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### CLOUDS AS SEEN FROM AN AEROPLANE.

By CAPTAIN C. K. M. DOUGLAS, B.A., F.R.Met.Soc.

[Synopsis of a Lecture delivered before the Royal Meteorological Society, March 17, 1920.]

A SERIES of photographs will be shown on the screen this afternoon which will illustrate, firstly, the appearance of the clouds from above; and, secondly, the relation of the forms of the clouds to the distribution of temperature and humidity in the upper air, and to the local weather and general meteorological conditions. The photographs were taken in conjunction with observations of temperature and humidity at different heights, from fully exposed dry and wet bulb thermometers on the wing strut of the aeroplane, and also from self-recording instruments.

It is not generally realised that when the sky is covered with a gloomy canopy of cloud, with the inevitable smoky haze over towns and for a considerable distance to leeward, one has only to ascend about a mile in order to enter a region with clear blue sky above, and a sea of white billowy cloud underneath, which stretches in all directions to a distant horizon which stands out sharply owing to the perfect visibility.

Until recently almost the only method of getting above the clouds was by the slow and laborious process of climbing a mountain, and from the mountains of this country a view of the upper surface of the clouds is comparatively rare. A fair number of instances were recorded at the Ben Nevis Observatory, but most of them were in winter or in the early morning. In many cases when the level of the cloud-sheet is just below the top of the mountain, the sheet rises to cross the mountain and covers up the top.

The aeroplane now provides a much simpler means of getting above the clouds. A modern high-powered machine will climb up through several thousand feet of cloud in a very few minutes. In the cloud one is surrounded by thick fog which covers the machine with water, or with ice if the temperature is below the freezing-point and the cloud consists of super-cooled water-drops. Very soon, however, it grows lighter up above, and shortly afterwards one breaks out into clear sunshine. On some occasions there are other layers of cloud up above, but in anticyclones at any rate there is usually only a single sheet.

