

## PART II.

## METEOROLOGICAL RECORD OF S.Y. "AURORA."

RECORDED BY PERCIVAL GRAY (*Second Officer*), ASSISTED BY C. DE LA MOTTE (*Third Officer*),  
UNDER DIRECTION OF CAPTAIN J. K. DAVIS.

---

## INTRODUCTORY REMARKS.

By D. MAWSON.

During the progress of the Expedition, the S.Y. "Aurora" under the command of Captain J. K. Davis made three summer cruises in Antarctic waters southward of Australia and two Subantarctic cruises, one of which was conducted in the height of winter. As that section of the Antarctic seas visited was an almost unknown area the ship's meteorological records are specially valuable and are reproduced as Part II of this volume. The voyage from Capetown to Hobart in the spring of 1911 is also judged of sufficient interest to be incorporated herewith.

The officer principally responsible for keeping this record was Percival Gray, the Second Officer, but Captain Davis took a personal interest in the matter whereby the loggings greatly benefited from his experience. The entries were made in tabular form in the usual meteorological log books designed and printed for the purpose by the Hydrographical Department in collaboration with the Meteorological Office.

The data is published as observed, with the necessary temperature, gravity and altitude corrections to the barometer readings, while the relative and absolute humidities have been computed and included.

*Pressure.*—Owing to the mercurial barometer being out of order between the 20th November, 1913, and 17th December, 1913, readings were obtained for that period as visual observations of a special 6-inch aneroid with extended scale which was regularly carried on the ship. A careful comparison of the aneroid with the mercurial barometer had established a constant correction of +0.15 inch which has been applied throughout to these aneroid readings. Observation established that with the application of the above correction a satisfactory degree of accuracy was obtained.

*Clouds.*—The proportion of the sky clouded is expressed on the usual scale of 0 to 10. The cloud types listed below have been recorded. Both in the tables of this section and of Part III of this volume some irregularity will be noted in the abbreviations used to denote cloud types. For instance S. for stratus and N. for nimbus is usually adopted. In all cases, however, the type of cloud intended is obvious.

Cloud Type.	Abbreviations.
Cirrus... ..	Ci.
Cirro-Stratus ... ..	Ci.-St.
Cirro-Cumulus ... ..	Ci.-Cu.
Alto-Cumulus ... ..	A.-Cu.
Alto-Stratus ... ..	A.-St.
Cumulus ... ..	Cu.
Cumulo-Nimbus ... ..	Cu.-Nb.
Nimbus ... ..	Nb.
Stratus ... ..	St.
Fracto-Cumulus ... ..	Fr.-Cu.
Fracto-Stratus ... ..	Fr.-St.
Strato-Cumulus ... ..	St.-Cu.
Mammato-Cumulus ... ..	Mam.-Cu.
Fracto-Nimbus ... ..	Fr.-Nb.
Strato-Nimbus ... ..	St.-Nb.

*Fog.*—The scale of Fog Intensity is that generally adopted, namely :—

- 0—No fog or mist.
- 1—Light fog or mist.
- 2 } Moderate fog.
- 3 }
- 4 } Thick fog.
- 5 }

*Weather.*—In recording the general state of the weather the usual practice has been followed by signifying the conditions by a series of letters as herewith :—

- |                      |  |
|----------------------|--|
| b—Blue sky.          | q—Squally.   |
| c—Clouds (detached). | r—Rain.  |
| d—Drizzling rain.    | s—Snow.  |
| e—Wet without rain.  | t—Thunder.   |
| f—Foggy.             | u—Ugly (threatening appearance of weather).            |
| g—Gloomy.            | v—Visibility. Objects at a distance unusually visible. |
| h—Hail.              | w—Dew.   |
| l—Lightning.         | z—Haze.  |
| m—Misty.             |  |
| o—Overcast.          |  |
| p—Passing showers.   |  |

*Wind.*—In the “Aurora’s” meteorological logs the wind is recorded on the Beaufort Scale of force as detailed in the introductory remarks preceding Part I of this volume.

*Sea Disturbance.*—The practice of the Hydrographic Office has been followed. The scale of roughness from 0 to 10 is recorded according to the following scale :—

Scale.	Description.	Height of Waves in feet from Crest to Trough.	Condition of Surface.
0	Calm ... ..	.....	Glassy.
1	Smooth ... ..	.....	Rippled.
2			
3	Slight to moderate ...	Under 5 feet ... ..	Rocks buoy or small boat. Furrowed.
4			
5			
6	Rough to very rough ...	5 to 10 feet ... ..	Deeply furrowed; much dis- turbed.
7			
8	High to very high ...	{ 11 to 15 feet ... .. { 16 to 35 feet ... ..	Rollers with steep fronts.
9			
10	Phenomenal... ..	36 feet and above ... ..	Precipitous; towering.

The same scale numbers and the corresponding heights from crest to trough are used for waves and for swell. Where the sea is "confused" the chief direction of motion is indicated.