



*World Survey of Climatology Volume 6*

# Climates of Central and Southern Europe

edited by

C. C. WALLÉN

*World Meteorological Organisation  
Geneva (Switzerland)*



ELSEVIER SCIENTIFIC PUBLISHING COMPANY  
Amsterdam-Oxford-New York 1977

# Contents

## *Chapter 1. INTRODUCTION*

by C. C. WALLÉN

## *Chapter 2. CLIMATES OF CENTRAL EUROPE*

by M. SCHÜEPP and H. SCHIRMER

Historical account . . . . .	3
General geographical and climatological features . . . . .	4
The general circulation over central Europe . . . . .	6
The annual variation of atmospheric conditions . . . . .	12
Classification of extended weather types. . . . .	12
Seasonal characteristics . . . . .	14
Spring and autumn, 16—Summer, 17	
Monthly characteristics . . . . .	18
Climatic provinces . . . . .	28
The lowlands north of the central-European highlands . . . . .	29
The German highlands and the Jura Mountains . . . . .	31
General climatic features, 31—Special regional features, 33—The Jura Mountains, 34	
The northern Alpine foreland . . . . .	35
The Swiss Midland, 35—The German Alpine foreland, 37	
The Alps . . . . .	37
The Swiss Alps, 38—The German Alps, 39—The Austrian Alps, 40	
The regional distribution of the climatic elements . . . . .	41
Air temperature . . . . .	42
Precipitation . . . . .	49
Sunshine . . . . .	49
Cloudiness . . . . .	52
Winds . . . . .	52
Climatic tables . . . . .	57
References . . . . .	57

## *Chapter 3. THE CLIMATE OF POLAND, CZECHOSLOVAKIA AND HUNGARY*

by W. OKOŁOWICZ

The history of meteorological records and climatological summaries . . . . .	75
--	----

Geographical position . . . . .	76
Sunshine and radiation . . . . .	77
Atmospheric circulation and winds . . . . .	80
General circulation . . . . .	80
Migratory baric systems and their part in weather formation . . . . .	82
Examples of weather situations . . . . .	85
Upper winds . . . . .	94
Surface winds . . . . .	99
Spatial distributions and annual pattern of some meteorological elements . . . . .	100
Air temperature . . . . .	100
Cloudiness . . . . .	103
Precipitation . . . . .	105
Air humidity and evaporation . . . . .	109
Seasons . . . . .	109
Winter . . . . .	109
Summer . . . . .	111
Main climatic differences . . . . .	112
Oscillations and fluctuations of climate . . . . .	112
References . . . . .	113
Climatic tables . . . . .	115

*Chapter 4. THE CLIMATE OF ITALY*

by V. CANTÚ

Meteorological observations in Italy . . . . .	127
Geographical factors influencing the climate of the Apennine Peninsula . . . . .	128
Meteorological phenomena over Italy . . . . .	130
The synoptic climatology of Italy . . . . .	130
Climatology of depressions . . . . .	130
Synoptic climatology of the upper air . . . . .	131
Dynamic climatology of the cyclogenesis . . . . .	135
Weather in climatic regions . . . . .	135
The Alps . . . . .	135
Po Valley . . . . .	137
Northern Adriatic . . . . .	137
Central and southern Adriatic . . . . .	137
Liguria and northern Tuscany . . . . .	137
Tyrrhenian versants . . . . .	138
Calabria and Sicily . . . . .	138
Sardinia . . . . .	138
Climate and life in Italy . . . . .	138
The climatic elements . . . . .	139
Temperature distribution . . . . .	139
Precipitation and aridity . . . . .	142
Snow . . . . .	148
Thunderstorms . . . . .	150

## *Contents*

---

Diurnal variations of pressure . . . . .	165
Pressure, temperature, humidity and wind at upper levels . . . . .	166
Climatic variations . . . . .	166
Final considerations . . . . .	170
References . . . . .	171
Climatic tables . . . . .	174
<b>Chapter 5. THE CLIMATE OF SOUTHEAST EUROPE</b>	
by D. FURLAN	
Introduction . . . . .	185
Factors affecting the climate . . . . .	186
Geographical position . . . . .	186
Features of the relief . . . . .	186
Radiation conditions . . . . .	188
The general circulation over southeast Europe . . . . .	190
The main features of the weather . . . . .	190
Air masses . . . . .	192
The main characteristics of the most important climatic elements . . . . .	193
Temperature . . . . .	193
Mean temperature in January, 194—Mean temperature in July, 196—Annual variation of temperature, 198—Extremes of temperature, 200	
Precipitation . . . . .	203
Annual precipitation, 203—Annual variation of precipitation, 205—Frequency and annual variation of the number of days with precipitation, 207—Maximum daily precipitation, 208—Snow and snow cover, 209	
Clouds and sunshine . . . . .	210
Relative humidity . . . . .	213
Evapotranspiration . . . . .	214
Pressure distribution and winds . . . . .	216
Pressure distribution . . . . .	216
Winds . . . . .	217
Remarks on the climatic variation in southeast Europe . . . . .	220
References . . . . .	221
Climatic tables . . . . .	224
REFERENCE INDEX . . . . .	237
GEOGRAPHICAL INDEX . . . . .	241
SUBJECT INDEX . . . . .	247