INITIAL INVESTIGATIONS IN THE UPPER AIR OF AUSTRALIA.[1]

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[Abstract for the REVIEW.]

Under this title we have recently received an interesting account of the first 20 aerial soundings made in Australia. A scheme for these investigations had been outlined in 1907, but flights could not begin until May, 1913. They all started from Melbourne, Victoria. The Australian observations are of special interest to us in that they are made at approximately the same latitude south as are ours north.

The Dines instrumental equipment has been used throughout.

In view of the number and distribution of these soundings, the conclusions based upon them have been drawn with caution. The general direction of drift of the balloon is found related to the surface pressure distribution. The atmospheric layer between the 1- and 8-kilometers levels is often subjected to different conditions from those obtaining above and below these levels. The temperature gradient does not seem to vary with the seasons. The account speaks of "the isothermal layer." No apparent seasonal variation in the height of this layer is found. Based upon the data obtained the average height of the layer over Melbourne is 10 kilometers.

The general conclusions are in accord with our own and with other observations.

The use of one or the other system of units, with translations where they are deemed necessary, would make the article more readable; but a very fundamental criticism of the method of observation is applicable not only to this work, but to much of the work done in other countries. Observations are made occasionally only. In view of the fact that variations in some elements observed may occur, in the course of a week, which are as great or greater than those found in the mean seasonal values of the elements, it is obvious that erroneous conclusions may easily be drawn from occasional observations. Progress in the study of upper-air conditions has, in the writer's opinion, been considerably impeded by erroneous conclusions so drawn. If only 20 soundings a year are to be made, it is believed that they would yield the best results if they were made in two series of 10 daily soundings each—one in the summer and one in the winter season.— *W. R. Blair.*

[1] *Australia. Commonwealth Bureau of Meteorology.* Initial investigations in the upper air of Australia, by Griffith Taylor. [Melbourne,] 1916. 16p. 35 figs. 4°. (Cmnwlth. bur. met'y., Bulletin No. 13.)