meteorograph stations, already referred to. Others included the reduction of pressure to levels of 1,000, 1,500, and 2,000 geodynamic meters; provision for "signs of tropical cyclone" in the ww code (No. 92), this being assigned to ww 19 (other significant changes in this code were: ww 17=visibility reduced by smoke; e. g., veldt or forest fires, or industrial smoke or volcanic ashes; and ww 18=duststorm—visibility greater than 1 km); adoption of a new code for mean pressure over the oceans; recommendation that green and brown colors be used respectively for shading to indicate precipitation, and sand or dust storms on synoptic charts; adoption of a special code for use at stations near the Poles to indicate wind direction; adoption of a new code for international exchange of upper-air wind data; inclusion of mountain station reports in collective messages.

MISCELLANEOUS

A subcommission on sea swells of the Commission on Maritime Meteorology decided to institute an international week of observations of swells in the North Atlantic in 1938, with the hope of extending it in later years to all the oceans. Plans for organizing the program for 1938 are now being worked out.

One of the most important resolutions at Lima was the decision to broadcast twice daily from Rio de Janeiro synoptic reports from 84 South American stations. This new service is to begin January 1, 1938.

1941 CONFERENCE IN AMERICA

Of special interest to all American meteorologists is the decision of the International Meteorological Committee to hold the next general conference on this side of the Atlantic in 1941. This action was taken in response to an invitation issued jointly by the Director of the Canadian Meteorological Service and the Chief of the U. S. Weather Bureau. The plan is that several of the Commissions will meet in Toronto, and these meetings will be followed by the regular six-yearly conference in Washington. This will be the first meeting of this international body in America, and plans already are being worked out to make it one of the most successful ever held anywhere.

CONCLUSION

The onward march of international meteorology is marked by several outstanding accomplishments, among them the preparation and adoption of an International Cloud Atlas, the organization of the Polar Year campaign of 1882–83, and another 50 years later; the establishment of a program of simultaneous upper-air soundings on "International Days;" and the decision to utilize radio in exchanges of reports between continents. Undoubtedly one of the most fruitful of all conferences was that at Copenhagen in 1929, when action of far-reaching significance was taken in standardizing codes and symbols and many other features of international service. The Warsaw conference was notable in putting the finishing touches on much of the fine work so well begun at Copenhagen. But it seems quite certain that the period of a year and a half now coming to a close will take its place as second to none in advancing the high ideals of internationalism in meteorological service, marking as it does a more completely world-wide interest and activity than has any other in the entire history of the International Meteorological Organization.

A CURIOUS PHOTOGRAPHIC CLOUD EFFECT

By W. J. HUMPHREYS

[Weather Bureau, Washington, December 1937]

The correct interpretation of a photograph of a meteorological phenomenon is not always obvious. In many cases this difficulty is owing to unsuspected effects caused by the photographic equipment used, or by the process of development and printing, or both. An excellent example of this sort of puzzling photograph is that of "dark lightning," so called because the positive print shows the streaks as dark lines, and not white as one would expect them to be. This phenomenon does not appear on all pictures of lightning, and when it does occur is more pronounced along the branch discharges than on the main trunk. Of course, despite the testimony of the photographs, the streaks on them are not dark because the lightning itself was black, but for some other reason; and that reason, called the Clayden effect, is a photographic reversal induced by an exceedingly brief, bright image followed by a diffuse fogging illumination. The first light shock renders the plate relatively insensitive at the place or places struck, while the subsequent light darkens the rest of the plate; hence the unexpected reversal in the print. So much for a review of "dark lightning."

The accompanying picture is a fine example of another such puzzle, one which from its analogy to "dark lightning" might be called "black sky." Its explanation is this: Considerably below the level of the cumulus head there was a thin horizontal sheet of sparse cloud, or dust loaded with more or less condensation; and below that in turn, a much fainter haze, due to dry dust, extending down probably to the ground. Above the thin cloud, or sheet of dense haze, the atmosphere was comparatively free from any particles of light-reflecting size. Under these circumstances the sky seen through the portion of the cloud veil that is shaded by the cumulus above would be, and on this occasion was, a clear deep blue, and the sky outside the shaded area a gray blue. If, then, this combination of sky and cloud were photographed with an equipment that would eliminate the blue and violet while registering the rest of the light, the cumulus would print dark with a white fringe, and the sky black near the cumulus where it "looks" clear blue, and a slightly streaked gray beyond. Just such was the equipment in this case; an Eastman K_2 filter that cuts out the blue and violet while leaving the other colors, and a panchromatic film; exposure $\frac{1}{50}$ second, F/11.

This picture, taken at Rochester, Vt., 2:15 p. m., about August 30, 1937, was kindly supplied by Mr. James Stokley, director, The Fels Planetarium, Franklin Institute, Philadelphia, Pa., with permission by the photographer, Mr. J. W. Sanders, 2216 Rittenhouse Square, Philadelphia, Pa., to publish it.