

companies about \$364,000; Federal buildings and works probably about \$1,100,000 (Naval Academy at Annapolis alone \$90,000); passenger, freight, and pleasure boats and establishments about \$392,000 (Maryland Yacht Club at Baltimore in excess of \$60,000);

miscellaneous damage to dwellings, pleasure resorts, coast towns, etc., about \$2,000,000; shore land lost in Maryland by wave action (estimated by State Conservation Commissioner) about two square miles, in Delaware about one square mile.—*J. R. W.*

OFFICIAL LONG-RANGE FORECASTS IN GERMANY

Prof. Dr. FRANZ BAUR, the director of the "Staatliche Forschungsstelle für langfristige Wettervorhersage," in Frankfurt a.M., Germany, is publishing long-range weather forecasts for Germany. These forecasts are made for a period of 10 days each and are published on the evening preceding the first day of the forecast period. We quote here as an example the forecast for the period August 16 to 25, 1933, which was published August 15, 1933:

Forecast. "The weather during the next ten days will be rather unsettled, windy and frequently rainy. But days without any sunshine will seldom occur. The temperatures will be variable, but on the average below the normal value. The number of the days with at least 1 mm. precipitation will amount to 5 or more in northern Germany west of the Oder."

Verification, according to Dr. Baur, "The weather was very unsettled all over Germany from August 16 to August 25. Clear days and hours interchanged speedily with cloudy and rainy ones. The number of days with precipitation of 1 mm. or more was at least 5 everywhere, in northern Germany west of the Oder it amounted to 6 or 7 at most places. Days without any sunshine occurred only sporadically. Most places had not even one day without some sunshine; (in Frankfurt a.M., Karlsruhe, Stuttgart and Dresden, for example, the sun was shining at least half an hour on each of the ten days, on the majority of the days even more than four hours). The average wind velocity was stronger than the normal for the second half of August. . . . The temperatures were quite high in the beginning except in the Northeast,

they decreased then several degrees, reached the second maximum on the 19th, descended then considerably below the normal value and ascended again the last day. For the average of the ten days and for the whole of Germany the temperature was somewhat below normal. . . . It can be said that the forecast was perfectly fulfilled."

Dr. Baur has sent us the forecasts for the four periods of 10 days each, beginning July 6th. He reports that the first forecast was fulfilled to 100%, the second to 65%, the third to 100%, the fourth to 95% and the fifth (which we have given above) to 100%.

Dr. Baur writes further that this success was obtained by a special combination of synoptics, indirect aerology, and statistics. For each forecast it was necessary to draw 25 maps. Five persons had to work intensively four hours each on the day preceding the forecast. Thus for each forecast 75 hours' work were necessary.

Still more recently Dr. Baur has published forecasts of the average pressure distribution for a whole month. He reports that the attempts for Europe were very satisfactory. The same kind of forecasts could be given for every region where sufficiently exact daily weather maps are available, for North America, *e. g.* However, that would involve a considerable amount of additional work, which cannot be attacked with the present staff.—*B. Haurwitz.*

TRANSLATION OF "LUFTKÖRPER"

The expression "air-mass" is, I believe, now universally employed in English as the equivalent of the Ger-

man term "Luftkörper," applied to extensive masses of air, that, according to the conceptions developed by