# NOTES ON THE REMARKABLE STORMS WHICH OCCURRED ON THE COASTS OF TASMANIA AND THE NEIGHBORING CONTINENT IN MARCH, 1866.

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In the year 1838, Professor Loomes undertook the investigation of a violent storm which swept over the United States of America about the 20th of December, 1836. This storm extended from the Gulf of Mexico to an unknown distance on the north. Professor Loomes shows that along a meridian line of at least 1,200 miles there was on the west side a very violent current, setting from a point 30° N. of W.; and on the east side, in close proximity, a current setting from a point 10° E. of S. These two currents blew with great violence for at least 48 hours, in a direction inclined to each other 130°.

It will appear clear upon the face of the present records, as well as from other authority, previously referred to, that the general conduct of the various currents of atmospheric air in the Southern Ocean is more complex, and their normal character more difficult to determine than in the case of the storm referred to by Professor Loomes.

From the 2nd to the 10th March, 1866, a series of bad weather is recorded in the logs of H.M.S. Falcon and Curaçoa,—the former sailing from Sydney, and the latter from Auckland, New Zealand, to Hobart Town,—reports of the same bad weather were received also from other vessels, and from some of the coast stations.

It would be out of place here to particularize a number of casualties which occurred during the storm, this having been done at the time by the public press, the present object being more to trace out and ascertain the different directions and force of the wind, which prevailed, within a certain, area during the stormy weather.

H.M. steam sloop Falcon, Commander G. H. Parkin, left Sydney for Hobart Town on the 2nd of March. with fine breezes from the north, which continued until the 4th, when about 3 a.m. it came on to blow very hard from S.W. The gale continued until midnight on the 5th, with a very heavy breaking sea. The vessel during the gale shipped three or four seas. At noon on the 7th the wind went to the north,

and blew fresh until it suddenly veered round in a heavy squall at 4 a.m. on the 8th, blowing so hard that it was thought at one time even the close-reefed topsails would have to be taken in. On the 9th steam was got up, in order to get into harbor as soon as possible. The ship arrived at Hobart Town on the afternoon of the 10th. During the height of the gale on the 8th two of the men went overboard, and were seen floating past the ship without there being the slightest possibility of saving them.

H.M.S.S. Curaçoa, Commodore Sir W. Wiseman, arrived in the river from Auckland, New Zealand, a few hours after the Falcon. Had variable winds until the 3rd of March; on the 4th a very strong gale came on from the N.E., which suddenly shifted to the S.W. and lasted fifty-six hours. On the 8th another very heavy gale came on from the S.W. and lasted 26 hours, lat. 41° 23′ S., long. 152° 15′ E. During both gales the ship had to be hove-to.

The cutter Victoria, lying at anchor between Arch Island and Three Hut Point, was struck by a heavy squall from the westward, on the night of the 7th of March, by which she lost her mast.

The Ant left Port Albert at 3 p.m. on the 7th of March, and had light N. and N.E. winds to Cape Paterson: at midnight a fearful hurricane from the W.S.W. was experienced. Captain King hove the vessel to, and at 8 a.m. the gale increased in violence, the sea rising to an alarming height. Foresail and mainsail carried away. This gale was described by all on board to have been the worst they had ever experienced in these latitudes.

At Melbourne, between 11 and 12 o'clock p.m. on the 7th March, the city was visited by a most severe gale of wind, mainly from the N., but with occasional squalls of great violence from every point of the compass in turn, driving before them clouds of dust, which rendered it dangerous to walk the streets.

In Geelong many of the inhabitants sat up to see out the storm. In the western suburbs dilapidated buildings gave way to the force of the wind; roofs were lifted from their rafters and carried away, and several premises and many chimneys were blown down.

The Derwent left Launceston at 4 p.m. on the 7th March, and Tamar Heads at 7 p.m., with light winds from N.W., and thick rainy weather; at 10 p.m. the wind began to freshen until midnight, when it blew a heavy gale, which continued with greater or less violence until noon on the 8th. During the continuance of the gale the steamer was hove to for several hours.


140
145
150
155
SOUTH
AUSTRALIA
NEW SOUTH WALES
8 SYDNEY
Spencer Gulf
1 ADELAIDE
35
Kangaroo I.
VICTORIA
Cape Howe
Guichen Bay
2
15 MELBOURNE
QUEENSCLIFF
3
Portland Bay
4
C. Schanck
Cape Otway
7
Port Albert
10 Kent's Group
Kings I.
9
40
Goose I.
12
13 Swan I.
CURAÇOA
LAUNCESTON
TASMANIA
HOBART TOWN
12
South Bruni
11
Survey Department, Hobart Town, Tasmania.
W. C. Piguenit, del.

The following tabulated form will show the nature of the contending currents of air during this 26 hours' storm. In Professor Loomes' investigation of the storm of 1838, before referred to, he gives the direction of two opposed forces at an angle of 130° with each other; setting from a point 30° N. of W., and on the E. side, in close proximity from a point 10° E. of S.

By the present recorded observations on the storm of March 7th and 8th, 1866, it appears that the gale commenced from N.N.W., and met a force from S.S.W.—or as some registers have it S. or S.S.E.—the opposing currents thus forming an an angle with each other very similar to that given for the American storm.

| —— | March, 1866. | | Wind. | | Barometer. |
|---|---|---|---|---|---|
| | | | Current. | Force. | |
| | | | | | In. |
| H. M. "Falcon"... | *a*7 | Sunset | W.NW. | 3 to 6 | 29·93 |
| ,, | 8 | Sunrise | S. to S.W. | 5 to 10 | 29·16 |
| H. M. "Curaçoa" | *b*7 | Sunset | N.W. by N. | 6 to 8 | 29·78 |
| ,, | 8 | Sunrise | S.S.W. | 8 to 12 | 29·36 |
| Melbourne..... | 7 | Sunset | N.N.W. | | 29·810 |
| ,, | 8 | Sunrise | S. | Strong | 30·116 |
| King's Island ..... | *c*7 | Sunset | N.E. to N.W. | | 29·67 |
| ,, | 8 | Sunrise | S.W. | Strong. | 29·87 |
| Kent's Group ..... | *d*7 | Sunset | N. | | 29·41 |
| ,, | 8 | Sunrise | S.W. | Very Strong | 29·80 |
| South Bruni..... | *e*7 | Sunset | N. | Strong | 29·50 |
| ,, | 8 | Sunrise | S.W. | Strong | 29·60 |
| Queenscliff ..... | 7 | Sunset | N.N.W. | Fresh | |
| ,, | 8 | Sunrise | S. | Heavy | |
| Cape Schanck ..... | *f*7 | Sunset | N.N.W. | Fresh | |
| ,, | 8 | Sunrise | S. | | |
| Cape Otway ..... | 7 | Sunset | N.W. | | |
| ,, | 8 | Sunrise | S.W. | Strong | |
| Portland ..... | 7 | Sunset | N.E. | | |
| ,, | 8 | Sunrise | S. | Fresh | |
| Sydney ..... | 7 | Sunset | N. | Light | |
| ,, | 8 | Sunrise | S. | Strong | |
| Adelaide ..... | 7 | Sunset | N. | Fresh | |
| ,, | 8 | Sunrise | S.E. | | |
| Guichen Bay ..... | 8 | Sunrise | S. | Strong | |

*a*. Close-reefed topsails and fore-staysail—steaming.

*b*. Barometer falling rapidly, sea increasing; a heavy squall struck the ship.

*c*. P.M.—Light winds and rain. At midnight a hurricane, 20·83lbs. to square foot. It blew with terrific force for six hours.

*d*. Eve overcast and threatening. Wind increased to a hurricane by midnight.

*e*. At midnight a very high wind with thunder and lightning.

*f*. The Coorong, s.s., sailed from Adelaide on the evening of the 7th, and arrived in Hobson's Bay at 11h. 30m. p.m. on the 9th. Experienced strong S.E. and E. winds with heavy sea throughout the passage.

In discussing the earlier parts of the lighthouse tables I have unreservedly stated that there is in all the observed phenomena of storms in these latitudes a current and a counter current of the wind—one of them usually being *Equatorial*, and the other *Polar* ; but in the present instance, as in the American storm investigated by Professor Loomes, both currents were nearly Polar, no traces of so called Circular storms are observed. Such storms, in and near the tropics, as well as Equatorial and Polar currents of wind, may be accounted for astronomically ; but better data, and more experience are required before any definite conclusion can be arrived at relative to cyclones within the area comprised in these registers.

Opposite currents of the air are frequently observable in the different motions of the upper and lower strata of the clouds, in which case it requires only an increase of temperature in the lower part of the atmosphere to transpose the upper and the lower currents, frequently causing a deflection which may change the direction of both.

The Rev. W. B. Clarke, in some remarks made upon a paper on Australian storms, by Mr. John Tebbutts, junr., read before a meeting of the Philosophical Society at New South Wales on the 7th September, 1864, quite agrees with the author that there are always two winds at work in all great derangements of the atmosphere in Australia. Mr. Clarke also in a paper read before the same Society, speaking of the hot winds, says that they frequently commence at Sydney from seaward at N.E., and end at S.W. or S., clouds for hours preceding the change gathering in the S.W. by condensation of the vapor suspended by the N.W. wind through the contact with the S. wind. The hot N.E. wind is in reality the N.W. current deflected by the N.E. wind. This explanation assimilates very closely with the fact of the hot wind approaching Auckland, New Zealand, from seaward at E., which has been accounted for in the 25 years' tables.

A paper I had the opportunity of reading before the Society in May last,* the facts of which were obtained from noteworthy records kept at the Cape of Good Hope, Hobart Town, and Auckland, New Zealand, will go far to shew that all previous authorities, although following each other pretty closely, appear in some cases to have had no personal knowledge of the records connected with these islands, and have required more and longer continued registers relative to them than those obtained from the Board of Trade, or from

*See Papers and Proceedings of Royal Society of Tasmania for May, 1867, page 13.

the observations of Captain Ross, which no doubt had reference more especially to prevailing currents of oceanic winds in higher latitudes.

At Auckland the prevailing currents of wind are S.W., the next N.E. The N.W. and S.E. winds, which are by far the most frequent at Hobart Town, are considerably the least at Auckland. The E. and N.E. winds at the Cape of Good Hope are all but *nil*; at Auckland they are a maximum, and Hobart Town a minimum. The S. and S.E. winds at the Cape of Good Hope are greatly in excess of any other; and at Auckland they are recorded the least of any, being for many months without a single register. It is stated by seafaring men that hot-air currents are frequently fallen in with on the East Coast of New Zealand, from which it is inferred that warm vapor may arise from the difference in the temperature of the water, in parts of the surrounding ocean, caused by volcanic action which is well known to be actively going on in and near these islands. This may in some degree account for the frequency of the North East currents at Auckland, as compared with the other stations lying in or near the same parallel of latitude.

It is now admitted, that next to the existence of matter, heat is the most important element in creation. Since the introduction into modern science of thermodynamics, by which heat is considered as a mode of motion, the measure of it, under any circumstances, is the first step from statics to dynamics, which now rank as the last and truest form of all science. No system of meteorology would therefore be complete without a reference to heat, and its power to alter the direction, force, and dimensions of all bodies.

Mankind, although long engaged in the investigation of the subject,—and having all the appliances of modern science to aid them,—have not, as yet, been able to establish any general law, whereby those interested in the pursuit, and situated at different stations, are enabled either to foretell or confirm each other's observations. The subject is one of great capability, and the local circumstances connected with it are so numerous, that long continued labour is required before the important question of general meteorology can be settled.

It is therefore much to be desired that the owners, masters, or agents of ships, would furnish the Royal Society, or the Marine Board, with copies of their logs, which could be made available to persons engaged in the investigation of this very interesting and important subject.