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**Synopsis:** Todd has good weather data but not capable of being used for effective forecasting

**Summary:** Mentions continental reach, how data could be more useful in the future, analyses rainfall influence on cropping around the Colony. Complements Todd and his staff

MONDAY, OCTOBER 20, 1879.

We have already referred to the rainfall statistics for the year 1878 prepared by the Government astronomer, and recently published by order of the House of Assembly which from a most interesting and valuable document worthy of further notice. It is not composed of cumbersome and almost-endless pages of figures, for it contains an explanation of the tables, which forms a readable dissertation on the meteorological conditions of the colony for the past year. Mr. Todd certainly possesses unusual advantages in the department under his direction, the observing stations across the continent affording an unbroken chain by means of which the atmospheric changes and disturbances of one of the most remarkable regions in the world can be noted if need be from hour to hour. These also being connected in almost every direction with the greater portion of the interior and with most of the coast line the Government astronomer is enabled to furnish in formation of the most valuable kind. Hitherto Mr. Todd has not thought it desirable to place before the public a comprehensive view of the continental meteorology. This perhaps is because the stations until recently have been too scattered, and in some respects not sufficiently systematised to be fully available. The paper before us, however, leads to the conclusion that that time has passed away, and that without much risk of error a valuable map might be prepared showing the isothermal and pluvial lines for a series of years, which would form a somewhat reliable guide to persons engaged in pastoral and agricultural pursuits. By this of course we do not mean that a completely accurate forecast of the weather at any given time could be made, but that the nature of the different seasons in different localities might from time to time be fairly estimated and provided for. Although in those portions of the province which abut upon the sea, special changes, often sudden and severe, are experienced, the general changes occur with remarkable regularity and as far as the materials at our command enables us to judge, that regularity is also experienced in the interior. We have yet to discover the full effect which the monsoons that visit the northern portion of Australia have upon the subtropical regions of the continent, or how far they may affect the rainfall in the southern parts. It seems probable that there is a substantial connection between them which sooner or later will be made clear. No system of observations, however, will be complete in the true scientific sense unless it can be extended beyond its present limits. What is wanted in addition to Mr. Todd's tables is an accurate record of the currents which prevail round New Holland, so as to enable us to form some judgment of the influence they have, if any, upon the climate of Australia. Such observations perhaps may be beyond Mr. Todd's means or official resources just at present, but they must be undertaken some day, and the results, there is no doubt, will amply repay the cost. The paper before us is prepared on the basis of observations made at 115 stations starting at Palmerston in the Northern Territory and stretching across the continent to Adelaide, passing thence south and east until Mount Gambier is reached. The greatest amount of rainfall recorded is of course in the tropics; and at Southport on the north coast there were 73-80 inches registered. The least was at Lake Boulka, on the boundary of New South Wales— 5.61 inches. The orthodox quantity which South Australia depends upon is 21.5 inches nearly. The area, however, over which this amount is expected may be taken to be included by a line drawn from Adelaide to Kooringa, thence to the sea coast south of Port-Broughton, overland thence to Port Wakefield, and along the coast-line to Adelaide again. The rest of the colony has a rainfall not yet certainly recorded; never the less if the block above described gets a fair share of rain the prospects of the rest of the colony are not likely to be very bad. In 1878 the results of the harvest were only 7 bushels and 9 lbs. per acre, as compared with 11 bushells 45 lbs. in 1874-5, and 11 bushels 57 lbs in 1875-6. In 1878 at Kooringa and Adelaide, the extreme points north and south of the area mentioned above, the rainfall was in excess of the average of the best years, which gave 24.214 inches, by 1.357 and 1.726 respectively; the intermediate points however, showed a heavy falling off which at Mount Gambier had reached the formidable amount of 7.180 inches. The harvest was consequently a comparative failure. The most important months for the growth of wheat are April, May, August, and September. In all of those months the rain was short in quantity and irregular in its visits, so that the young plant had a poor start, and there was nothing to promote their

development to maturity. This year we are differently situated. The rain has come in the right months and in fair abundance, and although we are still short of the quantity which might have been expected, the wheat plants are almost everywhere in a most satisfactory condition, and generally good returns may be expected. There is the usual danger to be anticipated from early hot winds, and another risk which is rarely regarded, and that is the probability of a wet harvest. The character of the seasons in the southern hemisphere has a remarkable similarity to that of seasons in temperate and subtropical climates north of the equator. If this holds good during the present season things may yet turn out well. However there is always the counter balancing influence of the general want of rivers and high mountains, so that on the whole the prospects are not unfavorable. Mr. Todd's tables are quite as useful to the general public as to the individual farmer or stockholder. The rainfall regulates the water supply for the year. To the Government engineers they should be of the highest importance; because they show them what they may depend upon in order to supply water to centres of population. We have continually pointed out that three-fifths of the available rainfall is allowed to run to waste, and where attempts, are made to store it for general use the exigencies of the moment only are considered, and future development is wholly disregarded. In the Mount Lofty ranges the rainfall is nearly 44 inches over an area of 129 square miles. From this source the City of Adelaide and the suburbs are supplied with water. Our present storage capacity is not more than 750 to 800 millions of gallons whilst there is more than four times that quantity which could be arrested at the Torrens Gorge and stored if suitable receptacles were made. All Mr. Todd's exertions, however, are not likely to impress this on either the official or the parliamentary powers which under nature control our destinies. A growing population and a hot climate will make a revolution in the use of the rainfall, and others who may succeed us will appreciate Mr. Todd's labors more perhaps than they are appreciated to-day. The report is illustrated by a very good outline map prepared under Mr. Todd's directions by Mr. W. H. Abbott. We notice, however, that the portion which refers to South Australia proper is not marked with either latitudes or longitudes, consequently its actual value, in a scientific sense, is greatly diminished. Subject to this remark the report is an able paper, and is creditable to Mr. Todd and his staff.