At the October 28, 1966, meeting of the Council a very important resolution was adopted. It deals with procedures for electing Councilors. In order for this to come to pass it will be necessary for the membership to approve a revision in the Constitution. It is planned to place the question on the ballot to be distributed during the Autumn of 1967. This should give all interested members the opportunity to discuss this matter at Chapter meetings and write letters to the editor if they so desire.

The Council approved the following amendment:

Paragraph 2 of Article V currently reads as follows:

"Four Councilors shall be elected at each Annual Meeting for a term of three years. Four Councilors shall be elected by members eligible to vote. One Councilor shall be elected by the members eligible to vote from each state."

It is proposed that this be amended to read as follows:

"Four Councilors shall be elected at each Annual Meeting for a term of three years. Four Councilors shall be elected by members eligible to vote. One Councilor shall be elected by the members eligible to vote from each state."

What is the justification for such a change? In the view of some, this may appear to be a move to centralize authority, to strip members of their rights to control the makeup of the Council. However, this certainly is not the intent and furthermore the change will not have

under take an interdisciplinary study of communication. Among the groups participating in the study are the Optical Society of America, the American Geophysical Union, the American Institute of Aeronautics and Astronautics, the American Institute of Physics, the American Sociological Association, and the American Meteorological Society. The field of meteorology can contribute much to the scientific communication picture and the active interest and participation of its membership will add a new dimension and perspective to the previous work on scientific information exchange and to which that is developing currently.

Louis J. Battan
President
American Meteorological Society

1. Introduction

The existence, nature, and causes of the so-called urban "heat island" are well documented in what are probably the classic papers on the subject (e.g. Duckworth and Sandberg, 1954; Kuster, 1956; Mitchell, 1961; Sandberg, 1959) and in several more recent papers (e.g., Chandler, 1962; Woodlum, 1964). These papers represent a range of city population from that of Palo Alto, California (Duckworth and Sandberg) to that of Lon don (Chandler). They also represent a variety of emphasis from a major concern with time trends in the nature of the heat island (Mitchell) to a major concern with choice of sampling network and development of predictive formulae (Sandberg). Some presentations of mapped isotherms are for individual nights and some for seasonal mean values. Duckworth and Sandberg (1961) apply normalizing indices to certain aspects of the structure of the urban area studied and to the temperature patterns observed.

All of the papers cited demonstrate the existence of a warm core coinciding with the most densely built-up and populated portion of the city, and demonstrate that the core is best developed under nocturnal conditions with clear skies and calm winds. Only Sandberg (1959) and Duckworth and Sandberg (1961) make explicit mention of effects on isothermal patterns of topography within the urban areas.

This zone is intended as a contribution to the literature on the urban heat island emphasizing three points: 1) the heat island effect is readily observed in cities as small as 20,000 to 25,000 people; 2) the same isothermal pattern may be observed in calm, clear nights produced by quite distinctly different macroscale synoptic situations; and 3) nearly simultaneous observations may be made, with resulting ease of analysis, by a large group of observers using readily available instruments combined with care in planning.

2. Site, methods, and times of observation

Corvallis, Oregon, a small university town located in an urban environment with no city of comparable size, has a population of 15,000. The situation in smaller towns is quite different, and was not the subject of this study. However, observations of the urban heat island were made in Corvallis, Oregon, a small university town located in an urban setting with no city of comparable size, has a population of 15,000. The population density is 64 people per square mile. The city is located near the ocean, and is surrounded by forested areas. The weather in Corvallis is typically mild, with temperatures ranging from 10°F to 90°F. Rainfall is moderate, with an average of 35 inches per year. The climate is characterized by mild winters and warm summers.

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Observations of the Urban Heat Island in a Small City

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3. Results and discussion

Fig. 3 and 4 present the results of the two series of observations on a map of the area showing topography and location of greatest urban development. On both nights these areas of higher temperatures are apparent. The first area is associated with a hilltop to the southwest; the second with a hilltop to the northwest; the third with the commercial city center on the river front to the east. The third is clearly the true heat island, though on both nights it blends into the warm hilltop area to the northwest. The first area is disjointed from the other two because of the effect of a large city park lying on low ground. Although it may not be deduced directly from either map, careful measurements on and beyond the bridge near the city center yielded no indication the Willamette River exerted any major influence on the temperature field.

From the maps may be obtained the information that the temperature ranges on the two nights were 15°F and 10°F, and that the values for the differential intensity expression of Duckworth and Sandberg (1954) (the inverse of maximum horizontal temperature gradient in the urban center) are about 0.07°F and 0.15 mi deg.

These values fit very well with those of the Bay Area cities given by Duckworth and Sandberg, and indicate the nights observed in Corvallis must have been near the extremes of occurrence for this area.

4. Conclusion

We would like to urge similar groups of observers to undertake observation series such as are reported here. With the variety of city sizes and topographic features available to such groups across the country, it would seem possible to assemble rather quickly and effortlessly a large and useful body of data on a currently much-discussed topic: the urban heat island.

References


Sandberg, A., 1950: Local climatological studies of the temperature conditions in an urban area. Tellus, 2, 221-231.


Alan Harrison Newcomb 1921-1966


Mr. Newcomb was born in Lakewood, Ohio, and served as a pilot in the Air Force from 1942 to 1945. He had been with WVTY, the Jefferson Standard Broadcasting Company, since 1955, and had held membership in the American Meteorological Society since 1960.

Alden Paul Richter 1926-1966


Born in Reno, Calif., he began his meteorological studies at Los Angeles City College, Calif., but interrupted them to enter the U. S. Navy in 1944. Following two years service in the Pacific, he resumed his education at the University of California, Los Angeles, and the Spartan School of Aeronautics, Tulsa, Okla. In 1949 he joined the Weather Bureau and worked at various assignments in California for four years. He then returned to UCLA where he received an A.B. in 1960.

He rejoined the Weather Bureau as a meteorologist at Las Vegas, Nev. Subsequent assignments took him to Wallops Station, Va., and, in 1962, to the Air Resources Field Research Office at Idaho Falls, Idaho, where he was a research meteorologist until the time of his death. His work in support of one vehicle launches for the National Aeronautics and Space Administration earned him letters of commendation from the chairman of the Nevada Test Site Organization Advisory Panel in 1958 and from the chief of the Weather Bureau in 1960.

Mr. Richter had been a member of the American Meteorological Society since 1949 and a professional member since 1961.

He is survived by his wife, Margaret J. Richter, and three children.

Ross Cowing Seegars 1916-1966

Ross C. Seegars, Lieutenant Colonel, U. S. Air Force (retired), died on 3 August 1966. His birthplace was unknown, N. Y., and he attended Alfred University, Alfred, N. Y., prior to joining the Army Air Corps in 1936. He received meteorological training at Fort Monmouth, N. J., and Chanute Field, Ill. In the course of his fourteen years military service, he held assignments at detachment commander and staff weather officer in this country, on the Southwest Pacific and in Europe. Since his retirement in 1960, he had made his home in Folsom, Calif.

Colonel Seegars' membership in the American Meteorological Society dated from 1938.

He is survived by his wife and children.
3. Results and discussion

Figs. 3 and 4 present the results of the two series of observations on a map of the area also showing topography and location of greatest urban development. On both nights three areas of higher temperatures are apparent. The first area is associated with a hilltop to the southwest; the second with a hilltop to the northeast; the third with the commercial city center on the river front to the east. The third is clearly the true heat island, though on both nights it blends into the warm hilltop areas to the northwest. The first area is disjunct from the other two because of the effect of a large city park lying on low ground. Although it may not be deduced directly from either map, careful measurements on, and beyond the bridge near the city center yielded no indication the Willamette River exerted any major influence on the temperature field.

From the maps may be obtained the information that the temperature ranges on the two nights were 13°F and 10°F, and that the values for the differential intensity expansion of Duckworth and Sandberg (1954) (the inverse of maximum horizontal temperature gradient in the urban canopy) are about 0.075 and 0.150 mil deg⁻¹. These values fit very well with those of the Bay Area cities given by Duckworth and Sandberg, and indicate the nights observed in Corvallis must have been near the extremes of occurrence for this area.

4. Conclusion

We would like to urge similar groups of observers to undertake observation series such as are reported here. With the variety of city sizes and topographic features available to such groups across the country, it would seem possible to assemble rather quickly and effortlessly a large and useful fund of data on a currently much-discussed topic: the urban heat island.

References