mean temperature, mean maximum, mean minimum, absolute maximum, and absolute minimum temperatures. The values of each of the five elements for every day in the year are stated in tabular form.

In extending the relations to different parts of the globe, recourse has been made to Hann's "Lehrbuch der Meteorologie" for information relating to 143 stations, coastal and inland, scattered over the two hemispheres, and the results for Brussels and Nertchinsk are added to these. Expressions have been obtained for the same five temperature means and extremes for all of these stations, while for 26 of them more exact expressions have been calculated. The accuracy of these latter expressions may be gauged when it is stated that the difference between the observed and calculated monthly mean temperatures in no case amounts to 1° C., and in most cases is a small fraction of this amount.

To progress from the results for individual stations, the earth's surface is divided into belts of 10° of latitude. For each belt the mean latitude is obtained for the stations contained in the belt and also the mean of their respective temperatures. The results obtained for the successive belts are then integrated to obtain a mean temperature for the whole globe and for each hemisphere. The values obtained are: (1) for the whole globe, 15°·61 C.; (2) for the northern hemisphere, 16°·15 C.; and (3) for the southern hemisphere, 15°·07 C. These results are somewhat higher than those given by Angot in his "Traité de météorologie." This may to a certain extent be accounted for by the fact that no allowance has been made by the author for the relative amounts of land and water in his successive belts of 10° of latitude, as was done by Spitaler and Forbes in their calculations. The difference between the observed mean temperature at any place and the value calculated for that latitude gives a measure of the effects of topography and local conditions, such as nearness to the sea, the direction of prevailing winds, the influence of ocean currents, etc. These effects of continentality and oceanity have further been considered as equivalent to a change of latitude, and examples are given for different places the mean temperature of which is equal to that for latitudes considerably nearer the equator or the poles.

The amplitude of the temperature oscillations has been similarly considered, because this is also dependent upon latitude, and the difference between the observed and the calculated amplitude will again be due to local conditions, the climate being more or less equable than is general for the latitude. The effects of continentality and oceanity on both mean temperature and its amplitude are shown on charts.

A possible allocation of dates is suggested for the meteorological seasons based on temperature changes. The dates for the change of seasons would be those where the maximum, minimum, and mean temperatures were passed. To a first approximation for places outside the torrid zone, the dates obtained (January 22, April 24, July 24, and October 23) are about one month later than the corresponding astronomical seasons.

The author concludes that the really determining factor in temperature is latitude, and that the other conditions, topographical or local, give rise only to more or less important perturbations the effects of which can be obtained by direct observation alone. R. S. R.

Botanical Exploration in China.

THE *Anzeiger* of the Vienna Academy of Sciences for 1924, which has recently been issued, contains, among other interesting matter, parts 25-30 of Dr. H. Handel-Mazzetti's "Plantae Novae Sinenses." They add another century of new species and varieties of Chinese plants to those included in the earlier numbers. There is no definite plan in the selection of the plants described as new. The descriptions are rather in the nature of gleanings obtained in the course of the author's elaboration of the extensive material which he collected during his five years' exploration work in China, and of preliminaries towards a full account of his expedition. This, we understand, is almost ready for the press, and as Dr. Handel-Mazzetti is not only a highly competent botanist and an experienced traveller—he has done good work in Kurdistan and Upper Mesopotamia—but also a naturalist with a very comprehensive and thorough training, we are eagerly looking forward to its publication.

Dr. Handel-Mazzetti went to China with Camillo Schneider, the well-known dendrologist, early in 1914 on behalf of the Austrian Dendrological Society and with the support of the Vienna Academy of Sciences, the immediate object of the expedition being the Upper Yangtse basin between 27° and 30° N. The travellers left Yunnan-fu in March 1914 and devoted themselves during the spring and early summer to the exploration of the Yalung basin in southern Szechuan and of the north-western corner of Yunnan. When Schneider left in July for America, Handel-Mazzetti continued the work alone. He returned to Szechuan in the autumn, going afterwards to Mengtse and Manhao on the Red River and, in the spring of 1915, to Yunnan-fu, whence he started for the Likiang range, crossed the Mekong, and penetrated to the watershed of the Salween and the Kiukiang, the easternmost tributary of the Irawadi. The next year was given up to the exploration of the Upper Salween basin as far as its western and northern boundaries. After having spent the winter of 1916–1917 at Yunnan-fu, Handel-Mazzetti turned his attention to the botanically very incompletely known provinces of Kweichou and Hunan. He traversed southern Kweichou from west to east and reached Changsha in Hunan towards the end of 1917. The following summer saw the explorer in Central and South-West Hunan. After another winter in Changsha, which was spent in preparing his extensive collections for despatch to Europe, Handel-Mazzetti left China, arriving in Vienna in the early summer of 1919.

Dr. Handel-Mazzetti published preliminary accounts of the floral zones and plant-formations of West Szechuan and Yunnan in the *Anzeiger* in 1916, 1917, and 1920, and a revised account in Engler's "Botanische Jahrbücher," Band 56, with a map (1921), whilst a similar account dealing with the flora of Kweichou and Hunan appeared in the *Sitzungsberichte* of the Vienna Academy in 1919. A preliminary report on his exploration in Yunnan may be found in the *Mitteilungen* of the Geographical Society of Vienna in 1919 and a paper "Ergebnisse der Expedition Dr. Handel-Mazzetti's nach China, 1914–1918. Neue Aufnahmen in N.W. Yunnan und S. Setschuan," accompanied by a map, in the *Denkschriften* of the Vienna Academy in 1921. The latter contains important contributions to the glacial geology of the country and is repeatedly referred to in J. W. and C. J. Gregory's recent memoir on "The Geology and Physical Geography of Chinese Tibet" (Phil. Trans. Roy. Soc., London, Ser. B., Vol. 213). Dr. Handel-Mazzetti, who is an excellent photographer, has also made a fine collection of slides (partly coloured), many of which are of great beauty. O. S.