

book reviews

***Atlas ekstremalnych zjawisk meteorologicznych oraz sytuacji synoptycznych w Polsce (The Atlas of extreme meteorological phenomena and synoptic situations in Poland)* by Ustrnul Z., Czekierda D., IMGW, Warszawa, 2009, 192 pp., maps, photographs, charts**

The public was recently presented with an interesting publication by Zbigniew Ustrnul and Danuta Czekierda, dedicated to extreme meteorological phenomena in Poland and to the search of synoptic, or broader, circulatory reasons of their occurrence. This aim is served by maps of spatial arrangement of selected meteorological extremes on certain days, appropriate synoptic charts and an extensive description (in Polish and English side by side). The basis of the study are daily data from 61 weather stations from 1951–2006 and synoptic maps (surface and sometimes upper-air maps) mainly made by the Polish meteorological service, but also by the German and French ones, as well as other auxiliary materials, such as satellite and radar photographs, aerological diagrams etc. The subject matter of the analysis are the extremes in the atmospheric pressure and wind, air temperature, precipitation and fog, very good visibility, snow

cover and storms. Interpreting the conditions of occurrence of a given extreme weather situation is not limited only to analyzing the synoptic situation over Central Europe; the authors also examine circulation types over this area in the perspective of five typologies – starting from Grosswetterlagen (GWL), to the classifications of J. Lityński, B. Osuchowska-Klein and T. Niedźwiedz, and finishing with Z. Ustrnul's own original classification; these typologies are described in the Atlas. The basis of determining extreme weather situations was in general the frequency of their occurrence with the probability below 10%, although in some cases a stricter criterion of 1% and 0.5% was used.

After the introductory chapter 1 the next 2 one is dedicated to *atmospheric pressure*. The highest and lowest values of pressure at each station in multiannual periods, the largest drops and rises of pressure within three hours (the largest values of pressure tendency) and the largest gradients of pressure over Poland along the lines E-W; SE-NW, S-N and SW-NE are discussed. All these issues are shown on maps and in tables, synoptic documentation is added and the types of circulation on the chosen days are given. In the case of wind, due to the inconsistency of the observational

material, the authors dispensed with analyzing the largest measured velocities and limited themselves to giving dates on which the geostrophic wind velocity (the level of 850 hPa) reached at least 30 m/s at the 52.5°N, 20°E point and types of circulation on these days and to illustrating them with synoptic maps.

The next, 3 chapter regards *air temperature*. The authors concentrated on absolute minima and maxima at each station; types of circulation on the days of their occurrence are given (a map and a table). The values of the highest maxima and the lowest minima in the chosen months: January, April, July and October were given separately; but for reasons unknown, differently than in the other tables, where the stations are given in the alphabetic order, in these tables the order of weather station numbers in the international network was assumed. The pattern of maximum and minimum temperature on the days when their highest and lowest values respectively covered the biggest areas of the country (i.e. they occurred at the biggest number of stations) was illustrated and backed up with weather charts as well. In this chapter also the highest values of maximum temperature in winter are shown, as well as days with minimum temperature above 20°C (space arrangement, tables with the dates of its occurrence and types of circulation, weather maps). The last part of the chapter regards ground frost: the dates of the latest spring ground frosts and the earliest autumn ones; the pattern of minimum temperature in Poland on these days and the appropriate weather maps are shown.

Chapter 4 is devoted to *the highest total precipitations in a 24-hour cycle*: a map and a table with the values, a table with dates of extremely high precipitation covering the largest area of the country and types of circulation on these days, then maps of spatial arrangement of precipitation on ten of these days, synoptic maps. Situations from recent years (1997, 2000) are illustrated with satellite photographs of cloudiness. The next part of the chapter is dedicated to winter precipitation, described with a similar approach.

Chapter 5 is entitled *Other meteorological elements*. Here are discussed the cases of *long-term fog* occurring at least at 10% of the stations; cases of visibility over 50 km at three stations: on the Hel peninsula, in Warsaw and in Cracow; the highest snow cover, its biggest increase within 24 hours and the dates of the earliest snow cover at all stations; days with storms occurring at the largest number of stations. Just like in the previous chapters, spatial arrangement of a given quantity on chosen days, tables with dates of the largest range of the studied extreme value and types of circulation on these days and synoptic maps are presented.

As we can see, the approach is in general similar in consecutive chapters, some approaches, however, are individually tailored for the specific character of a given meteorological element or phenomenon; there is order, but not a stiff pattern. The whole is described and interpreted. It should be stressed here that in each case not only the synoptic situation, but also the types of circulation in different systems were taken into account, which gives a possibility of forecasting

the occurrence of the extreme values of the studied meteorological elements and phenomena. This is also, in some way, the content of the last chapter.

Chapter 6 contains *a summary and conclusions*. An interesting attempt was taken up here to determine a dependence of the occurrence of thermal extremes and precipitation maxima on the types of circulation, which is a kind of a copestone of the cause-effect approach, which is the guiding line of the Atlas content.

The Atlas is beautifully published: on glossy paper, with maps in nice, clear colours, a large number of photographs of clouds, atmospheric phenomena, measuring devices, landscapes etc; even on the margins there are, against a light background, photographs connected by their subject with the content of the chapter; on the hard covers there are also beautiful illustrations. As a result, this is not only a valuable, but also a highly aesthetic publication. Moreover, the value of the Atlas is raised by the fact that it is bilingual, Polish-English, which makes it accessible also for foreign readers.

Unfortunately, there are quite a few flies in this lovely ointment. First of all, the maps showing the spatial arrangement of the studied phenomena, which form the most original part of the Atlas and are one of its greatest informative values, are too small (the scale is probably 1:8 000 000), and from the cartographic point of view they are not maps at all, but merely pictures, since there is neither map projection nor the scale given.

A big weakness of the Atlas is its language. First of all, the authors, probably influenced by the title of the

work, definitely overuse the adjective “extreme”, sometimes creating an impression that they do not remember the meaning of it and the existence in the Polish language of words that in many places would convey the meaning better than the unfortunate “extreme”. It can be even said that the adjective “extreme” is harped on to absurdity: “the most extreme case”, “maximum extreme values”, “extremely high maximum temperature”, “very extreme cases were distinguished”, “extremely high total precipitation”, “extremely high precipitation”, “precipitation of extreme character”, “the most extreme events”, “extremely long lasting fogs”, “another extreme episode”, “extremely good visibility”, “the increasing of extreme phenomena” and many others.

It is perhaps then worth reminding what this word means in Polish. In the dictionary of loanwords used in Polish (PWN, 1997) we may read that “extreme” means 1. “outermost, going to the greatest lengths” or 2. “regarding a mathematical value: minimal or maximal”. The conclusion is that something (e.g. a value) which is described in Polish as extreme, i.e. as going to the greatest lengths, can be the only such thing, because the one that comes second to it does not reach *the greatest lengths*. Therefore, in the strict sense of the word in Polish, nothing can be more or less extreme; it may only be or not be extreme. However, in the IPCC definition quoted in the Atlas an extreme phenomenon is understood in a broader way – as a phenomenon which is very rare, where the “rarity” criterion is determined with statistic methods. This

means that there may be more than one extreme phenomenon in the studied set, but is any of them “extremer” than the others then? In such situation the selected values can be called the highest and lowest, the biggest and smallest or some of the biggest and smallest, fog can be called unusually long-lasting, the visibility – exceptionally good, and a case can be ultimate or exceptional. What is especially unfortunate is the combination “extreme maximum temperature”, since maximum temperature is extreme just by the nature of it, and then, taking into account that there are two extremes, it is not very clear what this is about. One may guess that this is about the cases of the highest maximum temperature, but were we interested in its lowest values, they would be extreme too! In many places using pure Polish words, and not loanwords, would make the text more unambiguous and thus easier to understand.

Also using the adjective “extreme” in regard to precipitation raises a strong objection. The highest precipitation is the maximal total precipitation in a 24-hour cycle; such values are considered here and so they are commonly called. The other extreme – is the lowest precipitation, that is no precipitation, which in a single day is no extreme phenomenon and of course is not considered in the Atlas. Why then is maximal precipitation called with unrelenting consistency (and no logic) “extreme”? Maximal precipitation may be the highest, extremely high, exceptionally high etc. – which is more understandable than this forever repeated “extreme”, which proves a limited vocabulary. And

expressions such as “very extreme” are simply lamentable.

Another common fault, typical for the climatologic jargon, is the abuse of the preposition “for”, a buzzword, exempting from thinking. In many places “in the case of”, “regarding” or “of” should be used instead or the sentence should be rephrased. For example the sentence “For both of these elements ... there were available sequences of daily data for the whole discussed century” should read: there were available sequences of daily data on both elements from the whole discussed century; “The material is complete for most stations” should be: The material from most stations is complete, “research for Southern Poland” is research regarding Southern Poland. Phrases like “data for elements”, “values for the multiannual period”, “data for seasons”, “data for stations” appear throughout the text, standing in contradiction not only to correct Polish, but even with logic.

Another common fault is the so called personification: “the work presents”, “most works concentrate on the evaluation”, “a characteristic which takes into account”, “the station noted” and many others. But only a human may present, concentrate, take into account, note; a thing can never do this. So it should read: ... is presented in the work, the authors of most works concentrate on the evaluation, characteristics in which ... was taken into account, at the station ... was noted etc. And again I remark: this is not just the language, it is also logic!

Let us mercifully bring down the curtain on stylistic and punctuation errors

and mistakes in the alphabetic order of names in the bibliography. One is, however, overwhelmed with sorrow that this unusually valuable in its substance and interesting work, the preparation of which demanded a tremendous effort, with beautiful graphics, was not written with equal care. And it should be remembered

that at least for the next dozen years it will for sure be the basic source of information about extreme meteorological phenomena in Poland, useful to many different users. Do they therefore have to draw, together with valuable knowledge, dreadful patterns of how to speak and write about these phenomena?

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