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NOTE

The statistical information in this volume is intended to present in generalized form a representation of the average atmospheric conditions in the region of the Mediterranean east of Malta and thence to the Persian Gulf, and the areas to north and south of this axial line. The mean and extreme departures of some of the climatic elements from the normal values are also given. Direct observations of upper air currents are wanting for the greater part of the area dealt with, and the relation of these currents can for the most part only be inferred by the application of general theory to the interpretation of surface conditions. It is intended that this book should be used, in this connexion, in conjunction with a volume on general meteorology now being prepared for the use of the Air Services by the Meteorological Office.

Notes explanatory of the tables have been added for each of the main divisions of the region, and attention is drawn to any special points affecting aviation.

CONTENTS

SECTION I

CHAP.		PAGE
I.	Climate of the Balkan Peninsula and the Aegean Sea	9
	Tables	35
II.	Climate of Asia Minor	136
	Tables	143
III.	Climate of Cyprus, Syria, and Palestine	162
	Tables	169
IV.	Climate of Mesopotamia and the Persian Gulf	202
	Tables	219
V.	Climate of Lower Egypt, including Sinai Peninsula	232
	Tables	243
VI.	Climate of Cyrenaica, Tripoli, and Malta	257
	Tables	261
VII.	Avoidance of Ill Effects of Aviation	272
VIII.	Note on Magnetic Variation	274
IX.	Tables of Mean Pressures and Temperatures Computed for Different Altitudes above the Ground	275
X.	Formulae and Conversion Tables	284

LIST OF MAPS

(in pocket at end of volume)

PLATE I. MEAN ISOBARS, JANUARY.
PLATE II. MEAN ISOBARS, APRIL.
PLATE III. MEAN ISOBARS, JULY.
PLATE IV. MEAN ISOBARS, OCTOBER.
PLATE V. LINES OF EQUAL MAGNETIC VARIATION, 1917.

CHAPTER I

CLIMATE OF THE BALKAN PENINSULA AND THE AEGEAN SEA

Physical Features

The southern portion of the Balkan Peninsula consists of a mountainous region lying between the Adriatic Sea on the west and the Aegean and Black Seas on the east. As one of the great land-masses which project into the Mediterranean, it has the general climatic character of the larger of these, such as the Iberian Peninsula and Asia Minor, in that its coastal belt enjoys a temperate climate, while the inland parts, which are at a distance from the sea and are often at a considerable altitude, experience a continental type of climate with a wide range of temperature and a less abundant rainfall in the winter months.

Although the Balkan Peninsula from 43° N. lat. to the south of Greece is geographically in a similar situation to Southern Italy, its climatic conditions differ widely from those which are generally associated with the Mediterranean.

Eastern Europe and Western Asia lie to the northward, where a severe winter climate is experienced, while on the south the warm waters of the Mediterranean separate the peninsula from the sub-tropical region of North Africa. Thus its geographical position on the border-line between the strongly marked inland or 'continental' climate of Eastern Europe and the warmer and more equable one of the Mediterranean region gives rise to wide differences in the climate of places which are not very far distant from one another. Besides the position, which brings the inland portions within range of a continental climate while the eastern and western shores and Southern Greece enjoy milder conditions, the general

air-circulation over the Eastern Mediterranean exercises a powerful influence upon the climatic conditions, bringing cold northerly gales to the south of the Aegean Sea in winter, while the northerly, 'Etesian', winds of summer temper the heat of that season.

The complex of mountain ranges which extends along the eastern shore of the Adriatic is known as the Illyrian Alps, and these join in Northern Serbia with the Transylvanian Alps where the Danube passes from the Hungarian plain into that of Roumania. From this point the Balkan Mountains continue to the Black Sea as a wall which divides the valley of the Danube from the lands to the southward. On the south side of the Balkan Mountains lies the Roumelian plain, which extends from near Sofia on the west to the Black Sea and Constantinople on the east, and is bounded on its southern side by the Rhodope Mountains of Roumelia.

With the exception, therefore, of this eastern plain, the Balkan area is a region of mountains and valleys, an elevated mass of country deeply carved out into mountain ridges and narrow valleys in which the rivers of the country flow. Here and there the wider portions of the valleys, or the junction of two or more main valleys, furnish small tracts of level ground, but for the most part it is a mountainous country.

The Balkan range of mountains is an important feature in the climate of Bulgaria, since it stands as a barrier between the northerly winds of Roumania and the fertile Roumelian plain to the south. Here in this plain, except in the spring months, an area is found which enjoys an abnormally warm climate under the shadow of the mountains, from which warm and dry air-currents descend after depositing a large proportion of their moisture on the northern slopes of the range. The western end of the plain is shut in by the mountainous country of Western Bulgaria and Serbia, which forms a much eroded plateau in which the winter conditions are severe.

The mountain system, which includes practically the whole of Serbian and Bulgarian territory, extends to Albania and Greece, while the numerous islands of the Greek coasts are

the witnesses of a former wider extension of these same hill ranges. In Greece the deeply indented coast-line admits the waters of the Aegean and the Adriatic to a large coastal area, and, consequently, introduces the mild and temperate conditions of the Mediterranean climate, while the continental conditions of the Balkans extend in a modified form to the plateaux and hills of Northern Greece.

Meteorological Stations

Under such conditions as have been described above it is difficult to obtain satisfactory sites for meteorological stations, which have usually to be established in places which are convenient of access rather than especially suited for observing. The direction of the valley in which the station lies and of the neighbouring mountain ranges usually affect the circulation of air at the station and may cause it to differ considerably from the general movement of air over the region. These meteorological stations, too, are usually few in number, so that only a very generalized idea of the climate can be obtained from the data which they furnish, while the peculiarities of any particular station may be given a greater significance than they really possess.

In order to investigate the climatic conditions of the Balkan Peninsula we require stations representing those which prevail in these various regions—the hill-country of the Balkans, the Roumelian plain, with its milder conditions; those of the Adriatic coast of Albania and of the northern coast of the Aegean will represent a transition zone between the continental climate of the Balkans and the Mediterranean climate of the more southern regions. The modified continental conditions of Northern Greece will be shown by the towns of Thessaly and Epirus, while the coastal and southern towns enjoy a true Mediterranean climate. Observations which have been made at the following stations furnish a satisfactory collection of material from which the climate of the country may be deduced.

List of Stations

Place.	Altitude.	Lat. N.		Long. E.		Remarks.
	Feet.	°	′	°	′	
Group I :						
Chepelare	3,625	41	44	24	42	High-level stations.
Samokov	3,117	42	20	23	34	
Rilski Monastir	3,855	42	8	23	21	
Kustendil	1,722	42	17	22	41	
Sofia	1,804	42	42	23	20	
Group II :						
Burgas	49	42	29	27	29	Roumelian Plain.
Stara Zagora	768	42	25	25	28	
Kazanlyk	1,220	42	37	25	24	
Haskovo	640	41	56	25	25	
Philippopolis	525	42	9	24	45	
Group III :						
Monastir	2,034	41	1	21	23	Western Macedonia.
Üsküb	804	42	0	21	26	
Group IV :						
Ragusa	49	42	38	18	7	Adriatic Coast.
Scutari	33	42	3	19	30	
Durazzo	22	41	19	19	28	
Valona	33	40	29	19	30	
Group V :						
Constantinople	246	41	2	28	28	North Coast of Aegean Sea.
Kavalla	39	40	55	24	22	
Salonica	7	40	39	22	57	
Group VI :						
Yanina	1,590	39	47	20	55	Inland stations of Northern Greece.
Trikkala	367	39	35	21	45	
Larissa	246	39	36	22	24	
Lamia	230	38	54	22	15	
Group VII :						
Volo	26	39	24	22	58	Stations on the Eastern Coast of Greece.
Chalchis	36	38	27	23	30	
Athens	351	37	58	23	44	
Nauplia	20	37	33	22	48	
Group VIII :						
Andros	154	37	47	24	45	Islands in the South Aegean Sea.
Syra	1,073	37	29	24	56	
Naxos	16	37	6	25	23	
Santorin	745	36	25	25	30	

Place.	*Altitude.*	*Lat. N.*		*Long. E.*		*Remarks.*
	Feet.	°	′	°	′	
Group IX :						
Cythera . .	574	36	9	23	0	Sea south of Greece.
Canea . . .	131	35	30	24	31	
Candia . .	111	35	21	25	30	
Group X :						
Corfu . . .	98	39	38	19	33	Ionian Islands and West Coast of Greece.
Arta . . .	177	39	10	20	45	
Kephalonia . .	26	38	11	20	15	
Patras . .	16	38	14	21	44	
Zante . . .	10	37	33	22	48	

Of the meteorological stations in Bulgaria, five have been selected from those which are situated in the western mountain region and in the Rhodope range to represent the high-level conditions, and the first group includes the stations in this mountainous part of the country. Chepelare is in the Rhodope range, almost due N. of Kavalla and about 55 miles distant. Samokov is SE., and Rilski Monastir nearly due S. of Sofia, and about 30 and 40 miles distant from it respectively ; Kustendil is about 30 miles SW. of Sofia.

At Sofia in the west (1,804 ft.) the level country is of small extent, since to the north-west and south the mountainous country of Western Bulgaria hems it in, and climatically it is more conveniently grouped with other hill stations than with the places in the Roumelian plain.

In the second group, which contains stations representing the more favourable climate of the Roumelian plain, Philippopolis and Haskovo are on the south side of the plain, while Kazanlyk is at the foot of the Balkan range ; Stara-Zagora is some 20 miles away to the south-east at the foot of a small group of hills lying in front of the Balkans ; and Burgas is a port on the Black Sea. On the south side of this plain the Rhodope mountains extend in a south-easterly direction from Serbia and Western Bulgaria to Adrianople, while their southern spurs reach the northern coast of the Aegean Sea.

The climate of Western Macedonia is represented by Üsküb and Monastir (Group III), which are the only stations furnish-

ing observations extending over an adequate period. The conditions which they represent may be taken as continuing westward until the influence of the Adriatic gives rise to a milder and less rigorous climate; and the four stations of Ragusa, Scutari, Durazzo, and Valona, which represent this coastal climate, are included in Group IV, so far as data from them are available.

The other coast-line of Macedonia—that of the Aegean Sea—is represented by Salonica and Kavalla (Group V), to which is added Constantinople, where the climatic conditions are very similar to those of the other two places in this group. These three stations represent a climatic transition between the Mediterranean climate and that of the Balkans. Here snow falls every winter, and rather low temperatures are not uncommon, but the rainy season is in the winter, and a comparatively small amount of rain falls in the hot summer months. The sixth group is of much the same character, since the stations represent the inland regions of Northern Greece and are situated at a moderate altitude. The winter is cold, and the summer months are hot and dry. The seventh group represents the milder climate of the east coast of Greece, where low temperatures are exceptional and the rainfall is moderate in quantity. The eighth group includes the islands of the South Aegean, where the climate is mild in winter and the rainfall is somewhat heavy. Crete and the sea to the south of Greece (Group IX) are very similar in their climatic conditions to the islands of the South Aegean. The tenth group, the Ionian Islands and the west coast of Greece, has a mild winter climate with only occasional frost and a considerable winter rainfall.

Seasons.

In Bulgaria and Serbia the four seasons of spring, summer, autumn, and winter are convenient climatic divisions of the year, as is generally the case in the north temperate zone, but in the more southern regions of Greece, Cyprus, Asia, Syria, and still more markedly in Egypt, the spring and autumn

seasons become less definitely marked, and pass into short transitional periods between the winter and summer conditions. In Greece and the Aegean Sea April and May form such a transition period between the winter and summer, while at the end of the summer October is a shorter period during which winter conditions replace rather quickly those of the summer.

General Conditions.

The distribution of atmospheric pressure which determines the air-circulation over the Balkan region during winter and the Eastern Mediterranean differs essentially from that which prevails in the summer months. In January the vast high-pressure system which occupies the greater part of Central Asia extends also into Southern Russia and the Balkan Peninsula, while a less strongly marked ridge of high pressure lies over North Africa. The Mediterranean itself is an area of low pressure, along which numerous cyclonic depressions pass throughout the winter months; another low-pressure area exists in the Northern Sudan, towards which the air currents in Egypt flow. As the result of this distribution, northerly winds predominate, but the frequent passage of depressions along the Mediterranean and across the Balkan Peninsula gives rise to a large proportion of southerly winds at all stations. The pressure over the Balkans and Southern Russia falls gradually during the early part of the year, and by June the Persian Gulf and North-western India constitute a strongly marked low-pressure area which is related to the monsoon of the Indian Ocean. Throughout the summer this feature of the distribution of pressure, which reaches its greatest development in July and August, determines a general flow of air from the north-west over the Eastern Mediterranean, and only in October, when the low pressure in the Persian Gulf has passed away, does the change from summer to winter conditions take place.

The Balkan Peninsula

While the climate of Greece and the Aegean Sea is of the Mediterranean type, which is characterized by a hot summer, a mild winter, and a maximum rainfall in the winter months, that of the Balkan Peninsula is of the continental type with a cold winter, a warm summer, and a rainfall which is distributed throughout the year. On the north there is little to shield it from the cold northerly and north-easterly winds which blow from Russia; the warm waters of the Adriatic are separated from it by the coastal ranges of Albania and Bosnia; the Black Sea is too much affected by the climate of the Russian Steppes to have the moderating influence on the Balkan climate that the Adriatic and the Mediterranean exercise on their shores. Moreover, the Black Sea is normally an area of low pressure during the winter, so that northerly winds are prevalent on its western shores.

The summer temperature is moderately high, reaching 95° F. and even 100° F. as a maximum in most years at many stations in summer, but in winter the low temperatures recorded at all stations are much below those of other countries of the northern coasts of the Mediterranean. At Sofia −24° F. has been recorded in January, and temperatures nearly as low have occurred at other stations during a period of ten years. During the summer months periods of dry, hot weather alternate with thunderstorms and heavy rainfall, after which cooler and fine weather sets in for a time.

The cold dry conditions which prevail on the steppes of Southern Russia during the winter months whenever the pressure is high frequently extend to the Balkan Peninsula and account for the moderate rainfall and the low temperatures which are then experienced. Such cold periods are characterized by calms or light winds, clear skies, and very low night temperatures.

The rainfall is distributed fairly equally throughout the year and in no month is the average amount very large,

3 to 4 inches being as a rule the average rainfall of the wettest month; a minimum of rainfall occurs in winter, December or January having usually the smallest amount. The rainfall then increases until the early summer, the maximum occurring usually in June, a month in which thunderstorms are especially common, and after this the amount decreases until August or September when a second minimum occurs, which is followed in November by another maximum.

The passage of depressions over or near the Balkans from west to east is of frequent occurrence, especially during the winter months, and these cyclonic systems exert an important influence on the climate. On the approach of such a depression from the westward the temperature begins to rise and the sky becomes clouded; the winds become northerly or southerly according as the centre of the depression passes to the southward or northward of the Balkans; the weather is showery, with snowfall at some stations if the winds are northerly. As the centre of the depression approaches, the temperature rises, the weather becomes mild or even warm for the time of year, with rainfall generally and increasing wind. As the depression moves away to the eastward, north-westerly winds set in with colder weather and often considerable falls of snow. Similar changes accompany the passage of each depression which is of any intensity, and if these follow one another at short intervals, showery, unsettled, and cloudy weather with a comparatively mild temperature may continue for several days or even two or three weeks. More commonly, however, high-pressure conditions assert themselves once or twice in each month over Hungary, the Carpathians, Roumania, or Southern Russia, and as these spread to the Balkan Peninsula the weather becomes colder; it is at first cloudy with local rain or snow showers with moderate or fresh northerly winds. As the pressure rises, the temperature falls, winds become light and northerly, with calms at many stations, and the sky is usually clear, though at times there is a considerable amount of cloud during such a period of anticyclonic conditions. These periods of clear, calm, and

cold weather coincide frequently with the northerly and north-easterly gales with low temperatures which occur in the Aegean Sea under these conditions of pressure distribution. The most favourable winter weather occurs when a broad belt of equal and moderately high pressure extends from South Russia over the Balkan Peninsula to the north coast of Africa (Cyrenaica), while a shallow low-pressure area lies over central Europe, or over the Levant and Syria. In the former case mild, clear weather prevails, with light southerly winds; in the latter, the temperature is about the mean value for the month, the sky is clear, and light northerly and north-westerly winds prevail.

In the summer months depressions arriving from the Mediterranean are few, but irregularities in the distribution of pressure occur not infrequently and favour the development of local thunderstorms with heavy rainfall, which are a marked feature of this season in the Balkans. The weather before such a storm is hot and dry, very low values of relative humidity being often recorded. After the thunderstorm has passed away cooler weather prevails for a while.

Greece and the Aegean Sea

The climate of Greece and the Aegean Sea is typically Mediterranean, being characterized by a hot dry summer and a mild winter with considerable rainfall, but on the northern shore and the high ground of Thessaly the commencement of a transition to the continental conditions of the Balkans is apparent.

In summer the temperature is generally high, and little if any rain falls, so that the whole country becomes sunburnt and dried up; in the rocky valleys, where the northerly winds are not felt, the temperature may be considerably above that recorded at more open and exposed stations. Northerly winds predominate and blow with great steadiness at this season. Haze is frequent and visibility is usually much below that of the cooler months. As almost every-

where on the coasts of the Mediterranean, daily alternation of the land and sea breezes is well developed on the shores of the Aegean.

In winter the temperature is never very low, except at some of the inland stations, which are situated at a considerable altitude, but slight frosts occur occasionally even as far south as Athens. The days are pleasantly warm except during the continuance of the northerly winds.

The winter coincides with the rainy season of the Mediterranean, and from November to February rain falls frequently, especially on the western coast of Greece and of Asia Minor, but the rainfall of the eastern coast of Greece is markedly less. The rain falls during the passage of cyclonic systems which pass frequently in the winter months from west to east over or near to Greece, and over the Aegean Sea. As the spring approaches such depressions tend to follow more northerly tracks, and the rainfall throughout Greece diminishes towards the summer minimum.

Snow also is recorded once or twice in most years at several of the Greek stations.

As summer conditions give place to those of the winter, cyclonic depressions, which rarely pass over the Eastern Mediterranean in the summer, begin to invade it, and throughout the winter they occur frequently, giving rise to gales, heavy rain and generally unsettled weather. Their general direction of movement is from west to east, but their paths are usually curved and often very irregular. Those that affect Greece and the Aegean Sea may pass over them, or to the southward, or over the Balkan region to the north. In the first case strong southerly winds may prevail in the Aegean Sea as the depression approaches, veering to the north-west as the depression passes away to the eastward. The more persistent southerly gales occur when a depression or a series of depressions passes to the north of the Aegean Sea and causes strong southerly winds to continue for three or even four days. The depressions which pass to the south of Greece give rise to northerly and north-easterly winds of

some strength which are often full gales if the atmospheric pressure over the Balkan region is high at the same time.

Notes on the Tables

The climatological data which are given in this section will probably be consulted usually in order to ascertain the extreme conditions which may be anticipated in any month, or to see what phenomena are restricted to certain seasons.

The monthly extremes of temperature (Mean Monthly Maximum and Mean Monthly Minimum, Tables III and VI, pp. 44, 56) show the highest and lowest temperatures which are to be expected in any month. Occasionally these limits may be passed, and the Tables IV and VII (the Absolute Maximum and Absolute Minimum Temperatures pp. 50, 60) show the highest and lowest temperatures which have hitherto been recorded.

While the humidity of the air may be considerable when the mean of the day is taken as in Table XI, p. 70, nevertheless at some stations and under favourable meteorological conditions the air may be extremely dry, and the extent to which this is the case is shown in Table XII, p. 74.

The rainfall in any month may frequently exceed the Mean Rainfall, Table XIII, p. 76, but it is unlikely to reach the amount of the Highest Rainfall, Table XIV, p. 80.

The northerly gales of winter which sweep down on the Aegean from the Baltic highlands, Table XX, p. 118, the thunderstorms of summer, and the rainfall of southern Greece, are examples of phenomena having a special relation to certain seasons.

Temperature

In summer high temperatures occur especially at places in the Roumelian Plain and at Salonica, since this town lies under the lee of the hills which keep off the northerly breezes. June, July, and August are the hottest months, a sensible reduction

of temperature occurring in September. In the Roumelian Plain Stara Zagora is especially to be mentioned as having a very warm summer climate, in which the fig and the sugar cane ripen in gardens where irrigation is practicable.

In winter very low temperatures occur over all Bulgaria and Macedonia, especially in the hill districts. The temperature of 0° Fahrenheit is not infrequently recorded, especially in the mountains, and it is only on the shores of the Aegean Sea and the Adriatic that milder conditions occur. Snow falls frequently in December, January, and February, and occasionally in November and March. The temperature begins to rise appreciably in March, and in April the climate is generally mild.

The mean temperature of the various stations and the mean values for each district are given in Table I, p. 36. July and August are the hottest months, there being everywhere but little difference between them. The lowest mean temperature occurs everywhere in January. At the hill stations of Bulgaria the lowest mean temperatures are recorded, 25°–27° F., as compared with 41° F. on the Aegean coast. February is from 2° F. to 4° F. warmer, but the most rapid increases take place between March and April, and April and May. In the summer the difference in the mean temperature of different districts, which is so noticeable in winter, practically disappears, for while the Bulgarian hill stations have a mean temperature in July of 65° F., that of all the other districts lies between 73° F. and 77° F.

A well-marked decrease of temperature occurs everywhere in September and October, amounting to about 6° to 8° F. in each month, while in November with the commencement of winter conditions a more rapid decrease takes place.

At the Greek stations also January is the coldest month, but at none of them is the mean temperature so low as 32° F.; at Larissa, where the lowest mean temperature is recorded, it is 39° F. The temperature rises slowly in February and March, and then more rapidly in April and May, reaching its highest value, about 80° to 83° F., in July or August.

The mean daily maximum temperature recorded at the

various stations is given in Table II, p. 40, where it will be seen that July and August have the highest values. The range of the daily maximum temperature in different districts is from about 80° F. in the hill stations to about 90° F. on the shores of the Adriatic.

A better measure of the maximum temperatures which are likely to occur is given by the mean monthly maximum or the mean of the highest temperatures recorded in each month (Table III, p. 44). These range from 87° F. to 95° F. at the hill stations to 95° F. to 101° F. in the Roumelian Plain, where the highest temperatures occur, Salonica 99·1° being the only other place at which the maximum temperature in August will probably reach 100° F.

In Table IV, p. 48, the highest temperatures recorded are given so far as they are available, and the highest value 106·5° F. is recorded at Haskovo in the southern part of the Roumelian Plain; but Kustendil, Burgas, Stara Zagora, and Salonica have all recorded temperatures over 100° F. during the past 12 or 15 years.

In Greece the mean daily maximum temperature (Table II, p. 42) is especially marked at the inland stations where higher temperatures occur than at those on the coast; at Trikkala in northern Greece (Group VI) the mean daily maximum is 95° F. in July and August as compared with 84° F. in the islands of the southern Aegean Sea (Group VIII). The highest temperatures which may be anticipated in any month (Table III, p. 46) vary from 105° F. at Trikkala and 102° F. at Larissa to 92°–94° F. in the Greek Islands.

The highest temperatures which have been recorded (Absolute Maximum, Table IV, p. 50) reach 110° F. and 111° F. at many stations not only at the inland stations but also at some coast stations such as Chalchis and Arta, and on islands as Kephalonia.

Tables V, VI, and VII (pp. 52, 56, 60) set forth the information relating to the lowest temperatures which have been recorded, and this is complete for the Bulgarian stations, but less so for the other places for which the summarized results only are avail-

able at present. The lowest temperatures occur everywhere in January. December and February are but little warmer at most stations. In winter the lowest temperature in January is about 0° F. at all the hill stations, and about 10° F. at those in the Roumelian Plain, while at the coast stations it is 5° or 6° F. below freezing point. The Bulgarian stations experience very low temperatures in February also, the lowest which are to be anticipated being about 8° F. above those of January.

In the summer moderate temperatures occur as the minimum values at the hill stations, where in July the mean daily minimum is about 52° F., and the lowest minimum in the month about 45° F. In the Roumelian Plain the corresponding temperatures are about 7° F. higher, and on the Adriatic and Aegean coasts about 17° F. higher than those of the Bulgarian hill stations.

In Table VII, p. 60, the lowest temperatures which have been recorded at the various stations are given, and the intense cold of the winter at the Bulgarian hill stations is well shown. These periods of very low temperature coincide with the occurrence of high atmospheric pressure over the Balkans, Roumania, and southern Russia. As the barometer rises the temperature falls, especially at night ; clear skies prevail, and light winds are the rule. Day by day the air over the Balkan plateau gets colder until the advance of a depression from the western Mediterranean and the Adriatic brings a warm moist current of air leading to the formation of cloud and milder conditions. These high pressure (anticyclonic) conditions may continue for several days, and not infrequently for one or two weeks.

Under the continental conditions which prevail in the Balkans, with corresponding temperatures low in winter and high in summer, the maximum range of temperature is always considerable. The difference between the highest and lowest temperatures which are to be anticipated in each month gives the monthly range of temperature, and this is set out in Table X., p. 66.

The range of temperature is greatest at the hill stations in January when, as has been already said, extremely low

various stations is given in Table II, p. 40, where it will be seen that July and August have the highest values. The range of the daily maximum temperature in different districts is from about 80° F. in the hill stations to about 90° F. on the shores of the Adriatic.

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In Greece the mean daily maximum temperature (Table II, p. 42) is especially marked at the inland stations where higher temperatures occur than at those on the coast; at Trikkala in northern Greece (Group VI) the mean daily maximum is 95° F. in July and August as compared with 84° F. in the islands of the southern Aegean Sea (Group VIII). The highest temperatures which may be anticipated in any month (Table III, p. 46) vary from 105° F. at Trikkala and 102° F. at Larissa to 92°–94° F. in the Greek Islands.

The highest temperatures which have been recorded (Absolute Maximum, Table IV, p. 50) reach 110° F. and 111° F. at many stations not only at the inland stations but also at some coast stations such as Chalchis and Arta, and on islands as Kephalonia.

Tables V, VI, and VII (pp. 52, 56, 60) set forth the information relating to the lowest temperatures which have been recorded, and this is complete for the Bulgarian stations, but less so for the other places for which the summarized results only are avail-

able at present. The lowest temperatures occur everywhere in January. December and February are but little warmer at most stations. In winter the lowest temperature in January is about 0° F. at all the hill stations, and about 10° F. at those in the Roumelian Plain, while at the coast stations it is 5° or 6° F. below freezing point. The Bulgarian stations experience very low temperatures in February also, the lowest which are to be anticipated being about 8° F. above those of January.

In the summer moderate temperatures occur as the minimum values at the hill stations, where in July the mean daily minimum is about 52° F., and the lowest minimum in the month about 45° F. In the Roumelian Plain the corresponding temperatures are about 7° F. higher, and on the Adriatic and Aegean coasts about 17° F. higher than those of the Bulgarian hill stations.

In Table VII, p. 60, the lowest temperatures which have been recorded at the various stations are given, and the intense cold of the winter at the Bulgarian hill stations is well shown. These periods of very low temperature coincide with the occurrence of high atmospheric pressure over the Balkans, Roumania, and southern Russia. As the barometer rises the temperature falls, especially at night ; clear skies prevail, and light winds are the rule. Day by day the air over the Balkan plateau gets colder until the advance of a depression from the western Mediterranean and the Adriatic brings a warm moist current of air leading to the formation of cloud and milder conditions. These high pressure (anticyclonic) conditions may continue for several days, and not infrequently for one or two weeks.

Under the continental conditions which prevail in the Balkans, with corresponding temperatures low in winter and high in summer, the maximum range of temperature is always considerable. The difference between the highest and lowest temperatures which are to be anticipated in each month gives the monthly range of temperature, and this is set out in Table X., p. 66.

The range of temperature is greatest at the hill stations in January when, as has been already said, extremely low

night temperatures prevail. In the Roumelian Plain the maximum range falls in October, when cold nights begin to occur, while the day temperatures are still fairly high. Western Macedonia (Group III) experiences a range which is very similar to that of the Roumelian Plain.

On the coasts the range is naturally much less, on account of the moderating influence of the waters of the Mediterranean, which in winter are from 4° F. to 6° F. and even 8° F. above the temperature of the coastal towns.

In Greece much more temperate conditions prevail, and only at some of the inland stations of Northern Greece does the mean daily minimum temperature (Table V, p. 54) fall as low as 32° F. Elsewhere it varies between 40° F. and 50° F. in January and rises to about 70° F. in the summer months. The lowest temperatures to be anticipated (mean monthly minimum, Table VI, p. 58) are below freezing point in the North of Greece in December and January, especially at the inland stations, but not elsewhere. In exceptionally severe winters low temperatures are experienced in Northern Greece, and the lowest temperatures which have been recorded are given in Table VII, p. 62.

Frost

From the above it may be seen that frost may occur at the inland stations of Northern Greece from November to March, but only in January and February in the Greek islands.

Under the conditions which prevail in the Balkan region during the winter months, the prevalence and the continuance of frost is a factor of considerable importance. In Table VIII, p. 64, the average number of days is given on which the temperature fell below 32° F., and also, for certain stations, the average number of days in each month on which it did not rise above freezing point throughout the day. At the hill stations frost is of daily occurrence during December, January, and February, and in the Roumelian Plain it occurs on rather more than half the days on the average. But conditions vary considerably in different years, and in Table IX, p. 65, the maximum number

of occurrences of frost are given in the same form for these stations. Thus it may be seen that in years when meteorological conditions are favourable to the occurrence of low temperatures frost may occur daily in December, January, and February, and from ten to twenty days in each month the temperature may be below 32° F. throughout the twenty-four hours.

Humidity

The mean relative humidity for the day is given in Table XI, p. 70, from which it will be seen that December has the highest mean value. In summer there is naturally a considerable diminution, and this is especially marked in the Roumelian Plain, where the mean value for Stara Zagora in August is only 50 per cent. The hot and dry summer climate of this place has already been referred to. The prevailing dry northerly winds of the summer months are the cause of comparatively low values for the humidity at Constantinople and also at Salonica, where the maximum temperature in summer is abnormally high, as has been mentioned above.

In any month, however, great variations occur, for during the mild cloudy weather which accompanies the passage of depressions and the occurrence of rain the humidity is usually very high ; while during the prevalence of anticyclonic conditions and northerly winds the air is frequently extremely dry, the relative humidity falling occasionally to 20 per cent. and even less in the afternoon. See Table XII, p. 74.

In Greece also the humidity in summer is not high, since rain falls comparatively rarely, and the prevalent winds are from the north. The lowest values occur at the inland stations of Northern Greece, and the highest at those in the Ionian Islands.

Rainfall

The first three groups, which include stations of Bulgaria and Macedonia, show the same character of distribution of the rainfall. May or June and October or November are the

two periods of heaviest rainfall, but in no month does so little as an inch of rain fall. March and September are the driest months, especially the latter. The mean rainfall for each month is given in Table XIII, p. 76, where the even distribution of rainfall in Bulgaria throughout the year is clearly shown as compared with the well-defined winter rainy season of the Adriatic and Aegean coasts with their summer minimum rainfall of less than one inch.

The winter is the rainy season in the Mediterranean, and the mean amounts which fall in November, December, and January at any of the Greek stations do not differ greatly one from another; in February there is a slight diminution at most stations, but it is not until March that the decrease becomes definite, though even then at some stations the reduction is but feebly indicated. On the whole, January is the month of the heaviest rainfall, while November and December fall but little behind it. In April the amount of precipitation is considerably reduced, and the approach of the summer dry season is strongly marked.

In June, July, and August the rainfall everywhere except in Northern Greece is below an inch, and at some of the southern stations these months may almost be described as rainless. Occasional thunderstorms furnish such rain as does fall, and these showers, which are quite local, may sometimes be very heavy. The inland region of Northern Greece, which has a more continental type of climate, has a greater number of these thunderstorms, and a heavier summer rainfall.

The mean values given in Table XIII are based on series of observations extending over about 16–18 years at the majority of the stations, and in any year of heavy rainfall these mean values may be greatly exceeded. The maximum rainfalls recorded during this period are generally from 2 to 2½ times the mean rainfall.

Table XIV, p 80, gives the heaviest rainfall which has been recorded in each month at the various Bulgarian stations, and from it will be seen that the rainfall at any place may be double, and in the Roumelian Plain even three times the mean value

for the month. Here, too, June is the month of the heaviest rainfall, this being due to the heavy rain which accompanies the thunderstorms, which reach their maximum frequency in June (see Table XXII, p. 124).

Rain-days[1] show the same distribution as the rainfall, and in Bulgaria the highest numbers occur in May and June. In wet summers two-thirds of the days may in these months be more or less wet. In the more southern regions the Mediterranean character is more apparent, and the number of rain-days in July and August is but one-third of the number that occur in the winter months or even less (Table XV, p. 82).

Snow

Snow may be expected at any time from November to April, and in December, January, and February it falls frequently. In the hill country one day in three represents the average frequency of snowfall in these three months, while in the Roumelian Plain it is about one day in six. The average number of days on which snow falls at different stations is given in Table XVI, p. 86, as well as the average number of days during which the ground is covered with snow. The maximum values for the periods for which observations are available are given in Table XVII, p. 90, and from this it will be seen that in the harder winters the ground in the hill country may be covered with snow for the whole of December, January, February, and March, and the Roumelian Plain for January and February.

Snow falls every year on two or three occasions at some of the Greek stations. While the average number of days on which snow falls in each winter month at Salonica is nearly one per month, at the various Greek stations its occurrence is rarer except at the northern and inland stations, as is shown in Table XVI, p. 88.

[1] Days on which 0·2 mm. or 0·008 in. of rain fell.

Mist and Fog

The prevalence of mist and fog is so much affected by local conditions that no general description of its distribution is possible. Table XVIII, p. 90, gives the mean number of days of mist or fog in each month for the Bulgarian stations and for Salonica. The winter months show the highest values, while the summer months are almost free from this phenomenon. Haskovo appears to be particularly liable to misty weather.

The observations do not indicate to what extent dust and heat haze affect visibility in the summer months, but it is likely that under the prevailing conditions these may at times restrict it considerably.

The distribution of fog and mist on so broken a coast line as that of Greece is difficult to represent with any accuracy, for the geographical conditions at any station largely determine the number of misty days that are recorded. The observations taken at Athens record mist on about 20 days in each of the winter months, while at many of the other stations the average is from 3 to 5. Such observations as are available have been summarized in Table XVIII.

Winds

The wind directions of Roumelia and Macedonia are given in detail in Table XIX, p. 94, but any general account of them that will give an accurate representation is difficult; probably owing to the local peculiarities of some of the stations. The great preponderance of north-westerly and south-easterly winds at Üsküb is an instance of this.

In the summer the general flow of the air currents is from a northerly or north-westerly direction, but their predominance is not strongly marked and winds are recorded with a fair frequency from all directions. At the coast of the Aegean Sea, and at Constantinople, the northerly and north-easterly winds (the 'Etesian' winds of the Greeks and the 'Meltemi' of the Turks) become more definitely the prevailing winds. At almost all stations except those on the Aegean

coast a large percentage of the observations record calms, so that light to moderate winds ordinarily prevail.

In Table XX, p. 118, the total numbers of days with winds of gale force which have been recorded in eleven years are given, and it will be seen that in the winter months these amount to more than one per month on the average only at the hill stations.

In the winter the conditions are different, for the Mediterranean is now an area of low pressure, and very high pressure frequently occurs in Southern Russia and over Roumania and the Balkan region. Under these conditions light winds, clear skies, and low night temperatures prevail over the high plateau regions, and although the winds here attain no great strength, the cold air pours down from the Balkans into the low-lying area of the Aegean Sea as a gale which often continues for three, four, and even six days.

At this season, however, northerly winds are not so predominant as during the summer months, since the frequent passage of cyclonic depressions over and to the north of Greece gives rise to southerly and south-westerly winds which may often exceed the northerly winds in frequency at this season of the year.

In summer these depressions occur more rarely, and the northerly winds blow with great steadiness until the summer conditions begin to wane.

With the passage of depressions across the Balkans in winter strong southerly and south-westerly winds occur, with mild cloudy weather and often heavy rain, but these conditions cease as the depression moves away to the eastward and cold north-westerly winds, often accompanied by snow-showers, succeed them. At this season gales are rather more frequent than in summer, but even in winter the proportion of calm days is very considerable.

The daily alternation of the wind during the summer months at coastal stations is of general occurrence. For a few hours after sunrise there is an almost complete calm, but two or three hours before noon a breeze sets in from the sea,

becoming gradually stronger until by the afternoon it is of moderate force. This sea-breeze dies down about sunset, and a little later a light breeze blows from the land toward the sea, and continues until shortly before sunrise, but never attains the force of the sea-breeze.

Gales

Those recorded at the Bulgarian stations have been referred to above, and are summarized in Table XX, p. 118.

The winds which cause a rough sea in the Aegean Sea are almost exclusively from between north-west and north-east, or from between south-east and south-west; strong easterly or westerly winds are rare. Daily observations are available from Athens for a series of years, and these give both the wind force and the state of the sea; observations at Smyrna also are available for eight years, and these two series may fairly be utilized to furnish data concerning the gales which occur in the Aegean Sea during the winter months.

An analysis of the daily observations for the twelve years 1902–13 is given in Table XXI, p. 120, where the days on which the sea was reported as rough, very rough, or high are classified according as the wind was from a northerly or a southerly quarter. As some of these winds were only 'moderate' or 'fresh', the number of days on which the northerly and the southerly winds were of gale force are given in additional columns. For the most part such strong winds and rough sea lasted only for one or two days, and in the fifth column the gales which lasted for more than two days are noted.

From this table it will be seen that the days of northerly winds are more numerous on the whole than those on which a rough sea was caused by southerly winds; that the maximum number of days on which the sea was reported as rough varied from 12 to 15 in different months, and that the average was from 5·5 to 0·8.

Some gales lasted for six and even seven days, but three and four were more usual periods. The northerly gales, which include almost all those of over two days' duration, occurred

when the atmospheric pressure was very high over the Balkans or Southern Russia. Under these conditions during the winter months the temperature on the Balkan highlands is low, and frequently very low (see Tables VI and VII, pp. 56, 60). The air over this region becomes very cold, and under suitable conditions pours off the high lands into the low-lying Aegean Sea as a strong wind which rises occasionally to full gale force. Recent observations show that this stream of cold air is of no great thickness—about 5,000 feet perhaps—but it may attain a very considerable velocity and is of a strongly gusty character. At the same time that such a northerly gale is blowing in the Aegean, the highlands of Bulgaria and Serbia enjoy typical anticyclonic conditions, viz. clear skies, and light breezes with very low night temperatures; so long as these conditions prevail the gale in the Aegean Sea may last, but occasionally the wind drops for a while and then recommences, as the controlling conditions vary.

On the approach of a depression from the westward, the weather in the Balkans becomes cloudy and milder, thus putting an end to the conditions which gave rise to the gale in the Aegean Sea, and the wind then rapidly moderates. The southerly gales occur when a depression is approaching the Grecian coast from the west, or when a depression passes over the Balkan region to the north of the Aegean Sea. They usually take from one to two days in passing, though occasionally one of exceptional size, or two following in quick succession, may protract a southerly gale to three or four days.

Thunderstorms

As is the case generally in Central Europe, the greatest number of thunderstorms occur in the summer months. In Tables XXII and XXIII, pp. 124, 128, the average numbers in each month during a period of 10 years, 1901–10, are given, and the maximum in June is very clearly marked. This prevalence of thunderstorms during the summer months explains the well-maintained rainfall at that season with a

maximum in June, since heavy falls of rain occur in connexion with the thunderstorms though the rain may be falling for only a few hours.

The high temperature, light winds, and the rapid condensation which occurs in mountain regions are all favourable to the development of thunderstorms, and it is noticeable that the number recorded in the Roumelian Plain is about half as many again as in the mountains. Short periods of high temperature and low humidity with calms or light breezes are terminated by a more or less violent thunderstorm which is succeeded by cooler, moister, and more pleasant weather for a while.

In Greece they are much fewer in number, about two being the average per month. The summer is not always the period of the maximum number of thunderstorms, for in the Ionian Islands at least the highest monthly averages fall in the spring and autumn.

Cloud

In the Balkan region the amount of cloud is greatest in the winter months, but the diminution in the summer is not great. The mean values for each month are given in Table XXIV, p. 132, in the scale of 0–10, where 0 represents a cloudless sky, and 10 one which is completely overcast. In winter there is no well-marked variation of cloudiness during the day, but in the summer the tendency is for the mornings and evenings to be clear, and for the clouds to increase appreciably in the early afternoon. At the more southern stations in Greece, where drier conditions prevail in the summer months, there is a maximum amount of cloud in winter, and a strongly marked minimum in the summer months, when for days the sky may be almost cloudless.

Conditions Affecting Aviation

Among the meteorological conditions which have an intimate relation to the requirements of aviators is the clearness of the atmosphere. Mist and fogs are most frequent

during the winter months as is shown in Table XVIII, but local conditions have great influence and no general guide to the prevalence of fog can be given. While Athens records a large number of misty mornings, other stations in the Aegean Sea show few.

On account of the high temperature in summer in the Roumelian Plain and the light winds which prevail, dust and heat haze are probably prevalent in the dry weather, though the continuance of the rain throughout the summer and especially in June should reduce considerably the difficulties arising from this cause.

The range of temperature is considerable in all months of the year, as is shown in Table X where the extreme range of temperature which may be expected in each month is given. The daily range is of course considerably less, and may be taken as about 25° F. to 28° F. in summer and 15° F. to 20° F. in winter at the Bulgarian stations, while on the Aegean and Adriatic coasts it is considerably less (see Tables II and V).

Local air currents of considerable strength occur in the neighbourhood of the mountain ranges, but except during the passage of the depressions in winter when both southerly and north-westerly winds of gale force are not infrequent, moderate winds seem generally to prevail. The high frequency of thunderstorms in the Roumelian Plain (Table XXIII) during the summer months implies the occurrence of sudden and violent squalls of wind which accompany the development of the thunderstorms, and in June at any rate they must be looked upon as a normal feature of the weather. During the winter months the descent of cold air from the Macedonian highlands to the Aegean Sea when conditions are favourable must occasion not only high winds on the coast but violent gusts and great disturbances in the air currents as they descend to lower levels. Squalls of a similar nature occur at many parts of the Greek coast and among the Greek islands where high land descends steeply to the sea.

The velocity of the upper air currents (2,000–4,000 ft.) over

Macedonia under normal distribution of pressure reaches from 25 to 30 miles per hour in January and February, when the pressure gradient on either side of the Balkan spur of high pressure is rather steep, but has considerably lower values at other seasons. These normal conditions of the winter months, however, are frequently replaced by the much steeper gradients due to the passage of depressions, or to the occurrence of anti-cyclone conditions over the Balkans; much higher velocities will then occur.

TABLES

Summary

Table		PAGES
I.	Mean Temperature	36–9
II.	Mean Daily Maximum Temperature	40–3
III.	Mean Monthly Maximum Temperature	44–7
IV.	Absolute Maximum Temperature	48–51
V.	Mean Daily Minimum Temperature	52–5
VI.	Mean Monthly Minimum Temperature	56–9
VII.	Absolute Minimum Temperature	60–3
VIII.	Number of Days of	
	A. Frost (Minimum temperature less than 32° F.).	64
	B. Frost all day (Maximum temperature less than 32° F.)	64
IX.	Maximum Number of Days, in any year, of	
	A. Frost	65
	B. Frost all day	65
X.	Monthly Range of Temperature	66–9
XI.	Relative Humidity	70–3
XII.	Mean and Absolute Minimum Relative Humidity at 2 p.m.	74–5
XIII.	Mean Monthly Rainfall	76–9
XIV.	Maximum Rainfall	80–1
XV.	Number of Rain Days	82–5
XVI.	Average Number of Days of Snowfall	86–9
XVII.	Maximum Number of Days, in any year, of	
	A. Snowfall.	90–1
	B. Snow covering ground	90–1
XVIII.	Average Number of Days of Mist and Fog	90–3
XIX.	Wind Directions as Percentages of Total Observations	94–117
XX.	Total Number of Days with Winds of Gale Force.	118–19
XXI.	Number of Days of Winds, Force 5 to 9.	120–3
XXII.	Mean Number of Thunderstorms	124–7
XXIII.	Maximum Number of Thunderstorms	128–31
XXIV.	Mean Amount of Cloud	132–5

TABLE I

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	*25·5*	30·0	34·5	43·3	52·5	57·4
Samokov	*25·3*	28·8	34·5	43·9	54·0	59·5
Rilski Monastir	*27·3*	29·8	34·3	42·6	52·7	56·8
Kustendil	*27·7*	34·5	41·4	50·7	61·0	65·8
Sofia	*26·4*	31·1	40·1	48·7	58·8	64·9
Mean	*26·4*	30·8	36·9	45·8	55·8	60·9
Group II :						
Burgas	*33*	34	41·5	51	61	68
Stara Zagora	*33*	39	44	53	63	69
Kazanlyk	*31*	36	42	51	61	67
Haskovo	*31*	37	43	53	63	69·1
Philippopolis	*31*	34	43·5	54	63	70·0
Mean	*31·8*	36	42·8	52·4	62·2	68·6
Group III :						
Monastir	*30*	37	45·5	52	61	67
Üsküb	*29·5*	34	45·0	53	60	69
Mean	*29·8*	35·5	45·2	52·5	60·5	68·0
Group IV :						
Durazzo	*47*	48	52	58	65	72
Scutari	*39*	42	49	57	65	72
Valona	*48*	49	53	59	66	73
Mean	*44·6*	46·3	51·3	58·0	65·3	72·3
Group V :						
Constantinople	*41*	*41*	46	53	62	70
Kavalla	*42*	44	49	57	68	74·5
Salonica	*41*	45	49	58	68	76·5
Mean	*41·3*	43·3	48·0	56·0	66	73·7

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
61·0	59·9	52·5	46·6	36·9	31·8	Chepelare.
63·5	63·1	55·2	47·5	35·8	31·1	Samokov.
60·8	**60·8**	53·8	46·8	37·8	32·0	Rilski Monastir.
69·8	69·6	61·9	52·9	40·6	35·2	Kustendil.
68·0	67·6	61·9	52·7	39·9	30·7	Sofia.
64·6	64·2	57·1	49·3	38·2	32·2	*Mean.*
						Group II :
73	72	66	58	47	38	Burgas.
75	74·5	66	57·6	45	39	Stara Zagora.
71	**71**	62	53·8	42	36	Kazanlyk.
74	**74**	65	55·6	43·5	38	Haskovo.
74	72·5	65	56·1	44	35	Philippopolis.
73·4	72·8	64·8	56·2	44·3	37·2	*Mean.*
						Group III :
72	71	65	56	45	35	Monastir.
74	72	66	57	43	34	Üsküb.
73·0	71·5	65·5	56·5	44	34·5	*Mean.*
						Group IV :
77	76	70	64	55	49	Durazzo.
78	77	70	61	50	44	Scutari.
77	76	71	65	57	50	Valona.
77·3	76·3	70·3	63·3	54·0	47·7	*Mean.*
						Group V :
74	**74·5**	68	62	53	46	Constantinople
78	**79**	71	62	53	48	Kavalla.
80	79	72	63·5	52	48	Salonica.
77·3	**77·5**	70·3	62·5	52·7	47·3	*Mean.*

TABLE I (*continued*)

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Yanina	*41*	43	47	56	67	71
Trikkala	*40*	45	51	59	69	76·5
Larissa	*39*	45	50	58	68·5	77
Lamia	*44*	48	52	60	70	78
Mean	*41·0*	45·2	50·0	58·2	68·6	75·6
Group VII :						
Volo	*45*	49	53	59	66	76
Chalchis	*48*	50	53	59	68	78
Athens	*49*	50	53	59	68	76
Nauplia	*49*	51	54	60	68	76
Mean	*47·8*	50·0	53·2	59·2	67·5	76·5
Group VIII :						
Andros	*51*	53	55	60	69	76
Syra	*53*	54	56	61	70	77
Naxos	*55*	55	57	62	68	74·5
Santorin	*51*	53	55	60	65	72
Mean	*52·5*	53·8	55·8	60·8	68·0	74·9
Group IX :						
Cythera	*52*	53	54	59	68	74
Canea	*51*	51	56	60	67	74
Candia	*51*	52	55	61	68	75
Mean	*51·3*	52·0	55·0	60·0	67·7	74·3
Group X :						
Corfu	*50*	51	55	61	68	75
Arta	*47*	50	54	60	69	75
Kephalonia	*51*	53	56	61	68	74·5
Patras	*50*	52	56	62	70	76
Zante	*53*	54	56	62	68·5	75
Mean	*50·2*	52·0	55·4	61·2	68·7	75·1

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
75	**75**	69	61	49	43	Yanina.
83	82	74	64	51	46	Trikkala.
82	81·5	73	64	52	46	Larissa.
83	82	75	67	55	49	Lamia.
80·7	80·1	72·7	64·0	51·8	46·0	*Mean.*
						Group VII :
81	80	74	66	55	50	Volo.
83	82	76	68	56	50	Chalchis.
81	80	74	67	57	52	Athens.
82	81·5	76	68	59	53	Nauplia.
81·7	80·9	75·0	67·2	56·8	51·2	*Mean.*
						Group VIII :
80	79·5	77	68	59	54	Andros.
81	80·0	75	69	60	56	Syra.
77·5	**77·5**	74	69	62	57	Naxos.
76·5	**76·5**	72	67	59	54	Santorin.
78·7	78·4	74·5	68·2	60·0	55·2	*Mean.*
						Group IX :
81	**82**	78	70	60	54	Cythera.
78	77	74	68	60	54	Canea.
78	**79**	75	67	61	55	Candia.
79	**79·3**	75·7	68·3	60·3	54·3	*Mean.*
						Group X :
80	**80**	75	68	60	54	Corfu.
81	**82**	75	67	56	50	Arta.
79	**79**	76	68	60	54	Kephalonia.
82	**82**	77	68·5	60	54	Patras.
81	**81**	77	70·5	62	56	Zante.
80·6	**80·8**	76·0	68·4	59·6	53·6	*Mean.*

TABLE II

Mean Daily Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	*39*	43	48	57	67	72
Samokov	*37*	40	45·5	55	65·5	71
Rilski Monastir	*40*	43	49	57	66	72
Kustendil	*37*	44	53	63	75	80
Sofia	*35*	41	50	60	71	76
Mean	*37·6*	42·2	49·1	58·4	68·9	74·2
Group II :						
Burgas	*41*	46	50	60	69	78
Stara Zagora	*41*	46	52	64	75	80
Kazanlyk	*41*	46	53	63	74·5	80
Haskovo	*41·5*	47	55	65	77	84
Philippopolis	*38*	44	52	63	74	80
Mean	*40·5*	45·8	52·4	63	73·9	80·4
Group III :						
Monastir	*38*	46	55	62	71·6	78·8
Group IV :						
Durazzo	*58*	60	65	70	78	86
Scutari	*44*	48	55	62	72	78
Valona	*63*	63	70	76	86	90
Mean	*55*	57	63·3	69·3	78·7	84·7
Group V :						
Constantinople	46	*45*	52	60	71·2	78
Kavalla	*48*	51	55	64	75	81
Salonica	*49*	53	58	66	76·5	84
Mean	*47·7*	49·7	55	63·3	74·2	81

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
76	**76**	69	62	49	43	Chepelare.
76	**77**	69	59·5	46	41	Samokov.
77	**79**	70	60	49	42	Rilski Monastir.
85	**85**	76	65	50	44	Kustendil.
81·5	81	73	62	47	39	Sofia.
79·1	**79·6**	71·4	61·7	48·2	41·8	*Mean.*
						Group II :
83·5	**84**	76·5	67·5	54	46	Burgas.
86	**87**	78	67	52	45	Stara Zagora.
85·5	**86**	77·5	67·5	52	46	Kazanlyk.
89	**91**	80	71	52·5	47	Haskovo.
85	**85**	76	66	51	44	Philippopolis.
85·8	**86·6**	77·6	67·8	52·3	45·6	*Mean.*
						Group III :
85	84·2	77	65	53	41	Monastir.
						Group IV :
90	**91**	85	77	67	63	Durazzo.
85	84·6	77	67	56	49	Scutari.
94	**94**	88	81	73	65	Valona.
89·7	**89·9**	83·3	75	65·3	59	*Mean.*
						Group V :
82	**82**	75	68	58	51	Constantinople.
86	**86·5**	79	69	59	54	Kavalla.
90	88	81	71	58	52	Salonica.
86	85·5	78·3	69·3	58·3	52·3	*Mean.*

TABLE II (*continued*)

Mean Daily Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Yanina	*56*	61	69	80	88	92
Trikkala	*48*	53	59	69	80	88
Larissa	*50*	55	61	70	80	87
Lamia	*51*	55	59	68	78	86
Mean	*51·2*	56·0	62·0	71·8	81·5	88·2
Group VII :						
Volo	*52*	56	61	68	77	84
Chalchis	*53*	56	60	69	79	87
Athens	*53*	55	61	68	78	86
Nauplia	*57*	59	62	68	76	84
Mean	*53·7*	56·5	61·0	68·2	77·5	85·2
Group VIII :						
Andros	*51*	57	59	66	74·8	81·5
Syra	*56*	58	61	67	75·7	83·5
Naxos	*58*	59	61	63	72·5	79
Santorin	*53*	56	58	63	71·4	78
Mean	*54·5*	57·5	59·8	64·8	73·6	80·5
Group IX :						
Cythera	*55*	56	58	64	71·6	78
Canea	59	*58*	64	67	76	83
Candia	*57*	59	62	67	73	80
Mean	*57·0*	57·6	61·3	66·0	73·5	80·3
Group X :						
Corfu	*56*	57	61	67	75	82
Arta	*56*	58	63	70	79	85
Kephalonia	*57*	58	63	69	76	82
Patras	*56*	58	62	68	77	83
Zante	*57*	58	60	67	75	81
Mean	*56·4*	57·8	61·8	68·2	76·4	82·6

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
95	93	86	79	65	57	Yanina.
95	**95**	85·5	74	59	52	Trikkala.
90·5	**92**	84	73	60	54	Larissa.
92	91	84	75	62	55	Lamia.
93·1	92·7	84·9	75·2	61·5	54·5	*Mean.*
						Group VII :
89	**89**	82	75	62	57	Volo.
91	90	83·5	75	62	58	Chalchis.
91	90	83·5	74	64	56	Athens.
90	**90·5**	84	76	66	60	Nauplia.
90·2	89·9	83·2	75	63·5	57·8	*Mean.*
						Group VIII :
85	**85**	77	73	63	58	Andros.
87	**87**	81	74	65	60	Syra.
81	**83**	79	73	65	61	Naxos.
83	**83**	77·5	71	64	58	Santorin.
84	**84·5**	78·6	72·7	64·2	59·2	*Mean.*
						Group IX :
85·5	**86**	82	73	64	58	Cythera.
86	**86**	82	77	69	63	Canea.
83	**83·5**	80	72·5	68	62	Candia.
84·8	85·2	81·3	74·2	67·0	61·0	*Mean.*
						Group X :
88	**88·5**	83	75	66	59	Corfu.
91	**94**	87	77·5	65	58	Arta.
88	**88·5**	83	76·5	67	60	Kephalonia.
89	**90**	84	76	67	59	Patras.
86	**86**	81	75	66	60	Zante.
88·4	**89·4**	83·6	76·0	66·2	59·2	*Mean.*

TABLE III

Mean Monthly Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	53·8	56·5	63·1	72·7	79·9	83·8
Samokov	52·5	54·5	59·9	71·1	78·1	83·7
Rilski Monastir	53·4	54·5	60·6	70·3	79·0	82·6
Kustendil	53·4	57·6	66·4	77·2	85·3	90·0
Sofia	52·3	57·9	66·4	76·5	82·6	88·2
Mean	53·1	56·2	63·3	73·6	81·0	85·7
Group II :						
Burgas	56·7	62·1	68·2	78·1	84·4	89·8
Stara Zagora	57·7	60·4	67·8	78·6	86·4	90·9
Kazanlyk	55·4	60·4	67·8	77·4	85·5	90·5
Haskovo	58·5	61·2	69·3	79·9	88·3	94·3
Philippopolis	54·0	59·2	66·9	78·3	85·8	90·5
Mean	56·5	60·7	68·0	78·5	86·1	91·2
Group III :						
Monastir	53·2	57·9	66·9	77·2	84·6	91·2
Üsküb	48	56·8	69·4	76·3	82·2	90·3
Mean	50·6	57·3	68·1	76·7	83·4	90·7
Group IV :						
Durazzo	—	—	—	—	—	—
Valona	—	—	—	—	—	—
Mean	—	—	—	—	—	—
Group V :						
Constantinople	57·6	57·9	67·3	75·0	84·7	89·4
Kavalla	58·3	58·5	62·4	73·0	81·1	86·7
Salonica	60·1	63·3	68·3	77·5	87·1	94·1
Mean	58·7	59·9	66·0	75·2	84·3	90·1

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
88·0	87·1	81·9	76·6	64·4	57·7	Chepelare.
87·1	**88·2**	81·9	75·7	63·1	55·4	Samokov.
86·2	**87·8**	83·1	77·0	63·7	54·7	Rilski Monastir.
94·5	**95·4**	87·3	78·3	66·9	57·0	Kustendil.
91·8	**92·1**	85·1	76·8	65·5	54·0	Sofia.
89·5	**90·1**	83·9	76·9	64·7	55·8	*Mean.*
						Group II :
92·8	**94·8**	87·3	82·2	69·4	61·3	Burgas.
97·0	**98·1**	90·0	81·9	67·3	59·4	Stara Zagora.
95·2	**96·1**	89·2	83·1	68·0	59·4	Kazanlyk.
98·8	**101·1**	89·4	87·4	69·1	61·3	Haskovo.
94·6	**96·1**	87·1	80·8	66·0	56·5	Philippopolis.
95·7	**97·2**	88·6	83·1	68·0	59·6	*Mean.*
						Group III :
94·8	**95·5**	88·3	78·8	66·6	54·7	Monastir.
93·6	**95·2**	88·0	78·1	65·1	50·7	Üsküb.
94·2	**95·3**	88·2	78·4	65·8	52·7	*Mean.*
						Group IV :
—	—	—	—	—	—	Durazzo.
—	—	—	—	—	—	Valona.
—	—	—	—	—	—	*Mean.*
						Group V :
90·0	**90·1**	84·7	78·1	69·6	61·9	Constantinople.
91·9	**94·3**	86·9	76·6	68·5	61·2	Kavalla.
98·2	**99·1**	91·9	82·0	70·0	62·6	Salonica.
93·4	**94·5**	87·8	78·9	69·4	61·9	*Mean.*

TABLE III (*continued*)

Mean Monthly Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F
Group VI :						
Trikkala	61·7	65·5	72·3	82·8	91·6	98·4
Larissa	61·9	68·5	75·0	84·0	90·5	97·7
Lamia	63·9	67·6	72·9	81·5	90·5	98·1
Mean	62·5	67·2	73·4	82·8	90·9	98·1
Group VII :						
Volo	64·8	67·8	71·2	78·8	83·1	94·1
Chalchis	63·3	68·2	71·6	81·3	90·0	97·2
Athens	62·9	65·4	70·4	77·2	88·0	93·5
Nauplia	66·0	68·9	72·0	77·5	86·2	94·3
Mean	64·2	67·6	71·3	78·7	86·8	94·8
Group VIII :						
Andros	63·9	66·6	69·8	77·2	86·9	91·8
Syra	63·5	66·7	69·6	76·6	84·9	92·1
Naxos	65·3	67·1	70·9	77·2	84·0	89·2
Santorin	61·9	64·0	67·5	74·5	82·6	87·4
Mean	63·6	66·1	69·4	76·4	84·6	90·1
Group IX :						
Cythera	61·3	63·1	66·4	73·8	82·8	88·5
Candia	66·4	68·5	73·2	79·7	86·7	**97·5**
Mean	63·8	65·8	69·8	76·7	84·7	**93·0**
Group X :						
Corfu	61·9	64·2	68·9	75·6	83·8	90·1
Arta	63·9	68·0	73·4	81·9	89·2	93·9
Kephalonia	62·1	65·8	72·3	79·2	86·7	91·0
Patras	63·3	66·9	72·7	79·3	85·1	91·9
Zante	62·2	64·4	67·6	74·5	82·6	88·3
Mean	62·7	65·9	71·0	78·1	85·5	91·0

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
103·8	**104·9**	97·3	87·1	73·0	63·7	Trikkala.
102·2	**102·4**	96·6	85·5	73·8	64·9	Larissa.
101·8	101·5	93·9	86·9	75·4	66·0	Lamia.
102·6	**102·9**	95·9	86·5	74·1	64·9	*Mean.*
						Group VII :
96·3	**97·5**	91·9	84·2	77·4	68·2	Volo.
101·5	**101·5**	94·6	86·4	75·2	67·6	Chalchis.
98·6	98·0	92·5	84·3	73·9	66·0	Athens.
97·7	**99·0**	93·2	89·2	78·3	69·3	Nauplia.
98·5	**99·0**	93·0	86·0	76·2	67·8	*Mean.*
						Group VIII :
94·5	**97·0**	90·0	88·3	73·9	67·6	Andros.
94·6	**96·1**	90·5	83·7	74·1	68·7	Syra.
88·9	**90·0**	86·7	82·4	74·7	68·4	Naxos.
89·2	**91·0**	85·1	81·0	71·8	63·1	Santorin.
91·8	**93·5**	88·1	83·8	73·6	66·9	*Mean.*
						Group IX :
94·5	**94·8**	89·1	81·5	72·1	65·7	Cythera.
91·2	88·0	89·2	84·4	81·1	69·8	Candia.
92·8	91·4	89·2	83·0	76·6	67·8	*Mean.*
						Group X :
95·2	**95·4**	91·4	83·3	73·8	65·8	Corfu.
100·4	**102·2**	96·4	88·5	75·4	68·4	Arta.
97·7	**98·8**	94·3	84·7	72·5	66·7	Kephalonia.
97·3	**98·1**	92·1	84·9	76·5	67·5	Patras.
93·0	**93·9**	87·4	81·5	75·0	66·0	Zante.
96·7	**97·7**	92·3	84·6	74·6	66·9	*Mean.*

TABLE IV

Absolute Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	58·3	63·7	72·1	77·2	87·3	91·0
Samokov	61·2	62·4	69·8	76·5	87·1	88·9
Rilski Monastir	57·9	65·7	69·3	79·7	86·9	86·7
Kustendil	60·1	64·8	73·0	84·7	97·5	95·5
Sofia	61·3	67·8	75·6	85·6	92·8	93·4
Highest Temp. in Group	61·3	67·8	75·6	85·6	97·5	95·5
Group II :						
Burgas	65·5	76·8	74·5	91·0	93·9	95·4
Stara Zagora	61·9	71·1	75·7	91·0	97·3	97·9
Kazanlyk	62·4	72·9	75·6	89·1	96·3	96·3
Haskovo	62·6	67·1	74·3	89·4	99·3	104·0
Philippopolis	61·0	71·6	75·0	84·6	96·4	96·6
Highest Temp. in Group	65·5	76·8	75·7	91·0	99·3	104·0
Group III :						
Üsküb	—	—	—	—	—	—
Group IV :						
Durazzo	—	—	—	—	—	—
Valona	—	—	—	—	—	—
Group V :						
Constantinople	—	—	—	—	—	—
Kavalla	—	—	—	—	—	—
Salonica	66·7	69·4	73·4	82·4	96·3	100·9

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
93·7	**93·7**	87·8	83·5	70·3	62·2	Chepelare.
90·7	**93·6**	88·2	83·1	74·3	67·3	Samokov.
95·9	90·5	88·5	83·5	70·0	62·8	Rilski Monastir.
97·7	**101·1**	94·5	84·6	72·9	60·8	Kustendil.
97·7	**99·0**	95·0	82·4	76·3	68·5	Sofia.
97·7	**101·1**	95·0	84·6	76·3	68·5	*Highest Temp. in Group.*
						Group II :
96·6	**103·3**	93·0	90·3	77·9	68·2	Burgas.
103·3	**103·8**	93·6	90·1	73·4	66·7	Stara Zagora.
98·1	**99·3**	94·1	93·9	76·6	69·3	Kazanlyk.
102·7	**106·5**	98·2	99·1	75·2	68·0	Haskovo.
99·0	**100·8**	93·9	91·4	71·4	68·0	Philippopolis.
103·3	**106·5**	98·2	99·1	77·9	69·3	*Highest Temp. in Group.*
						Group III :
—	**102·2**	—	—	—	—	Üsküb.
						Group IV :
—	**95·0**	—	—	—	—	Durazzo.
—	**98·1**	—	—	—	—	Valona.
						Group V :
—	**96·3**	—	—	—	—	Constantinople.
—	**98·2**	—	—	—	—	Kavalla.
102·7	**104·4**	99·0	86·2	78·8	70·5	Salonica.

TABLE IV (*continued*)

Absolute Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Yanina	—	—	—	—	—	—
Trikkala	70·7	73·4	84·2	91·4	98·6	105·8
Larissa	69·4	78·8	86·4	92·5	100·0	103·6
Lamia	71·2	77·0	85·6	94·6	98·1	107·6
Highest Temperature	71·2	78·8	86·4	94·6	100·0	107·6
Group VII :						
Volo	73·4	77·0	77·0	89·6	98·6	102·2
Chalchis	67·3	73·0	78·3	86·7	95·4	102·9
Athens	75·0	73·6	83·1	91·4	100·6	104·5
Nauplia	73·4	74·1	81·0	85·1	95·4	100·0
Highest Temperature	75·0	77·0	83·1	91·4	100·6	104·5
Group VIII :						
Andros	69·8	73·4	78·8	84·2	94·1	97·7
Syra	69·4	72·5	75·2	82·8	92·8	100·6
Naxos	69·8	73·2	76·1	82·6	92·1	**96·8**
Santorin	64·9	72·1	75·2	85·3	97·2	93·2
Highest Temperature	69·8	73·4	78·8	85·3	97·2	100·6
Group IX :						
Cythera	66·2	68·0	72·5	80·6	91·4	97·7
Canea	—	—	—	—	—	—
Candia	69·4	74·3	77·7	83·7	93·2	**101·8**
Highest Temperature	69·4	74·3	77·7	83·7	93·2	**101·8**
Group X :						
Corfu	67·6	72·5	76·3	83·5	91·4	95·0
Arta	68·0	72·3	77·5	90·7	96·8	100·4
Kephalonia	65·8	74·3	95·0	92·3	95·9	95·9
Patras	70·7	75·4	82·4	85·8	97·7	97·0
Zante	72·0	73·4	77·0	85·1	97·7	98·1
Highest Temperature	72·0	75·4	95·0	92·3	97·7	100·4

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
96·6	—	—	—	—	—	Yanina.
110·3	**111·2**	105·8	93·2	80·6	74·1	Trikkala.
107·6	106·9	105·8	91·8	84·2	71·6	Larissa.
111·7	109·0	103·1	92·3	84·2	73·4	Lamia.
111·7	111·2	105·8	93·2	84·2	74·1	*Highest Temperature.*
						Group VII :
104·0	**104·9**	99·5	91·4	86·0	75·2	Volo.
107·6	**111·2**	100·4	91·8	81·3	77·7	Chalchis.
105·3	**107·4**	102·6	95·0	86·9	70·7	Athens.
101·8	**107·6**	103·3	95·7	91·6	73·8	Nauplia.
107·6	**111·2**	103·3	95·7	91·6	77·7	*Highest Temperature.*
						Group VIII :
99·3	**105·1**	99·0	93·2	82·4	76·6	Andros.
100·4	**104·0**	100·4	87·8	79·9	85·1	Syra.
93·9	95·9	91·4	88·7	83·7	71·1	Naxos.
93·2	**97·7**	92·3	90·7	75·2	73·0	Santorin.
100·4	**105·1**	100·4	93·2	83·7	85·1	*Highest Temperature.*
						Group IX :
102·2	100·4	98·6	86·0	78·8	69·8	Cythera.
—	**95·4**	—	—	—		Canea.
94·6	90·0	100·2	90·0	87·4	76·3	Candia.
102·2	100·4	100·2	90·0	87·4	76·3	*Highest Temperature.*
						Group X :
99·3	**99·5**	96·4	86·7	77·9	70·3	Corfu.
110·3	**111·6**	107·6	98·2	82·4	76·3	Arta.
106·7	**109·4**	104·0	89·6	77·0	69·8	Kephalonia.
103·3	**107·1**	97·9	90·5	83·3	73·8	Patras.
100·0	**101·8**	100·0	96·4	85·6	72·7	Zante.
110·3	**111·6**	107·6	98·2	85·6	76·3	*Highest Temperature.*

TABLE V

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* °F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	*15*	21	26	31	40·5	45
Samokov	*17*	22	27	34	43·5	49
Rilski Monastir	*22*	24	28	34	43	46
Kustendil	*21*	27	33	39	49·5	54
Sofia	*20*	24	35	40	48	54
Mean	*19*	23·6	29·8	35·6	44·9	49·6
Group II :						
Burgas	*28*	32	36	44	52	59
Stara Zagora	*26*	33	36	43	52·5	59
Kazanlyk	*24*	30	34	40	49	55
Haskovo	*22*	30	34	42	50	57
Philippopoli	*26*	31	36	44	54	60
Mean	*25·2*	31·2	35·2	42·6	51·5	58
Group III :						
Monastir	*23*	30	36	42	50	55
Group IV :						
Scutari	*34*	37	42	49	57	64
Group V :						
Constantinople	38	*36*	40	46	55	62
Kavalla	*36*	40	43	51	61	67
Salonica	*36*	38	43	50	58	65
Mean	*36·7*	38	42	49	58	64·7

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec* ° F.	
						Group I :
47	46	40	36	28	24	Chepelare.
51	50	44	38·5	29	25	Samokov.
49	50	45	39	31	26	Rilski Monastir.
57	56·5	51	44	33	29	Kustendil.
58	56	50	43·5	33	26	Sofia.
52·4	51·7	46	40·2	30·8	26	*Mean.*
						Group II :
62	62	56	50	40	34	Burgas.
63	63	56·5	47·5	38	33	Stara Zagora.
58	57	51	45	36	31	Kazanlyk.
59	58	51	44	36	30	Haskovo.
63	62	55	48	38	33	Philippopoli.
61	60·4	53·9	46·9	37·6	32·2	*Mean.*
						Group III :
59	58	54	47	38	30	Monastir.
						Group IV :
69	68	62	55	46	39	Scutari.
						Group V :
67	68	61·5	57	50	43	Constantinople.
71	72	64	56	47	43	Kavalla.
70	69	63	56	46	40	Salonica.
69·3	69·7	62·8	56·3	47·7	42	*Mean.*

TABLE V (*continued*)

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Yanina	*18*	24	33	40	48	51
Trikkala	*32*	36	41	47	55	62
Larissa	*32*	33	39	46	54·5	62
Lamia	*38*	41	44	51	59	66
Mean	*30·0*	33·5	39·2	46·0	54·1	60·2
Group VII :						
Volo	*38*	40	44	49	58	63
Chalchis	*41*	42	44	50	58·5	66
Athens	*41*	42	46	52	60	67·5
Nauplia	*41*	43	46	50	58	65
Mean	*40·2*	41·8	45·0	50·2	58·6	65·4
Group VIII :						
Andros	45	*44*	48	53	60	67
Syra	48	*40*	50	55	62	69
Naxos	*50*	*50*	53	56	61·5	68
Santorin	*47*	*47*	50	53	59	66
Mean	*47·5*	*45·2*	50·2	54·2	60·6	67·5
Group IX :						
Cythera	*47*	*47*	49	53	59	65
Canea	46	*45*	48	51	58	64
Candia	*47*	*47*	50	54	60	67
Mean	46·7	*46·3*	49·0	52·7	59	65·3
Group X :						
Corfu	*43*	44	47	51	58	64
Arta	38	41	44	49	57	62
Kephalonia	*44*	45	50	51	58	64
Patras	*44*	46	49	54	59	66
Zante	*47*	48	50	54	58	66
Mean	43·2	44·8	48	51·8	58·0	64·4

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
58	58	54	44	33	24	Yanina.
65·5	65	60	53	44	38	Trikkala.
66	65	60	52·5	43	37	Larissa.
70	70	64	58	48	43	Lamia.
64·9	64·5	59·5	51·9	42·0	35·5	*Mean.*
						Group VII :
69	68·5	62	57	48	43	Volo.
70	69	64	58	50	45	Chalchis.
72·5	72	67	59·5	52	45	Athens.
70	70·5	65·5	60	51	46	Nauplia.
70·4	70·0	64·6	58·6	50·2	44·8	*Mean.*
						Group VIII :
72	72	67	62	54	49	Andros.
74·5	74	69	64	56	52	Syra.
72	72	68·5	64	57	53	Naxos.
70	70	67	62	55	50	Santorin.
72·1	72·0	67·9	63·0	55·5	51·0	*Mean.*
						Group IX :
69	70	67	61·5	54	50	Cythera.
69	69	66	61·0	54	49	Canea.
72	73	72	62	57	51	Candia.
70	70·7	68·3	61·5	55·0	50·0	*Mean.*
						Group X :
69	69	65	60	53	47	Corfu.
66	67	65·5	56	47	43	Arta.
70	69	66	60	53	48	Kephalonia.
71	72	67·6	61	53	48	Patras.
72	72	68	63	56	51	Zante.
69·6	69·8	66·4	60·0	52·4	47·4	*Mean.*

TABLE VI

Mean Monthly Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	*—4*	4	12	19	33	37
Samakov	*0*	4	13	23	34	41
Rilski Monastir	*3*	9	15	23	33	38
Kustendil	*4*	13	20	30	39	46
Sofia	*4*	11	17	24	38	45
Mean	*1·4*	8·2	15·4	23·8	35·4	41·4
Group II :						
Burgas	*13*	19	24	33	44	50·5
Stara Zagora	*11*	20	26	32	44	52
Kazanlyk	*9*	17	24	30	40·5	47
Haskovo	*3*	15	21	30	39	47·5
Philippopolis	*11*	19	29	33	45	52
Mean	*9·4*	18	24·8	31·6	42·5	49·8
Group III :						
Monastir	*7*	14	25	31	41	47·5
Üsküb	*7*	14	28	40	50	56
Mean	*7*	14	26·5	35·5	45·5	51·8
Group IV :						
Durazzo	*28·6*	31·5	36·3	46·0	54·5	62·2
Scutari	*25·5*	28·6	34	43	52	60
Valona	*32·0*	36·3	41·7	46·4	54·0	60·1
Mean	*28·7*	32·1	37·3	45·1	53·5	60·8
Group V :						
Constantinople	28	*26*	31	37	46	54
Kavala	*23*	29	35	41	52	60
Salonica	*24*	27	33	40	50	59
Mean	*25*	27·3	33	39·3	49·3	57·7

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
39	36·5	35	23	12	6	Chepelare.
44	41	32	27	13	8	Samakov.
42	39	33	28	18	12	Rilski Monastir.
49·5	47	39	31	20	14	Kustendil.
49	47	38·5	31	17	10	Sofia.
44·7	42·1	35·5	28	16	10	*Mean.*
						Group II :
56	54	45	38	24	18	Burgas.
55	54·5	45	36	23	18	Stara Zagora.
51	50	40·5	31	22	17	Kazanlyk.
51	46	40	29	17	14	Haskovo.
56	54	44	34·5	25	19	Philippopolis.
53·8	51·7	42·9	33·7	22·2	17·2	*Mean.*
						Group III :
52	49	42	35	23	11	Monastir.
62	59	53	37	23	14	Üsküb.
57	54	47·5	36	23	12·5	*Mean.*
						Group IV :
66·4	64·8	54·1	48·6	37·8	33·1	Durazzo.
63	64	56	46	35	35	Scutari.
64·2	61·9	58·1	50	41·2	34	Valona.
64·5	63·6	56·1	48·2	38·0	34·0	*Mean.*
						Group V :
61	60	53	48	38	33	Constantinople.
64	64	53	48	36	33	Kavala.
65	61·5	54·5	45	32	26	Salonica.
63·3	61·8	53·5	47	35·3	30·7	*Mean.*

TABLE VI (*continued*)

Mean Monthly Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Trikkala	*20*	28	32	36	46·2	53·6
Larissa	*22*	24	29	36	44	54
Lamia	*28*	31	33	40	49·5	58·5
Mean	*23·3*	27·7	31·3	37·3	46·6	55·4
Group VII :						
Volo	*28*	31	34	39	50	57
Chalchis	*32*	33	35	40	51	58
Athens	*32*	33	36	44	51	59
Nauplia	*32*	34	36	42	50	58
Mean	*31·0*	32·8	35·2	41·2	50·5	58
Group VIII :						
Andros	*35*	37	39	46	52	59
Syra	*39*	40	42	47	56	63·5
Naxos	*40*	42	44	48	55	62
Santorin	*38*	*38*	40	46	53	60
Mean	*38·0*	39·2	41·2	46·8	54	61·1
Group IX :						
Cythera	*37*	38	42	46	53	59
Candia	*40*	*40*	43	47	53	61
Mean	*38·5*	39	42·5	46·5	53	60
Group X :						
Corfu	*34*	35	39	43	50	58
Arta	*28*	32	34	39	48	55
Kephalonia	*34*	36	39	43	50	57
Patras	*35*	36	41	46	53	60
Zante	*39*	*39*	44	48	54	61
Mean	*34·0*	35·6	39·4	43·8	51·0	58·2

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
57·6	57·6	50·7	42	32	27	Trikkala.
59·0	58·0	49	41	31	26	Larissa.
62	63	56	49	37	30	Lamia.
59·5	59·5	51·9	44	33·3	27·7	*Mean.*
						Group VII :
63	62	55	48	37	31	Volo.
63	63	55	50	39	34	Chalchis.
65	65	57	52	42	35	Athens.
64	65	58·5	53	40	35	Nauplia.
63·8	63·8	56·4	50·8	39·5	33·8	*Mean.*
						Group VIII :
66	66	60	54	42	38	Andros.
69	69	62	58	47	40	Syra.
67	69	62	58·5	48	44	Naxos.
66	67	61	55	46	41	Santorin.
67	67·8	61·2	56·4	45·8	40·8	*Mean.*
						Group IX :
65	65	60	55	46	40	Cythera.
65·5	68	61	54	49	45	Candia.
65	66·5	60·5	54·5	47·5	42·5	*Mean.*
						Group X :
62	64	58	52	43	37	Corfu.
59	60	54	45	37	31	Arta.
63	62	58	52	42	36	Kephalonia.
66	67	60	53	44	37	Patras.
66	66	62	56	47	42	Zante.
63·2	63·8	58·4	51·6	42·6	36·6	*Mean.*

TABLE VII

Absolute Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	*−19·1*	−14·8	− 4·0	+12·0	25·5	32·4
Samokov	*−13·9*	− 5·8	+ 3·6	+19·0	27·9	35·8
Rilski Monastir	*−12·1*	− 7·6	+ 3·9	+17·6	27·9	33·4
Kustendil	− 7·6	*− 8·3*	+11·3	+23·4	36·7	39·9
Sofia	*−24·2*	−15·3	− 1·1	+23·5	33·3	36·3
Lowest Temp. in Group	−24·2	−15·3	− 4·0	+12·0	25·5	32·4
Group II :						
Burgas	*+0·7*	+8·6	+13·5	+24·9	38·5	44·6
Stara Zagora	+1·9	*+1·0*	+15·8	+27·9	36·1	48·7
Kazanlyk	*−5·8*	−0·9	+18·5	+25·9	34·0	41·7
Haskovo	−3·8	*−9·4*	+16·2	+26·6	34·5	43·0
Philippopolis	+4·3	*−1·5*	+18·1	+30·6	37·6	45·7
Lowest Temp. in Group	−5·8	−9·4	13·5	24·9	34·0	41·7
Group III :						
Monastir	*− 0·9*	—	—	—	—	—
Usküb	*−14·4*	—	—	—	—	—
Group IV :						
Durazzo	—	—	—	—	—	—
Valona	—	—	—	—	—	—
Group V :						
Constantinople	*17·2*	—	—	—	—	—
Kavalla	*12·0*	—	—	—	—	—
Salonica	*14·0*	14·9	26·6	33·1	44·1	53·1

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
36·0	32·7	18·5	16·7	— 4·5	—6·9	Chepelare.
41·0	36·0	22·5	22·3	— 1·3	—2·0	Samokov.
37·0	34·7	17·8	23·4	+ 8·6	+2·1	Rilski Monastir.
45·5	42·8	25·5	26·2	+12·6	—6·5	Kustendil.
46·2	44·6	31·6	19·0	+ 0·9	—7·1	Sofia.
36·0	32·7	17·8	16·7	— 4·5	—7·1	*Lowest Temp. in Group.*
						Group II :
51·8	49·8	34·7	31·5	8·6	9·3	Burgas.
51·4	50·5	34·7	30·2	23·0	18·1	Stara Zagora.
45·7	45·0	33·1	24·1	11·5	8·4	Kazanlyk.
46·2	43·7	30·9	23·0	8·4	— 4·0	Haskovo.
51·8	50·4	35·2	27·9	25·2	19·0	Philippopolis.
45·7	43·7	30·9	23·0	8·4	— 4·0	*Lowest Temp. in Group.*
						Group III :
—	—	—	—	—	—	Monastir.
—	—	—	—	—	—	Üsküb.
						Group IV :
—	—	—	—	—	—	Durazzo.
—	—	—	—	—	—	Valona.
						Group V :
—	—	—	—	—	—	Constantinople.
—	—	—	—	—	—	Kavalla.
55·4	59·0	42·0	39·9	23·0	20·3	Salonica.

TABLE VII (*continued*)

Absolute Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Yanina	*17·6*	—	—	—	—	—
Trikkala	*−2·2*	12·9	26·2	33·8	43·2	51·8
Larissa	*8·6*	14·9	20·8	30·2	41·0	51·1
Lamia	20·5	18·3	25·9	35·6	40·6	49·6
Lowest Temp. in Group	−2·2	12·9	20·8	30·2	40·6	49·6
Group VII :						
Volo	*19·4*	23·0	30·2	33·8	44·6	50·0
Chalchis	26·6	*19·4*	25·5	32·2	48·2	51·8
Athens	*20·3*	22·6	30·2	35·2	46·6	55·4
Nauplia	*25·0*	*25·0*	30·0	35·0	45·5	50·9
Lowest Temp. in Group	19·4	19·4	25·5	32·2	44·6	50·0
Group VIII :						
Andros	*26·6*	28·4	33·8	39·2	48·2	55·4
Syra	32·0	*30·6*	32·9	41·0	53·2	60·8
Naxos	*29·8*	34·2	37·0	41·7	50·9	58·3
Santorin	*28·4*	30·2	32·2	41·0	48·7	53·6
Lowest Temp. in Group	26·6	28·4	32·2	39·2	48·2	53·6
Group IX :						
Cythera	30·2	*28·4*	35·6	39·2	50·0	53·6
Candia	36·0	*33·0*	40·0	45·0	51·8	61·0
Lowest Temp. in Group	30·2	28·4	35·6	39·2	50·0	53·6
Group X :						
Corfu	27·1	*23·0*	32·0	37·4	45·0	53·2
Arta	23·0	*19·4*	28·4	35·2	45·1	50·7
Kephalonia	*26·1*	26·6	35·4	37·4	46·4	54·3
Patras	26·8	*24·8*	32·0	40·5	46·8	53·6
Zante	33·4	*30·2*	37·4	41·0	51·1	56·1
Lowest Temp. in Group	23·0	19·4	28·4	35·2	45·0	50·7

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* °F.	
						Group VI :
—	—	—	—	—	—	Yanina.
46·4	48·6	44·6	37·0	27·5	19·9	Trikkala.
54·7	55·0	40·6	34·5	22·3	16·7	Larissa.
53·6	59·0	46·8	44·2	28·4	17·2	Lamia.
46·4	48·6	40·6	34·5	22·3	16·7	*Lowest Temp. in Group.*
						Group VII :
59·0	57·2	46·4	43·7	31·1	24·8	Volo.
52·5	51·8	47·5	40·3	32·4	28·2	Chalchis.
61·0	60·3	48·0	44·8	30·2	28·4	Athens.
61·7	61·5	47·1	46·2	32·0	30·0	Nauplia.
52·5	51·8	46·4	40·3	30·2	24·8	*Lowest Temp. in Group.*
						Group VIII :
58·1	62·6	53·6	48·2	32·0	33·8	Andros.
65·3	66·2	51·1	51·8	39·6	32·0	Syra.
63·7	61·5	50·0	48·9	38·1	39·6	Naxos.
63·5	63·0	52·7	51·1	29·8	35·1	Santorin.
58·1	61·5	50·0	48·2	29·8	32·0	*Lowest Temp. in Group.*
						Group IX :
58·1	59·0	55·4	50·0	39·2	32·0	Cythera.
64·6	66·4	60·1	51·3	44·0	43·0	Candia.
58·1	59·0	55·4	50·0	39·2	32·0	*Lowest Temp. in Group.*
						Group X :
57·2	59·0	50·0	43·7	38·1	29·3	Corfu.
53·6	57·0	48·2	39·0	30·2	23·7	Arta.
55·4	57·0	52·7	47·5	36·5	28·2	Kephalonia.
56·5	60·8	54·5	41·2	36·5	30·6	Patras.
59·7	56·7	56·3	50·0	42·3	37·0	Zante.
53·6	56·7	48·2	39·0	30·2	23·7	*Lowest Temp. in Group.*

TABLE VIII

NUMBER OF DAYS OF (*A*) FROST; (*B*) FROST ALL DAY.

(*Minimum temperature less than* 32° *F.*)
(*Maximum temperature less than* 32° *F.*)

	Nov.		*Dec.*		*Jan.*		*Feb.*		*March.*		*April.*	
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
Chepelare	17	2	24	3	28	7	23	3	24	1	12	—
Samokov	19	3	26	4	29	9	25	6	24	2	10	—
Rilski Monastir	15	1	23	4	28	5	23	2	23	1	9	—
Kustendil	12	5	18	2	28	9	18	3	13	—	3	—
Sofia	14	2	21	6	28	11	21	5	15	1	4	—
Mean of Group I	15·4	2·6	22·4	3·8	28·2	8·2	22·0	3·8	19·8	1·0	7·6	—
Burgas	6	1	12	2	22	5	14	2	8	1	11	—
Stara Zagora	8	—	14	1	21	5	10	1	9	—	1	—
Kazanlyk	11	1	17	1	27	5	16	1	12	—	2	—
Haskovo	6	—	11	2	19	4	10	1	8	—	1	—
Philippopolis	7	1	12	2	24	8	13	3	7	—	—	—
Mean of Group II	7·6	0·6	13·2	1·6	22·6	5·4	12·6	1·6	8·8	0·2	3·0	—

TABLE IX

MAXIMUM NUMBER OF DAYS, IN ANY YEAR, OF (*A*) FROST; (*B*) FROST ALL DAY.

	A	B										
Chepelare † .	22	7	28	8	31	12	28	7	31	4	18	1
Samokov † .	13	12	27	12	31	15	28	19	31	19	9	3
Rilski Monastir †	23	5	29	9	31	8	28	14	28	4	15	—
Kustendil † .	19	2	28	18	30	24	28	18	30	2	5	—
Sofia* . .	27	9	29	16	31	23	28	18	29	3	9	—
Burgas * . .	17	2	21	10	29	17	26	5	21	3	4	1
Stara Zagora † .	15	2	24	4	31	11	28	8	28	1	2	—
Kazanlyk † .	18	2	25	4	31	9	28	6	26	1	4	—
Haskovo † .	14	2	24	9	31	13	28	7	23	3	4	—
Philippopolis † .	14	2	25	14	30	16	25	17	19	—	2	—

* Observations, 1894–1910, utilized. † Observations, 1900–10, utilized.

TABLE X

Range of Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group I :						
Chepelare	54·2	52·1	51·1	53·7	46·9	46·8
Samokov	52·5	50·5	46·9	48·1	44·1	42·7
Rilski Monastir	50·4	45·5	45·6	47·3	46·0	44·6
Kustendil	49·4	44·6	46·4	47·2	46·3	44·0
Sofia	48·3	46·9	49·4	52·5	44·6	43·2
Mean.	50·9	47·9	47·9	49·8	45·6	44·3
Group II :						
Burgas	43·7	43·1	44·2	45·1	40·4	39·3
Stara Zagora	46·7	40·4	41·8	46·6	42·4	38·9
Kazanlyk	46·4	43·4	43·8	47·4	45·5	43·5
Haskovo	55·5	46·2	48·3	49·9	49·3	46·8
Philippopolis	43·0	40·2	37·9	45·3	40·8	38·5
Mean	47·1	42·7	43·2	46·9	43·6	41·4
Group III :						
Monastir	46·2	43·9	41·9	46·2	43·6	43·7
Üsküb	41·0	42·8	41·4	36·3	32·2	34·3
Mean	43·6	43·3	41·6	41·2	37·9	39·0
Group IV :						
Valona	30·8	27·0	28·3	29·7	32·0	30·2
Durazzo	29·7	28·8	29·2	25·8	22·4	23·4
Mean.	30·2	27·9	28·7	27·7	27·2	26·8
Group V :						
Constantinople	29·6	31·9	36·3	38·0	38·7	35·4
Kavalla	35·3	29·5	27·4	32·0	29·1	26·7
Salonica	36·1	36·6	35·3	37·5	37·1	35·1
Mean	33·7	32·7	33·0	35·8	35·0	32·4

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group I :
49·0	50·6	46·9	53·6	52·4	51·7	Chepelare.
43·1	47·2	49·9	48·7	50·1	47·4	Samokov.
44·2	48·8	50·1	49·0	45·7	42·7	Rilski Monastir.
45·0	48·4	48·3	47·3	46·9	43·0	Kustendil.
42·8	45·1	46·6	45·8	48·5	44·0	Sofia.
44·8	48·0	48·4	48·9	48·7	45·8	*Mean.*
						Group II :
36·8	40·8	42·3	44·2	45·4	43·3	Burgas.
42·0	43·6	45·0	45·9	44·3	41·4	Stara Zagora.
44·2	46·1	48·7	52·1	46·0	42·4	Kazanlyk.
47·8	55·1	49·4	58·4	52·1	47·3	Haskovo.
38·6	42·1	43·1	46·3	41·0	37·5	Philippopolis.
41·9	45·5	45·7	49·4	45·8	42·4	*Mean.*
						Group III :
42·8	46·5	46·3	43·8	43·6	43·7	Monastir.
31·6	36·2	35·0	41·1	42·1	36·7	Üsküb.
37·2	41·3	40·7	42·4	42·8	40·2	*Mean.*
						Group IV :
26·1	32·4	30·4	31·0	25·7	30·6	Valona.
23·9	25·9	30·5	28·0	29·1	29·7	Durazzo.
25·0	29·1	30·4	29·5	27·4	30·1	*Mean.*
						Group V :
29·0	30·1	31·7	30·1	31·6	28·9	Constantinople.
27·9	30·3	33·9	28·6	32·5	28·2	Kavalla.
33·2	37·6	37·4	37·0	38·0	36·6	Salonica.
30·1	32·7	34·3	31·9	34·1	31·2	*Mean.*

TABLE X (*continued*)

Range of Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Group VI :						
Trikkala	41·7	37·5	40·3	46·8	45·4	44·8
Larissa	39·9	44·5	46·0	48·0	46·5	43·7
Lamia	35·9	36·6	39·9	41·5	41·0	39·6
Mean	39·2	39·5	42·1	45·5	44·3	42·7
Group VII :						
Volo	36·8	36·8	37·2	39·8	33·1	37·1
Chalchis	31·3	35·2	36·6	41·3	39·0	39·2
Athens	30·9	32·4	34·4	33·2	37·0	34·5
Nauplia	34·0	34·9	36·0	35·5	36·2	36·3
Mean	33·2	34·8	36·1	37·5	36·3	36·8
Group VIII :						
Andros	28·9	29·6	30·8	31·2	34·9	32·8
Syra	24·5	26·7	27·6	29·6	28·9	28·6
Naxos	25·3	25·1	26·9	29·2	29·0	27·2
Santorin	23·9	26·0	27·5	28·5	29·6	27·4
Mean	25·6	26·8	28·2	29·6	30·6	29·0
Group IX :						
Cythera	24·3	25·1	24·4	27·8	29·8	29·5
Candia	26·4	28·5	30·2	32·7	33·7	36·5
Mean	25·3	26·8	27·3	30·2	31·7	33·0
Group X :						
Corfu	27·9	29·2	29·9	32·6	33·8	32·1
Arta	35·9	36·0	39·4	42·9	41·2	38·9
Kephalonia	28·1	29·8	33·3	36·2	36·7	34·0
Patras	28·3	30·9	31·7	33·3	32·1	31·9
Zante	23·2	25·4	23·6	26·5	28·6	27·3
Mean	28·7	30·3	31·6	34·3	34·5	32·8

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Group VI :
46·2	47·3	46·6	45·1	41·0	36·7	Trikkala.
43·2	44·4	47·6	44·5	42·8	38·9	Larissa.
39·8	38·5	37·9	37·9	38·4	36·0	Lamia.
43·1	43·4	44·0	42·5	40·7	37·2	*Mean.*
						Group VII :
33·3	35·5	36·9	36·2	40·4	37·2	Volo.
38·5	38·5	39·6	36·4	36·2	33·6	Chalchis.
33·6	33·0	35·5	32·3	31·9	31·0	Athens.
33·7	34·0	34·7	36·2	38·3	34·3	Nauplia.
34·8	35·2	36·7	35·3	36·7	34·0	*Mean.*
						Group VIII :
28·5	31·0	30·0	34·3	31·9	29·6	Andros.
25·6	27·1	28·5	25·7	27·1	28·7	Syra.
21·9	21·0	24·7	23·9	26·7	24·4	Naxos.
23·2	24·0	24·1	26·0	25·8	22·1	Santorin.
24·8	25·8	26·8	27·5	27·9	26·2	*Mean.*
						Group IX :
29·5	29·8	29·1	26·5	26·1	25·7	Cythera.
25·7	20·0	28·2	30·4	32·1	24·8	Candia.
27·6	24·9	28·6	28·4	29·1	25·2	*Mean.*
						Group X :
33·2	31·4	33·4	31·3	30·8	28·8	Corfu.
41·4	42·2	42·4	43·5	38·4	37·4	Arta.
34·7	36·8	36·3	32·7	30·5	30·7	Kephalonia.
31·3	31·1	32·1	31·9	32·5	30·5	Patras.
27·0	27·9	25·4	25·5	28·0	24·0	Zante.
33·5	33·9	33·9	33·0	32·0	30·3	*Mean.*

TABLE XI

Relative Humidity

	Jan. %	*Feb.* %	*Mar.* %	*April.* %	*May.* %	*June.* %
Group I :						
Chepelare	75·5	76·5	75	71·5	72·5	75
Samokov	77	79·5	77	70·6	69·3	71·3
Rilski Monastir	72	71·4	71·4	67·5	70·6	70·2
Kustendil	77·5	75·4	69	61·7	60·3	63·7
Sofia	82	79	72	66	66	68
Mean	76·8	76·4	72·9	67·5	67·7	69·6
Group II :						
Burgas	80	83	81	77	79	77
Stara Zagora	73	73	68	61	61	63
Kazanlyk	77	75	69	63	64	66
Haskovo	81	81·5	77·5	70	68·5	69·5
Philippopolis	78	79·5	73	65	67·5	65·5
Mean	78	78·4	73·7	67·2	68	68
Group IV :						
Durazzo	77	74	73	72	73	71
Group V :						
Constantinople	74	71	62	57	57	53
Kavalla	84	85	83	83	81	79
Salonica	70·8	71·3	68·3	66·1	64·3	60·7
Mean	76·3	75·8	71·1	68·7	67·4	64·2

July. %	*Aug.* %	*Sept.* %	*Oct.* %	*Nov.* %	*Dec.* %	
						Group I :
70·5	70	74·5	76·5	78·5	**80**	Chepelare.
66	63·3	70·3	78·2	80	**82**	Samokov.
66	63·3	70·7	76	78	**79·4**	Rilski Monastir.
59·2	56·5	64	75	78·2	**80·2**	Kustendil.
63	62	68	77	81	**83**	Sofia.
65	63	69·5	76·5	79·1	80·9	*Mean.*
						Group II :
74	72	75	81	82	**84**	Burgas.
53	50	58	69	74	**77**	Stara Zagora.
57	54	63	73	78	**79**	Kazanlyk.
59·5	58·5	66·5	75·5	81·5	**84·5**	Haskovo.
58·5	58	65	73·5	79·5	**81**	Philippopolis.
60·4	58·5	65·5	74·4	79	**81·1**	*Mean.*
						Group IV :
68	71	73	78	79	**80**	Durazzo.
						Group III :
53	53	55	63	71	**74**	Constantinople.
75	75	78	82	84	**85**	Kavalla.
54·2	57	62·4	71	73·6	**74·5**	Salonica.
60·7	61·7	65·1	72	76·2	**77·8**	*Mean.*

TABLE XI (*continued*)

RELATIVE HUMIDITY

	Jan. %	*Feb.* %	*Mar.* %	*April.* %	*May.* %	*June.* %
Group VI :						
Trikkala	80·5	76·9	73	66·3	59·6	54·2
Larissa	79·3	75·8	71·3	66·7	62·1	55·2
Lamia	72	69·2	66·5	62·5	56·9	52·0
Mean	77·3	74·0	70·3	65·2	59·5	53·8
Group VII :						
Volo	74·5	73	71·1	70·1	65·2	65·6
Chalchis	77·5	76·1	73·1	67·8	61·4	58·2
Athens	74	72	69·2	64·4	59·7	54·2
Nauplia	72·8	70·1	68·3	66·7	63·5	60
Mean	74·7	72·8	70·4	67·2	62·4	59·5
Group VIII :						
Andros	74	73	71·7	68·2	64	62·4
Syra	71	70	68·5	66·5	63·4	60·7
Naxos	74·7	74·4	71·7	70·7	70·7	68·9
Santorin	72·3	71·7	70·7	70·6	69·6	65·4
Mean	73	72·3	70·6	69	66·9	64·4
Group IX :						
Cythera	70·8	72·4	70·6	67·6	61·4	61·2
Canea	76	75	72	70	67	61
Candia	69	69	68	64	63	61
Mean	71·9	72·1	70·2	67·2	63·8	61·1
Group X :						
Corfu	76·1	78·3	75	75·5	73·7	72·8
Arta	77·6	77	75·4	73·5	70·4	71·3
Kephalonia	77·3	78	76·5	75·7	73·9	72·1
Patras	75·2	74·3	71	70·8	69·7	68
Zante	74·2	75	72·4	72·6	69·1	68·3
Mean	76·1	76·5	74·0	73·6	71·4	70·5

July. %	*Aug.* %	*Sept.* %	*Oct.* %	*Nov.* %	*Dec.* %	
						Group VI :
48·6	48	56·9	71·8	78·9	**80·5**	Trikkala.
49·5	48·6	58·3	72·3	79·1	**81·7**	Larissa.
46·9	47·7	55·9	66·1	72·1	**74·1**	Lamia.
48·3	48·1	57·0	70·1	76·7	**78·8**	*Mean.*
						Group VII :
63·4	60·7	65·1	74·3	**76·6**	73·8	Volo.
53·6	54·4	61·2	70·4	74·1	**78·4**	Chalchis.
47	46·3	55	66	73·3	**74·5**	Athens.
54	54·9	59·8	68·5	72·6	**75·5**	Nauplia.
54·5	54·1	60·3	69·8	74·1	**75·5**	*Mean.*
						Group VIII :
59·7	60	63·2	70·1	74·9	**76·7**	Andros.
53·2	57	63·6	71·8	**76**	75·2	Syra.
71·1	73·9	73	75·3	74·3	**76**	Naxos.
60·4	62·1	68·2	72·5	73·7	**74·6**	Santorin.
61·1	63·2	67	72·4	74·7	**75·6**	*Mean.*
						Group IX :
51·1	50·4	55·1	64·3	71·2	**72·3**	Cythera.
58	57	62	67	74	**76**	Canea.
61	60	65·6	68	68	**73**	Candia.
56·7	55·8	60·9	66·4	71·1	**73·8**	*Mean.*
						Group X :
68·8	68·4	71·8	78·6	77·5	**78**	Corfu.
62·0	60·4	65·2	74·2	79	**80·8**	Arta.
68·7	70·9	71·5	77·9	79·1	**80·8**	Kephalonia.
61·6	60·3	63·7	71·2	73·2	**75·4**	Patras.
62·7	58·5	66	73·1	74·4	**75·9**	Zante.
64·8	63·7	67·6	75·0	76·6	**78·2**	*Mean.*

TABLE XII

Mean Minimum Relative Humidity at 2 p.m.

	Jan. %	*Feb.* %	*Mar.* %	*April.* %	*May.* %	*June.* %
Samokov . . .	37	39	38	32	29	34
Sofia	46	44	33	24	27	33
Philippopolis . .	44	45	31	29	28	32
Kazanlyk . . .	31	31	27	24	22	28

Absolute Minimum Relative Humidity at 2 p.m.

Samokov . . .	20	31	31	25	25	25
Sofia	34	24	19	19	19	25
Philippopolis . .	28	32	22	21	17	26
Kazanlyk . . .	20	16	20	16	16	23

July. %	*Aug.* %	*Sept.* %	*Oct.* %	*Nov.* %	*Dec.* %	
29	26	31	36	36	39	Samokov.
30	27	31	38	41	46	Sofia.
28	26	30	33	35	43	Philipoppolis.
26	22	24	29	32	36	Kazanlyk.
22	18	15	25	28	31	Samokov.
19	18	18	28	29	26	Sofia.
18	20	23	24	28	22	Philippopolis.
17	13	16	17	20	24	Kazanlyk.

TABLE XIII

Mean Monthly Rainfall

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
Group I :						
Chepelare	2·56	2·6	1·93	2·52	2·91	**4·31**
Samokov	1·59	1·67	1·85	2·42	2·81	**3·31**
Rilski Monastir	1·90	2·44	2·17	3·11	3·1	**3·36**
Kustendil	1·94	1·9	1·22	1·78	**2·84**	2·38
Sofia	1·50	1·42	1·46	2·05	**3·39**	3·23
Mean	1·9	2·01	1·73	2·37	3·01	**3·32**
Group II :						
Burgas	1·85	2·24	1·61	1·77	2·02	**3·38**
Stara Zagora	1·46	1·85	1·69	1·58	2·44	**3·35**
Kazanlyk	1·73	1·81	1·46	1·73	2·76	**3·74**
Haskovo	2·52	2·32	2·13	2·05	1·88	**2·94**
Philippopolis	1·89	1·81	1·61	1·85	1·68	**2·65**
Mean	1·89	2·01	1·70	1·79	2·16	**3·21**
Group III :						
Monastir	1·93	2·64	1·97	2·48	**2·87**	2·75
Usküb	1·42	1·10	0·79	1·69	**2·28**	2·24
Mean	1·68	1·87	1·38	2·08	**2·58**	2·49
Group IV :						
Durazzo	2·95	3·31	**3·94**	2·24	1·61	1·93
Scutari	4·65	5·98	**6·61**	4·96	3·27	2·09
Valona	3·98	3·50	4·21	2·32	1·42	1·89
Mean	3·86	4·26	4·92	3·17	2·1	1·97
Group V :						
Constantinople	3·42	2·72	2·44	1·65	1·18	1·34
Kavalla	2·80	**3·42**	2·72	1·93	2·05	1·65
Salonica	1·26	0·87	1·10	1·61	1·73	1·85
Mean	2·49	2·34	2·09	1·73	1·65	1·61

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						Group I :
3·64	1·97	1·54	1·69	2·64	**3·07**	Chepelare.
2·70	2·0	1·76	1·81	**2·02**	1·22	Samokov.
2·40	2·12	1·63	3·06	**3·43**	1·9	Rilski Monastir.
2·37	2·35	1·48	2·15	**2·53**	1·68	Kustendil.
2·83	2·07	1·59	**2·19**	1·93	1·42	Sofia.
2·79	2·10	*1·6*	2·18	**2·51**	1·86	*Mean.*
						Group II :
1·55	1·18	0·87	1·98	**2·52**	2·05	Burgas.
2·15	1·61	0·99	1·58	**2·36**	1·81	Stara Zagora.
2·23	1·51	1·76	2·08	**2·48**	1·69	Kazanlyk.
1·63	1·32	1·13	1·42	**3·03**	2·20	Haskovo.
1·65	1·23	1·34	1·24	**1·77**	1·34	Philippopolis.
1·84	1·37	*1·22*	1·66	**2·43**	1·82	*Mean.*
						Group III :
1·81	1·77	1·38	**3·38**	2·99	2·6	Monastir.
1·46	1·46	1·18	**2·09**	1·50	1·97	Üsküb.
1·63	1·62	*1·28*	**2·74**	2·25	2·29	*Mean.*
						Group IV :
0·47	1·89	1·73	7·13	**8·46**	7·32	Durazzo.
1·54	*1·02*	3·46	7·4	**8·46**	6·22	Scutari.
0·51	1·89	3·97	5·39	**7·68**	5·75	Valona.
0·84	1·60	3·05	6·64	**8·2**	6·43	*Mean.*
						Group V :
1·06	1·65	2·05	2·52	4·02	**4·80**	Constantinople.
0·71	2·16	1·34	0·87	2·72	3·23	Kavalla.
0·79	1·02	1·14	1·73	**1·97**	**1·97**	Salonica.
0·85	1·61	1·51	1·71	2·9	**3·33**	*Mean.*

TABLE XIII (*continued*)

Mean Monthly Rainfall

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
Group VI :						
Yanina . . .	5·51	3·86	5·67	2·83	1·89	2·83
Trikkala . . .	3·23	2·80	3·11	2·05	2·83	1·61
Larissa . . .	1·77	1·81	1·65	1·58	1·89	1·30
Lamia	2·31	1·81	1·50	1·93	1·93	1·42
Mean . . .	3·20	2·57	2·98	2·10	2·13	1·79
Group VII :						
Volo	1·69	1·77	1·81	1·30	1·42	1·02
Chalchis . . .	2·71	1·85	1·81	1·42	0·83	0·55
Athens . . .	2.05	1·46	1·34	0·83	0·79	0·67
Nauplia . . .	2·28	1·81	1·89	0·94	1·02	0·67
Mean . . .	2·18	1·72	1·71	1·12	1·01	0·73
Group VIII :						
Andros . . .	**5·20**	3·94	3·11	1·18	0·91	0·63
Syra	**3·86**	2·60	2·32	1·10	0·94	0·35
Naxos	2·84	2·52	1·46	0·91	0·78	0·12
Santorin . . .	2·56	1·73	1·38	0·83	0·75	0·04
Mean . . .	3·61	2·70	2·07	1·00	0·84	0·28
Group IX :						
Cythera . . .	4·29	3·58	2·20	0·94	0·59	0·55
Canea	4·13	3·94	1·77	0·79	0·39	0·24
Candia. . . .	3·39	3·23	1·97	0·63	0·48	0·09
Mean . . .	3·94	3·58	1·98	0·79	0·49	0·29
Group X :						
Corfu	6·26	5·94	4·33	2·99	2·13	0·86
Arta	4·49	5·32	4·37	3·23	2·99	1·65
Kephalonia . . .	4·65	4·33	2·99	1·65	1·10	0·83
Patras	3·27	2·95	2·32	2·09	1·50	0·79
Zante	6·02	4·88	3·39	1·97	1·34	0·35
Mean . . .	4·94	4·68	3·48	2·39	1·81	0·89

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						Group VI :
1·50	2·01	1·54	6·89	7·13	**7·99**	Yanina.
0·87	0·78	0·98	3·15	**4·17**	4·06	Trikkala.
1·22	0·75	1·06	1·89	**2·72**	2·32	Larissa.
1·22	1·06	1·18	2·40	3·15	**3·58**	Lamia.
1·20	1·15	1·19	3·58	4·29	**4·49**	*Mean.*
						Group VII :
0·51	0·67	1·18	1·69	**2·64**	2·16	Volo.
0·19	0·43	0·91	1·14	2·20	**2·76**	Chalchis.
0·27	0·35	0·55	1·73	**2·87**	2·44	Athens.
0·27	0·55	1·06	2·28	3·03	**3·66**	Nauplia.
0·31	0·50	0·92	1·71	2·68	**2·75**	*Mean.*
						Group VIII :
0·08	0·16	0·63	1·73	3·15	**5·20**	Andros.
0·20	0·51	0·83	1·69	3·15	3·54	Syra.
0·04	0·08	0·39	1·04	2·01	**2·87**	Naxos.
0·04	—	0·43	0·91	2·52	**3·03**	Santorin.
0·09	0·19	0·57	1·34	2·71	**3·66**	*Mean.*
						Group IX :
0·51	0·78	0·83	2·91	4·61	**5·35**	Cythera.
—	0·08	0·32	0·94	**6·73**	5·63	Canea.
0·12	0·35	0·78	1·81	3·58	**3·98**	Candia.
0·21	0·40	0·64	1·89	4·97	**4·99**	*Mean.*
						Group X :
0·20	0·91	3·54	6·34	8·50	**9·72**	Corfu.
0·67	0·59	1·97	5·31	5·63	**7·48**	Arta.
0·16	0·67	1·26	4·49	5·08	**7·13**	Kephalonia.
0·16	0·20	1·14	3·35	4·10	**4·84**	Patras.
0·08	0·16	1·30	4·21	8·19	**10·24**	Zante.
0·25	0·51	1·84	4·74	6·30	**7·88**	***Mean.***

TABLE XIV

Maximum Rainfall

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
Group I :						
Chepelare . . .	4·69	3·58	3·84	4·69	4·42	**7·09**
Samokov . . .	3·03	3·13	4·54	4·84	4·46	**5·81**
Rílski Monastir . .	3·23	4·27	4·65	5·36	4·74	7·07
Kustendil . . .	3·31	2·75	3·76	2·89	5·13	5·15
Sofia	5·04	2·88	4·12	3·73	5·73	7·31
Group II :						
Burgas . . .	5·53	6·18	3·86	4·25	4·71	**10·24**
Stara Zagora . .	4·33	3·70	4·49	5·51	4·87	**6·67**
Kazanlyk . . .	5·0	3·93	3·05	4·68	4·87	**7·75**
Haskovo . . .	5·59	5·16	3·32	3·86	3·87	5·16
Philippopolis . .	6·11	3·78	2·75	4·60	3·54	**7·91**

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						Group I :
6·35	5·29	3·31	5·16	5·30	6·13	Chepelare.
4·53	5·03	4·41	3·42	5·0	2·79	Samokov.
5·16	4·24	4·21	6·21	**8·14**	5·27	Rilski Monastir.
3·81	4·61	3·62	**6·10**	5·35	3·15	Kustendil.
6·19	**8·91**	3·26	6·89	6·46	3·26	Sofia.
						Group II :
5·28	4·09	2·56	5·24	7·13	4·67	Burgas.
3·77	4·06	3·41	3·66	4·09	3·68	Stara Zagora.
4·36	4·67	5·61	4·77	5·0	3·13	Kazanlyk.
2·78	5·0	3·76	3·78	**6·54**	4·79	Haskovo.
3·78	2·98	3·95	3·50	4·77	3·31	Philippopolis.

TABLE XV

Number of Rain Days (> 0·2 mm. or 0·008 in. of rain)

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I :						
Chepelare	11	12	11	12	**14**	7
Samokov	10	12	12	12	14	**15**
Rilski Monastir	10	13	12	13	**15**	**15**
Kustendil	7	9	6·5	7	**12**	11
Sofia	12	8	10	11	**13**	12
Mean	10	10·8	10·3	11·0	**13·6**	12·0
Group II :						
Burgas	8	10	9	9	10	**11**
Stara Zagora	8	10	9	9	11	**13**
Kazanlyk	8	10	9	12	12	**14**
Haskovo	8	9	9	9	9	**12**
Philippopolis	7	8	8	7	9	**13**
Mean	7·8	9·4	8·8	9·2	10·2	**12·6**
Group III :						
Monastir	10	11	10	11	**14**	13
Üsküb	6	5	5	6	**9**	7
Mean	8	8	7·5	8·5	**11·5**	10
Group IV :						
Durazzo	9·9	8·6	11·8	8·2	6·6	5·2
Scutari	9·0	10·5	**10·7**	9·8	7·9	5·8
Valona	8·1	6·9	8·6	5·3	3·8	3·6
Mean	9·0	8·7	10·4	7·8	6·1	4·9
Group V :						
Constantinople	12·0	11·0	10·0	8·0	6·4	4·6
Kavalla	6·0	**10·0**	8·0	6·0	6·0	6·5
Salonica	6·0	6·0	6·0	7·0	6·0	6·0
Mean	8·0	9·0	8·0	7·0	6·1	5·7

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
10	6	8	8	12	11	Chepelare.
10	7	8	9	12	9	Samokov.
9	7	9	10	12	10	Rilski Monastir.
8	5	7·5	7·5	10	6·5	Kustendil.
9	6	6	7	8	11	Sofia.
9·2	6·2	7·7	8·3	10·8	9·5	*Mean.*
						Group II :
5	4	5	7	9	9	Burgas.
8	5	5	7	10	8	Stara Zagora.
8	6	7	8	11	9	Kazanlyk.
7	5	5	7	10	9	Haskovo.
6	4	5	7	10	8	Philippopolis.
6·8	4·8	5·4	7·2	10·0	8·6	*Mean.*
						Group III :
8	6·5	5·5	10	9	11	Monastir.
5	4	4	6	5	6	Üsküb.
6·5	5·2	4·7	8	7	8·5	*Mean.*
						Group IV :
2·1	4·1	4·2	10·0	**13·6**	12·4	Durazzo.
3·0	3·1	5·6	9·6	10·1	10	Scutari.
1·0	3·1	5·5	6·5	**11·4**	9·9	Valona.
2·0	3 4	5·1	8·7	**11·7**	10·8	*Mean.*
						Group V :
2·9	3·5	6·1	6·5	11	**14**	Constantinople.
4·3	4·3	4·5	3·0	8	9	Kavalla.
4·0	3·0	3·5	6·0	7	**8**	Salonica.
3·7	3·6	4·7	5·1	8·7	**10·3**	*Mean.*

TABLE XV (*continued*)

Number of Rain Days

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group VI :						
Yanina	11	8	17	14	13	13·5
Trikkala	11	**13**	**13**	11	9	7
Larissa	8	10	9	9	8	6
Lamia	11	11	9	7	7·4	4·6
Mean	10·2	10·5	**12·0**	10·2	9·4	7·8
Group VII :						
Volo	8	8	**10**	6	5·7	5·6
Chalchis	**13**	12	11	7	6·5	4·6
Athens	11	11	10	8	8	5
Nauplia	9·8	9·6	10	7	6	4
Mean.	10·4	10·1	10·2	7	6·6	4·8
Group VIII :						
Andros	**12**	**12**	10	6	4·5	2·0
Syra	**12**	11	9	4	4·6	1·0
Naxos	**12**	11	6	6	5·0	1·0
Santorin	11	**12**	8	4	3·6	1·0
Mean	11·8	11·5	8·2	5·0	4·4	1·2
Group IX :						
Cythera	7	9	7	2·5	2·6	0·8
Canea	13·4	11·2	6·9	4·2	2·4	1·1
Candia.	**15**	12	12	5	4	1
Mean	11·8	10·7	8·6	3·9	3·0	1·0
Group X :						
Corfu	11	**13**	9	9	6	4
Arta	11	**13**	12	10	10	7
Kephalonia	11	**13**	9	6	4	2·5
Patras	12	**15**	12	11	9	6
Zante	13	15	10	8	5·6	3·2
Mean	11·6	**13·8**	10·4	8·8	6·9	4·5

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
9	7	6	11	**14**	13	Yanina.
5	3	6	9	11	12	Trikkala.
5	3	4·6	6	**10**	9	Larissa.
3·2	3·4	5·2	7	9	**12**	Lamia.
5·5	4·1	5·4	8·2	11·0	11·5	*Mean.*
						Group VII :
2·1	2·6	2·5	5	8	7	Volo.
2	2·6	4·6	8	11	12	Chalchis.
2	2	4	8	11	**13**	Athens.
2	2	3·6	7·5	9	**10·4**	Nauplia.
2·0	2·3	3·7	7·1	9·7	**10·6**	*Mean.*
						Group VIII :
1·0	1·0	3·0	5·5	10	**12**	Andros.
0·2	0·1	1·5	4	7	11	Syra.
0·4	0·4	1·6	4	6	10	Naxos.
0·1	0·0	1·0	4	8	11	Santorin.
0·4	0·4	1·8	4·4	7·8	11·0	*Mean.*
						Group IX :
0·4	0·0	0·9	4·5	8	**9**	Cythera.
0·1	0·4	1·7	5·6	10·9	**13·9**	Canea.
0·0	1	2	7	12	**15**	Candia.
0·2	0·5	1·5	5·7	10·3	**12·6**	*Mean.*
						Group X :
2	1·5	5	10	11	11	Corfu.
3	2	6	9	12	**13**	Arta.
0·1	0·1	3	7	9	**13**	Kephalonia.
1·5	2·6	5·2	11·4	13	**15**	Patras.
1·0	1·2	5·5	8·0	12	**17**	Zante.
1·5	1·5	4·9	9·1	11·4	**13·8**	*Mean.*

TABLE XVI

Average Number of Days of Snowfall

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I :						
Chepelare . . .	**10**	**10**	9	4	0·3	—
Samokov . . .	**11**	10	10	4	0·3	—
Rilski Monastir . .	10	10	9	4	0·4	—
Kustendil . . .	**6**	5	4	0·8	0·1	—
Sofia	**10**	9	8	2	0·1	—
Mean . . .	**9·4**	8·8	8	2·9	0·2	—
Group II :						
Burgas . . .	**6**	4	3	0·4	—	—
Stara Zagora . .	**6**	4	5	0·4	—	—
Kazanlyk . . .	**7**	**7**	5	1	—	—
Haskovo . . .	**7**	5	4	1	—	—
Philippopolis . .	**6**	4	3	0·5	—	—
Mean . . .	**6·4**	4·8	4	0·6	—	—
Group III :						
Üsküb	**4·7**	3·5	1	—	—	—
Group IV :						
Scutari . . .	1·1	1·2	0·6	—	—	—
Group V :						
Constantinople . .	5·5	**6**	3	0·2	—	—
Salonica . . .	**1·4**	**0·7**	0·4	0·1	—	—

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
—	—	0·3	0·5	6	7	Chepelare.
—	—	0·2	0·7	6	7	Samokov.
—	—	0·1	1	6	**12**	Rilski Monastir.
—	—	0·0	0·0	3	3	Kustendil.
—	—	0·0	0·3	5	7	Sofia.
—	—	0·1	0·5	5·2	7·2	*Mean.*
						Group II :
—	—	—	—	1	3	Burgas.
—	—	—	—	3	3	Stara Zagora.
—	—	—	—	4	4	Kazanlyk.
—	—	—	—	3	3	Haskovo.
—	—	—	—	2	2	Philippopolis.
—	—	—	—	2·6	3	*Mean.*
						Group III :
—	—	—	0·6	1·4	2·1	Üsküb.
						Group IV :
—	—	—	0·1	0·6	**3·6**	Scutari.
						Group V :
—	—	—	—	0·6	2·9	Constantinople.
—	—	—	—	0·3	0·7	Salonica.

TABLE XVI (*continued*)

Average Number of Days of Snowfall

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group VI :						
Yanina	**1·7**	1·6	1·0	—	—	—
Trikkala	3·5	**3·8**	0·9	0·1	—	—
Larissa	1·**6**	1·2	0·3	0·1	—	—
Lamia	**2·4**	1·4	0·5	—	—	—
Mean	2·3	**2·0**	0·7	0·1	—	—
Group VII :						
Volo	0·6	**1·1**	0·2	—	—	—
Chalchis	**1·9**	1·5	0·2	—	—	—
Athens	**1·8**	1·5	1·1	0·1	—	—
Nauplia	**0·9**	**0·9**	—	—	—	—
Mean	**1·3**	1·2	0·4	—	—	—
Group VIII :						
Andros	**2·8**	2·6	0·4	—	—	—
Syra	0·6	**1·4**	—	—	—	—
Naxos	0·6	**1·2**	0·1	—	—	—
Santorin	0·6	**1·4**	0·2	—	—	—
Mean	1·1	**1·6**	0·2	—	—	—
Group IX :						
Cythera	—	0·6	—	—	—	—
Group X :						
Corfu	0·4	0·2	—	—	—	—
Arta	0·1	0·1	—	—	—	—
Kephalonia	0·6	0·4	—	0·1	—	—
Patras	0·1	0·6	—	—	—	—
Zante	0·3	0·9	0·1	—	—	—
Mean	0·3	0·4	—	—	—	—

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
—	—	—	—	0·7	1·1	Yanina.
—	—	—	—	0·6	0·5	Trikkala.
—	—	—	—	0·4	0·4	Larissa.
—	—	—	—	0·4	0·5	Lamia.
—	—	—	—	0·5	0·6	*Mean.*
						Group VII :
—	—	—	—	0·1	0·2	Volo.
—	—	—	—	0·2	0·6	Chalchis.
—	—	—	—	0·1	0·9	Athens.
—	—	—	—	0·8	0·5	Nauplia.
—	—	—	—	0·3	0·5	*Mean.*
						Group VIII :
—	—	—	—	—	0·9	Andros.
—	—	—	—	—	0·1	Syra.
—	—	—	—	—	0·4	Naxos.
—	—	—	—	—	0·1	Santorin.
—	—	—	—	—	0.4	*Mean.*
						Group IX :
—	—	—	—	—	0·1	Cythera.
						Group X :
—	—	—	—	—	0·1	Corfu.
—	—	—	—	—	—	Arta.
—	—	—	—	—	—	Kephalonia.
—	—	—	—	—	—	Patras.
—	—	—	—	—	0·3	Zante.
—				—	0·1	*Mean.*

TABLE XVII

Maximum Number of Days in any Year, of
(*A*) SNOWFALL; (*B*) SNOW COVERING GROUND.

	Nov.		*Dec.*		*Jan.*	
	A.	B.	A.	B.	A.	B.
Chepelare †	11	13	14	23	18	31
Samokov †	12	13	12	27	14	31
Rilski Monastir †	9	19	12	26	14	31
Kustendil †	7	14	7	27	11	31
Sofia *	9	13	17	27	16	31
Burgas *	4	8	6	8	13	25
Stara Zagora †	4	4	7	11	9	30
Kazanlyk †	7	7	9	17	12	31
Haskovo †	6	4	8	20	12	31
Philippopolis †	6	5	6	23	11	31

* Observations, 1894–1910.
† Observations, 1900–10.

TABLE XVIII

AVERAGE NUMBER OF DAYS OF MIST AND FOG

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I :						
Chepelare	0·7	1·3	1·3	0·6	—	0·4
Samokov	6·1	8·7	6·1	3·5	1·8	0·5
Rilski Monastir	4·6	4·4	4·3	4·0	1·6	1·4
Kustendil	5·1	1·0	1·0	0·3	0·1	—
Sofia	14·0	6·0	6·0	1·0	0·1	0·3
Mean	6·1	4·3	3·7	1·9	0·7	0·5
Group II :						
Burgas	3·5	3·1	4·2	1·8	1·8	1·0
Stara Zagora	5·0	3·2	2·5	1·5	1·0	0·3
Kazanlyk	4·4	5·2	2·4	0·8	0·3	0·3
Haskovo	7·2	7·7	9·7	4·3	2·1	0·9
Philippopolis	5·1	4·7	2·5	0·5	0·2	0·2
Mean	5·0	4·8	4·3	1·8	1·1	0·5
Group V :						
Salonica	2·5	1·7	0·6	0·4	0·1	—

Feb.		*Mar.*		*Apr.*		
A.	B.	A.	B.	A.	B.	
21	28	22	31	7	15	Chepelare.†
19	28	19	31	9	9	Samokov.†
17	28	17	31	8	15	Rilski Monastir.†
11	28	12	26	2	3	Kustendil.†
18	28	21	25	9	3	Sofia.*
8	13	11	6	1	—	Burgas.*
10	22	8	4	2	5	Stara Zagora.†
14	28	16	5	4	1	Kazanlyk.†
11	28	13	10	3	1	Haskovo.†
10	28	10	8	1	—	Philippopolis.†

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
—	—	0·5	1·3	1·1	1·5	Chepelare.
0·1	0·1	1·4	5·5	6·4	8·7	Samokov.
1·1	0·6	0·7	4·5	4·7	5·5	Rilski Monastir.
—	—	0·2	0·4	3·8	5·7	Kustendil.
0·2	0·2	1·0	6·0	10·0	12·0	Sofia.
0·3	0·2	0·8	3·5	5·2	6·7	*Mean.*
						Group II :
0·7	0·4	2·0	4·1	3·0	4·1	Burgas.
—	—	1·0	1·3	3·4	5·5	Stara Zagora.
—	—	0·1	2·1	3·5	7·0	Kazanlyk.
1·7	1·7	3·4	9·5	9·8	13·6	Haskovo.
—	—	0·2	2·0	4·5	7·0	Philippopolis.
0·5	0·4	1·3	3·8	4·8	7·4	*Mean.*
						Group V :
—	—	0·1	0·8	3·2	7·5	Salonica.

TABLE XVIII (*continued*)

Average Number of Days of Mist and Fog

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group VI :						
Trikkala	3·1	0·4	0·4	0·2	0·5	0·2
Larissa	1·0	0·1	0·1	0·1	—	—
Lamia	—	0·4	—	1·0	—	—
Mean	1·4	0·3	0·2	0·4	0·2	0·1
Group VII :						
Volo	0·7	0·2	0·6	0·6	—	—
Chalchis	0·3	—	—	—	0·2	—
Athens	18·0	15·0	25·0	20·0	24·0	22·0
Nauplia	6·2	4·2	7·0	3·6	1·4	1·4
Mean	6·3	4·8	8·1	6·0	6·4	5·8
Group VIII :						
Andros	2·5	2·0	3·5	3·0	2·0	1·0
Syra	1·2	1·2	2·0	0·8	—	0·2
Naxos	—	0·2	0·8	0·8	0·8	0·1
Santorin	1·7	1·4	3·4	6·9	11·0	14·0
Mean	1·3	1·2	2·4	2·9	3·4	3·8
Group IX :						
Cythera	—	1·3	0·4	0·6	1·0	0·6
Group X :						
Corfu	3·4	2·6	4·6	3·7	2·0	0·2
Arta	0·4	0·4	0·6	—	—	—
Kephalonia	1·6	0·8	1·4	2·2	3·4	2·2
Patras	7·5	7·3	10·0	8·6	5·0	3·3
Zante	1·2	0·8	0·6	1·2	1·0	0·4
Mean	2·8	2·4	3·4	3·1	2·3	1·2

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
0·1	0·4	—	0·9	3·2	1·2	Trikkala.
—	—	0.1	0·3	1·4	0·9	Larissa.
—	—	0·2	—	0·2	—	Lamia.
—	0.1	0·1	0·4	1·6	0·7	*Mean.*
						Group VII :
—	—	—	0·3	1·0	0·3	Volo.
—	—	—	—	0·2	0·4	Chalchis.
22·0	20·0	23·0	24·0	19·0	18·0	Athens.
0·3	2·4	2·1	1·8	4·5	5·8	Nauplia.
5·6	5·6	6·3	6·5	6·2	6·1	*Mean.*
						Group VIII :
1·0	1·0	1·0	2·0	3·0	2·5	Andros.
—	—	—	0·8	1·5	1·5	Syra.
0·1	0·2	—	0·1	0·1	0·2	Naxos.
6·0	4·7	5·0	3·8	5·0	1·6	Santorin.
1·8	1·5	1·5	1·7	2·4	1·4	*Mean.*
						Group IX :
—	0·1	0·2	—	0·3	—	Cythera.
						Group X :
1·4	1·7	2·0	4·5	2·0	0·6	Corfu.
—	—	—	4·0	0·2	0·6	Arta.
2·2	—	0·2	0·4	2·4	2·8	Kephalonia.
6·6	8·6	5·4	8·3	10·3	9·2	Patras.
1·8	0·4	1·2	1·4	1·4	1·6	Zante.
2·4	2·1	1·7	3·7	3·3	3·0	*Mean.*

TABLE XIX

Wind Directions as Percentages of Total Observations

JANUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare	22·4	13·8	1·8	6·9	24·7	11·2	4·7	5·1	8·4
Samokov	5·0	7·4	8·8	11·5	11·7	10·2	13·9	10·8	20·6
Rilski Monastir	3·2	23·2	5·0	1·8	5·8	17·6	1·7	0·3	41·4
Kustendil	3·7	1·3	1·6	2·3	1·0	1·2	1·6	4·3	83·0
Sofia	2·0	10·0	14·0	11·0	2·0	10·0	13·0	17·0	22·0
Mean	7·3	11·1	6·3	6·7	9·0	10·0	7·0	7·5	35·1
Group II :									
Burgas	16·3	6·1	2·6	0·8	3·7	16·3	23·8	11·4	19·0
Stara Zagora	20·2	16·4	10·7	5·8	10·3	7·0	4·7	10·7	14·1
Kazanlyk	5·2	2·1	3·8	5·8	1·4	1·1	7·2	21·3	52·0
Haskovo	9·6	7·6	1·0	0·9	3·8	3·3	11·6	15·1	47·1
Philippopolis	3·3	1·4	8·4	6·4	1·2	12·9	22·5	6·8	37·2
Mean	10·9	6·7	5·3	3·9	4·1	8·1	14·0	13·1	33·9
Group III :									
Monastir	24·3	6·8	12·5	14·5	12·9	4·8	10·0	14·4	0·0
Üsküb	0·1	0·3	—	23·3	—	1·1	—	67·6	7·6
Mean	12·2	3·5	6·2	18·9	6·5	2·9	5·0	41·0	3·8
Group IV :									
Scutari	2·4	4·6	17·3	3·8	1·6	1·3	3·3	3·5	62·2
Durazzo	45·0	16·0	11·0	14·0	5·0	3·0	1·0	2·0	3·0
Mean	23·7	10·3	14·2	8·9	3·3	2·2	2·2	2·7	32·6
Group V :									
Constantinople	21·8	26·8	1·3	0·9	14·7	18·3	2·7	2·7	10·8
Kavalla	32·8	2·7	17·2	4·3	5·4	2·1	15·6	10·2	9·7
Salonica	23·0	13·6	8·1	5·1	2·5	3·7	3·0	7·5	33·5
Mean	25·9	14·4	8·9	3·4	7·5	8·0	7·1	6·8	18·0

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	8·6	6·9	9·2	30·1	14·5	3·9	12·4	14·4	—
Trikkala .	13·8	6·8	5·5	6·9	5·7	15·3	19·5	24·8	1·7
Larissa . .	8·5	6·4	7·9	2·0	2·9	3·9	6·2	5·7	56·5
Lamia . .	13·0	1·7	10·0	3·7	2·0	1·6	9·5	33·6	24·9
Mean . .	11·0	5·4	8·1	10·7	6·3	6·2	11·9	19·6	20·8
Group VII :									
Volo . .	15·1	1·6	2·9	5·8	2·5	0·6	3·8	64·7	3·0
Chalchis .	41·8	10·9	5·8	7·5	12·6	2·0	4·4	14·9	0·1
Athens . .	15·0	22·1	6·4	4·8	13·1	7·5	4·8	9·3	17·0
Nauplia. .	23·9	11·6	9·4	3·6	6·6	9·0	5·2	12·1	18·6
Mean . .	24·0	11·5	6·1	5·4	8·7	4·8	4·6	25·2	9·7
Group VIII :									
Andros . .	21·4	32·5	6·4	6·2	21·7	6·9	0·9	3·9	0·1
Syra . .	36·7	16·8	3·1	3·0	6·3	12·7	9·4	7·1	4·9
Naxos . .	37·7	18·1	1·0	5·0	15·3	10·1	4·3	3·0	5·5
Santorin .	26·8	15·2	6·0	5·3	7·7	11·3	13·9	13·8	—
Mean . .	30·7	20·7	4·1	4·9	12·8	10·2	7·1	6·9	2·6
Group IX :									
Cythera. .	0·1	8·1	1·9	3·9	4·7	14·3	17·5	9·4	0·1
Canea . .	13·8	21·9	11·7	4·5	9·4	9·8	10·3	2·3	16·3
Candia . .	20·7	1·2	—	0·6	42·9	10·5	1·0	15·1	8·1
Mean. .	24·9	10·4	4·5	3·0	19·0	11·5	9·6	8·9	8·2
Group X :									
Corfu . .	6·7	8·5	10·0	14·1	11·0	9·3	5·3	9·2	25·9
Arta . .	2·1	32·4	34·2	18·2	3·8	3·2	4·1	1·8	0·2
Kephalonia .	8·2	12·2	8·7	15·1	14·7	13·6	6·4	15·9	5·2
Patras . .	17·8	23·8	8·5	14·4	16·5	8·4	5·1	3·7	1·8
Zante . .	24·7	12·5	6·3	10·9	13·4	11·1	7·8	11·6	1·7
Mean. .	11·9	17·9	13·6	14·5	11·9	9·1	5·7	8·4	7·0

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

FEBRUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare	20·1	12·3	0·9	9·9	25·8	12·8	4·6	4·6	8·9
Samokov	4·4	9·5	16·8	9·5	8·8	10·1	10·3	11·1	19·5
Rilski Monastir	2·2	15·7	3·3	1·5	4·8	20·9	1·9	0·9	48·8
Kustendil	2·9	1·6	1·8	2·1	2·2	1·9	1·3	4·1	82·1
Sofia	2·0	7·0	12·0	10·0	2·0	6·0	21·0	23·0	17·0
Mean	6·3	9·2	7·0	6·6	8·7	10·3	7·8	8·7	35·3
Group II :									
Burgas	15·4	12·2	10·2	3·4	2·2	12·3	17·0	10·0	17·3
Stara Zagora	16·8	16·6	21·4	10·8	7·1	5·7	3·3	7·6	10·6
Kazanlyk	6·4	1·7	6·4	13·9	2·4	1·1	6·0	15·5	46·6
Haskovo	11·1	9·6	4·8	3·8	4·6	2·6	9·3	15·8	38·4
Philippopolis	3·5	1·9	14·8	11·6	2·9	9·7	15·0	6·6	33·7
Mean	10·6	8·4	11·5	8·7	3·8	6·3	10·1	11·1	29·3
Group III :									
Monastir	23·3	8·1	7·2	13·0	20·9	3·1	9·7	14·7	—
Üsküb	—	0·3	—	18·7	0·2	1·2	0·5	66·1	13·0
Mean	11·6	4·2	3·6	15·9	10·5	2·2	5·1	40·4	6·5
Group IV :									
Scutari	2·0	3·4	17·4	4·3	3·0	1·7	5·4	3·3	59·5
Durazzo	29·0	13·0	6·0	20·0	11·0	6·0	4·0	5·0	6·0
Mean	15·5	8·2	11·7	12·2	7·0	3·8	4·7	4·2	32·8
Group V :									
Constantinople	21·8	27·8	2·3	0·8	13·9	17·9	2·1	3·9	9·5
Kavalla	5·4	6·0	44·0	8·9	8·9	1·8	10·1	5·4	9·5
Salonica	21·9	11·1	9·3	5·5	3·1	5·5	4·6	7·2	31·8
Mean	16·4	14·9	18·5	5·1	8·6	8·4	5·6	5·5	17·0

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	7·5	8·0	7·5	28·4	14·1	7·4	12·4	14·7	—
Trikkala .	15·8	8·4	6·1	8·7	5·2	12·4	21·6	20·8	1·0
Larissa . .	6·6	10·9	7·4	3·0	2·8	4·0	8·7	6·8	49·8
Lamia . .	9·8	3·6	18·0	5·9	2·0	1·9	9·0	26·7	23·1
Mean. .	9·9	7·7	9·7	11·5	6·0	6·4	12·9	17·2	18·5
Group VII :									
Volo . .	13·4	4·4	4·6	12·0	8·6	0·5	4·5	48·4	3·6
Chalchis .	32·9	11·3	7·4	13·9	21·2	3·2	2·3	7·6	0·2
Athens . .	11·6	20·1	6·2	6·2	19·3	9·7	6·4	7·7	12·8
Nauplia. .	18·0	10·9	10·8	4·4	11·3	12·7	6·4	7·5	18·0
Mean. .	19·0	11·7	7·2	9·1	15·1	6·5	4·9	17·8	8·6
Group VIII :									
Andros . .	18·5	27·4	8·2	10·8	22·6	7·5	1·2	3·7	0·1
Syra . .	27·3	14·1	6·1	5·0	9·6	15·6	11·4	6·1	4·8
Naxos . .	31·3	14·4	0·6	8·1	18·0	11·8	6·0	4·6	5·2
Santorin .	20·6	12·4	6·0	9·4	8·7	14·0	18·3	10·6	—
Mean. .	24·4	17·1	5·2	8·4	14·7	12·2	9·2	6·3	2·5
Group IX :									
Cythera. .	29·1	6·7	3·2	7·5	6·1	19·1	24·0	4·3	—
Canea . .	16·9	20·6	12·7	4·7	6·9	9·9	7·2	5·8	15·3
Candia . .	10·2	1·8	—	1·5	43·7	7·3	1·3	12·4	21·7
Mean. .	18·7	9·7	5·3	4·6	18·9	12·1	10·8	7·5	12·3
Group X :									
Corfu . .	6·6	8·4	8·2	14·4	14·2	9·6	6·6	7·6	24·4
Arta . .	1·5	26·7	30·7	17·1	9·1	7·9	4·8	2·1	0·1
Kephalonia .	5·6	9·7	8·0	16·4	15·2	11·7	9·7	17·9	5·8
Patras . .	17·7	19·1	8·0	14·0	16·4	10·6	9·5	3·4	1·3
Zante . .	17·3	10·5	5·8	12·5	14·7	12·5	11·4	13·9	1·4
Mean. .	9·7	14·9	12·1	14·9	13·9	10·5	8·4	9·0	6·6

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

MARCH

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	22·1	16·4	0·9	9·5	25·6	9·3	3·2	3·9	9·1
Samokov . .	5·8	10·3	15·5	9·4	9·2	10·0	9·9	10·4	19·5
Rilski Monastir	3·0	16·1	4·2	1·2	5·1	20·8	1·8	0·4	47·1
Kustendil .	4·7	2·1	1·9	3·4	3·3	2·9	2·1	5·1	74·5
Sofia . .	2·0	11·0	15·0	9·0	2·0	6·0	17·0	20·0	17·0
Mean . .	7·5	11·2	7·5	6·5	9·0	9·8	6·8	8·0	33·5
Group II :									
Burgas . .	14·7	16·5	17·2	4·0	3·0	10·3	13·2	7·5	13·5
Stara Zagora .	15·6	19·1	21·4	8·7	8·4	6·4	3·4	6·2	10·7
Kazanlyk .	8·9	2·4	9·9	16·5	1·5	1·6	5·9	15·8	37·4
Haskovo .	10·4	11·3	7·7	5·1	7·4	3·8	5·1	11·0	38·2
Philippopolis .	2·8	2·5	19·4	13·1	1·9	12·6	13·0	5·7	28·9
Mean . .	10·5	10·4	15·1	9·5	4·4	7·0	8·1	9·2	25·7
Group III :									
Monastir .	19·5	7·3	7·1	14·0	25·4	4·2	9·4	13·1	—
Üsküb . .	0·5	0·3	0·9	15·4	0·3	0·9	0·1	69·7	11·9
Mean . .	10·0	3·8	4·0	14·7	12·8	2·5	4·8	41·4	6·0
Group IV :									
Scutari . .	1·4	2·9	12·3	4·0	3·8	3·1	6·0	2·5	64·0
Durazzo . .	24·0	19·0	7·0	18·0	10·0	7·0	3·0	5·0	7·0
Mean . .	12·7	11·0	9·6	11·0	6·9	5·0	4·5	3·8	35·5
Group V :									
Constantinople.	19·9	31·7	2·1	0·6	12·4	17·6	2·2	2·3	11·2
Kavalla . .	12·9	1·6	18·3	7·5	26·4	9·1	8·1	4·3	11·8
Salonica . .	13·9	9·0	8·9	6·9	5·3	12·3	4·3	5·3	34·1
Mean . .	15·5	14·1	9·8	5·0	14·7	13·0	4·9	4·0	19·0

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	8·2	9·6	10·7	30·7	16·3	2·6	8·3	13·6	—
Trikkala .	8·6	8·2	10·5	11·6	7·1	15·3	19·4	16·6	2·2
Larissa . .	5·3	11·3	16·0	2·7	2·5	5·9	8·5	6·0	41·8
Lamia . .	7·6	2·4	21·0	7·4	2·4	1·8	8·0	23·3	26·1
Mean. .	7·4	7·9	14·6	13·1	7·1	6·4	11·0	14·9	17·5
Group VII :									
Volo . .	11·7	1·8	4·5	14·7	15·5	0·8	3·8	41·0	6·2
Chalchis .	32·9	14·2	6·4	12·9	18·2	3·7	2·8	8·8	0·1
Athens . .	11·6	21·5	5·2	4·3	16·1	11·7	7·6	5·4	16·6
Nauplia. .	17·3	11·0	9·6	4·8	14·9	9·9	8·0	5·6	18·9
Mean. .	18·4	12·1	6·4	9·2	16·2	6·5	5·6	15·2	10·4
Group VIII :									
Andros . .	24·7	25·8	8·7	9·1	19·7	6·8	1·5	3·7	—
Syra . .	29·6	15·3	6·8	6·2	7·6	13·2	8·7	6·4	6·2
Naxos . .	32·8	17·8	0·5	6·5	16·6	10·3	4·0	4·3	7·2
Santorin .	23·1	12·4	7·5	8·4	5·5	10·1	19·3	13·7	—
Mean. .	27·6	17·8	5·9	7·6	12·4	10·1	8·4	7·0	3·3
Group IX :									
Cythera. .	30·2	7·0	3·9	4·7	5·6	10·1	29·5	9·0	—
Canea . .	10·9	9·9	6·6	12·9	10·2	8·5	15·5	7·4	18·1
Candia . .	10·5	0·2	0·4	1·2	28·4	10·5	2·8	15·7	30·2
Mean. .	17·2	5·7	3·6	6·3	14·7	9·7	15·9	10·7	16·1
Group X :									
Corfu . .	5·5	5·0	7·6	14·1	13·2	13·6	6·1	10·7	24·2
Arta . .	1·3	20·4	25·2	15·1	13·6	9·8	11·2	3·0	0·2
Kephalonia .	6·3	7·8	6·6	14·8	15·8	11·9	10·0	22·4	4·4
Patras . .	18·2	21·7	6·2	9·8	16·2	11·4	10·6	4·3	1·6
Zante . .	16·7	7·3	7·2	12·5	14·9	10·9	11·3	17·7	1·5
Mean. .	9·6	12·5	10·6	13·3	14·7	11·5	9·8	11·6	6·4

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

APRIL

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare	16·2	12·9	2·2	14·7	29·8	8·1	3·4	3·1	9·6
Samokov	4·6	9·1	16·6	9·0	6·1	7·3	16·9	10·6	19·9
Rilski Monastir	2·2	14·2	5·7	2·1	4·2	17·6	2·3	0·7	51·0
Kustendil	4·2	4·1	4·7	3·0	3·3	2·9	3·2	4·5	70·1
Sofia	3·0	13·0	20·0	11·0	2·0	8·0	13·0	16·0	14·0
Mean	6·0	10·6	9·8	8·0	9·1	8·8	7·7	7·0	32·9
Group II :									
Burgas	9·4	16·0	23·4	5·2	3·4	12·7	12·7	5·1	12·1
Stara Zagora	13·4	17·5	19·7	10·5	10·5	6·3	3·3	6·7	12·1
Kazanlyk	6·9	1·8	8·6	21·5	1·9	1·8	5·0	16·3	36·2
Haskovo	10·8	11·7	7·5	6·2	9·9	3·7	7·3	10·6	32·3
Philippopolis	2·6	1·9	20·3	14·3	1·8	10·4	12·9	6·1	29·7
Mean	8·6	9·8	15·9	11·5	5·5	7·0	8·2	8·9	24·5
Group III :									
Monastir	17·5	8·0	7·8	17·3	19·4	4·8	10·3	14·9	—
Üsküb	1·7	5·0	2·2	25·0	1·4	3·3	1·3	49·7	10·4
Mean	9·6	6·5	5·0	21·2	10·4	4·0	5·8	32·3	5·2
Group IV :									
Scutari	0·8	1·0	11·7	3·6	4·5	4·3	5·9	2·0	66·2
Durazzo	21·0	8·0	8·0	16·0	15·0	9·0	2·0	12·0	9·0
Mean	10·9	4·5	9·8	9·8	9·8	6·6	3·9	7·0	37·6
Group V :									
Constantinople	17·0	35·4	2·1	1·3	10·5	14·8	2·7	2·1	14·1
Kavalla	8·0	0·7	26·0	10·0	12·7	7·3	14·7	3·3	17·3
Salonica	13·2	6·5	7·8	8·2	6·0	16·3	4·8	5·6	31·6
Mean	12·7	14·2	12·0	6·5	9·7	12·8	7·4	3·7	21·0

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	15·2	15·2	6·8	21·7	11·8	2·8	7·1	19·4	—
Trikkala .	7·6	8·2	12·4	15·2	9·5	16·8	14·5	14·1	1·7
Larissa . .	4·2	11·2	20·1	4·2	2·4	6·4	10·3	3·8	37·4
Lamia . .	6·1	2·8	23·9	10·1	3·9	2·0	8·8	19·8	22·6
Mean. .	8·3	9·4	15·8	12·8	6·9	7·0	10·2	14·3	15·4
Group VII :									
Volo . .	7·6	0·5	4·6	12·5	27·6	0·7	4·6	33·5	8·4
Chalchis .	29·1	7·6	6·3	13·0	23·9	3·9	3·3	12·0	—
Athens . .	9·1	16·6	5·0	4·2	17·1	15·6	9·1	4·6	18·7
Nauplia. .	12·2	8·7	7·4	2·9	17·3	14·6	7·3	6·3	23·3
Mean. .	14·5	8·4	5·8	8·1	21·5	8·7	6·1	14·1	12·6
Group VIII :									
Andros . .	19·5	25·4	10·7	7·9	22·6	5·5	0·5	7·8	0·1
Syra . .	23·1	19·8	7·0	4·8	6·5	15·9	10·6	5·2	7·1
Naxos . .	36·0	14·9	0·4	3·4	19·1	11·9	3·2	2·7	8·4
Santorin .	16·8	12·9	11·1	9·0	4·1	10·3	20·6	15·2	—
Mean. .	23·9	18·2	7·3	6·3	13·1	10·9	8·7	7·7	3·9
Group IX :									
Cythera. .	33·6	5·9	1·3	3·4	7·5	9·0	31·9	7·4	—
Canea . .	10·6	6·0	11·4	6·0	5·1	11·3	20·0	15·5	14·1
Candia . .	8·0	0·4	1·0	2·5	21·2	5·2	2·3	18·1	41·1
Mean. .	17·4	4·1	4·6	4·0	11·3	8·5	18·1	13·7	18·4
Group X :									
Corfu . .	4·1	5·0	6·4	10·1	17·1	14·6	8·0	10·6	24·1
Arta . .	1·0	15·1	24·0	17·1	13·9	11·8	11·3	5·0	0·8
Kephalonia .	3·9	2·7	4·2	14·5	24·8	12·0	7·4	25·3	5·2
Patras . .	17·8	17·4	3·2	6·3	16·7	14·6	14·7	7·6	1·7
Zante . .	10·6	5·5	5·8	13·0	18·8	8·8	11·9	23·2	2·4
Mean. .	7·5	9·1	8·7	12·2	18·3	12·4	10·7	14·3	6·8

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

MAY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	16·3	13·0	1·4	17·0	30·0	5·8	2·1	3·0	11·2
Samokov . .	6·3	8·5	17·7	10·0	4·5	4·7	14·2	9·9	24·2
Rilski Monastir	2·0	14·2	7·3	2·9	4·1	17·4	0·9	0·5	50·5
Kustendil .	2·9	3·2	2·7	2·8	2·9	2·9	1·8	3·9	76·6
Sofia . .	2·4	10·0	12·6	12·9	0·9	4·6	11·8	13·3	31·3
Mean . .	6·0	9·8	8·3	9·1	8·5	7·1	6·1	6·1	38·8
Group II :									
Burgas . .	8·3	15·7	27·7	8·2	4·5	15·0	11·4	2·5	6·4
Stara Zagora .	13·9	16·3	21·7	12·4	9·5	4·9	2·6	6·3	12·4
Kazanlyk .	7·6	3·2	7·9	17·7	2·6	1·4	5·5	13·3	40·8
Haskovo .	10·2	12·8	10·6	4·4	5·9	2·0	5·5	11·6	36·8
Philippopolis .	2·7	2·9	19·6	11·5	2·6	8·4	13·1	5·9	33·0
Mean . .	8·5	10·2	17·5	10·8	5·0	6·3	7·6	7·9	25·9
Group III :									
Monastir .	16·7	10·0	7·5	18·2	16·7	4·7	12·4	13·8	—
Üsküb . .	0·1	1·5	2·3	28·2	3·1	1·5	0·7	50·7	11·9
Mean . .	8·4	5·8	4·9	23·2	9·9	3·1	6·6	32·3	6·0
Group IV :									
Scutari . .	0·4	1·1	6·6	2·7	4·8	6·1	5·8	1·8	70·7
Durazzo . .	12·0	7·0	16·0	12·0	10·0	7·0	6·0	18·0	12·0
Mean . .	6·2	4·0	11·3	7·3	7·4	6·5	5·9	9·9	41·4
Group V :									
Constantinople .	18·2	34·9	2·9	1·1	7·7	13·4	3·0	3·2	15·6
Kavalla . .	7·5	1·1	16·1	10·2	17·2	15·6	11·8	0·6	19·9
Salonica . .	11·2	6·8	7·7	6·6	7·0	19·1	4·9	5·6	31·1
Mean . .	12·3	14·3	8·9	6·0	10·6	16·0	6·6	3·1	22·2

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	9·9	24·2	9·9	19·1	2·8	3·8	5·6	24·7	—
Trikkala .	7·7	7·0	13·1	13·1	10·1	15·5	14·1	16·8	2·6
Larissa . .	2·4	10·7	20·6	4·7	2·9	7·4	6·9	2·4	42·0
Lamia . .	4·5	2·6	23·1	10·1	3·4	1·8	10·7	18·0	25·8
Mean. .	6·1	11·1	16·7	11·7	4·8	7·1	9·3	15·5	17·6
Group VII :									
Volo . .	7·7	0·6	1·2	8·1	39·5	0·5	2·3	33·3	6·8
Chalchis .	31·6	7·4	7·1	14·1	20·4	3·7	2·3	13·4	—
Athens . .	8·7	15·0	4·2	3·1	17·8	16·3	6·7	4·0	24·2
Nauplia. .	10·8	7·9	5·4	3·4	19·8	11·7	5·1	5·7	30·2
Mean. .	14·7	7·7	4·5	7·2	24·4	8·0	4·1	14·1	15·3
Group VIII :									
Andros . .	15·0	18·7	16·8	4·0	18·9	6·6	1·4	17·7	0·9
Syra . .	22·6	21·8	11·7	4·2	6·4	11·6	7·3	3·2	11·2
Naxos . .	34·4	18·1	0·2	2·8	19·7	10·0	3·0	2·5	9·3
Santorin .	17·4	11·4	9·9	6·1	3·7	10·6	27·0	13·8	0·1
Mean. .	22·3	17·5	9·6	4·3	12·2	9·7	9·7	9·3	5·4
Group IX :									
Cythera. .	34·4	3·3	0·7	1·8	1·9	5·4	46·7	5·8	—
Canea . .	17·0	13·8	12·1	3·7	7·4	3·3	21·4	8·7	12·6
Candia . .	9·3	4·1	1·4	1·4	13·6	1·8	0·4	28·8	39·0
Mean. .	20·2	7·1	4·7	2·3	7·6	3·5	22·8	14·4	17·2
Group X :									
Corfu . .	5·3	10·1	5·6	10·4	13·5	12·0	9·4	9·7	24·0
Arta . .	0·7	13·4	24·5	13·3	13·0	14·9	14·3	4·1	1·8
Kephalonia .	3·3	3·6	2·0	8·8	19·2	10·2	6·8	41·3	4·8
Patras . .	16·5	10·2	3·0	6·2	15·4	14·9	21·7	8·4	3·7
Zante . .	6·4	5·8	2·7	8·2	12·7	6·0	16·6	38·3	3·3
Mean. .	6·4	8·6	7·6	9·4	14·8	11·6	13·8	20·4	7·5

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

JUNE

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	18·8	14·7	1·9	16·6	25·0	4·9	2·6	2·5	12·8
Samokov .	5·3	8·9	8·1	7·4	5·3	6·5	14·6	13·4	30·5
Rilski Monastir	2·4	12·1	7·0	3·0	4·7	11·3	1·9	0·9	57·0
Kustendil .	2·8	3·0	3·4	3·1	1·7	2·7	3·9	3·3	75·9
Sofia . .	3·7	7·7	7·7	8·1	1·2	4·7	14·7	19·3	32·8
Mean . .	6·6	9·3	5·6	7·6	7·6	6·0	7·5	7·9	41·8
Group II :									
Burgas . .	5·3	7·2	22·4	10·5	7·2	15·9	16·6	4·8	10·1
Stara Zagora .	16·4	15·7	14·8	9·3	7·8	6·7	5·0	9·8	14·4
Kazanlyk .	9·5	4·0	4·2	10·8	2·3	2·2	6·7	15·2	45·0
Haskovo . .	10·5	8·6	7·3	5·1	3·6	2·4	10·0	11·9	40·5
Philippopolis .	6·0	2·1	13·7	7·0	3·5	10·3	17·5	8·1	31·8
Mean . .	9·5	7·5	12·5	8·5	4·9	7·5	11·2	9·8	28·4
Group III :									
Monastir . .	20·0	12·5	13·6	15·1	9·3	2·9	8·1	18·5	—
Üsküb . .	0·4	1·8	1·1	21·9	3·8	2·1	1·3	59·6	8·0
Mean . .	10·2	7·2	7·4	18·5	6·5	2·5	4·7	39·0	4·0
Group IV :									
Scutari . .	0·5	1·0	5·2	3·7	3·6	4·5	7·3	1·2	73·0
Durazzo .	21·0	7·0	12·0	9·0	7·0	2·0	6·0	17·0	19·0
Mean . .	10·8	4·0	8·6	6·3	5·3	3·3	6·6	9·1	46·0
Group V :									
Constantinople.	17·6	39·3	4·0	1·2	5·9	10·8	2·5	2·8	15·9
Kavalla . .	3·3	0·5	21·7	10·0	12·8	16·7	25·0	2·2	7·8
Salonica . .	15·3	7·2	5·0	7·3	7·1	17·5	5·8	8·2	26·6
Mean . .	12·1	15·7	10·2	6·2	8·6	15·0	11·1	4·4	16·8

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	17·7	14·2	6·8	18·9	4·6	4·3	7·5	26·0	—
Trikkala .	7·4	7·0	8·4	9·2	10·1	15·7	17·8	22·9	1·5
Larissa . .	1·8	11·9	17·8	4·9	3·6	9·4	8·3	3·0	39·3
Lamia . .	4·0	1·7	22·0	8·6	3·2	2·4	12·1	19·0	27·0
Mean. .	7·7	8·7	13·8	10·4	5·4	7·9	11·4	17·7	16·9
Group VII :									
Volo . .	8·4	0·8	1·2	4·7	49·8	—	3·7	24·4	7·0
Chalchis .	34·9	10·3	7·7	9·7	20·1	4·5	2·5	10·3	—
Athens . .	8·2	13·8	4·3	3·0	16·6	18·1	8·0	4·0	24·0
Nauplia. .	8·0	5·1	3·8	2·7	25·3	10·3	5·2	3·8	35·8
Mean. .	14·9	7·5	4·3	5·0	27·9	8·2	4·9	10·6	16·7
Group VIII :									
Andros . .	18·4	18·4	17·1	1·8	13·2	5·3	0·8	24·6	0·4
Syra . .	28·1	22·9	12·6	3·3	3·3	10·3	5·8	4·1	9·6
Naxos . .	43·9	17·4	0·1	1·9	15·1	8·0	1·6	2·0	10·0
Santorin .	25·9	6·5	3·0	1·9	3·2	9·3	30·3	19·6	0·3
Mean. .	29·1	16·4	8·2	2·2	8·7	8·2	9·6	12·6	5·1
Group IX :									
Cythera. .	30·3	1·3	0·9	0·6	0·3	3·3	61·2	2·1	—
Canea . .	16·5	10·6	11·3	3·8	5·6	2·0	23·4	14·1	12·7
Candia . .	9·2	3·1	1·0	1·9	2·5	1·9	1·0	38·9	40·4
Mean. .	18·7	5·0	4·3	2·2	2·8	2·4	28·5	18·4	17·7
Group X :									
Corfu . .	7·3	10·3	7·4	7·7	8·9	9·6	7·1	10·2	31·5
Arta . .	1·3	13·0	20·8	10·5	13·9	15·9	18·3	5·7	0·6
Kephalonia .	2·6	1·0	0·8	6·2	14·5	8·1	6·2	55·1	5·5
Patras . .	9·6	5·3	1·5	4·7	19·1	20·1	28·8	6·8	4·1
Zante . .	11·3	6·9	2·2	6·0	5·0	4·2	16·8	43·7	3·9
Mean. .	6·4	7·3	6·5	7·0	12·3	11·6	15·4	24·3	9·1

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

JULY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	20·4	16·1	2·7	18·2	21·9	3·9	1·8	3·8	12·0
Samokov .	6·6	8·5	9·4	5·8	7·6	7·1	14·8	14·3	25·9
Rilski Monastir	0·9	12·7	6·4	1·8	5·1	13·9	1·6	0·3	57·3
Kustendil .	2·6	3·8	1·8	2·5	1·9	2·8	3·8	6·2	74·3
Sofia . .	3·6	7·8	5·8	5·6	1·6	4·3	16·8	19·0	35·6
Mean . .	6·8	9·8	5·2	6·8	7·6	6·4	7·8	8·7	41·0
Group II :									
Burgas . .	4·9	6·0	26·0	8·9	7·6	13·0	17·4	5·2	10·9
Stara Zagora .	22·0	18·7	14·0	8·5	6·5	4·8	2·2	9·6	13·7
Kazanlyk .	12·8	3·3	3·6	8·7	2·4	2·0	6·8	21·2	38·3
Haskovo .	11·3	9·7	6·1	2·5	4·0	2·0	9·8	14·1	40·4
Philippopolis .	4·9	1·1	12·5	7·4	2·8	9·7	18·7	8·5	34·4
Mean . .	11·2	7·7	12·5	7·2	4·7	6·3	11·0	11·9	27·5
Group III :									
Monastir .	23·8	15·2	11·4	10·7	9·5	2·2	8·7	18·5	—
Üsküb . .	—	2·0	0·1	16·7	4·5	1·2	1·2	61·4	12·9
Mean . .	11·9	8·6	5·7	13·7	7·0	1·7	4·9	39·9	6·5
Group IV :									
Scutari . .	0·3	2·8	9·9	2·2	2·1	5·1	8·2	2·1	67·3
Durazzo . .	30·0	6·0	9·0	10·0	3·0	1·0	1·0	19·0	21·0
Mean . .	15·2	4·4	9·5	6·1	2·5	3·0	4·6	10·5	44·2
Group V :									
Constantinople .	22·4	54·0	4·4	0·7	1·7	2·5	1·0	2·1	11·2
Kavalla . .	6·5	3·2	11·8	6·5	18·3	21·5	7·0	1·1	23·6
Salonica . .	16·1	7·1	5·1	5·7	7·4	18·9	5·5	7·5	26·7
Mean . .	15·0	21·4	7·1	4·3	9·1	14·3	4·5	3·6	20·5

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	17·6	13·7	10·2	10·9	3·9	3·2	9·8	30·7	—
Trikkala .	8·0	9·2	11·1	12·2	6·2	14·3	15·9	19·8	3·3
Larissa . .	3·5	13·6	17·2	3·0	1·8	4·6	8·2	3·5	44·6
Lamia . .	4·3	2·2	26·4	8·7	2·6	0·9	10·4	15·8	28·7
Mean. .	8·4	9·7	16·2	8·7	3·6	5·7	11·1	17·5	19·1
Group VII :									
Volo . .	12·2	1·6	0·5	2·5	54·0	0·1	3·0	18·5	7·6
Chalchis .	42·4	14·1	4·8	7·6	10·4	3·1	4·0	13·6	—
Athens . .	15·5	26·7	4·2	1·8	10·2	11·5	4·6	5·6	19·9
Nauplia. .	19·0	5·9	3·6	2·1	22·7	7·4	3·4	5·4	30·5
Mean. .	22·3	12·1	3·3	3·5	24·3	5·5	3·7	10·8	14·5
Group VIII :									
Andros . .	22·5	14·4	6·9	0·3	4·6	2·2	0·4	48·4	0·3
Syra . .	50·9	27·1	5·9	1·1	1·7	1·9	3·4	4·3	3·7
Naxos . .	62·1	23·2	—	0·7	4·8	1·3	0·1	1·0	6·8
Santorin .	46·2	10·4	0·3	0·3	1·0	3·2	11·6	26·8	0·2
Mean. .	45·4	18·8	3·3	0·6	3·0	2·1	3·9	20·1	2·7
Group IX :									
Cythera. .	47·4	4·2	0·2	—	0·1	1·7	45·3	1·1	—
Canea . .	30·7	10·4	4·9	1·5	3·3	5·1	16·4	12·6	15·1
Candia . .	3·2	0·6	0·8	0·4	2·0	0·6	5·4	65·9	21·0
Mean. .	27·1	5·1	1·9	0·6	1·8	2·8	22·4	26·5	12·0
Group X :									
Corfu . .	9·1	8·4	6·7	4·4	4·3	4·8	6·9	15·5	39·9
Arta . .	1·2	14·2	22·6	10·3	14·1	15·9	16·1	4·4	1·2
Kephalonia .	3·8	2·3	1·0	5·5	12·4	4·6	6·2	61·2	3·0
Patras . .	15·7	10·8	2·5	3·3	15·3	17·4	22·4	7·7	4·9
Zante . .	9·6	6·9	2·3	2·6	3·3	1·1	20·1	47·1	7·0
Mean. .	7·9	8·5	7·0	5·2	9·9	8·7	14·3	27·2	11·2

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

AUGUST

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare	18·7	15·8	2·9	19·7	21·8	3·5	1·3	2·7	13·5
Samokov	6·3	9·7	9·5	9·5	9·1	8·7	9·7	9·8	27·7
Rilski Monastir	1·2	12·8	6·3	2·4	4·8	13·9	0·8	1·2	56·3
Kustendil	3·4	4·3	3·0	2·2	3·1	5·1	4·3	4·6	69·9
Sofia	2·4	10·1	8·6	7·1	1·9	3·6	12·6	14·0	39·7
Mean	6·4	10·5	6·1	8·2	8·2	7·0	5·3	6·5	41·4
Group II :									
Burgas	7·4	11·1	26·7	7·8	6·7	11·3	14·0	6·8	7·9
Stara Zagora	21·3	20·5	16·6	9·3	5·9	4·3	1·5	7·2	13·4
Kazanlyk	12·8	4·4	5·3	10·8	2·0	2·0	5·3	19·4	38 0
Haskovo	9·0	11·3	5·1	2·0	1·4	1·9	9·9	11·6	47·6
Philippopolis	3·9	1·4	14·7	11·2	2·9	7·8	17·1	5·9	35·1
Mean	10·9	9·7	13·7	8·2	3·8	5·4	9·6	10·2	28·4
Group III :									
Monastir	28·3	11·4	8·2	14·9	9·7	2·2	11·0	14·3	—
Üsküb	—	1·5	0·1	17·0	2·4	3·1	4·0	57·9	14·0
Mean	14·2	6·5	4·2	15·9	6·1	2·6	7·5	36·1	7·0
Group IV :									
Scutari	0·3	3·7	9·9	3·5	2·3	2·4	4·6	1·0	72·3
Durazzo	28·0	7·0	10·0	12·0	3·0	3·0	4·0	19·0	14·0
Mean	14·1	5·4	9·9	7·7	2·6	2·7	4·3	10·0	43·2
Group V :									
Constantinople	20·4	59·6	2·7	0·6	1·2	1·4	1·0	1·4	11·7
Kavalla	9·7	6·5	21·5	3·2	9·7	17·2	11·8	3·2	17·2
Salonica	14·5	6·4	5·3	6·2	6·7	18·8	3·0	6·0	33·1
Mean	14·9	24·2	9·8	3·3	5·9	12·5	5·3	3·5	20·7

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	19·9	9·6	10·7	8·6	1·5	5·7	9·2	34·8	—
Trikkala .	7·6	9·0	14·0	12·9	6·9	11·1	16·3	19·3	2·9
Larissa . .	5·9	12·0	15·6	3·4	1·5	2·7	7·3	2·6	49·0
Lamia . .	4·9	3·5	29·1	12·0	1·4	1·1	9·1	11·4	27·5
Mean. .	9·6	8·5	17·3	9·2	2·8	5·1	10·5	17·0	19·9
Group VII :									
Volo . .	15·2	2·1	0·7	1·3	50·4	0·4	2·0	19·6	8·3
Chalchis .	50·7	14·7	7·0	4·4	9·1	1·3	2·3	10·5	—
Athens . .	18·3	31·4	3·6	1·2	8·0	9·2	3·9	5·4	19·0
Nauplia. .	22·7	5·8	3·0	1·9	22·8	7·7	1·5	6·6	28·0
Mean. .	26·7	13·7	3·6	2·2	22·6	4·7	2·4	10·5	13·8
Group VIII :									
Andros . .	20·3	15·8	6·1	—	3·2	0·7	0·2	53·5	0·2
Syra . .	57·1	23·6	4·1	0·9	1·5	1·1	2·7	4·4	4·6
Naxos . .	68·8	20·3	0·8	—	2·9	0·8	0·1	0·8	5·5
Santorin .	48·1	11·3	0·5	—	0·8	3·8	10·9	24·6	—
Mean. .	48·6	17·8	2·9	0·2	2·1	1·6	3·5	20·8	2·6
Group IX :									
Cythera. .	56·9	5·8	0·4	—	0·1	2·4	33·4	1·0	—
Canea . .	26·9	13·5	5·2	2·9	4·2	2·9	13·1	18·2	13·1
Candia . .	3·4	1·4	0·2	0·4	1·2	1·8	7·2	64·9	19·3
Mean. .	29·1	6·9	1·9	1·1	1·8	2·4	17·9	28·0	10·8
Group X :									
Corfu . .	8·0	12·2	4·4	5·5	4·6	6·1	7·6	12·3	39·3
Arta . .	0·6	16·0	27·2	9·6	13·6	13·6	12·4	2·9	4·1
Kephalonia .	1·9	2·8	1·7	3·4	6·2	9·7	5·7	63·7	4·9
Patras . .	19·0	10·1	4·5	4·6	15·1	16·5	18·8	5·8	5·6
Zante . .	13·3	6·8	2·0	2·7	2·7	1·9	18·9	45·9	5·8
Mean. .	8·5	9·6	8·4	5·1	8·4	9·6	12·7	26·1	11·9

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

SEPTEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare	20·8	11·6	1·6	16·3	25·6	4·5	1·9	4·1	13·4
Samokov	5·1	10·5	15·6	10·6	7·6	7·9	7·8	8·6	26·4
Rilski Monastir	1·2	14·1	9·3	1·8	3·8	13·3	7·0	0·5	49·0
Kustendil	3·6	2·3	2·8	2·6	2·4	2·0	2·6	3·1	78·4
Sofia	1·9	7·0	13·4	12·0	1·7	4·0	11·9	10·7	37·2
Mean	6·5	9·1	8·5	8·7	8·2	6·3	6·3	5·4	40·9
Group II :									
Burgas	11·0	12·8	21·5	9·0	6·8	9·6	12·3	6·5	10·4
Stara Zagora	19·6	22·2	17·6	9·5	6·5	3·8	1·5	4·5	14·6
Kazanlyk	9·0	2·8	5·1	11·8	2·1	1·1	4·7	14·9	48·4
Haskovo	10·6	11·2	7·9	2·0	2·5	2·4	6·0	10·3	47·1
Philippopolis	2·5	1·5	17·4	12·1	3·9	8·2	15·4	5·4	33·4
Mean	10·5	10·1	13·9	8·9	4·4	5·0	8·0	8·3	30·8
Group III :									
Monastir	20·0	9·3	8·6	15·3	17·8	4·0	9·6	15·4	—
Üsküb	0·3	1·5	0·4	18·0	0·8	3·6	1·0	51·9	22·5
Mean	10·2	5·4	4·5	16·7	9·3	3·8	5·3	33·6	11·2
Group IV :									
Scutari	1·8	2·8	12·2	2·4	4·7	5·1	6·5	2·0	62·5
Durazzo	32·0	7·0	6·0	11·0	7·0	5·0	6·0	18·0	8·0
Mean	16·9	4·9	9·1	6·7	5·8	5·1	6·2	10·0	35·3
Group V :									
Constantinople	16·1	53·3	3·2	1·1	3·7	6·3	1·1	1·6	13·6
Kavalla	10·3	0·6	26·7	4·8	11·5	17·6	9·1	3·6	15·8
Salonica	13·2	6·5	8·2	6·1	5·2	18·1	3·5	4·4	34·8
Mean	13·2	20·1	12·7	4·0	6·8	14·0	4·6	3·2	21·4

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	16·0	11·7	11·7	15·2	6·6	2·6	8·3	27·9	—
Trikkala .	6·0	10·0	9·0	15·8	8·0	14·3	15·9	17·4	3·6
Larissa . .	4·6	13·1	15·2	2·2	2·4	4·6	3·0	2·1	52·8
Lamia . .	3·6	1·3	30·2	10·0	2·3	0·7	6·2	12·7	33·0
Mean. .	7·6	9·0	16·5	10·8	4·8	5·6	8·4	15·0	22·3
Group VII :									
Volo . .	9·0	1·3	0·9	5·1	39·7	0·3	2·2	35·0	6·5
Chalchis .	44·0	17·8	5·3	9·5	11·8	1·6	2·4	7·3	0·1
Athens . .	14·3	28·2	3·9	1·6	9·6	9·2	3·6	4·4	25·2
Nauplia. .	21·0	8 5	5·3	2·2	21·7	7·2	2·8	7·5	23·8
Mean. .	22·1	13·9	3·9	4·7	20·7	4·6	2·7	13·6	13·9
Group VIII :									
Andros . .	31·2	15·1	9·6	1·9	7·4	1·6	1·2	31·3	0·7
Syra . .	54·3	21·2	4·7	1·7	2·9	2·9	4·2	1·5	6·6
Naxos . .	56·9	24·1	0·3	0·9	7·5	2·4	0·7	1·0	6·2
Santorin .	42·4	17·3	3·1	1·6	1·1	4·3	10·2	20·0	—
Mean . .	46·2	19·4	4·4	1·5	4·7	2·8	4·1	13·5	3·4
Group IX :									
Cythera. .	55·5	4·8	1·3	1·1	1·4	3·8	30·8	1·3	—
Canea . .	25·9	13·1	4·5	1·5	7·7	3·9	12·2	9·9	21·3
Candia . .	9·3	0·8	—	0·8	9·0	2·7	1·8	41·9	33·3
Mean . .	30·2	6·2	1·9	1·1	6·0	3·5	14·9	17·7	18·2
Group X :									
Corfu . .	4·9	5·3	3·9	9·2	9·4	9·3	7·7	10·4	39·9
Arta . .	1·3	22·1	30·2	12·5	10·2	8·3	10·7	4·2	0·5
Kephalonia .	1·4	5·6	5·4	5·8	13·9	11·6	5·1	45·0	6·2
Patras . .	19·9	17·2	6·4	9·6	13·1	12·8	13·0	3·8	4·2
Zante . .	18·2	7·4	3·4	6·2	7·5	4·2	11·9	38·8	2·4
Mean .	9·1	11·5	9·9	8·7	10·8	9·0	9·7	20·4	10·6

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

OCTOBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	18·4	12·0	1·6	12·9	28·1	8·6	3·0	3·6	11·8
Samokov .	5·0	12·1	16·1	9·7	7·2	8·1	9·1	7·7	24·9
Rilski Monastir	2·1	14·5	5·7	2·4	4·3	19·5	4·9	0·9	45·3
Kustendil .	1·7	1·7	2·6	3·1	2·1	2·8	2·9	2·0	80·9
Sofia . .	2·1	6·2	13·5	14·3	1·2	5·1	10·2	8·6	38·6
Mean . .	5·9	9·3	7·9	8·5	8·6	8·8	6·0	4·6	40·3
Group II :									
Burgas . .	11·8	12·3	16·1	5·9	5·8	16·3	14·7	7·1	9·8
Stara Zagora .	16·6	18·8	20·4	9·5	7·1	4·4	2·1	4·3	16·6
Kazanlyk .	5·1	1·9	6·0	11·9	1·6	1·4	3·1	13·4	55·8
Haskovo . .	8·8	9·8	5·7	2·7	4·1	1·8	6·6	8·4	52·0
Philippopolis .	2·9	0·9	13·9	9·7	3·2	10·4	14·2	3·4	41·3
Mean . .	9·0	8·7	12·4	7·9	4·4	6·8	8·1	7·3	35·1
Group III :									
Monastir . .	18·0	6·7	9·5	13·6	23·4	5·2	11·0	12·6	—
Üsküb . .	0·3	—	0·1	28·4	0·1	1·9	4·4	46·5	18·3
Mean . .	9·2	3·4	4·8	21·0	11·2	3·6	7·7	29·5	9·4
Group IV :									
Scutari . .	1·7	4·5	10·6	4·4	2·2	2·2	8·0	3·5	62·9
Durazzo .	29·0	14·0	11·0	18·0	9·0	6·0	2·0	6·0	5·0
Mean . .	15·3	9·2	10·8	11·2	5·6	4·1	5·0	4·8	34·0
Group V :									
Constantinople.	16·0	36·8	3·1	1·6	8·1	16·3	2·3	3·2	12·6
Kavalla . .	2·7	1·1	30·1	12·4	16·7	5·4	8·0	5·9	17·7
Salonica . .	12·1	7·7	9·3	6·3	5·3	14·3	3·2	4·0	37·8
Mean . .	10·3	15·2	14·2	6·8	10·0	12·0	4·5	4·4	22·7

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	13·4	5·7	9·5	32·9	8·6	6·0	4·6	19·3	—
Trikkala .	7·8	6·7	8·9	10·7	8·8	16·1	20·0	16·3	4·7
Larissa . .	3·4	4·8	10·6	2·5	0·8	1·4	3·3	2·3	70·9
Lamia . .	9·2	1·2	21·0	6·7	3·4	1·7	5·8	14·0	37·0
Mean. .	8·5	4·6	12·5	13·2	5·4	6·3	8·4	13·0	28·1
Group VII :									
Volo . .	6·5	1·5	2·7	8·0	23·1	0·1	4·5	48·2	5·4
Chalchis .	33·2	13·1	7·7	13·3	19·5	2·7	1·9	8·1	0·5
Athens . .	10·9	23·8	5·8	3·8	13·4	10·5	4·9	3·6	23·3
Nauplia. .	12·5	13·2	8·8	3·3	18·8	10·0	4·8	6·8	21·8
Mean. .	15·8	12·9	6·2	7·1	18·7	5·8	4·0	16·7	12·7
Group VIII :									
Andros . .	27·6	22·0	14·1	5·0	14·8	6·8	1·4	8·1	0·2
Syra . .	36·2	18·3	7·0	2·1	8·6	8·8	8·8	2·6	7·6
Naxos . .	45·5	18·2	0·7	2·2	13·4	7·1	1·5	1·3	10·1
Santorin .	25·8	19·2	9·9	4·9	3·2	9·7	15·1	12·2	—
Mean. .	33·8	19·4	7·9	3·5	10·0	8·1	6·7	6·0	4·5
Group IX :									
Cythera. .	50·3	7·8	2·4	2·6	3·3	8·4	20·9	4·3	—
Canea . .	15·4	14·4	7·5	1·8	3·9	6·2	10·5	4·2	36·1
Candia . .	9·7	1·6	—	1·3	13·7	9·5	2·8	40·0	21·9
Mean. .	25·1	7·9	3·3	1·9	7·0	8·0	11·4	16·2	19·3
Group X :									
Corfu . .	3·7	5.4	4·7	13·0	13·0	9·9	6·3	6·2	37·8
Arta . .	1·4	18·8	28·6	17·1	11·9	6·8	11.5	3·1	0·8
Kephalonia .	3·6	5·7	5·3	13·9	21·5	12·5	6·9	27·1	3·5
Patras . .	20·4	19·2	6·9	15·3	13·1	7·7	10·1	4·1	3·2
Zante . .	13·2	9·0	7·7	13·6	12·2	10·5	9·9	22·0	1·9
Mean. .	8·5	11·6	10·6	14·6	14·3	9·5	8·9	12·5	9·4

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

NOVEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	19·3	15·0	1·1	9·0	24·7	11·8	4·5	5·2	9·4
Samokov. .	6·3	10·0	12·8	10·6	8·2	6·0	12·6	10·4	23·1
Rilski Monastir	1·7	15·6	4·9	1·0	3·7	19·0	5·7	0·8	48·0
Kustendil .	3·1	1·7	2·1	3·1	1·7	2·4	1·7	3·8	80·4
Sofia . .	2·0	10·0	16·0	13·0	3·0	10·0	12·0	14·0	19·0
Mean . .	6·5	10·4	7·4	7·3	8·3	9·8	7·3	6·8	36·0
Group II :									
Burgas . .	21·7	8·2	6·5	2·7	3·3	12·8	18·0	10·3	16·3
Stara Zagora .	18·5	18·7	16·1	7·1	8·1	5·2	2·4	7·5	16·4
Kazanlyk .	5·7	1·9	4·0	7·7	2·2	1·4	5·2	14·4	57·4
Haskovo .	11·0	8·9	3·4	2·1	3·4	1·9	7·4	13·4	48·5
Philippopolis .	1·5	0·8	11·8	10·3	2·4	10·4	16·8	6·9	39·1
Mean . .	11·7	7·7	8·3	6·0	3·9	6·3	10·0	10·5	35·5
Group III :									
Monastir .	23·6	8·6	8·6	16·1	17·6	3·5	8·2	13·8	—
Üsküb . .	—	0·3	3·5	19·6	—	0·3	1·0	64·5	10·8
Mean . .	11·8	4·4	6·0	17·8	8·8	1·9	4·6	39·2	5·4
Group IV :									
Scutari . .	1·9	4·9	19·0	3·5	3·0	0·9	3·9	2·3	60·6
Durazzo . .	27·0	16·0	9·0	22·0	7·0	3·0	2·0	8·0	6·0
Mean . .	14·5	10·5	14·0	12·8	5·0	2·0	3·0	5·1	33·3
Group V :									
Constantinople.	16·4	34·8	2·3	1·6	11·9	16·6	2·4	1·7	12·3
Kavalla . .	10·5	2·2	32·8	8·3	7·2	5·6	13·9	6·7	12·8
Salonica . .	20·2	12·7	10·6	4·2	3·0	6·1	3·6	6·5	33·1
Mean . .	15·7	16·5	15·2	4·7	7·4	9·1	6·6	5·0	19·4

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	8·8	5·2	3·4	33·7	11·8	7·0	5·2	24·9	—
Trikkala .	11·2	6·9	5·9	8·2	9·0	13·9	18·9	23·6	2·4
Larissa . .	6·1	6·2	7·9	1·0	0·6	1·2	4·0	4·3	68·7
Lamia . .	8·5	1·9	14·4	4·3	2·8	0·7	9·8	22·4	35·2
Mean. .	8·6	5·0	7·9	11·8	6·0	5·7	9·5	18·8	26·6
Group VII :									
Volo . .	13·9	2·7	2·8	6·9	6·6	1·1	3·9	57·9	4.2
Chalchis .	37·6	12·8	6·2	12·8	14·1	3·1	3·3	9·0	0·6
Athens . .	12·1	28·5	7·0	4·6	11·5	6·9	4·2	5·4	19·8
Nauplia. .	23·6	12·8	10·3	2·1	10·6	6·9	4·1	11·6	18·0
Mean. .	21·8	14·2	6·6	6·6	10·7	4·5	3·9	21·0	10·6
Group VIII :									
Andros . .	19·4	38·5	11·0	9·6	14·9	2·9	1·0	2·7	—
Syra . .	35·5	22·0	6·3	2·9	7·8	10·6	6·0	3·9	5·0
Naxos . .	40·6	20·7	0·8	4·9	15·4	7·0	1·1	3.5	6·0
Santorin .	29·1	19·1	8·1	6·6	4·9	9·1	12·6	10·4	0·1
Mean. .	31·1	25·1	6·6	6·0	10·7	7·4	5·2	5·1	2·8
Group IX :									
Cythera. .	45·3	11·0	3·5	5·7	6·4	9·6	14·9	3·6	—
Canea . .	16·2	17·3	8·0	3·7	5·3	7·4	15·3	3·1	23·7
Candia . .	5·0	1·7	0·3	1·8	38·3	15·2	3·8	18·2	15·7
Mean. .	22·2	10·0	3·9	3·7	16·7	10·7	11·3	8·3	13·1
Group X :									
Corfu . .	4·1	6·9	10·3	16·5	10·8	8·9	6·3	6·5	29·7
Arta . .	2·4	29·7	33·7	15·2	9·2	3·1	3·8	1·5	1·4
Kephalonia .	6·3	11·6	8·8	14·0	17·5	15·8	6·4	17·1	2·5
Patras . .	22·7	23·8	8·5	17·5	9·0	7·1	6·5	3·0	1·9
Zante . .	19·2	13·4	8·4	12·2	11·3	11·5	7·2	14·1	2·7
Mean. .	10·9	17·1	13·9	15·1	11·6	9·3	6.0	8·4	7·6

TABLE XIX (*continued*)

Wind Directions as Percentages of Total Observations

DECEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group I :									
Chepelare .	20·8	12·1	1·4	7·9	26·8	13·4	3·0	4·2	10·4
Samokov. .	5·1	8·3	11·5	12·6	9·7	7·4	13·3	10·4	21·2
Rilski Monastir	2·3	15·5	4·7	0·6	3·0	18·3	3·3	1·0	51·3
Kustendil .	3·1	2·2	2·7	3·0	1·8	0·9	0·8	3·9	81·6
Sofia . .	4·0	11·0	14·0	11·0	4·0	6·0	15·0	17·0	16·0
Mean . .	7·1	9·8	6·9	7·0	9·1	9·2	7·1	7·3	36·1
Group II :									
Burgas . .	18·6	7·4	5·2	1·6	3·1	13·5	24·9	8·2	18·0
Stara Zagora .	15·5	17·5	15·8	6·6	8·9	5·8	3·1	7·2	19·5
Kazanlyk .	5·9	1·1	4·8	8·6	2·1	0·6	7·4	15·8	53·7
Haskovo .	8·2	7·5	3·1	2·0	5·2	2·6	7·7	13·1	50·6
Philippopolis .	2·9	1·9	10·7	7·1	1·9	9·4	19·6	6·3	40·3
Mean . .	10·2	7·1	7·9	5·2	4·2	6·4	12·5	10·1	36·4
Group III :									
Monastir .	24·3	6·8	12·5	14·5	12·9	4·8	10·0	14·4	—
Üsküb . .	0·1	0·3	—	23·3	—	1·1	—	67·6	7·6
Mean . .	12·2	3·5	6·2	18·9	6·4	2·9	5·0	41·0	3·8
Group IV :									
Scutari . .	2·1	3·7	15·9	4·3	3·8	0·8	3·2	3·5	62·7
Durazzo . .	22·0	14·0	10·0	29·0	11·0	6·0	1·0	1·0	6·0
Mean . .	12·1	8·8	12·9	16·6	7·4	3·4	2·1	2·2	34·3
Group V :									
Constantinople.	22·5	28·0	1·4	1·1	14·6	15·7	2·5	3·9	10·3
Kavalla . .	12·4	2·7	21·5	10·2	12·4	7·5	15·6	8·0	9·7
Salonica . .	22·1	12·8	9·4	5·5	2·1	2·7	2·4	8·2	34·8
Mean . .	19·0	14·5	10·8	5·6	9·7	8·6	6·8	6·7	18·3

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Group VI :									
Yanina . .	8·1	3·7	6·8	28·9	12·8	4·7	13·2	21·8	—
Trikkala .	9·3	6·3	5·6	8·8	8·5	15·0	22·1	22·9	1·5
Larissa . .	6·8	6·0	5·1	1·2	2·8	1·8	4·8	3·4	68·1
Lamia . .	8·6	2·4	11·0	3·2	1·4	1·8	9·1	30·9	31·6
Mean. .	8·2	4·6	7·1	10·5	6·4	5·8	12·3	19·7	25·3
Group VII :									
Volo . .	13·4	1·3	2·6	10·4	3·1	0·7	5·1	60·0	3·4
Chalchis .	30·0	11·3	8·7	15·1	18·4	3·5	2·5	10·5	—
Athens . .	11·4	22·5	7·3	5·1	14·3	9·4	5·4	6·6	18·0
Nauplia. .	20·7	15·2	9·1	3·0	8·2	8·0	6·5	9·6	19·7
Mean. .	18·9	12·6	6·9	8·4	11·0	5·4	4·9	21·7	10·0
Group VIII :									
Andros . .	17·7	32·4	8·5	8·5	21·0	9·3	0·6	2.0	—
Syra . .	29·6	16·0	4·7	2·5	11·8	14·6	11·7	4·7	4·4
Naxos . .	33·5	15·7	1·3	5·7	22·1	9·9	3·7	3·0	5·1
Santorin .	24·6	13·6	6·6	7·9	10·3	14·9	12·0	10·1	—
Mean. .	26·4	19·4	5·3	6·1	16·3	12·2	7·0	4·9	2·4
Group IX :									
Cythera. .	38·3	9·2	4·4	7·2	5·4	14·0	16·6	4·9	—
Canea . .	16·3	14·2	12·3	5·1	4·8	8·0	12·5	3·1	23·7
Candia . .	11·1	1·4	0·3	1·6	41·4	18·0	3·0	10·0	12·9
Mean. .	21·9	8·2	5·7	4·6	17·2	13·3	10·7	6·0	12·2
Group X :									
Corfu . .	3·7	8·2	12·7	16·6	12·3	11·6	5·9	6·0	23·0
Arta . .	2·3	26·4	34·1	19·3	7·1	4·1	4·2	1·5	1·0
Kephalonia .	6·8	11·0	9·3	15·4	14·8	15·5	6·9	17·6	2·7
Patras . .	16·9	25·6	8·7	15·3	15·2	8·1	4·9	2·9	2·4
Zante . .	21·7	11·0	10·5	12·5	12·1	14·1	6·4	10·2	1·5
Mean. .	10·3	16·4	15·1	15·8	12·3	10·7	5·7	7·6	6·1

TABLE XX

Total Number of Days with Winds of Gale Force during the Eleven Years 1900–1910

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June*
Group I :						
Chepelare . . .	6	7	10	7	6	—
Samokov . . .	25	**35**	20	30	21	11
Rilski Monastir (10 yrs.)	15	14	17	12	7	6
Kustendil . . .	2	3	6	8	7	6
Sofia	12	17	14	18	9	13
Mean . . .	12	15	13	15	10	7
Group II :						
Burgas . . .	12	9	**16**	5	4	6
Stara Zagora . .	12	15	11	18	10	15
Kazanlyk . . .	3	3	2	2	3	1
Haskovo . . .	2	1	2	2	—	3
Philippopolis . .	8	11	5	13	4	16
Mean . . .	7	8	7	8	4	8

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
7	2	2	4	**13**	6	Chepelare.
15	14	17	13	15	25	Samokov.
6	2	6	7	**18**	17	Rilski Monastir (10 yrs.)
11	7	4	10	5	7	Kustendil.
20	11	7	12	12	13	Sofia.
12		7	9	13	14	*Mean.*
						Group II :
6	4	3	1	5	5	Burgas.
22	**22**	16	16	**22**	15	Stara Zagora.
8	6	5	4	4	6	Kazanlyk.
7	5	4	2	—	4	Haskovo.
17	7	6	4	5	12	Philippopolis.
12	9	7	5	7	8	*Mean.*

TABLE XXI

Number of Days with Winds, Force 5 to 9

Year.	January.					February.					March.				
	Days of Wind, Moderate to Gale, Beaufort Nos. 5 to 9.		Days of Wind of Gale force, Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind, Moderate to Gale, Beaufort Nos. 5 to 9.		Days of Wind of Gale force, Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind, Moderate to Gale, Beaufort Nos. 5 to 9.		Days of Wind of Gale force, Beaufort Nos. 8 and 9.		Gales of over two days' duration.
	N.	S.	N.	S.	*	N.	S.	N.	S.	*	N.	S.	N.	S.	*
1902 . .	5	0	3	0	—	4	0	2	0	1_3	7	1	4	0	1_3
1903 . .	6	4	4	1	1_7	6	2	4	0	1_4	5	0	3	0	—
1904 . .	3	1	3	1	—	1	0	0	0	—	6	2	5	0	1_3
1905 . .	8	1	4	0	1_3	2	0	1	0	—	1	0	1	0	—
1906 . .	3	0	3	0	—	3	2	2	2	—	2	3	1	2	—
1907 . .	6	1	2	1	1_3	7	1	6	1	1_3	6	0	2	0	—
1908 . .	7	2	5	1	1_3	3	1	3	0	—	4	0	3	0	1_4
1909 . .	10	2	7	1	1_3 1_7	2	0	2	0	—	0	2	0	2	—
1910 . .	3	4	1	4	—	1	0	1	0	—	3	2	3	0	—
1911 . .	11	1	4	0	1_5 1_4	4	2	1	0	—	5	1	3	1	—
1912 . .	3	3	2	2	—	6	2	4	1	1_4	2	1	1	1	—
1913 . .	1	0	0	0	—	7	0	4	0	1_4	2	0	2	0	—
Total in 12 years	66	19	38	11	8	46	10	30	4	5	43	12	28	6	3
Average per year	5·5	1·6	3·2	0·9	—	3·8	0·8	2·5	0·3	—	3·6	1·0	2·3	0·5	—
Maximum in year	11	4	7	4	—	7	2	6	2	—	7	3	5	2	—

* 1_4 means a gale of four days' duration.

April.					May.					June.					Year.
Days of Wind Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gale of over two days' duration.	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	
N.	S.	N.	S.	*	N.	S.	N.	S.	*	N.	S.	N.	S.	*	
6	0	3	0	1_3	4	5	0	0	—	4	1	4	0	—	. . 1902
1	6	1	4	2_8	2	2	0	0	—	5	0	0	0	—	. . 1903
2	0	1	0	—	4	0	1	0	—	3	0	1	0	—	. . 1904
2	0	0	0	—	3	1	2	0	—	0	0	0	0	—	. . 1905
3	2	3	1	1_3	0	1	0	0	—	6	4	1	1	1_5	. . 1906
3	1	2	1	—	6	1	3	0	—	5	1	2	0	—	. . 1907
0	2	0	2	—	3	0	3	0	—	9	0	3	0	1_4 1_2	. . 1908
6	0	4	0	1_4	6	1	4	0	1_2	2	1	1	0	—	. . 1909
1	0	1	0	—	1	1	0	0	—	1	1	0	0	—	. . 1910
3	0	1	0	—	4	1	0	0	1_3	6	0	1	0	1_4	. . 1911
5	3	3	0	—	2	2	1	0	—	2	3	0	0	1_3	. . 1912
1	0	0	0	—	2	1	0	0	—	6	2	1	0	—	. . 1913
33	14	19	8	5	37	16	14	0	2	49	13	14	1	5	Total in 12 years
2·8	1·2	1·6	0·7	—	3·0	1·3	1·1	—	—	4·0	1·0	1·1	0	—	Average per year
6	6	4	4	—	6	5	4	0	—	9	4	4	1	—	Maximum in year

TABLE XXI (*continued*)

Number of Days with Winds, Force 5 to 9

Year.	July.					August.					September.				
	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.
	N.	S.	N.	S.	*	N.	S.	N.	S.	*	N.	S.	N.	S.	*
1902 . .	6	0	2	0	1_3	5	0	0	0	—	12	0	2	0	1_8
1903 . .	4	2	0	0	—	12	0	1	0	1_3 1_5	8	0	3	0	1_5
1904 . .	9	0	3	0	1_4	6	0	0	0	1_4	5	0	1	0	—
1905 . .	13	0	1	0	3_3	8	1	0	0	—	9	0	0	0	1_3
1906 . .	6	0	2	0	1_5	7	0	5	0	1_3	8	0	2	0	1_6
1907 . .	6	0	0	0	—	11	0	4	0	—	9	0	4	0	1_3
1908 . .	6	0	1	0	1_3	10	0	0	0	1_5 1_4	8	0	2	0	—
1909 . .	13	0	2	0	1_7 1_5	9	0	2	0	1_3	0	1	0	0	—
1910 . .	2	0	0	0	—	5	0	0	0	—	3	0	1	0	—
1911 . .	11	0	2	0	1_3 1_5	4	0	0	0	—	5	1	3	1	1_3
1912 . .	3	0	2	0	—	4	0	0	0	1_3	3	3	0	0	—
1913 . .	2	0	0	0	—	3	0	0	0	—	2	0	0	0	—
Total in 12 years	81	2	15	0	11	84	1	12	0	8	72	5	18	1	6
Average per year	6·7	0·1	1·2	0	—	7·0	0	1·0	0	—	6·0	0·4	1·5	0	—
Maximum in year	13	2	3	0	—	12	1	5	0	—	12	3	4	1	—

* 1_4 means a gale of four days' duration.

October.					November.					December.					Year
Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	Days of Wind. Moderate to Gale. Beaufort Nos. 5 to 9.		Days of Wind of Gale force. Beaufort Nos. 8 and 9.		Gales of over two days' duration.	
N.	S.	N.	S.	*	N.	S.	N.	S.	*	N.	S.	N.	S.	*	
1	2	1	1	—	7	0	3	0	1_3	6	1	3	1	1_3	. . 1902
3	1	0	0	—	2	0	0	0	—	3	5	2	3	1_3	. . 1903
2	1	1	0	—	7	3	4	1	—	3	2	2	2	—	. . 1904
0	6	0	1	1_4	2	0	1	0	—	4	1	4	1	—	. . 1905
4	0	0	0	—	6	0	2	0	1_5	5	7	2	3	3_3	. . 1906
8	0	0	0	1_3	8	0	5	0	1_4	2	4	1	1	—	. . 1907
8	0	2	0	1_5	4	3	1	2	—	2	6	1	2	—	. . 1908
0	0	0	0	—	1	5	0	5	1_3	2	0	2	0	—	. . 1909
8	0	0	0	1_4	0	7	0	5	—	3	2	1	0	1_3	. . 1910
5	2	4	0	1_4	3	1	0	0	—	3	0	1	0	—	. . 1911
2	2	0	0	—	2	6	1	4	1_3	1	0	1	0	—	. . 1912
6	0	4	0	—	4	1	1	1	—	5	4	3	2	—	. . 1913
47	14	12	2	5	46	26	18	18	5	39	32	23	15	6	Total in 12 years
4·0	1·1	1·0	0·1	—	3·8	2·2	1·5	1·5	—	3·2	2·7	1·9	1·2	—	Average per year
8	6	4	1	—	8	7	5	5	—	6	7	4	3	—	Maximum in year

Ayrs

TABLE XXII

Mean Number of Thunderstorms

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I:						
Chepelare	—	0·1	0·1	1·1	4·7	**8·5**
Samokov	0·1	—	0·2	1·3	5·3	**7·5**
Rilski Monastir	—	0·1	0·3	0·9	2·4	3·9
Kustendil	0·2	0·1	0·1	0·4	1·8	**3·8**
Sofia	—	0·2	0·2	2·0	7·7	**10·6**
Mean	0·06	0·1	0·2	1·1	4·4	**6·9**
Group II:						
Burgas	—	0·2	0·4	1·7	4·1	**7·9**
Stara Zagora	—	0·3	0·5	2·4	8·5	**11·6**
Kazanlyk	0·1	0·2	0·6	2·2	8·5	**12·8**
Haskovo	—	0·5	0·5	1·5	5·3	**9·0**
Philippopolis	—	0·2	—	1·6	5·3	**8·3**
Mean	0·02	0·3	0·4	1·9	6·3	**9·9**
Group IV:						
Durazzo	1·8	1·4	3·0	1·2	1·8	2·3
Group V:						
Constantinople	0·1	—	0·1	0·4	0·9	**2·0**

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
6·7	4·5	2·4	0·9	0·5	0·1	Chepelarc.
5·5	5·2	1·5	0·6	0·1	—	Samokov.
3·1	**4·0**	0·8	0·9	0·1	0·1	Rilski Monastir.
3·8	2·5	1·0	0·3	0·1	—	Kustendil.
7·1	5·3	2·5	1·3	0·3	0·2	Sofia.
5·2	4·3	1·6	0·8	0·2	0·1	*Mean.*
						Group II :
3·8	2·0	1·3	1·0	0·5	0·1	Burgas.
7·3	4·8	3·3	1·3	0·2	0·2	Stara Zagora.
7·8	5·8	3·6	1·2	0·2	0·1	Kazanlyk.
6·1	3·7	2·1	0·7	0·4	0·3	Haskovo.
3·5	3·6	2·1	0·5	—	—	Philippopolis.
5·7	4·0	2·5	0·9	0·2	0·1	*Mean.*
						Group IV :
1·8	2·9	1·6	**4·8**	2·9	3·3	Durazzo.
						Group V :
1·1	1·4	1·9	1·0	0·5	0·1	Constantinople.

TABLE XXII (*continued*)

Mean Number of Thunderstorms

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group VI :						
Trikkala	0·4	0·75	0·6	0·5	1·9	**3·1**
Larissa	—	—	—	—	—	—
Lamia	0·1	0·25	0·1	0·1	0·5	**0·9**
Mean	0·2	0·33	0·2	0·2	0·8	**1·3**
Group VII :						
Volo	—	0·5	0·4	0·6	1·4	**2·5**
Chalchis	0·4	0·6	0·5	0·1	0·9	0·6
Athens	1·0	0·8	0·8	1·0	1·8	2·1
Nauplia	1·1	0·75	0·4	0·25	0·75	**2·9**
Mean	0·6	0·66	0·5	0·5	1·2	**2·0**
Group VIII :						
Andros	0·1	**0·3**	**0·3**	—	0·1	0·2
Syra	0·6	0·4	**1·0**	—	0·1	0·1
Naxos	0·5	**1·75**	0·75	0·6	1·0	0·1
Santorin	0·9	1·9	1·6	0·7	0·5	0·4
Mean	0·5	**1·09**	0·9	0·3	0·4	0·2
Group IX :						
Cythera	—	0·1	0·1	—	—	—
Group X :						
Corfu	1·0	1·4	0·9	0·75	0·9	0·5
Arta	1·75	2·0	1·4	1·5	2·5	**3·0**
Kephalonia	0·75	**1·4**	1·25	0·4	0·5	0·4
Patras	1·0	1·75	1·5	1·6	1·6	3·0
Zante	2·1	2·5	1·5	0·9	1·0	0·4
Mean	1·3	1·8	1·3	1·0	1·3	1·5

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
2·4	0·9	0·9	0·9	1·1	0·4	Trikkala.
0·1	—	—	0·1	—	—	Larissa.
—	0·1	0·1	0·1	—	0·1	Lamia.
0·8	0·3	0·3	0·4	0·4	0·2	*Mean.*
						Group VII :
1·4	1·4	1·0	0·75	0·4	0·25	Volo.
0·75	0·9	**1·4**	0·5	0·3	0·4	Chalchis.
1·7	1·7	1·7	**2·7**	2·3	1·5	Athens
1·75	1·0	0·6	1·3	0·1	0·6	Nauplia.
1·4	1·25	1·2	1·3	0·8	0·68	*Mean.*
						Group VIII :
—	—	0·25	—	0·25	0·1	Andros.
0·4	0·1	—	0·5	0·1	0·75	Syra.
0·6	0·5	0·4	1·0	1·25	0·6	Naxos.
0·1	—	0·4	1·25	**2·6**	1·25	Santorin.
0·3	0·2	0·26	0·7	1·0	0·7	*Mean.*
						Group IX :
—	—	—	—	—	—	Cythera.
						Group X :
0·75	0·25	2·4	**2·6**	2·1	1·5	Corfu.
2·25	0·9	2·1	2·75	2·0	1·75	Arta.
—	—	0·25	1·0	0·9	0·25	Kephalonia.
0·9	1·1	2·1	1·7	**3·1**	1·6	Patras.
0·25	0·25	0·9	1·75	2·25	**2·6**	Zante.
0·8	0·5	1·5	2·0	**2·07**	1·5	*Mean.*

TABLE XXIII

Maximum Number of Thunderstorms

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I :						
Chepelare . . .	—	1	1	3	8	**13**
Samokov . . .	1	0	1	4	8	**13**
Rilski Monastir . .	—	1	2	2	4	**9**
Kustendil . . .	1	1	1	1	4	10
Sofia	—	2	2	6	13	**14**
Maximum. . .	1	2	2	6	13	**14**
Group II :						
Burgas . . .	—	2	2	6	10	**14**
Stara Zagora . .	—	2	2	5	15	**17**
Kazanlyk . . .	1	2	2	6	13	**21**
Haskovo . . .	—	3	2	2	13	**17**
Philippopolis . .	—	2	—	5	11	**16**
Maximum. . .	1	3	2	6	15	**21**

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
9	11	5	2	2	1	Chepelare.
10	10	5	3	1	—	Samokov.
8	**9**	3	2	1	1	Rilski Monastir.
11	6	4	2	1	—	Kustendil.
11	12	5	3	2	1	Sofia.
11	12	5	3	2	1	*Maximum.*
						Group II :
8	6	5	4	2	1	Burgas
12	8	9	3	1	1	Stara Zagora.
14	9	8	3	1	1	Kazanlyk
9	7	9	2	2	1	Haskovo.
6	7	8	2	—	—	Philippopolis.
14	9	9	4	2	1	*Maximum.*

TABLE XXIII (*continued*)

Maximum Number of Thunderstorms

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group VI :						
Trikkala	1	3	2	2	6	**11**
Larissa	—	—	—	—	—	—
Lamia	1	1	1	1	**3**	2
Maximum	1	3	2	2	6	**11**
Group VII :						
Volo	—	2	1	2	3	**7**
Chalchis	2	2	1	1	2	2
Athens	3	5	4	5	6	**8**
Nauplia	3	3	2	1	3	**10**
Maximum	3	5	4	5	6	**10**
Group VIII :						
Andros	1	1	1	—	1	1
Syra	3	2	3	—	1	1
Naxos	1	**5**	2	1	3	1
Santorin	3	**6**	3	2	2	1
Maximum	3	**6**	3	2	3	1
Group IX :						
Cythera	—	1	1	—	—	—
Group X :						
Corfu	3	4	3	2	3	2
Arta	4	7	3	3	**10**	9
Kephalonia	3	4	**6**	2	2	2
Patras	3	4	3	3	4	**9**
Zante	4	7	3	3	3	1
Maximum	4	7	6	3	**10**	9

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
6	4	4	5	3	2	Trikkala.
1	—	—	1	—	—	Larissa.
—	1	1	1	—	1	Lamia.
6	4	4	5	3	2	*Maximum.*
						Group VII :
3	4	4	2	1	1	Volo.
2	2	**3**	2	1	2	Chalchis.
8	7	**8**	**8**	7	4	Athens.
8	3	2	4	1	2	Nauplia.
8	7	8	8	7	4	*Maximum.*
						Group VIII :
—	—	1	—	1	—	Andros.
2	1	—	2	1	3	Syra.
3	**3**	1	**4**	3	3	Naxos.
1	—	2	3	5	2	Santorin.
3	3	2	4	5	3	*Maximum.*
						Group IX :
—	—	—	—	—	—	Cythera.
						Group X :
2	1	**8**	**8**	5	5	Corfu.
8	5	**7**	5	6	4	Arta.
—	—	**1**	5	**6**	2	Kephalonia.
3	2	**3**	4	7	**7**	Patras.
2	1	3	5	6	**9**	Zante.
8	5	8	8	7	**9**	*Maximum.*

TABLE XXIV

Mean Amount of Cloud[1]

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Group I :						
Chepelare	5·2	**6·0**	**6·0**	5·2	5·2	5·4
Samokov	6·1	**7·2**	6·7	6·7	6·2	5·9
Rilski Monastir	5·5	**6·4**	6·2	**6·4**	5·8	5·6
Kustendil	5·8	**6·4**	5·8	5·8	5·2	4·6
Sofia	6·3	**6·7**	6·2	6·0	5·3	5·0
Mean	5·8	6·5	6·2	6·0	5·5	5·3
Group II :						
Burgas	6·4	**7·3**	7·2	6·1	5·4	4·8
Stara Zagora	6·0	**7·1**	6·7	6·2	5·7	5·5
Kazanlyk	5·7	**7·0**	6·6	6·1	5·4	5·3
Haskovo	6·4	**7·3**	6·9	6·2	5·9	5·6
Philippopolis	5·7	**7·0**	6·5	5·6	5·3	5·2
Mean	6·0	7·1	6·8	6·0	5·5	5·3
Group III :						
Monastir	6·4	**6·6**	5·6	5·6	5·3	4·6
Üsküb	**7·1**	6·1	6·0	6·3	5·7	4·7
Mean	6·7	6·4	5·8	5·9	5·5	4·6
Group IV :						
Durazzo	4·4	4·1	4·4	3·9	3·2	2·4
Scutari	4·6	**5·1**	4·7	5·0	4·1	3·2
Valona	5·5	4·6	4·8	3·6	3·8	2·8
Mean	4·8	4·6	4·6	4·1	3·7	2·8
Group V :						
Kavalla	4·6	5·8	5·5	5·1	4·2	3·8
Salonica	4·8	**6·1**	5·8	5·1	4·2	3·4
Mean	4·7	6·0	5·6	5·1	4·2	3·6

[1] 0 = cloudless sky ; 10 = completely overcast.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group I :
3·7	3·0	3·7	5·0	**6·1**	5·9	Chepelare.
4·6	3·6	4·5	5·7	6·8	**6·9**	Samokov.
4·0	3·5	3·9	5·1	**6·2**	6·0	Rilski Monastir.
3·3	2·8	3·7	5·0	6·5	**6·6**	Kustendil.
3·4	2·7	3·6	5·2	6·7	**7·0**	Sofia.
3·8	3·1	3·9	5·2	6·5	6·5	*Mean.*
						Group II :
3·0	2·4	4·0	5·6	6·8	**7·0**	Burgas.
3·8	2·9	4·0	5·7	6·6	**7·0**	Stara Zagora.
3·8	2·9	4·0	5·6	6·6	**6·7**	Kazanlyk.
3·9	3·0	3·9	5·5	7·0	**7·1**	Haskovo.
3·7	2·9	3·9	5·5	6·8	**6·9**	Philippopolis.
3·6	2·8	3·96	5·6	6·8	6·9	*Mean.*
						Group III :
2·7	2·6	3·2	5·0	5·8	5·9	Monastir.
3·4	3·4	3·3	5·0	6·6	6·8	Üsküb.
3·0	3·0	3·3	5·0	6·2	6·3	*Mean.*
						Group IV :
1·1	1·5	1·8	3·9	5·0	**5·1**	Durazzo.
1·6	1·7	2·8	4·3	4·6	**5·1**	Scutari.
1·4	1·9	3·1	4·6	**6·2**	5·7	Valona.
1·4	1·7	2·6	4·3	5·3	5·3	*Mean.*
						Group V :
2·4	2·1	3·7	3·9	5·6	**6·2**	Kavalla.
2·0	2·1	3·1	4·7	**6·2**	6·0	Salonica.
2·2	2·1	3·4	4·3	5·9	6·1	*Mean.*

TABLE XXIV (*continued*)

Mean Amount of Cloud

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June*
Group VI :						
Trikkala	5·9	**6·7**	6·4	6·0	5·4	**4·4**
Larissa	5·4	**6·0**	5·8	5·1	4·6	3·8
Lamia	5·7	6·1	**6·2**	5·2	4·1	3·3
Mean	5·7	6·3	6·1	5·4	4·7	3·8
Group VII :						
Volo	5·2	**5·4**	**5·4**	4·4	4·0	3·1
Chalchis	6·5	6·3	5·9	4·9	4·2	3·2
Athens	5·5	**5·6**	5·2	4·6	3·6	2·4
Nauplia	5·6	**6·0**	5·8	4·9	4·3	2·9
Mean	5·7	5·8	5·6	4·7	4·0	2·9
Group VIII :						
Andros	**6·8**	6·5	5·8	4·2	3·0	1·4
Syra	5·9	5·8	5·3	3·9	3·2	1·3
Naxos	6·9	6·8	6·1	5·0	4·2	2·1
Santorin	**6·8**	6·6	5·8	4·9	**3·7**	1·8
Mean	6·6	6·4	5·7	4·5	3·5	1·7
Group IX :						
Cythera	5·8	5·6	5·1	4·7	3·4	1·9
Canea	**6·6**	**6·6**	4·9	4·6	3·5	2·1
Candia	**6·0**	5·5	4·3	3·6	2·9	1·1
Mean	6·1	5·9	4·8	4·3	3·3	1·7
Group X :						
Corfu	4·9	**5·7**	5·0	4·6	3·7	2·5
Arta	5·0	**6·0**	5·6	5·5	4·8	3·7
Kephalonia	4·6	5·1	4·4	3·8	2·5	1·8
Patras	5·5	**6·3**	5·9	5·6	4·6	3·0
Zante	4·8	**5·3**	4·2	3·9	2·8	1·9
Mean	5·0	5·7	5·0	4·7	3·7	2·6

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Group VI :
2·6	2·1	3·4	5·0	6·6	**6·7**	Trikkala.
2·0	1·8	3·0	4·7	**6·1**	**6·1**	Larissa.
1·6	1·6	2·9	4·4	**6·1**	**6·1**	Lamia.
2·1	1·8	3·1	4·7	6·3	6·3	*Mean.*
						Group VII :
1·9	1·9	2·8	4·1	**5·5**	5·4	Volo.
1·4	1·4	2·7	4·3	6·2	**6·6**	Chalchis.
1·0	1·1	2·2	4·0	**5·6**	**5·6**	Athens.
1·4	1·5	2·6	4·3	5·6	**6·0**	Nauplia.
1·4	1·5	2·6	4·2	5·7	5·9	*Mean.*
						Group VIII :
0·5	0·76	1·75	3·7	6·2	6·7	Andros.
0·6	0·4	1·4	3·2	5·0	**6·1**	Syra.
0·8	0·5	2·1	4·3	6·5	**7·1**	Naxos.
0·2	**0·3**	1·1	3·3	5·8	6·7	Santorin.
0·5	0·5	1·6	3·6	5·9	6·6	*Mean.*
						Group IX :
0·6	0·8	1·7	3·7	5·6	**6·0**	Cythera.
0·7	1·4	2·6	3·5	5·8	**6·6**	Canea.
1·1	1·3	1·6	3·4	4·9	5·0	Candia.
0·8	1·2	2·0	3·5	5·4	5·9	*Mean.*
						Group X :
0·9	1·1	2·4	4·2	5·4	5·6	Corfu.
1·4	1·4	2·6	4·2	5·6	5·8	Arta.
0·4	0·5	1·6	2·9	4·6	**5·2**	Kephalonia.
1·0	1·0	2·1	4·5	6·0	6·1	Patras.
0·6	0·8	1·9	3·5	4·7	5·1	Zante.
0·9	1·0	2·1	3·9	5·3	5·6	***Mean.***

CHAPTER II

CLIMATE OF ASIA MINOR

Physical Features

Practically the whole of Asia Minor consists of an elevated plateau, which, with its mountain ranges, everywhere rises rapidly from the coast, and forms a region having an average altitude of about 3,000 feet and upwards, of which the climate is of the continental type. Here hot summers and cold winters are everywhere the rule, and, as is ordinarily the case in mountainous countries, there are wide differences between the temperatures which are experienced in winter at places only a short distance apart. Towns and villages which are situated on the floors of valleys experience a greater intensity of cold in winter than other places of the same altitude which are on sloping ground, where the air which has been chilled on the mountain can flow past instead of accumulating. Rainfall is fairly abundant in the winter on the coasts, but it usually decreases rapidly from the coast as inland localities are reached. The interior receives little rain in summer; November and May are usually the months of the heaviest rainfall. In the south-eastern portion of the country a gradual passage from these spring and autumn rains to the winter rainfall of Mesopotamia and Syria is noticeable. In the higher mountains of the interior the rainfall is frequently heavy, and deep snow occurs in their passes in winter, but recorded observations are few.

Meteorological Stations

In Asia Minor there are few meteorological stations, and the majority have been in operation for a few years only. The coastal stations, of which three lie on the Black Sea shore,

one close to the Sea of Marmora, two on the shore of the Aegean Sea, and one near the Gulf of Alexandretta, represent the coastal conditions, which extend but a very short way from the sea margins. In recent years the rainfall has been measured at many of the railway stations of Asia Minor, but only a few of the results have been published. Those of 1902 are, however, available and from them some idea of the distribution of the rainfall of the interior to the east of Smyrna can be obtained.

Not only are the places at which meteorological observations have been taken few in number, but the observations are in many cases incomplete, some of the climatic factors only having been observed.

Records are however available for longer or shorter periods from the following places in Asia Minor.

Place.	*Number of Years' Observation.*	*Altitude.*	*Lat. N.*		*Long. E.*	
		ft.	°	′	°	′
North Coast:						
Sinope	17	66	42	1	35	19
Samsun	1–10	33	41	18	36	19
Trebizond	10	98	41	1	39	45
West Coast:						
Smyrna	6–23	33	38	25	27	0
Samos	4	230	37	40	26	45
South Coast:						
Adana	2–4	66	36	46	34	50
Interior:						
Mezere	7	3,540	38	38	39	22
Merzifun	14	2,460	40	41	35	31
Sivas	4	4,330	39	43	37	10
Konia	2	3,370	37	53	32	29
Eski Sheher	2	2,600	39	44	30	26
Afion Kara Hisar	2	3,300	38	45	30	25

The northern coast of Asia Minor is inadequately represented by the observations of Sinope, Samsun and Trebizond, which have not been taken for any length of time, and are in some respects incomplete. On the west coast, Smyrna and

Samos furnish a fairly complete series of observations, although the periods over which they extend are not long. The railway stations in the neighbourhood of Smyrna furnish measurements of the rainfall, but it seems that only those for 1902 have been published.

On the south coast Adana is the only station available, and here observations have been made for two years, and, in the case of rainfall, for four years.

The great tableland which forms the whole of Asia Minor except the narrow coastal belt has a mean altitude of about 3,000 to 4,000 ft., while its mountain ranges rise to a height of 10,000 ft. in some places. Some half-dozen stations furnish a general idea of the climate of the interior, but of these only two, Merzifun, 14 years, and Mezere, 7 years, have observations which embrace an adequate number of years. As regards their position, Mezere, which is close to Kharput, lies on the northern flanks of the Taurus range, to the north of Urfeh and Diarbekr, places which provide observations illustrating the climate of northern Mesopotamia. Merzifun, Sivas, Kaisiriyeh, and Konia, form a group of stations in the central portion of the plateau, while Eski Sheher and Afion Kara Hisar lie further to the westward.

General Conditions

As in Greece and Syria so also in Asia Minor the winter and summer seasons are the most developed, while spring and autumn have rather the character of short transitional periods of a month or two, the one between winter and summer being somewhat longer than that which introduces the winter season. November to March constitute the winter, with April and May as the transition period between it and the summer, which ends with September. In October the change from summer to winter conditions begins and is completed by the following month.

In summer the general meteorological conditions of the Eastern Mediterranean are mainly determined by the low pressure which prevails over the Persian Gulf and is related

to the monsoon of the Indian Ocean. In May these conditions begin to develop, and by June they are fully established. As a result there is a general northerly and north-westerly flow of air from south-eastern Europe towards the plains of Mesopotamia, and hot dry climatic conditions prevail generally over Asia Minor. By November winter conditions have set in, when the Mediterranean is the principal area of low pressure and the Asiatic high-pressure system extends frequently over Asia Minor with light winds, clear skies, and very low night temperatures. With the passage of frequent cyclonic storms from the Mediterranean over Asia Minor considerable precipitation takes place, and this on the elevated plateau of the interior occurs very largely in the form of snow.

Notes on the Tables

Temperature

The mean temperature of several stations is given in Table I, p. 144. The lowest temperature occurs everywhere in January, and the highest usually falls in July or sometimes in August. The mean temperature at the coastal stations is always considerably above freezing-point, but falls below it in January, and often in December and February also, at the inland stations.

The mean daily maximum exceeds 90° F. at Smyrna and Adana, of the coast stations, and also at the high inland station of Mezere. The highest temperatures which have been recorded are given in Table IV, p. 146, and for stations at which the observations only extend over a short period the value given represents a temperature which may occur in any year, and may frequently be exceeded. Temperatures exceeding 100° F. may occur at Smyrna, Adana, Sivas, and probably at other stations in the interior, though the observations which are available are insufficient to indicate more closely the extreme summer temperatures on the plateau.

The mean daily minimum temperatures are given in Table V, p. 148, where it will be seen that these are not below 32° F.

except on the plateau, where this occurs from November to March. Tables VI and VII, pp. 148, 150, show the mean monthly minimum and absolute minimum temperatures recorded at a few stations, but as the observations at some of them, e.g. Sivas, Konia, and others, have only been made for a few years, they can only indicate the general character of the winter. They do, however, indicate very severe winter conditions in December, January, and February, and this is fully borne out by the result obtained at Merzifun in the north, and at Mezere in the south, where observations have been taken for 14 and 7 years respectively. When data are so incomplete it is difficult to state the greatest range of temperature which is to be anticipated in any month, but taking Smyrna as a coastal station the mean monthly range of temperature is 42° F. in January, 44° F. in April, and 37° F., in July. For Merzifun as an inland station the figures are 36° F., 47° F., and 37° F.; other places in the interior may perhaps experience a wider range of temperature.

Humidity

The humidity has been observed at few stations in the interior, but the observations made at Mezere show well the dryness of the summer months (Table VIII, p. 150).

Rainfall

The rainfall is moderately heavy on the coasts, and inland a considerable quantity falls, though the amount diminishes rapidly on going inland.

On the coasts the heaviest rainfall occurs in December, but in the interior May is usually the wettest month, while from July to September very little rain falls.

Besides the stations given in Table IX, p. 152, some additional data are available.

	Spring. ins.	*Summer.* ins.	*Autumn.* ins.	*Winter.* ins.	*Year.* ins.
Angora .	3·86	1·81	1·39	2·32	9·38
Konia .	—	—	—	—	7·09

In Table IX certain results in western Asia Minor for the year 1902 are included. They were taken at a number of the stations of the railway system and are here grouped in four sets. The first set includes the results of five stations, all near Smyrna, and on or near the coast ; the second and third include stations to the east of Smyrna and situated at an altitude of from about 2,500 to 3,500 ft. The fourth set includes stations on the inland plateau to the east-south-east of Smyrna. On the coast the winter maximum of rainfall is well marked, while on the western plateau maxima occurred in that year in March and November.

The average number of rain-days in each month is available from a few stations. In the winter season at the coast stations the maximum number of rain-days is from 12–14, while the spring maximum at the inland stations has about the same number (Table X, p. 152).

Winds

The paucity of stations and the dominating influence of local conditions in such regions as the deeply-indented western coast of Asia Minor, or the inland plateau with its mountain ranges, make it difficult to deduce the actual air circulation from the available observations. Very probably many of these apply only to the immediate neighbourhood of the station (Table XI, p. 154). On the north coast there is a predominance of southerly winds at Trebizond, which is much more marked in the winter months than in the summer. Farther westward at Samsun and Sinope the northerly winds are in a considerable majority in the summer and equal or even exceed the southerly winds in winter. On the west coast the wind conditions are those of the Aegean Sea with the northerly winds exceeding the southerly winds little if at all in winter, but very considerably in the summer months. Smyrna, with its large proportion of westerly and south-westerly winds in summer represents doubtless local conditions only.

On the south coast Tarsus furnishes 18 months' observations which indicate that south-westerly winds largely

predominate in summer, while in winter they are greatly reduced in frequency as the north-easterly winds of that season increase. In the interior Merzifun and Mezere alone furnish observations which extend over several years; at Konia and Angora only two years' observations are available.

Northerly winds prevail extensively in the summer, but during the winter southerly winds, at any rate in the northern part of the tableland, reach a considerable importance. The numerous mountain ranges must also affect materially the winds in their vicinity, giving rise to strongly-marked local types.

Conditions affecting Aviation

With so few stations and such incomplete series of observations it would be inadvisable to attempt any detailed account of the special conditions which affect aviation. The range of temperature in the interior is given above, and the very low winter temperatures are shown in Tables VI and VII, pp. 148, 150. Much of the precipitation recorded in Table IX, p. 152, must fall as snow, but no records of number of days of snowfall nor of the time during which the snow covers the ground are available. Snow may fall heavily in March, and at Erzerum cold weather at this season is expected. The lowest temperatures occur during clear still weather, which is doubtless associated with conditions of high atmospheric pressure over Asia Minor and the Caucasus.

In the summer, when the country is hot and dry, haze and dust probably interfere with visibility considerably, but no observations on this subject are available.

TABLES

SUMMARY

Table.		PAGES
I.	Mean Temperature	144–5
II.	Mean Daily Maximum Temperature	144–5
III.	Mean Monthly Maximum Temperature	146–7
IV.	Absolute Maximum Temperature	146–7
V.	Mean Daily Minimum Temperature	148–9
VI.	Mean Monthly Minimum Temperature	148–9
VII.	Absolute Minimum Temperature	150–1
VIII.	Relative Humidity	150–1
IX.	Mean Rainfall	152–3
X.	Number of Rain Days	152–3
XI.	Wind Directions as Percentages of Total Observations	154–9
XII.	Mean Amount of Cloud	160–1

TABLE I

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
North Coast :						
Samsun	—	—	—	—	65·3	67·8
Trebizond	*43·3*	45·9	47·8	53·1	61·5	67·8
West Coast :						
Smyrna	*45·6*	47·6	51·2	59·5	69·2	76·4
Samos	*48·6*	51·3	51·6	59·2	67·6	73·8
South Coast :						
Adana	*50·6*	54·7	58·1	66·7	73·9	79·7
Interior :						
Konia	*26·3*	31·0	39·2	50·0	60·4	64·4
Sivas	*23·2*	36·9	34·7	46·6	58·8	63·5
Merzifun	*29·5*	35·0	40·8	48·2	59·7	63·6
Mezere	*19·2*	29·9	40·6	52·7	60·2	70·3
Eski Sheher	*23·5*	26·1	32·5	39·7	53·4	69·1
Afion Kara Hisar	*32·7*	43·5	41·3	54·3	54·5	63·7

TABLE II

Mean Daily Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
North Coast :						
Samsun	—	—	—	—	70·9	75·7
Trebizond	*48·9*	52·1	54·8	59·9	68·5	75·7
West Coast :						
Smyrna	*53·0*	55·7	60·2	68·5	78·6	86·7
Samos	*52·5*	55·4	56·1	64·6	73·4	79·5
South Coast :						
Adana	53·4	*53·2*	65·5	71·2	82·4	90·3
Interior :						
Konia	*37·7*	42·6	50·7	65·1	75·7	79·8
Sivas	*31·8*	37·4	43·9	59·7	79·3	81·3
Merzifun	*34·7*	38·3	46·9	56·1	70·3	74·6
Mezere	*27·7*	38·4	51·9	66·3	73·9	84·2
Eski Sheher	*34·9*	38·1	44·4	55·0	71·8	83·1
Afion Kara Hisar	*40·3*	52·9	51·8	67·3	69·8	82·9

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						North Coast :
73·8	**75·7**	70·3	61·7	58·3	50·0	Samsun.
73·8	**73·9**	68·7	63·9	55·8	48·2	Trebizond.
						West Coast :
80·9	**82·0**	75·0	65·8	58·1	51·8	Smyrna.
78·8	78·1	72·5	66·9	59·0	52·5	Samos.
						South Coast :
83·8	82·2	79·7	71·2	59·0	54·3	Adana.
						Interior :
68·9	66·9	60·4	51·6	42·0	36·1	Konia.
69·3	67·6	60·6	50·0	40·3	27·5	Sivas.
67·8	67·6	60·8	54·3	42·9	35·4	Merzifun.
77·0	76·1	67·1	57·2	44·9	33·4	Mezere.
75·6	74·7	65·3	50·4	34·5	31·3	Eski Sheher.
68·9	67·6	63·1	59·0	34·7	33·2	Afion Kara Hisar.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						North Coast :
81·3	**83·7**	79·0	69·8	65·5	55·9	Samsun.
80·2	79·7	75·2	69·6	59·1	55·5	Trebizond.
						West Coast :
91·5	**93·0**	85·8	76·8	67·0	59·5	Smyrna.
85·5	84·4	78·6	72·0	63·5	56·7	Samos.
						North Coast :
90·7	**93·0**	87·8	81·3	68·4	58·8	Adana.
						Interior :
85·1	82·9	76·2	66·2	54·3	45·5	Konia
87·8	86·2	77·7	63·7	49·3	36·0	Sivas.
78·4	77·1	70·8	62·8	48·3	40·2	Merzifun.
91·2	**91·9**	82·9	72·1	54·1	39·9	Mezere.
89·4	87·6	82·8	68·4	47·3	42·3	Eski Sheher.
87·2	84·5	81·5	75·9	46·2	43·0	Afion Kara Hisar.

TABLE III

Mean Monthly Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
West Coast :						
Smyrna	*67·1*	67·6	71·9	82·0	90·6	98·0
Samos	*61·7*	62·4	65·5	78·6	81·5	86·7
South Coast :						
Adana	62·8	64·6	75·6	80·2	94·1	**96·6**
Interior :						
Sivas	*42·4*	53·1	55·8	78·1	85·5	92·5
Merzifun	*45·8*	50·5	64·2	73·5	78·4	82·7
Mezere	*46·0*	50·0	62·6	79·2	85·8	93·7
Eski Sheher	*44·6*	46·4	55·4	60·8	66·2	88·7
Afion Kara Hisar	*50·9*	60·8	62·6	73·4	83·3	86·0

TABLE IV

Absolute Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
North Coast :						
Samsun	—	—	—	—	82·0	**90·0**
West Coast :						
Smyrna	*69·0*	71·9	77·0	84·0	96·4	102·0
Samos	*62·9*	65·1	70·7	81·5	86·7	89·6
South Coast :						
Adana	64·9	71·4	84·9	81·7	99·3	**103·6**
Interior :						
Konia	*50·0*	53·6	69·8	75·2	87·8	87·8
Sivas	*48·2*	54·5	64·2	89·2	94·1	97·2
Merzifun	*52·7*	54·5	67·1	80·6	83·3	87·8
Mezere	*46·0*	53·2	70·3	79·7	87·1	95·9
Eski Sheher	*46·4*	50·0	60·8	68	91·4	89·6
Afion Kara Hisar	*53·6*	62·6	66·2	73·4	87·8	89·6

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						West Coast :
100·2	**102·3**	95·3	87·2	79·8	68·1	Smyrna.
91·2	90·8	87·8	81·8	72·3	64·9	Samos.
						South Coast :
94·8	96·3	94·8	89·8	80·6	61·7	Adana.
						Interior :
97·3	97·0	91·4	74·8	61·9	46·8	Sivas.
87·0	**87·6**	82·0	74·1	61·7	52·5	Merzifun.
99·9	96·8	94·1	85·6	66·0	57·6	Mezere.
95·0	**96·8**	89·6	78·8	55·4	50·9	Eski Sheher.
93·2	91·4	86·9	74·3	54·5	54·5	Afion Kara Hisar.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						North Coast :
88·5	89·6	88·2	89·4	76·8	63·0	Samsun.
						West Coast :
102·0	**107·0**	98·9	93·0	82·0	73·9	Smyrna.
91·6	93·2	**95·0**	86·5	76·1	66·7	Samos.
						South Coast :
95·7	102·2	96·6	90·1	82·0	66·4	Adana.
						Interior :
96·8	91·4	91·4	78·8	69·8	53·6	Konia
101·7	100·0	95·4	76·6	65·3	52·5	Sivas.
91·4	**91·4**	86·9	78·8	65·3	57·2	Merzifun.
100·4	97·7	94·1	88·7	70·2	58·3	Merzere.
96·8	**96·8**	91·4	78·8	57·2	51·8	Eski Sheher.
93·2	**93·2**	**93·2**	82·4	55·4	57·2	Afion Kara Hisar.

TABLE V

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
North Coast :						
Samsun	—	—	—	—	59·7	60·1
Trebizond	*37·9*	40·1	41·5	46·2	55·5	61·7
West Coast :						
Smyrna	*38·3*	39·5	42·4	50·5	59·5	66·3
Samos	*43·9*	46·4	46·6	53·2	61·2	67·1
South Coast :						
Adana	*37·6*	39·2	46·4	54·5	60·8	66·9
Interior :						
Konia	*14·9*	19·3	27·7	35·0	45·3	48·9
Sivas	*14·2*	16·7	25·3	33·6	43·0	46·4
Merzifun	*24·1*	24·8	31·1	37·9	49·1	53·4
Mezere. . . .	*11·2*	22·1	31·5	41·7	48·3	55·9
Eski Sheher . . .	*15·3*	16·7	23·9	28·6	36·1	52·9
Afion Kara Hisar . .	25·0	34·3	30·4	41·3	39·4	44·4

TABLE VI

Mean Monthly Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
West Coast :						
Smyrna	*25·0*	28·3	33·4	37·9	50·1	59·3
Samos. . . .	*32·0*	37·9	37·7	43·0	54·8	61·2
South Coast :						
Adana	*26·6*	30·2	38·5	48·9	52·5	58·1
Interior :						
Sivas	*−8·8*	*−9·2*	6·8	23·2	34·0	36·3
Merzifun	*10·1*	13·7	20·9	26·8	37·2	44·4
Mezere. . . .	*−0·9*	4·3	9·0	26·1	32·0	48·9
Eski Sheher . . .	*10·4*	*10·4*	19·4	26·5	35·6	48·2
Afion Kara Hisar . .	*13·1*	18·5	23·0	32·9	32·0	41·0

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						North Coast :
66·4	**67·8**	61·9	53·8	51·1	44·1	Sansum.
66·9	**67·1**	62·7	57·5	48·3	43·1	Trebizond.
						West Coast :
70·3	**71·0**	64·2	55·2	48·7	44·2	Smyrna.
71·2	70·3	66·0	61·7	54·5	48·2	Samos.
						South Coast :
72·1	**73·6**	68·2	60·8	50·5	43·5	Adana.
						Interior :
52·7	51·0	44·7	37·0	29·9	27·0	Konia.
50·9	49·3	43·5	36·7	31·3	20·1	Sivas.
57·5	57·2	52·3	45·1	37·0	30·1	Merzifun.
61·5	**61·5**	52·8	45·5	37·4	27·0	Mezere.
61·3	61·2	45·7	32·4	23·9	21·7	Eski Sheher.
50·5	50·0	44·9	42·1	23·0	23·9	Afion Kara Hisar.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						West Coast :
63·1	**65·8**	56·6	45·6	34·7	33·2	Smyrna.
67·6	66·4	58·4	53·6	44·9	34·7	Samos.
						South Coast :
68·0	**69·8**	61·3	54·3	38·3	36·9	Adana.
						Interior :
42·8	41·9	33·4	27·7	14·4	7·9	Sivas.
49·6	49·2	40·8	32·7	25·0	17·3	Merzifun.
54·9	51·4	43·7	35·6	25·7	3·1	Mezere.
53·6	49·1	33·8	23·0	15·8	17·6	Eski Sheher.
39·2	**55·4**	41·9	38·3	19·4	19·4	Afion Kara Hisar.

TABLE VII

Absolute Minimum Temperature

	Jan. °F.	*Feb.* °F.	*Mar.* °F.	*April.* °F.	*May.* °F.	*June.* °F.
North Coast :						
Samsun	—	—	—	—	55·4	51·1
West Coast :						
Smyrna	11·0	12·2	26·1	30·1	48·0	53·9
Samos	25·2	34·0	34·0	39·5	54·3	58·8
South Coast :						
Adana	19·0	23·5	36·5	44·4	52·2	57·4
Interior :						
Konia	− 0·4	5·0	19·4	28·4	33·8	44·6
Sivas	− 17·3	− 34·6	1·3	18·2	30·0	32·3
Merzifun	5·0	− 8·0	17·6	23·0	33·8	37·4
Mezere	− 3·6	1·4	8·2	20·3	26·6	47·5
Eski Sheher	10·4	8·6	15·8	31·5	32·0	33·4
Afion Kara Hisar	12·2	8·6	12·0	32·0	32·0	32·9

TABLE VIII

Relative Humidity

	Jan. %	*Feb.* %	*Mar.* %	*April.* %	*May.* %	*June.* %
North Coast :						
Trebizond	66	72	68	66	75	78
West Coast :						
Smyrna	69	71	68	63	62	58
Interior :						
Mezere, mean of day	85	83	65	58	59	47
Mezere, at 12 noon	76	74	54	45	44	32

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						North Coast :
59·4	**63·0**	57·9	39·7	42·4	37·6	Samsun.
						West Coast :
60·0	**62·0**	48·9	39·9	18·5	23·0	Smyrna.
66·5	65·6	51·6	48·7	39·5	29·0	Samos.
						South Coast :
67·6	**68·2**	60·8	53·6	32·2	32·7	Adana.
						Interior :
46·4	44·6	32·0	23·0	21·2	24·8	Konia.
38·3	**40·6**	29·0	19·6	7·9	—14·1	Sivas.
48·2	46·4	36·0	33·8	14·0	10·4	Merzifun.
53·2	50·0	36·5	31·1	21·2	8·5	Mezere.
50·0	32·5	32·0	12·0	10·4	10·4	Eski Sheher.
33·4	32·9	32·0	32·5	12·0	12·2	Afion Kara Hisar.

July. %	*Aug.* %	*Sept.* %	*Oct.* %	*Nov.* %	*Dec.* %	
						North Coast :
71	67	74	75	69	65	Trebizond.
						West Coast :
50	48	59	66	74	77	Smyrna.
						Interior :
36	35	41	54	76	86	Mezere, mean of day.
26	24	30	41	63	81	Mezere, at 12 noon.

TABLE IX

Mean Rainfall (inches)

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
North Coast :						
Samsun	3·15	2·28	2·91	2·59	1·89	1·49
Trebizond	2·87	1·89	2·83	2·75	1·96	2·63
West Coast :						
Smyrna	2·79	2·61	3·21	1·12	0·88	0·38
Samos	5·43	5·51	4·56	1·14	0·98	0·19
South Coast :						
Adana	2·36	4·06	2·87	1·87	1·66	1·01
Interior :						
Sivas	2·10	1·68	1·37	2·34	**2·98**	1·09
Merzifun	0·89	1·21	1·78	1·96	**2·38**	2·26
Mezere	1·41	2·04	1·96	2·40	**2·52**	0·90
Eski Sheher	0·28	0·17	0·73	0·70	0·93	1·71
Afion Kara Hisar	0·51	2·65	**2·79**	1·94	2·10	1·55
In 1902 :						
Smyrna *	3·11	1·46	1·47	0·67	1·67	0·08
E. of Smyrna †	1·06	1·18	**2·68**	1·42	0·80	0·12
E. of Smyrna ‡	0·51	1·00	**3·44**	1·35	1·87	0·47
ESE. of Smyrna §	0·96	0·73	**3·48**	1·63	1·02	0·53

* Mean of five stations near Smyrna.
† Mean of six stations E. of Smyrna (Alashehir to Ushak).
‡ Mean of seven stations E. of Smyrna (Ushak to Afion Kara Hisar).
§ Mean of seven stations ESE. of Smyrna (Denislu to Diner).

TABLE X

Number of Rain Days (> 0·2 mm. or 0·008 in. of rain)

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
West Coast :						
Smyrna	10·8	10·6	9·6	7·1	5·1	1·5
Samos	**14**	**14**	12	9	3	3
South Coast :						
Adana	5	9·6	7	5·5	5·5	3·2
Interior :						
Sivas	12	10·3	11·7	10·5	**16·2**	6·2
Merzifun	6·3	7·4	7·3	9·3	**11·1**	9·2
Mezere	9·5	11·5	12·2	12·7	**15·2**	7·0
Eski Sheher	4·5	3	8	4·5	8	8
Afion Kara Hisar	3	3	**8·5**	6·5	4·5	6·5

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						North Coast :
0·70	1·06	2·12	2·75	**4·01**	3·62	Samsun.
1·73	2·32	3·03	3·34	4·17	**4·88**	Trebizond.
						West Coast :
—	0·43	0·52	0·81	3·36	**3·72**	Smyrna.
—	0·11	—	1·92	5·43	**7·75**	Samos.
						South Coast :
0·01	0·02	0·16	1·10	3·94	**4·96**	Adana.
						Interior :
0·42	0·13	0·72	1·25	1·94	0·89	Sivas.
0·72	0·65	0·84	1·32	1·52	1·09	Merzifun.
0·03	0·07	0·27	1·37	2·36	2·12	Merzere.
0·05	0·78	0·02	0·72	**2·33**	1·00	Eski Sheher.
0·11	0·61	0·05	1·12	**3·07**	1·12	Afion Kara Hisar.
						In 1902 :
0·24	—	—	1·20	2·96	**6·89**	Smyrna.*
0·33	—	—	0·25	**3·82**	2·76	E. of Smyrna.†
0·43	—	0·13	0·16	**3·19**	1·93	E. of Smyrna.‡
0·39	0·89	—	—	**4·01**	2·54	ESE. of Smyrna. §

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						West Coast :
0·3	0·6	2·5	3·0	10·3	**11·1**	Smyrna.
0·5	1·2	1	6	10	**14**	Samos.
						South Coast :
0·2	0·5	0·8	4	**10·5**	7·7	Adana.
						Interior :
3	2·2	4·7	9·2	11·2	6·7	Sivas.
3·1	1·7	3·3	5·0	6·8	5·9	Merzifun.
2·0	1·3	3·8	7·7	12·7	12·5	Mezere.
0·5	2·5	0·5	3·5	**9**	8·5	Eski Sheher.
0·5	2	1	1·5	8	6·5	Afion Kara Hisar.

TABLE XI

Wind Directions as Percentages of Total Observations

JANUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	6·0	2·7	22·4	14·9	7·9	2·6	25·3	12·3	5·9
Samsun .	0·8	14·8	3·0	16·0	2·5	21·1	0·4	41·4	—
Trebizond .	5·1	1·0	10·7	6·7	23·3	15·7	18·8	16·6	2·1
Mean . .	3·9	6·2	12·0	12·5	11·2	13·1	14·8	23·4	2·6
West Coast :									
Scutari . .	17·2	30·4	12·7	4·8	10·7	14·2	2·3	3·0	4·7
Smyrna .	10·6	19·0	22·3	11·7	11·7	1·9	7·0	2·2	13·6
Samos . .	7·8	11·0	13·7	10·9	8·7	2·0	2·0	17·6	26·3
Mean . .	11·9	20·1	16·2	9·1	10·4	6·0	3·7	7·6	14·9
Interior :									
Mezere . .	13·0	1·3	9·2	11·3	25·9	8·4	17·6	10·3	3·0
Merzifun .	10·3	8·8	14·2	6·4	11·8	7·0	11·0	4·0	26·6
Konia . .	37·1	15·3	9·7	9·7	19·4	4·0	1·6	3·2	—
Angora . .	27·4	56·4	1·6	1·6	6·5	6·5	—	—	—
Mean . .	21·9	20·5	8·7	7·2	15·9	6·5	7·5	4·4	7·4

FEBRUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	5·3	2·5	25·7	14·9	6·1	1·6	25·0	13·7	5·2
Samsun .	0·5	26·5	—	7·8	1·8	11·4	—	52·0	—
Trebizond .	5·4	1·4	19·0	8·2	20·6	8·8	16·8	15·9	3·9
Mean . .	3·7	10·1	14·9	10·3	9·5	7·3	13·9	27·2	3·0
West Coast :									
Scutari . .	20·7	28·7	12·1	3·7	10·8	14·4	3·2	1·3	5·1
Smyrna .	7·4	13·0	19·0	16·6	14·2	6·4	4·7	2·4	16·3
Samos . .	2·6	4·8	15·2	16·9	12·1	4·5	2·1	17·9	23·9
Mean . .	10·2	15·5	15·4	12·4	12·4	8·4	3·3	7·2	15·1
Interior :									
Mezere . .	12·2	1·9	8·7	10·3	30·1	8·3	19·0	8·3	1·2
Merzifun .	15·4	9·4	9·9	3·7	12·6	7·3	9·4	5·5	26·8
Konia . .	30·3	10·7	8·9	17·9	23·2	5·4	1·8	1·8	—
Angora . .	16·1	42·8	7·1	23·2	1·8	3·6	5·4	—	—
Mean . .	18·5	16·2	8·6	13·8	16·9	6·1	8·9	3·9	7·0

MARCH

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	7·4	3·2	29·9	13·0	4·3	0·9	20·8	15·5	5·0
Samsun .	0·8	28·2	0·4	12·5	1·3	9·1	0·4	47·3	—
Trebizond .	8·3	2·7	25·7	7·1	13·5	7·0	15·9	16·5	3·3
Mean. .	5·5	11·4	18·7	10·8	6·4	5·7	12·4	26·4	2·8
West Coast :									
Scutari . .	19·7	25·8	6·7	2·8	14·8	17·4	6·1	1·7	5·0
Smyrna .	9·3	14·2	14·9	10·2	11·0	5·2	15·1	3·7	16·4
Samos . .	4·4	3·5	6·4	9·6	11·1	1·8	4·0	36·1	23·1
Mean. .	11·1	14·5	7·3	7·5	12·3	8·1	8·4	13·8	14·8
Interior :									
Mezere . .	15·4	1·3	10·8	13·3	27·2	6·4	14·5	11·1	—
Merzifun .	18·7	10·1	10·3	3·3	11·2	6·4	12·5	5·4	22·1
Konia . .	35·5	8·1	3·2	4·8	24·2	17·8	1·6	4·8	—
Angora . .	21·0	25·8	17·7	—	3·2	11·3	1·6	19·4	—
Mean. .	22·6	11·3	10·5	5·4	16·4	10·5	7·6	10·2	5·5

APRIL

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	6·6	3·3	28·9	14·9	4·5	1·0	24·4	12·0	4·4
Samsun .	0·9	39·2	0·9	9·9	1·3	3·9	0·4	43·5	—
Trebizond .	9·0	2·6	37·3	6·4	11·6	4·1	11·9	15·2	1·9
Mean. .	5·5	15·0	22·4	10·4	5·8	3·0	12·2	23·6	2·1
West Coast :									
Scutari . .	15·6	29·6	4·1	2·1	15·8	20·2	4·7	1·1	6·8
Smyrna .	7·6	8·9	11·4	12·7	14·5	4·8	24·6	2·9	12·6
Samos . .	4·7	1·6	5·2	6·9	16·3	3·0	3·8	33·5	25·0
Mean. .	9·3	13·4	6·9	7·2	15·5	9·3	11·0	12·5	14·8
Interior :									
Mezere . .	22·1	2·5	11·6	12·9	20·8	2·9	11·9	15·3	—
Merzifun .	12·1	10·7	11·5	2·3	11·2	8·4	15·9	4·3	23·6
Konia . .	23·3	13·3	1·7	1·7	36·7	15·0	8·3	—	—
Angora . .	8·4	8·3	3·3	10·0	1·7	30·0	10·0	28·3	—
Mean. .	16·5	8·7	7·1	6·7	17·6	14·1	11·5	11·9	5·9

TABLE XI (*continued*)

Wind Directions as Percentages of Total Observations

MAY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope	5·6	1·8	31·5	16·0	5·6	1·3	21·5	12·6	4·1
Samsun	1·6	33·8	1·2	10·7	3·3	4·9	—	44·5	—
Trebizond	10·3	3·3	35·3	8·1	7·7	4·2	10·8	14·7	5·6
Mean.	5·8	12·9	22·6	11·6	5·5	3·5	10·8	23·9	3·2
West Coast :									
Scutari	15·3	27·9	3·1	0·5	18·0	23·9	5·3	0·7	5·3
Smyrna	6·2	6·6	7·3	4·7	9·1	13·5	33·8	3·8	15·0
Samos	6·4	1·1	3·2	6·5	10·9	2·2	3·5	40·7	25·5
Mean.	9·3	11·9	4·5	3·9	12·7	13·2	14·2	15·1	15·3
Interior :									
Mezere	19·0	1·0	6·5	11·7	22·6	8·9	16·8	13·5	—
Merzifun	9·8	18·0	12·1	4·0	10·1	6·0	12·0	4·0	24·0
Konia	24·2	6·4	8·1	9·7	16·1	21·0	4·8	9·7	—
Angora	8·1	—	—	4·8	12·9	21·0	29·0	24·2	—
Mean.	15·3	6·4	6·7	7·5	15·4	14·2	15·7	12·8	6·0

JUNE

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope	6·2	1·9	21·0	16·0	4·2	1·9	22·9	17·3	8·6
Samsun	0·4	43·9	0·4	8·5	0·4	3·4	—	43·0	—
Trebizond	8·4	3·8	27·9	6·0	11·2	7·1	13·4	18·1	4·1
Mean.	5·0	16·5	16·4	10·1	5·3	4·1	12·1	26·1	4·2
West Coast :									
Scutari	11·5	30·1	4·5	0·2	15·4	29·9	2·7	1·1	4·6
Smyrna	7·3	6·9	7·2	4·8	9·7	12·3	34·1	6·7	11·0
Samos	4·8	0·5	3·1	5·7	9·1	1·1	3·0	57·7	15·0
Mean.	7·9	12·5	4·9	3·6	11·4	14·4	13·3	21·8	10·2
Interior :									
Mezere	20·0	—	2·2	5·7	22·1	7·7	24·3	18·0	—
Merzifun	17·4	15·4	8·5	3·1	8·2	5·3	15·1	3·0	24·0
Konia	38·4	6·7	3·3	8·3	21·7	13·3	5·0	3·3	—
Angora	5·0	20·0	13·3	11·7	8·3	15·0	13·4	13·3	—
Mean.	20·2	10·5	6·8	7·2	15·1	10·3	14·5	9·4	6·0

JULY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	8·4	1·6	18·1	10·3	3·9	1·0	29·9	21·7	5·1
Samsun .	1·2	41·0	1·7	3·3	1·3	5·0	1·3	45·2	—
Trebizond .	12·6	6·1	17·8	3·3	16·0	7·6	13·3	17·3	6·0
Mean. .	7·4	16·2	12·5	5·6	7·1	4·5	14·8	28·1	3·7
West Coast :									
Scutari . .	16·9	45·8	6·7	0·4	9·4	15·3	2·0	1·6	1·9
Smyrna .	12·4	15·5	8·5	0·7	1·7	13·9	34·0	5·2	8·1
Samos . .	5·0	0·1	2·4	0·5	—	—	2·1	83·4	6·5
Mean. .	11·4	20·5	5·9	0·5	3·7	9·7	12·7	30·1	5·5
Interior :									
Mezere . .	22·4	1·0	3·2	3·0	15·4	5·3	26·5	23·2	—
Merzifun .	23·3	24·0	8·5	2·0	5·3	3·3	8·5	1·1	24·0
Konia . .	67·8	16·1	—	3·2	9·7	1·6	—	1·6	—
Angora . .	4·8	17·7	14·5	8·1	8·1	6·4	6·5	33·9	—
Mean. .	29·6	14·7	6·5	4·1	9·6	4·1	10·4	15·0	6·0

AUGUST

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	9·1	3·1	18·0	9·1	3·9	1·2	29·7	19·8	6·1
Samsun .	3·8	45·0	2·5	3·0	0·8	0·4	0·4	44·1	—
Trebizond .	10·2	3·2	18·6	5·6	16·9	9·2	11·3	22·4	2·6
Mean. .	7·7	17·1	13·0	5·9	7·2	3·6	13·8	28·7	2·9
West Coast :									
Scutari . .	14·5	49·9	10·9	0·5	7·2	12·1	1·3	0·9	2·7
Smyrna .	14·4	13·2	5·6	—	1·5	12·3	27·2	5·3	20·5
Samos . .	15·5	1·0	4·2	0·5	0·2	0·7	4·2	70·2	3·5
Mean. .	14·8	21·4	6·9	0·3	3·0	8·4	10·9	25·5	8·9
Interior :									
Mezere . .	25·2	—	3.5	3·7	15·2	5·6	21·0	25·8	—
Merzifun .	29·6	22.5	9·7	1·6	3·4	6·3	2·0	0·2	24·6
Konia . .	54·9	22·6	—	—	17·7	1·6	—	3·2	—
Angora . .	14·5	3·2	30·6	8·1	12·9	12·9	6·5	11·3	—
Mean. .	31·0	12·1	11·0	3·4	12·3	6·6	7·4	10·1	6·1

TABLE XI (*continued*)

Wind Directions as Percentages of Total Observations

SEPTEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	9·1	3·1	18·0	9·1	3·9	1·2	29·7	19·8	6·1
Samsun .	3·8	45·0	2·5	3·0	0·8	0·4	0·4	44·1	—
Trebizond .	10·2	3·2	18·6	5·6	16·9	9·2	11·3	22·4	2·6
Mean . .	7·7	17·1	13·0	5·9	7·2	3·6	13·8	28·8	2·9
West Coast :									
Scutari . .	14·2	39·6	10·0	0·7	8·6	17·5	2·3	2·0	5·1
Smyrna .	8·8	15·5	13·0	1·5	4·2	13·0	22·1	3.6	18·3
Samos . .	14·9	0·6	3·3	0·6	4·1	0·6	3·4	62·0	10·5
Mean . .	12·6	18·6	8·6	0·9	5·6	10·4	9·3	22·5	11·3
Interior :									
Mezere . .	22·8	0·5	2·4	3·9	17·4	4·8	23·5	24·7	—
Merzifun .	17·1	18·8	14·6	2·2	5·6	2·0	7·5	2·7	29·5
Konia . .	51·7	23·3	6·7	8·3	10·0	—	—	—	—
Angora . .	21·7	1·7	3·3	10·0	10·0	11·7	18·3	23·3	—
Mean . .	28·3	11·1	6·7	6·1	10·7	4·6	12·3	12·7	7·4

OCTOBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	4·5	4·0	27·4	17·7	5·2	1·5	19·1	11·6	9·0
Samsun .	1·2	40·0	1·3	12·1	1·7	6·2	—	37·5	—
Trebizond .	3·9	1·5	16·4	9·3	25·1	10·6	16·7	12·6	3·9
Mean . .	3·2	11·8	15·0	13·0	10·7	6·1	11·9	20·6	4·3
West Coast :									
Scutari . .	12·2	32·5	10·6	3·6	8·4	19·3	2·1	1·5	9·8
Smyrna .	4·4	8·5	17·4	8·5	11·3	10·4	17·5	3·3	18·7
Samos . .	6·5	1·3	4·9	7·4	10·6	2·0	2·0	43·0	22·3
Mean . .	7·7	14·1	11·0	6·5	10·1	10·6	7·2	15·9	16·9
Interior :									
Mezere . .	12·3	—	2·2	7·9	28·8	9·1	26·0	13·7	—
Merzifun .	16·0	14·3	13·0	1·5	4·7	2·6	11·5	3·2	32·5
Konia . .	40·3	9·7	8·1	11·3	20·9	8·1	1·6	—	—
Angora . .	9·7	—	—	16·1	35·5	22·6	16·1	—	—
Mean . .	19·6	6·0	5·8	9·2	22·5	10·6	13·8	4·2	8·1

NOVEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	7·1	5·5	28·2	13·1	5·5	2·1	22·8	10·5	5·2
Samsun .	0·9	27·8	—	22·2	—	8·5	0·9	39·7	—
Trebizond .	4·1	0·8	12·2	8·5	20·5	16·5	22·4	8·8	6·2
Mean . .	4·0	11·4	13·4	14·6	8·7	9·0	15·4	19·7	3·8
West Coast :									
Scutari . .	12·9	26·6	12·4	5·7	10·7	15·7	4·5	2·3	9·2
Smyrna .	10·8	15·7	20·2	11·6	11·4	3·0	10·7	2·4	14·2
Samos . .	6·3	3·4	9·6	8·5	13·9	1·2	3·1	22·6	31·4
Mean . .	10·0	15·2	14·1	8·6	12·0	6·6	6·1	9·1	18·3
Interior . .									
Mezere . .	8·1	0·3	7·3	10·0	34·0	8·2	23·0	9·1	—
Merzifun .	8·5	5·0	11·0	5·4	10·0	8·7	12·5	1·8	37·1
Konia . .	41·7	3·3	13·3	23·3	16·7	1·7	—	—	—
Angora . .	11·7	18·3	1·7	8·3	5·0	23·3	15·0	16·7	—
Mean . .	17·5	6·7	8·3	11·7	16·4	10·5	12·6	6·9	9·3

DECEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
North Coast :									
Sinope . .	5·7	4·0	23·3	14·1	6·4	2·7	26·0	12·5	5·3
Samsun .	1·3	25·4	0·4	18·2	2·1	20·4	—	32·2	—
Trebizond .	3·3	0·4	10·8	7·2	28·8	18·2	20·3	8·5	2·5
Mean . .	3·4	9·9	11·5	13·2	12·4	13·8	15·4	17·7	2·6
West Coast									
Scutari . .	17·9	21·4	10·5	7·0	12·3	19·8	3·7	1·8	5·6
Smyrna .	13·7	14·1	21·8	11·3	15·9	1·1	5·4	1·7	15·0
Samos . .	5·7	6·9	10·9	11·7	12·1	3·1	3·1	16·4	30·1
Mean . .	12·4	14·1	14·4	10·0	13·4	8·0	4·1	6·6	16·9
Interior :									
Mezere . .	10·8	0·2	8·7	10·1	32·8	11·4	16·7	9·3	—
Merzifun .	9·0	7·0	18·8	5·0	7·7	5·3	7·5	2·0	37·7
Konia . .	12·9	4·8	14·5	12·9	24·2	11·3	6·5	12·9	—
Angora . .	11·3	16·1	—	3·2	12·9	24·2	9·7	8·1	14·5
Mean . .	11·0	7·0	10·5	7·8	19·4	13·0	10·1	8·1	13·0

TABLE XII

Mean Amount of Cloud[1]

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
West Coast :						
Samos	5·6	6·2	5·2	5·2	3·7	1·9
Interior :						
Konia	11	12	14	9	8	1
Mezere. . . .	5	6·9	5·8	5·2	5	2·5

[1] 0 = cloudless sky ; 10 = completely overcast.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						West Coast :
0·2	0·3	1·1	3·7	5·1	6	Samos.
						Interior :
3	3	4	6	15	19	Konia.
1	0·6	1·5	3·2	5·5	6·9	Mezere.

CHAPTER III

CLIMATE OF CYPRUS, SYRIA, AND PALESTINE

Physical Features and Meteorological Stations

Syria and Palestine form a narrow belt of country which lies between the Eastern Mediterranean on the west and the Syrian desert on the east, which separates it from the plains of Upper Mesopotamia. The country is hilly, especially in the north, where the Lebanon and other ranges, which run more or less parallel to the coast, attain considerable altitudes and divide the country into a series of parallel belts.

In the north where Syria joins Asia Minor at the Gulf of Iskanderun no meteorological observations are available, but those of Cyprus may be conveniently utilized since this island lies only 120 miles west of the coast of northern Syria.

The observations from the following stations have been utilized so far as they are available :

Place.	*Altitude.* Feet.	*Lat. N.* °	′	*Long. E.* °	′	*Period of Observation.* Years.
Cyprus :						
Kyrenia	45	35	20	33	19	24–27
Famagusta	75	35	7	33	57	24–27
Limassol	26	34	40	33	1	24–27
Nicosia	499	35	11	33	22	24–27
Coast :						
Beirut	115	33	54	35	28	25 Lebanon
Haifa	33	32	48	34	59	9 Palestine
Sarona	66	32	5	34	47	10 "
Gaza	66	31	30	34	27	10 "
Inland :						
El Kereiyeh	3,330	33	49	35	40	8 Lebanon
Ksara	3,030	33	49	35	52	2 "
Nazareth	1,608	32	42	35	17	15 Palestine
Jerusalem	2,200	31	47	35	13	20 "
Hebron	2,900	31	31	35	8	16–18 "
El Athrun	656	31	50	~~32~~	~~40~~	9 "
Tiberias	− 653	32	48	35	34	18 "
Melhamiyeh	− 770	32	39	35	33	3 "

The stations in Cyprus are on the coast of the island except Nicosia, which is in the Central Plain near the foot of the northern range, and they represent a climate which is very similar to that of the coast of northern Syria. Farther to the eastward lie the plains of the Jezireh in Northern Mesopotamia, and the foothills of the Taurus ranges where meteorological data more or less complete are available at 'Aintāb, Urfeh, Diarbekr, and Mosul (Chap. IV).

To the southward Beirut, Haifa, Sarona, and Gaza represent the climate of the coastal belt, while El Kereiyeh (Le Krey), Ksara, Nazareth, Jerusalem, Hebron, and El Athrun form a chain of stations on the inland plateau which lies between the Mediterranean and the valley of the Jordan. Tiberias, and Melhamiyeh which is a few miles farther to the southward, lie in the valley of the Jordan at about six or seven hundred feet below the level of the Mediterranean.

Syria and Palestine enjoy a climate of the Mediterranean type, but lying close to the deserts of Syria and Arabia the rainfall, which is abundant in the north, and moderate near to the coast, decreases rapidly inland.

In the winter season the Eastern Mediterranean is normally an area of low pressure, and the prevalent winds of the Syrian coast are easterly and south-easterly. As the summer approaches the influence of the Mediterranean becomes less, and during May the Persian Gulf becomes an area of low pressure which influences the flow of air over Syria and Mesopotamia. By June this circulation, which is related to the monsoon conditions of the Indian Ocean, is fully established, and westerly and south-westerly winds prevail on the Syrian coast with north-westerly winds inland until October, when a return to the winter conditions begins.

Notes on the Tables

Temperature

The climate of Syria and Palestine is warm generally, and in the summer comparatively high temperatures prevail, which coincide with the rainless season of the year. January

is the coldest month, and August the warmest. The temperature falls slowly in the early autumn, and that of September is usually higher than that of June.

In Table I, p. 170, the mean temperature of the day is given, from which it will be seen that 80°–82° F. represents the highest mean temperature at or near sea-level, lower values being recorded at the high-level stations of Palestine, and higher ones in the Jordan Valley. In Table II, p. 172, are given the mean daily maximum temperatures, or the mean of the highest temperatures of each day. This shows that Cyprus generally has a hot climate in summer, while that of the Jordan valley is hotter still. In Table III, p. 174, the mean of the highest temperatures in each month which have been recorded during the period for which observations are available is given, and this represents the highest temperature which may be ordinarily anticipated in each month. This is about 100° F. for Cyprus and somewhat less at most of the Syrian stations. The highest temperatures which have been recorded are given in Table IV, p. 176, where it will be seen that 110° F. has been reached at several stations.

The lower limits of temperature are given in Tables V–VII, pp. 178, 180, 182. The mean daily minimum nowhere falls as low as freezing point, and only at El Kereiyeh, Jerusalem, and Hebron may a frost be anticipated in the course of the month of January. The records show, however, that frost has occurred at practically all stations except those on the Mediterranean coast line, and in the Jordan valley (Table VII).

Under the semi-arid conditions which prevail over part of Syria a wide range of temperature is to be expected, but this is less marked in the region near the Mediterranean, where most of the meteorological stations are situated, than in the country to the east of the Jordan. (Table VIII, p. 184).

Humidity

The humidity of the air varies widely under these conditions. In Cyprus and on the Syrian coast it is moderately high throughout the year, but at the inland stations of Syria it is low in the summer months, and on some days very low indeed under the hot, dry conditions which then prevail. (Table IX. p. 186.)

Rainfall

The rainfall shows a strongly marked seasonal distribution of a typical Mediterranean type. The heaviest rainfall occurs in December or January in a rainy season which extends from about the middle of October to the middle of May. June to September are nearly, and frequently quite, rainless. The heaviest rainfall naturally occurs in the mountainous part of Northern Syria, where the station of El Kereiyeh may be taken as an example. Here the rainfall diminishes rapidly both towards the west and to the east as lower levels are reached, as may be seen by the much smaller amounts which are recorded at Beirut and Damascus. (Table X, p. 188.)

Farther south a belt of heavier rainfall extends along the high ground from Nazareth to Hebron, while the amount diminishes rapidly towards the east, where nearly all the region east of the Jordan valley receives less than an inch of rain in the year, and more gradually on the west as the coastal stations show. The variation in different years is very considerable, and the total for the year in wet years may be more than twice that which falls in a year of scanty rainfall. Table XI, p. 190, gives the highest amounts of rain which have been recorded at those stations for which this information is available. The average number of rain days (days on which 0·2 mm. or ·008 in. of rain fell) shows the same seasonal variation as the rainfall. Rain days occur but rarely in the summer months. (Table XII, p. 192.)

Snow falls every winter in the mountains, but only occasionally in the plains. At Jerusalem the average number of days on which snow falls is three.

Winds

Table XIII, p. 194, gives the percentage of winds blowing from eight points of the compass for each month, so far as the observations at different stations provide sufficient data. Not infrequently the position of the station affects the results to some extent, as at Kyrenia in Cyprus which is situated on the northern shore with a steep range of hills rising immediately behind it. The recording of calms also varies greatly, and at some places none are shown, the light airs being recorded probably as wind direction, and thus masking to some extent the true prevalent wind.

Taking the mean values for the groups of Cypriote stations, Syrian coastal stations, and the inland zone of Syria, there is a distinct seasonal change from a predominance of easterly winds in the winter months, when the Mediterranean is an area of low pressure, to the summer conditions in which the prevailing winds are westerly or south-westerly. The change is indicated in March and becomes clear in April, while in June, July, August, and even September, when the low pressure over the Persian Gulf is most strongly developed, westerly winds largely predominate. At the inland stations of Syria in these months the prevailing wind is north-west rather than west, thus conforming to the general air circulation of this part of Asia which is so strongly developed over the plains of Mesopotamia. The daily variation of the winds is not shown at all stations by the published data, but the phenomenon of the alternating land and sea breezes is noticeable on the coasts, though this will often take the form only of a well-marked freshening of the wind from sea to land during the day, as on the Egyptian coast. In October the easterly winds begin to increase in frequency on the Syrian coast, and by November with the arrival of winter conditions the predominance of easterly winds returns.

Winds of gale force are not very numerous. At Beirut they number on the average 11 per annum, of which the greatest number occur in January and rather fewer in Decem-

ber; from May to August practically none are recorded. Observations in Cyprus indicate a frequency of about the same amount, and of similar distribution.

Cloud

December and January are the months of greatest cloudiness, but even then the average amount does not usually exceed 5 in the scale where 0 represents a cloudless sky and 10 one that is completely overcast. The amount of cloud diminishes rapidly with the commencement of summer conditions and is very small until October. (Table XIV, p. 200.)

Conditions Affecting Aviation

Throughout Syria and Palestine the observations which have been made give little information bearing directly on this. As in all hot countries where the rainfall is scanty in summer, both dust and heat-haze must interfere considerably with visibility at that season of the year, especially in the afternoon when the wind has increased, but at other times a clear atmosphere may be expected on most occasions. The valley of the Jordan, especially in the summer months, may very probably furnish abnormal conditions.

The cloudiness is in general small, especially in the dry summer months, as is shown in Table XIV, p. 200, but in the mountains of northern Syria larger amounts are to be anticipated.

The extreme range of temperature which may be expected in any month is given in Table VIII, p. 184, where it will be seen to reach 40° F. on the coasts of Cyprus and Syria, and about 55° F. at inland stations in Palestine.

The average daily range of temperature is about 20° to 25° F. in Cyprus, 12° F. in winter to 25° F. in summer at Beirut, and rather more at the stations of inland Syria.

The normal directions of the wind at different stations is given in Table XIII, p. 194, from which it is seen that from April to October, when depressions passing over Syria from the Mediterranean are few, the winds, which are mainly from the

west and north-west, have considerable steadiness. With the passage of these depressions during the winter season, much larger variations both in force and direction occur.

At Beirut, December, January, and March are the months in which the strongest winds are recorded. In all months the wind force is greater in the afternoon, and this is probably more markedly the case at the inland stations, but the observations are not sufficient to demonstrate this.

In the mountain regions, and also in the neighbourhood of the Jordan valley, especially near the Dead Sea, irregular air currents are to be expected, but no actual observations exist on the subject.

TABLES

SUMMARY

TABLE		PAGES
I.	Mean Temperature	170–1
II.	Mean Daily Maximum Temperature	172–3
III.	Mean Monthly Maximum Temperature	174–5
IV.	Absolute Maximum Temperature	176–7
V.	Mean Daily Minimum Temperature	178–9
VI.	Mean Monthly Minimum Temperature	180–1
VII.	Absolute Minimum Temperature	182–3
VIII.	Monthly Range of Temperature	184–5
IX.	Relative Humidity	186–7
X.	Mean Monthly Rainfall	188–9
XI.	Maximum Rainfall	190–1
XII.	Number of Rain Days	192–3
XIII.	Wind Directions as Percentages of Total Observations	194–9
XIV.	Mean Amount of Cloud	200–1

TABLE I

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	*52·9*	54·9	58·0	64·1	71·1	78·0
Famagusta	*51·4*	53·6	57·2	63·3	70·6	77·5
Limassol	*52·2*	54·1	57·6	63·5	69·6	75·8
Nicosia	*47·9*	50·6	54·7	62·2	69·9	77·0
Syria, Coast :						
Beirut	*55·5*	56·6	59·7	64·5	70·1	75·7
Haifa	*53·9*	57·5	60·4	65·8	70·5	75·9
Sarona	*52·8*	54·6	58·1	63·1	69·5	72·8
Ghaza	*53·0*	55·9	59·7	64·9	70·7	74·6
Inland :						
Damascus (1867)	42·8	—	—	—	—	—
El Kereiyeh	*40·6*	48·5	49·0	58·1	63·8	68·1
Ksara	36·6	*36·3*	46·0	55·9	62·9	69·8
Nazareth	*49·1*	53·2	56·3	63·1	69·0	72·1
Jerusalem	*44·4*	47·8	51·4	59·1	66·2	70·1
Hebron	*44·8*	47·5	50·8	58·3	65·5	69·1
El Athrun	*53·6*	57·0	59·9	67·2	72·6	77·0
Jordan Valley :						
Tiberias	54·7	58·5	61·9	68·9	77·2	82·4
Melhamiyeh	54·6	58·2	61·8	68·7	77·9	83·1

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
83·2	**83·7**	79·3	72·8	62·9	56·6	Kyrenia.
82·2	**82·9**	78·6	71·9	62·1	55·5	Famagusta.
80·1	**81·0**	78·1	73·0	63·1	55·9	Limassol.
82·2	**82·3**	77·6	70·4	59·5	51·7	Nicosia.
						Syria, Coast :
80·2	**81·3**	78·9	74·8	66·3	60·2	Beirut. 68.6
79·8	**81·5**	79·8	75·0	64·3	58·2	Haifa.
77·3	**78·5**	76·4	71·7	63·6	57·0	Sarona.
78·9	**79·7**	77·0	73·4	64·7	59·3	Ghaza.
						Inland :
79·8	72·0	66·8	61·0	—	—	Damascus (1867).
71·2	**72·3**	69·2	64·5	53·4	46·5	El Kereiyeh.
74·1	**75·3**	70·3	63·5	55·5	45·8	Ksara.
75·7	**77·1**	75·9	73·7	63·3	54·3	Nazareth.
73·0	**73·0**	70·7	67·1	58·3	48·9	Jerusalem.
71·5	**73·1**	70·7	66·7	56·7	48·8	Hebron.
80·4	**81·5**	79·3	75·5	67·1	59·0	El Athrun.
						Jordan Valley :
85·8	**86·9**	84·4	80·1	68·7	60·4	Tiberias.
86·7	**88·5**	84·3	78·2	66·5	59·3	Melhamiyeh.

TABLE II

Mean Daily Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia . . .	*60·8*	64·1	68·1	74·5	81·2	88·0
Famagusta . . .	*59·4*	62·7	66·7	72·9	80·8	88·0
Limassol . . .	*62·9*	64·9	68·4	73·6	80·2	86·5
Nicosia . . .	*58·0*	61·2	65·9	74·7	83·6	91·3
Syria, Coast :						
Beirut	*61·5*	63·5	66·7	72·1	77·5	83·3
Inland :						
Damascus (1867) . .	—	—	—	—	—	—
El Kereiyeh . . .	*44·6*	54·1	54·8	65·4	71·9	77·0
Ksara	46·2	*43·8*	54·6	66·3	75·3	83·8
Nazareth . . .	*57·2*	61·7	65·3	74·1	79·1	85·8
Jerusalem . . .	*50·7*	56·3	60·9	70·3	78·9	84·2
Hebron . . .	*51·9*	56·4	60·7	70·6	79·7	83·5
El Athrun . . .	*62·0*	65·3	69·7	78·9	87·6	91·0
Jordan Valley :						
Tiberias . . .	*63·7*	67·3	72·0	80·4	89·4	96·4

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
94·0	**94·9**	90·1	83·3	72·0	64·4	Kyrenia.
92·9	**93·3**	89·1	82·7	73·5	64·0	Famagusta.
91·3	**91 6**	88·8	83·3	74·2	66·6	Limassol.
97·7	**97·8**	92·4	84·4	71·2	62·6	Nicosia.
						Syria, Coast :
88.1	**89.0**	86·1	81·5	73·0	66·2	Beirut.
						Inland :
95·0	84·1	77·4	71·0	—	—	Damascus (1867).
79·7	**80·7**	77·3	71·6	56·2	50·5	El Kereiyeh.
89·0	**90·5**	85·1	76·8	68·0	55·4	Ksara.
89·2	**89·7**	89·0	87·8	76·2	61·8	Nazareth.
87·0	**87·0**	83·6	78·4	65·3	55·9	Jerusalem.
85·9	**87·4**	84·8	79·8	67·2	57·1	Hebron.
94·4	**95·1**	91·5	87·4	77·1	68·2	El Athrun.
						Jordan Valley :
99·7	**99·7**	95·7	90·1	78·3	68·7	Tiberias.

TABLE III

Mean Monthly Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	*68·3*	71·9	75·9	82·6	89·7	96·7
Famagusta	*66·7*	69·2	74·8	82·0	91·5	92·4
Limassol	*69·9*	71.0	76·5	82·0	89·8	94·5
Nicosia	*65·1*	68·5	75·6	86·1	94·4	100·3
Syria, Coast :						
Beirut	*69·9*	72·5	81·6	86·3	89·7	90·8
Haifa	*67·8*	76·1	85·2	95·1	96·0	94·2
Sarona	*68·9*	75·3	88·1	**94·2**	90·1	89·7
Ghaza	*66·9*	73·0	85·8	92·1	**93·0**	86·7
Inland :						
El Kereiyeh	*58·1*	61·7	65·1	81·1	85·1	85·8
Ksara	*60·0*	60·8	67·6	77·9	91·0	94·4
Nazareth	*68·3*	73·0	82·4	91·9	97·7	99·1
Jerusalem	*60·9*	66·2	74·6	86·1	92·6	**94·8**
Hebron	*67·2*	68·9	76·6	89·0	94·2	**96·0**
El Athrun	*76·2*	77·9	85·1	99·8	**105·0**	103·8
Jordan Valley :						
Tiberias	*72·9*	77·7	88·9	96·4	102·7	**108·3**
Melhamiyeh	72·3	*71·1*	81·3	94·1	103·5	104·0

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* °F.	*Dec.* ° F.	
						Cyprus :
101·1	**101·6**	97·0	91.4	81·7	72·0	Kyrenia.
98·2	**98·6**	96·3	90·3	80·8	71·4	Famagusta.
98·2	97·6	95·6	90·4	82·3	73·3	Limassol.
104·1	103·6	100·4	94·1	81·7	70·1	Nicosia.
						Syria, Coast :
91·4	**92·3**	90·8	90·3	82·2	74·8	Beirut.
92·4	95·3	94·8	**96·6**	85·8	72·6	Haifa.
86·5	88·3	87·9	92·1	89·7	77·3	Sarona.
87·6	87·9	85·4	87·9	84·5	74·1	Ghaza.
						Inland :
85·2	**86·9**	80·7	76·1	68·9	59·0	El Kereiyeh.
98·9	**102·0**	95·5	89·7	80·0	64·7	Ksara.
97·3	94·8	**100·0**	99·1	87·9	77·0	Nazareth.
92·8	93·2	90·5	87·0	76·8	67·1	Jerusalem.
93·3	95·0	92·3	91·0	79·8	70·7	Hebron
100·5	101·4	99·3	97·3	91·0	80·4	El Athrun.
						Jordan Valley :
106·9	106·2	105·6	101·5	91·8	80·8	Tiberias.
104·7	—	—	99·5	84·2	77·5	Melhamiyeh.

TABLE IV

Absolute Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	*74·0*	97·0	98·0	101·5	101·8	103·5
Famagusta	*77·0*	78·0	82·5	89·0	101·0	103·0
Limassol	88·0	*79·0*	87·0	90·0	102·0	102·0
Nicosia	*70·0*	76·2	88·0	94·0	109·5	105·5
Syria, Coast :						
Beirut	*78·9*	82·2	92·1	97·1	100·0	99·5
Haifa	—	—	—	—	—	—
Sarona	—	—	—	—	—	—
Ghaza	—	—	—	—	—	—
Inland :						
Damascus (1867)	—	—	—	—	—	—
El Kereiyeh	*62·9*	67·4	76·8	85·1	91·0	92·8
Ksara	*60·0*	60·8	67·6	77·9	93·2	96·4
Nazareth	—	—	—	—	—	—
Jerusalem	—	—	—	—	—	—
Hebron	—	—	—	—	—	—
El Athrun	*84·5*	88·8	91·0	104·3	109·4	**111·5**
Jordan Valley :						
Tiberias	—	—	—	—	—	**114·1**
Melhamiyeh	—	—	—	—	—	—

* The month in which these temperatures

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
109·0	108·0	**113·0**	101·8	92·2	80·0	Kyrenia.
104·2	102·5	103·2	96·0	87·0	*77·0*	Famagusta.
106·0	**108·0**	103·0	98·0	88·5	80·0	Limassol.
116·0	108·0	105·8	100·5	95·0	75·0	Nicosia.
						Syria, Coast :
98·0	99·3	99·1	**101·3**	89·4	83·6	Beirut.
104·0*	—	—	—	—	—	Haifa.
100·9*	—	—	—	—	—	Sarona.
104·0*	—	—	—	—	—	Ghaza.
						Inland :
99·5	89·0	85·0	76·0	—	—	Damascus (1867).
89·6	**95·1**	84·2	80·9	71·2	64·7	El Kereiyeh.
99·5	**106·1**	97·1	92·6	82·5	65·8	Ksara.
110·4*	—	—	—	—	—	Nazareth.
102·2*	—	—	—	—	—	Jerusalem.
103·1*	—	—	—	—	—	Hebron.
103·0	108·6	108·6	103·6	93·2	86·7	El Athrun.
						Jordan Valley :
—	—	—	—	—	—	Tiberias.
107·2	—	—	—	—	—	Melhamiyeh.

were recorded is not stated.

TABLE V

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia . . .	*43·7*	44·8	47·3	51·6	58·0	64·2
Famagusta . . .	*41·4*	42·1	43·9	49·3	56·2	66·6
Limassol . . .	*43·1*	44·7	47·1	51·1	56·4	61·9
Nicosia . . .	*38·6*	39·9	41·8	47·4	55·2	62·8
Syria, Coast :						
Beirut	*49·2*	50·3	52·8	57·7	62·9	68·3
Inland :						
Damascus (1867) . .	36·3	*38·6*	—	46·8	—	—
El Kereiyeh . . .	*36·8*	43·1	43·7	50·9	55·7	59·3
Ksara	*27·2*	29·0	37·5	45·5	50·7	55·9
Nazareth . . .	*41·3*	43·5	46·2	51·6	57·0	61·7
Jerusalem . . .	*38·4*	41·0	44·0	49·4	54·8	59·0
Hebron . . .	*36·6*	38·5	40·8	45·9	51·2	54·7
El Athrun . . .	*46·0*	46·9	48·7	54·3	59·1	62·6
Jordan Valley :						
Tiberias . . .	*47·5*	49·8	52·9	58·5	65·1	70·3

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
69·9	**70·2**	66·7	61·0	53·6	47·6	Kyrenia.
68·8	**69·0**	64·1	58·0	50·4	45·4	Famagusta.
66·4	**67·7**	64·1	59·8	52·4	46·9	Limassol.
67·8	**67·9**	63·5	57·1	48·4	41·7	Nicosia.
						Syria, Coast :
72·3	**73·4**	71·9	68·1	60·2	54·1	Beirut.
						Inland :
64·7	59·8	56·1	50·8	44·4	40·6	Damascus (1867).
62·7	**64·0**	61·3	57·7	48·7	42·6	El Kereiyeh.
59·1	**60·4**	55·7	50·5	43·1	36·3	Ksara.
66·3	**67·4**	65·1	62·2	53·0	45·6	Nazareth.
62·6	**62·9**	60·6	57·7	49·1	43·1	Jerusalem.
57·1	**58·7**	56·5	53·6	46·2	40·4	Hebron.
66·2	**67·4**	65·3	62·6	56·3	50·3	El Athrun.
						Jordan Valley :
74·5	**75·7**	72·5	69·1	60·4	53·1	Tiberias.

TABLE VI

Mean Monthly Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	*37·2*	38·5	40·4	46·3	50·9	58·3
Famagusta	*31·4*	34·2	35·6	42·7	49·3	57·7
Limassol	*35·4*	38·8	39·8	44·9	50·7	56·9
Nicosia	*31·6*	33·1	34·2	40·3	46·7	55·6
Syria, Coast :						
Beirut	*41·0*	42·6	43·8	49·8	55·5	62·9
Haifa	*39·9*	42·4	45·5	50·9	55·9	64·9
Sarona	*41·1*	44·0	44·4	48·0	53·2	60·2
Ghaza	*42·6*	45·6	48·2	54·3	60·9	66·7
Inland :						
El Kereiyeh	*27·7*	32·5	33·0	35·2	47·1	51·6
Ksara	—	—	—	—	42·2	46·9
Nazareth	*33·2*	36·1	38·3	43·1	49·1	55·2
Jerusalem	*30·1*	34·1	34·8	37·5	44·2	51·4
Hebron	*29·6*	32·0	31·1	34·3	40·1	45·3
El Athrun	*34·1*	41·1	42·4	45·3	52·3	58·1
Jordan Valley :						
Tiberias	*38·8*	43·2	44·1	50·2	56·7	64·2
Melhamiyeh	*39·2*	46·0	49·3	52·5	62·8	70·2

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
64·2	**65·8**	61·4	55·1	46·9	41·1	Kyrenia.
64·6	**65·1**	58·2	51·3	41·4	36·3	Famagusta.
61·7	**63·9**	59·7	56·0	46·1	39·7	Limassol.
60·3	**61·4**	56·4	48·6	39·2	34·4	Nicosia.
						Syria, Coast :
68·5	**69·9**	67·1	60·6	52·1	43·3	Beirut.
70·7	**71·7**	67·2	58·8	50·9	43·5	Haifa.
65·1	**68·0**	62·6	57·9	51·2	44·6	Sarona.
71·9	**73·2**	67·1	60·9	51·6	45·8	Ghaza.
						Inland :
59·0	**59·5**	54·8	48·9	37·7	33·8	El Kereiyeh.
52·5	**52·8**	48·3	42·8	35·4	27·2	Ksara.
62·2	**63·8**	57·3	54·5	45·3	35·9	Nazareth.
56·8	**57·5**	52·7	47·4	39·3	34·1	Jerusalem.
50·5	**51·0**	47·6	44·7	37·4	31·8	Hebron.
62·7	**64·5**	62·0	57·5	48·5	41·9	El Athrun.
						Jordan Valley :
70·2	**72·0**	66·7	62·4	53·1	45·0	Tiberias.
78·1	**—**	**—**	**65·3**	**54·3**	**44·1**	**Melhamiyeh.**

TABLE VII

Absolute Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	*30·0*	*30·0*	33·8	37·0	46·8	42·0
Famagusta	23·0	26·0	*20·0*	31·0	39·0	50·0
Limassol	*27·5*	30·0	34·0	37·5	40·0	44·0
Nicosia	*25·0*	27·0	27·0	32·0	40·0	49·0
Syria, Coast :						
Beirut	35·0	35·9	35·7	42·9	49·8	55·9
Haifa	34·8*					
Sarona	37·5*					
Ghaza	39·2*					
Inland :						
Damascus (1867)	31·5	26·0	—	32·0	—	—
El Kereiyeh	*21·2*	28·4	29·9	32·1	40·1	44·6
Ksara	*0·7*	19·2	28·8	34·9	42·0	46·7
Nazareth	38·6*					
Jerusalem	21·2*					
Hebron	18·9*					
El Athrun	*26·6*	37·4	39·5	42·8	48·5	56·4
Jordan Valley :						
Tiberias	34·0	—	—	—	—	—
Melhamiyeh	33·4	—	—	—	—	—

* The month in which these temperatures

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
						Cyprus :
54·0	**60·0**	53·0	50·0	38·2	32·0	Kyrenia.
60·0	58·5	51·5	42·5	26·5	27·5	Famagusta.
46·9	**58·0**	53·0	50·0	33·0	29·0	Limassol.
52·0	**57·0**	48·5	40·0	26·0	29·0	Nicosia.
						Syria, Coast :
63·8	62·0	60·4	51·9	41·3	*30·1*	Beirut.
						Haifa.
						Sarona.
						Ghaza.
						Inland :
59·0	58·0	48·0	48·0	41·0	34·0	Damascus (1867).
56·8	**57·0**	53·2	44·7	27·2	27·2	El Kereiyeh.
52·5	50·1	48·3	41·7	32·3	22·5	Ksara.
						Nazareth.
						Jerusalem.
						Hebron.
61·5	**62·2**	60·4	55·7	42·0	36·3	El Athrun.
						Jordan Valley :
—	—	—	—	—	—	Tiberias.
—	—	—	—	—	—	Melhamiyeh.

were recorded is not stated.

TABLE VIII

Monthly Range of Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Cyprus :						
Kyrenia	31·1	33·4	35·5	36·3	38·8	38·4
Famagusta	36·1	35·6	40·4	40·2	42·9	35·4
Limassol	34·6	32·5	36·6	37·2	39·8	38·0
Nicosia	33·5	35·4	41·4	45·8	47·7	44·7
Syria, Coast :						
Beirut	28·9	29·9	37·8	36·5	34·2	27·9
Haifa	27·9	33·7	39·7	44·2	40·1	29·3
Sarona	27·8	31·3	43·7	46·2	36·9	29·5
Ghaza	24·3	27·4	37·6	37·8	32·1	20·0
Inland :						
El Kereiyeh	30·4	29·2	32·1	45·9	38·0	34·2
Ksara	—	—	—	—	48·8	47·5
Nazareth	35·1	36·9	44·1	48·8	48·6	43·9
Jerusalem	30·8	32·1	39·8	48·6	48·4	43·4
Hebron	38·2	36·9	45·5	54·7	54·1	50·7
El Athrun	42·1	36·8	42·7	54·5	52·7	45·7
Jordan Valley :						
Tiberias	34·1	34·5	44·8	46·2	46·0	44·1
Melhamiyeh	33·1	25·1	32·0	41·6	40·7	33·8

July. °F.	*Aug.* °F.	*Sept.* °F.	*Oct.* °F.	*Nov.* °F.	*Dec.* °F.	
						Cyprus :
36·9	35·8	35·6	36·3	34·8	30·9	Kyrenia.
34·4	34·3	39·2	40·1	40·6	36·6	Famagusta.
36·9	34·3	36·7	35·9	37·0	34·0	Limassol.
43·8	42·2	44·0	45·5	42·5	35·7	Nicosia.
						Syria, Coast :
22·9	22·4	23·7	29·7	30·1	31·5	Beirut.
21·7	23·6	27·6	37·8	34·9	29·1	Haifa.
21·4	20·3	25·3	34·2	38·5	32·7	Sarona.
15·7	14·7	18·3	27·0	32·9	28·3	Ghaza.
						Inland :
26·2	27·4	25·9	27·2	31·2	25·2	El Kerciyeh.
46·4	49·2	47·2	46·9	44·6	37·5	Ksara.
35·1	31·0	42·7	44·6	42·6	41·1	Nazareth.
36·0	35·7	37·8	39·6	37·5	33·0	Jerusalem.
42·8	44·0	44·7	46·3	42·4	38·9	Hebron.
37·8	36·9	37·3	39·8	42·5	38·5	El Athrun.
						Jordan Valley :
36·7	34·2	38·9	39·1	38·7	35·8	Tiberias.
26·6	—	—	34·2	29·9	33·4	Melhamiyeh.

TABLE IX

Relative Humidity

	Jan. %	*Feb.* %	*Mar.* %	*April.* %	*May.* %	*June.* %
Cyprus :						
Famagusta . . .	77·7	78·5	75·8	72·1	71·1	65·5
Nicosia . . .	82·2	82	79·4	73·5	68·1	65·2
Syria, Coast :						
Beirut	69	71	71	**72**	**72**	70
Haifa	**72**	71	69	69	70	**72**
Sarona. . . .	**76**	75	71	70·6	71·3	73
Ghaza	**76**	74	70·3	*67·6*	*67·6*	70
Inland :						
Damascus (1867) . .	82	78	—	67	—	—
El Kereiyeh . . .	**75**	61	67	61	*58*	59
Jerusalem . . .	**75·6**	70·3	70	57	*49*	52
El Athrun . . .	**69**	68	67·3	58·3	*50·3*	53
Jordan Valley :						
Tiberias (*Mean* 8 a.m., 4 p.m.)	**69·5**	66·5	63·5	58·5	55·5	*46·5*

July. %	*Aug.* %	*Sept.* %	*Oct.* %	*Nov.* %	*Dec.* %	
						Cyprus :
66·4	*65·0*	65·6	68·9	74·9	**79·1**	Famagusta.
65·1	68·3	67·1	70·9	78·3	**82·9**	Nicosia.
						Syria, Coast :
68	66	*64*	66	67	69	Beirut.
71	68	67	66	69	**72**	Haifa.
73·6	71·6	*69·6*	*69·6*	70·6	72·6	Sarona.
71	70·6	70·6	69	71	75·3	Ghaza.
						Inland :
49	58	66	—	79	**86**	Damascus (1867).
61	—	—	59	71	72	El Kereiyeh.
56·6	60·3	60·3	54·3	65	71·3	Jerusalem.
53	56·3	57·6	54·3	57	62	El Athrun.
						Jordan Valley :
49·5	51·5	55	49	60	68	Tiberias.

TABLE X

Mean Monthly Rainfall (inches)

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
Cyprus :						
Kyrenia	4·56	3·22	2·41	0·81	1·04	0·39
Famagusta	2·68	2·10	1·60	1·16	0·70	0·14
Limassol	4·14	2·98	1·59	0·87	0·68	0·38
Nicosia	2·58	1·68	1·57	0·88	1·20	0·50
Syria, Coast :						
Beirut	7·48	6·26	3·89	2·08	0·59	0·23
Haifa	6·14	3·54	2·12	0·98	0·27	0·03
Sarona	**7·52**	2·91	1·45	0·27	0·19	—
Ghaza	**4·33**	1·96	1·45	0·27	0·31	0·03
Inland :						
Damascus (1867)	1·36	3·54	—	0·52	—	—
El Kereiyeh	**12·95**	6·77	7·67	3·30	2·32	0·15
Ksara	**7·17**	4·96	4·82	5·20	0·60	—
Nazareth	5·70	4·09	3·34	0·94	0·23	—
Jerusalem	**6·26**	4·64	3·50	1·53	0·27	—
Hebron	**6·17**	4·57	3·42	2·01	0·28	0·07
El Athrun	**6·14**	4·06	3·37	1·70	0·09	0·02
Jordan Valley :						
Tiberias	**4·52**	2·9	2·36	0·90	0·15	—
Melhamiyeh	3·81	**3·97**	2·79	0·70	0·15	—

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						Cyprus :
0·03	0·15	0·38	1·49	3·82	**4·88**	Kyrenia.
—	—	0·20	1·20	3·31	**4·58**	Famagusta.
0·02	0·05	0·40	1·05	3·01	**4·57**	Limassol.
0·07	0·07	0·19	0·85	2·18	**3·03**	Nicosia.
						Syria, Coast :
—	—	0·35	1·89	5·23	**7·63**	Beirut. 3563
—	—	0·07	0·82	3·62	**6·37**	Haifa.
—	—	0·03	0·55	4·41	7·04	Sarona.
—	—	0·03	0·82	3·15	4·13	Ghaza.
						Inland :
—	—	—	—	—	**4·90**	Damascus (1867).
0·03	—	0·23	1·96	9·01	12·36	El Kereiyeh.
—	—	—	0·82	1·75	5·40	Ksara.
—	—	—	0·66	3·03	**6·37**	Nazareth.
—	—	—	0·39	2·52	5·66	Jerusalem.
—	—	—	0·53	2·13	5·05	Hebron.
—	—	—	0·66	2·12	5·21	El Athrun.
						Jordan Valley :
—	—	—	0·55	2·36	4·33	Tiberias.
—	—	—	0·15	2·08	3·62	Melhamiyeh.

TABLE XI

Maximum Rainfall

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*April.* ins.	*May.* ins.	*June.* ins.
Cyprus :						
Kyrenia . . .	8·40	9·14	5·90	3·04	3·20	1·08
Famagusta . . .	7·32	4·25	4·17	4·31	3·10	0·70
Limassol . . .	**11·65**	5·70	4·57	2·36	2·70	0·95
Nicosia . . .	6·63	5·28	3·73	2·31	4·80	4·02
Syria, Coast :						
Beirut	14·96	**15·74**	8·54	6·26	2·55	2·71
Inland :						
El Kereiyeh . . .	15·58	19·75	**19·79**	10·61	3·28	0·22
Ksara	7·17	4·96	4·82	5·20	0·81	—
Hebron . . .	13·87	12·37	8·64	8·30	2·19	1·29
El Athrun . . .	7·85	7·69	6·84	4·03	0·57	0·15
Jordan Valley :						
Tiberias . . .	**11·22**	6·49	4·96	3·03	0·9	—

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
						Cyprus :
0·04	0·20	1·48	6·06	9·84	**10·76**	Kyrenia.
0·05	0·11	2·00	8·90	**10·17**	12·20	Famagusta.
0·02	0·05	2·08	2·96	11·01	8·82	Limassol.
0·69	0·90	1·85	2·83	**10·29**	6·43	Nicosia.
						Syria, Coast :
0·39	0·27	2·40	7·36	15·31	13·66	Beirut.
						Inland :
—	0·02	0·96	8·05	12·15	15·77	El Kereiyeh.
—	—	—	0·98	1·77	**9·51**	Ksara.
—	—	0·19	2·47	6·10	**14·05**	Hebron.
—	—	0·05	2·11	3·65	**8·93**	El Athrun.
						Jordan Valley :
—	—	—	2·05	6·65	8·74	Tiberias.

TABLE XII

NUMBER OF RAIN DAYS (>0·2 mm. or 0·008 in. of rain).

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Cyprus :						
Famagusta . . .	**10·6**	9·8	7·7	4·9	3·7	0·8
Nicosia . . .	9·3	7·5	7·3	3·9	3·3	1·3
Syria, Coast :						
Beirut	**15·6**	14·5	10·9	6·5	3·2	0·8
Haifa	13·3	9·6	8·3	3	2·4	0·1
Sarona	11	6·8	6·8	2·6	0·2	—
Ghaza	**8·9**	6·4	4·9	1·4	1·5	0·1
Inland :						
Damascus (1868) . .	—	—	—	9	—	
El Kereiyeh . . .	13	7·7	**13·7**	8·2	4	1
Ksara	16	**19**	16	13	6	—
Nazareth . . .	**12·4**	12	9·9	4·5	1·9	—
Jerusalem . . .	**13**	9·8	9·6	4·6	2·1	0·1
Hebron . . .	**13**	11	10	5	1	1
El Athrun . . .	**14·5**	10·4	10·7	6·8	1·8	0·5
Jordan Valley :						
Tiberias . . .	**10·9**	10·3	8·8	3·8	1·3	—
Melhamiyeh . . .	12	**12·2**	9·8	4·5	3·3	—

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Cyprus :
—	—	1	3·7	7·2	10·1	Famagusta.
0·2	0·1	0·8	3	7	**10·2**	Nicosia.
						Syria, Coast :
0·3	0·2	1·4	4·6	10·2	13·8	Beirut.
—	0·2	0·1	2·8	8·6	**13·4**	Haifa.
—	—	0·2	2·0	9·3	**12·3**	Sarona.
—	—	0·2	2·7	6·9	7·6	Ghaza.
						Inland :
—	—	—	—	—	—	Damascus (1868)
0·5	0·7	1·7	4·5	13	11·7	El Kereiyeh.
—	—	2	7	7	10·5	Ksara.
—	—	0·2	2·5	8·1	11·8	Nazareth.
—	—	0·1	2·3	6·8	9·2	Jerusalem.
—	—	1	3	7	9	Hebron.
—	0·1	0·8	3·1	6·5	10·3	El Athrun.
						Jordan Valley :
—	—	—	1·6	6·4	10·4	Tiberias.
—	—	—	1·5	5	8·3	Melhamiyeh.

TABLE XIII

Wind Directions as Percentages of Total Observations

JANUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia .	18·7	7·6	35·9	0·6	20·2	0·7	11·8	2·3	2·2
Famagusta .	9·1	16·8	14·1	2·7	6·3	6·4	26·4	18·3	—
Limassol .	11·6	13·2	21·1	16·0	6·4	12·8	9·8	8·9	—
Mean. .	13·1	12·5	**23·7**	6·4	10·9	6·6	16·0	9·8	0·7
Beirut . .	7·8	9·6	10·2	18·7	10·2	20·5	6·4	3·2	13·4
Haifa . .	8·1	2·3	48·2	5·7	13·8	5·6	14·3	1·2	0·8
Sarona . .	4·5	7·7	7·7	14·9	31·6	7·1	2·3	4·2	20·0
Gaza . .	1·1	1·1	10·7	1·5	0·9	23·9	9·0	0·6	51·2
Mean. .	5·4	5·2	**19·2**	10·2	14·1	14·3	8·0	2·3	21·3
El Kereiyeh .	6·3	1·9	12·5	8·7	7·5	15·0	15·5	3·6	29·0
Nazareth .	4·5	19·3	27·3	13·6	9·1	6·8	10·1	9·1	—
Jerusalem .	2·3	1·0	24·3	1·6	1·4	10·6	30·4	4·1	24·3
Hebron . .	6·7	8·1	12·1	7·0	3·5	8·1	26·9	27·1	0·5
El Athrun .	3·3	3·4	17·4	12·3	6·7	19·2	10·7	17·7	9·3
Mean. .	4·6	6·7	**18·7**	8·6	5·6	11·9	**18·7**	12·3	12·6

FEBRUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia .	14·5	5·8	34·2	0·4	22·0	2·2	16·8	1·6	2·4
Famagusta .	6·8	14·0	12·4	4·2	7·8	10·1	24·8	20·0	—
Limassol .	5·6	6·3	25·2	8·5	7·4	8·2	15·9	9·5	13·4
Mean. .	8·9	8·7	**23·9**	4·4	12·4	7·5	19·2	10·3	5·3
Beirut . .	8·5	9·5	8·1	13·0	8·9	25·9	5·4	5·4	15·3
Haifa . .	12·2	1·3	35·0	1·9	15·1	5·6	23·0	1·5	4·4
Sarona . .	4·2	5·7	3·5	16·3	23·3	13·8	4·6	1·8	26·8
Gaza . .	3·8	0·2	12·1	3·6	1·0	19·6	8·0	2·1	49·6
Mean. .	7·2	4·2	14·7	8·7	12·1	**16·2**	10·2	2·7	24·0
El Kereiyeh .	2·7	3·0	8·0	16·2	8·6	12·8	20·3	6·1	22·1
Nazareth .	11·2	21·2	22·5	10·0	6·3	9·0	11·2	9·0	—
Jerusalem .	1·1	1·1	21·6	2·1	0·8	6·8	39·1	4·3	23·1
Hebron . .	10·1	4·7	3·0	11·2	5·3	5·0	31·1	29·6	—
El Athrun .	1·7	1·3	11·7	18·5	7·1	16·7	16·9	18·9	7·2
Mean. .	5·3	6·2	13·3	11·6	5·6	10·0	**23·7**	13·6	10·5

MARCH

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	16·6	6·0	28·5	0·8	21·0	0·6	22·5	2·9	1·0
Famagusta	5·6	15·3	11·9	2·9	5·8	12·3	25·8	20·4	—
Limassol	5·5	5·6	21·4	8·6	8·1	7·8	22·8	7·0	13·0
Mean.	9·2	8·9	20·6	4·1	11·6	6·9	**23·7**	10·1	4·6
Beirut	10·4	11·8	7·1	6·1	5·0	31·5	6·9	4·5	16·7
Haifa	15·1	0·3	30·4	2·3	10·1	4·3	30·1	4·6	2·8
Sarona	3·2	5·2	3·2	9·4	18·7	15·5	11·6	5·2	28·0
Gaza	5·8	0·6	8·8	4·1	0·9	21·3	13·8	1·3	43·4
Mean.	8·4	4·5	12·4	4·5	8·7	**17·9**	15·6	3·9	22·7
El Kereiyeh	2·3	1·4	9·3	11·2	8·7	13·3	24·2	8·2	21·4
Nazareth	10·3	12·6	17·2	11·5	3·4	15·0	18·4	11·5	—
Jerusalem	1·1	2·1	13·9	2·6	1·2	6·3	42·1	7·1	23·6
Hebron	6·1	6·5	4·5	11·6	4·5	3·9	35·8	27·1	—
El Athrun	4·2	1·1	10·0	16·0	5·9	11·8	18·2	25·2	7·6
Mean.	4·8	4·7	11·0	10·6	4·7	10·1	**27·8**	16·0	10·5

APRIL

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	14·6	1·8	30·1	—	17·1	0·6	30·2	4·0	1·5
Famagusta	6·9	15·4	16·2	3·5	6·1	12·7	24·6	15·0	—
Limassol	5·0	3·1	19·6	11·6	8·6	8·2	26·5	4·6	12·7
Mean.	8·8	6·8	22·0	5·0	10·6	7·2	**27·1**	7·9	4·7
Beirut	9·3	13·6	5·3	3·4	3·5	36·3	8·7	5·3	14·6
Haifa	19·4	0·8	19·8	2·4	7·5	5·9	36·3	4·9	3·0
Sarona	2·3	2·7	2·0	4·0	12·0	19·3	19·3	9·0	29·4
Gaza	3·5	0·5	12·0	1·4	0·7	11·8	22·9	3·0	44·2
Mean.	8·6	4·4	9·8	2·8	5·9	18·3	**21·8**	5·5	22·8
El Kereiyeh	2·2	0·9	5·4	23·0	4·5	9·7	24·8	8·1	21·1
Nazareth	11·7	10·4	19·5	9·0	1·3	10·4	22·0	15·0	—
Jerusalem	1·3	1·8	16·4	2·6	1·4	2·8	37·8	11·5	24·4
Hebron	14·4	2·8	13·3	10·8	4·5	5·0	20·0	28·1	1·1
El Athrun	3·4	1·5	7·5	19·8	5·7	9·0	12·5	29·7	10·6
Mean.	6·6	3·5	12·4	13·0	3·5	7·4	**23·4**	18·5	11·5

TABLE XIII (*continued*)

Wind Directions as Percentages of Total Observations

MAY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	15·7	2·0	24·1	0·4	21·3	0·8	32·8	2·8	0·1
Famagusta	5·4	13·4	21·0	4·7	6·7	13·5	24·0	11·5	—
Limassol	3·7	1·6	17·3	13·7	9·6	8·4	27·9	4·5	13·2
Mean.	8·3	5·7	20·8	6·3	12·5	7·6	**28·2**	6·3	4·4
Beirut	11·9	14·3	3·8	1·1	2·9	33·6	10·4	8·2	13·8
Haifa	14·4	0·8	13·2	0·8	8·0	6·6	42·7	8·9	4·6
Sarona	4·5	2·3	2·3	1·0	3·2	24·2	25·8	19·3	17·4
Gaza	5·9	—	17·8	2·7	0·5	9·4	29·3	3·5	30·9
Mean.	9·2	4·4	9·3	1·4	3·6	18·4	**27·0**	10·0	16·7
El Kereiyeh	6·3	2·4	6·6	16·1	4·5	4·3	22·0	11·4	26·0
Nazareth	22·1	9·3	5·8	10·5	2·3	22·1	15·1	12·8	—
Jerusalem	4·4	2·0	11·7	1·8	1·0	3·0	37·3	18·4	20·4
Hebron	16·5	5·9	8·6	9·2	6·8	7·0	16·5	29·2	0·3
El Athrun	3·0	1·5	3·6	15·8	6·1	4·4	8·0	43·0	14·3
Mean.	10·5	4·2	7·3	10·7	4·1	8·2	19·8	**23·0**	12·2

JUNE

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	16·5	0·8	14·7	—	15·5	0·7	47·1	3·0	1·4
Famagusta	2·6	10·3	26·5	5·9	8·3	13·4	20·0	12·8	—
Limassol	2·2	1·7	11·5	12·6	10·7	10·4	31·2	4·3	15·4
Mean.	7·1	4·3	17·6	6·2	11·5	8·2	**32·8**	6·7	5·6
Beirut	7·4	7·3	1·2	0·1	2·7	50·5	14·2	4·9	11·7
Haifa	10·5	0·5	2·9	0·9	5·1	8·2	60·2	7·0	4·7
Sarona	1·7	1·3	1·3	1·0	2·6	33·6	32·6	13·6	12·3
Gaza	4·9	—	17·1	0·7	1·3	1·3	30·5	2·0	42·2
Mean.	6·1	2·3	5·6	0·7	2·9	23·4	**34·4**	6·9	17·7
El Kereiyeh	7·6	2·9	2·4	3·4	3·2	1·1	27·0	15·4	37·0
Nazareth	13·1	6·0	3·5	2·4	—	23·8	26·2	25·0	—
Jerusalem	3·4	1·3	2·8	0·3	0·2	0·8	48·1	26·8	16·3
Hebron	10·8	3·0	2·0	1·4	2·2	2·5	20·6	57·2	0·3
El Athrun	2·5	0·4	1·9	12·8	4·9	2·6	7·9	54·4	12·3
Mean.	7·5	2·7	2·5	4·0	2·1	6·2	26·0	**35·8**	13·2

JULY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	16·5	1·1	21·7	—	18·0	1·1	37·9	2·3	1·2
Famagusta	1·8	8·6	26·6	6·1	10·7	17·0	19·1	8·5	1·6
Limassol	1·2	1·2	10·3	12·5	11·3	10·0	32·9	4·3	15·9
Mean.	6·5	3·6	19·5	6·2	13·3	9·4	**30·0**	5·0	6·2
Beirut	4·4	1·6	0·3	0·1	4·4	60·2	15·9	3·3	9·8
Haifa	1·4	0·2	1·8	0·9	9·1	19·0	62·1	2·0	3·5
Sarona	—	—	1·3	0·3	0·3	56·3	30·4	3·3	8·1
Gaza	1·6	0·6	16·7	0·5	0·5	4·8	29·0	1·1	45·2
Mean.	1·9	0·6	5·0	0·4	3·6	**35·1**	34·4	2·4	16·6
El Kereiyeh	7·7	0·8	0·8	1·4	3·1	2·0	20·3	17·0	46·9
Nazareth	7·3	—	2·4	—	—	40·3	31·7	18·3	—
Jerusalem	1·8	—	0·5	—	0·1	1·0	51·9	30·7	14·0
Hebron	13·2	1·9	1·1	—	1·1	1·3	13·9	67·2	0·3
El Athrun	1·0	0·1	1·2	14·6	4·3	2·7	8·5	55·7	12·2
Mean.	6·2	0·6	1·2	3·2	1·7	9·5	25·3	**37·8**	14·7

AUGUST

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	19·0	0·7	18·5	0·1	20·5	0·7	33·9	3·1	3·4
Famagusta	5·6	11·1	20·2	4·0	9·1	16·1	21·7	11·1	1·1
Limassol	1·1	2·0	11·3	12·1	11·8	8·3	34·9	7·2	11·1
Mean.	8·6	4·6	16·7	5·4	13·8	8·4	**30·2**	7·1	5·2
Beirut	5·7	3·9	0·7	0·1	5·4	44·9	18·9	6·8	13·6
Haifa	5·4	0·3	2·0	1·4	8·7	15·7	58·2	4·6	3·7
Sarona	0·3	—	0·3	1·3	4·5	48·2	23·2	8·0	14·2
Gaza	3·5	—	18·5	0·4	1·3	1·9	24·5	8·2	41·7
Mean.	3·7	1·0	5·4	0·8	5·0	27·7	**31·2**	6·9	18·3
El Kereiyeh	8·6	1·2	0·6	2·7	4·5	1·5	18·0	15·0	48·0
Nazareth	10·7	1·2	—	1·2	—	21·4	39·3	26·2	—
Jerusalem	2·2	0·5	0·5	0·2	0·1	0·6	44·9	35·2	15·8
Hebron	14·0	0·3	0·5	0·8	1·3	1·3	11·6	69·1	1·1
El Athrun	5·7	0·1	2·1	18·2	1·8	1·1	7·6	53·6	9·8
Mean.	8·3	0·7	0·7	4·6	1·5	5·2	24·3	**39·8**	14·9

TABLE XIII (*continued*)

Wind Directions as Percentages of Total Observations

SEPTEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia .	19·3	0·4	17·8	0·08	22·7	0·6	33·0	2·6	3·4
Famagusta .	6·9	9·0	14·0	1·1	3·8	11·4	35·3	18·3	0·1
Limassol .	1·6	1·9	13·7	11·7	7·7	9·2	34·0	6·0	14·2
Mean. .	9·3	3·8	15·2	4·3	11·4	7·1	**34·1**	9·0	5·9
Beirut . .	16·5	11·5	1·6	0·3	2·7	29·7	15·3	9·0	13·4
Haifa . .	19·7	0·8	7·5	1·4	1·4	4·9	46·7	9·5	8·1
Sarona . .	5·7	2·0	0·3	0·7	5·4	35·4	13·0	12·4	25·1
Gaza . .	2·0	—	25·0	0·4	—	2·9	27·2	4·0	38·5
Mean. .	11·0	3·6	8·6	0·7	2·4	18·2	**25·6**	8·7	21·3
El Kereiyeh .	6·1	5·3	3·5	2·5	6·3	8·9	17·8	8·5	41·0
Nazareth .	22·2	6·2	6·2	2·4	1·2	14·8	23·4	23·4	—
Jerusalem .	5·0	1·9	4·8	1·3	—	1·7	34·9	30·0	20·4
Hebron . .	16·6	1·4	3·6	3·6	3·0	1·7	9·4	60·1	0·6
El Athrun .	8·9	1·0	4·7	14·3	1·8	3·3	5·4	51·0	9·4
Mean. .	11·8	3·2	4·6	4·8	2·5	6·1	18·2	**34·6**	14·3

OCTOBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia .	19·2	1·9	21·4	0·06	24·2	0·5	27·0	1·9	3·3
Famagusta .	7·0	11·1	9·0	1·5	4·3	8·1	34·3	24·5	0·06
Limassol .	4·0	3·9	19·9	12·4	5·2	9·2	25·0	5·7	14·7
Mean. .	10·1	5·6	16·8	4·6	11·2	5·9	**28·8**	10·7	6·0
Beirut . .	20·2	19·4	4·6	2·5	4·4	19·7	6·4	5·2	17·6
Haifa . .	18·9	1·3	24·8	2·3	2·9	2·3	32·1	9·5	5·9
Sarona . .	5·8	4·2	4·8	5·5	9·7	14·5	4·5	8·4	42·6
Gaza . .	3·0	0·5	22·8	5·1	0·8	2·4	25·5	4·9	35·0
Mean. .	12·0	6·4	14·2	3·9	4·5	9·7	**17·1**	7·0	25·3
El Kereiyeh .	2·4	0·9	12·0	12·4	7·7	8·8	23·4	6·1	26·0
Nazareth .	31·2	21·1	13·7	7·5	2·5	3·7	6·3	13·7	—
Jerusalem .	2·9	3·1	18·7	1·5	0·7	1·9	27·0	13·0	31·2
Hebron . .	16·7	8·3	9·4	7·8	2·7	2·2	11·3	39·5	2·1
El Athrun .	10·1	1·2	11·3	15·4	3·0	5·7	6·9	37·6	8·9
Mean. .	12·7	6·9	13·0	8·9	3·3	4·5	15·0	**22·0**	13·6

NOVEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	18·9	6·1	29·9	0·3	26·5	0·5	12·9	2·2	2·5
Famagusta	9·7	14·2	10·6	3·7	4·9	7·0	29·5	20·4	0·07
Limassol	7·4	9·2	24·0	7·6	7·7	7·0	19·2	5·2	12·7
Mean	12·0	9·8	**21·5**	3·9	13·0	4·8	20·5	9·3	5·1
Beirut	11·0	12·1	8·3	10·4	9·2	19·2	7·5	3·4	18·9
Haifa	13·2	0·2	37·1	3·0	7·5	5·2	24·9	4·6	4·3
Sarona	1·0	6·3	5·0	11·7	22·0	12·3	2·3	2·0	37·4
Gaza	1·6	0·9	16·9	4·8	0·9	10·5	21·7	0·7	42·0
Mean	6·7	4·9	**16·8**	7·5	9·9	11·8	14·1	2·7	25·6
El Kereiyeh	3·9	0·6	11·5	10·3	11·1	18·4	16·2	4·7	23·3
Nazareth	12·0	29·0	23·0	8·3	6·0	7·2	6·0	8·3	—
Jerusalem	2·4	1·8	23·0	3·5	0·6	4·0	28·9	5·0	30·8
Hebron	11·7	8·9	15·0	6·1	2·5	3·6	21·9	29·5	0·8
El Athrun	4·5	1·5	13·6	14·6	5·7	13·0	11·8	22·9	12·0
Mean	6·9	8·3	**17·2**	8·6	5·2	9·2	**16·9**	14·1	13·4

DECEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Kyrenia	16·2	9·2	35·1	1·2	22·4	0·7	11·0	1·6	2·4
Famagusta	8·2	16·3	17·0	4·2	6·0	6·6	22·6	19·1	—
Limassol	5·9	9·4	26·8	8·4	9·0	6·4	13·8	8·3	12·0
Mean	10·1	11·6	**26·3**	4·6	12·4	4·6	15·8	9·6	4·8
Beirut	8·0	8·9	11·6	16·1	12·2	20·1	5·7	3·0	14·4
Haifa	5·0	1·4	53·6	3·4	8·4	6·1	15·6	3·8	2·7
Sarona	1·6	8·7	6·1	16·8	25·5	8·4	3·6	0·6	28·7
Gaza	1·3	0·2	13·7	2·6	2·6	22·8	11·6	0·9	44·3
Mean	4·0	4·8	**21·2**	9·7	12·2	14·3	9·1	2·1	22·5
El Kereiyeh	7·4	1·2	14·3	7·5	8·0	14·0	18·8	3·7	25·0
Nazareth	3·3	18·2	28·4	20·4	7·0	14·8	2·3	5·7	—
Jerusalem	0·8	0·8	25·2	3·6	0·8	7·1	32·1	2·5	27·1
Hebron	11·0	5·9	12·9	7·8	3·0	3·5	26·9	29·0	—
El Athrun	3·0	2·0	21·3	13·2	3·2	20·7	11·2	16·2	9·0
Mean	5·1	5·6	**20·4**	10·5	4·4	12·0	18·2	11·4	12·2

TABLE XIV

Mean Amount of Cloud[1]

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Cyprus :						
Kyrenia . . .	**4·2**	3·8	3·3	2·7	2·0	0·9
Famagusta . . .	3·6	3·6	3·4	3·1	2·4	1·5
Limassol . . .	2·9	2·9	2·6	2·0	1·7	0·9
Nicosia . . .	4·0	4·1	3·4	2·7	1·9	0·9
Syria, Coast :						
Beirut	**5·59**	5·57	4·83	4·2	3·15	1·37
Haifa	**5·2**	4·6	4·7	3·7	3·0	2·5
Sarona	4·2	3·9	4·3	3·2	2·6	1·7
Ghaza	**3·6**	3·1	3·3	2·6	2·4	1·7
Inland :						
El Kereiyeh . . .	5·8	4·5	**5·9**	5·0	4·0	1·5
Ksara, 1910–11 . .	6·0	**6·8**	4·9	5·3	4·5	0·8
Nazareth . . .	4·9	4·6	**5·4**	4·3	3·5	2·2
Jerusalem . . .	**5·2**	4·8	5·1	3·9	2·9	1·2
Hebron . . .	**5·8**	5·3	5·4	3·7	1·7	0·5
El Athrun . . .	**4·0**	3·4	**4·0**	2·9	1·7	0·8
Jordan Valley :						
Tiberias . . .	**6·2**	4·6	4·3	3·1	1·2	0·5

[1] 0 = cloudless sky ; 10 = completely overcast.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Cyprus :
0·26	0·4	0·75	1·85	3·26	4·1	Kyrenia.
0·7	0·9	1·6	2·6	3·3	**3·8**	Famagusta.
0·5	0·8	1·1	1·7	2·7	**3·2**	Limassol.
0·3	0·4	0·8	2·1	3·4	**4·2**	Nicosia.
						Syria, Coast :
1·54	1·74	1·91	2·64	4·24	5·28	Beirut.
2·6	2·5	2·1	2·6	4·2	5·1	Haifa.
1·6	1·4	1·6	1·8	3·9	**4·4**	Sarona.
1·6	1·8	1·8	2·1	3·2	3·5	Ghaza.
						Inland :
2·4	2·3	2·3	3·5	5·8	5·8	El Kereiyeh.
0·6	0·5	0·9	2·9	3·5	5·1	Ksara.
3·5	3·6	2·3	2·5	4·5	5·1	Nazareth.
0·8	1·0	1·3	2·5	3·7	4·9	Jerusalem.
0·5	0·5	1·0	2·4	3·8	3·9	Hebron.
0·4	0·5	0·8	1·8	2·8	3·5	El Athrun.
						Jordan Valley :
0·6	0·6	1·1	1·0	4·1	4·5	Tiberias.

CHAPTER IV

CLIMATE OF MESOPOTAMIA AND THE PERSIAN GULF

Physical Features

Mesopotamia includes the area comprised in the isosceles triangle of which the apex is at Fao, on the head of the Persian Gulf, and the base is from a line drawn from Diarbekr on the Tigris to the point where the 36th degree of latitude crosses the Euphrates at Meskeneh. The area in question is about 180,000 square miles in extent and is bounded as follows: To the S. by the Persian Gulf; SE., E., and NE. by the chains of mountains that are the rim of the great plateau of Iran or Persia; to the N. by the similar ranges which form the edges of the table-lands of Armenia and Asia Minor; to the W. by the Syrian Desert, and SW. the arid wastes of Northern Arabia.

These very well defined limits enclose what, relative to the surrounding highlands, is a vast depression of the surface, which, however, as explained below, contains a low plateau in itself. This depression falls away from the northern mountains, at first at a steep, and then at a more slowly diminishing gradient, till it reaches the point where the Tigris and Euphrates rivers approach to within 40 miles of each other, viz. on the line Baghdad–Fellūjeh. Here, now at a very low altitude, it changes suddenly into the great alluvial basin which, in almost a dead flat, stretches southwards for 500 miles, to end at the Persian Gulf.

The limits of this depression are everywhere clearly marked; on its upper half across from Euphrates to Tigris by the spurs

of the mountains of Asia Minor ; then, looking down-stream, to the right of the Euphrates by the cliff-like edge of the Syrian Desert as far as Nasirīyeh, and to the left of the Tigris by the outworks of the Kurdish ranges, as far as Samarra ; thence onwards to the sea by a glacis sloping upwards, on the one hand to the submontane regions of the Kurdish and Persian hills, and on the other to the Arabian desert.

The depression falls, as stated above, into two most distinct zones or districts ; a feature which the Arabs and the Turkish administration have very clearly realized, and to which they have given expression by calling the first zone or district Jezīreh and the second Irak. The boundary of Jezīreh and Irak is at or about a line from Baghdad to Fellūjeh on the Euphrates ; all to the north of this line in Mesopotamia is Jezīreh ; all to the south is Irak.

Jezīreh is a low plateau, composed of limestone and sedimentary formations, intersected by low ranges of limestone, gypsum, and basalt, which slopes from the southern spurs of the Taurus and other ranges, southwards to where it ends suddenly in the great alluvial plain of Irak. In its northern half, Jezīreh is distinctly a submontane belt merging gradually into a rolling and undulating plain, and presents all the characteristics of such regions : good soil, plenty of water, fair rainfall. These favourable conditions diminish with increasing distance from the mountains, and the sloping plain assumes the character of the Syrian Desert to its west. The ruins of innumerable towns and villages ; the existence of the Assyrian empire with Nineveh, its capital, at Mosul ; the importance of this tract in Persian, Greek, Roman, and Arab times, testify to what it was in the past, and may be again in the future under a good and settled government. Jezīreh under happier conditions was a worthy rival of Irak. The Jebel Sinjar range is a rough boundary between Upper and Lower Jezīreh ; the latter is, and always has been, an unmitigated desert.

Irak is a perfect plain ; in 350 miles it falls 220 ft. to the sea. It is a sheet of the most fertile alluvium, an argillaceous,

calcareous loam, interspersed with occasional, unimportant, pockets of stiff clay or else pebbles; sand is sometimes met with, but not to any appreciable degree. There is not a stone in the country. This loam-plain bears depressions of vast extent in which the floods of the rivers have formed, especially during the later centuries of Turkish misrule, enormous permanent marshes and swamps, more particularly on the lower course of the Euphrates river. No doubt many of them could be drained, but as they stand they form grave blots on the fair face of Irak. Throughout the great alluvial plain the boundless horizon is unrelieved by a single range, hill, or natural eminence, and is unbroken save by the artificial mounds which are the silent evidence to the existence of bygone civilizations.

In considering the climatic conditions it is necessary to include some of the mountain area to the north, and the terms Upper and Lower Mesopotamia are adopted as convenient.

General Conditions

The climatic conditions of Mesopotamia are those of a subtropical area which lies at a distance from any ocean, and therefore are of a semi-arid type, although an appreciable amount of rain falls in the winter months. In the winter the atmospheric pressure is comparatively high over Northern Syria and Mesopotamia, since they lie on the outskirts of the great high-pressure system of Central Asia; and while the air-currents at this season are somewhat variable in their directions, winds from the northwest predominate in all parts of the country.

Rain occurs during the passage of cyclonic depressions, some of which come from the Eastern Mediterranean, and others probably pass across Asia Minor, but at other times the northwesterly winds descending from the high plateau to the northward arrive at the low-lying Jezīreh as dry and comparatively warm winds. In summer this effect is more strongly marked, and these north-westerly winds, warmed by their descent from the plateau and in their passage to lower latitude, sweep over the valley of the Tigris and Euphrates as hot dry winds, which blow

almost continuously from May until October. At this season the great low-pressure area of North-West India, which is related to the monsoon of the Indian Ocean, extends to the Persian Gulf, and the pressure gradient which exists from the Eastern Mediterranean to the Persian Gulf maintains this flow of air over Mesopotamia throughout these months.

Consequently the land depends on the waters of its two great rivers for its fertility, since the rainfall alone is insufficient to maintain vegetation through the summer. Drawing their supply largely from the snowfall in the mountains of Armenia, the levels of the Tigris and Euphrates increase in the spring months, and begin to diminish as midsummer draws nigh. As in Egypt, the cultivator is dependent on the water of the rivers for bringing his crops to maturity, but in Mesopotamia they are at their highest in April and May, whereas the rains of Abyssinia from June to September produce the annual Nile flood of Egypt in August and September.

Meteorological Observations

In a region so sparsely inhabited and so little civilized as Mesopotamia the places at which meteorological observations have been made are naturally few. Some have been carried on for short periods among the foot-hills of the Taurus in the northern portion of the basin of the Euphrates, while others have been made for longer periods at Baghdad and Basra, and have been published in the Meteorological Reports of the Indian Government. Besides these, a series of observations which extends over five to six years has been provided by the activity of an archaeological mission engaged upon investigations on the site of the ancient city of Babylon.

We have therefore meteorological observations from the following places in Mesopotamia, but they are too few in number and extend over too limited periods to represent adequately the extensive basin of the Tigris and the Euphrates.

Place.	*Period of Observations.*	*Altitude.*	*Latitude N.*	*Longitude E.*
Upper Mesopotamia:	*Years.*	*Feet.*		
'Aintāb	32	3,200 2,755*	37° 4′	37° 35′
Urfeh	7	1,870	37 13	38 47
Diarbekr	2–4	1,950	37 54	40 22
Mosul	3–4	980 830*	36 22	43 14
Lower Mesopotamia:				
Baghdad	21	120	33 21	44 26
Babylon	5–6	100	32 30	44 20
Basra	11	25		
Mohammareh	½	?	30 26	48 13
Persian Gulf:				
Bushire	33	25	29 0	49 50
Bahrein	8	18		
Jask	18	13	25 47	57 48
Muscat	18	20	23 37	58 35

Of these twelve stations 'Aintāb, Urfeh, and Diarbekr represent the climate of the hilly country which lies immediately to the southward of the mountain ranges which extend from the Gulf of Iskanderun on the west to Lake Van on the east, where they join the mountains of Western Persia which form the eastern boundary of Mesopotamia. This region, which forms a part of the upper basins of the Euphrates and the Tigris, lies at an altitude of 1,500 to 3,000 feet, while many of the hills rise to greater heights. At 'Aintāb the observations, which relate to rainfall only, extend over thirty-two years. At Urfeh and Diarbekr the periods are shorter, being seven (1900–6) and two to four years (1901–5) respectively, but the observations are more complete and include all climatic factors.

Situated on the banks of the Tigris about 100 miles farther south than Diarbekr and more to the eastward is Mosul, where observations have been made for three to four years (1908–11). This town, which is about 900 feet above sea-level, represents the climate of the southern part of Upper Mesopotamia,

* The altitudes of some stations are uncertain. Those marked with an asterisk are taken from the Royal Geographical Society's Map of 1910, the other value being that quoted in the observations.

where more arid conditions prevail than in the foot-hills. At Mosul itself the winter rainfall is considerable, but in the Jezīreh it decreases gradually as the hill-country is left behind.

Notes on the Tables: Upper Mesopotamia

Temperature

The coldest month is January, while the hottest is July or August, there being but little difference between these two months. The mean temperature of the day (Table I, p. 220) varies from about 40° F. in January (31° F. at Diarbekr) to about 90° F. in July and August, the increase being at the rate of about ten degrees per month from April onwards. September sees a definite reduction of temperature after the summer heat, while in October and November the temperature diminishes rapidly.

The difference between the temperature at Mosul and that of the stations in the hills is not very apparent in the mean temperature, but is clearly seen in the daily and monthly extremes (Tables II, III, V, VI, pp. 220, 222). The mean daily maximum temperature in Mosul in July is 110° F. or 11° higher than at Diarbekr, while the mean monthly maximum, the highest temperature which may ordinarily be expected in the month, is 116·6° F. or 11° and 12° above that recorded at Diarbekr and Urfeh respectively.

Fairly low temperatures occur at all these stations annually, the mean daily minimum being 26·4° F. at Diarbekr, and 32° F. at Mosul in January, but occasionally much lower readings are recorded. The mean monthly minimum in January is 27·1° F. at Urfeh, 19·2° F. at Mosul, and even 10·9° F. at Diarbekr. This severe cold at Diarbekr is doubtless due to its position in a basin into which the cold air drains from the surrounding mountains.

The lowest and highest temperatures which have been recorded show the same wide range, though the observations have not yet extended over a long period, seven years being available for Urfeh, but from two to four for Diarbekr, and from three to four years for Mosul.

Place.	*Highest Temperature Recorded.* ° F.	*Month.*	*Lowest Temperature Recorded.* ° F.	*Month.*	*Range.* ° F.
Urfeh . . .	110·7	July	22·1	February	88·6
Diarbekr . .	107·8	August	− 0·4	January	108·2
Mosul . . .	118·8	July	4·3	January	114·5

This represents the extreme range of temperature which has been recorded at each place during the period for which observations are available. If, however, the difference between the lowest mean monthly minimum and the highest mean monthly maximum (Tables VI and III, pp. 222, 220), that is between the lowest and highest temperatures which may ordinarily be expected in any year, the annual range is : for Urfeh, 77·1° F. ; for Diarbekr 94·4° F. ; and for Mosul, 97·4°.

Humidity

The mean relative humidity at Urfeh is remarkably low, and, if the figures are correct, must be ascribed to the föhn effect when the winds blow from the northward over the high mountain ranges of Asia Minor and descend to the much lower level of the basin of the Euphrates as warm and dry winds. In summer the humidity is particularly low, being from 26 to 29 per cent. At Mosul it is considerably higher, especially in December and January (Table VIII, p. 224).

Rainfall

In Upper Mesopotamia the rainfall is moderately plentiful at stations in and near the mountains, but it diminishes rapidly towards the alluvial plain of the Euphrates and Tigris.

The station of ʿAintāb, which is situated in the hills about 60 miles to the north of Aleppo, has an average annual rainfall of 22·05 inches, as deduced from a series of observations which extends over 32 years (Table IX, p. 226). The greatest amount of rain falls in December (4·13 inches), while more than 3 inches are recorded in November, January, and February. The months of July, August, and September are practically rainless, while the average rainfall in June is only 0·24 inch.

At the other stations the observations are probably too few as yet to furnish satisfactory averages, but they all show the heaviest rainfall as occurring in February, with a secondary maximum in December at Urfeh, and in November at Diarbekr and Mosul. This approximates to the yearly distribution of rainfall at stations in Western Persia. The number of rain days show maxima in the same months (Table X, p. 226), and call for no special remark.

Snow occurs in Upper Mesopotamia in December and January, and sometimes in February and March as well. It is recorded on eight days on the average at Diarbekr and two at Urfeh during the winter.

Thunderstorms

Thunderstorms (Table XII, p. 230) are moderately common, and occur most frequently in April and May, when the average number for the month is four at Diarbekr and three at Urfeh, the total number in the year being 14·1 at the former and 10·3 at the latter place.

Cloud

Observations of the amount of cloud are available from Urfa, and also from Mosul, where observations were made three times daily (Table XIII, p. 230). While the summer months, June to September, are almost cloudless, the amount increases rapidly in the autumn, until during the winter months, the mean amount is from 4 to 5, Mosul showing a maximum of 5 to 6 in April on a scale in which 10 represents a completely overcast sky.

Notes on the Tables: Lower Mesopotamia

The northern portion of Lower Mesopotamia extends from about Baghdad on the Tigris to Kurna at the junction of the Euphrates and the Tigris, and its extremely hot and dry climate is represented by the meteorological observations which have been taken at Baghdad and Babylon. At Baghdad these extend over a period of twenty-one years, while at Babylon they were made

regularly for six years by an archaeological mission which was carrying out excavations there.

To the south of the junction of the two rivers at Kurna the climate becomes very damp as well as hot, and heavy dews are of frequent occurrence, the conditions approximating to those of the Persian Gulf. Basra, a station where meteorological observations have been made for eleven years past, represents this portion of the country, while some observations made during four months in the summer of 1885 at Mohammareh are also available.

Temperature

In Lower Mesopotamia the mean temperature (Table I, p. 220) ranges from 47° F. in January to 95° F. in July, while at Baghdad and Basra the range is somewhat less. January is the coldest month, and February is only slightly warmer, but from March onwards the temperature rises steadily at the rate of about 10° F. per month until June. June, July and August are the hottest months of the year, the maximum usually falling in July or August.

As is to be expected in this semi-arid region, the maximum temperatures are very high. The mean daily maximum (Table II, p. 220) is from 57° F. to 60° F. in January, and rises to 110° F. and 111° F. in August at Baghdad and Babylon, and to 104° F. at Basra. The mean monthly maximum temperature (Table III, p. 220) for August is considerably higher, being 119·5° F. at Baghdad, while the highest temperatures which have been recorded at these four stations are 121·3° F. at Babylon and 121·0° F. at Baghdad in August. While such high temperatures are annually experienced in the summer, frost occurs occasionally in December, January, and February. The mean monthly minimum temperature (Table VI, p. 222) in January is 27·5° F. for Baghdad, and 26·1° F. at Babylon, while the lowest temperature which has been recorded is 20·8° F. for both of these places.

The extreme annual range of temperature is hardly so great as in Upper Mesopotamia, although the maximum in August is higher, since the minimum in January is not nearly so low as, for instance, at Diarbekr.

Place.	*Highest recorded Temperature.* ° F.	*Month.*	*Lowest recorded Temperature.* ° F.	*Month.*	*Range.* ° F.
Baghdad . .	121·0	August	20·8	January	100·2
Babylon . .	121·3	,,	20·8	,,	100·5
Basra . . .	111·4	July	23·7	,,	87·7

The greatest range of temperature which may ordinarily be anticipated, i. e. the difference between the mean monthly maximum and mean monthly minimum temperatures, are 97·0° F., 91·9° F., and 76·5° F. for these three stations.

Humidity

The mean relative humidity at Baghdad lies between 60 and 80 per cent. from November to April, but falls much lower in the summer, and is only 38 per cent. in June, from which it rises slowly to 44 per cent. in September. At Babylon the values are lower. Here, even in the winter, very low relative humidities occur, 10 per cent. or less having been recorded in every month except December and January during the period 1907–11 (Table VIII, p. 224).

Rainfall

While the rainfall of Lower Mesopotamia is less than that of Upper Mesopotamia, still an inch of rain usually falls in each of three months of the year. At Baghdad and Babylon the largest rainfall is in February, while at Basra the total for January is the highest, being thus intermediate between the later date of the maximum rainfall at places in the upper reaches of the river, and December, when the heaviest rainfall at places in the Persian Gulf is recorded. The total amount is not large at any station, ranging, on the average, from 4 to 7 inches. June to September are practically rainless, and in April, May, and October the amount which falls is small (Table IX, p. 226). The rain days are consequently few (see Table X, p. 226), the highest average number being 3·6 in

March at Baghdad and 5·0 in December and January at Babylon, while at Basra it is 2·6 in January.

Snow falls occasionally, and as many as four days of snow were recorded in January 1912 at Babylon.

Thunderstorms

Thunderstorms (Table XII, p. 230) appear to be rather frequent, for at Babylon, which is the only place at which they have been regularly recorded, they show a well-marked maximum in April and May, when nearly five occur on the average. During the five years over which the observations extended eight occurred in April of one year and ten in May of another. In July, August, and September none occurred ; and only a few in the autumn, which thus exhibits in this respect a marked difference from the spring.

Cloud

Cloudiness (Table XIII, p. 230) is naturally much less in the arid climate of Southern Mesopotamia than under the somewhat moister conditions of the country to the north of Baghdad. Both that station and Babylon, however, show a well-marked cloudy season from December to April, while from June to September the sky is almost cloudless. A similar annual variation of cloudiness is noticeable at the northern end of the Persian Gulf, while at places nearer to the Indian Ocean, such as Jask and Muscat, July and August are months of much cloud.

Winds (Upper and Lower Mesopotamia)

The winds of Mesopotamia have been observed at five stations, viz. Urfeh, Mosul, Baghdad, Babylon, and Basra ; but at Baghdad and Basra the observations have been made at 8 a.m. only, while at the other places three observations daily at 8 a.m., 2 p.m., and 7 p.m. or 8.30 p.m. are available, and give a better representation of the air movement.

The mean wind directions for each month, expressed as percentages of the total directions observed in the month, are given in Table XI, p. 228, where it will be seen that the dominant wind

direction in all months is the north-west, inclining at one time more to the west and at another to the north. In the summer the north-west wind shows the greatest steadiness at all stations, when it reaches a percentage frequency of 70 to 80. In winter and spring the southerly and easterly winds attain their greatest frequency, but there is a recognizable difference at the different stations. At Urfeh calms are not indicated in the observations, and in the winter months easterly and southerly winds have each about half the frequency of the north-westerly. At this station southerly winds are fairly frequent at all seasons, but, as elsewhere, are at the minimum in the summer months.

At Mosul calms are few, and the north-westerly winds are still predominant, reaching 77·7 per cent. in the summer months. At that season southerly winds are comparatively rare, but they reach 30·3 per cent. in the winter months, and as south-easterly winds continue into April and May. At Baghdad the observations were made at 8 a.m. only, and a very high percentage of calms was recorded, from 58·4 per cent. in December to 22·9 per cent. in July. This high proportion may be due to local conditions, but also the light airs of the winter mornings have probably been recorded as calms, since Dr. A. Schläfli, who resided there in 1862–3 and made careful meteorological observations, notes that calms are comparatively rare. Even though very light airs prevail in the early morning, the wind rises steadily in the forenoon, and by the early afternoon is blowing freshly to drop again at sunset, and this diurnal variation in the strength of the wind is a normal condition in all the months of the year except during periods of cold and rainy weather in winter.

Southerly winds are frequent in the winter, but they fall to a very small number in the summer months. At Babylon, some seventy miles south of Baghdad, where observations were taken three times daily for more than five years, hardly any calms were recorded. Southerly winds were frequent in the winter months and in April and May, but were always greatly inferior to the north-westerly winds, which in the

summer months reached the proportion of 85·5 per cent. At Basra the proportions do not differ greatly from those of the stations higher up the river, but southerly winds have a rather greater prevalence in the summer months than farther northward.

The general character of the air circulation over Mesopotamia is well indicated by these observations. Throughout the year a prevailing current from the north-west sweeps over the country from the hilly country in the north to the shores of the Persian Gulf. This air has for the most part descended from altitudes of 4,000 feet or more on the plateaus of Asia Minor and Kurdistan, and therefore reaches the northern part of Upper Mesopotamia as a dry wind. This is clearly indicated by the low value of the relative humidity at Urfeh. Passing southwards and entering successively warmer regions, the air of Mesopotamia is everywhere dry, except in the delta, where the climatic conditions agree closely with those in the Persian Gulf. The frequent occurrence of easterly winds in the northern part of Upper Mesopotamia during the winter and spring is probably connected with the occurrence of depressions in the Levant, many of which pass over Northern Syria or Palestine into Mesopotamia. Data bearing on the velocity of the wind are very scanty.

There is probably a well-marked diurnal variation in both the direction and the force of the wind in all parts of the country, but the wind directions at the three hours of observation have been published for Babylon only. Here the north-westerly wind of the morning becomes more northerly and even passes to the east of north by the afternoon, especially in the summer months. Except in the cold weather or during the passage of depressions the increase of wind velocity during the day is usual and is especially marked during the hot months. From light airs at sunrise the wind increases to a moderate breeze by about 10 a.m., and by 2 p.m. to 4 p.m. has become a fresh or even a strong breeze. It is strong enough to raise dust and even sand, so that in the afternoon the horizon is usually obscured. About sunset the wind drops to rise again an hour or two later as a light breeze, which may continue during the night, falling to a calm before sunrise.

Gales are said to be rare, but probably high winds occur when depressions pass over the country in the rainy season. In the summer the afternoon wind is said occasionally to reach gale force, but this seems to be exceptional.

Sand storms

The occurrence of sand storms during 1911 and 1912 was noted at Babylon, 12 and 4 being recorded respectively. They seem to be most common in the spring months, but the observations were too few to support any definite conclusion. It appears that these sand storms were strong winds carrying dust and sand similar to the *Khamsin* of Egypt, and not the *Simoom* (the hot wind accompanying a cloud of sand and dust which sweeps across the arid country as a disturbance of comparatively slight depth and short duration). Preceded by dull or cloudy weather of great heat and oppressiveness and usually by a light southerly wind, the squall of the simoom itself, accompanied by a dense sand cloud which it has raised, advances with great rapidity, and often blows with extreme violence. After its passage the air quickly clears and a cooler period with northerly winds follows.

Conditions affecting Aviation

The density of the air in Mesopotamia has been computed for four months of the year including those of mid-winter and mid-summer, and the results are given in the following table :

Table of Density in Grammes per Cubic Metre

Place.	*January.*	*April.*	*July.*	*October.*
Mosul	1,233	1,170	1,089	1,149
Baghdad	1,254	1,194	1,127	1,172
Babylon	1,260	1,166	1,121	1,177
Basra	1,250	1,185	1,130	1,176

In all hot countries where the ground is heated to a high temperature in the summer months, the air in contact with it is much hotter than that at a short distance above the ground. The density of this layer which is in contact with the ground is consequently less than that of the upper layers,

and all objects seen through these heated layers appear to be below their true position. This effect, known as mirage, leads to a part of the sky being seen as though on the surface of the desert, where it appears to be a sheet of water, and to hills, rocks, and other objects being distorted. Visibility is thereby greatly interfered with whenever the line of sight is inclined at a small angle to the ground; for a line of sight from any considerable height this form of interference would not be serious, but when the ground is highly heated, as in the case of a semi-arid and sub-tropical region, the ascending hot air and the cooler air which descends to take its place will probably produce a general haziness throughout the hottest time of the day. Further, the increased velocity of the wind after midday raises a considerable amount of fine dust which remains in suspense until sunset, and diminishes the visibility of objects at a distance.

Clouds are rare in the summer months, and the few that do occur are cirrus clouds which are situated at high altitudes. Occasionally, when unsettled weather is imminent, overcast skies are experienced, but these are uncommon and do not usually last for any time.

The difference between the highest and lowest temperatures in any month is very considerable; the mean range, or the difference which is ordinarily experienced in the course of the various months, is given in the following table:

MEAN MONTHLY RANGE OF TEMPERATURE

Month.	*Mosul.* ° F.	*Baghdad.* ° F.	*Babylon.* ° F.	*Basra.* ° F.	*Bushire.* ° F.
January	41·2	41·1	43·0	37·3	35·2
February	40·8	41·9	45·9	37·7	30·7
March	36·4	45·0	48·8	37·7	35·5
April	45·2	43·5	54·0	37·6	36·9
May	41·8	46·5	50·8	38·0	33·5
June	44·7	42·5	49·2	30·9	26·7
July	44·3	42·7	47·5	32·3	24·8
August	44·1	45·4	49·4	33·8	27·0
September	**47·7**	**47·7**	**53·1**	39·8	27·1
October	44·8	47·4	51·0	39·8	30·0
November	44·1	45·5	51·4	**40·3**	**34·5**
December	34·8	40·3	46·3	33·5	33·3

The average range of temperature in a single day is naturally much less, and is given below for the same places :

AVERAGE DAILY RANGE OF TEMPERATURE

Month.	*Mosul.* ° F.	*Baghdad.* ° F.	*Babylon.* ° F.	*Basra.* ° F.	*Bushire.* ° F.
January	18·0	21·3	20·3	16·2	13·0
February	17·7	22·8	24·6	16·4	12·6
March	18·9	23·3	26·7	17·3	13·4
April	22·5	24·7	26·8	18·8	14·1
May	27·0	25·4	29·0	19·6	13·5
June	28·9	28·4	33·6	18·9	11·2
July	29·6	29·8	35·1	21·5	11·0
August	**31·5**	**30·8**	36·3	23·5	13·0
September	31·1	**30·8**	**36·4**	**24·6**	14·8
October	28·4	29·3	31·7	22·7	**16·3**
November	22·5	24·6	27·9	18·3	15·6
December	18·0	20·5	23·0	13·7	13·3

The prevalent winds are shown in Table XI, p. 228, for the different stations at which observations have been made. The north-westerly and northerly winds blow with great steadiness, especially in summer when there is a steep pressure gradient from the north of Mesopotamia to the Persian Gulf. In consequence of heating, the lower layers of air which are in contact with the ground rise, and in this way a mixing of the lower and upper air takes place as the day advances. The result is that the more rapid motion of the upper layers is imparted to the lower layers with which they are being mixed, and increased velocity of the surface wind in the midday and afternoon hours is thus brought about.

Observations of atmospheric pressure have been made at few places in Mesopotamia, but from these and others in the Persian Gulf, in Syria, Egypt, Arabia, and India the general trend of the isobars can be deduced for the summer months, May to October, when there is a well-defined pressure gradient towards the Persian Gulf. In the winter months the gradient is slight, and the data are insufficient for reliable deductions to be made of the velocity of the upper air currents. An approximate value can, however, be obtained for the summer months, and the

estimated velocity of the winds at from 1,500 to 4,000 feet (gradient wind) is given in the following table :

ESTIMATED VELOCITY OF THE GRADIENT WIND IN LOWER MESOPOTAMIA, BAGHDAD TO BASRA

	June.	*July.*	*Aug.*	*Sept.*	*Oct.*
Metres per second	9·4	7·0	5·4	5·4	10·9
Miles per hour	21·0	15·7	12·1	12·1	24·4

Farther eastward these velocities appear to increase to 30·0, 25·6, 24·8, 23·7, and 24·4 miles per hour respectively.

In the summer half-year the change of pressure (reduced to sea-level) is comparatively rapid as the Tigris or Euphrates is ascended, and the average increase of pressure for Mesopotamia may be taken as being about 1 mb. for 125 kilometres or 77·7 statute miles, in going from the head of the Persian Gulf to Upper Mesopotamia. In the months before and after July the gradient is less, but from October to April the distribution of pressure is too imperfectly known for isobars of any reliability to be drawn. The lines shown on the maps must be regarded as merely approximate so far as this area is concerned.

TABLES

Summary

TABLE		PAGE
I.	Mean Temperature	220–1
II.	Mean Daily Maximum Temperature	220–1
III.	Mean Monthly Maximum Temperature	220–1
IV.	Absolute Maximum Temperature	222–3
V.	Mean Daily Minimum Temperature	222–3
VI.	Mean Monthly Minimum Temperature	222–3
VII.	Absolute Minimum Temperature	224–5
VIII.	Relative Humidity	224–5
IX.	Mean Monthly Rainfall	226–7
X.	Rain Days	226–7
XI.	Wind Directions, as Percentages of Total Observations	228–31
XII.	Thunderstorms	230–1
XIII.	Mean Amount of Cloud	230–1

TABLE I

Mean Temperature

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Upper Mesopotamia :						
Urfeh	*40·3*	47·8	52·3	62·6	71·2	81·7
Diarbekr	*30·9*	40·5	47·5	58·5	68·2	78·8
Mosul	*41·0*	46·0	52·0	62·6	76·5	86·5
Lower Mesopotamia :						
Baghdad	*48·8*	52·8	59·2	68·0	78·8	87·3
Babylon	*46·6*	53·8	61·9	76·1	84·0	91·3
Basra *	*51·8*	55·6	63·0	72·9	81·9	87·3
Mohammareh †	—	—	—	—	86·4	90·1
Persian Gulf :						
Bushire	*57·5*	58·8	64·5	72·9	81·1	84·9
Bahrein *	*61·2*	62·2	67·2	74·3	83·1	87·2
Jask	*66·7*	67·9	71·3	79·0	84·3	88·2
Muscat	*69·3*	69·8	73·2	81·9	87·6	**89·7**

TABLE II

Mean Daily Maximum Temperature

Upper Mesopotamia :						
Diarbekr	*39·0*	48·2	56·1	67·6	78·6	90·3
Mosul	*50·0*	54·9	61·5	73·9	90·0	100·9
Lower Mesopotamia :						
Baghdad	*59·5*	65·8	72·9	82·8	93·7	104·5
Babylon	*57·2*	66·7	75·4	85·6	97·7	106·3
Basra	*59·9*	65·4	73·6	83·8	93·9	99·7
Persian Gulf :						
Bushire	*64·4*	65·5	72·4	81·2	89·1	91·8
Bahrein	*66·7*	67·5	73·8	81·4	90·7	93·9
Jask	*73·8*	74·8	79·2	86·5	92·2	95·9
Muscat	*73·5*	73·9	78·4	86·5	93·7	**95·9**

TABLE III

Mean Monthly Maximum Temperature

Upper Mesopotamia :						
Urfeh	*53·2*	60·1	71·4	82·0	90·9	100·6
Diarbekr	*47·5*	54·7	65·3	77·4	87·1	99·9
Mosul	*60·4*	64·8	70·9	84·9	97·0	108·7
Lower Mesopotamia :						
Baghdad	*68·6*	75·9	85·0	93·7	106·1	113·4
Babylon	*69·1*	76·8	87·3	99·9	109·6	114·3
Basra	*70·0*	75·1	83·2	93·3	103·2	106·3
Persian Gulf :						
Bushire	*75·4*	75·6	86·2	94·3	101·2	100·9
Bahrein	*76·6*	*75·2*	85·7	92·6	102·6	101·4
Jask	*78·7*	81·4	87·9	92·0	101·6	**104·5**
Muscat	80·7	*79·2*	89·4	96·5	104·5	**106·6**

* Deduced from $\frac{\text{Max. Min.}}{2}$—a correction derived from the observation of Baghdad and Bushire respectively.

† For 1885 only.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Upper Mesopotamia :
88·9	**88·9**	80·4	70·0	55·4	46·0	Urfeh.
87·4	87·3	76·5	63·9	50·4	40·1	Diarbekr.
94·8	93·4	85·5	73·2	59·0	48·2	Mosul.
						Lower Mesopotamia :
92·1	**92·5**	86·0	76·3	61·5	52·5	Baghdad.
94·8	93·7	88·0	77·2	61·3	50·9	Babylon.
90·2	**90·7**	85·3	77·4	64·9	56·0	Basra.*
94·8	92·1	—	—	—	—	Mohammareh.†
						Persian Gulf :
88·5	**89·4**	85·8	78·2	69·6	61·6	Bushire.
90·3	**91·2**	87·8	80·9	73·7	65·0	Bahrein.*
89·0	88·2	86·3	81·8	75·4	70·2	Jask
88·2	85·0	84·4	82·2	77·1	72·4	Muscat.

						Upper Mesopotamia :
99·0	98·1	86·0	73·8	58·1	48·0	Diarbekr.
110·1	109·0	101·1	87·4	70·2	57·4	Mosul.
						Lower Mesopotamia :
109·4	**110·0**	103·3	92·3	75·1	63·1	Baghdad.
110·5	**110·7**	105·8	93·0	75·7	62·4	Babylon.
103·3	**104·5**	99·5	89·1	75·3	63·3	Basra.
						Persian Gulf :
95·3	**96·9**	94·0	87·6	77·9	68·5	Bushire.
97·7	**98·4**	94·6	88·5	79·9	70·8	Bahrein.
96·0	94·3	93·0	90·3	83·4	77·6	Jask.
93·2	89·1	89·1	88·2	82·5	76·9	Muscat.

						Upper Mesopotamia :
104·0	**104·2**	95·5	87·4	72·5	59·2	Urfeh.
105·3	105·1	92·8	83·3	68·2	59·9	Diarbekr.
116·6	115·0	109·8	96·1	81·0	65·7	Mosul.
						Lower Mesopotamia :
116·8	**119·5**	112·6	101·8	86·9	72·1	Baghdad.
116·4	**117·0**	114·1	101·7	86·5	73·2	Babylon.
108·5	**109·2**	106·0	97·5	86·8	72·0	Basra.
						Persian Gulf :
102·3	**104·4**	99·7	94·0	88·2	79·0	Bushire.
102·7	**103·8**	100·7	95·2	89·2	79·7	Bahrein.
103·6	101·3	99·8	96·8	88·7	82·8	Jask.
103·1	98·8	98·3	97·0	90·1	83·1	Muscat.

TABLE IV

Absolute Maximum Temperature

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Upper Mesopotamia :						
Urfeh	*59·0*	69·1	83·1	89·4	97·3	106·3
Diarbekr	*51·7*	60·1	65·7	79·7	91·6	104·9
Mosul	*62·6*	66·4	71·1	87·6	103·5	110·3
Lower Mesopotamia :						
Baghdad	*79·9*	84·8	98·8	99·1	109·9	119·2
Babylon	*75·4*	81·7	95·7	105·3	114·1	120·7
Basra	80·1	83·3	91·9	99·9	114·2	111·4
Mohammareh *	—	—	—	—	98·4	106·3
Persian Gulf :						
Bushire	*80·0*	84·6	104·7	102·5	106·5	109·3
Bahrein	*83·7*	83·2	95·2	96·5	**108·8**	106·7
Jask	*82·2*	88·3	92·3	102·2	110·2	109·8
Muscat	85·9	*85·3*	96·8	103·3	110·3	**114·3**

TABLE V

Mean Daily Minimum Temperature

Upper Mesopotamia :						
Diarbekr	*26·4*	33·4	38·8	49·3	58·5	65·5
Mosul	*32·0*	37·2	42·6	51·4	63·0	72·0
Lower Mesopotamia :						
Baghdad	*38·2*	43·0	49·6	58·1	68·3	76·1
Babylon	*36·9*	42·1	48·7	58·8	68·7	72·7
Basra	*43·7*	49·0	56·3	65·0	74·3	80·8
Persian Gulf :						
Bushire	*51·4*	52·9	59·0	67·1	75·6	80·6
Bahrein	*56·4*	57·6	63·0	69·7	78·0	83·1
Jask	*60·6*	62·0	66·6	73·2	78·4	83·3
Muscat	*67·1*	67·5	72·0	79·7	85·7	**88·5**

TABLE VI

Mean Monthly Minimum Temperature

Upper Mesopotamia :						
Urfeh	*27·1*	31·3	35·6	44·6	52·7	61·2
Diarbekr	*10·9*	22·3	29·5	39·6	51·8	55·9
Mosul	*19·2*	24·4	34·5	39·7	55·2	64·0
Lower Mesopotamia :						
Baghdad	*27·5*	34·0	40·0	50·2	59·6	70·9
Babylon	*26·1*	30·9	38·5	45·9	58·8	65·1
Basra	*32·7*	37·4	45·5	55·7	65·2	75·4
Persian Gulf :						
Bushire	*40·2*	44·9	50·7	57·4	67·7	74·2
Bahrein	*46·7*	49·6	54·4	60·7	70·3	76·1
Jask	*50·6*	54·3	58·5	65·4	72·3	78·1
Muscat	*60·6*	62·8	65·7	71·5	79·3	**83·2**

* For 1885 only.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Upper Mesopotamia :
110·7	108·5	101·8	90·5	78·8	61·7	Urfeh.
106·2	**107·8**	93·2	84·9	69·8	62·4	Diarbekr.
118·8	117·7	113·9	97·0	86·5	71·8	Mosul.
						Lower Mesopotamia :
120·2	**121·0**	117·2	108·0	95·3	81·0	Baghdad.
119·3	**121·3**	116·1	104·4	90·9	80·8	Babylon.
114·4	113·9	109·4	101·4	92·4	76·6	Basra.
110·5	**113·2**	—	—	—	—	Mohammareh.*
						Persian Gulf :
109·5	**115·0**	107·5	101·0	91·3	86·6	Bushire.
105·7	107·5	105·4	104·7	92·4	84·1	Bahrein.
111·8	106·7	104·8	102·2	92·3	86·3	Jask.
110·3	105·3	102·8	102·3	96·3	88·3	Muscat.

						Upper Mesopotamia :
75·0	74·8	64·0	53·2	44·4	36·1	Diarbekr.
79·5	77·5	70·0	59·0	47·7	39·4	Mosul.
						Lower Mesopotamia :
79·6	79·2	72·5	63·0	50·5	42·6	Baghdad.
75·4	74·5	69·4	61·3	47·8	39·4	Babylon.
81·8	81·0	74·9	66·4	57·0	49·6	Basra.
						Persian Gulf :
84·3	83·9	79·2	71·3	62·3	55·2	Bushire.
85·4	**86·1**	82·5	76·0	68·4	59·7	Bahrein.
85·5	84·1	81·1	75·9	69·0	64·0	Jask.
87·5	84·0	83·1	80·6	75·2	70·3	Muscat.

						Upper Mesopotamia :
69·8	69·4	57·4	51·6	41·4	32·7	Urfeh.
69·3	**69·4**	55·8	44·2	36·5	29·1	Diarbekr.
72·3	70·9	62·1	51·3	36·9	30·9	Mosul.
						Lower Mesopotamia :
74·1	**74·1**	64·9	54·4	41·4	31·8	Baghdad.
68·9	67·6	61·0	50·7	35·1	26·9	Babylon.
76·2	75·4	66·2	57·7	46·5	38·5	Basra.
						Persian Gulf :
77·5	77·4	72·6	64·0	53·7	45·7	Bushire.
80·0	**80·5**	76·4	69·1	60·8	51·0	Bahrein.
82·3	79·9	75·4	69·2	62·1	58·0	Jask.
81·7	78·7	79·2	75·3	69·7	65·6	Muscat.

TABLE VII

Absolute Minimum Temperature

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Upper Mesopotamia :						
Urfeh	23·0	22·1	30·2	39·2	45·5	53·6
Diarbekr	*−0·4*	17·2	26·1	36·5	46·0	52·9
Mosul	*4·3*	5·2	34·5	37·6	53·2	61·9
Lower Mesopotamia :						
Baghdad	20·8	29·8	33·5	43·8	50·0	62·8
Babylon	20·8	25·9	32·9	41·7	57·7	61·3
Basra	*23·7*	31·1	39·7	52·3	59·1	70·3
Mohammareh *	—	—	—	—	67·8	71·8
Persian Gulf :						
Bushire	*32·0*	37·2	45·4	50·4	57·7	67·2
Bahrein	*40·8*	44·8	51·3	57·3	65·3	72·3
Jask	*41·8*	51·3	47·3	61·3	69·3	73·7
Muscat	*57·5*	62·7	62·1	70·6	78·1	**78·3**

TABLE VIII

Relative Humidity (Mean of Day)

Upper Mesopotamia :						
Urfeh	50	53	48	43	36	29
Mosul	87	87	78	76	65	43
Lower Mesopotamia :						
Baghdad †	80	72	71	60	52	38
Babylon	67	55	47	42	34	26
Basra †	79	76	71	66	61	58
Persian Gulf :						
Bushire	78	77	71	66	62	66
Bahrein	80	80	78	74	68	66
Jask	74	75	73	68	68	71
Muscat	68	69	68	59	59	64

* For 1885 only. † 8 a.m. only.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Upper Mesopotamia :
66·2	**67·1**	51·8	48·2	37·6	*19·4*	Urfeh.
67·5	66·2	54·3	43·5	32·9	16·3	Diarbekr.
71·2	67·1	58·3	48·9	29·1	27·9	Mosul.
						Lower Mesopotamia :
71·1	68·9	56·0	47·5	29·5	*18·6*	Baghdad.
60·1	**63·0**	57·2	46·0	27·1	*18·9*	Babylon.
70·7	68·7	59·7	52·5	35·7	29·9	Basra.
80·8	75·9	—	—	—	—	Mohammareh.*
						Persian Gulf :
74·0	69·1	63·2	55·4	46·3	39·4	Bushire.
76·8	**79·3**	74·4	55·9	52·9	43·0	Bahrein.
76·2	**76·8**	70·0	65·2	52·3	53·8	Jask.
77·3	77·1	77·3	74·7	67·1	63·5	Muscat.

						Upper Mesopotamia :
26	28	29	34	49	50	Urfeh.
46	64	61	72	80	86	Mosul.
						Lower Mesopotamia :
39	42	44	52	66	80	Baghdad.*
24	22	25	35	51	67	Babylon.
59	59	62	68	71	79	Basra.*
						Persian Gulf :
67	68	67	65	68	75	Bushire.
68	74	74	77	79	82	Bahrein.
74	77	74	69	69	72	Jask.
75	81	75	66	66	68	Muscat.

TABLE IX

Mean Monthly Rainfall (inches)

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Upper Mesopotamia :						
'Aintāb	3·23	3·54	2·76	2·36	1·30	0·24
Urfeh	2·64	2·64	**2·91**	1·18	0·87	0·04
Diarbekr	2·05	1·97	**4·10**	2·84	1·54	0·16
Mosul	2·49	3·06	**3·37**	2·09	0·48	0·11
Lower Mesopotamia :						
Baghdad	1·04	1·37	**1·41**	0·81	0·23	—
Babylon	0·95	0·36	**1·09**	0·20	0·02	—
Basra	**1·17**	1·05	1·09	0·48	0·46	—
Persian Gulf :						
Bushire	2·68	2·06	0·91	0·48	0·02	—
Bahrein	0·37	0·59	0·38	0·17	0·10	—
Jask	0·79	0·86	0·77	0·06	—	0·05
Muscat	**1·08**	0·78	0·76	0·11	—	0·15

TABLE X

Rain Days (>0·2 mm. or 0·008 in. of rain)

Upper Mesopotamia :						
Urfeh	7·9	9·2	**11·3**	8·8	5·9	0·6
Diarbekr	7·0	7·0	**13·0**	12·0	6·0	2·5
Mosul	8·0	**11·0**	9·3	9·6	5·3	0·5
Lower Mesopotamia :						
Baghdad	2·2	2·4	**3·6**	2·1	0·7	—
Babylon	**5**	4	4	3	1	—
Basra	**2·6**	2·5	2·1	1·5	1·2	—
Persian Gulf :						
Bushire	**4·2**	3·8	2·2	1·1	—	—
Bahrein	0·9	**1·7**	1·1	0·9	0·2	—
Jask	**2·2**	1·8	1·7	0·2	—	0·1
Muscat	1·8	1·6	**1·9**	0·4	—	0·2

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Upper Mesopotamia :
0·08	—	—	1·06	3·35	**4·13**	'Aintāb.
—	—	0·16	0·47	1·81	2·72	Urfeh.
—	—	0·04	0·71	3·15	2·68	Diarbekr.
—	—	0·31	0·26	2·10	1·91	Mosul.
						Lower Mesopotamia :
—	0·05	—	0·08	0·79	1·17	Baghdad.
—	—	—	0·40	0·45	0·78	Babylon.
—	—	0·19	0·08	0·89	0·82	Basra.
						Persian Gulf :
—	0·01	—	0·10	1·56	**3·25**	Bushire.
—	—	—	0·01	0·04	**0·81**	Bahrein.
0·01	—	—	0·04	0·32	**1·27**	Jask.
0·02	—	—	0·07	0·35	0·62	Muscat.

						Upper Mesopotamia :
—	—	0·8	3·2	7·8	9·5	Urfeh.
—	—	2·5	4·5	10·0	12·0	Diarbekr.
—	—	0·7	2·5	6·0	7·0	Mosul.
						Lower Mesopotamia :
—	0·1	—	0·3	1·5	3·1	Baghdad.
—	—	—	2	3	5	Babylon.
—	—	0·3	0·2	1·8	2·5	Basra.
						Persian Gulf :
—	—	—	0·2	2·4	4·1	Bushire.
—	—	—	0·1	0·3	1·7	Bahrein.
—	—	—	0·2	0·6	2·1	Jask.
0·1	—	—	0·1	0·8	1·3	Muscat.

TABLE XI

Wind Directions as Percentages of Total Observations

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Urfeh :						
N.	14	11	9	9	11	11
NE.	10	**13**	12	6	11	4
E.	10	**13**	12	6	4	2
SE.	9	11	**14**	12	4	4
S.	3	7	6	7	2	2
SW.	6	8	9	10	**15**	13
W.	14	15	19	16	12	**20**
NW.	34	22	19	34	41	44
Mosul :						
N.	13·9	14·6	8·4	14·7	**23·1**	21·9
NE.	8·4	4·9	3·3	3·4	5·1	3·9
E.	10·2	**15·0**	14·7	10·2	10·7	3·0
SE.	15·4	15·3	**23·7**	20·6	13·8	4·5
S.	6·6	**11·7**	11·4	6·1	4·5	1·1
SW.	5·5	5·2	4·0	5·9	2·9	6·7
W.	11·7	13·7	14·4	12·1	13·5	19·8
NW.	28·2	19·5	20·1	27·0	26·4	35·7
C.	—	—	—	—	—	3·4
Baghdad :						
N.	12·9	12·4	15·6	13·6	18·1	**30·8**
NE.	0·3	1·9	1·7	4·4	4·8	5·0
E.	1·0	1·9	**3·7**	2·1	1·9	0·7
SE.	1·7	4·3	**5·7**	1·7	1·3	1·0
S.	7·5	9·3	**10·1**	7·0	3·2	0·6
SW.	**2·7**	—	1·3	1·7	2·2	—
W.	7·5	5·4	3·7	7·0	5·6	2·0
NW.	12·2	11·6	8·1	13·6	15·8	34·2
C.	54·0	53·1	50·1	49·0	47·0	25·8
Babylon :						
N.	13·1	18·6	15·2	17·8	21·8	**23·9**
NE.	4·9	4·5	5·5	**7·7**	5·7	2·1
E.	5·9	7·4	6·8	**7·2**	7·1	2·4
SE.	18·0	**20·1**	17·3	12·7	9·3	2·7
S.	7·2	5·7	**8·7**	6·7	7·7	2·0
SW.	4·4	5·7	5·3	**5·6**	5·1	2·5
W.	17·0	15·5	13·1	13·0	14·7	15·8
NW.	26·7	20·3	26·0	26·3	26·7	47·0
C.	2·6	2·3	2·4	2·9	1·9	1·6
Basra :						
N.	29·3	21·6	19·8	33·4	27·2	27·1
NE.	0·6	2·2	**4·5**	3·7	2·4	0·7
E.	—	1·3	1·3	1·8	**2·4**	0·7
SE.	6·4	3·6	**8·6**	3·7	4·5	1·0
S.	17·7	20·6	**23·0**	17·8	10·0	4·2
SW.	5·8	6·8	3·1	6·3	3·9	1·8
W.	13·5	14·4	8·9	11·6	15·1	20·1
NW.	14·4	15·8	12·3	11·6	15·7	**41·6**
C.	12·3	13·7	18·5	10·0	18·8	2·8

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Urfeh :
6	11	12	9	**15**	**15**	N.
8	7	8	6	11	**15**	NE.
2	5	2	2	8	**18**	E.
3	3	4	8	**17**	9	SE.
4	2	6	5	3	7	S.
11	14	**15**	14	5	2	SW.
12	15	12	12	11	15	W.
54	43	41	44	30	19	NW.
						Mosul :
18·6	17·8	16·7	14·3	11·6	14·7	N.
2·5	2·0	3·0	4·2	5·9	**8·7**	NE.
5·9	4·2	3·9	6·0	8·6	5·9	E.
4·5	4·2	6·2	10·0	14·8	10·8	SE.
2·5	3·0	5·3	3·0	4·8	8·5	S.
5·6	7·5	5·9	7·1	7·4	6·2	SW.
20·6	**23·6**	20·8	21·4	13·9	12·7	W.
39·8	37·6	38·0	34·0	33·0	32·5	NW.
—	—	—	—	—	—	C.
						Baghdad :
18·4	20·2	22·5	20·6	14·4	11·3	N.
1·0	1·7	2·8	3·3	1·7	1·0	NE.
—	1·0	1·0	**2·6**	1·7	1·3	E.
0·3	0·7	1·4	1·3	1·7	**4·9**	SE.
—	—	1·0	2·9	6·2	5·9	S.
—	0·3	0·3	1·6	2·0	1·6	SW.
7·1	6·7	6·5	2·0	2·7	4·3	W.
50·3	38·2	22·5	12·5	11·6	11·2	NW.
22·9	31·2	42·0	53·2	58·0	58·4	C.
						Babylon :
15·8	15·0	16·5	18·7	11·0	10·7	N.
1·3	2·1	5·5	**6·6**	5·0	3·7	NE.
1·3	1·2	2·2	**5·2**	4·9	4·0	E.
1·2	2·6	3·0	9·9	11·4	11·6	SE.
1·3	1·3	2·5	**5·8**	3·3	7·0	S.
2·2	1·6	3·9	**5·1**	4·8	3·1	SW.
18·6	**20·6**	17·3	12·4	18·3	18·2	W.
56·5	51·8	43·1	30·8	35·9	34·5	NW.
1·6	3·8	6·0	5·6	5·3	5·0	C.
						Basra :
32·8	22·1	6·2	16·1	11·6	15·3	N.
1·2	1·8	**4·7**	2·6	2·0	1·8	NE.
1·2	1·8	**2·3**	0·6	1·3	1·8	E.
1·5	2·4	3·1	4·5	**10·7**	5·7	SE.
5·2	6·7	2·3	9·7	**14·0**	11·5	S.
3·6	10·7	14·8	3·9	3·0	6·1	SW.
21·3	25·3	**40·6**	31·0	26·0	28·5	W.
27·9	22·5	13·3	10·3	16·7	18·5	NW.
5·2	6·7	12·5	**21·2**	14·7	10·8	C.

TABLE XI (*continued*)

Wind Directions as Percentages of Total Observations

SUMMARY

	Nov.–March.			*April–May.*		
Percentage.	W., NW., & N.	NE. & E.	SE., S., & SW.	W., NW., & N.	NE. & E.	SE., S., & SW.
Urfeh	52·4	24·4	23·2	61·5	13·5	25·0
Mosul	52·6	17·1	30·3	58·4	14·7	17·9
Baghdad	30·0	3·2	13·0	53·3	6·2	2·8
Babylon	58·8	10·5	26·7	60·2	13·9	23·6
Basra	53·3	3·4	29·3	57·3	2·1	23·1

TABLE XII

Thunderstorms

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Upper Mesopotamia :						
Urfeh	—	0·4	1·2	2·1	3·0	1·4
Diarbekr	—	0·3	1·0	4·0	1·7	2·5
Lower Mesopotamia :						
Babylon	1·0	2·0	2·4	4·8	4·6	0·8
,, Maximum in any year	2	5	4	8	10	2

TABLE XIII

Mean Amount of Cloud ‡

Upper Mesopotamia :						
Urfeh *	3·9	**4·7**	**4·7**	3·6	2·8	0·9
Mosul *	5·2	5·5	5·1	**5·6**	3·6	1·4
Lower Mesopotamia :						
Baghdad †	2·8	2·7	**2·9**	2·1	1·6	0·3
Babylon *	**4·3**	3·9	3·6	3·9	3·2	0·9
Basra †	3·6	3·4	**3·9**	2·7	2·6	0·1
Persian Gulf :						
Bushire †	**3·9**	2·7	3·7	3·2	2·2	0·1
Bahrein †	**2·4**	1·8	1·8	1·0	0·9	0·2
Jask †	**2·8**	**2·8**	2·4	1·5	0·5	1·0
Muscat	2·8	2·3	2·3	1·1	0·7	1·8

* 8 a.m. only.
† Three observations at 8 a.m., 2 p.m., and 7.30 or 8.30 p.m.
‡ 0 = cloudless sky ; 10 = completely overcast.

June–Sept.			October.			
W., NW., & N.	NE. & E.	SE., S., & SW.	W., NW., & N.	NE. & E.	SE., S., & SW.	*Percentage.*
70·2	9·5	20·2	65·0	8·0	27·0	**Urfeh.**
77·7	14·2	7·8	69·7	10·2	20·1	**Mosul.**
64·9	3·3	1·4	35·1	5·9	5·8	**Baghdad.**
85·5	9·0	6·7	61·9	11·8	20·8	**Babylon.**
75·2	3·6	11·5	57·4	3·2	18·1	**Basra.**

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
						Upper Mesopotamia :
0·3	0·2	0·6	0·8	0·3	—	Urfeh.
—	—	2·0	1·3	1·5	0·3	Diarbekr.
						Lower Mesopotamia :
—	—	—	1·3	1·5	1·5	Babylon.
—	—	—	3	3	3	,, Maximum in any year.

						Upper Mesopotamia :
0·4	0·4	1·0	2·3	3·8	**4·7**	Urfeh.*
0·2	0·5	1·4	2·4	4·8	5·3	Mosul.*
						Lower Mesopotamia :
0·1	0·3	0·5	1·5	1·9	2·3	Baghdad.†
0·3	0·2	0·6	2·6	3·1	4·2	Babylon.*
0·1	0·2	0·5	1·9	2·2	3·5	Basra.†
						Persian Gulf :
0·7	0·8	0·6	1·1	2·7	3·2	Bushire.†
0·1	0·4	0·1	0·3	0·5	**2·4**	Bahrein.†
2·0	2·7	1·5	0·9	1·9	2·6	Jask.†
3·2	2·8	1·1	0·6	1·5	2·5	Muscat.

CHAPTER V

CLIMATE OF LOWER EGYPT INCLUDING SINAI PENINSULA

Physical Features

The territorial division of Lower Egypt represents the delta of the Nile, being divided from Upper Egypt (the Nile valley) at the parallel of 30° N., just south of Cairo, and the apex of the delta. The deltaic area measures 100 miles from S. to N., and its base on the shore of the Mediterranean Sea measures 155 miles from Alexandria (W.) to Port Said (E.). Along the shore the land consists mostly of low barren sandhills or saline waste, backed by a series of great salt or brackish lagoons—lakes Mareotis, Edku, Burlus, and Menzala. To the south the fertile plain of the delta slopes very gently upward to the apex, where the elevation is only some 30 ft. above sea-level. The plain is bounded east and west by the higher ground of the desert, which is not reached by the flood waters of the Nile.

The Suez Canal, leading from the Mediterranean at Port Said S. to the Gulf of Suez. Along the western shore of this gulf and of the Red Sea to the south extends a long chain of hills, which ultimately rise and broaden into the highlands of Eritrea and Abyssinia. The desert plateau of Et-Tih extends E. of the Suez Canal, and merges to the S. in the peninsula of Sinai, a triangular area bounded on the west and east respectively by the two deep gulfs at the head of the Red Sea, Suez and Akaba. The apex of the triangle is occupied by a mountain mass in which the principal peaks rise over 8,500 ft. These mountains rise steeply from the valleys at their feet, and they are sterile and almost bare, supporting hardly any vegetation.

General Conditions

From the point of view of climate Lower Egypt and the Sinai peninsula lie in the region of the eastern Mediterranean not far to the north of the tropic, and throughout the year they are within the area of northerly air currents which blow from cooler to warmer regions of the globe. The relief of the country is low, a system of comparatively high atmospheric pressure exists throughout the year over that part of the North African coast which lies to the west of Egypt, so that all the conditions are favourable for the development of the arid and semi-arid types of climate which give rise to the deserts of North Africa, Syria, and Arabia.

The Egyptian climate is characterized by a hot summer, tempered somewhat on the coast by the waters of the Mediterranean, a mild winter, a scanty rainfall in the winter months which does not extend southward beyond the delta of the Nile, and a prevalence of northerly winds at all seasons.

Although in winter the weather is at times unsettled during the passage of depressions over the eastern Mediterranean, the weather conditions of northern Egypt are very stable in their character, and remain the same for days and sometimes weeks together. November to February constitute the winter season when cloudy skies, occasional rain, and south-westerly winds occur; March and April are months of transition to the summer conditions which are established by May, and continue until the end of September, October being the month in which the change from summer to winter conditions takes place, as elsewhere in the southern Mediterranean. This division of the year into two seasons, winter and summer, is determined by changes in the pressure distribution which reaches its typical developments in January and July respectively. In January and the winter months the Mediterranean is an area of low pressure, while the principal area of high pressure is southern Russia and the Balkans (see p. 15); the northern coast of Africa also forms a ridge of comparatively high pressure on the south side of the Mediterranean. Conse-

quently the normal air circulation over Egypt is northerly, and the winds blow round the North African high pressure system over Egypt and the Red Sea, and towards a low-pressure system which at this season exists in the Sudan. In Lower Egypt this normal circulation is interfered with by the cyclonic depressions which traverse the eastern Mediterranean and cause south-westerly and westerly winds on the Egyptian coast, but these winds do not extend as a rule far into Middle Egypt, and in Upper Egypt, Nubia, and the Sudan the northerly winds blow with great steadiness. By April the low pressure in the Sudan has greatly diminished, and that which occupies Mesopotamia and the Persian Gulf in the summer months has begun to form. Both in March and April the low pressure over the Mediterranean is less strongly marked than in the winter months, and winter conditions are now changing to those of the summer.

By June summer conditions are well established; a low pressure exists over the Persian Gulf, and there is also a steep gradient from the Aegean Sea to the head of the Gulf; North Africa is a region of moderately high pressure, while a well-marked easterly gradient is maintained over Egypt from the Mediterranean to latitude 20° N. Consequently northerly and north-westerly winds blow with great steadiness over Greece and the Aegean Sea, the eastern Mediterranean, Egypt, and the Red Sea as far as latitude 20° N. during the summer months, that is until the end of September. In October the low pressure of the Persian Gulf disappears, that of the Sudan is reformed, and in southern Russia and over the Balkans the pressure rises considerably; depressions again traverse the Mediterranean with increasing frequency, and by November winter conditions are completely re-established.

Meteorological Stations

During the last fifteen years a well-arranged network of meteorological stations has been established in the Nile valley and the Sudan, but for Lower Egypt the following stations will suffice:

Place.	*Altitude. Feet.*	*Latitude N.* °	′	*Longitude E.* °	′	*Period of Observations. Years.*
Sidi Barrani	88	31	38	25	58	3
Alexandria	104	31	12	29	54	30–45
Port Said	11	31	16	32	19	22–27
El Arish	62	31	7	33	46	6
Cairo (Abbassia)	100	30	5	31	17	18–45
Ismailiyeh	29	30	36	32	18	13–22
Suez	11	29	59	32	33	16–22
Nekhl	1,300	29	54	33	45	5
Helwan	380	29	52	31	20	9
Tor	5	28	14	33	37	6
Red Sea, near Ras Mohammed	0	27	0	35	0	—

The first five stations are on the Mediterranean coast, Abbassia and Helwan are respectively on the north, and a short distance to the south, of Cairo; Ismailiyeh and Suez are on the Suez Canal; Nekhl is in the northern portion of the Sinai Peninsula; and Tor is on the eastern shore of the Gulf of Suez.

Notes on the Tables

Temperature

In January, which is the month of the lowest temperature, the mean temperature of the day (Table I, p. 244) is nowhere in Lower Egypt as low as 50° F., and at Nekhl on the plateau of northern Sinai is 47° F. The highest mean temperature occurs in July or August, there being little difference between these two months. The temperature rises quickly in April and May, and falls most rapidly from October to November and November to December with the commencement of winter.

In Table II, p. 244, the mean daily maximum temperature for places in Lower Egypt shows the mild character of the winter and the hot summer which lasts from May to September. The mean monthly maximum temperature (Table III, p. 244) represents the highest temperature which may be ordinarily anticipated in a month, and it appears that temperatures exceeding 100° F. occur ordinarily in any of the five months May–September. Exceptionally they may occur in any

month except the four winter months November to February (Table IV, p. 246).

At no station does the mean daily minimum temperature fall below 32° F., though it is very near it on the plateau of North Sinai as represented by Nekhl ; and here, as at most parts of the high desert, very sharp frosts occur occasionally (Tables VI, VII, pp. 246, 248). On the coast the moderating effect of the Mediterranean is strongly felt, and the minimum temperatures at Cairo are considerably below those of Port Said and Alexandria. In Middle Egypt, where the effect of the desert plateau is more strongly felt, the night temperatures are frequently even lower than those at Cairo. The comparatively low night temperatures in the summer months (Table V, p. 246) are of great hygienic importance, providing a relief from the heat of the day.

The mean range of temperature for any month is given in Table VIII, p. 248, and in so arid a climate the amount is naturally large. At several stations it exceeds 50° F. in April, and at the two desert stations, Sidi Barrani and Nekhl, it may exceed 60° F. The mean daily range of temperature in this month varies from 16° F. at Alexandria to 23° F. at Cairo and 34° F. at Nekhl.

Humidity

On the coast the air is moist at all seasons, though in the afternoon during the summer months it is comparatively dry. Inland, except in winter, the air is usually very dry, and exceptionally so while the hot southerly winds are blowing even though the amount of moisture actually present in the air may not be inconsiderable.

The comparatively low night temperatures, especially in the deserts, cause an abundant deposit of dew except when unusually dry conditions prevail (Table IX, p. 248).

Rainfall

While Middle and Upper Egypt receive practically no rain beyond that which falls in an occasional thunderstorm, or during the rare passage of a small depression, Cairo receives

about an inch and a quarter on the average, some years being practically rainless, others recording two or three inches. The rain has no practical importance, since agriculture depends wholly on the Nile for the water needed for the crops. Further north in the Delta the amount of rain increases, as much as 8·5 inches being the average annual rainfall at Alexandria. During and after rain the unmetalled roads of the alluvial delta are almost impracticable. In the coastal region to the west of Alexandria the winter rain has a considerable economic importance, as the nomad Arabs utilize it to raise a crop of barley which is of value.

In the deserts bordering the Nile heavy but local rainstorms occur occasionally, and large quantities of water (Arab. *seil*) pour down the ordinarily dry valleys (*wadi*) for a few hours with considerable force. In southern Sinai where the country is mountainous, and the valleys are steep-sided and narrow, the Arabs avoid camping on the valley floor in the autumn when thunderstorms are common, and in stormy weather, on account of the danger from these sudden floods (Tables X and XI, p. 250).

Winds

On the coast westerly and south-westerly winds predominate in December and January, when the depressions which pass along the eastern Mediterranean from west to east are most numerous. As these decrease the northerly and north-westerly winds increase in frequency until by May they blow with great steadiness and little variation in direction. Farther inland a similar seasonal change takes place, but the southerly winds are less frequent, and at Cairo the northerly winds are the more numerous at all seasons. Except in the winter months the diurnal change in the velocity of the wind is strongly marked. Beginning as a light breeze at sunrise, it increases steadily until it reaches a moderate or fresh breeze in the afternoon, falling to a light breeze again at or soon after sunset. While northerly winds largely predominate in Egypt, there is at all seasons a marked increase of the westerly

component farther towards the east, as is to be seen at El Arish, Nekhl, and the Syrian coast stations.

At Port Said the predominance of the northerly winds is replaced by that of the westerly winds from December to February, but farther to the eastward, at El Arish, no change of the predominant direction there (south-west) occurs, but the proportion of the southerly winds increases, showing the increased frequency of the winds caused by depressions off the Syrian coast. Similarly at Gaza on the Syrian coast the winter is characterized by a shift of the prevailing winds from west to south-west.

These changes may be seen in the accompanying summaries, where the numbers represent the percentage of the wind directions in each month which are recorded to each direction at three coast stations, Port Said, El Arish, and Gaza.

Further south the westerly winds are much less frequent except at Nekhl on the plateau of northern Sinai, where westerly winds prevail throughout the year and the seasonal change is shown by the increased frequency of south-westerly winds in winter, and of north-easterly winds in summer.

To the south of Suez the southerly winds are rare at all seasons, and at Tor the westerly winds are associated especially with the summer months, the mean wind direction being more northerly in winter, and more westerly in summer when the low pressure over the Persian Gulf has been established. South of the Sinai Peninsula in the Red Sea near Ras Mohammed the wind direction hardly shows any change and is NNW. throughout the year.

During the summer months few depressions pass over the eastern Mediterranean, and consequently disturbances are rare as soon as the transition period of April and May is past. The summer months are characterized by steady winds of no great force, which blow day after day in a direction which makes a slight angle with the isobars. Northerly winds prevail everywhere in Egypt and westerly winds in southern Syria, while westerly and west-south-westerly winds are the most frequent on the plateau of northern Sinai.

Winter Months

	Direction.	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Apr.*
Port Said . .	N. + NW.	33·6	22·8	23·0	26·9	34·6	41·4
	S. + SW.	16·9	25·2	26·6	22·9	14·0	8·1
El Arish . .	NW.	13·8	7·9	5·2	9·2	17·8	21·0
	S.	15·5	18·8	24·0	14·8	16·1	13·0
Gaza . . .	SW.	10·5	22·8	23·9	19·6	21·3	11·8
	W.	21·7	11·6	9·0	8·0	13·8	22·9
Suez . . .	N. + NW.	63·3	43·8	46·0	48·1	53·9	64·9
	S. + SW.	17·0	29·8	27·8	31·2	28·4	25·4
Nekhl . .	NE.	3·3	4·8	1·6	—	6·5	10·0
	SW.	17·5	17·0	25·8	36·0	15·2	15·0
Tor . . .	N. + NE.	48·5	53·1	54·1	51·6	36·1	16·7
	W. + NW.	44·8	39·7	34·7	37·0	48·2	61·5
Red Sea, near Ras Mohammed .	N. + NW.	78·7	77·4	74·2	73·8	72·6	74·1

Summer Months

	Direction.	*May.*	*June.*	*July.*	*Aug.*	*Sept.*	*Oct.*
Port Said . .	N. + NW.	48·6	63·8	69·6	72·9	67·7	48·7
	S. + SW.	5·3	4·0	4·5	3·6	4·2	6·0
El Arish . .	NW.	22·5	26·3	25·1	27·5	24·6	15·1
	S.	11·0	5·3	4·8	5·0	4·9	13·8
Gaza . . .	W.	29·3	30·5	29·0	24·5	27·2	25·5
	SW.	9·4	1·3	4·8	1·9	2·9	2·4
Suez . . .	N. + NW.	71·5	88·2	85·1	88·8	88·0	77·9
	S. + SW.	18·1	5·2	6·5	2·0	3·0	9·7
Nekhl . . .	NE.	9·7	14·2	10·5	13·7	30·0	23·4
	SW.	15·3	13·3	8·9	13·7	8·3	13·7
Tor . . .	N. + NE.	12·4	8·6	7·0	10·4	15·2	35·4
	W. + NW.	71·5	88·9	87·2	85·8	81·5	58·2
Red Sea, near Ras Mohammed .	N.+NW.	79·9	88·8	85·5	88·0	90·8	79·5

This is best shown by extracting the principal directions from the table of percentages of wind directions for each month (Table XII, p. 252), and the transition month of October may be conveniently included.

The general character of the air circulation over the peninsula of Sinai may be described therefore as showing a winter and a summer type. In the winter, winds on the coastal belt are mainly westerly and south-westerly. As more southerly areas are considered, the southerly component becomes less, and north-west is the general wind direction. On the plateau of northern Sinai, however, westerly winds predominate

throughout the year with a marked proportion of south-westerly winds in the winter months. In the summer the southerly and south-westerly winds diminish to an insignificant quantity, and on the Mediterranean coast of Egypt north-north-west is the predominant direction. Further eastward westerly winds prevail both at El Arish and Gaza, where the winds of the plateau of northern Sinai as represented by Nekhl follow the same direction. At Tor also the westerly component is more important now than the northerly, and the principal wind direction in summer is west-north-west.

The winds of Egypt and the Sinai peninsula are usually moderate except (*a*) during the passage of deep depressions (which are not often experienced except near the Mediterranean coast), or (*b*) when sudden squalls occur in connexion with the thunderstorms which are not infrequently experienced during the transition month of October and less commonly in April and May. Light winds prevail commonly in the morning and evening, increasing to moderate or fresh by midday and the afternoon, but winds of gale force are rare. Since the pressure distribution remains practically unchanged for many days or even weeks, especially in the summer months, moderate or fresh winds often blow steadily day after day, dropping at night, and recommencing in the morning.

While the Nile valley and the plateau regions of the desert experience the greatest steadiness of northerly winds, the mountainous character of the southern extremity of the Sinai peninsula alters the character of the westerly winds of its northern plateau. They acquire a more local character except on the shores of the Gulfs of Suez and Akaba, where the trend of the coastline influences the wind direction. In the interior, light winds are the rule even during the day time, and high winds are not very commonly experienced. Detailed observations from the Gulf of Akaba are not available, but the reports of surveying parties who were there from November until May speak of strong gusty winds up to gale force from the north-east. In the winter months low, some-

times very low, temperatures are experienced in the mountains of this part of the peninsula, for several peaks rise to altitudes of over 6,000 ft., and under anticyclonic conditions considerable masses of air will be cooled. This cold air, streaming down the mountain walls which contain the Gulf of Akaba, will give rise to such strong gusty winds as are described. They should not therefore occur in the summer months.

In the months of April and May passing depressions in the Mediterranean may cause hot southerly winds in Lower Egypt, especially if an area of high pressure is situated to the east of the Nile. An increase of temperature with a rapid fall in humidity indicates the commencement of this hot wind (*khamsin*). It blows at first from the south-east and increases rapidly in force during the day; the air is filled with fine dust or even sand carried by the wind and the temperature rises much above the ordinary daily maximum. These hot winds may last one, two, or even three days, ceasing when the direction veers rapidly to the north-west as the depression passes away to the eastward, and cooler weather sets in.

In the hot weather small cyclonic squalls (*habub*) occasionally occur, which are accompanied by dense clouds of sand and dust and violent gusts of wind. These pass by rapidly, and last as a rule but an hour or two.

Thunderstorms

Thunderstorms occur occasionally in the winter season, being rather more frequent in September and October than in the other months. The average number recorded in the year is three at Alexandria and four at Cairo.

Cloud

The amount of cloud is small at all times of year, and especially during the summer months, when the greater part of both day and night is practically cloudless. In September and October thick mists are common in the early morning, clearing away as the day becomes warm (Table XIII, p. 256).

Conditions affecting Aviation

The cause and effect of mirage have been discussed in an earlier chapter (pp. 215, 216). The range of temperature which may be anticipated is given in Table VIII, p. 248, and occasionally the figures there given may be exceeded.

The Helwan Observatory near Cairo is the only place in the eastern Mediterranean at which investigations of the upper air have been carried on. Observations have been made during the last eight years, and some of the conclusions arrived at may be extended to the air circulation over Egypt and to the Sinai peninsula. The northerly and north-westerly winds of the Nile valley are succeeded usually by westerly winds at an altitude which may be taken as varying from about 2,000 to 3,000 metres (6,600 to 10,000 ft.). It may be assumed that this holds over the Sinai peninsula, so that on its northern plateau westerly winds may be anticipated at all seasons and at all altitudes.

The velocity of gradient wind, which may be taken as representing the upper air currents up to about 5,000 ft., as deduced from the mean monthly distribution of pressure, is about 8 metres per second, or 18 miles per hour, and this is in reasonable agreement with the results obtained at Helwan. Under certain conditions, and especially when southerly winds are blowing into a depression which is passing to the northwards, velocities up to double this amount were recorded at 2,000 metres (6,600 ft.), but this is not of frequent occurrence.

TABLES

SUMMARY

TABLE.		PAGE
I.	Mean Temperature	244–5
II.	Mean Daily Maximum Temperature	244–5
III.	Mean Monthly Maximum Temperature	244–5
IV.	Absolute Maximum Temperature	246–7
V.	Mean Daily Minimum Temperature	246–7
VI.	Mean Monthly Minimum Temperature	246–7
VII.	Absolute Minimum Temperature	248–9
VIII.	Mean Monthly Range of Temperature	248–9
IX.	Relative Humidity	248–9
X.	Mean Monthly Rainfall	250–1
XI.	Number of Rain Days	250–1
XII.	Wind Directions as Percentages of Total Observations	252–6
XIII.	Mean Amount of Cloud	256

TABLE I

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani (3 yrs.)	*53·8*	55·8	56·3	62·4	67·3	70·7
Alexandria (45 yrs.)	*57·2*	58·3	60·8	64·9	69·6	74·3
Port Said (27 yrs.)	*56·3*	57·9	60·8	65·1	70·5	75·7
El Arish (6 yrs.)	*52·3*	54·5	58·1	63·5	69·6	73·8
Cairo (Abbassia) (45 yrs.)	*54·0*	56·8	62·15	69·8	76·5	81·3
Ismailia (13 yrs.)	*55·9*	59·7	63·1	70·3	75·6	79·8
Suez (16 yrs.)	*56·8*	60·6	64·4	71·4	78·1	82·0
Nekhl (5 yrs.)	*47·3*	50·9	55·9	63·9	72·0	74·7
Helwan (9 yrs.)	*52·7*	55·6	59·9	68·0	75·2	79·2
Tor (6 yrs.)	*56·3*	59·0	63·5	70·0	79·3	79·7

TABLE II

Mean Daily Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	62·6	64·8	65·8	73·2	78·4	80·1
Alexandria	64·4	66·6	69·6	74·3	79·0	82·4
Port Said	65·8	68·4	71·1	75·7	80·6	85·1
El Arish	63·7	66·9	69·8	75·6	80·2	83·3
Cairo	64·6	69·1	74·5	83·1	90·3	94·5
Ismailia	66·2	70·7	74·5	82·8	88·9	92·7
Suez	65·8	70·5	75·4	83·8	91·6	95·2
Nekhl	61·9	65·8	71·6	80·8	90·1	92·8
Helwan	64·2	68·0	73·0	82·8	90·3	93·7
Tor	69·6	71·6	79·3	82·2	88·2	92·1

TABLE III

Mean Monthly Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	74·1	75·9	78·3	95·2	**107·6**	100·6
Alexandria (5 yrs.)	72·9	74·8	81·5	94·5	**97·9**	95·7
Port Said (16 yrs.)	71·6	77·4	83·5	94·0	94·0	**95·0**
El Arish	76·5	84·4	88·7	**100·9**	99·3	94·1
Cairo	77·0	78·6	84·0	99·0	102·7	**104·0**
Ismailia	73·9	81·9	88·7	99·7	103·8	**105·3**
Suez	73·6	79·5	86·4	98·1	103·8	**105·4**
Nekhl	76·5	80·2	84·6	95·9	102·9	**103·8**
Helwan (5 yrs.)	78·6	80·6	85·8	100·4	**107·6**	106·0
Tor	79·5	82·8	88·5	98·1	101·5	**103·8**

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
74·3	**75·2**	73·9	69·1	64·9	57·9	Sidi Barrani (3 yrs.).
77·9	**78·8**	77·0	73·8	67·3	61·0	Alexandria (45 yrs.).
79·3	**80·2**	78·3	75·0	67·5	60·1	Port Said (27 yrs.).
76·8	**78·3**	75·7	71·8	63·0	55·8	El Arish (6 yrs.).
83·1	82·2	77·7	73·6	65·0	57·7	Cairo (Abbassia) (45 yrs.).
83·5	82·9	79·5	75·4	66·6	59·2	Ismailia (13 yrs.).
84·7	**84·9**	81·3	76·1	66·9	59·9	Suez (16 yrs.).
76·8	**77·5**	74·1	69·1	58·8	49·5	Nekhl (5 yrs.).
81·0	80·4	77·0	73·0	64·6	56·1	Helwan (9 yrs.).
81·1	**82·2**	79·3	74·5	66·6	59·2	Tor (6 yrs.).

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
82·2	83·7	**83·8**	78·4	82·2	66·6	Sidi Barrani.
86·5	**86·7**	84·7	81·5	74·8	68·0	Alexandria.
90·0	**90·3**	87·8	84·7	77·2	69·6	Port Said.
85·8	**86·5**	83·8	80·8	75·4	67·8	El Arish.
96·6	94·6	89·8	85·6	75·7	68·2	Cairo.
95·9	95·0	91·2	87·1	77·5	69·6	Ismailia.
97·5	96·6	92·8	87·6	77·0	69·1	Suez.
93·9	**94·5**	90·0	84·2	75·2	65·5	Nekhl.
95·4	94·1	89·4	84·7	75·9	67·3	Helwan.
93·6	**94·5**	88·0	82·9	77·7	71·8	Tor.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
92·5	87·5	96·8	94·3	86·2	72·3	Sidi Barrani.
90·7	89·8	93·9	92·7	82·8	75·4	Alexandria (5 yrs.).
94·3	93·6	90·0	90·0	83·0	74·3	Port Said (16 yrs.).
94·8	92·1	89·6	89·2	87·3	76·3	El Arish.
101·5	99·3	97·2	92·7	84·4	74·5	Cairo.
102·7	100·9	99·3	94·8	87·6	77·4	Ismailia.
104·0	102·9	100·0	96·6	86·0	75·7	Suez.
102·2	100·9	98·8	91·9	85·1	75·6	Nekhl.
103·3	101·7	97·9	94·3	85·6	75·2	Helwan.
103·1	102·7	99·0	89·4	86·5	78·4	Tor.

TABLE IV

Absolute Maximum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	84·0	80·2	84·9	103·1	111·2	**112·1**
Alexandria	81·0	91·4	102·9	102·2	104·9	**112·8**
Port Said (27 yrs.)	84·2	91·4	102·6	104·7	107·2	**109·4**
El Arish	86·0	88·7	95·9	**109·4**	106·7	98·6
Cairo	82·6	95·5	106·2	108·7	111·6	**116·0**
Ismailia	77·0	93·2	103·6	108·7	106·9	**113·9**
Suez	77·7	97·9	98·6	104·0	**113·0**	110·5
Nekhl	86·0	84·0	91·9	100·0	106·0	107·1
Helwan	84·9	84·2	95·7	107·8	111·2	**114·8**
Tor	86·0	89·6	94·1	**113·0**	106·7	108·5

TABLE V

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	45·0	*44·8*	46·8	52·2	55·9	61·2
Alexandria	*50·4*	52·2	54·5	58·1	63·5	68·9
Port Said	*48·2*	49·8	52·9	56·8	62·6	67·6
El Arish	*43·9*	45·3	48·7	53·2	57·4	61·7
Cairo	*44·2*	46·7	49·8	55·0	61·0	65·7
Ismailia	*45·8*	48·2	51·1	56·7	61·5	65·9
Suez	*47·7*	50·5	53·6	59·0	64·6	68·9
Nekhl	*32·7*	35·8	40·1	46·9	53·4	56·5
Helwan	*45·3*	46·9	50·5	57·0	63·1	67·3
Tor	*46·8*	48·2	54·0	61·3	67·5	73·0

TABLE VI

Mean Monthly Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	*37·4*	38·3	39·0	43·7	44·2	51·3
Alexandria	44·4	*42·6*	48·2	52·0	58·5	64·9
Port Said (16 yrs.)	*45·0*	47·0	49·5	53·8	59·4	66·2
El Arish	*35·2*	41·0	42·1	45·5	51·3	55·2
Cairo (6 yrs.)	*35·9*	39·3	43·0	47·1	54·3	61·9
Ismailia	*39·2*	43·2	44·1	48·0	54·9	60·6
Suez	*41·0*	44·2	46·4	50·7	56·7	63·9
Nekhl	*23·2*	27·9	28·2	36·9	45·1	50·4
Helwan	*38·3*	39·7	43·3	48·0	55·0	61·2
Tor	*39·9*	40·1	45·3	51·6	59·2	66·9

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
97·0	88·0	104·0	102·2	89·8	73·6	Sidi Barrani.
98·6	95·0	104·0	103·8	95·0	84·2	Alexandria.
106·5	101·1	102·6	99·3	93·6	82·4	Port Said (27 yrs.).
103·1	95·0	95·9	99·5	91·8	83·3	El Arish.
111·7	106·9	105·8	107·8	94·1	84·9	Cairo.
108·0	106·5	106·2	100·8	92·5	83·5	Ismailia.
111·2	109·4	107·2	104·0	88·5	79·5	Suez.
108·0	105·1	105·1	98·1	88·0	80·1	Nekhl.
108·3	103·6	106·2	104·5	93·2	83·8	Helwan.
107·6	109·4	104·0	94·1	89·1	82·4	Tor.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
66·9	68·0	64·2	60·6	54·7	49·6	Sidi Barrani.
72·9	74·1	71·8	68·5	61·7	54·3	Alexandria.
71·1	72·7	70·7	67·6	60·1	52·1	Port Said.
66·9	68·2	66·0	61·9	53·4	46·9	El Arish.
69·6	69·6	66·0	62·7	54·5	47·8	Cairo.
70·3	70·9	67·3	63·1	55·0	48·4	Ismailia.
72·3	72·9	69·8	65·7	56·8	50·7	Suez.
59·9	60·6	58·3	54·0	42·6	33·4	Nekhl.
69·4	70·0	67·3	64·4	56·5	48·7	Helwan.
74·3	75·2	72·0	63·9	55·6	48·6	Tor.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
56·3	60·4	54·9	49·1	43·7	44·8	Sidi Barrani.
68·7	71·1	66·0	58·5	53·4	46·8	Alexandria.
69·9	71·6	68·4	62·6	55·1	47·7	Port Said (16 yrs.).
60·4	63·7	60·1	56·1	44·1	38·7	El Arish.
65·1	66·6	60·9	56·8	46·4	41·0	Cairo (6 yrs.).
66·2	67·5	61·7	56·7	48·2	42·3	Ismailia.
68·0	68·9	63·3	58·8	48·2	42·6	Suez.
54·9	54·9	49·3	44·1	33·1	24·8	Nekhl.
64·0	65·8	61·9	55·6	47·8	42·8	Helwan.
69·4	69·4	64·4	56·5	47·7	40·8	Tor.

TABLE VII

Absolute Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	*36·5*	36·7	36·7	43·0	41·5	48·2
Alexandria	39·2	*37·4*	41·9	50·0	53·6	56·8
Port Said (27 yrs.)	34·5	34·5	37·4	41·0	45·0	48·6
El Arish	*29·3*	35·6	40·1	41·0	48·2	50·0
Cairo	*30·7*	34·2	37·8	42·3	48·2	57·2
Ismailia	34·5	39·9	40·6	42·8	51·8	57·2
Suez	34·7	41·0	39·2	45·0	53·6	61·7
Nekhl	19·9	25·7	21·9	34·0	41·7	45·7
Helwan	34·9	37·2	38·1	42·3	52·0	55·4
Tor	*38·3*	39·2	43·7	50·0	57·2	64·4

TABLE VIII

Mean Monthly Range of Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*Apr.* ° F.	*May.* ° F.	*June.* ° F.
Sidi Barrani	36·7	37·6	39·3	51·5	**63·4**	49·3
Alexandria	28·5	32·2	33·3	**42·5**	39·4	30·8
Port Said	26·6	30·4	34·0	**40·2**	34·6	28·8
El Arish	41·3	39·4	46·6	**55·4**	48·0	38·9
Cairo	41·1	39·3	41·0	**51·9**	48·4	42·1
Ismailia	34·7	38·7	44·6	**51·7**	48·9	44·7
Suez	32·6	35·3	40·0	**47·4**	47·1	41·5
Nekhl	53·3	52·3	56·4	**59·0**	57·8	53·4
Helwan	40·3	40·9	42·5	52·4	**52·6**	44·8
Tor	39·6	42·7	43·2	**46·5**	42·3	36·9

TABLE IX

Relative Humidity (per cent.)

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May.*	*June.*
Alexandria	68·8	*68·0*	68·2	69·3	72·2	74·1
Port Said	75·7	75·2	74·4	73·2	73·2	74·3
El Arish	76·2	77·0	74·0	*72·1*	72·7	78·5
Cairo	68·8	65·3	58·8	51·0	*47·0*	47·1
Suez	55·0	49·6	44·0	*38·0*	38·5	40·0
Ismailia	63·6	57·2	52·2	*47·0*	47·4	50·0
Helwan	62·3	55·5	53·1	45·8	*41·2*	44·1
Tor	55·0	54·0	*51·0*	58·0	61·0	63·0

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
55·4	59·0	51·8	45·5	37·4	44·8	Sidi Barrani.
63·5	64·4	60·3	54·0	46·4	*37·4*	Alexandria.
55·4	60·8	58·3	50·0	39·9	*32·0*	Port Said (27 yrs.).
56·3	59·9	57·2	53·6	34·7	35·6	El Arish.
59·0	59·9	55·4	51·4	38·3	33·8	Cairo.
63·7	64·4	55·4	53·6	44·6	*33·1*	Ismailia.
62·6	66·2	60·4	53·6	42·8	*32·9*	Suez.
51·1	53·6	45·0	39·9	23·0	*18·0*	Nekhl.
60·8	63·0	58·3	50·7	42·3	*34·3*	Helwan.
68·0	68·0	61·7	52·2	42·8	*38·3*	Tor.

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
36·2	27·9	41·9	45·2	42·5	27·5	Sidi Barrani.
22·0	18·7	27·9	34·2	29·4	28·6	Alexandria.
24·4	22·0	21·6	27·4	27·9	26·6	Port Said.
34·4	28·4	29·5	33·1	43·2	37·6	El Arish.
36·4	32·7	36·3	35·9	38·0	33·5	Cairo.
36·5	33·4	37·6	38·1	39·4	35·1	Ismailia.
36·0	34·0	36·7	37·8	37·8	33·1	Suez.
47·3	46·0	49·5	47·8	52·0	50·8	Nekhl.
39·3	35·9	36·0	38·7	37·8	32·4	Helwan.
33·7	33·3	34·6	32·9	38·8	37·6	Tor.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
76·0	75·2	71·1	71·0	69·1	70·0	Alexandria.
76·1	75·1	73·5	73·6	*72·6*	75·6	Port Said.
77·5	77·5	75·0	73·5	75·5	**79·7**	El Arish.
51·2	56·3	62·2	66·1	68·8	**70·8**	Cairo.
41·5	44·5	49·0	50·0	55·0	**58·0**	Suez.
53·0	55·0	58·0	59·0	62·0	**65·0**	Ismailia.
49·8	55·0	58·4	58·8	60·9	**64·1**	Helwan.
65·0	**65·5**	64·0	60·0	53·0	55·0	Tor.

TABLE X

Mean Monthly Rainfall (inches)

	Jan. ins.	*Feb.* ins.	*Mar.* ins.	*Apr.* ins.	*May.* ins.	*June.* ins.
Sidi Barrani	1·98	2·56	0·7	0·05	0·016	—
Mersa Matruh	2·64	0·93	0·78	0·06	—	—
Alexandria	2·25	1·23	0·67	0·15	0·04	—
Port Said	0·90	0·43	0·4	0·24	0·047	0·047
El Arish	1·15	0·71	0·72	0·47	0·13	—
Cairo	0·33	0·18	0·15	0·16	0·03	—
Ismailia	0·45	0·23	0·21	0·16	0·14	0·004
Suez	0·27	0·15	0·09	0·12	0·02	0·001
Nekhl	0·3	0·22	0·26	0·24	0·06	—
Helwan	0·38	0·12	0·21	0·38	0·035	—

TABLE XI

Number of Rain Days (>0·2 mm. or 0·008 in. of rain)

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May.*	*June.*
Sidi Barrani	9·7	7·3	2·7	1·0	0·3	—
Mersa Matruh	7·0	3·0	2·7	0·6	—	—
Alexandria	10·6	7·1	4·3	1·3	0·7	—
Port Said	5·8	2·2	2·1	1·2	1·2	0·05
El Arish	6·0	4·0	3·0	2·0	1·0	—
Cairo	4·2	1·9	2·1	0·76	0·6	—
Ismailia	5·3	3·9	3·5	0·8	1·4	0·1
Suez (days with rain)	3·5	2·0	1·4	1·0	0·5	0·2
Nekhl	3·4	2·2	1·2	1·6	0·2	—
Helwan	3·1	1·9	1·3	0·8	0·1	—

July. ins.	*Aug.* ins.	*Sept.* ins.	*Oct.* ins.	*Nov.* ins.	*Dec.* ins.	
—	—	0·016	0·62	0·57	1·83	Sidi Barrani.
—	—	—	1·27	0·89	1·04	Mersa Matruh.
—	—	0·07	0·31	1·43	2·38	Alexandria.
—	—	—	0·065	0·465	0·737	Port Said.
—	—	—	0·06	0·48	0·45	El Arish.
—	—	—	0·004	0·13	0·2	Cairo.
—	—	0·002	0·1	0·12	0·32	Ismailia.
—	—	—	0·04	0·118	0·2	Suez.
—	—	—	—	—	0·12	Nekhl.
—	—	—	0·016	0·08	0·114	Helwan.

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
—	—	0·3	2·3	2·3	6·7	Sidi Barrani.
—	—	—	2·3	4·0	4·1	Mersa Matruh.
—	—	0·4	1·2	5·9	9·5	Alexandria.
—	—	0·1	0·8	2·0	4·2	Port Said.
—	—	—	1·0	3·5	5·0	El Arish.
—	—	0·09	0·54	1·95	3·3	Cairo.
0·1	0·1	0·1	1·0	2·8	4·3	Ismailia.
—	—	—	0·8	1·2	2·4	Suez (days with rain).
—	—	—	—	—	1·2	Nekhl.
—	—	—	0·1	0·9	1·3	Helwan.

TABLE XII

Wind Directions as Percentages of Total Observations

JANUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani (3 yrs.)	11·6	6·4	4·3	4·0	7·0	33·0	31·7	1·9	0·0
Mersa Matruh (2 observations per diem, 8 a.m. 4 p.m., 3 yrs.)	34·9	2·7	1·6	—	4·3	3·8	26·8	25·8	—
Alexandria (30 yrs.)	16·2	7·9	10·9	7·2	10·7	13·3	11·1	16·7	6·1
Port Said (22 yrs.)	9·7	12·3	9·0	3·2	6·3	20·3	24·8	13·3	1·1
El Arish (7 yrs.)	2·1	0·5	—	0·2	24·0	46·5	13·1	5·2	8·4
Cairo (18 yrs.)	19·1	7·5	1·1	0·9	20·8	19·6	13·3	7·5	10·1
Ismailia (22 yrs.)	22·4	7·6	9·4	2·6	6·1	12·0	29·7	10·2	—
Suez (22 yrs.)	34·4	10·0	3·4	5·3	15·2	12·6	7·5	11·6	—
Nekhl (one observation per diem, 5 yrs.)	1·6	1·6	0·8	1·6	0·8	25·8	67·0	0·8	—
Helwan (9 yrs.)	18·8	22·1	9·4	8·2	10·0	9·5	6·7	12·4	2·8
Tor (7 yrs.)	46·3	7·8	3·0	1·1	2·5	1·4	10·5	24·2	3·2
Red Sea, near Ras Mohammed	32·4	4·4	1·8	4·9	4·1	1·4	5·2	41·8	4·0

FEBRUARY

	N.	NE	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	10·9	6·2	5·0	4·7	7·0	30·3	26·2	9·7	—
Mersa Matruh	33·0	2·3	5·3	—	5·9	8·2	23·5	22·3	—
Alexandria	17·2	9·6	10·4	7·3	8·7	9·9	12·7	21·0	3·1
Port Said	13·9	16·6	10·0	3·3	6·7	16·2	19·3	13·0	1·0
El Arish	2·1	4·4	0·2	1·6	14·8	41·6	15·2	9·2	10·8
Cairo	24·7	7·7	1·1	0·6	18·3	16·0	14·5	6·8	9·9
Ismailia	22·1	9·2	11·9	3·8	4·3	8·4	29·1	11·2	—
Suez	36·2	7·9	2·4	5·8	19·6	11·6	4·6	11·9	—
Nekhl	—	—	0·8	1·8	2·6	36·0	57·0	1·8	—
Helwan	17·2	14·9	8·6	9·8	9·0	13·0	11·6	12·7	2·9
Tor	45·5	6·1	3·0	2·4	3·5	0·6	12·8	24·2	1·9
Red Sea, near Ras Mohammed	27·2	4·0	1·9	4·0	3·8	1·8	5·7	46·6	5·0

MARCH

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	11·8	11·3	9·4	7·2	3·5	19·1	27·4	10·2	—
Mersa Matruh	28·5	1·1	14·5	—	4·3	4·8	38·1	8·6	—
Alexandria	22·7	15·0	10·6	7·0	5·0	5·6	7·6	24·5	2·3
Port Said	17·1	20·7	11·5	2·7	4·3	9·7	15·8	17·5	0·7
El Arish	8·2	2·8	1·8	0·2	16·1	32·5	14·1	17·8	6·5
Cairo	33·5	9·2	0·9	0·2	10·5	10·9	13·8	13·7	7·2
Ismailia	27·3	11·6	11·1	4·2	3·5	6·3	23·5	12·5	—
Suez	42·4	5·1	1·9	4·2	19·2	9·2	6·5	11·5	—
Nekhl	1·6	6·5	0·8	0·8	3·1	15·2	67·7	4·3	—
Helwan	27·0	20·7	7·7	5·4	7·6	7·3	6·4	16·3	1·5
Tor	31·7	4·4	2·2	3·1	6·0	1·2	13·9	34·3	3·2
Red Sea, near Ras Mohammed	29·2	3·3	2·8	6·4	4·4	1·1	3·4	43·4	6·0

APRIL

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	16·1	16·7	14·4	4·1	7·7	12·0	15·3	12·0	1·7
Mersa Matruh	50·6	3·3	5·6	3·3	3·3	—	23·9	10·0	—
Alexandria	26·2	17·3	11·9	6·6	3·2	2·4	5·6	23·5	3·0
Port Said	26·1	23·7	12·4	3·3	2·7	5·4	10·6	15·3	0·5
El Arish	3·3	6·2	2·9	1·0	13·0	29·4	13·1	21·0	10·0
Cairo	42·0	13·5	0·8	1·0	6·0	5·6	11·0	13·9	6·1
Ismailia	31·0	15·2	13·1	2·9	3·2	2·6	18·4	13·6	—
Suez	54·9	4·3	0·6	2·2	16·9	8·5	2·5	10·0	0·1
Nekhl	7·5	10·0	5·0	1·7	10·0	15·0	45·7	5·0	—
Helwan	31·1	21·3	7·1	6·2	5·7	5·6	6·3	15·1	1·5
Tor	15·3	1·4	1·8	4·8	8·5	2·1	17·8	43·7	4·4
Red Sea, near Ras Mohammed	30·0	2·8	2·2	5·1	3·4	2·4	3·0	44·1	7·0

MAY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	17·5	8·6	16·5	5·4	9·7	6·4	19·9	12·4	3·2
Mersa Matruh	69·4	4·8	3·8	—	1·6	1·1	12·4	7·0	—
Alexandria	36·9	18·7	7·7	3·8	2·3	1·1	4·1	22·8	2·4
Port Said	31·9	24·5	10·9	2·5	1·9	3·4	7·9	16·7	0·3
El Arish	9·5	7·8	2·7	3·5	11·0	20·6	14·2	22·5	8·1
Cairo	47·3	14·8	0·9	0·3	2·4	3·2	6·6	16·8	7·6
Ismailia	44·5	16·5	9·5	1·7	2·0	1·5	10·8	13·5	—
Suez	64·4	5·2	1·0	1·9	13·3	4·8	2·3	7·1	—
Nekhl	3·1	9·7	6·5	1·6	0·8	15·3	55·7	7·3	—
Helwan	36·7	24·6	4·9	1·8	1·6	4·1	4·9	20·5	1·0
Tor	12·1	0·3	1·6	2·4	5·6	3·2	21·1	50·4	3·3
Red Sea, near Ras Mohammed	27·1	1·5	1·8	3·1	2·1	1·6	3·0	52·8	7·0

TABLE XII (*continued*)

Wind Directions as Percentages of Total Observations

JUNE

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	14·7	11·6	8·3	4·8	1·6	7·5	28·7	20·5	2·2
Mersa Matruh	52·8	—	5·0	4·4	—	—	18·9	18·9	—
Alexandria	43·8	11·6	2·8	1·4	1·2	0·9	3·6	32·4	2·1
Port Said	42·5	17·3	4·5	1·3	0·8	3·2	8·5	21·3	0·6
El Arish	12·2	5·2	0·9	0·4	5·3	24·4	17·6	26·3	7·7
Cairo	60·1	15·1	1·0	—	0·5	0·3	4·2	15·9	3·1
Ismailia	56·2	12·5	5·4	0·3	0·7	0·5	8·0	16·4	—
Suez	84·1	5·1	0·1	1·0	3·3	1·9	0·3	4·1	0·1
Nekhl	6·7	14·2	3·3	1·7	1·7	13·3	53·3	5·8	—
Helwan	44·4	18·4	4·0	0·6	0·8	0·5	2·4	26·8	2·0
Tor	8·4	0·2	0·2	0·3	0·4	0·6	26·4	62·5	1·0
Red Sea, near Ras Mohammed	26·7	0·9	0·5	1·4	1·0	0·7	2·7	62·1	4·0

JULY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	22·5	4·3	2·7	1·6	2·2	1·1	21·2	41·0	3·3
Mersa Matruh	79·6	0·5	4·8	—	0·5	—	7·0	7·6	—
Alexandria	43·6	2·3	0·2	0·03	0·03	0·8	3·6	48·1	1·2
Port Said	42·1	7·4	0·9	0·1	0·8	3·7	17·2	27·5	0·3
El Arish	6·3	0·8	0·2	0·2	4·8	35·6	19·6	25·1	7·4
Cairo	53·8	4·0	0·6	—	0·2	0·7	8·2	29·8	2·6
Ismailia	50·7	10·0	2·2	0·2	0·7	2·1	13·9	20·2	—
Suez	81·9	7·0	0·7	0·4	4·9	1·6	0·3	3·2	—
Nekhl	8·1	10·5	4·8	1·6	—	8·9	61·3	4·8	—
Helwan	45·2	8·8	0·4	0·3	0·3	0·3	5·2	37·4	2·1
Tor	6·8	0·2	0·2	1·5	2·6	0·6	24·0	63·2	0·9
Red Sea, near Ras Mohammed	27·3	1·2	0·6	0·6	1·0	1·4	6·7	58·2	3·0

AUGUST

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	28·9	1·9	—	—	1·1	1·6	15·0	51·1	0·5
Mersa Matruh	62·8	1·1	0·5	—	2·2	—	17·7	15·6	—
Alexandria	50·0	5·5	0·8	0·03	0·08	0·05	2·9	38·7	1·9
Port Said	45·4	7·6	0·6	0·1	0·3	3·3	14·8	27·5	0·4
El Arish	6·4	0·2	—	—	5·0	29·6	22·6	22·2	14·0
Cairo	58·1	7·9	0·9	0·5	0·7	0·5	6·0	22·8	2·5
Ismailia	51·8	9·6	2·2	0·1	0·4	1·7	12·5	21·7	—
Suez	85·8	7·7	0·6	0·3	1·3	0·7	0·3	3·0	0·3
Nekhl	5·6	13·7	1·6	0·8	—	13·7	54·8	7·2	—
Helwan	52·0	10·4	0·1	0·2	0·2	0·3	2·7	33·3	0·7
Tor	9·6	0·8	1·0	0·2	0·5	1·1	25·8	60·0	1·0
Red Sea, near Ras Mohammed	31·0	1·6	1·7	1·0	0·4	0·3	4·0	57·0	3·0

SEPTEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	27·0	12·2	2·5	—	2·2	1·7	23·0	29·7	1·7
Mersa Matruh	67·2	2·2	7·7	—	1·1	—	13·9	7·2	0·5
Alexandria	52·0	13·5	3·1	1·0	1·2	1·1	1·3	23·6	3·2
Port Said	44·0	13·8	2·4	0·9	0·7	3·5	10·8	23·7	0·2
El Arish	9·0	0·2	—	0·9	4·9	28·5	17·1	24·6	14·8
Cairo	63·8	13·3	0·6	0·2	0·7	0·8	3·7	15·4	1·5
Ismailia	58·9	13·6	2·4	0·1	0·5	1·1	8·2	15·2	—
Suez	85·0	7·7	0·6	0·3	1·9	1·1	0·4	3·0	—
Nekhl	13·3	30·0	3·3	0·8	—	8·3	39·2	5·0	—
Helwan	50·5	23·1	1·4	0·4	0·3	0·3	0·9	22·2	1·2
Tor	14·7	0·5	0·7	0·4	—	0·3	19·5	62·0	1·9
Red Sea, near Ras Mohammed	25·8	1·0	0·6	—	0·8	0·8	5·0	65·0	1·0

OCTOBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	20·2	20·2	3·2	1·1	2·7	17·2	15·0	19·9	0·5
Mersa Matruh	64·5	1·1	8·0	—	4·3	—	15·6	6·4	—
Alexandria	36·2	27·6	10·0	3·1	2·2	1·9	2·2	12·0	4·8
Port Said	32·6	27·9	7·6	1·5	2·4	3·6	7·9	16·1	0·4
El Arish	9·0	3·0	1·1	0·6	13·8	25·9	18·4	15·1	13·1
Cairo	54·8	17·2	2·1	0·1	1·4	2·2	3·0	13·6	4·6
Ismailia	51·7	15·5	8·2	0·9	1·0	2·1	9·1	11·5	—
Suez	69·5	9·3	1·1	1·0	5·9	3·8	1·0	8·4	—
Nekhl	7·2	23·4	1·6	3·1	—	13·7	48·5	2·4	—
Helwan	37·7	30·2	5·4	2·5	1·1	1·4	2·9	18·0	0·8
Tor	31·7	3·7	1·4	0·6	0·8	0·5	14·0	44·2	3·1
Red Sea, near Ras Mohammed	30·9	3·0	1·4	3·6	1·6	0·9	3·0	48·6	7·0

NOVEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani	4·7	12·5	4·1	7·0	8·6	18·8	25·5	17·5	1·1
Mersa Matruh	43·3	—	3·9	—	9·4	—	35·6	7·7	—
Alexandria	24·8	19·1	10·7	4·4	6·1	6·9	7·6	15·0	5·3
Port Said	19·1	23·6	6·6	1·9	5·1	11·8	17·0	14·5	0·4
El Arish	4·8	2·3	0·7	0·8	15·5	39·7	17·3	13·8	5·1
Cairo	34·1	14·8	2·1	0·9	11·3	7·1	7·7	14·1	7·8
Ismailia	39·0	12·9	8·6	0·9	1·9	5·1	20·4	11·2	—
Suez	54·1	10·9	2·6	3·0	10·4	6·6	3·2	9·2	—
Nekhl	3·3	3·3	4·2	3·3	—	17·5	60·0	8·3	—
Helwan	21·9	30·8	7·4	7·8	6·2	5·4	5·0	12·9	2·4
Tor	39·0	9·5	1·9	0·7	1·2	0·4	10·3	34·5	2·4
Red Sea, near Ras Mohammed	33·2	3·4	2·1	1·9	3·0				

TABLE XII (*continued*)

Wind Directions as Percentages of Total Observations

DECEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Sidi Barrani .	8·3	11·0	2·7	3·2	5·9	23·1	24·4	21·2	—
Mersa Matruh .	43·0	3·2	2·2	—	9·1	—	29·0	13·4	—
Alexandria .	14·8	10·8	10·7	7·4	11·9	13·6	9·8	13·9	7·1
Port Said . .	10·7	13·7	9·5	3·5	7·1	18·1	24·3	12·1	1·0
El Arish . .	1·8	1·0	0·5	1·0	18·8	46·2	16·8	7·9	6·0
Cairo . .	20·8	9·5	1·0	1·0	20·1	19·5	12·7	5·9	9·5
Ismailia . .	23·5	9·5	10·5	1·6	3·1	9·5	32·0	10·3	—
Suez . .	34·2	12·0	3·6	5·5	15·9	13·9	5·3	9·6	—
Nekhl . .	3·1	4·8	1·6	1·6	—	17·0	63·0	8·9	—
Helwan . .	20·5	21·7	7·7	10·1	11·7	9·3	6·8	10·3	2·0
Tor . . .	42·1	11·0	2·6	0·5	1·1	0·9	9·3	30·4	2·1
Red Sea, near Ras Mohammed .	32·7	2·8	2·1	3·6	1·3	[illegible]·6	5·2	44·7	6·0

TABLE XIII

Mean Amount of Cloud[1]

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May.*	*June.*	*July.*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
Alexandria	4·5	4·0	3·5	2·9	2·3	1·2	1·3	1·6	1·8	2·2	3·6	4·4
Port Said .	4·1	3·8	3·5	3·2	2·4	1·4	1·5	1·8	1·8	2·4	3·4	4·0
Cairo .	4·4	4·0	3·7	3·5	2·8	1·2	1·4	1·6	1·6	2·5	3·2	4·3
Helwan .	4·8	3·9	3·6	3·3	2·4	0·7	0·9	1·1	0·9	2·2	2·8	4·0

[1] 0 = cloudless sky; 10 = completely overcast.

CHAPTER VI

CLIMATE OF CYRENAICA, TRIPOLI, AND MALTA

THE tables included in this chapter cover observations at eight stations, which are given for the sake of completing the chain from Lower Egypt (Chapter V), through Tripoli, Malta, Sicily, and Southern Italy, to the Balkan Peninsula (Chapter I).

The province of Tripoli is the Italian territory in North Africa between Tunisia and Egypt. It extends southward to include Fezzan and Kufra, and is bounded by the frontier of the French Sahara to the S. and by that of Egypt to the SE. and E. This vast territory is divided naturally into four well-marked divisions, NW., SW., NE., and SE., based on physical and geological features. Cyrenaica, the NE. division, is a high limestone plateau. It is near the coast, so it has more rain and dew than the area to the south, and has a northern belt with trees and scrub; it has a good soil, is intersected by deep wadis, and has a large proportion of Mediterranean plants. Tripoli proper, the NW. division, consists mainly of a coastal plain; its western districts have ample rains, and where the ground affords good water-storage the prolific wells allow the land to be developed as fertile oases. The level is low, and the sea off it is comparatively shallow; and the level of the land rises slowly in treeless rolling plains. Fezzan, the SW. division, is an arid desert area, of stony plateaus, bare downs, with occasional oases. The rainfall in this area being higher than in the eastern, the oases are larger and more numerous than the SE. division, which is mainly desert, in the midst of which are the oases of Kufra.

Observations are given from two coastal stations in this area—Benghazi on the eastern shore of the Gulf of Syrtis,

in 32° 7′ N., 20° 2′ E., and Tripoli on the coast in 32° 54′ N., 13° 11′ E. The island of Malta furnishes observations from a point between the North African coast and Sicily (35° 55′ N., 14° 29′ E.). Syracuse (37° 3′ N., 15° 15′ E.) and Catania (37° 30′ N., 15° 3′ E.) are on the east coast of Sicily, and Palermo (38° 6′ N., 13° 19′ E.) is on the north coast of the same island. Lecce (40° 22′ N., 18° 11′ E.) and Foggia (41° 27′ N., 15° 30′ E.) are respectively near the south-eastern and the north-western extremities of the Apulian plain, Lecce being situated near the centre of the heel of Italy between the Gulf of Taranto and the Adriatic Sea, and Foggia a short distance inland from the Gulf of Manfredonia (Adriatic Sea).

The climate of this portion of the Mediterranean basin exhibits the usual division of the year into a dry summer season from May to September, and a wet winter season from November to March, together with April and October as months of transition between them. The stations quoted in the tables are all close to the sea, so that the temperature rarely falls as low as 32° F., Palermo and Syracuse alone having recorded frost. On the other hand, records of temperatures as high as 100° F. are not common except on the African coast, and at Palermo. At Benghazi and Tripoli a marked decrease in the highest temperatures of July and August is recorded, which is apparently connected with the great steadiness of the northerly winds in these months, and the absence of southerly winds. At this season practically no depressions pass along the southern shores of the Mediterranean. Northerly and north-westerly winds of moderate force prevail, with settled fine weather.

In September, when the distribution of pressure begins to change, the weather becomes less settled, and depressions cause southerly winds and rainfall especially in southern Italy. From October to February the rainfall is considerable and stormy weather is frequent as deep depressions traverse the Mediterranean from west to east; southerly and south-westerly winds are frequent, and are often of gale force. These depressions sometimes remain almost stationary to the

west or north-west of Malta and Sicily, producing a continuance of stormy and unsettled weather. In April there is a marked improvement in the weather conditions, the rainfall decreases, and depressions pass less frequently. The high-pressure system which extends from the Azores over north-western Africa now becomes more effective, and northerly and north-easterly winds predominate on the African coast over the southerly and westerly winds of the winter months. The exceptionally high temperatures in May and June at Tripoli and Benghazi occur in connexion with the passage of depressions over northern Africa and the occurrence of southerly winds. With the summer, however, a period of fine settled weather ordinarily sets in, with northerly and north-westerly winds, continuing until towards the end of September.

TABLES

Summary

TABLE		PAGE
I.	Mean Temperature	262–3
II.	Mean Daily Maximum Temperature	262–3
III.	Mean Monthly Maximum Temperature	262–3
IV.	Absolute Maximum Temperature	262–3
V.	Mean Daily Minimum Temperature	264–5
VI.	Mean Monthly Minimum Temperature	264–5
VII.	Absolute Minimum Temperature	264–5
VIII.	Mean Monthly Range of Temperature	264–5
IX.	Relative Humidity	266–7
X.	Mean Monthly Rainfall	266–7
XI.	Number of Rain Days	266–7
XII.	Wind Directions as Percentages of Total Observations	268–70
XIII.	Mean Amount of Cloud	271

TABLE I

Mean Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Benghazi	56·1	58·1	63·1	66·5	71·2	75·9
Tripoli	53·7	55·6	59·5	64·4	68·7	74·3
Malta	53·4	53·4	55·0	58·6	63·9	70·9
Syracuse	52·0	52·5	55·0	58·6	65·1	72·5
Catania	51·4	52·5	56·3	60·3	66·2	74·1
Palermo	50·5	52·2	54·7	58·6	64·0	70·7
Lecce	48·0	49·1	52·5	57·7	64·6	72·3
Foggia	43·5	45·5	50·4	56·3	64·0	72·7

TABLE II

Mean Daily Maximum Temperature

Benghazi	60·3	63·5	67·8	72·5	77·9	80·4
Tripoli	59·9	61·9	66·2	71·4	75·4	80·9
Malta	59·5	60·4	63·1	66·7	72·1	81·1
Syracuse	57·0	57·9	61·3	65·7	72·0	79·9
Catania	56·5	57·6	60·8	65·5	72·5	80·1
Palermo	60·1	61·5	65·1	69·3	75·6	82·2
Lecce	52·9	54·7	59·7	65·1	73·8	80·6
Foggia	50·0	52·0	59·4	64·8	75·6	83·3

TABLE III

Mean Monthly Maximum Temperature

Benghazi	66·4	72·9	85·8	87·3	**96·1**	95·2
Tripoli	67·6	74·5	83·3	93·4	94·8	**100·8**
Malta	65·5	66	70·5	74·3	81	87
Syracuse	63·3	63·9	70·2	73·9	81·3	88·7
Palermo	70·2	72·0	80·2	83·8	88·5	91·8

TABLE IV

Absolute Maximum Temperature

Benghazi	68·0	75·2	88·5	88·5	101·3	**104·0**
Tripoli	79·3	89·6	95·4	104·4	103·6	**109·4**
Malta	76	72	83	93	89	99
Syracuse	72·5	69·1	77·7	79·9	87·6	96·8
Palermo	82·2	82·4	98·1	91·9	104·2	96·4

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
78·0	**79·2**	77·7	73·6	64·2	59·5	Benghazi.
78·4	**79·4**	78·0	73·7	65·4	57·4	Tripoli.
76·5	**77·2**	74·1	68·9	61·7	55·8	Malta.
79·3	**79·5**	75·2	68·2	60·3	55·2	Syracuse.
79·5	79·3	75·9	68·5	60·1	54·0	Catania.
76·3	**76·6**	73·4	67·3	59·4	53·4	Palermo.
77·4	77·2	72·1	65·3	56·3	50·7	Lecce.
78·8	78·3	71·6	62·6	52·7	46·0	Foggia.

82·9	83·8	**84·0**	81·0	71·7	64·3	Benghazi
84·7	**86·0**	84·8	80·2	72·3	64·0	Tripoli.
87·1	86·5	84·0	78·1	70·3	62·1	Malta.
86·2	**86·4**	81·7	74·1	65·7	59·9	Syracuse.
86·2	**86·2**	81·5	74·5	65·3	59·4	Catania.
88·2	**88·9**	84·9	77·1	69·6	62·8	Palermo.
85·8	**85·8**	79·7	71·8	62·1	55·8	Lecce.
89·4	88·2	80·1	70·3	59·5	52·2	Foggia.

88·0	89·8	90·5	91·9	78·4	72·5	Benghazi.
97·5	96·7	98·2	92·8	83·7	71·8	Tripoli.
93	92	88·5	84·1	74·8	69	Malta.
96·8	95·2	91·6	82·0	73·8	66·4	Syracuse.
102·2	99·9	97·3	90·9	80·8	72·5	Palermo.

91·4	98·2	**94·1**	99·1	81·1	76·3	Benghazi.
109	105·8	**109·4**	102·2	94·8	78·8	Tripoli.
103	101	100	94	81	75	Malta.
104·0	**104·5**	102·2	90·9	82·2	69·8	Syracuse.
112·6	113·9	**115·9**	104·5	88·5	78·6	Palermo.

TABLE V

Mean Daily Minimum Temperature

	Jan. ° F.	*Feb.* ° F.	*Mar.* ° F.	*April.* ° F.	*May.* ° F.	*June.* ° F.
Benghazi	*51·1*	52·5	56·1	60·1	65·5	69·4
Tripoli	*47·5*	49·3	52·9	57·5	62·1	67·7
Malta	*48·7*	49·6	50·9	54·1	58·5	64·8
Syracuse	*45·9*	46·4	48·6	52·5	57·6	64·9
Catania	*44·1*	44·6	47·3	51·6	57·7	64·6
Palermo	*41·9*	42·3	44·2	47·8	52·5	58·8
Lecce	*41·7*	42·3	45·5	49·8	56·1	62·8
Foggia	*36·3*	36·7	41·7	46·0	53·6	60·8

TABLE VI

Mean Monthly Minimum Temperature

Benghazi	*47·3*	48·6	50·8	57·9	59·2	65·5
Tripoli	*39·7*	42·5	44·3	48·6	53·6	61·2
Malta	45·0	*44·8*	45·3	50	55·4	62·1
Syracuse	*38·5*	39·3	41·2	46·0	50·9	58·8
Palermo	*34·3*	*34·3*	35·4	40·3	44·4	52·5

TABLE VII

Absolute Minimum Temperature

Benghazi	46·4	*43·9*	47·8	51·6	55·8	62·6
Tripoli	*34·5*	37·0	40·3	44·6	49·1	56·8
Malta	39·0	*34·0*	37·0	44·0	49·0	58·0
Syracuse	34·3	*32·0*	37·4	42·1	47·3	55·4
Palermo	30·4	*28·6*	31·3	34·2	38·8	49·6

TABLE VIII

Mean Monthly Range of Temperature

Benghazi	19·1	24·3	35·0	29·4	36·9	29·7
Tripoli	27·9	32·0	39·0	44·8	41·2	39·6
Malta	20·5	21·2	25·2	24·3	25·6	24·9
Syracuse	24·8	24·6	29·0	27·9	30·4	29·9
Palermo	35·9	37·7	44·8	43·5	44·1	39·3

July. ° F.	*Aug.* ° F.	*Sept.* ° F.	*Oct.* ° F.	*Nov.* ° F.	*Dec.* ° F.	
73·2	74·3	72·1	68·4	60·2	54·7	Benghazi.
72·0	72·9	71·2	67·1	58·5	50·8	Tripoli.
69·8	70·7	69·3	65·3	59·0	52·5	Malta.
71·1	72·0	68·4	62·1	54·5	47·5	Syracuse.
70·0	70·5	67·1	61·3	53·8	47·7	Catania.
63·9	64·9	62·6	56·8	50·0	44·4	Palermo.
68·0	68·9	63·7	57·9	50·2	44·6	Lecce.
67·1	66·2	60·8	53·8	44·8	38·8	Foggia.

70·3	73·4	69·3	62·6	53·1	50·0	Benghazi.
66·0	68·0	65·5	58·6	50·2	43·2	Tripoli.
68·4	69·7	64·8	58·7	51·8	47·5	Malta.
64·8	66·0	61·5	53·4	46·8	40·8	Syracuse.
58·3	59·5	55·4	47·7	41·7	36·3	Palermo.

66·7	70·0	63·1	61·0	44·6	46·0	Benghazi.
62·2	64·4	60·6	52·7	42·4	39·0	Tripoli.
63·0	65·0	57·0	45·0	42·0	42·0	Malta.
54·7	54·0	55·6	46·4	41·7	33·8	Syracuse.
54·1	54·1	50·5	43·0	37·9	30·0	Palermo.

17·7	16·4	21·2	29·3	25·3	22·5	Benghazi.
31·5	28·7	32·7	34·2	33·5	28·6	Tripoli.
24·6	22·3	23·7	25·4	23·0	21·5	Malta.
32·0	29·2	30·1	28·6	27·0	25·6	Syracuse.
43·9	40·4	41·9	43·5	39·1	36·2	Palermo.

TABLE IX

Relative Humidity

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
	%	%	%	%	%	%
Benghazi	78	74	74	66	71	73
Tripoli	66	66	64	65	67	67
Malta	74	76	73	74	72	68
Syracuse	71	71	70	74	70	71
Catania	66	65	64	62	56	53
Palermo	73	72	67	67	66	65
Lecce	74	71	66	65	60	52
Foggia	77	73	69	65	60	53

TABLE X

Mean Monthly Rainfall (inches)

	in.	in.	in.	in.	in.	in.
Benghazi	3·21	1·31	0·78	0·12	0·13	0·00
Tripoli	3·69	2·08	0·97	0·58	0·28	0·06
Malta	3·31	2·01	1·58	0·87	0·47	0·80
Syracuse	3·74	2·63	1·62	1·54	0·81	0·21
Catania	3·27	2·24	2·01	1·34	0·67	0·27
Palermo	4·03	3·10	2·83	2·61	1·38	0·63
Lecce	2·52	2·13	2·05	2·16	1·61	0·94
Foggia	2·05	1·1	1·3	1·61	1·77	1·18

TABLE XI

Number of Rain Days (>0·2 mm. or 0·008 in. of rain)

Benghazi	12	8	5·6	2	1·5	0·7
Tripoli	11	6	5	3	2	0·3
Malta	13	9	9	5	3	1
Syracuse	11	9	8	6	5	2
Catania	9	7	6	6	4	1
Palermo	15	13	12	11	7	4
Lecce	12	10	10	10	7	5
Foggia	8	7	7	9	7	6

July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	
%	%	%	%	%	%	
84	80	74	73	76	77	Benghazi.
66	65	64	63	63	65	Tripoli.
64	66	68	71	72	74	Malta.
64	67	70	72	72	70	Syracuse.
50	54	59	67	69	70	Catania.
61	62	66	69	72	75	Palermo.
50	54	61	69	74	76	Lecce.
42	47	57	69	74	79	Foggia.

in.	in.	in.	in.	in.	in.	
0·01	0·00	0·07	0·38	2·10	2·89	Benghazi.
0·02	0·07	0·47	1·54	2·33	**4·48**	Tripoli.
0·80	0·16	1·46	3·39	3·27	**4·33**	Malta.
0·30	0·28	1·91	3·66	**4·29**	4·12	Syracuse.
0·08	0·35	1·22	2·60	**3·54**	3·38	Catania.
0·31	0·56	1·47	3·98	3·90	**4·69**	Palermo.
0·47	0·59	2·13	**3·35**	3·15	3·23	Lecce.
0·59	1·22	1·42	2·05	**2·28**	1·73	Foggia.

0	0	2·2	4	7	12·5	Benghazi.
0·3	0·2	1·4	4	6	11	Tripoli.
0·2	1	3	7	11	13	Malta.
1	2	5	9	10	12	Syracuse.
1	1	4	6	8	9	Catania.
2	2	6	12	13	16	Palermo.
2	4	6	10	11	12	Lecce.
2	4	5	8	8	8	Foggia.

TABLE XII

Wind Directions as Percentages of Total Observations

JANUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi	16	4	7	7	**30**	6	23	7	—
Tripoli	10	11	5	12	10	**20**	16	16	—
Malta	5·1	16·7	3·7	14·3	1·6	15·3	6·9	**33**	3·4
Syracuse	6	16	8	7	4	17	**29**	10	3
Catania	6	9	8	3	3	14	**24**	8	25
Palermo	5	6	4	3	21	**32**	11	8	10
Lecce	15	3	2	13	16	8	7	**19**	7
Foggia	14	2	4	9	7	10	15	**26**	13

FEBRUARY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi	19	6	6	10	**24**	6	20	9	—
Tripoli	13	12	6	10	8	15	16	**20**	—
Malta	3·9	17·5	5·1	12·4	3·3	13·4	7·8	**33·4**	3·2
Syracuse	7	22	9	8	4	16	21	8	5
Catania	8	14	11	6	2	10	**16**	12	21
Palermo	6	10	5	2	14	**25**	8	12	18
Lecce	18	5	2	10	12	8	5	**24**	16
Foggia	**19**	7	4	8	4	9	16	**19**	14

MARCH

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi	**27**	4	6	7	23	4	19	10	—
Tripoli	13	**17**	12	13	8	11	9	**17**	—
Malta	3·7	16·2	5·2	14·0	2·5	10·0	10·6	**35·3**	2·5
Syracuse	6	19	11	10	6	16	**20**	6	6
Catania	5	15	15	7	5	11	**17**	7	18
Palermo	6	10	7	4	**17**	**17**	9	11	19
Lecce	14	6	3	**16**	13	11	7	**16**	14
Foggia	10	4	7	10	5	**21**	16	16	11

APRIL

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi	**39**	4	4	6	20	3	13	11	—
Tripoli	14	22	11	11	6	8	10	**18**	—
Malta	4·5	15·1	6·1	17·2	2·8	8·7	7·6	**36·6**	1·3
Syracuse	5	**22**	11	10	6	15	19	8	4
Catania	4	**21**	16	10	3	9	10	7	20
Palermo	5	**14**	8	3	10	11	12	11	26
Lecce	14	7	6	15	13	9	6	**19**	11
Foggia	15	6	7	13	6	12	12	**18**	11

TABLE XII (*continued*)

Wind Directions as Percentages of Total Observations

MAY

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi	**42**	6	3	3	20	3	13	10	—
Tripoli	12	**28**	15	11	5	8	9	12	—
Malta	7·2	21·4	8·7	16·5	2·2	5·7	5·0	**30·7**	2·5
Syracuse	9	**27**	13	10	7	13	10	6	5
Catania	5	21	**23**	11	2	5	7	4	22
Palermo	6	**20**	14	3	3	8	8	12	26
Lecce	16	6	2	12	14	9	7	**18**	16
Foggia	**17**	5	7	10	4	16	15	**17**	9

JUNE

Benghazi	**60**	4	3	3	9	3	6	12	—
Tripoli	14	**31**	16	12	4	4	6	13	—
Malta	6·8	26·2	6·9	12·7	1·4	5·0	5·5	**33·1**	2·4
Syracuse	11	**25**	14	9	8	13	8	5	7
Catania	7	18	**25**	11	2	5	4	2	29
Palermo	4	**28**	17	2	3	4	4	8	30
Lecce	17	10	3	9	9	8	17	**19**	18
Foggia	**18**	7	7	13	4	10	13	15	13

JULY

Benghazi	**80**	3	1	1	1	1	1	12	—
Tripoli	17	**29**	17	11	3	5	6	12	—
Malta	8·9	26·7	2·9	8·5	1·4	4·6	4·0	**41·0**	2·0
Syracuse	10	**30**	13	7	8	16	6	4	6
Catania	2	15	**23**	13	2	3	5	3	34
Palermo	4	**26**	15	2	3	4	5	11	30
Lecce	**26**	7	2	3	5	8	6	**29**	14
Foggia	**25**	9	5	10	3	8	12	**19**	9

AUGUST

Benghazi	**70**	3	3	1	3	0	7	13	—
Tripoli	15	**31**	15	12	4	7	4	12	—
Malta	8·8	27·1	4·7	10·1	1·7	4·2	3·8	**38·0**	1·6
Syracuse	9	**30**	11	12	8	12	6	4	8
Catania	3	12	**22**	14	2	3	6	4	34
Palermo	5	**24**	16	4	5	6	4	9	27
Lecce	**27**	9	2	4	7	6	5	**25**	15
Foggia	**21**	8	6	11	4	8	12	17	13

TABLE XII (*continued*)

Wind Directions as Percentages of Total Observations

SEPTEMBER

	N.	NE.	E.	SE.	S.	SW.	W.	NW.	C.
Benghazi . .	**52**	4	4	4	14	4	9	9	—
Tripoli . .	13	**24**	17	11	5	12	6	12	—
Malta . .	5·4	23·1	6·3	17·3	2·7	8·7	3·3	**31·6**	1·5
Syracuse . .	8	23	10	11	7	**17**	12	6	6
Catania . .	3	9	**17**	9	2	6	8	5	41
Palermo . .	4	**23**	8	4	9	13	5	8	26
Lecce . .	**22**	7	3	11	8	7	3	21	18
Foggia . .	**18**	6	7	9	4	7	12	17	20

OCTOBER

Benghazi . .	**36**	3	6	10	21	4	11	9	—
Tripoli . .	9	**19**	14	12	9	11	12	14	—
Malta . .	2·8	19·0	5·6	20·6	2·8	10·8	5·5	**31·2**	1·7
Syracuse . .	6	**19**	8	9	10	17	17	7	7
Catania . .	7	13	**17**	5	3	5	9	5	36
Palermo . .	4	12	8	4	14	**22**	8	9	19
Lecce . .	13	6	3	**18**	14	9	3	17	17
Foggia . .	10	3	7	12	6	12	10	**18**	22

NOVEMBER

Benghazi . .	21	4	7	10	**30**	6	16	6	—
Tripoli . .	8	12	9	15	9	**17**	13	**17**	—
Malta . .	3·1	17·4	4·5	15·1	4·1	11·6	7·0	**35·3**	1·9
Syracuse . .	6	19	8	8	4	16	**22**	9	8
Catania . .	8	12	11	3	2	8	**15**	3	38
Palermo . .	5	9	7	4	21	**29**	6	6	13
Lecce . .	13	6	2	17	11	5	5	**20**	21
Foggia . .	15	3	3	12	4	9	12	**20**	22

DECEMBER

Benghazi . .	13	1	7	13	**29**	9	21	7	—
Tripoli . .	8	7	4	13	12	**25**	18	13	—
Malta . .	3·4	14·2	3·7	13·1	1·9	15·6	10·8	**34·9**	2·4
Syracuse . .	5	19	7	5	4	17	**26**	11	6
Catania . .	8	10	10	4	3	8	**23**	9	25
Palermo . .	6	4	4	5	22	**28**	13	9	9
Lecce . .	14	5	2	18	9	4	9	**23**	16
Foggia . .	14	3	3	10	4	9	14	**26**	17

TABLE XIII

Mean Amount of Cloud

	Jan.	*Feb.*	*Mar.*	*April.*	*May.*	*June.*
Benghazi	4·6	3·5	3·2	2·8	2·5	1·1
Tripoli	4·3	4·0	3·4	3·4	3·0	1·6
Malta	5·7	5·6	5·4	4·6	4·1	2·7
Syracuse	5·9	5·9	5·6	5·8	4·6	3·3
Catania	4·5	5·0	4·7	4·6	3·8	2·5
Palermo	6·3	5·9	5·9	5·6	4·4	3·1
Lecce	5·6	5·5	5·1	5·0	4·1	3·1
Foggia	6·2	6·2	5·4	5·6	4·8	4·2

	July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
Benghazi	0·7	1·1	1·5	1·8	2·4	3·9
Tripoli	0·5	0·7	2·6	3·5	4·0	4·3
Malta	1·5	1·9	3·7	5·3	5·5	5·9
Syracuse	1·6	2·3	4·2	5·7	5·8	6·3
Catania	1·1	1·8	2·9	4·9	5·3	5·0
Palermo	1·4	1·8	3·3	5·3	5·7	6·3
Lecce	1·5	1·7	3·1	5·0	5·3	5·9
Foggia	2·6	2·4	3·3	5·6	6·2	6·7

CHAPTER VII

AVOIDANCE OF ILL EFFECTS OF AVIATION

MANY aviators are troubled by vertigo or giddiness. In our usual movements, such as walking, running, railway travelling, &c., we maintain our sense of equilibrium partly by our visual impressions, partly by those impressions which are conveyed to the brain from the labyrinth of the internal ear. In aviation, these visual and labyrinthine impressions tend to become confused by abnormal impressions, from sudden and unusual changes in the position of the body, and from the effects of gravity on the body during spiral descents, &c.

It is to these conditions, and not to any changes of atmospheric pressure, that we must attribute the occurrence of vertigo. The change of atmospheric pressure, during an ascent, is neither great enough, nor sudden enough, to cause anything like 'caisson disease': that is, the setting free of nitrogen in solution in the body fluids, which may happen if a diver or a caisson-worker is too rapidly 'decompressed' from the atmospheric pressure under which he has been working.

It might seem more likely that an aviator, at a great altitude, would suffer, not only from excessive cooling of the body, but from want of oxygen. But, as he sits quiet, and is not, like a mountain-climber, taking hard exercise, his consumption of oxygen is small, and he is not likely to suffer from want of oxygen at a height less than 15,000 ft. If he were minded to break the record in altitude, he would need some apparatus for inhaling oxygen, to prevent the danger of insidious loss of power. He must keep proper voluntary control and manipulation of his levers: and in this he might fail, from want of oxygen, without being conscious of his danger. But at the ordinary altitudes of aerial warfare,

the want of oxygen does not come into play at all. And certainly it has nothing to do with the symptoms which are felt after rapid descents: for any want of oxygen would at once disappear, when he came down into the lower levels.

The aviator ought of course to protect himself from the numbing action of cold, in every possible way. The protective value of clothes depends on the entanglement of stationary air in the garments. Fluffy woollen underclothing must be worn, and a wind-proof material over all, either a light waterproof material or leather. The garments should join close together, so that the wind cannot blow up between them: gloves and sleeves should be closely joined, and breeches and tunic. Grenfell's Arctic clothes (Labrador) are suitable.

To avoid vertigo, the aviator should keep his gaze, so far as he can, on the point of ground round which he is turning his spiral. The pilot suffers less than the observer, because, in moving the control levers, he *expects* the changes which are going to happen in his bodily position. Good pilotage will of course mitigate the vertigo very greatly. We can hardly suppose that there are any sure means of relieving it, any more than there are cures for sea-sickness. Rest and quiet are the proper remedies. It is not advisable to use drugs for dulling the nervous system.

NOTE ON THE MAP SHOWING LINES OF EQUAL MAGNETIC VARIATION (PLATE V)

The map shows the approximate positions of lines of equal magnetic declination or variation (isogonic lines) for the area of the Eastern Mediterranean for the year 1917. The positions are a little uncertain in the neighbourhood of the Caspian Sea and off the coast of Greece a certain amount of 'smoothing' has had to be done. In the latter region the lines are not so regular as shown, but it is impossible to draw them in more correct detail without fuller surveys.

The secular variation may be taken all over the map as 5′ annually: the lines are all travelling westwards, a little faster NW. than SE.

To get the True Bearing of a point from a compass observation the magnetic variation must be *added* to the observed bearing if the variation is East, *subtracted* if the variation is West. Example :—

Observed Bearing.	*Magnetic Variation.*	*True Bearing.*
55°	15° E.	55° + 15° = 70°
55°	15° W.	55° − 15° = 40°

TABLES OF MEAN PRESSURES AND TEMPERATURES COMPUTED FOR DIFFERENT ALTITUDES ABOVE THE GROUND

Supplied by the Meteorological Office, May 1916.

Summary

TABLE			PAGE
I.	United Kingdom.	Pressures and Temperatures	276
II.	France (Paris).	„	278
III.	Italy (Milan and Pavia).	„	280
IV.	Egypt (Helwan).	„	281
V.	East Africa.	„	282
VI.	Mesopotamia (Baghdad).	„	283

TABLE I. UNITED KINGDOM

The temperatures are taken from *Geophysical Memoirs*,[1] No. 2 (W. H. Dines) and are results obtained with ballons-sondes. Pressures are for SE. England, and are calculated from the Normal Pressures at sea-level (at Kew) and from the temperatures given below.

Pressure (in Millibars)

Height, km.	*Jan.* ° A.	*Feb.* ° A.	*Month. Mar.* ° A.	*April.* ° A.	*May.* ° A.	*June.* ° A.
12	187	186	186	189	193	196
11	218	217	217	221	226	229
10	255	254	254	259	264	267
9	297	297	297	302	307	311
8	346	346	346	350	356	360
7	401	401	400	405	410	415
6	463	462	462	467	472	476
5	532	532	531	535	540	544
4	610	609	608	612	616	620
3	696	695	693	697	701	704
2	792	790	789	791	795	797
1	899	897	895	897	900	901
Gd.	1018	1016	1014	1014	1016	1016

Temperature (Absolute)

Height, km.	*Jan.* ° A.	*Feb.* ° A.	*Month. Mar.* ° A.	*April.* ° A.	*May.* ° A.	*June.* ° A.
12	217	218	219	220	221	222
11	217	217	217	219	220	221
10	220	220	220	222	224	225
9	224	223	224	226	229	231
8	230	229	230	233	236	238
7	237	236	237	239	242	245
6	243	243	244	246	249	252
5	250	249	250	252	256	259
4	257	256	257	259	262	265
3	263	262	263	265	268	271
2	267	266	267	270	273	276
1	271	271	273	276	279	282
Gd.	276	276	277	282	285	288

[1] Published by the Meteorological Office.

			Month.			
July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Year.*
° A.	° A.	° A.	° A.	° A.	° A.	° A.
199	198	198	194	191	188	192
232	232	231	227	223	220	224
270	270	269	265	260	256	262
314	313	312	308	303	299	305
363	362	361	356	351	347	354
417	416	416	411	406	402	408
478	478	477	472	468	464	470
546	546	545	540	536	533	538
621	621	620	616	612	610	615
705	705	704	700	697	695	699
798	797	798	794	792	790	794
902	900	902	898	897	896	899
1016	1015	1017	1014	1014	1014	1015

			Month.			
July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Year.*
° A.	° A.	° A.	° A.	° A.	° A.	° A.
222	221	221	219	218	217	219
222	222	221	220	219	218	220
226	226	226	224	223	221	222
234	233	233	231	228	225	228
241	241	241	238	235	232	234
247	248	247	245	241	238	241
255	255	254	251	249	245	248
261	262	261	258	255	252	255
267	268	267	264	261	258	262
273	274	273	270	267	264	268
278	279	278	275	272	269	273
283	283	281	279	275	272	278
289	289	286	283	280	277	282

TABLE II. FRANCE (PARIS)

The temperatures are taken from *Geophysical Memoir*, No. 5, p. 85 (Major E. Gold). The number of ascents vary from 4 in March to 16 in August. The normals shown in the bottom line are mean values for 24 hours at 2 metres from the ground. Pressures are computed from the temperatures given below for actual ascents and from the normal pressures at ground level.

Pressure (in Millibars)

Height, km.	*Jan.*	*Feb.*	*Month. Mar.*	*April.*	*May.*	*June.*
6	467	469	458	469	473	476
5	536	537	527	537	541	544
4	613	613	605	613	617	620
3	698	698	692	698	700	704
2	793	792	788	792	794	797
1	899	898	895	897	899	901
Gd.	1018	1018	1015	1015	1015	1017

Temperatures (Absolute)

Height, km.	*Jan.*	*Feb.*	*Month. Mar.*	*April.*	*May.*	*June.*
6	246	249	**237**	249	252	253
5	252	255	**245**	256	259	260
4	260	261	**252**	262	265	266
3	265	267	**259**	267	270	271
2	270	272	**265**	271	274	276
1	274	272	**271**	277	279	281
Gd.	275	274	**273**	280	281	285
Gd. Normals[1]	275	277	279	283	286	290

[1] The difference between the two temperatures given for the ground is to be attributed in the main to the fact that ascents are usually made in the early morning.

			Month.			*Mean for*
July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Year.*
481	485	476	479	473	472	473
548	552	544	547	541	540	541
623	626	619	621	616	616	617
706	709	703	705	700	701	701
799	801	797	797	794	795	796
902	903	902	900	898	900	900
1017	1016	1017	1015	1016	1018	1016·5

			Month.			*Mean for*
July.	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Year.*
258	**261**	254	257	252	250	251
264	**267**	261	264	258	257	258
270	**273**	266	270	265	263	264
275	**278**	270	275	270	269	270
280	**283**	276	279	275	273	275
284	**288**	281	283	277	277	279
287	**289**	285	284	278	279	281
291	291	288	283	279	276	283

TABLE III. ITALY (MILAN AND PAVIA)

(Temperatures taken from *Geophysical Memoir*, No. 5, p. 98, down to 1 km.; Surface Temperatures estimated. Pressures computed from Surface Pressures from Monthly Normals in *Geo. Mem.*, No. 1).

Pressure (in Millibars)

Height, km.	*Spring. Feb., Mar., April.*	*Summer. May, June, July.*	*Autumn. Aug., Sept., Oct.*	*Winter. Nov., Dec., Jan.*	*Year.*
6	464	476	483	468	473
5	533	544	550	537	541
4	609	621	626	613	617
3	695	705	709	698	701
2	790	799	801	792	796
1	896	902	904	897	900
Gd.	1014	1015	1016	1015	1015

Temperature (Absolute)

Height, km.	*Spring. Feb., Mar., April.*	*Summer. May, June, July.*	*Autumn. Aug., Sept., Oct.*	*Winter. Nov., Dec., Jan.*	*Year.*
6	244	251	257	248	250
5	250	258	264	253	256
4	257	264	270	261	263
3	263	271	276	268	269
2	269	278	282	272	275
1	275	285	288	275	281
Gd.	279	293	294	279	286

TABLE IV. EGYPT (HELWAN)

Temperature observations with kites in October, November, December, 1907; and January, 1908, are available. It is assumed that above the first kilometre the fall of temperature per kilometre is the same as that found in August for East Africa, viz.: 6° C.

Pressure (in Millibars)

Height, km.	*Winter.*	*Summer.*	*Equinox.*	*Year.*
6	474	485	480	480
5	542	552	548	547
4	618	626	623	622
3	703	709	707	706
2	798	800	800	799
1	903	901	903	902
0	1018	1011	1015	1015

Temperature (Absolute)

Height, km.	*Winter.*	*Summer.*	*Equinox.*	*Year.*
6	250	261	256	256
5	256	267	262	260
4	262	273	268	266
3	268	279	274	272
2	274	285	280	278
1	280	291	286	284
0	288	300	295	291

Winter—November, December, January, February.
Summer—May, June, July, August.
Equinox—March, April, September, October.

TABLE V. EAST AFRICA

Observations taken mainly in August and September of one year, 1908.

The temperatures for ground up to 2 km. are derived from observations at coast stations; those for 2·5 to 3 km. from the average of observations at the coast and at Victoria Nyanza; those above 3 km. from Victoria Nyanza only.

Height, km.	*Pressure (millibars)*	*Temperature (absolute)*
6	487	263
5	553	269
4	627	275
3	709	282
2	800	287
1	900	293
0	1010	301

TABLE VI. MESOPOTAMIA (BAGHDAD)

In the absence of observations on the Upper Air it has been assumed that the fall of temperature for the first km. is 10° in summer and 4° in winter; for the second km. 8° in summer and 6° in winter, and for the third km. 6° in summer and 6° in winter, &c.

Pressure (in Millibars)

Height, km.	*Winter.*	*Summer.*	*Year.*
6	473	486	480
5	541	552	547
4	618	626	622
3	703	707	705
2	798	797	798
1	903	895	899
Gd.	1020	1002	1011

Temperature (Absolute)

Height, km.	*Winter.*	*Summer.*	*Year.*
6	249	265	257
5	255	271	263
4	261	277	269
3	267	283	275
2	273	289	281
1	279	297	288
Gd.	283	307	295

No estimate of the characters of spring and autumn has been attempted.

FORMULAE AND CONVERSION TABLES

TABLE		PAGE
	Units and Formulae of Conversion	285
I.	Millimetres to Inches	286
II.	Metres to Fee	287
III.	Kilometres to Statute Miles	288
IV.	Kilometres to Nautical Miles	288
V.	Square Metres to Square Feet	289
VI.	Hectares to Acres	290
VII.	Cubic Metres to Cubic Feet	291
VIII.	Litres to Gallons	292
IX.	Metres per Second to Statute Miles per Hour	293
X.	Centigrade Degrees to Degrees Fahrenheit	294
XI.	Degrees Fahrenheit to Centigrade Degrees	295
XII.	Equivalents in Millibars of Inches of Mercury at 32° F. and Lat. 45°	298
XIII.	Specification of the Beaufort Scale with Probable Equivalents of the Numbers of the Scale	300

UNITS AND FORMULAE OF CONVERSION

Measures of Length.

1 statute mile	=	1609·315 metres.
1 nautical mile	=	1853·152 ,,
1 kilometre	=	0·6213824 statute mile.
,,	=	0·5396212 nautical mile.

Measures of Velocity.

1 metre per sec.	=	3·2809 ft. per sec.
,, ,,	=	2·2369 miles per hour.
,, ,,	=	1·9435 knots.
1 foot per sec.	=	0·304797 metre per sec.
1 mile per hour	=	0·44704 ,, ,,
1 knot	=	0·51453 ,, ,,

Measures of Temperature.

Absolute scale A, Centigrade scale C, Fahrenheit scale F, Réaumur scale R. Equivalent intervals 1°A = 1°C = 1·8° F = 1·6° R. Freezing point of water (under standard conditions) is 273° A = 0° C = 32° F = 0° R. Boiling point of water (under standard conditions) is 373° A = 100° C = 212° F = 80° R.

$$A = 273 + C = \tfrac{5}{9}(459{\cdot}4 + F) = \tfrac{5}{4}(218{\cdot}4 + R)$$

or

$$C = \tfrac{5}{9}(F - 32) = \tfrac{5}{4}R.$$

Measures of Pressure.

1 millibar (mb.)	=	0·0295306 mercury inch.
	=	0·750076 mercury millimetre.
1 mercury inch at 32° F in latitude 45°.		
	=	33·8632 mb.
[30 mercury inches	=	1015·8960 mb.]
1 mercury millimetre at 0° C in latitude 45°.		
	=	1·333200 mb.
[760 mercury millimetres	=	1013·231 mb.]

1000 mb. = 14·496 lb. per sq. in. (in London).

CONVERSION TABLES

TABLE I

Millimetres to Inches

mm.	*ins.*	*mm.*	*ins.*	*mm.*	*ins.*	*mm.*	*ins.*	*mm.*	*ins.*
0	0·000	40	1·575	80	3·150	120	4·724	160	6·299
1	0·039	41	1·614	81	3·189	121	4·764	161	6·339
2	0·079	42	1·654	82	3·228	122	4·803	162	6·378
3	0·118	43	1·693	83	3·268	123	4·843	163	6·417
4	0·157	44	1·732	84	3·307	124	4·882	164	6·457
5	0·197	45	1·772	85	3·346	125	4·921	165	6·496
6	0·236	46	1·811	86	3·386	126	4·961	166	6·535
7	0·276	47	1·850	87	3·425	127	5·000	167	6·575
8	0·315	48	1·890	88	3·465	128	5·039	168	6·614
9	0·354	49	1·929	89	3·504	129	5·079	169	6·654
10	0·394	50	1·969	90	3·543	130	5·118	170	6·693
11	0·433	51	2·008	91	3·583	131	5·157	171	6·732
12	0·472	52	2·047	92	3·622	132	5·197	172	6·772
13	0·512	53	2·087	93	3·661	133	5·236	173	6·811
14	0·551	54	2·126	94	3·701	134	5·276	174	6·850
15	0·591	55	2·165	95	3·740	135	5·315	175	6·890
16	0·630	56	2·205	96	3·780	136	5·354	176	6·929
17	0·669	57	2·244	97	3·819	137	5·394	177	6·969
18	0·709	58	2·283	98	3·858	138	5·433	178	7·008
19	0·748	59	2·323	99	3·898	139	5·472	179	7·047
20	0·787	60	2·362	100	3·937	140	5·512	180	7·087
21	0·827	61	2·402	101	3·976	141	5·551	181	7·126
22	0·866	62	2·441	102	4·016	142	5·591	182	7·165
23	0·906	63	2·480	103	4·055	143	5·630	183	7·205
24	0·945	64	2·520	104	4·094	144	5·669	184	7·244
25	0·984	65	2·559	105	4·134	145	5·709	185	7·283
26	1·024	66	2·598	106	4·173	146	5·748	186	7·323
27	1·063	67	2·638	107	4·213	147	5·787	187	7·362
28	1·102	68	2·677	108	4·252	148	5·827	188	7·402
29	1·142	69	2·717	109	4·291	149	5·866	189	7·441
30	1·181	70	2·756	110	4·331	150	5·906	190	7·480
31	1·220	71	2·795	111	4·370	151	5·945	191	7·520
32	1·260	72	2·835	112	4·409	152	5·984	192	7·559
33	1·299	73	2·874	113	4·449	153	6·024	193	7·598
34	1·339	74	2·913	114	4·488	154	6·063	194	7·638
35	1·378	75	2·953	115	4·528	155	6·102	195	7·677
36	1·417	76	2·992	116	4·567	156	6·142	196	7·717
37	1·457	77	3·031	117	4·606	157	6·181	197	7·756
38	1·496	78	3·071	118	4·646	158	6·220	198	7·795
39	1·535	79	3·110	119	4·685	159	6·260	199	7·835
								200	7·874

Tenths of a Millimetre

Tenths of mm.	1	2	3	4	5	6	7	8	9
Inch.	·004	·008	·012	·016	·020	·024	·028	·032	·035

TABLE II

METRES TO FEET

1 metre = 3·28084 feet

Metres.	0	1	2	3	4	5	6	7	8	9
			Feet.						*Feet.*	
0	0·00	3·28	6·56	9·84	13·12	16·40	19·68	22·97	26·25	29·53
10	32·81	36·09	39·37	42·65	45·93	49·21	52·49	55·77	59·06	62·34
20	65·62	68·90	72·18	75·46	78·74	82·02	85·30	88·58	91·86	95·14
30	98·43	101·71	104·99	108·27	111·55	114·83	118·11	121·39	124·67	127·95
40	131·23	134·51	137·80	141·08	144·36	147·64	150·92	154·20	157·48	160·76
50	164·04	167·32	170·60	173·88	177·17	180·45	183·73	187·01	190·29	193·57
60	196·85	200·13	203·41	206·69	209·97	213·25	216·54	219·82	223·10	226·38
70	229·66	232·94	236·22	239·50	242·78	246·06	249·34	252·62	255·91	259·19
80	262·47	265·75	269·03	272·31	275·59	278·87	282·15	285·43	288·71	291·99
90	295·28	298·56	301·84	305·12	308·40	311·68	315·96	318·24	321·52	324·80
100	328·08	331·36	334·65	337·93	341·21	344·49	347·77	351·05	354·33	357·61
200	656·17	659·44	662·73	666·01	669·29	672·57	675·85	679·13	682·41	685·70
300	984·25	987·53	990·81	994·09	997·38	1000·66	1003·94	1007·22	1010·50	1013·78
400	1312·34	1315·62	1318·90	1322·18	1325·46	1328·74	1332·02	1335·30	1338·58	1341·86
500	1640·42	1643·70	1646·98	1650·26	1653 54	1656·82	1660·11	1663·39	1666·67	1669·95
600	1968·50	1971·78	1975·07	1978·35	1981·63	1984·91	1988·19	1991·47	1994·75	1998·03
700	2296·59	2299·87	2363·15	2306·43	2309·71	2312·99	2316·27	2319·55	2322·83	2326·12
800	2624·67	2627·95	2631·23	2634·51	2637·80	2641·08	2644·36	2647·64	2650·92	2654·20
900	2952·76	2956·04	2959·32	2962·60	2965·88	2969·16	2972·44	2975·72	2979·00	2982·28
1000	3280·84	3284·12	3287·40	3290·68	3293·96	3297·24	3300·53	3303·81	3307·09	3310·37

TABLE III

Kilometres to Statute Miles

Kilo-metres.	*Stat. miles.*	*Kilo-metres.*	*Stat. miles.*	*Kilo-metres.*	*Stat. miles.*	*Kilo-metres.*	*Stat. miles.*	*Kilo-metres.*	*Stat. miles.*
1	0·621	21	13·049	41	25·477	61	37·904	81	50·332
2	1·243	22	13·670	42	26·098	62	38·526	82	50·953
3	1·864	23	14·292	43	26·719	63	39·147	83	51·575
4	2·486	24	14·913	44	27·341	64	39·768	84	52·196
5	3·107	25	15·536	45	27·962	65	40·390	85	52·817
6	3·728	26	16·156	46	28·584	66	41·011	86	53·439
7	4·350	27	16·777	47	29·205	67	41·633	87	54·060
8	4·971	28	17·399	48	29·826	68	42·254	88	54·682
9	5·592	29	18·020	49	30·448	69	42·875	89	55·303
10	6·214	30	18·641	50	31·069	70	43·497	90	55·924
11	6·835	31	19·263	51	31·690	71	44·118	91	56·546
12	7·457	32	19·884	52	32·312	72	44·739	92	57·167
13	8·078	33	20·506	53	32·933	73	45·361	93	57·789
14	8·699	34	21·127	54	33·555	74	45·982	94	58·410
15	9·321	35	21·748	55	34·176	75	46·604	95	59·031
16	9·942	36	22·370	56	34·797	76	47·225	96	59·653
17	10·563	37	22·991	57	35·419	77	47·846	97	60·274
18	11·185	38	23·613	58	36·040	78	48·468	98	60·895
19	11·806	39	24·234	59	36·662	79	49·089	99	61·517
20	12·428	40	24·855	60	37·283	80	49·711	100	62·138
100	62·138	300	186·415	500	310·691	700	434·907	900	559·244
200	124·276	400	248·553	600	372·829	800	497·106	1000	621·382

TABLE IV

Kilometres to Nautical Miles

Kilo-metres.	*Nautical miles.*	*Kilo-metres.*	*Nautical miles.*	*Kilo-metres.*	*Nautical miles.*	*Kilo-metres.*	*Nautical miles.*	*Kilo-metres.*	*Nautical miles.*
1	0·540	21	11·332	41	22·124	61	32·917	81	43·709
2	1·079	22	11·872	42	22·664	62	33·457	82	44·249
3	1·619	23	12·411	43	23·204	63	33·996	83	44·789
4	2·158	24	12·951	44	23·743	64	34·536	84	45·328
5	2·698	25	13·491	45	24·283	65	35·075	85	45·868
6	3·238	26	14·030	46	24·823	66	35·615	86	46·407
7	3·777	27	14·570	47	25·362	67	36·155	87	46·947
8	4·317	28	15·109	48	25·902	68	36·694	88	47·487
9	4·857	29	15·649	49	26·441	69	37·234	89	48·026
10	5·396	30	16·189	50	26·981	70	37·774	90	48·566
11	5·936	31	16·728	51	27·521	71	38·313	91	49·106
12	6·475	32	17·268	52	28·060	72	38·853	92	49·645
13	7·015	33	17·807	53	28·600	73	39·392	93	50·185
14	7·555	34	18·347	54	29·140	74	39·932	94	50·724
15	8·094	35	18·887	55	29·679	75	40·472	95	51·264
16	8·634	36	19·426	56	30·219	76	41·011	96	51·804
17	9·174	37	19·966	57	30·758	77	41·551	97	52·343
18	9·713	38	20·506	58	31·298	78	42·090	98	52·883
19	10·253	39	21·045	59	31·838	79	42·630	99	53·423
20	10·792	40	21·585	60	32·377	80	43·170	100	53·962
100	53·962	300	161·886	500	269·811	700	377·735	900	485·659
200	107·924	400	215·849	600	323·773	800	431·697	1000	539·621

TABLE V

Square Metres to Square Feet

1 square metre = 10·764299 square feet.

Square metres.	0	1	2	3	4	5	6	7	8	9
0·	0·000	1·0764	2·1529	3·2293	4·3057	5·3821	6·4586	7·5350	8·6114	9·6879
—	—	10·764	21·529	32·293	43·057	53·821	64·586	75·350	86·114	96·879
1	107·643	118·407	129·172	139·936	150·700	161·464	172·229	182·993	193·757	204·522
2	215·286	226·050	236·815	247·579	258·343	269·107	279·872	290·636	301·400	312·165
3	322·929	333·693	344·458	355·222	365·986	376·750	387·515	398·279	409·043	419·808
4	430·572	441·336	452·101	462·865	473·629	484·393	495·158	505·922	516·686	527·451
5	538·215	548·979	559·744	570·508	581·272	592·036	602·801	613·565	624·329	635·094
6	645·858	656·622	667·387	678·151	688·915	699·679	710·444	721·208	731·972	742·737
7	753·501	764·265	775·029	785·794	796·558	807·322	818·087	828·851	839·615	850·380
8	861·144	871·908	882·672	893·437	904·201	914·965	925·730	936·494	947·258	958·023
9	968·787	979·551	990·315	1001·08	1011·84	1022·61	1033·37	1044·14	1054·90	1065·67
10	1076·43									

TABLE VI

Hectares to Acres

1 hectare = 2·47114 acres.

Hectares.	0	1	2	3	4	5	6	7	8	9
—	—	2·471	4·942	7·413	9·885	12·356	14·827	17·298	19·769	22·240
1	24·711	27·183	29·654	32·125	34·596	37·067	39·538	42·009	44·480	46·951
2	49·423	51·894	54·365	56·836	59·307	61·779	64·250	66·721	69·192	71·663
3	74·134	76·605	79·076	81·548	84·019	86·490	88·961	91·432	93·903	96·374
4	98·846	101·317	103·788	106·259	108·730	111·201	113·672	116·144	118·615	121·086
5	123·557	126·028	128·499	130·970	133·442	135·913	138·384	140·855	143·326	145·797
6	148·268	150·740	153·211	155·682	158·153	160·624	163·095	165·566	168·038	170·509
7	172·980	175·451	177·922	180·393	182·864	185·336	187·807	190·278	192·749	195·220
8	197·691	200·162	202·633	205·105	207·576	210·047	212·518	214·989	217·460	219·931
9	222·403	224·874	227·345	229·816	232·287	234·758	237·229	239·701	242·172	244·643
10	247·114									

TABLE VII

Cubic Metres to Cubic Feet

1 cubic metre = 35·31658 cubic feet.

Cubic metres.	0	1	2	3	4	5	6	7	8	9
—	—	35·3166	70·6332	105·9497	141·2663	176·5829	211·8995	247·2161	282·5326	317·8492
1	353·1658	388·4824	423·7990	459·1155	494·4321	529·7487	565·0653	600·3819	635·6984	671·0150
2	706·3316	741·6482	776·9648	812·2814	847·5979	882·9145	918·2311	953·5477	988·8643	1024·1808
3	1059·4974	1094·8140	1130·1306	1165·4472	1200·7637	1236·0803	1271·3969	1306·7135	1342·0301	1377·3466
4	1412·6632	1447·9798	1483·2964	1518·6130	1553·9295	1589·2461	1624·5627	1659·8793	1695·1959	1730·5124
5	1765·8290	1801·1456	1836·4622	1871·7788	1907·0953	1942·4119	1977·7285	2013·0451	2048·3616	2083·6782
6	2118·9948	2154·3114	2189·6280	2224·9446	2260·2612	2295·5777	2330·8943	2366·2109	2401·5275	2436·8441
7	2472·1606	2507·4772	2542·7938	2578·1104	2613·4270	2648·7435	2684·0601	2719·3767	2754·6933	2790·0099
8	2825·3264	2860·6430	2895·9596	2931·2762	2966·5928	3001·9093	3037·2259	3072·5425	3107·8591	3143·1757
9	3178·4922	3213·8088	3249·1254	3284·4420	3319·7586	3355·0751	3390·3917	3425·7083	3461·0249	3496·3415
10	3531·6581									

TABLE VIII

Litres to Gallons

1 litre = ·220097 gallon.

Litres.	0	1	2	3	4	5	6	7	8	9
—	—	0·2201	0·4402	0·6603	0·8804	1·1005	1·3206	1·5407	1·7608	1·9809
1	2·2010	2·4211	2·6412	2·8613	3·0814	3·3015	3·5216	3·7416	3·9617	4·1818
2	4·4020	4·6220	4·8421	5·0622	5·2823	5·5024	5·7225	5·9426	6·1627	6·3828
3	6·6029	6·8230	7·0431	7·2632	7·4833	7·7034	7·9235	8·1436	8·3637	8·5838
4	8·8039	9·0240	9·2441	9·4642	9·6843	9·9044	10·1245	10·3446	10·5647	10·7848
5	11·0049	11·2249	11·4450	11·6651	11·8852	12·1053	12·3254	12·5455	12·7656	12·9857
6	13·2058	13·4259	13·6460	13·8661	14·0862	14·3063	14·5264	14·7465	14·9666	15·1867
7	15·4068	15·6269	15·8470	16·0671	16·2872	16·5073	16·7274	16·9475	17·1676	17·3877
8	17·6078	17·8279	18·0480	18·2681	18·4882	18·7083	18·9284	19·1485	19·3686	19·5887
9	19·8087	20·0288	20·2489	20·4690	20·6891	20·9092	21·1293	21·3494	21·5695	27·7896
10	22·0097									

TABLE IX

Metres per Second to Statute Miles per Hour

Metres per Second.	*Miles per Hour.*	*Metres per Second.*	*Miles per Hour.*	*Metres per Second.*	*Miles per Hour.*
1	2·24	21	46·98	41	91·72
2	4·47	22	49·21	42	93·95
3	6·71	23	51·45	43	96·19
4	8·95	24	53·69	44	98·43
5	11·18	25	55·92	45	100·66
6	13·42	26	58·16	46	102·90
7	15·66	27	60·40	47	105·14
8	17·90	28	62·64	48	107·37
9	20·13	29	64·87	49	109·61
10	22·37	30	67·11	50	111·85
11	24·61	31	69·35	51	114·09
12	26·84	32	71·58	52	116·32
13	29·08	33	73·82	53	118·56
14	31·32	34	76·06	54	120·80
15	33·55	35	78·29	55	123·03
16	35·79	36	80·53	56	125·27
17	38·03	37	82·77	57	127·51
18	40·27	38	85·01	58	129·74
19	42·50	39	87·24	59	131·98
20	44·74	40	89·48	60	341·22

TABLE X

Centigrade Degrees to Degrees Fahrenheit

Centigrade. °	*Fahrenheit.* °	*Centigrade.* °	*Fahrenheit.* °
+0	+32·0	26	78·8
1	33·8	27	80·6
2	35·6	28	82·4
3	37·4	29	84·2
4	39·2	30	86·0
5	41·0	31	87·8
6	42·8	32	89·6
7	44·6	33	91·4
8	46·4	34	93·2
9	48·2	35	95·0
10	50·0	36	96·8
11	51·8	37	98·6
12	53·6	38	100·4
13	55·4	39	102·2
14	57·2	40	104·0
15	59·0	41	105·8
16	60·8	42	107·6
17	62·6	43	109·4
18	64·4	44	111·2
19	66·2	45	113·0
20	68·0	46	114·8
21	69·8	47	116·6
22	71·6	48	118·4
23	73·4	49	120·2
24	75·2	50	122·0
25	77·0		

TABLE XI

Conversion of Degrees Fahrenheit into Centigrade Degrees

To convert to the Absolute Scale add 273° to the Centigrade reading.

Tenths of Degrees.

Degrees Fah.	0	1	2	3	4	5	6	7	8	9		°
32	0·0	0·1	0·1	0·2	0·2	0·3	0·3	0·4	0·4	0·5	0·6	31
33	0·6	0·6	0·7	0·7	0·8	0·8	0·9	0·9	1·0	1·1	1·1	30
34	1·1	1·2	1·2	1·3	1·3	1·4	1·4	1·5	1·6	1·6	1·7	29
35	1·7	1·7	1·8	1·8	1·9	1·9	2·0	2·1	2·1	2·2	2·2	28
36	2·2	2·3	2·3	2·4	2·4	2·5	2·6	2·6	2·7	2·7	2·8	27
37	2·8	2·8	2·9	2·9	3·0	3·1	3·1	3·2	3·2	3·3	3·3	26
38	3·3	3·4	3·4	3·5	3·6	3·6	3·7	3·7	3·8	3·8	3·9	25
39	3·9	3·9	4·0	4·1	4·1	4·2	4·2	4·3	4·3	4·4	4·4	24
40	4·4	4·5	4·6	4·6	4·7	4·7	4·8	4·8	4·9	4·9	5·0	23
41	5·0	5·1	5·1	5·2	5·2	5·3	5·3	5·4	5·4	5·5	5·6	22
42	5·6	5·6	5·7	5·7	5·8	5·8	5·9	5·9	6·0	6·1	6·1	21
43	6·1	6·2	6·2	6·3	6·3	6·4	6·4	6·5	6·6	6·6	6·7	20
44	6·7	6·7	6·8	6·8	6·9	6·9	7·0	7·1	7·1	7·2	7·2	19
45	7·2	7·3	7·3	7·4	7·4	7·5	7·6	7·6	7·7	7·7	7·8	18
46	7·8	7·8	7·9	7·9	8·0	8·1	8·1	8·2	8·2	8·3	8·3	17
47	8·3	8·4	8·4	8·5	8·6	8·6	8·7	8·7	8·8	8·8	8·9	16
48	8·9	8·9	9·0	9·1	9·1	9·2	9·2	9·3	9·3	9·4	9·4	15
49	9·4	9·5	9·6	9·6	9·7	9·7	9·8	9·8	9·9	9·9	10·0	14
50	10·0	10·1	10·1	10·2	10·2	10·3	10·3	10·4	10·4	10·5	10·6	13
51	10·6	10·6	10·7	10·7	10·8	10·8	10·9	10·9	11·0	11·1	11·1	12
52	11·1	11·2	11·2	11·3	11·3	11·4	11·4	11·5	11·6	11·6	11·7	11
53	11·7	11·7	11·8	11·8	11·9	11·9	12·0	12·1	12·1	12·2	12·2	10
54	12·2	12·3	12·3	12·4	12·4	12·5	12·6	12·6	12·7	12·7	12·8	9
55	12·8	12·8	12·9	12·9	13·0	13·1	13·1	13·2	13·2	13·3	13·3	8
56	13·3	13·4	13·4	13·5	13·6	13·6	13·7	13·7	13·8	13·8	13·9	7
57	13·9	13·9	14·0	14·1	14·1	14·2	14·2	14·3	14·3	14·4	14·4	6
58	14·4	14·5	14·6	14·6	14·7	14·7	14·8	14·8	14·9	14·9	15·0	5
59	15·0	15·1	15·1	15·2	15·2	15·3	15·3	15·4	15·4	15·5	15·6	4
60	15·6	15·6	15·7	15·7	15·8	15·8	15·9	15·9	16·0	16·1	16·1	3
61	16·1	16·2	16·2	16·3	16·3	16·4	16·4	16·5	16·6	16·6	16·7	2
62	16·7	16·7	16·8	16·8	16·9	16·9	17·0	17·1	17·1	17·2	17·2	1
63	17·2	17·3	17·3	17·4	17·4	17·5	17·6	17·6	17·7	17·7	17·8	0
		9	8	7	6	5	4	3	2	1	0	*Degrees Fah.*

Tenths of Degrees.

The Centigrade values corresponding with the degrees Fah., as shown in the right-hand column, require the *minus* sign.

TABLE XI (*continued*)

Conversion of Degrees Fahrenheit into Centigrade Degrees

Degrees Fah. Plus.	Minus.	Tenths of Degrees. 0	1	2	3	4	5	6	7	8	9
°	°										
64	0	17·8	17·8	17·9	17·9	18·0	18·1	18·1	18·2	18·2	18·3
65	1	18·3	18·4	18·4	18·5	18·6	18·6	18·7	18·7	18·8	18·8
66	2	18·9	18·9	19·0	19·1	19·1	19·2	19·2	19·3	19·3	19·4
67	3	19·4	19·5	19·6	19·6	19·7	19·7	19·8	19·8	19·9	19·9
68	4	20·0	20·1	20·1	20·2	20·2	20·3	20·3	20·4	20·4	20·5
69	5	20·6	20·6	20·7	20·7	20·8	20·8	20·9	20·9	21·0	21·1
70	6	21·1	21·2	21·2	21·3	21·3	21·4	21·4	21·5	21·6	21·6
71	7	21·7	21·7	21·8	21·8	21·9	21·9	22·0	22·1	22·1	22·2
72	8	22·2	22·3	22·3	22·4	22·4	22·5	22·6	22·6	22·7	22·7
73	9	22·8	22·8	22·9	22·9	23·0	23·1	23·1	23·2	23·2	23·3
74	10	23·3	23·4	23·4	23·5	23·6	23·6	23·7	23·7	23·8	23·8
75	11	23·9	23·9	24·0	24·1	24·1	24·2	24·2	24·3	24·3	24·4
76	12	24·4	24·5	24·6	24·6	24·7	24·7	24·8	24·8	24·9	24·9
77	13	25·0	25·1	25·1	25·2	25·2	25·3	25·3	25·4	25·4	25·5
78	14	25·6	25·6	25·7	25·7	25·8	25·8	25·9	25·9	26·0	26·1
79	15	26·1	26·2	26·2	26·3	26·3	26·4	26·4	26·5	26·6	26·6
80	16	26·7	26·7	26·8	26·8	26·9	26·9	27·0	27·1	27·1	27·2
81	17	27·2	27·3	27·3	27·4	27·4	27·5	27·6	27·6	27·7	27·7
82	18	27·8	27·8	27·9	27·9	28·0	28·1	28·1	28·2	28·2	28·3
83	19	28·3	28·4	28·4	28·5	28·6	28·6	28·7	28·7	28·8	28·8
84	20	28·9	28·9	29·0	29·1	29·1	29·2	29·2	29·3	29·3	29·4
85	21	29·4	29·5	29·6	29·6	29·7	29·7	29·8	29·8	29·9	29·9
86	22	30·0	30·1	30·1	30·2	30·2	30·3	30·3	30·4	30·4	30·5
87	23	30·6	30·6	30·7	30·7	30·8	30·8	30·9	30·9	31·0	31·1
88	24	31·1	31·2	31·2	31·3	31·3	31·4	31·4	31·5	31·6	31·6
89	25	31·7	31·7	31·8	31·8	31·9	31·9	32·0	32·1	32·1	32·2
90	26	32·2	32·3	32·3	32·4	32·4	32·5	32·6	32·6	32·7	32·7
91	27	32·8	32·8	32·9	32·9	33·0	33·1	33·1	33·2	33·2	33·3
92	28	33·3	33·4	33·4	33·5	33·6	33·6	33·7	33·7	33·8	33·8
93	29	33·9	33·9	34·0	34·1	34·1	34·2	34·2	34·3	34·3	34·4
94	30	34·4	34·5	34·6	34·6	34·7	34·7	34·8	34·8	34·9	34·9
95	31	35·0	35·1	35·1	35·2	35·2	35·3	35·3	35·4	35·4	35·5
96	32	35·6	35·6	35·7	35·7	35·8	35·8	35·9	35·9	36·0	36·1
97	33	36·1	36·2	36·2	36·3	36·3	36·4	36·4	36·5	36·6	36·6
98	34	36·7	36·7	36·8	36·8	36·9	36·9	37·0	37·1	37·1	37·2
99	35	37·2	37·3	37·3	37·4	37·4	37·5	37·6	37·6	37·7	37·7
100	36	37·8	37·8	37·9	37·9	38·0	38·1	38·1	38·2	38·2	38·3
101	37	38·3	38·4	38·4	38·5	38·6	38·6	38·7	38·7	38·8	38·8
102	38	38·9	38·9	39·0	39·1	39·1	39·2	39·2	39·3	39·3	39·4
103	39	39·4	39·5	39·6	39·6	39·7	39·7	39·8	39·8	39·9	39·9
104	40	40·0	40·1	40·1	40·2	40·2	40·3	40·3	40·4	40·4	40·5
105	41	40·6	40·6	40·7	40·7	40·8	40·8	40·9	40·9	41·0	41·1
106	42	41·1	41·2	41·2	41·3	41·3	41·4	41·4	41·5	41·6	41·6

Temperatures on this page have the same sign in both scales.

TABLE XI (*continued*)

Conversion of Degrees Fahrenheit into Centigrade Degrees

Degrees Fah. Plus.	Degrees Fah. Minus.	Tenths of Degrees. 0	1	2	3	4	5	6	7	8	9
°	°										
107	43	41·7	41·7	41·8	41·8	41·9	41·9	42·0	42·1	42·1	42·2
108	44	42·2	42·3	42·3	42·4	42·4	42·5	42·6	42·6	42·7	42·7
109	45	42·8	42·8	42·9	42·9	43·0	43·1	43·1	43·2	43·2	43·3
110	46	43·3	43·4	43·4	43·5	43·6	43·6	43·7	43·7	43·8	43·8
111	47	43·9	43·9	44·0	44·1	44·1	44·2	44·2	44·3	44·3	44·4
112	48	44·4	44·5	44·6	44·6	44·7	44·7	44·8	44·8	44·9	44·9
113	49	45·0	45·1	45·1	45·2	45·2	45·3	45·3	45·4	45·4	45·5
114	50	45·6	45·6	45·7	45·7	45·8	45·8	45·9	45·9	46·0	46·1
115	51	46·1	46·2	46·2	46·3	46·3	46·4	46·4	46·5	46·6	46·6
116	52	46·7	46·7	46·8	46·8	46·9	46·9	47·6	47·1	47·1	47·2
117	53	47·2	47·3	47·3	47·4	47·4	47·5	47·6	47·6	47·7	47·7
118	54	47·8	47·8	47·9	47·9	48·0	48·1	48·1	48·2	48·2	48·3
119	55	48·3	48·4	48·4	48·5	48·6	48·6	48·7	48·7	48·8	48·8
120	56	48·9	48·9	49·0	49·1	49·1	49·2	49·2	49·3	49·3	49·4
121	57	49·4	49·5	49·6	49·6	49·7	49·7	49·8	49·8	49·9	49·9
122	58	50·0	50·1	50·1	50·2	50·2	50·3	50·3	50·4	50·4	50·5
123	59	50·6	50·6	50·7	50·7	50·8	50·8	50·9	50·9	51·0	51·1
124	60	51·1	51·2	51·2	51·3	51·3	51·4	51·4	51·5	51·6	51·6
125	61	51·7	51·7	51·8	51·8	51·9	51·9	52·0	52·1	52·1	52·2

TABLE XII

Vapour Pressure. Mercury Inches at Standard Temperature (273° A) in Latitude 45° to Millibars

The fundamental equations are:

g_{45} = 980·617 cm./sec.^{2}

density of mercury at normal freezing point of water = 13·5955 gm/cm^3.

1 mercury inch = 33·8632 millibars.

1 millibar = 0·0295306 mercury inches = 0·750076 mercury millimetres.

using 1 inch = 2·54000 cm.

1 cm. = 0·393701 inch.

and taking the expression 'mercury inch' to denote the pressure due to a column of mercury one inch high under standard conditions of temperature (freezing point of water) and gravity (latitude 45°).

Inches.	0	1	2	3	4	5	6	7	8	9
					Millibars.					
0·0	0·0	0·3	0·7	1·0	1·4	1·7	2·0	2·4	2·7	3·0
0·1	3·4	3·7	4·1	4·4	4·7	5·1	5·4	5·8	6·1	6·4
0·2	6·8	7·1	7·5	7·8	8·4	8·5	8·8	9·1	9·5	9·8
0·3	10·2	10·5	10·8	11·2	11·5	11·9	12·2	12·5	12·9	13·2
0·4	13·5	13·9	14·2	14·6	14·9	15·2	15·6	15·9	16·3	16·6
0·5	16·9	17·3	17·6	17·9	18·3	18·6	19·0	19·3	19·6	20·0
0·6	20·3	20·7	21·0	21·3	21·7	22·0	22·3	22·7	23·0	23·4
0·7	23·7	24·0	24·4	24·7	25·1	25·4	25·7	26·1	26·4	26·8
0·8	27·1	27·4	27·8	28·1	28·4	28·8	29·1	29·5	29·8	30·1
0·9	30·5	30·8	31·2	31·5	31·8	32·2	32·5	32·8	33·2	33·5
1·0	33·9	34·2	34·5	34·9	35·2	35·6	35·9	36·2	36·6	36·9

Inches	1	2	3	4	5	6	7	8	9	10
Millibars	33·9	67·7	101·6	135·5	169·3	203·2	237·0	270·9	304·8	338·6
Inches	11	12	13	14	15	16	17	18	19	20
Millibars	372·5	406·4	440·2	474·1	507·9	541·8	575·7	609·5	643·4	677·3

TABLE XII (*continued*)

EQUIVALENTS IN MILLIBARS OF INCHES OF MERCURY AT 32° F. AND LATITUDE 45°

Mercury Inches and Tenths.	0	1	2	3	4	5	6	7	8	9
					Millibars.					
27·0	914·3	914·6	915·0	915·3	915·7	916·0	916·3	916·7	917·0	917·4
27·1	917·7	918·0	918·4	918·7	919·0	919·4	919·7	920·1	920·4	920·7
27·2	921·1	921·4	921·8	922·1	922·4	922·8	923·1	923·4	923·8	924·1
27·3	924·5	924·8	925·1	925·5	925·8	926·2	926·5	926·8	927·2	927·5
27·4	927·9	928·2	928·5	928·9	929·2	929·5	929·9	930·2	930·6	930·9
27·5	931·2	931·6	931·9	932·3	932·6	932·9	933·3	933·6	933·9	934·3
27·6	934·6	935·0	935·3	935·6	936·0	936·3	936·7	937·0	937·3	937·7
27·7	938·0	938·3	938·7	939·0	939·4	939·7	940·0	940·4	940·7	941·1
27·8	941·4	941·7	942·1	942·4	942·8	943·1	943·4	943·8	944·1	944·4
27·9	944·8	945·1	945·5	945·8	946·1	946·5	946·8	947·2	947·5	947·8
28·0	948·2	948·5	948·8	949·2	949·5	949·9	950·2	950·2	950·9	951·2
28·1	951·6	951·9	952·2	952·6	952·9	953·2	953·6	953·9	954·3	954·6
28·2	954·9	955·3	955·6	956·0	956·3	956·6	957·0	957·3	957·7	958·0
28·3	958·3	958·7	959·0	959·3	959·7	960·0	960·4	960·7	961·0	961·4
28·4	961·7	962·1	962·4	962·7	963·1	963·4	963·7	964·1	964·4	964·8
28·5	965·1	965·4	965·8	966·1	966·5	966·8	967·1	967·5	967·8	968·1
28·6	968·5	968·8	969·2	969·5	969·8	970·2	970·5	970·9	971·2	971·5
28·7	971·9	972·2	972·6	972·9	973·2	973·6	973·9	974·2	974·6	974·9
28·8	975·3	975·6	975·9	976·3	976·6	977·0	977·3	977·6	978·0	978·3
28·9	978·6	979·0	979·3	979·7	980·0	980·3	980·7	981·0	981·4	981·7
29·0	982·0	982·4	982·7	983·0	983·4	983·7	984·1	984·4	984·7	985·1
29·1	985·4	985·8	986·1	986·4	986·8	987·1	987·5	987·8	988·1	988·5
29·2	988·8	989·1	989·5	989·8	990·2	990·5	990·8	991·2	991·5	991·9
29·3	992·2	992·5	992·9	993·2	993·5	993·5	994·2	994·6	994·9	995·2
29·4	995·6	995·9	996·3	996·6	996·9	997·3	997·6	997·9	998·3	998·6
29·5	999·0	999·3	999·6	1000·0	1000·3	1000·7	1001·0	1001·3	1001·7	1002·0
29·6	1002·4	1002·7	1003·0	1003·4	1003·7	1004·0	1004·4	1004·7	1005·1	1005·4
29·7	1005·7	1006·1	1006·4	1006·8	1007·1	1007·4	1007·8	1008·1	1008·4	1008·8
29·8	1009·1	1009·5	1009·8	1010·1	1010·5	1010·8	1011·2	1011·5	1011·8	1012·2
29·9	1012·5	1012·8	1013·2	1013·5	1013·9	1014·2	1014·5	1014·9	1015·2	1015·6
30·0	1015·9	1016·2	1016·6	1016·9	1017·3	1017·6	1017·9	1018·3	1018·6	1018·9
30·1	1019·3	1019·6	1020·0	1020·3	1020·6	1021·0	1021·3	1021·7	1022·0	1022·3
30·2	1022·7	1023·0	1023·3	1023·7	1024·0	1024·4	1024·7	1025·0	1025·4	1025·7
30·3	1026·1	1026·4	1026·7	1027·1	1027·4	1027·7	1028·1	1028·4	1028·8	1029·1
30·4	1029·4	1029·8	1030·1	1030·5	1030·8	1031·1	1031·5	1031·8	1032·2	1032·5
30·5	1032·8	1033·2	1033·5	1033·8	1034·2	1034·5	1034·9	1035·2	1035·5	1035·9
30·6	1036·2	1036·6	1036·9	1037·2	1037·6	1037·9	1038·2	1038·6	1038·9	1039·3
30·7	1039·6	1039·9	1040·3	1040·6	1041·0	1041·3	1041·6	1042·0	1042·3	1042·6
30·8	1043·0	1043·3	1043·7	1044·0	1044·3	1044·7	1045·0	1045·4	1045·7	1046·0
30·9	1046·4	1046·7	1047·1	1047·4	1047·7	1048·1	1048·4	1048·7	1049·1	1049·4

TABLE XIII

Specification of the Beaufort Scale with Probable Equivalents of the Numbers of the Scale

Beaufort Number.	Explanatory Titles.	Classification of Winds for use at Sea.	Specification of Beaufort Scale for use on land based on Observations made at Land Stations.	[1] Mean Pressure (at Standard density) on a disk of 1 sq. ft. Lb. per sq. ft.	Equivalent Velocity in miles per hour.
0	Calm	—	Calm; smoke rises vertically.	0	0
1	Light air	Light breeze	Direction of wind shown by smoke drift, but not by wind vanes.	0·01	2
2	Slight breeze		Wind felt on face; leaves rustle; ordinary vane moved by wind.	0·08	5
3	Gentle breeze		Leaves and small twigs in constant motion; wind extends light flag.	0·28	10
4	Moderate breeze.	Moderate or Fresh breeze.	Raises dust and loose paper; small branches are moved.	0·67	15
5	Fresh breeze		Small trees in leaf begin to sway; crested wavelets form on inland waters.	1·31	21
6	Strong breeze.	Strong wind.	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.	2·3	27
7	High wind		Whole trees in motion; inconvenience felt when walking against wind.	3·6	35
8	Gale.	Gale forces.	Breaks twigs off trees; generally impedes progress.	5·4	42
9	Strong gale.		Slight structural damage occurs (chimney pots and slates removed).	7·7	50
10	Whole gale	Storm forces.	Seldom experienced inland; trees uprooted; considerable structural damage occurs.	0·5	59
11	Storm		Very rarely experienced; accompanied by widespread damage.	14·0	68
12	Hurricane	Hurricane.	—	Above 17·0	Above 75

[1] The pressure due to the wind on any object exposed to it arises from the impact of the air on the windward side and suction on the leeward side; the mean pressure depends on the shape and size of the object. The values given are for a disk of one square foot in area, but they apply with fair approximation for circular or square plates from 1 sq. ft. to 100 sq. ft. in area. One millibar = 10 megadynes per square metre = 10^3 dynes per square centimetre.

EASTERN MEDITERRANEAN

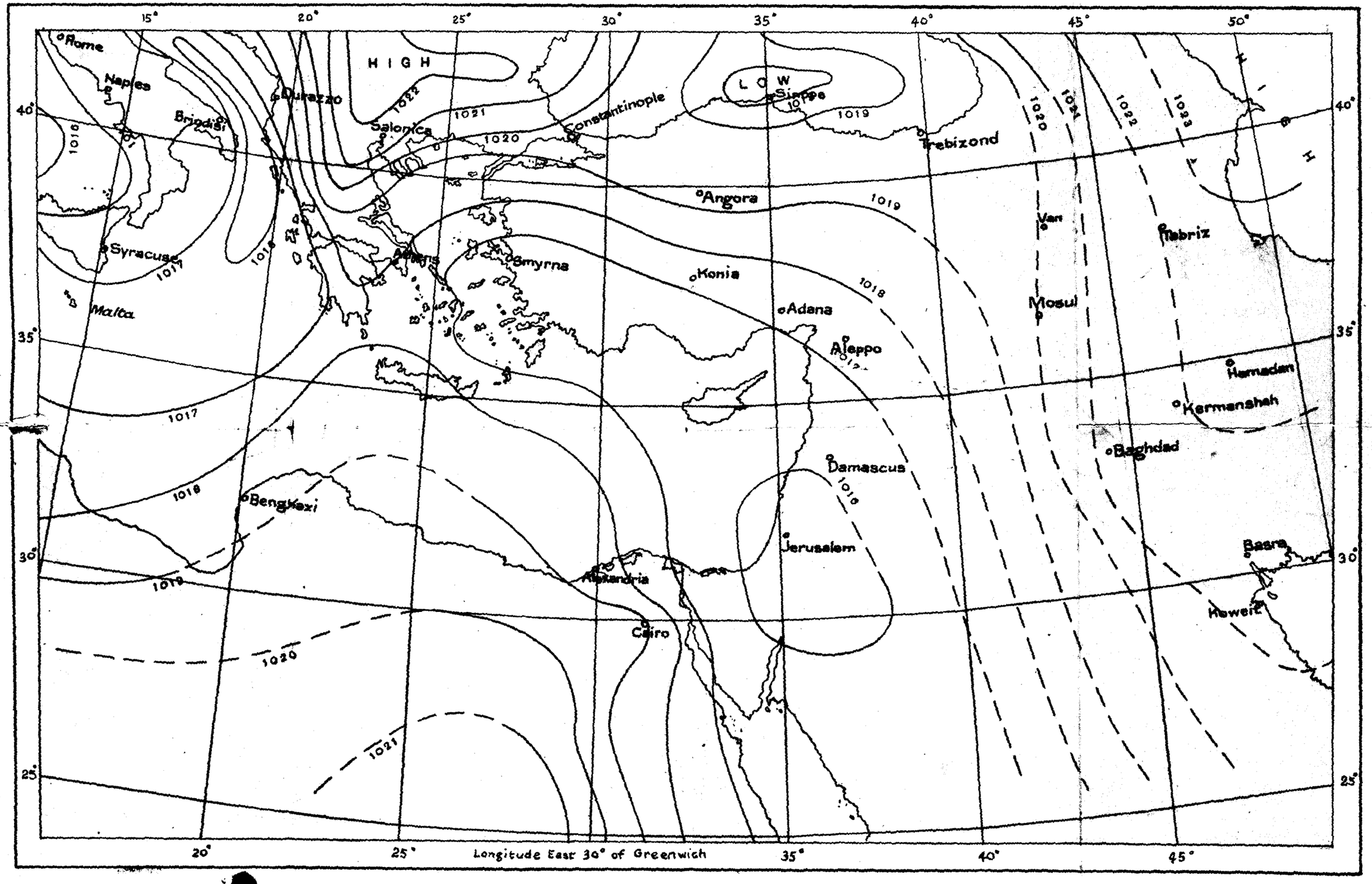
PLATE I

MEAN ATMOSPHERIC PRESSURE

January

MEAN ATMOSPHERIC PRESSURE.—MILLIBARS

JANUARY



EASTERN MEDITERRANEAN

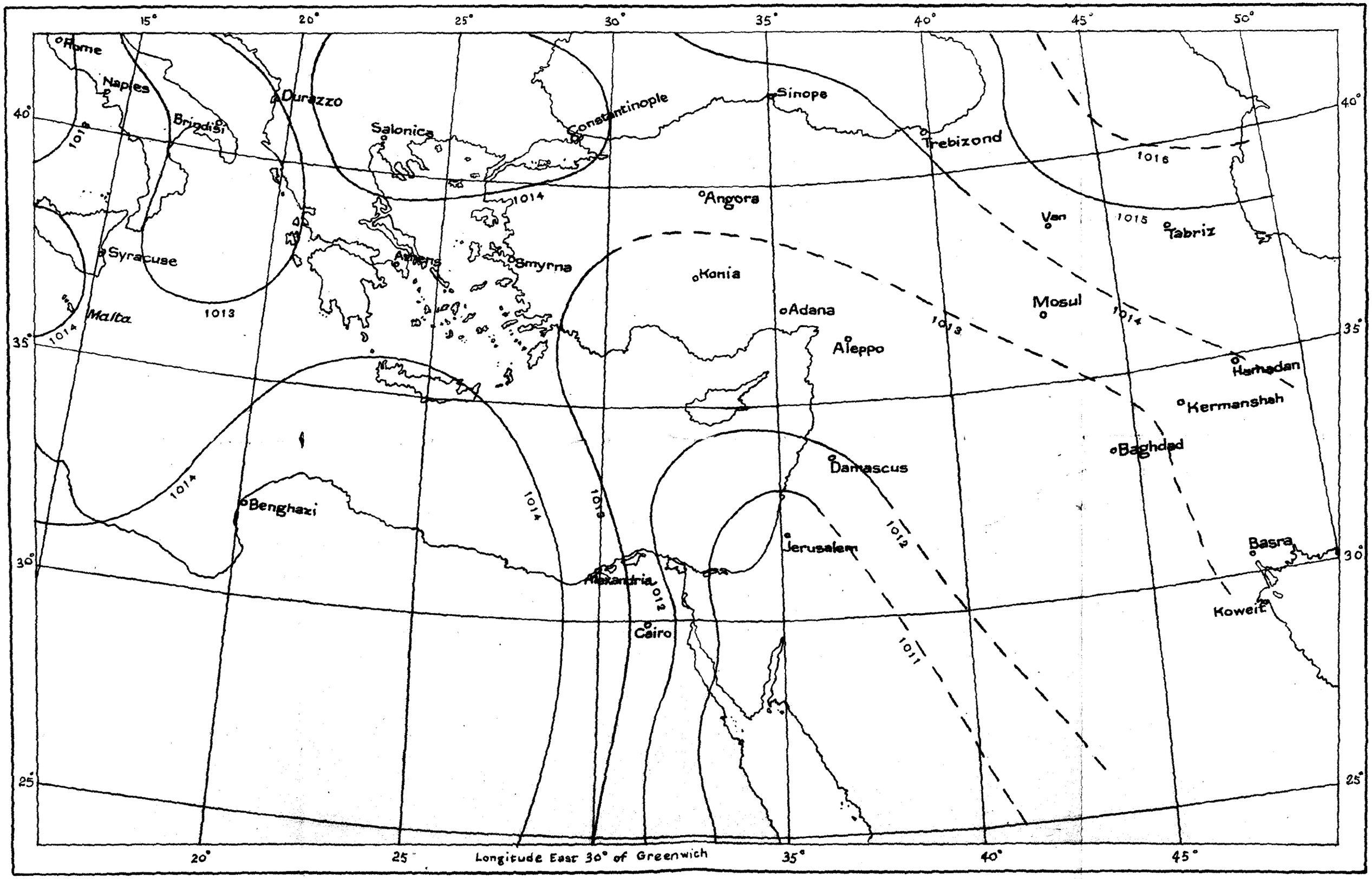
PLATE II

MEAN ATMOSPHERIC PRESSURE

April

MEAN ATMOSPHERIC PRESSURE.—MILLIBARS

APRIL



EASTERN MEDITERRANEAN

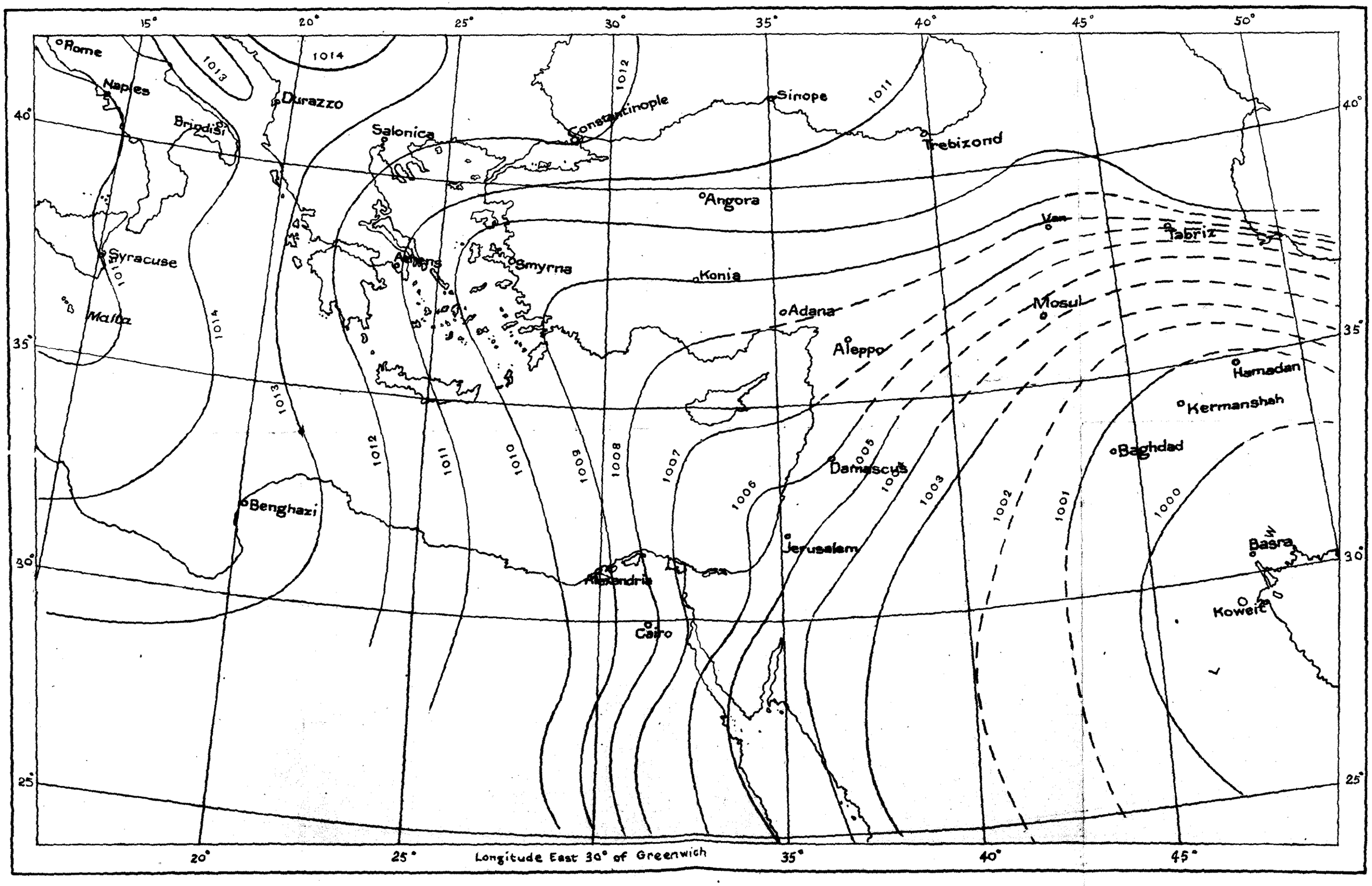
PLATE III

MEAN ATMOSPHERIC PRESSURE

July

MEAN ATMOSPHERIC PRESSURE.—MILLIBARS

JULY



EASTERN MEDITERRANEAN

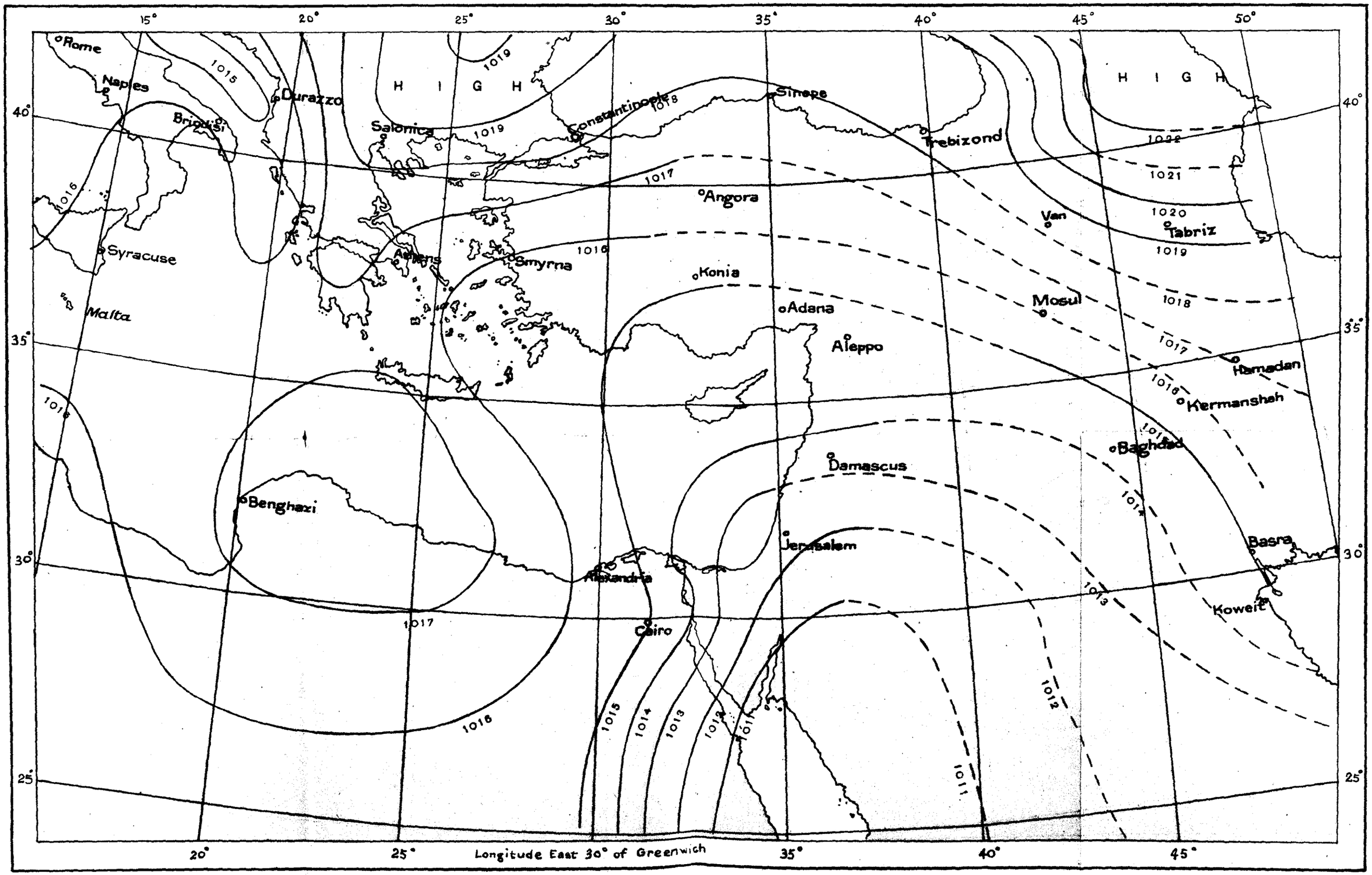
PLATE IV

MEAN ATMOSPHERIC PRESSURE

October

MEAN ATMOSPHERIC PRESSURE.—MILLIBARS

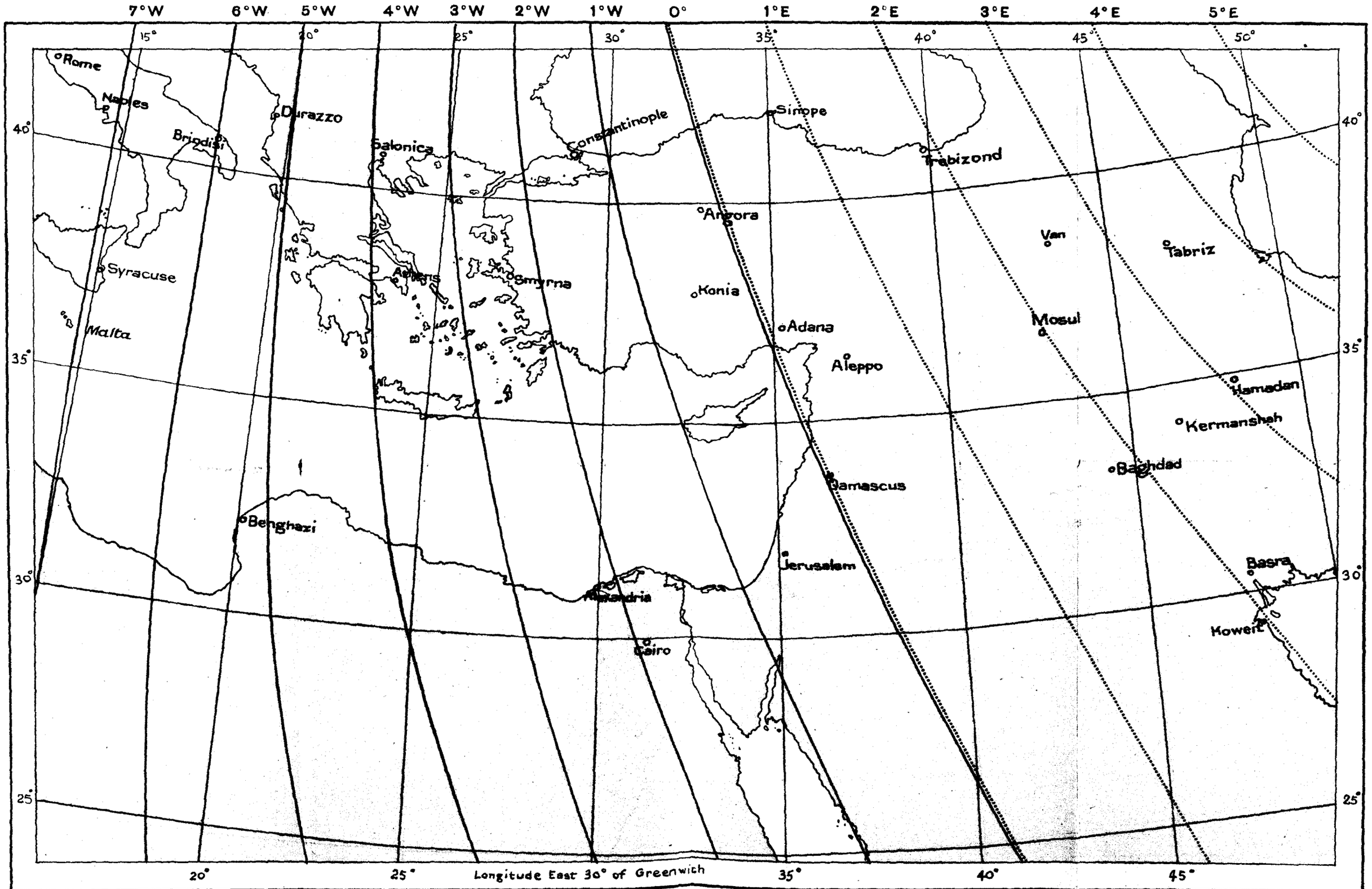
OCTOBER



EASTERN MEDITERRANEAN

PLATE V

LINES OF EQUAL MAGNETIC VARIATION 1917



LINES OF EQUAL MAGNETIC VARIATION. 1917

——————Lines of West Variation

·····Lines of East Variation