

ILLUSTRATIONS OF THE METEOROLOGY OF INDIA AND HIGH ASIA.

I. TEMPERATURE OF THE AIR: 3, THE ISOTHERMAL LINES OF THE SEASONS.

THERMAL TYPES.

THE YEAR.

The isothermal lines of the year show most distinctly the influence of the topographical form of the Indian peninsula on the increase of the mean temperature: in the southern parts they follow the contours of the shores, or obtain forms evidently in connexion with them; in the northern part these lines are raised to the extent of a difference of five degrees of latitude where they pass over the central axis of India. At the same time, southern India presents one of those insular regions of greatest heat which are connected with each other by the thermal equator; the Indian archipelago shows as the next of these regions which follows to the east.

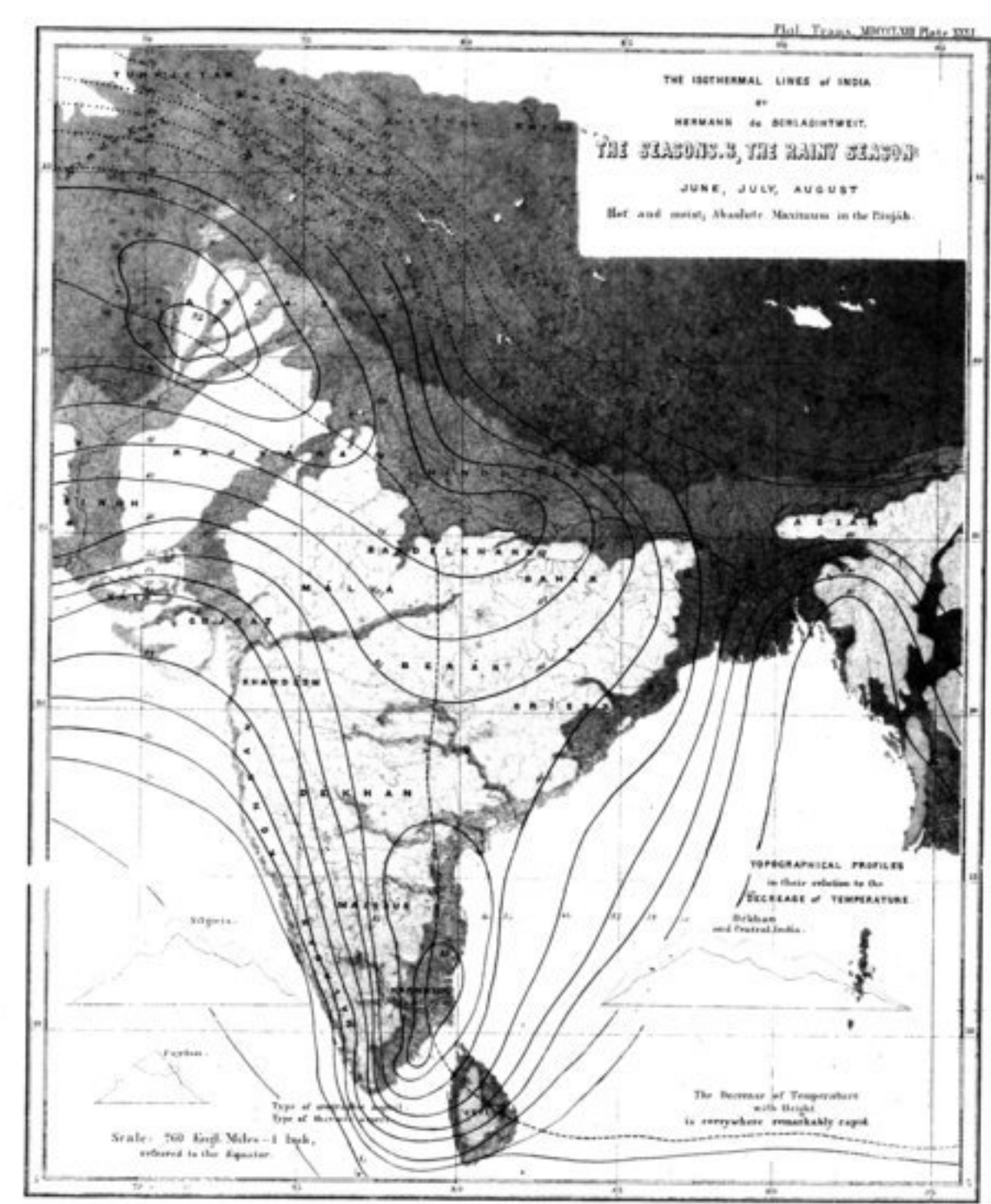
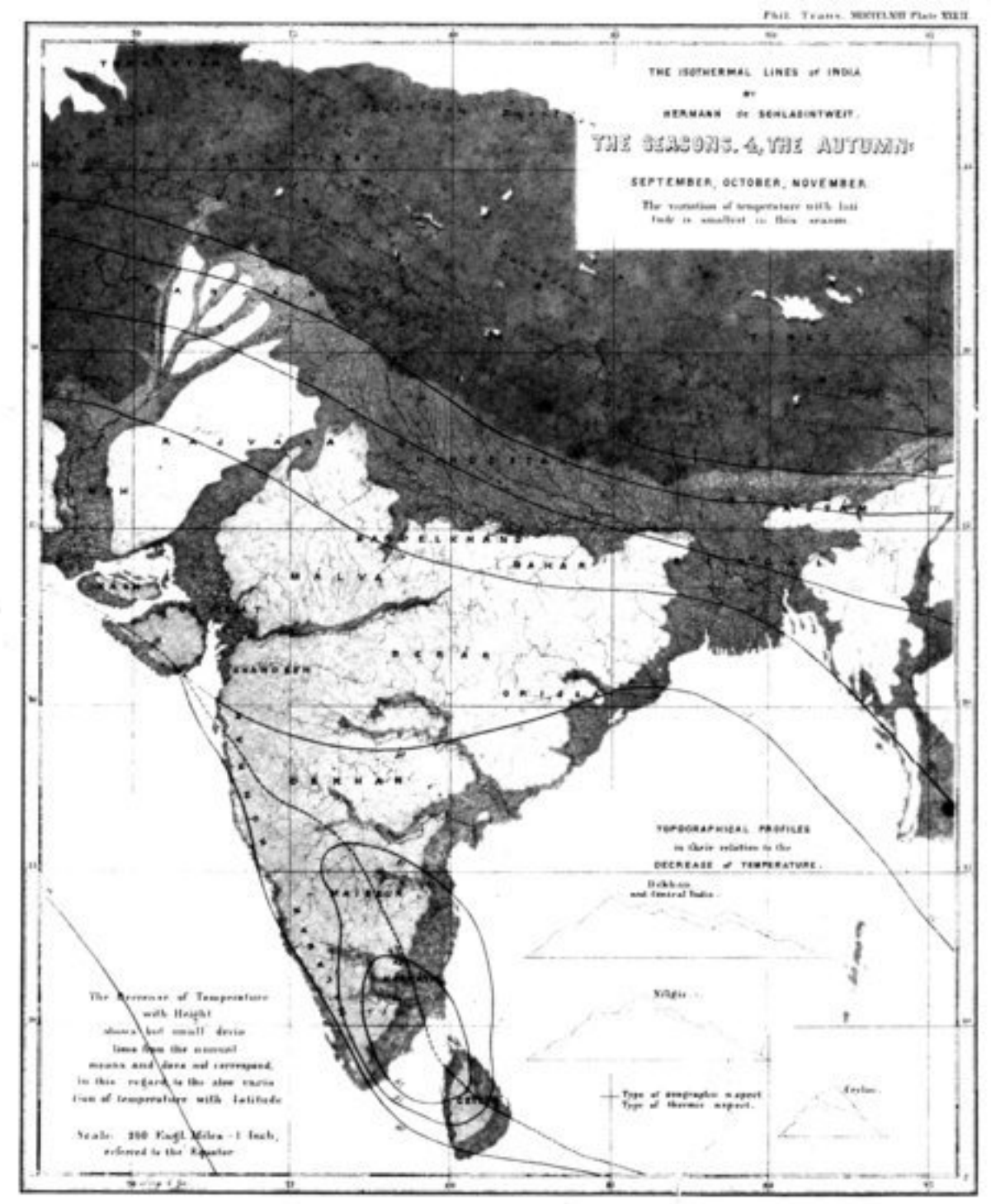
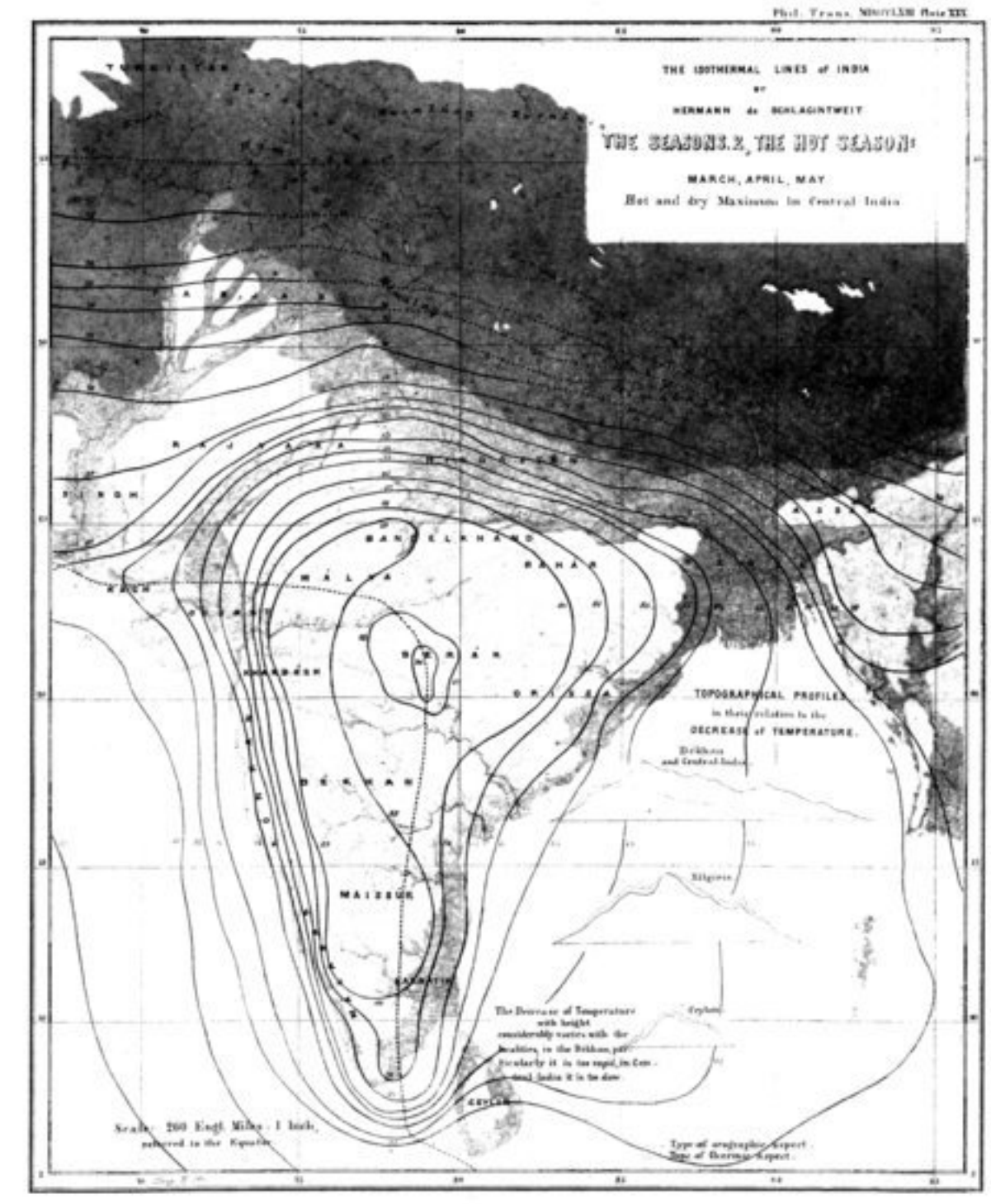
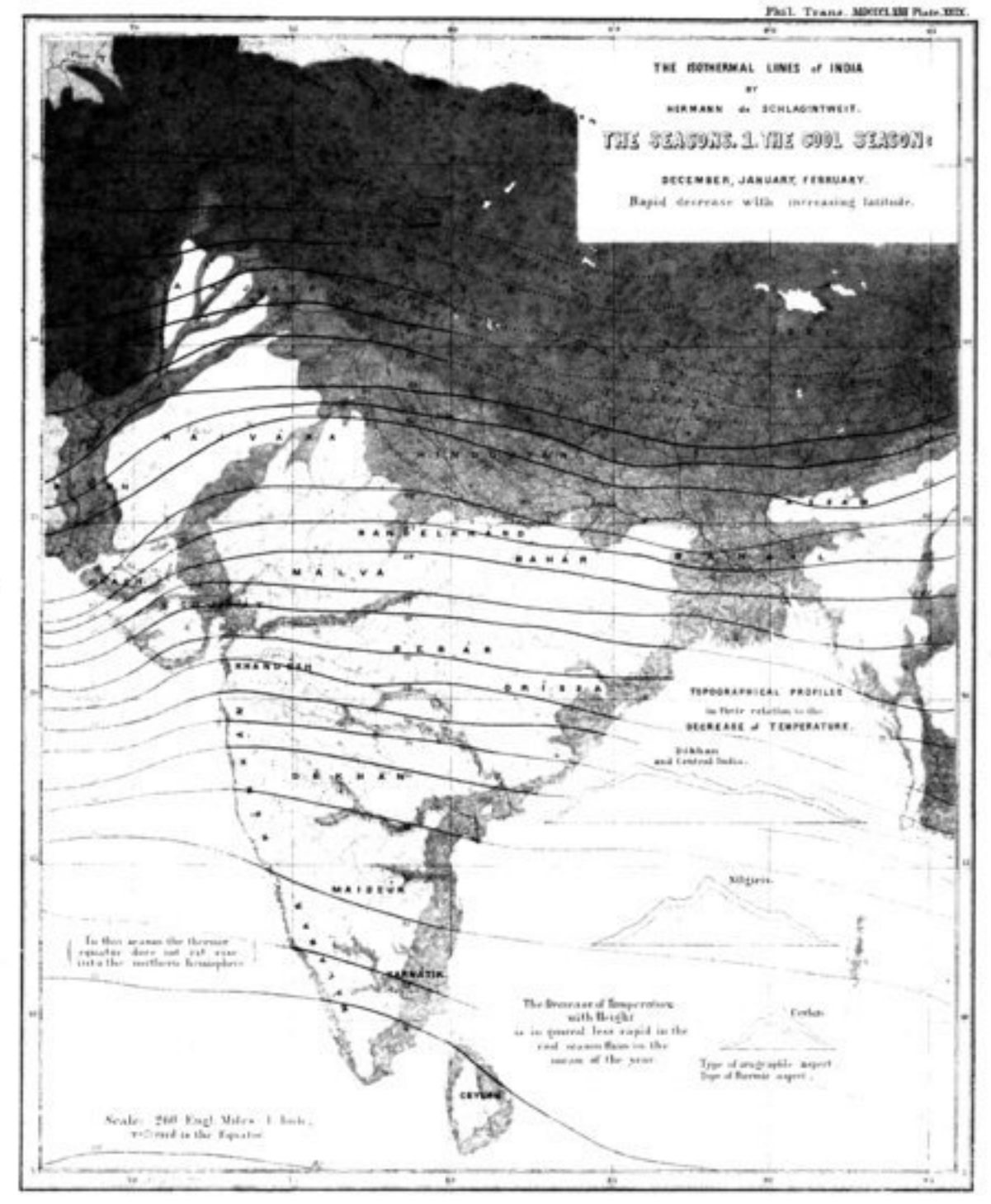
THE COOL SEASON.

The cool season. — This period already shows traces of the increase of temperature in the interior of the land when compared to surrounding seas; but, as it must be expected, the influence of insolation is, comparatively speaking, but little felt during this season in the provinces at some distance to the north of the equator, on account of the southern position of the sun. In the regions beyond the tropics the liberal influence of the sun, compared to that of the sea, causes depression of temperature. In reference to the Panjáb, it must be further added that we have here, comparatively speaking, a greater number of stations for which the actual temperature is still lower than the values represented by the isothermal lines, as the latter had to be reduced to the level of the sea. The general elevation of the ground, and, throughout the season, a sky unusually clear, so favourable to nocturnal radiation, may be mentioned as the principal causes. The decrease of temperature with latitude is by far the most rapid in the cool season.

When comparing this period with the following seasons we are particularly surprised by the unusually great variety of the four types, whilst in many of the more western regions of the tropics we see that it is more the numerical value of the lines which is changed than the type of their forms. These variations have the more importance, as the territory here represented has a surface considerably larger than might be expected, perhaps, from the extent of European empires. The distance from the Bay of Biscay to the Caspian Sea can be considered as about equal to the difference in longitude of the borders of these Maps; whilst 30° of latitude, referred to European regions, might be compared with the distance from the southern shores of the Mediterranean to St. Petersburg.

THE AUTUMN.

Autumn (September, October, November) is the only one of the tropical seasons which shows here a very regular form of its curves, and a very slow decrease of temperature with latitude; it is not less characteristic for this season that in most regions, particularly in those along the banks of the larger rivers, the drying up of vast surfaces formerly inundated is the cause of most deleterious miasmatic vapours; but in the Panjáb, and in the hilly countries along the Brahmaputra and in Central India, where these dangerous modifications of the atmosphere are not to be feared, this season frequently approaches the mild and refreshing character of the regions of southern Europe.



THERMAL TYPES.

[Continued.]

THE HOT SEASON.

The second period of the year (March, April, and May) which is generally called the hot season all over India, also in its north-western parts, shows a remarkable difference in the type of the curves when compared to the cool season; the influence of the topographical forms of the peninsula has become now considerably more apparent. The thermal equator enters the western border of the Map already at an elevation of 24° of latitude, passes through a central region of maximum temperature exceeding 90°, and descends from thence directly to the south, to the very southern end of India. Great dryness is combined in this period with the high temperature, and is an important element for making its difference from the other seasons still more apparent; but it would be erroneous to expect, at it might appear rather probable, that in consequence the heat is felt the heavier by the human organism. Though the central parts, compared to the shores of the sea, show a rapid increase of temperature with the progress towards the interior, I must add that, on account of the moisture being greater along the shores, not only the heat is felt there more close and more oppressive, but also its influence on the health, particularly of the Europeans, is decidedly still more unfavourable. For the coasts, and for the interior of India up to latitude 25° N., these months remain the period of the year which includes the highest means, and also the greatest heat of single days.

THE RAINY SEASON.

The third period (June, July, and August) is, for the greatest part of India, the rainy season; its setting in is connected, particularly in Central India, with the most rapid sinking of temperature. Nearer to the shores the difference is felt less beneficial; the humidity has increased, too, and makes, in the shade at least, the heat the more oppressive. The power of the insolation now being broken, by a sky nearly permanently clouded, must be named as the particular cause why the beginning of this season in general is considered as a welcome period. For the state of health, however, it is less favourable; dyspeptic complaints and fevers are particularly frequent in the latter part of this season. In the Panjáb, and partly already in the north-west provinces of Hindostan, this period has no more the character of a rainy season. The precipitation takes the form of our summer rains with thunder-storms and also the amount of precipitation most rapidly decreases towards the north-west.

At the same time these provinces include a region of maximum for which the mean temperatures during the three months exceed 92°, which therefore must be considered as one of the very hottest regions of our globe. For this region also the non-periodic variations of temperature, the variations between different years, have become much greater than we find them to be in the more southern tropical part of the territory examined. The thermal equator enters the west of the Map at the latitude of 32°, and only leaves the Indian peninsula near Ceylon in an easterly direction.