episodes in the general geological history of the earth. The recent one seems important merely because it is so close to us, and did so much in the conditioning of man's early days on earth and in the preparation of the lands that are now of outstanding economic importance. But the normal state of the earth's climate, for ages on end, is equable, moderately warm, and moist, without the stormy contrasts we know now, which are due largely to the fact that the Ice Age is really not quite ended.—Excerpt from *Science Service* report of vice-presidential address by Prof. W. H. Hobbs of the Section of Geology and Geography of the A.A.A.S.

DYNAMIC CLIMATOLOGY [1]

By PHIL E. CHURCH, Evanston, Ill.

Dynamic climatology, in contrast to statistical climatology, may prove more satisfactory as a basis from which to make climatic interpretations. The phases which are of interest to the geographers are the characteristics, frequency, seasonal distribution, and duration of distinct air masses. The properties of these air masses are contingent upon their source region, e.g.: polar or sub-polar, or tropical, continental, or marine. The source region imparts to the overlying air the characteristics which are quite stable even after the air mass moves to another region.

The extra-tropics lie in the broad zone of conflict between polar and tropical air masses. The rapidity and degree of changeableness of the weather depends upon the succession of the different types of air masses. There are three polar and four tropical types which are named for the region which impresses definite characteristics upon the air. Thus, there is the polar continental, polar Pacific, and polar Atlantic, tropical Gulf, tropical Atlantic, tropical continental, and tropical Pacific. All tropical air masses are warm and all are very moist except the tropical continental. The tropical Atlantic and tropical Gulf, both very humid, bring the moisture to that section east of the 100th meridian. The tropical continental is hot and dry during the summer, its season of maximum occurrence.

In contrast to the tropical, the polar masses are cool or cold. The polar continental is very cold and dry during the winter and cool in summer. The polar Pacific mass loses its moisture on the western coast and becomes quite dry on reaching the interior of the United States. The polar Atlantic is cold and moist during spring and fall when it is most frequent along our northeast coast.

Each of these masses becomes somewhat modified after leaving its source region and when the characteristics have undergone a large enough change the mass is then designated as transitional. Thus there are more than a dozen types of air masses.

The passing of different types of air masses produces weather changes which are far from the average. These changes are probably of far greater importance in determining and restricting man's activities in his adjustment to the environment than the averages that these wide and rapid changes produce. Many agricultural, industrial, economical, and human adjustments to the environment can be better interpreted with a more complete understanding of the properties, frequency, seasonal distribution, and duration of the air masses. —*Author's Abstract.*

[1] Evanston meeting, Assoc. Am. Geogs. Dec., 1933. Reprinted from Annals A. A. G., Mar., 1934.