	25	8·2	5·2	+58	75	·579	4·8	56	61·68	− 5·68	41·82	35·86	+ 5·96	4·07	Bangalore.		
12	9	39	52	39	16	43	113	42	3·4	?	?	75	·578	5·8	65	?	?	39·79	30·47	+9·32	3·14	Hassan.		
24	8	46	29	14	17	117	91	19	9·7	?	?	76	·620	5·6	65	?	?	38·62	29·32	+9·20	2·30	Mysore.		

* Wind observations of 246 days.

(a) Wind observations of 334 days.

Table

Abstract of observations taken at 8 A. M.

Number of District.	Meteorological Province or District.	Station.	Elevation of Bar Cistern above sea level in feet.	Pressure 8 A.M. in inches. Mean actual pressure (reduced to 32°).	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Temperature of air. Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year.	Mean daily temperature of year.	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
56	Madras, East-Coast, South.	Negapatam	31	29·875	−·008	29·833	30·068	29·678	·390	·151	82·7	91·0	+1·6*	77·3	+1·6	84·2	+1·4*	13·8	105·7	68·0	37·7	24·9
		Cuddalore	12	·889	?	·830	·089	·668	·421	·160	81·0	91·0	?	74·9	?	83·0	?	16·1	105·3	63·3	42·0	26·1
		Trichinopoly	255	·652	−·014	·841	29·827	·458	·369	·150	80·7	95·1	+1·1	75·2	+1·6	85·2	+1·6	19·9	106·2	62·4	43·8	30·3
		Madras	22	·880	−·012	·833	30·107	·635	·471	·173	81·8	91·8	+1·0	75·6	+1·0	83·7	+1·0	16·2	107·0	64·5	42·5	26·9
55	Madras, East-Coast, Central.	Nellore	71	·811	?	·815	·061	·525	·536	·187	82·1	95·1	?	76·3	?	85·7	?	18·8	113·3	62·1	51·2	30·4
		Masulipatam	15	·871	−·001*	·821	·155	·544	·611	·191	81·1	91·1	+0·9	75·4	+1·2	83·3	+1·0	15·8	114·2	59·2	55·0	29·2
54	Madras, Central	Cuddapah	433	·459	−·015	·832	29·695	·159	·536	·175	82·2	97·2	+2·8	76·2	+2·0	86·7	+2·4	21·0	113·3	59·3	54·0	33·2
		Kurnool	923	28·961	−·021†	·834	·207	28·684	·523	·171	78·0	95·3	+2·1	71·8	+1·5*	83·6	+1·9*	23·5	113·3	47·7	65·6	35·4
		Bellary	1,475	·418	−·001	·841	28·645	·149	·496	·160	78·7	94·7	+1·7*	72·2	+1·9*	83·4	+2·1†	22·5	111·2	55·1	56·1	33·5
52	Madras, East-Coast, North.	Rajahmundry	112	...			Not recorded.				79·7	93·2	+1·4*	75·1	+1·2	84·2	+1·4*	18·2	112·1	55·9	56·2	30·8
		Cocanada	26	29·852	?	29·813	30·149	29·488	·661	·207	80·2	89·6	+1·6†	76·3	+1·5	83·0	+1·6†	13·3	110·5	57·0	53·5	26·4
		Vizagapatam	31	·832	−·006	·801	·148	·424	·724	·231	81·3	89·7	+0·7	75·6	+1·2	82·7	+1·0	14·1	105·2	54·9	50·3	26·7
		Gopalpur	21	·831	?	·792	·181	·387	·794	·257	78·8	86·8	?	74·0	?	80·4	?	12·8	98·2	51·1	47·1	23·7
	XII.—Hill Stations.		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
48	Baluchistan	Sharigh	?	25·829	?	?	26·160	25·440	·720	·313	67·5	82·5	?	53·3	?	67·9	?	29·3	109·2	22·0	87·2	48·2
		Pishin*	?				Not recorded.				?	76·9	?	40·7	?	58·9	?	36·2	110·3	14·9	95·4	56·7
		Quetta	5,502	24·626	+·011	?	24·857	24·292	·575	·251	56·3	73·9	+0·6	44·5	0	59·2	+0·3	29·4	98·1	9·3	88·8	48·9
		Kalat	?				Not recorded.				56·2	75·0	?	37·1	?	56·0	?	37·9	101·7	−6·4	108·1	60·1
		Chaman	4,311	25·669	?	?	25·929	25·247	·682	·269	65·2	79·3	?	54·7	?	67·0	?	24·6	107·2	15·1	92·1	45·2
30	Punjab	Leh	11,503				Not recorded.				34·3	52·7	?	28·7	?	40·7	?	24·0	85·7	−8·5	94·2	41·3
		Srinagar	5,204	24·894	?	?	·325	24·526	·799	·356	49·4	64·5	?	43·1	?	53·9	?	21·4	91·9	11·6	80·3	38·5
		Skardu	?	22·991	?	?	23·445	22·498	·947	·422	44·5	60·8	?	38·7	?	49·7	?	22·1	98·1	−10·0	108·1	45·3
		Dras	?	20·792	?	?	21·053	20·363	·695	·349					Not recorded.							
		Gilgit	?	24·777	?	?	25·511	24·270	1·241	·406	56·9	70·4	?	52·3	?	61·4	?	18·2	105·9	25·7	80·2	36·5
		Chitral	?				Not recorded.				54·1	71·2	?	46·1	?	58·6	?	25·1	104·2	5·4	98·8	43·1
		Killa Drosh	?				Not recorded.				63·1*	76·4*	?	52·4*	?	64·4*	?	23·9	102·3	18·8	84·0	41·4
		Cherat	?	25·371	?	?	·930	25·301	·659	·325	61·6	72·4	?	56·4	?	64·4	?	16·0	104·0	27·5	76·5	36·1
		Murree	6,333	23·826	+·008	?	24·053	23·459	·594	·301	56·0	64·9	−0·9	50·3	−0·5†	57·6	−0·7	14·7	91·7	18·0	73·7	35·2
		Poo	?				Not recorded.				?	61·5	?	40·8	?	51·2	?	20·7	82·2	11·5	70·7	36·2
		Simla	7,224	·096	+·003	?	23·284	22·868	·416	·234	54·4	61·2	−0·3	49·9	0	55·6	−0·2	11·3	82·7	27·1	55·6	26·3
25	North-Western Provinces.	Chakrata	7,022	·285	+·012	?	·492	23·040	·452	·228	54·1	63·9	−0·5	49·9	+0·4	56·9	0	13·9	84·3	28·1	56·2	28·8
		Mussooree	6,705	·507	?	?	·694	·270	·424	·236	55·8	63·8	?	51·2	?	57·5	?	12·6	87·8	30·5	57·3	26·6
		Ranikhet	6,069	24·091	+·018	?	24·291	·834	·457	·226	58·3	68·1	+0·4	54·0	+0·9	61·1	+0·7	14·1	88·1	31·0	57·1	28·7
		Muktesar†	?	22·841	?	?	23·003	22·607	·396	·231	57·3	66·8	?	51·5	?	59·2	?	15·2	85·6	33·9	51·7	30·1
13	Bengal	Yatung	10,480?				Not recorded				?	54·8	?	41·7	?	48·3	?	13·2	70·0	12·9	57·1	28·4
		Darjeeling	7,408	·974	+·005	?	·147	·762	·385	·230	52·4	59·1	+0·8	47·4	+0·6	53·3	+0·7	11·7	72·1	31·3	40·8	21·6
		Gantok	5,660	24·510†	?	?	24·679	24·307	·372	·216	57·9	67·4	?	43·7	?	55·6	?	23·6	81·6	28·6	53·0	33·5
	Central India	Mount Abu	3,945	26·019	−·011	?	26·258	25·675	·583	·205	67·7	75·9	−0·3	61·9	+0·1	68·9	−0·1	14·0	100·7	33·0	67·7	27·7
		Pachmarhi	3,528	·426	+·001	?	·693	26·097	·596	·197	69·9	80·7	+1·6	61·8	+0·9	71·3	+1·3	18·9	103·7	35·8	67·9	33·2
	South India	Wellington	6,200	24·241	−·018	?	24·358	24·067	·291	·122	62·1	72·3	+1·7	53·7	0	63·0	+0·9	18·6	81·7	36·2	45·5	29·2

* Mean of 11 months. † Mean of 10 months.

I—*contd.*

at 210 stations in India, Burma, etc., in the year 1897—contd.

Wind direction. Number of winds from: Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W	Wind velocity. Mean velocity in miles per hour.	Normal.	Percentage variation.	Hygrometry 8 A.M. Mean humidity of year.	Mean vapour tension of year.	Mean cloud amount of year.	Rainfall. Number of rainy days during year	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.	Heaviest rainfall during year.	Station.	Meteorological Province or District.	Number of Distr ict.
	7	31	7	12	23	96	63	76	8·8	5·6	+57	76	·852	4·5	34	60·74	−26·74	23·76	54·66	−30·90	2·95	Negapatam	Madras, East-Coast, South.	56
...	55	4	2	3	61	92	85	63	1·7	?	?	81	·858	2·7	50	56·80	−6·80	36·90	47·91	−11·01	4·90	Cuddalore.		
150	21	19	6	2	6	26	104	31	4·8	5·8	−17	72	·747	5·0	48	45·45	+2·55	37·76	32·69	+5·07	3·32	Trichinopoly.		
18	53	13	6	11	73	85	73	33	6·6	7·1	− 7	77	·837	5·1	51	60·53	−9·53	38·47	49·02	−10·55	3·04	Madras.		
119	...	2	...	70	22	3	64	85	6·4	?	?	77	·833	6·8	33	44·30	−11·30	23·41	35·80	−12·39	3·28	Nellore	Madras, East-Coast, Central.	55
43	82	31	4	34	48	15	46	62	7·7	7·0	+10	82	·875	5·4	49	55·24	−6·24	21·33	43·54	−22·21	1·30	Masulipatam.		
1	1	49	36	81	8	52	63	74	?	?	?	69	·752	4·2	43	46·00	−3·00	32·56	34·18	−1·62	2·36	Cuddapah	Madras, Central	54
186	...	...	28	3	1	18	112	17	?	?	?	64	·620	4·0	49	48·93	+0·07	27·94	30·06	−2·12	2·40	Kurnool.		
120	9	5	9	21	13	11	114	63	5·1	6·5	−21	52	·504	5·2	30	35·00	−5·00	22·68	19·73	+2·95	2·40	Bellary.		
89	116	8	26	9	30	16	68	3	?	?	?	73	·756	5·5	71	50·58	+20·42	49·45	41·48	+7·97	4·95	Rajahmundry	Madras, East Coast, North.	52
8	79	39	10	9	21	83	71	45	8·1	?	?	75	·775	4·1	67	55·10	+11·90	39·58	44·54	−4·96	5·14	Cocanada.		
217	9	4	...	4	1	49	64	17	1·7	2·9	−41	75	·809	5·1	46	64·36	−18·36	31·65	46·47	−14·82	4·78	Vizagapatam.		
10	90	6	4	5	21	134	25	70	13·6	9·6	+42	80	·796	2·4	74	61·35	+12·65	53·93	49·41	+4·52	4·13	Gopalpur.		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**XII.—Hill Stations.**		
77	41	8	27	27	1	27	84	63	5·6	?	?	42	·291	1·3	24	?	?	15·99	14·60	+1·39	1·57	Sharigh.(d)	Baluchistan.	48
			No	t recor	ded.				?	?	?	?	?	?	3	?	?	2·12	10·40	−8·28	1·22	Pishin.*		
319	4	3	4	14	13	2	4	2	3·3	4·1	−20	60	·297	2·0	24	22·45	+ 1·55	9·53	10·89	−1·36	1·05	Quetta.		
...	8	3	31	6	191	48	60	12	?	?	?	53†	·253†	1·6	16	?	?	5·47	9·05	−3·58	0·63	Kalat.‖		
1	12	12	70	106	49	79	19	17	9·6	?	?	41	·247	1·8	18	?	?	7·56	7·43	+0·13	1·15	Chaman.		
1	5	55	24	17	67	61	123	12	2·4	?	?	53	·128	5·1	14	?	?	5·10	3·17	+1·93	0·65	Leh	Punjab.	30
103	36	18	18	77	58	11	15	29	5·2	?	?	90	·364	4·6	68	?	?	33·52	35·23	−1·71	2·62	Srinagar		
202	9	40	6	1	11	16	77	3	4·0	?	?	80	·245	5·2	31	?	?	9·94	13·32	− 3·38	1·42	Skardu.		
346	5	...	2	1	...	1	3	7	1·3	?	?	?	?	4·8	76	?	?	32·38	?	?	1·80	Dras.		
			No	t recor	ded.				?	?	?	53	·214	5·3	18	?	?	5·41	4·08	+1·33	0·51	Gilgit.		
51	54	74	21	54	70	13	5	20	?	?	?	65*	·319*	2·5	45	?	?	20·83	?	?	2·00	Chitral.(b)		
			No	t recor	ded.				?	?	?	44*	·254*	?	32‡	?	?	12·33‡	?	?	0·95	Killa Drosh.		
49	133	19	...	18	43	5	10	88	13·8	?	?	53	·306	3·0	56	?	?	29·90	26·16	+ 3·74	2·08	Cherat.		
105	54	13	29	86	20	2	5	51	8·2	6·8	+21	55	·264	3·8	75	67·56	+ 7·44	51·71	56·29	− 4·58	3·50	Murree.		
108	12	16	33	32	20	31	68	41	?	?	?	?	?	4·0	53	?	?	24·05	18·56	+ 5·49	1·74	Poo.§		
128	75	61	15	13	39	15	...	1	4·6	2·2	+109	55	·253	4·1	86	84·52	+ 1·48	51·27	64·19	−12·92	3·02	Simla.		
191	103	24	8	1	30	1	...	7	9·3	5·2	+79	64	·288	3·7	86	?	?	79·84	67·76	+12·08	4·20	Chakrata.	North-Western Provinces.	25
...	28	32	121	31	6	6	36	105	?	?	?	66	·311	3·7	100	79·73	+162·7†	99·53	97·95	+ 1·98	6·05	Mussooree.		
152	17	41	35	22	15	26	27	30	2·9	2·1	+38	68	·345	3·7	76	77·29	− 1·29	58·90	54·44	+ 4·46	5·46	Ranikhet.		
...	6	15	67	81	15	14	13	94	1·9	?	?	62	·304	4·3	64	?	?	62·79	?	?	7·12	Muktesar. (c		
				Not	rec	orded.			?	?	?	?	?	?	129	?	?	52·15	?	?	2·44	Yatung	Bengal.	13
60	9	47	92	52	7	44	46	8	5·3	4·1	+29	86	·360	5·0	117	125·43	− 8·43	99·49	121·69	−22·20	5·49	Darjeeling.		
234	6	25	10	9	10	6	27	17	2·7*	?	?	83	·416	?	171	?	?	155·75	143·89	+11·86	4·15	Gantok.¶		
59	21	62	10	22	17	115	29	30	8·7	7·0	+24	56	·381	4·1	55	53·19	+ 1·81	57·83	66·87	− 9·04	4·77	Mount Abu	Central India.	
182	10	10	7	8	11	50	58	29	7·6	5·2	+46	65	·479	3·9	73	80·37	− 7·37	79·70	78·23	+1·47	6·73	Pachmarhi.		
235	18	23	7	20	3	39	12	6	3·0	3·3	− 9	74	·421	5·0	88	88·63	− 0·63	41·67	52·98	−11·31	2·53	Wellington §	South India.	

(b) Wind observations of 362 days.
(c) „ „ „ 305 „
‡ For 10 months.
‖ Wind observation of 359 days.
§ „ „ 361
¶ Wind observations of 344 days.
(d) „ „ „ 355 „

Table

Abstract of observations taken at 8 A.M.

Meteorological Province or District.	Station.	Elevation of Bar Cistern above sea level in feet.	Pressure 8 A.M. in inches.							Temperature of air.											
			Mean actual pressure (reduced to 32°).	Variation from normal.	Mean pressure reduced to sea level and to constant gravity 45° Lat.	Highest pressure recorded during year.	Lowest pressure recorded during year.	Absolute range during year.	Mean monthly range of pressure.	Mean of 8 A.M. of year.	Mean maximum of year.	Variation from normal of year.	Mean minimum of year.	Variation from normal of year	Mean daily temperature of year.	Variation from normal of year.	Mean daily range of temperature.	Highest temperature observed during year.	Lowest temperature observed during year.	Absolute range during year.	Mean monthly absolute range.
XIII.—Extra India.		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ceylon	Trincomalee	12	29·886	?	29·824	30·046	29·706	·340	·147	80·7	88·5	?	77·0	?	82·8	?	11·5	99·0	70·0	29·0	18·9
	Colombo	40	·893	−·015	·859	·006	·761	·245	·139	80·8	87·9	?	76·4	?	82·2	?	11·5	94·5	68·0	26·5	18·6
Persia	Meshed	3,104			Not	recorde	d.			54·8	?	?	46·1	?	?	?	?	?	1·5	?	?
	Teheran	?	26·006	?	?	26·450	25·600	·850	·450	59·5	72·6	?	50·4	?	61·7	?	22·2	106·8	15·8	91·0	42·6
	Ispahan	?	24·702	?	?	25·040	24·150	·890	·328	57·0	74·8	?	45·1	?	60·0	?	29·6	107·3	11·1	96·2	48·1
	Bushire	?	29·878	+·019	·851	30·359	29·331	1·028	·339	74·7	81·5	−1·0	68·3	0	74·9	−0·5	13·3	107·5	38·9	68·6	34·2
	Jask	14	·864	?	·816	·332	·385	·944	·226	78·9	86·8	?	73·7	?	80·3	?	13·1	103·7	41·8	61·9	27·3
Arabia	Muscat	?	·862	?	·829	·321	·354	·967	·279	81·6	84·2	?	78·8	?	81·5	?	5·4	103·8	57·5	46·3	17·3
	Baghdad	20	·772	−·011*	·974	·422	·142	1·280	·517	66·4	84·2	−1·6	59·9	+1·0	72·1	−0·3	24·2	114·9	23·8	91·1	42·8
	Aden	220	·827	−·004	·853	·071	·457	·614	·175	81·6	89·0	+0·2	78·2	+0·8	83·6	+0·5	10·8	102·3	66·9	35·4	21·5
	Perim	94	·704	?	?	29·924	·471	·453	·151	83·3	89·9	?	75·4‡	?	82·1‡	?	14·3	105·1	60·2	44·9	22·0
Afghanistan	Kabul	?				Not re	corded.			48·7	69·2	?	40·5	?	54·9	?	28·8	97·1	−0·2	97·3	47·8
Central Asia	Kashgar	?	25·634	?	?	26·271	25·104	1·167	·529	49·7	64·2	?	43·2	?	53·7	?	21·1	99·3	−2·2	101·5	45·0
Arabian Sea Island.	Amini Devi*	?	29·912	?	·855	30·064	29·689	·375	·142	82·2	84·9	?	77·4	?	81·2	?	7·5	94·3	69·4	24·9	15·7
Africa	Zanzibar	1,510	30·002	?	30·002	·172	·855	·317	·126	79·0	84·1	?	77·0	?	80·6	?	7·1	90·6	69·9	20·7	12·9

* Mean of 11 months.
‡ " 10 "

Note.—When a query is inserted against any reading or in the variation returns for any station

I—*concld.*

at 210 stations in India, Burma, etc., in the year 1897—concld.

Wind direction. Number of winds from									Wind velocity.			Hygrometry 8 A.M.			Rainfall.								
Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Mean velocity in miles per hour.	Normal.	Percentage variations.	Mean humidity of year.	Mean vapour tension of year.	Mean cloud amount of year.	Number of rainy days during year.	Normal number of rainy days during year.	Variation.	Rainfall of year.	Normal rainfall of year.	Variation from normal of year.	Heaviest rainfall during year.	Station.	Meteorological Province or District.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**XIII.—Extra India.**	
59	16	23	1	4	9	255	...	9	4·9	?	?	84	·892	3·3	81	?	?	77·61	59·54	+18·07	4·42	Trincomalee	Ceylon.
2	23	46	39	68	29	75	74	9	9·0	7·6	+19	83	·879	5·3	122	?	?	82·36	90·04	−7·68	4·63	Colombo.	
					Not	recor	ded.		?	?	?	68	·315	4·3†	25	?	?	9·18	8·12	+1·06	1·82	Meshed	Persia
197	59	33	12	3	21	13	13	5	3·5	?	?	?	?	2·5	26	?	?	10·43	9·76	+0·67	0·99	Teheran.¶	
73	21	32	49	33	6	33	59	56	4·0	?	?	59	·278	1·7	8	?	?	2·15	?	?	0·64	Ispahan. ‖	
10	56	58	54	59	6	13	9	99	8·3	7·9	+5	66	·600	1·9	10	?	?	6·91	13·31	−6·43	3·70	Bushire. (a).	
20	75	20	139	11	7	...	12	80	9·6	?	?	75	·772	1·3	5	?	?	1·90	4·44	−2·54	1·04	Jask. (a)	
...	12	29	67	43	26	22	76	89	4·2	?	?	69	·753	1·3	4	?	?	1·20	?	?	0·38	Muscat (a)	Arabia.
90	137	18	9	13	17	7	13	60	4·0	?	?	61	·338	0·3	15	?	?	6·63	10·62†	−3·99	0·97	Baghdad. (a)	
25	12	72	148	34	17	46	4	7	11·0	11·5	−4	72	·784	4·3	3	?	?	1·10	3·79	−2·69	0·60	Aden.	
42	2	40	10	53	5	37	13	22	16·1	?	?	74	·852	3·9	2	?	?	0·69	1·71†	−1·02	0·19	Perim. (c)	
85	18	11	62	2	51	29	88	16	?	?	?	?	?	1·5	40	?	?	16·78	11·44†	+1·84	1·40	Kabul	Afghanistan.
245	24	7	23	3	12	3	22	9	?	?	?	?	?	4·5	8	?	?	2·42	4·41†	−2·25	0·36	Kashgar (b)	Central Asia.
30	50	21	4	2	...	45	77	77	?	?	?	80	·881	4·9	68	?	?	52·82	?	?	2·83	Amini Devi*	Arabian Sea Island.
...	57	51	10	47	116	77	3	4	5·7	?	?	83	·829	5·2	85	?	?	67·04	55·30	+11·74	3·41	Zanzibar	Africa

† For 11 months.

the date for that station are not utilized in calculating the provincial variations.

¶ Wind observations of 356 days.
‖ ,, ,, 362 ,,
(a) ,, ,, 364 ,,
(c) ,, ,, 323 ,,
(b) ,, ,, 348 ,,

R

Table

Abstract of Observations recorded at 10 A.M. and 4 P.M.

Meteorological Province.	Station.	Elevation of bar-cistern above sea level in feet.	Pressure.						Temperature of air.									
			Mean of 10 hours.	Mean of 16 hours.	Mean daily range.	Mean daily pressure.	Variation from normal.	Mean reduced to S. L. and for gravity 45° Lat.	Mean maximum.	Mean minimum.	Mean daily range.	Highest maximum.	Lowest minimum.	Absolute range.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal
Burma Coast and Bay Islands.	Port Blair	...	29·862	29·767	·095	29·812	+·003	29·803	87·5	77·8	9·7	96·4	70·4	26·0	84·7	84·9	81·5	+0·8
	Rangoon	...	·882	·759	·123	·824	−·007	·801	90·0	73·3	16·7	105·1	57·7	47·4	82·4	85·9	79·6	+0·7
	Diamond Island	...	·881	·779	·102	·827	−·008	·803	85·4	77·1	8·3	93·5	68·2	25·3	82·8	82·6	80·0	+1·2
	Cocos Island	111	·825	·733	·092	·776	?	·819	86·8	77·6	9·2	96·9	72·6	24·3	83·8	83·2	80·8	?
	Akyab	...	·885	·779	·106	·832	−·004	·795	86·3	72·9	13·4	94·9	55·9	39·0	81·7	83·5	79·0	+0·6
Assam	Silchar	...	·796	·666	·130	·733	−·005	·788	87·4	68·0	19·4	98·6	47·5	51·1	78·9	84·6	76·7	+1·1
	Sibsagar	...	·571	·433	·138	·502	−·012	·794	81·5	65·6	15·9	96·2	43·9	52·3	74·1	80·1	72·4	+0·1
	Dhubri	...	·768	·636	·132	·701	−·005	·771	83·3	68·4	14·9	99·5	48·6	50·9	76·3	81·9	74·5	+0·4
Bengal and Orissa	Chittagong	...	·803	·691	·112	·747	−·011	·782	?	?	?	?	?	?	?	?	?	?
	Narayanganj	...	·846	·730	·116	·788	−·004	·762	86·6	71·5	15·1	101·0	48·3	52·7	80·6	84·2	78·7	+0·9
	Calcutta (Alipore)	...	·843	·728	·118	·783	−·002	·749	86·7	71·3	15·4	104·6	49·0	55·6	80·9	84·8	78·6	+0·7
	Saugor Island	...	·829	·721	·108	·772	−·010	·741	86·2	74·5	11·7	95·7	51·2	44·5	82·2	83·6	79·2	+0·9
	Burdwan	...	·764	·638	·126	·699	−·004	·745	90·1	71·2	18·9	113·3	49·1	64·2	82·3	87·6	79·6	+0·7
	Berhampore	...	·789	·671	·118	·727	−·004	·742	88·4	69·8	18·6	110·4	45·1	65·3	81·6	86·9	78·3	+0·2
	False Point	...	·846	·740	·106	·793	−·011	·756	86·2	73·4	12·8	101·5	46·9	54·6	83·1	83·5	78·6	+1·0
	Cuttack	...	·776	·656	·120	·720	−·012	·741	91·2	73·6	17·6	109·6	50·9	58·7	82·8	88·4	81·0	+0·9
Gangetic Plain and Chota Nagpur.	Hazaribagh	...	27·833	27·735	·098	27·784	−·011	·728	85·1	66·5	18·6	110·6	42·2	68·4	78·4	81·8	74·8	+0·9
	Patna	...	29·662	29·543	·119	29·601	−·012	·737	88·4	69·5	18·9	112·4	42·9	69·5	81·5	86·4	78·1	+0·9
	Darbhanga	...	·689	·565	·124	·626	−·008	·746	86·8	69·0	17·8	105·8	45·9	59·9	80·2	85·4	77·2	+0·6
	Allahabad	...	·534	·413	·121	·469	−·010	·730	91·7	68·4	23·3	117·0	38·4	78·6	83·5	89·9	79·2	+1·4
	Lucknow	...	·471	·356	·115	·410	−·012	·734	91·5	67·1*	24·4	117·0	40·2	76·8	82·6	88·1	78·7*	?
Upper Sub-Himalayas.	Dehra Dun	...	27·618	27·525	·093	27·562	−·009	·753	82·2	61·4	20·8	106·5	40·1	66·4	73·9	78·2	70·5	0
	Roorkee	...	28·936	28·832	·104	28·876	−·008	·730	87·6	62·7	24·9	113·5	35·4	78·1	78·4	85·2	74·3	+0·2
	Meerut	...	29·094	·992	·102	29·036	−·004	·739	88·1	64·4	23·7	112·8	37·4	75·4	79·2	85·9	75·5	+0·6
	Lahore	...	·122	29·030	·092	·068	−·005	·741	87·4	64·7	22·7	118·1	36·4	81·7	77·7	86·6	75·4	+1·7
	Ludhiana	...	·011	28·918	·093	28·957	−·005	·739	87·9	64·8	23·1	116·4	36·9	79·5	78·6	85·1	75·3	+1·2
Indus Valley and N.-W Rajputana.	Peshawar	...	28·752	·658	·094	·698	+·006	·799	84·0	58·8	25·2	114·5	32·8	81·7	75·3	81·1	70·2	−0·7
	Mooltan	...	29·410	29·309	·101	29·352	−·001	·740	92·3	66·0	26·3	121·0	34·5	86·5	80·6	89·9	78·1	+1·3
	Jacobabad	...	·650	·527	·123	·581	−·001	·724	96·0	66·0	30·0	126·0	30·5	95·5	84·7	94·1	80·0	+1·1
	Kurrachee	...	·851	·754	·097	·801	−·004	·781	88·0	70·3	17·7	114·1	40·8	73·3	82·8	84·3	78·0	+0·7
Eastern Rajputana, Central India and Gujarat.	Jeypore	...	28·436	28·332	·104	28·379	+·002	·758	91·4	65·7	25·7	117·7	35·8	81·9	82·9	88·8	77·3	+1·1
	Ajmere	...	·254	·151	·103	·199	−·011	·763	89·1	64·7	24·4	116·3	36·1	80·2	79·7	87·6	76·2	+1·2
	Deesa	...	29·406	29·287	·119	29·342	−·006	·768	93·9	66·5	27·4	119·3	37·9	81·4	84·1	92·0	79·8	0
	Nowgong	...	·091	28·983	·108	·033	−·004	·742	89·7	67·1	22·6	117·0	39·7	77·3	82·2	88·0	77·9	+1·0
	Agra	...	·285	29·173	·112	·220	−·017	·733	91·2	68·6	22·6	117·2	39·8	77·4	82·8	88·3	79·2	+1·2
Deccan	Belgaum	...	27·391	27·286	·105	27·338	−·006	·756	86·5	64·3	22·2	104·1	52·7	51·4	79·1	81·8	73·8	+1·2
	Sholapur	...	28·303	28·165	·138	28·236	−·012	·744	94·7	69·4	25·3	112·1	45·1	67·0	84·7	92·0	81·0	+1·3
	Poona	...	·061	27·948	·113	·008	−·005	·766	91·3	64·7	26·6	109·6	43·2	66·4	82·1	87·8	77·1	+1·1
	Akola	...	·946	28·809	·137	·874	−·006	·745	95·0	68·8	26·2	114·3	40·9	73·4	85·6	93·2	81·6	+2·3
	Buldana	2,132	27·761	27·643	·118	27·699	−·004	·741	89·5	69·0	20·5	108·2	50·4	57·8	81·7	87·4	78·9	+1·8
	Khandwa	...	28·830	28·702	·128	28·763	−·001	·750	93·6	68·1	25·5	113·7	39·1	74·6	84·7	92·2	80·3	+2·1
	Hoshangabad	...	·862	·729	·133	·793	−·004	·749	91·6	68·1	23·5	115·0	40·8	74·2	82·4	90·2	9·3	+1·2

* Mean of 11 months.

II.

at 83 Stations in India, Burma, etc., in the year 1897.

Temperature, Wet-bulb.				Vapour Tension.					Humidity.					Cloud.				Rainfall.		Station.	Meteorological Province.
Mean minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	From minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	From minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	Total rainfall for the year.	Heaviest rainfall during the year.		
75·2	79·5	79·3	78·0	·843	·941	·926	·904	+·021	89	79	78	82	0	6·3	6·8	6·6	+1·1	...	...	Port Blair.	Burma Coast and Bay Islands.
71·5	76·3	76·5	74·8	·756	·833	·794	·795	+·016	91	76	66	78	0	5·3	5·9	5·6	+0·3	...	...	Rangoon.	
74·3	76·8	76·6	75·9	·816	·847	·838	·834	+·028	87	75	75	79	0	5·8	6·2	6·0	+0·8	...	...	Diamond Island.	
73·8	77·9	77·3	76·4	·787	·881	·863	·844	?	83	76	76	79	?	5·5	5·5	5·5	?	85·12	5·52	Cocos Island.	
70·6?	77·4?	78·8?	75·6?	·735?	·899?	·934?	·856?	+·079	89?	82?	81?	84?	+5	6·0	5·6	5·8	+1·2	...	...	Akyab.	
66·8	73·0	74·0	71·8	·670	·753	·715	·716	+·006	93	75	59	76	−3	5·8	5·3	5·6	+0·1	...	...	Silchar	Assam.
65·3	70·7	72·9	69·6	·657	·734	·738	·710	+·004	99	84	70	84	+1	6·3	5·0	5·7	−0·7	...	...	Sibsagar.	
66·3	71·9	72·7	70·1	·654	·718	·704	·692	+·004	89	77	64	77	−1	4·1	3·9	4·0	−0·1	...	...	Dhubri.	
?	?	?	?	?	?	?	?	?	?	?	?	?	?	5·3	4·7	5·0	+0·4	...	...	Chittagong	Bengal and Orissa.
68·7	74·5	74·7	72·6	·692	·797	·753	·747	0	86	74	64	75	−2	5·4	5·1	5·3	+0·7	...	...	Narayanganj.	
69·0	73·4	73·8	72·1	·708	·749	·711	·723	−·013	89	69	59	72	−4	4·8	4·5	4·7	+0·3	...	...	Calcutta (Alipore).	
71·8	76·3	76·4	74·8	·770	·849	·836	·819	−·001	87	75	71	78	−2	5·9	5·2	5·6	+0·7	...	...	Saugor Island.	
68·1	73·5	74·1	71·9	·681	·736	·685	·701	+·015	84	65	53	68	−1	4·1	4·3	4·2	−0·2	...	...	Burdwan.	
66·6	73·0	73·7	71·1	·647	·728	·680	·685	−·007	83	65	54	68	−6	3·9	4·0	4·0	−0·8	...	...	Berhampore.	
71·9	76·6	76·6	75·0	·788	·846	·840	·825	+·029	93	73	72	79	−1	5·4	5·4	5·4	+0·6	...	...	False Point.	
?	74·1	74·6	?	?	·744	·687	?	?	?	65	52	?	?	4·1	4·5	4·3	+0·2	...	...	Cuttack.	
60·7	66·3	67·2	64·7	·490	·518	·503	·504	+·020	72	54	49	58	+1	4·8	5·7	5·3	+0·6	...	...	Hazaribagh	Gangetic Plain and Chota Nagpur.
65·4	71·8	72·7	70·0	·621	·681	·650	·651	+·025	79	62	52	64	0	3·5	3·6	3·6	−0·4	...	...	Patna.	
66·3	71·6	72·5	70·1	·653	·690	·655	·666	−·005	87	64	54	68	−2	2·8	2·6	2·7	−0·1	...	...	Darbhanga.	
62·6	70·1	71·8	68·2	·539	·595	·569	·568	−·004	73	52	42	55	−5	3·3	3·7	3·5	+0·2	...	...	Allahabad.	
62·3	69·4	71·0	67·6	·541*	·577	·562	·557*	?	76*	52	44	57*	?	3·5	3·3	3·4	−0·1	...	...	Lucknow.	
56·5	63·0	64·2	61·3	·430	·467	·454	·450	−·016	74	55	48	59	−3	3·7	4·0	3·9	0	...	...	Dehra Dun	Upper Sub-Himalayas.
59·0	66·2	67·4	64·2	·499	·514	·463	·492	−·004	82	53	39	58	−1	2·5	2·8	2·7	−0·4	...	...	Roorkee.	
60·2	65·7	67·3	64·4	·514	·490	·452	·485	−·028	79	48	37	54	−4	2·8	2·8	2·8	−0·2	...	...	Meerut.	
58·8	65·8	68·3	64·3	·468	·520	·482	·490	+·005	71	53	38	54	+3	2·5	2·4	2·5	−0·2	...	...	Lahore.	
59·4	65·9	67·0	64·1	·481	·504	·451	·479	−·027	73	51	38	54	−4	2·8	3·1	3·0	−0·6	...	...	Ludhiana.	
53·6	62·4	64·1	60·0	·389	·444	·421	·418	−·007	72	50	40	54	+1	3·1	4·0	3·6	+0·4	...	...	Peshawar	Indus Valley and N.-W. Rajputana.
58·9	66·4	69·7	65·0	·453	·504	·491	·483	−·051	65	46	34	49	−5	1·6	1·9	1·8	0	...	...	Mooltan.	
58·7	67·4	70·6	65·5	·453	·487	·474	·472	+·012	64	39	29	44	+1	1·9	2·7	2·3	+0·1	...	...	Jacobabad.	
66·4	72·8	74·1	71·1	·643	·709	·734	·696	+·026	80	60	60	66	0	2·6	2·5	2·6	−0·6	...	...	Kurrachee.	
58·6	66·9	68·3	64·6	·449	·491	·462	·467	+·003	65	42	34	47	−2	2·9	3·8	3·4	−0·2	...	...	Jeypore	Eastern Rajputana, Central India and Gujarat.
58·6	66·6	69·8	65·0	·473	·529	·536	·513	+·023	69	50	41	53	+1	2·4	2·9	2·7	−0·1	...	...	Ajmere.	
60·5	69·0	69·7	66·4	·499	·541	·455	·498	+·018	68	45	32	48	+3	2·6	2·3	2·5	−1·0	...	...	Deesa.	
60·7	68·3	69·3	66·1	·496	·531	·494	·507	−·006	70	49	40	53	−3	3·2	4·1	3·7	−0·4	...	...	Nowgong.	
61·7?	69·5?	71·4?	67·5?	·512?	·536?	·580?	·559?	+·052	67?	50?	42?	53?	+1	2·2	2·7	2·5	−0·4	...	...	Agra.	
61·3	65·8	67·8	65·0	·517	·481	·515	·504	−·016	81	51	51	62	−2	3·8	4·3	4·1	−0·6	...	...	Belgaum	Deccan.
62·1	67·6	69·2	66·3	·491	·474	·433	·468	−·025	66	41	31	46	−5	3·7	5·0	4·4	−0·4	...	...	Sholapur.	
60·2	66·2	67·6	64·7	·491	·460	·434	·462	−·023	76	43	37	52	−1	3·7	4·0	3·9	−0·5	...	...	Poona.	
61·5	70·0	71·8	67·8	·487	·547	·512	·515	+·024	66	45	35	48	−3	3·5	4·3	3·9	+0·1	...	...	Akola.	
59·7	65·1	66·1	63·7	·417	·432	·390	·413	−·053	58	41	33	44	−8	3·4	3·9	3·7	−0·3	29·78	2·23	Buldana.	
60·0	68·0	69·5	65·8	·456	·439	·452	·469	−·028	63	43	33	46	−6	2·8	3·2	3·0	−0·4	...	...	Khandwa.	
60·8	68·9	71·0	66·9	·473	·566	·541	·529	−·001	67	52	40	53	−3	3·1	3·7	3·4	−0·2	...	...	Hoshangabad.	

Table

Abstract of Observations recorded at 10 A.M. and 4 P.M.

Meteorological Province.	Station.	Elevation of Bar-Cistern above sea level in feet.	Pressure. Mean of 10 hours.	Mean of 16 hours.	Mean daily range.	Mean daily pressure.	Variation from normal.	Mean reduced to S. L. and for gravity 45° Lat.	Temperature of air. Mean maximum.	Mean minimum.	Mean daily range.	Highest maximum.	Lowest minimum.	Absolute range.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.
Deccan—(concld.)	Nagpur	...	28·831	28·697	·134	28·761	−·006	29·729	94·2	70·4	23·8	117·0	41·9	75·1	84·6	91·0	81·7	+2·0
	Nagpur (Sanitary Commr.'s Office.)	...	·849	·721	·128	·782	?	·739	95·0	70·6	24·4	116·8	42·8	74·0	85·9	92·6	82·2	?
	Jubbulpore	...	·526	·408	·118	·434	−·005	·736	89·7	65·5	24·2	114·1	36·0	78·1	81·4	87·3	76·8	+1·3
	Saugor	...	·048	27·936	·112	27·989	−·010	·726	88·6	68·1	20·5	114·2	45·1	69·1	81·7	86·8	77·5	+1·6
	Sutna	...	·794	28·681	·113	28·735	−·008	·727	89·5	68·0	21·5	114·6	40·1	74·5	83·3	87·7	78·0	+1·9
	Raipur	...	·887	·758	·129	·820	−·003	·719	91·7	70·6	21·1	115·6	47·2	68·4	83·4	89·4	80·7	+1·8
	Hyderabad (Deccan)	...	·200	·074	·126	·137	−·009	·745	92·3	70·7	21·6	112·2	50·1	62·1	83·9	89·7	80·9	+2·3
West Coast	Bombay	...	29·877	29·774	·103	29·821	−·002	·798	85·9	74·6	11·3	93·7	61·1	32·6	80·9	83·0	79·5	−0·1
	Ratanagiri	...	·803	·705	·098	·750	+·002	·797	87·5	73·4	14·1	95·2	61·1	34·1	83·7	84·0	79·5	+0·3
	Karwar	...	·886	·782	·104	·829	−·003	·805	86·8	73·0	13·8	94·5	58·8	35·7	81·6	84·7	79·3	+0·6
	Cochin	...	·931	·841	·090	·882	−·003	·819	88·9	76·0	12·9	94·9	67·0	27·9	83·9	85·9	81·7	+1·4
South India	Salem	...	28·998	28·859	·139	28·936	−·013	·803	93·9	72·3	21·6	104·3	58·9	45·4	84·5	89·8	81·2	+1·5
	Mercara	...	26·244	26·151	·093	26·206	−·003	?	77·1	62·7	14·4	91·0	53·9	37·1	71·5	72·9	68·9	+1·1
	Chitaldroog	...	27·526	27·407	·119	27·469	−·004	·767	88·0	68·1	19·9	103·0	55·1	47·9	79·9	85·6	77·5	+1·6
	Bangalore	...	26·947	26·832	·115	26·895	−·008	·776	85·9	65·6	20·3	100·8	53·3	47·5	77·7	83·1	75·0	+2·1
	Hassan	...	·887	·781	·106	·840	−·006	·792	83·8	62·8	21·0	96·6	47·9	48·7	77·6	81·0	72·6	+1·1
	Mysore	...	27·440	27·320	·120	27·381	−·003	·789	87·0	66·7	20·3	99·2	54·6	44·6	79·2	84·2	76·1	+1·1
	Trichinopoly	...	29·658	29·522	·136	29·599	−·011	·782	95·1	75·2	19·9	106·3	62·3	44·0	87·0	92·1	83·5	+1·2
	Madras	...	·888	·772	·116	·834	−·009	·785	91·8	75·6	16·2	107·1	64·4	42·7	86·5	86·6	82·4	+0·7
	Bellary	...	28·433	28·294	·139	28·366	−·014	·761	94·6	72·1	22·5	111·0	55·1	55·9	85·0	91·8	82·3	+1·7
	Cocanada	...	29·852	29·740	·122	29·799	?	·761	89·6	76·3	13·3	110·5	57·0	53·5	84·6	87·3	82·4	+1·0
	Vizagapatam	...	·842	·730	·112	·784	−·011	·752	89·7	75·6	14·1	105·4	54·9	50·5	86·2	86·2	82·5	+0·3
Hill Station, Baluchistan.	Quetta	...	24·637	24·561	·076	24·592	+·009	?	73·9	44·5	29·4	98·3	9·3	89·0	65·6	70·4	58·3	+0·2
Hill Stations, Punjab.	Leh	...	?	?	?	?	?	?	52·8	28·7	24·1	85·7	−8·5	94·2	42·1	49·8	40·3	−0·9
	Srinagar	...	·908	·826	·082	·859	+·010	?	64·6	?	?	91·7	11·6	80·1	54·5	62·5	?	?
	Murree	...	23·844	23·813	·031	23·821	+·003	?	64·8	50·3	14·5	91·7	18·0	73·7	59·8	61·2	56·6	−0·3
	Kailang	10,087	20·766	20·702	·064	20·741	−·022	?	54·9	30·9	24·0	80·8	−3·5	84·3	44·4	48·7	40·4	−0·5
	Simla (Ridge)	...	23·117	23·068	·049	23·085	+·006	?	61·2	49·7	11·5	82·7	27·1	55·6	57·1	57·8	54·6	−0·9
Hill Stations, N.-W.-P.	Chakrata	...	·292	·236	·056	·257	+·003	?	63·9	49·9	14·0	84·1	28·2	55·9	58·5	58·9	55·6	−0·1
	Ranikhet	...	·112	·042	·070	·065	+·013	?	68·1	54·0	14·1	88·2	31·1	57·1	63·1	64·6	60·1	+0·3
Hill Station, Nipal	Katmandu	4,338	25·580	25·515	·065	25·546	?	?	78·5	54·1	24·4	93·8	31·0	62·8	69·3	73·1	65·0	+0·2
Hill Station, Bengal	Darjeeling	...	23·002	22·925	·077	22·963	+·012	?	59·1	47·5	11·6	72·1	31·3	40·8	55·4	56·3	52·6	+0·7
Hill Stations, Central India.	Mount Abu	...	26·038	25·965	·073	25·997	−·015	?	75·9	61·8	14·1	100·7	33·2	67·5	71·8	73·8	68·3	+0·1
	Pachmarhi	...	445	26·357	·088	26·398	+·001	?	80·7	61·8	18·9	103·7	35·8	67·9	75·1	78·7	70·9	+1·3
	Chikalda	3,642	·340	·245	·095	·289	+·005	?	81·0	65·5	15·5	100·4	45·9	54·5	74·6	79·4	75·0	+1·7
Hill Station, South India.	Wellington	...	24·251	24·183	·068	24·234	−·008	?	72·3	53·7	18·6	81·6	36·3	45·3	68·3	82·5	61·8	+0·7
Extra India	Muscat	...	29·873	29·794	·079	29·833	−·008	·801	84·0	78·8	5·2	103·9	57·5	46·4	82·6	83·4	81·3	+0·7
	Aden	...	·838	·724	·114	·777	+·003	·802	88·8	78·1	10·7	102·3	66·7	35·6	84·4	86·2	83·0	+0·8
	Perim	...	·714	·601	·113	·654	+·017	?	89·9	?	?	101·9	60·2	41·7	86·4	86·8	?	?
	Zanzibar	...	30·017	·897	·120	·988	+·014	?	84·1	77·0	7·1	90·6	69·9	20·7	80·4	83·5	80·4	+0·8
	Port Victoira (Seychelles).	15	29·977	·894	·083	·935	−·014	·874	82·5	77·4	6·1	83·3	71·7	16·6	82·1	82·8	80·3	+0·9

II—*concld.*

at 83 Stations in India, Burma, etc., in the year 1897—concld.

Temperature, Wet-bulb.				Vapour Tension.					Humidity.					Cloud.				Rainfall.			
Mean minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	From minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	From minimum.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	Mean 10 hours.	Mean 16 hours.	Mean daily.	Variation from normal.	Total rainfall for the year.	Heaviest rainfall during the year.	Station.	Meteorological Provinces.
63·6	70·7	72·3	68·8	·530	·594	·570	·565	+·036	70	52	42	55	+1	3·7	5·0	4·4	−0·1	...	...	Nagpur . .	Deccan—concld.
63·6	70·4	72·3	68·8	·530	·571	·552	·551	?	69	48	39	52	?	2·9	4·1	3·5	?	...	...	Nagpur (Sanitary Commr.'s Office.)	
61·4	68·2	70·0	66·5	·533	·548	·524	·535	+·027	82	52	43	59	+1	3·2	4·1	3·7	−0·2	...	...	Jubbulpore.	
60·6	?	?	?	·471	?	?	?	?	64	?	?	?	?	2·7	3·7	3·2	+0·3	...	...	Saugor.	
60·6	67·5	68·6	65·7	·479	·509	·486	·492	+·021	66	45	39	50	−1	2·3	2·9	2·6	−0·3	...	...	Sutna.	
64·3	69·5	70·2	68·0	·545	·555	·499	·533	−·008	71	51	39	54	−2	3·5	4·7	4·1	−0·1	...	...	Raipur.	
65·7	71·3	71·9	69·6	·590	·621	·570	·595	+·016	77	54	43	58	−3	3·4	3·8	3·6	−0·3	...	...	Hyderabad. (Deccan).	
70·2	74·2	75·6	73·3	·695	·768	·799	·754	−·022	79	72	70	74	−3	3·8	3·6	3·7	−0·6	...	...	Bombay . .	West Coast.
69·5	74·3	76·1	73·3	·684	·736	·801	·740	0	80	64	69	71	−1	3·4	3·6	3·5	+0·3	...	...	Ratnagiri.	
70·5	74·1	75·8	73·5	·726	·751	·774	·750	−·010	88	70	66	74	−3	3·4	3·6	3·5	−0·2	...	...	Karwar.	
73·6	77·3	78·1	76·4	·810	·851	·861	·841	+·027	90	73	70	78	−2	5·1	5·1	5·1	+0·5	...	...	Cochin.	
70·5	74·8	75·7	73·7	·727	·738	·706	·724	+·035	91	62	52	69	+1	4·1	5·7	4·9	+0·3	...	...	Salem . .	South India.
60·2	64·9	65·8	63·6	·500	·543	·558	·534	+·001	87	72	71	77	−3	6·0	6·7	6·4	+0·1	...	...	Mercara.	
62·9	68·1	68·3	66·4	·518	·547	·481	·516	+·009	74	55	42	57	−2	4·7	5·3	5·0	0	...	...	Chitaldroog.	
62·6	67·2	67·0	65·6	·541	·551	·483	·525	−·009	85	59	45	63	−4	4·3	4·8	4·6	0	...	...	Bangalore.	
61·3	66·7	66·7	64·9	·536	·532	·494	·521	−·006	92	57	50	67	−2	5·6	6·5	6·1	+0·1	...	...	Hassan.	
64·2	69·0	68·7	67·3	·574	·586	·515	·558	+·010	87	59	46	64	−1	5·7	6·1	5·9	+0·4	...	...	Mysore.	
71·0	74·5	75·2	73·5	·707	·687	·649	·681	−·009	81	54	44	60	−3	4·3	5·7	5·0	−0·7	...	...	Trichinopoly.	
?	77·1	77·6	76·4	?	·809	·830	·836	+·052	?	65	66	76	+2	5·4	5·2	5·3	+0·3	...	...	Madras.	
64·0	67·8	69·2	67·0	·507	·469	·436	·471	−·078	64	39	30	45	−9	5·5	6·8	6·2	+1·1	...	...	Bellary.	
72·6	75·6	76·1	74·8	·766	·776	·759	·767	+·014	83	65	59	69	−2	3·8	3·5	3·7	+0·2	...	...	Cocanada.	
72·7	76·2	76·7	75·2	·782	·784	·802	·789	+·040	87	62	63	71	+3	5·1	5·0	5·1	+0·9	...	...	Vizagapatam.	
39·0	51·7	53·0	47·9	·204	·270	·244	·239	−·009	64	41	34	46	−4	2·0	3·1	2·6	+0·4	...	...	Quetta . .	Hill Station, Baluchistan.
25·3	32·8	37·2	31·8	·129	·133	·139	·134	−·002	72	45	38	52	+1	5·2	5·8	5·5	+0·1	...	...	Leh. . .	Hill Stations, Punjab.
?	51·5	58·8	?	?	·401	·520	?	?	?	82	80	?	?	4·2	4·7	4·5	−0·1	...	...	Srinagar.	
42·7	50·0	51·5	48·0	·217	·286	·312	·272	−·005	56	53	56	55	−1	3·7	4·4	4·1	−0·5	...	...	Murree.	
29·1	37·3	39·3	35·2	·167	·190	·182	·179	−·001	86	59	52	65	+3	4·9	5·8	5·4	0	34·59	2·65	Kailang.	
44·0	48·5	49·7	47·4	·251	·274	·296	·271	−·015	65	55	59	59	−1	4·7	5·6	5·2	+0·1	...	...	Simla (Ridge).	
45·5	50·3	50·5	48·8	·281	·302	·301	·295	−·007	73	59	58	63	−1	4·4	5·1	4·8	+0·2	...	...	Chakrata . .	Hill Stations, N.-W.-P.
49·3	54·5	55·4	53·0	·322	·356	·364	·347	+·003	74	60	59	64	0	4·0	4·5	4·3	−0·2	...	...	Ranikhet.	
52·7	60·8	62·2	58·6	·422	·462	·458	·447	−·001	91	62	54	69	−3	4·0	4·8	4·4	−0·2	48·20	4·26	Katmandu .	Hill Station, Nipal.
46·6	52·5	53·1	50·7	?	·385	·388	?	?	?	83	82	?	?	6·3	6·5	6·4	−0·2	...	...	Darjeeling .	Hill Station, Bengal.
53·7	59·4	60·7	57·9	·342	·384	·402	·376	+·011	59	49	48	52	0	2·8	2·9	2·9	−0·7	...	...	Mount Abu .	Hill Stations, Central India.
56·8	63·8	65·8	62·1	·432	·481	·502	·472	?	76	56	53	61	?	3·8	4·5	4·2	0	...	...	Pachmari.	
57·8	61·8	63·7	61·1	·408	·418	·421	·415	−·017	64	51	45	54	−5	3·7	4·5	4·1	−0·3	58·22	10·04	Chikalda.	
51·4	59·4	60·2	57·0	·369	·425	·452	·417	+·024	87	62	68	72	0	5·8	6·8	6·3	+0·5	...	...	Wellington .	Hill Station, South India.
69·6	74·8	75·4	73·4	·622	·780	·797	·733	−·008	63	68	68	67	−3	1·1	1·9	1·1	−0·4	...	...	Muscat . .	Extra India.
71·1	75·6	74·6	73·8	·673	·778	·710	·721	−·020	70	65	57	64	−3	3·3	1·7	2·5	0	...	...	Aden.	
?	77·6	77·6	?	?	·838	·831	?	?	?	67	65	?	?	2·8	2·1	2·5	+0·4	...	...	Perim.	
73·8	75·8	75·9	75·2	·795	·831	·799	·808	+·016	85	80	69	78	0	4·3	3·5	3·9	−0·9	...	...	Zanzibar.	
73·1	76·3	76·5	75·3	·762	·833	·829	·808	+·023	81	76	74	77	−1	6·1	6·4	6·3	0	105·75	5·60	Port Victoria (Seychelles).	

EXPLANATION OF PLATES.

PLATE I.—A chart of India showing the 11 meteorological provinces and 57 districts of India.

PLATE II.—A chart of India showing the normal average rainfall and the variation of the rainfall from the normal of the months of January and February 1897. This chart and the three following charts have been prepared to illustrate the data given in Table XX. These charts are drawn up in the same manner as the rainfall chart (Plate V) in the Monthly Weather Reviews of the year 1897.

PLATE. III.—A chart of India showing the normal average rainfall and the variation of the rainfall from the normal of the months of March to May 1897.

PLATE IV.—A chart of India showing the normal average rainfall and the variation of the rainfall from the normal of the months of June to October 1897.

PLATE V.—A chart of India showing the normal average rainfall and the variation of the rainfall from the normal of the months of November and December 1897.

PLATE VI.—Chart showing the tracks of the more important cyclonic storms of 1897 in the Indian area during the south-west monsoon, a brief summary of which is given on pages 653 to 655.

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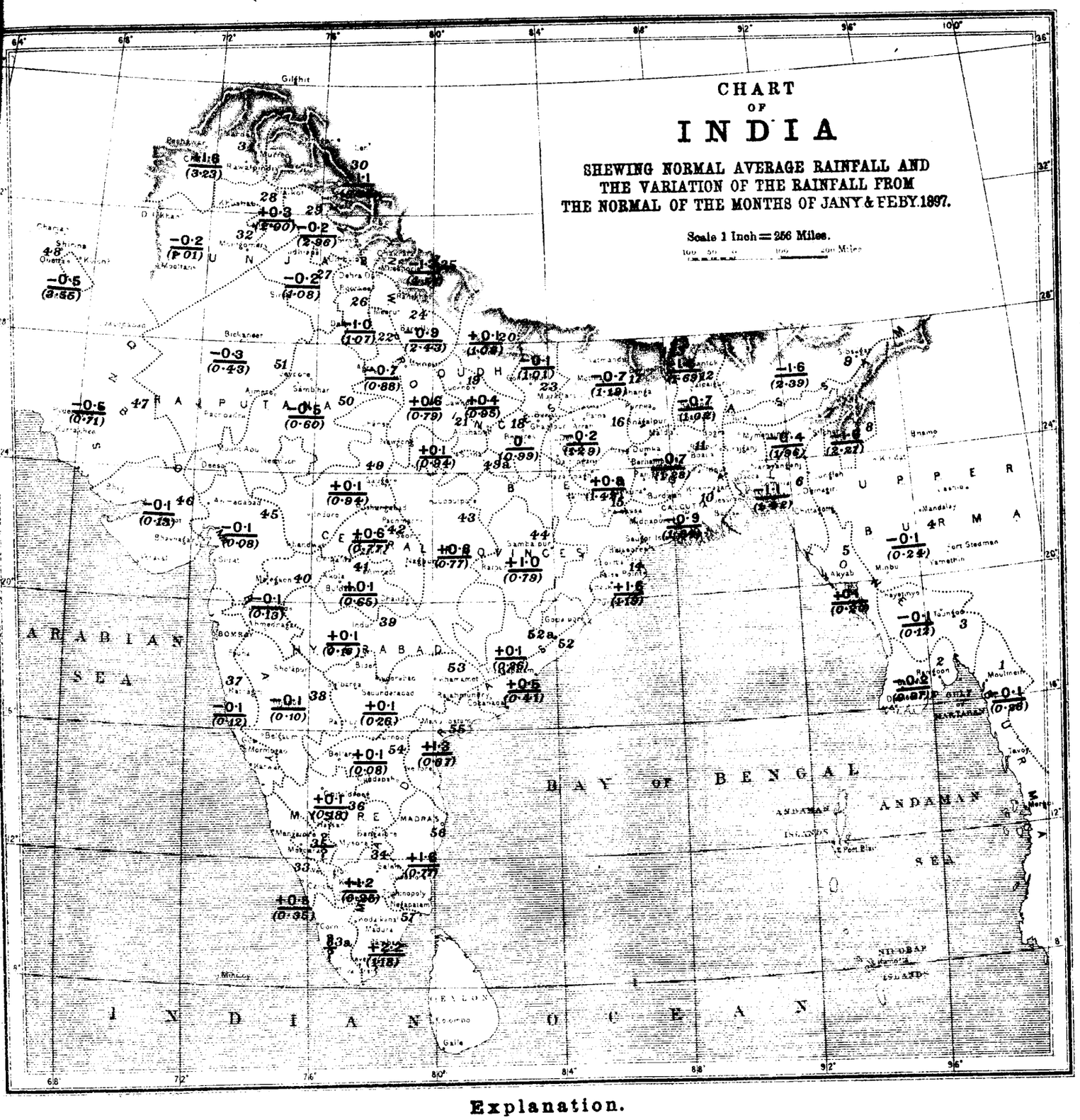
Explanation.

The name of the districts can be at once ascertained by referring in the following list to the number given near the right hand boundary of each district in small slanting red figures.

1. Tenasserim
2. Lower Burma Deltaic
3. Central do.
4. Upper do.
5. Arakan
6. East Bengal
7. Assam, Surma
8. Do., Hills
9. Do., Brahmaputra
10. Deltaic Bengal
11. Central do.
12. North do.
13. Bengal Hills
14. Orissa
15. Chota Nagpur
16. South Bihar
17. North Bihar
18. North Western Provinces, East
19. South Oudh
20. North do.
21. North Western Provinces, Central
22. Do. do., West
23. Do. do., East Submontane
24. Do. do., West do.
25. Do. do., Hills
26. South East Punjab
27. South do.
28. Central do.
29. Punjab, Submontane
30. Do., Hills
31. North Punjab
32. West do.
33. Malabar
33a Travancore
34. Madras, South Central
35. Coorg
36. Mysore
37. Konkan
38. Bombay Deccan
39. Hyderabad, North
40. Khandesh
41. Berar
42. Central Provinces, West
43. Do., Central
44. Do., East
45. Gujarat
46. Kathiawar
47. Sind
48. Baluchistan Hills
49. Central India, East
49a Do. do.
50. Rajputana East, Central India West
51. West Rajputana
52. Madras, East Coast, North
52(a). Do. do. do. (a)
53. Hyderabad, South
54. Madras, Central
55. Madras, East Coast, Central
56. Do. East Coast, South
57. Madras, South



Explanation.

The Chart gives the variations of the rainfall of the month (to tenths of an inch) from the normal over the whole of India and Burma with the exception of Upper Burma, for which rainfall data have not been obtained for a sufficient number of years to furnish reliable and useful means. The country is divided into 57 areas, over each of which the meteorological conditions are fairly uniform, and the staple crops similar in character; and the means (both actual and normal for the month) have been calculated, and the numbers given in the centre of each division (usually with a + or − sign attached) give the difference between the actual and normal mean rainfall of the district of the month. A plus sign indicates that the rainfall was in excess, and a negative sign that it was in defect by the amounts indicated by the numbers to which the signs are attached. The normal average rainfall is also given below in smaller figures enclosed within brackets so that the percentage variation can be at once estimated. The name of the district can be at once ascertained by referring in the following list to the number given near the right hand boundary of each district in small slanting red figures.

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11. Central do.
12. North do.
13. Bengal Hills
14. Orissa
15. Chota Nagpur
16. South Bihar
17. North Bihar
18. North Western Provinces, East
19. South Oudh
20. North do.
21. North Western Provinces, Central
22. Do. do., West
23. Do. do., East Submontane
24. Do. do., West do.
25. Do. do., Hills
26. South East Punjab
27. South do.
28. Central do.
29. Punjab, Submontane
30. Do., Hills
31. North Punjab
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40. Khandesh
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43. Do., Central
44. Do., East
45. Gujarat
46. Kathiawar
47. Sind
48. Baluchistan Hills
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49a Do. do.
50. Rajputana East, Central India West
51. West Rajputana
52. East Coast, North
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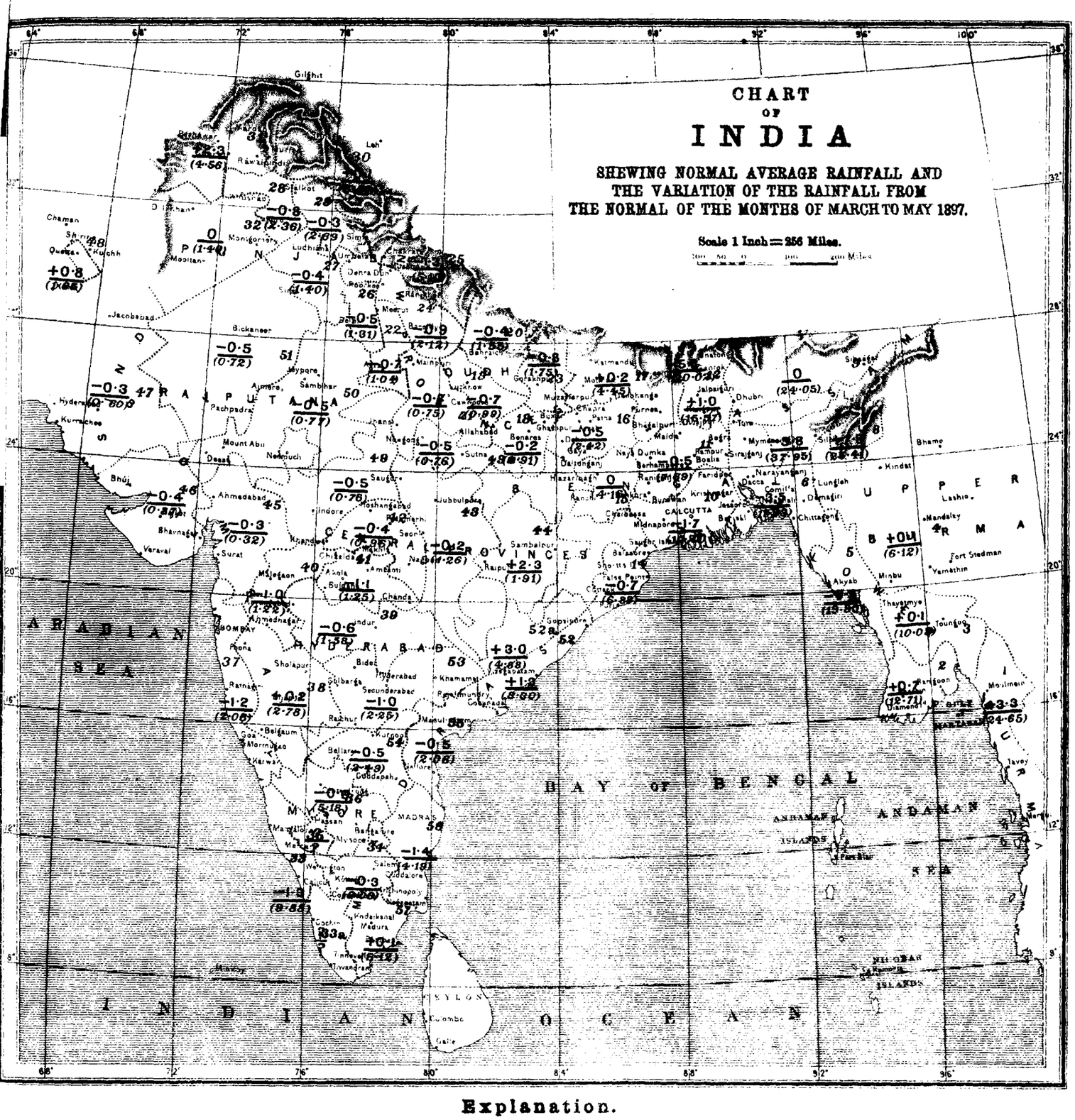
53. Hyderabad, South
54. Madras, Central
55. East Coast, Central
56. East Coast, South
57. Madras, South



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20. North do.
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22. Do. do., West
23. Do. do., East Submontane
24. Do. do., West do.
25. Do. do., Hills
26. South East Punjab
27. South do.
28. Central do.
29. Punjab, Submontane
30. Do., Hills
31. North Punjab
32. West do.
33. Malabar
33a Travancore
34. Madras, South Central
35. Coorg
36. Mysore
37. Konkan
38. Bombay Deccan
39. Hyderabad, North
40. Khandesh
41. Berar
42. Central Provinces. West
43. Do., Central
44. Do. East
45. Gujarat
46. Kathiawar
47. Sind
48. Baluchistan Hills
49. Central India, East
49a Do. do.
50. Rajputana East, Central India West
51. West Rajputana
52. East Coast, North
52(a). Do. do. (a)
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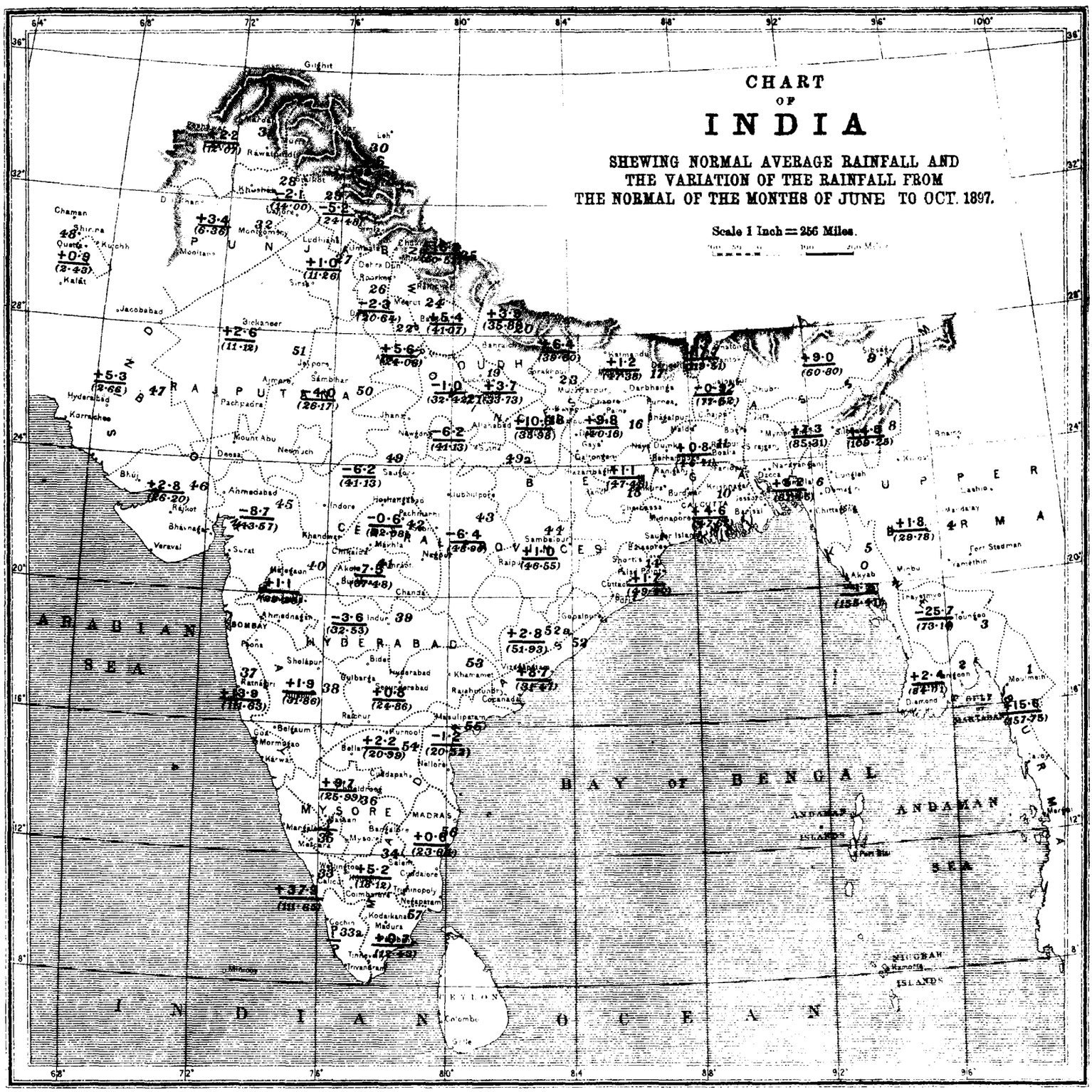
55. East Coast, Central
56. East Coast, South
57. Madras, South



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40. Khandesh
41. Berar
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44. Do., East
45. Gujarat
46. Kathiawar
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49a Do. do.
50. Rajputana East, Central India West
51 West Rajputana
52. East Coast, North
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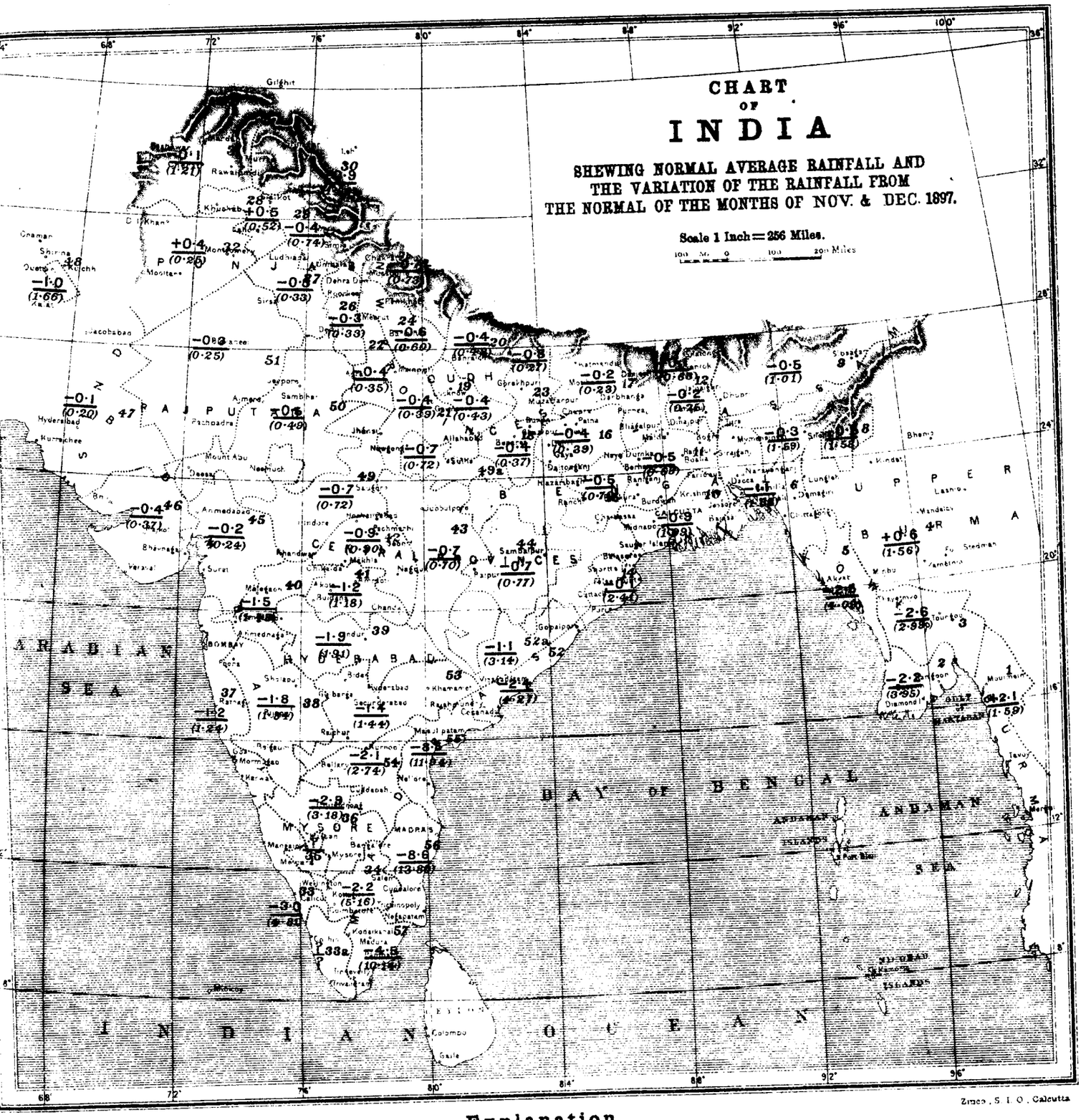
53. Hyderabad, South
54. Madras, Central
55. East Coast, Central
56. East Coast, South
57. Madras, South



Reg. No 149 Wr., L.—Aug. 98.—900.

Explanation.

The Chart gives the variations of the rainfall of the month (to tenths of an inch) from the normal over the whole of India and Burma with the exception of Upper Burma, for which rainfall data have not been obtained for a sufficient number of years to furnish reliable and useful means. The country is divided into 57 areas, over each of which the meteorological conditions are fairly uniform, and the staple crops similar in character; and the means (both actual and normal for the month) have been calculated, and the numbers given in the centre of each division (usually with a + or − sign attached) give the difference between the actual and normal mean rainfall of the district of the month. A plus sign indicates that the rainfall was in excess, and a negative sign that it was in defect by the amounts indicated by the numbers to which the signs are attached. The normal average rainfall is also given below in smaller figures enclosed within brackets so that the percentage variation can be at once estimated. The name of the district can be at once ascertained by referring in the following list to the number given near the right hand boundary of each district in small slanting red figures.

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12. North do.
13. Bengal Hills
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15. Chota Nagpur
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19. South Oudh
20. North do.
21. North Western Provinces, Central
22. Do. do., West
23. Do. do., East Submontane
24. Do. do. West do.
25. Do. do., Hills
26. South East Punjab
27. South do.
28. Central do.
29. Punjab, Submontane
30. Do., Hills
31. North Punjab
32. West do.
33. Malabar
33a. Travancore
34. Madras, South Central
35. Coorg
36. Mysore
37. Konkan
38. Bombay Deccan
39. Hyderabad, North
40. Khandesh
41. Berar
42. Central Provinces, West
43. Do., Central
44. Do., East
45. Gujarat
46. Kathiawar
47. Sind
48. Baluchistan Hills
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49a. Do. do.
50. Rajputana East, Central India West
51. West Rajputana
52. East Coast, North
52(a). Do. do. (a)
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54. Madras, Central
55. East Coast, Central
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57. Madras, South

Ref. No. 902, Weather—Dec. 05—305.

Zinco S. & C. Calcutta