

## **Making Landfall: Towards a Critical Tempestology of Cyclones in Colonial Australia to 1850**

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In May 2014 then Treasurer Joe Hockey assessed Australia's current economic and social climate as being in emergency need of more 'Responsible Government' (Natl. Commission of Audit): 'We can't keep heading into a cyclone and expect everything to be OK' (qtd. in Kenny and Massola 2). There is a long history of perceived economic and political turmoil being represented as a hurricane or cyclone in Australian public discourse. Hockey's cyclone metaphor resonates with the fact that '[t]ropical cyclones kill more people and cause more insured losses than any other natural disaster' (Murnane 1). Cyclones, hurricanes and typhoons are generally tropical weather events, European knowledge of which was acquired through imperial expansion by trade, invasion and settlement. The term cyclone was first introduced into meteorological discourse in 1848 by Henry Piddington (1797-1858), then President of the Marine Courts of Enquiry and Curator of the Museum of Economic Geology in Calcutta, in *The Sailor's Horn-book for the Law of Storms*. He had already published fourteen 'memoirs' of hurricanes and Indian Ocean storms in the *Journal of the Asiatic Society of Bengal*. The memoirs were drawn from 'logs, data, and information from ships' captains, interpreted in the light of his own maritime experience' (Blyth). The kinds of sources on which Piddington drew, as did William Reid (1791-1858), an army officer posted to the West Indies who became a leading meteorologist of cyclones, have recently been brought into the purview of scientists working in the 'emerging' field of paleotempestology: the historical study of cyclones, especially before 1851, when instruments began to more accurately measure whether a storm event was indeed a cyclone (Liu 13).

In paleotempestology the mapping of past tropical cyclone activity has been conducted through two principal methods: geological proxy techniques, to gauge the millennial scale incidence of cyclones,<sup>1</sup> and examination of archives, for example, newspapers, ships' logs, diaries, annals, government documents and Chinese historical documentary records which date back over a thousand years (Liu 13-15). The survey of historical sources by paleotempestologists is designed to elicit information about the incidence, intensity and tracks of cyclones and the material damage they have caused. In this essay I turn to Australian colonial newspapers before 1851 digitised by the National Library of Australia for its *Trove* database. They carried local and overseas reports of hurricane and intense storm activity; poems, letters, and excerpts of travel narratives which represent hurricanes; and local and overseas commentary on current affairs of state. The overseas material was reprinted through an exchange commons practice. The research questions that animate my critical tempestology are different from those posed by paleotempestologists. How did hurricanes (the general term in use before 1848, now used for tropical cyclones occurring in the Atlantic and Northeast Pacific) enter and shape the Australian colonial literary and discursive imaginary? What are the genres or narrative arcs of colonial cyclone writing, and how do they project a sense of place and right of

territorial occupation. How has it contributed to what David Arnold has influentially termed tropicality, ‘the discursive representation of the tropics’ (6)? My study supplements scholarly studies of later nineteenth- and twentieth-century discourses of tropicality in and about Australia, which draws, in particular, on emerging medical, racial and eugenic ideas (for example, Anderson and Walker).

An epigraph on the title page of Piddington’s *Horn-book* to Francis Bacon’s *De Augmentis Scientiarum* positions the author’s labour as ‘collect[ing] into an art or science that which hath been pretermitted by others as matters of common sense and experience.’ His empirical method was designed to prove two fundamental physical laws of cyclones—the coiling motion and that cyclones coiled anti-clockwise in the northern hemisphere and clockwise in the southern hemisphere—and to establish practical procedures both for sailors in the event of encountering cyclones and observers of cyclones. Piddington, an Englishman by birth who spent most of his adult life in Calcutta, suggested the word cyclone in *The Sailor’s Horn-book for the Law of Storms* as a generic name for ‘circular or highly curved winds’ (8). It was derived from a Greek word used to signify ‘among other things the coil of a snake’

as neither affirming the circle to be a true one, though the circuit may be complete, yet expressing sufficiently the *tendency* to circular motion in these meteors. We should by the use of it be able to speak without confounding names which may express either straight or circular winds—such as ‘gale, storm, hurricane,’ &c.—with those which are more frequently used (as hurricane) to designate merely their strength. (8)

In the archive on which I have drawn the term hurricane is most frequently employed to describe wind strength, especially in parts of Australia outside its cyclone belt. In 1808, for example, a wind represented as ‘uncommon fury’ causing ‘irresistable [*sic*] violence’ to crops and property at Hawkesbury is called a ‘dreadful hurricane’ (‘Sydney’ 1). Gale-force winds are described as increasing to hurricanes.<sup>2</sup> Innumerable items reporting fierce storm activity in Britain as hurricanes are reprinted from British newspapers.

To mark the occasion of the twenty-fifth anniversary of colonial settlement on 26 January 1813 the *Sydney Gazette and New South Wales Advertiser* of 30 January published ‘Effusions of Gratitude,’ a poem by Michael Massey Robinson (1744-1826). Robinson was the Poet Laureate of New South Wales in the 1810s under Lachlan Macquarie’s governorship, while he was ‘chief clerk to the secretary’s office’ (Clarke). An Oxford-educated lawyer, Robinson was transported to Australia for blackmail, arriving in 1798. In Robinson’s providential narrative of settlement in ‘Effusions of Gratitude’ hurricanes are represented as one of the trials of sea passage to the colony:

From Albion’s blest Isle have we cross’d the wide Main,  
And brav’d all the Dangers of Neptune’s Domain—  
The Hurricane’s Whirlwind, the Tempest’s load Roar,  
An Asylum to find on Australia’s rude Shore  
For the Genius of Britain sent forth a Decree,  
That her Sons should be exil’d—once more to be free!

Robinson was ‘the first author to use “Australia” consistently in his works’ (‘Michael’). Here he alludes, too, to founding Governor Arthur Phillip’s designation of the convict settlement as ‘new Albion’ and the idea of ‘new colonial beginnings,’ ‘the promise of rehabilitation into a new life’ (Coleman 141-142, 147). In the poem colonial freedom is won by sea ordeal, patriotic loyalty to Britain, ‘Exertion’ in the ‘Campaign’ to ‘subdue’ ‘[t]he Pride . . . of an obstinate Soil’ through agricultural expansion (‘Ceres’ and ‘Pomona’), reform of the ‘lorn Exile’ and regal ‘Gracious Benificence [*sic*].’ The ‘obstina[cy]’ of the ‘Soil’ and the ‘rude[ness]’ of the ‘Shore’ are metonyms for both Indigenous resistance to settlement and harsh conditions in the convict colony. Ceres is the Roman goddess of grain crops, often represented as a maternal figure, and Pomona is the Roman goddess of fruit. In the poem they are both fertile and disciplinary. The political sublime object in ‘Effusions of Gratitude’ is the ‘Decree’ of ‘Exile’ issued by the ‘Genius of Britain,’ hailed in the closing couplet of each verse. The couplets all rhyme ‘Decree’ and ‘free!’ The rhyme underscores Robinson’s subscription to what Tom Griffiths writes of as the ‘nineteenth century’s emerging liberal vision of history, which depicted “the sporadic but ineluctable advance of Freedom” from its natural home in Europe,’ giving colonial ‘peripheries a subordinate but significant place in world history’ (5).<sup>3</sup>

Discourses of the sublime generally structure the narrative arcs of early colonial cyclone writing. The arc begins with the natural sublime—the hurricane ‘filling the imagination with awe and terror’—and concludes with both an invocation of a ‘merciful . . . Divine Providence’ (‘Sydney’ 1811:3) that spares human life and settlement and a melancholic sublime. Immanuel Kant, who suggested that the sublime is subjective rather than the property of an object, includes ‘hurricanes with their track of devastation’ (100) in his examples of the ‘*dynamically sublime*’ (99). He suggests that ‘the sight of them is the more attractive, the more fearful it is, provided only that we are in security’ (100). Kant argues that ‘we willingly call these objects sublime, because they raise the energies of the soul above their accustomed height and discover in us a faculty of resistance of a quite different kind, which gives us courage to measure ourselves against the apparent almightiness of nature’ (100-101). This faculty of resistance is an ‘*affection of a strenuous kind* (viz. that excites the consciousness of our power to overcome every obstacle—*anima strenui*)’ that is ‘*aesthetically sublime*’ (113). In the period and archive of my study there is a general Christian religious imaginary that reads nature’s omnipotence as a manifestation of divine omnipotence. The invocation of a ‘merciful . . . Divine Providence’ that spares human life and settlement projects a sense of divine beneficence towards the larger colonial project.

The melancholic sublime has two registers. The first is exemplified in a locally written report of 30 March 1811 about meeting an unnamed man who had survived a hurricane in New Zealand on 21 March 1810. New Zealand is not in a tropical cyclone belt, which suggests that the weather event may have been what is called today an ‘extratropical transition’ of a hurricane (Sinclair 1). The author of the report projects himself or herself into the man’s stricken condition during a hurricane ‘most furious and terrific, dismantling forests of their largest trees, separating massy rocks’:

To a lonely European, constantly in dread of being surprised and murdered by the people upon whose soil the destinies had cast him, without a shelter from the fury of the elements, miserable and deplorable must have been his condition. But to one so lost, and so seemingly forsaken for a time, it was the Will of Providence at length to send relief, and to preserve him as an example to Mankind that the Divine Aid extends itself to the most humble, and can exalt to happiness the mind that sinks beneath the cheerless gloom of homeless melancholy. ('Sydney' 1811:3)

The colonial project is represented as integral to providential design ('destinies had cast him,' 'Will of Providence,' 'Divine Aid') not a racialised ideology of imperial expansion and civilisational spread. The descriptor 'homeless melancholy' is similar to the idea of colonial venturing, forced or free, as 'lorn exile' in Robinson's 'Effusions of Gratitude.' The experience of the hurricane intensifies the sense of melancholic displacement from a European home.

The other register of the typical melancholic sublime is starkly illustrated in a story in the *Sydney Gazette and New South Wales Advertiser* of 23 January 1823, picked up from the *Cape Town Gazette*. The story refers to 'most appalling accounts' of a hurricane in India, with Burrissaul [*sic*] as the most affected region. The word *accounts* suggests both forming narratives and a stocktaking of the devastation caused by the hurricane. The story emphasises the difficulty of finding an adequate language to describe what has happened, a topos of the sublime. The event is designated a 'terrific visitation of Providence.' 'Visitation' is used in its sense of an 'action, on the part of God or some supernatural power, of coming to, or exercising power over, a person or people for some end . . . In order to test, try, examine, or judge. . . . So as to afflict with sickness or other trouble, esp. by way of punishment for wrong-doing.' The news story about the Indian hurricane of the 5 July 1822 includes a letter from an indigo planter, who after surveying his own personal and business losses, writes,

alas! The sufferings of the native inhabitants are not to be described. No fewer than one lac of lives (100 000) are said to have been lost on this occasion, together with the whole of the cattle, and grain of every description, both in store, and what was on the ground. The dead bodies were floating in every direction, and carried with the current, through the houses. . . . [T]he district could not supply food for ten days' consumption to the inhabitants who have escaped this dreadful visitation. (*Sydney Gazette and New South Wales Advertiser* [1832])

Piddington gives the human death toll at 'Burrissal and Backergunge at the mouth of the Burrampooter and Ganges' as 'upwards of 50 000 souls' (57). The news story promises 'tremendous detail of devastation and misery,' detail compressed in the bare sketch of colonial matter and imposed order being out of place. Here I allude to Mary Douglas's famous definition of 'dirt as matter out of place.' Like dirt, material devastation here 'implies a set of ordered relations and a contravention of that order' (35). The collapse of imposed human order in cyclone writing is often registered in the language of levelling (for example, in 'The Hurricane at St Vincent's' (1832) and indiscriminate waste or ruin as in 'Hurricane in Dominica' (1835): 'the town is nearly one mass of ruin! the country

an arid waste!' The human inadequacy in this register of the melancholic sublime is the question of how to manage disaster relief, to produce the sketch (and there is often a self-censorship of detail, especially around the ingestion of the smell of death and decomposition on a large scale), and to comprehend what the author of 'Pen Sketches from the Note Book of a Wanderer, No. IV. The Hurricane' (1845), seemingly an Australian resident,<sup>4</sup> describes as the 'inscrutable will of a supreme power.' Colonial cyclone writing also emphasises the catastrophic suddenness of a reversal of fortune, despite the repetition of cyclonic damage in some places, especially in the West Indies. The possibility of such reversals produces in temperate zone readers in Australia an 'anticipative geography of the tropics' (Livingstone 94). Arnold highlights the way in which

Europe's engagement with the tropics contained, almost from the outset, a duality that made the tropics appear as much pestilential as paradisiacal. Powerfully negative images of the tropics centred on images of primitiveness, violence and destruction—the speed and fatality of tropical diseases, the destructiveness of tropical storms, the ferocity of tigers and other carnivorous beasts prowling in malarious jungles. (8)

Accounts of hurricanes are overwhelmingly brought into the visual and aural field of empire. The Wanderer, whose memoir of an 1833 hurricane in Bengal was published in the *Launceston Examiner*, does unusually refer to smell:

and the sun rose again on the dead and dying, the air tainted with the decomposition of carcasses [*sic*] of men and beasts—(a few miles from my bungalow a heap of two thousand men, cattle, deer, and one or two tigers lay rotting under the sickening rays of a Bengal sun). It was with desolate feelings I again strolled along the sandy beach.

There is a mordant pun on rays/raze (levelling destruction), with agency being attributed to exotic tropical weather, producing the tropics as 'a place of radical otherness to the temperate world, with which it contrasted and which it helped constitute' (Stepan 17). A stock hierarchy of human / animal is flattened. Like the indigo planter he is profoundly unsettled by the scale of loss of life ('sixty thousand of human beings' now in 'ocean graves') and the 'sea' laden with 'buildings, men, trees, and cattle' 'washing through' his 'bungalow.' Today the human death toll of that 1833 hurricane is reckoned as having been around 7000 (Bandyopadhyay 25). In the mind of the Wanderer, 'a smiling cultivated country,' 'thriving' under colonial rule in 'security,' 'peace' and 'plenty' on the 'morning' of 23 May when the hurricane made landfall is abjectly transformed over its course into an 'ill-fated shore where six lonely years had been wasted in the desert.' The sketch of colonial bungalow life on what is now called Sagar Island is framed by the Wanderer's story of a long-time friend Campbell and a Bengal tiger, a 'monster' symbolic of the hostile 'jungle,' the depredations of which threaten his masculine imposition of domestic and farming order. A concluding note relates that the tiger was so terrified by the hurricane that it, like 300 'ryots' (peasant cultivators), sought shelter in Campbell's bungalow. The tiger was finally shot by Campbell with the Wanderer's loaned rifle—a sign of restored human technological mastery over the animal. There may also be a pun on ryots/riots.

The features of early nineteenth-century writing about hurricanes that I have outlined also shape accounts of the first reported tropical hurricane in Australia at Port Essington in what is now the Northern Territory on 25 November 1839 (see Murphy 2-6; cf. Allen). Piddington notes that it ‘was of small extent though its violence was excessive, and the Barometer sunk to 28° 52’’ (43) and that its eye ‘did not pass, it appears, exactly over the settlement’ (136). It and seven other early colonial period cyclones before 1887 have only recently been dropped from the Australian Emergency Management Knowledge Hub database of cyclones that is now applying stricter authentication and classification criteria, including items like insurance value of loss. Port Essington (also known as New Victoria) had been established on the Cobourg Peninsula in 1838 for strategic reasons, because of ‘rumours that a French expedition was planning to occupy’ a site in northern Australia and ‘to give British traders a base in the north independent of the Dutch’ (‘Australia’s First Northern Port’). The settlement, the residents of which were beset by outbreaks of illness after 1840 (Anderson 76-77), was abandoned in 1849. Stuart B. Schwartz notes that by the eighteenth century in the Caribbean ‘there was a recognition that the hurricanes’ destruction of shelter and crops weakened populations and made them more vulnerable to famine, epidemics, or other threats’ (xiii).

The 1839 hurricane was first reported in the *Perth Gazette and Western Australian Journal* on 11 April 1840, and Sydney and Hobart papers subsequently picked up the story. The weather event is marked as exotic in Australia: ‘one of those awful hurricanes so common and destructive in the West Indies, Mauritius, &c.’ (‘Hurricane at Port Essington’). The author of the brief introductory remarks to the reprint in the *Colonial Times* (Hobart) writes of the ‘melancholy task’ of ‘record[ing]’ that the ‘new, and supposed-to-be flourishing settlement of *Port Essington*’ had been ‘awfully swept away by a hurricane,’ like Coringa in the state of Andhra Pradesh, India in 1839 (‘Port Essington’).

The visual and aural scene of the hurricane’s sky, thunder, rain and wind shifts: at a distance it is ‘terrifically grand’; the landfall of the hurricane ‘render[s] the scene altogether fearful in the extreme.’ In early imperial discourse colonies were said to be planted; the Port Essington hurricane acts ‘as if determined to root everything out of the ground’:

Trees were torn up and falling about in every direction; large branches were carried by the fury of the winds some hundred yards. Even the very stones themselves seemed animated and flying, as it were, from the fury of the hurricane. Every house in the settlement, with the exception of the officers’ mess-house, store, and hospital, was blown down. Government-house was thrown from the piles on which it was built upwards of ten feet, and lit on the ground, without, however, much injury . . . The church was blown down. All the houses, boat-sheds, armourer’s shop, &c, were destroyed . . . At day-light, the scene of devastation was melancholy in the extreme . . . Never could such a scene of devastation have been witnessed . . . Port Essington is now a perfect wilderness.

Twenty boats in the harbour were wrecked, with eight lives lost from the HMS *Pelorus*.

A 10-foot (3-metre) storm surge noted by Piddington (136), turned well water salty for three months. In Dominican colonial discourse the French patois phrase *temps perdi* was used to ‘matter-of-factly’ describe ‘wasted time, lost labour.’ It was a phrase used of hurricanes (Rhys 155). The idea of West Indian colonies being doomed both by the ‘powers of nature’ and the ‘wildest passions of mankind’ produced as a legacy of an appalling system of racialised slavery began to emerge by the 1830s (*Sydney Gazette and New South Wales Advertiser* (1832)).<sup>5</sup> In the *Perth Gazette and Western Australian Journal* report of the Port Essington hurricane, the sentiment (‘what has been done during the last 18 months by one hundred is entirely destroyed’) accords with the abject affect conveyed by *temps perdi*. Rebuilding after a hurricane becomes a crucial part of a colonial or empire-building work ethic, an ethic of fortitude deeply imbricated with the melancholic sublime and cathected to place. The term battler, used of ‘one with few natural advantages’ who ‘work[s] doggedly and with little reward, . . . struggle[s] for a livelihood, . . . [and] display[s] courage in so doing,’ entered Australian colonial discourse much later in the mid-1890s (Ramson 42-43).

Hurricanes had been conventionally represented as ‘irregular winds’ (‘Popular Information on Science’), disorientingly coming from ‘all parts of the compass’ (‘Reid’s Law of Storms’). For Kant, the sublime ‘is to be found in a formless object, as in it or by occasion of it *boundlessness* is represented, and yet its totality is also present to thought’ (82). In a religious age the totality may be God’s omnipotence, divine providence, and the like. ‘Scientific’ colonial knowledge of hurricanes began to be systematised across regions in the late 1830s, with Reid as a leading authority, and circulated back to imperial centres and throughout European empires. The so-called scientific, empirically-derived knowledge of hurricanes in the late 1830s through to 1850 was called ‘the law of storms,’ producing order out of the seemingly formless or unbounded. Australian newspapers carried reports of advances in knowledge of hurricanes and how to negotiate them at sea. Reid’s work was held to demonstrate that ‘the action of nature in these atmospheric convulsions was *regular*, and the tempests moved and operated according to a fixed law’ (‘Reid’s Law of Storms’). Reid did credit some local vernacular knowledges:

The famous Benjamin Franklin had recorded an observation ‘that a north-east storm came from the south-west,’ and the weatherwise people of New York had embodied the same remark in their catalogue of vernacular prognostics. Even seamen had a common proverb that ‘a north-wester would never remain long in debt to a south-easter,’ and the inhabitants of some of the West Indian islands actually applied the familiar name of roundabouts to the gales of the locality. (‘Reid’s Law of Storms’)

The West Indian vernacular might have been shaped by cross-cultural interaction. There is no record in the newspaper archive on which I have drawn of such interaction with Indigenous peoples in Australia. Popularisation of the law of storms, as in an 1849 reprint of part of Piddington’s *Horn-book* in the *Sydney Morning Herald* (‘Theory of Cyclones’), promised mariners according to one letter writer to the *Maurician*, whose letter was republished in the *South Australian* of 8 June 1849, a ‘grand victory of human genius over the elements’ (‘Law of Storms’), implicitly a means of mastering divine

omnipotence. That understanding of law was generated largely in the Atlantic Ocean and Indian Ocean regions. The rate of European settlement in the Australian tropics was slow. Anderson notes the monitory failure of early settlements in the Northern Territory in the 1820s and 1840s and the ‘cluster[ing]’ of settlement in Queensland ‘in the southeast’ in the mid-nineteenth century (76-78). Awareness of the law of storms would have benefitted the increase of tropical settlement in the 1860s.

Beyond their material reality hurricanes had a metaphorical and symbolic reach. Reports of cyclonic damage and emerging ideas of tropicity underpinned the sensational usage of the hurricane in imperial and colonial political discourse. In an extract from the *Quarterly Review* approvingly cited in a commentary on Napoleon Bonaparte in the *Sydney Gazette and New South Wales Advertiser* of 10 May 1817 the ‘turn of his mind’ is represented as ‘*oriental* . . . Extreme agitation is the basis of his existence—motion is his repose—he lives in a hurricane, fattens, as he himself said, on anxiety and care, and thrives when the rest of nature dwindles or perishes.’ A ‘wealthy Colonist’ visiting England writes in a letter to the editor of the *Australian*, published on 16 January 1828, of the economic and political conditions there: ‘It appeared to me as if there had been a dreadful hurricane; the effects of which have been shocking.’ He is perturbed by levelling: the ‘crush of many respectable structures,’ the spectacle of ‘fallen opulence’ and ‘beggary.’ He reports his promotion of emigration to temperate Australia and advocates that the British government should export a labour supply suitable for northern Australia, where ‘British constitutions will never . . . do,’ by ‘order[ing] the vessels that are taken prizes as slave dealing ships, to bring the poor creatures at once to our Colony.’ Revolutionary Europe of 1848 is routinely represented in Australian newspapers as in a hurricane. In a *Sydney Morning Herald* editorial on ‘England’s Future’ on 4 September 1848, for example, Europe is represented as a ‘raging storm’ and Great Britain

seems but one country that is either calm, as if in the centre of the hurricane, or only slightly affected by the whirl and uproar. But is she calm from security in the heart of the tempest, or is she in such a position with respect to it as to have suffered already in a slight degree as the storm came over her, and to be subjected again to the departing turmoil of agitation as the mighty cyclone passes on its way. (2)

This is the earliest use of the term *cyclone* I have found in *Trove* digitised Australian newspapers. The oft-reprinted *Spectator* (London) report of the June Days Uprising in Paris characterises it as the ‘burst’ of ‘[t]he great thunder-cloud of war which had been hanging so long over Paris’ and ‘government’ having been ‘swept away in the hurricane’ (‘News of the Week’; ‘The Insurrection at Paris’). The hurricane metaphor is also used in more revolutionary political discourse. In 1848 John Mitchel, the editor of the nationalist *United Irishman*, identifying himself as a ‘rebellious spirit,’ describes the ‘bloody old British Empire’ as a ‘pirate and blood-stained slaver, filled with dead men’s bones and with all uncleanness,’ with the ‘curses of the world swell[ing] the hurricane that rages around her.’ The extract of his open letter to Lord Clarendon, then Lord-Lieutenant of Ireland, reprinted in the *Cornwall Chronicle* (Launceston) is titled ‘Ravings of a Repealer!’ Mitchel was convicted of treason and transported first to Bermuda and later to Van Diemen’s Land, from which he escaped to the United States and became a prominent pro-slavery campaigner.

Writing of tropicality, Arnold notes that '[a]lthough the complex of ideas associated with the tropics was first assembled in the Caribbean, it did not remain confined there.' He draws attention to the way it was 'exported' via 'medical and botanical texts' (9). As I have demonstrated it was also produced and circulated through early colonial newspaper coverage and publication of material about hurricanes in a range of forms. Close attention to the colonial discursive representations of hurricanes across time and place illuminates and helps unpack colonial, national and increasingly global imaginaries of climate. Representations of hurricanes ('cyclones' after 1848) in public discourse are deeply imbricated in a providential narrative of empire and election to colonial place and in the construction of a tropical / temperate duality of settlement and culture.

## NOTES

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<sup>1</sup> Kam-biu Liu enumerates objects of geological proxy study: 'overwash deposits preserved in the sediments of coastal lakes . . . and coastal marshes'; 'microfossils . . . contained in these coastal sediments'; 'wave-generated or flood-generated sedimentary structures or deposits (tempestites) in marine or lagoonal sediments'; 'storm-generated beach ridges'; 'oxygen isotopic ratios of hurricane precipitation recorded in shallow-water corals and speleothems'; 'and tree rings' (14-15).

<sup>2</sup> See, for example, *Australian* 20 Sept. 1826.

<sup>3</sup> He is quoting William McNeill, 'The Changing Shape of World History'. *History and Theory* 34 (1995): 11.

<sup>4</sup> The sketch appears in the section titled 'Original Communications.' In the extant run of the *Launceston Examiner* there are later 'Pen Sketches, from the Note Book of a Wanderer' published in the same section of the paper, for example on 7 March 1846.

<sup>5</sup> The particular report from which I quote is a commentary on Samuel Sharpe's slave rebellion in Jamaica in 1831 and the violence of settler backlash there orchestrated by the Colonial Church Union.

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