committee found it practically impossible to estimate accurately the quantity of tar and sulphates present; and these indicate the origin of the deposit. The difficulty experienced was the dissolution of the metal of which the rain gages is constructed.—*H. L.*

ENGINEERING APPLICATIONS OF STATISTICAL WEATHER DATA.

By REID DAVIES.

[Abstract of paper, "Some temperature probabilities for March," published in *The Heating and Ventilating Magazine, New York, February, 1921, pp. 37–39.*]

During the past 15 years *The Heating and Ventilating Magazine* has been publishing, monthly, charts showing the weather conditions in several of the larger cities in this country [cf. charts for December, 1920, ibid., pp. 50–51]. These charts find their principal value in connection with analysis of heating-plant operation, coal consumption, etc. Obviously they are of little value in connection with the design of new installations because the weather conditions of a given month will never be exactly duplicated in any succeeding month. Of distinct value, however, from the design standpoint, would be knowledge of the maximum and minimum and average conditions over a period of years sufficiently long to make the figures reliable for inductive purposes.

A series of seven charts of curves is published each month for New York, Boston, and Chicago, showing *for each day:* The highest temperature for the entire period of observations, the highest mean temperature, the average maximum temperature, the average mean temperature, the average minimum temperature, the lowest mean temperature, and the lowest temperature ever reached.

While this discussion is confined to the curves for New York City, there is almost equal application to the charts for the other cities mentioned. An engineer, figuring on the cost of operating a heating plant during March, can see from the chart that the daily average mean temperatures remain well below 50° throughout the month, and average for the entire month 38°. This indicates that during March sufficient coal will have to be consumed to provide for a continuous heating of the outside air from 38° to the desired inside temperature. The curves also show the possibility that on some days during March, no heating will be required, as well as equal possiblity that on some days considerably more heating will be required, with corresponding fuel consumption.

Obviously the month of March does not show the maximum heating requirement of a system, as December, January, and February temperatures will fall below those of March, but where an installation comprises several heating units, the March chart will indicate how many are likely to be required in operation during that month. The chart is more reliable for a period of years than for any one year, and as a heating installation is made for use over a period of years, the use of the chart will indicate probable operating characteristics of the installation during its period of service.

Temperature records for March.

	New York.	Boston.	Chicago.
	° F.	° F.	° F.
Record high temperature	78	78	80
Highest daily mean temperature	66	62	70
Average maximum temperature	45	44	42
Average mean temperature	38	37	35
Average minimum temperature	30	30	29
Lowest daily mean temperature	9	−1	1
Record low temperature	3	−8	−12

—*H. L.*

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C. F. TALMAN, Professor in Charge of Library.

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