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SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.¹

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.,² the areas within the tropical and temperate zones are approximately as follows:—

AREAS OF TROPICAL AND TEMPERATE REGIONS
OF STATES WITHIN TROPICS.

| Areas. | Queensland. | Northern Territory. | Western Australia. | Total |
|--|-------------|---------------------|--------------------|------------|
| | Sq. miles. | Sq. miles. | Sq. miles. | Sq. miles. |
| Within Tropical Zone ... | 359,000 | 426,320 | 364,000 | 1,149,320 |
| Within Temperate Zone ... | 311,500 | 97,300 | 611,920 | 1,020,720 |
| Ratio of Tropical part to whole State ... | 0.535 | 0.814 | 0.373 | 0.530 |
| Ratio of Temperate part to whole State ... | 0.465 | 0.186 | 0.627 | 0.470 |

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 3.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2. and, according to Volume XXV. of the "Encyclopædia Britannica," tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopædia.

2. Its correct value for 1912.0 is 23° 27' 2".64, and it decreases about 6".47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shews how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{2}{10}$ times (1.29775) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

| Commonwealth of Australia | | 2,974,581 square miles. | |
|---|------------|---|--|
| Country. | Area. | Australian Commonwealth in comparison with— | In comparison with Australian C ^o wealth. |
| Continents— | Sq. miles. | | |
| Europe | 3,860,272 | 0.77 | 1.29775 |
| Asia | 16,972,911 | 0.18 | 5.70598 |
| Africa | 11,174,290 | 0.27 | 3.75659 |
| North and Central America and West Indies ... | 8,539,788 | 0.35 | 2.87092 |
| South America | 7,416,871 | 0.40 | 2.49342 |
| Australasia and Polynesia | 3,459,618 | 0.86 | 1.16306 |
| Total, exclusive of Arctic and Antarctic Conts. | 51,423,750 | 0.06 | 17.28772 |
| Europe— | | | |
| Russia (inclusive of Poland, Ciscaucasia & Finland) | 2,122,527 | 1.40 | 0.71355 |
| Austria-Hungary (incl. of Bosnia & Herzegovina) | 261,035 | 11.39 | 0.08776 |
| Germany | 208,780 | 14.25 | 0.07011 |
| France | 207,054 | 14.37 | 0.06969 |
| Spain | 194,783 | 15.27 | 0.06548 |
| Sweden | 172,876 | 17.21 | 0.05812 |
| Norway | 124,130 | 23.96 | 0.04173 |
| United Kingdom | 121,391 | 24.50 | 0.04081 |
| Italy | 110,659 | 26.88 | 0.03720 |
| Turkey (inclusive of Crete) | 68,715 | 43.29 | 0.02310 |
| Denmark (inclusive of Iceland) | 55,338 | 53.73 | 0.01861 |
| Rumania | 50,720 | 58.65 | 0.01705 |
| Bulgaria | 38,080 | 78.11 | 0.01280 |
| Portugal | 35,490 | 83.82 | 0.01193 |
| Greece | 25,014 | 118.91 | 0.00841 |
| Servia | 18,650 | 159.49 | 0.00627 |
| Switzerland | 15,976 | 186.22 | 0.00537 |
| Netherlands | 12,648 | 235.29 | 0.00425 |
| Belgium | 11,373 | 261.78 | 0.00382 |
| Montenegro | 3,630 | 819.67 | 0.00122 |
| Luxemburg | 998 | 2941.18 | 0.00034 |
| Andorra | 175 | 16997.61 | 0.00006 |
| Malta | 117 | 25423.76 | 0.00004 |
| Liechtenstein | 65 | 45793.55 | 0.00002 |
| San Marino | 38 | 78278.45 | 0.00001 |
| Monaco | 8 | 371822.63 | ... |
| Gibraltar | 2 | 1487290.50 | ... |
| Total, Europe | 3,860,272 | 0.77 | 1.29775 |
| Asia— | | | |
| Russia (inclus. of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters) | 6,525,130 | 0.45 | 2.19364 |
| China and Dependencies... | 4,277,170 | 0.70 | 1.43791 |
| British India... | 1,097,821 | 2.71 | 0.36906 |
| Independent Arabia | 966,700 | 3.08 | 0.32499 |
| Turkey (including Samos) | 693,790 | 4.29 | 0.23324 |
| Feudatory Indian States... | 675,267 | 4.41 | 0.22701 |
| Persia | 628,000 | 4.74 | 0.21112 |

| Country. | Area. | Australian Commonwealth in comparison with— | In com- parison with Australian C'wealth. |
|--|------------|--|---|
| ASIA (continued)— | Sq. Miles. | | |
| Dutch East Indies | 584,611 | 5.09 | 0.19654 |
| Afghanistan | 250,000 | 11.90 | 0.08405 |
| Siam | 195,000 | 15.25 | 0.06555 |
| Japan (inclusive of Formosa, Pescadores, Kwantung and Southern Sakhalin) | 174,919 | 17.01 | 0.05880 |
| Philippine Islands (inclusive of Sulu Archipelago) | 127,853 | 23.27 | 0.04298 |
| Laos | 98,000 | 30.35 | 0.03295 |
| Korea | 86,000 | 34.59 | 0.02891 |
| British Borneo and Sarawak | 83,106 | 35.79 | 0.02794 |
| Bokhara | 83,000 | 35.83 | 0.02790 |
| Omán | 82,000 | 36.27 | 0.02757 |
| Nepál | 54,000 | 55.10 | 0.01815 |
| Annam | 52,100 | 57.08 | 0.01752 |
| Tonking | 46,400 | 64.10 | 0.01560 |
| Cambodia | 45,000 | 66.10 | 0.01513 |
| Federated Malay States | 28,800 | 103.28 | 0.00968 |
| Ceylon | 25,332 | 117.37 | 0.00852 |
| Khiva | 24,000 | 123.94 | 0.00807 |
| Cochin China... .. | 20,000 | 148.73 | 0.00672 |
| Bhutan | 20,000 | 148.73 | 0.00672 |
| Aden and Dependencies | 9,005 | 330.32 | 0.00303 |
| Timor, etc. (Portuguese Indian Archipelago) | 7,330 | 406.50 | 0.00246 |
| Cyprus | 3,584 | 833.33 | 0.00120 |
| Brunei | 3,000 | 991.53 | 0.00101 |
| Goa, Damao, and Diu | 1,638 | 1818.18 | 0.00055 |
| Straits Settlements | 1,600 | 1851.85 | 0.00054 |
| Sokotra and Kuria Muria Islands | 1,382 | 2152.22 | 0.00046 |
| Hong Kong and Dependencies | 390 | 7692.31 | 0.00013 |
| Wei-hai-wei | 285 | 10623.50 | 0.00009 |
| Bahrein Islands | 250 | 11898.32 | 0.00008 |
| Kiauchau | 200 | 14872.91 | 0.00007 |
| French India (Pondicherry, etc.) | 196 | 15176.43 | 0.00007 |
| Labuan | 30 | 99152.70 | 0.00001 |
| Italian Concession, Tientsin | 18 | 165254.50 | 0.00001 |
| Macao, etc. | 4 | 743643.25 | ... |
| Total, Asia | 16,972,911 | 0.18 | 5.70598 |
| Africa— | | | |
| Turkey (inclusive of Egypt and Soudan) | 1,748,900 | 1.70 | 0.58796 |
| French Sahara | 1,544,000 | 1.93 | 0.51907 |
| Belgian Congo | 909,654 | 3.27 | 0.30582 |
| French Congo | 669,000 | 4.46 | 0.22491 |
| Angola | 484,800 | 6.14 | 0.16298 |
| Rhodesia | 439,575 | 6.77 | 0.14778 |
| Abyssinia | 432,432 | 6.88 | 0.14538 |
| German East Africa | 384,000 | 7.74 | 0.12909 |
| Mauretania | 344,967 | 8.62 | 0.11597 |
| Algeria (including Algerian Sahara) | 343,500 | 8.66 | 0.11548 |
| German South-west Africa | 322,450 | 9.23 | 0.10840 |
| Portuguese East Africa | 293,400 | 10.14 | 0.09864 |
| Cape Colony | 276,995 | 10.74 | 0.09312 |
| Bechuanaland Protectorate | 275,000 | 10.82 | 0.09245 |
| Northern Nigeria Protectorate | 256,400 | 11.60 | 0.08620 |
| Madagascar | 228,000 | 13.05 | 0.07665 |
| Uganda Protectorate | 223,500 | 13.31 | 0.07514 |
| Morocco | 219,000 | 13.58 | 0.07362 |
| Kamerun | 191,130 | 15.56 | 0.06425 |
| British East Africa Protectorate | 181,600 | 16.38 | 0.06105 |
| Italian Somaliland | 139,430 | 21.34 | 0.04687 |
| Ivory Coast | 130,000 | 22.87 | 0.04370 |

| Country. | Area. | Australian Commonwealth in comparison with— | In com- parison with Australian C'wealth. |
|--|------------|--|---|
| AFRICA (continued)— | | | |
| | Sq. miles. | | |
| Gold Coast Protectorate (with North Territories) | 119,260 | 24.94 | 0.04009 |
| Transvaal (with Swaziland) ... | 116,962 | 25.43 | 0.03932 |
| French Guinea ... | 95,000 | 31.31 | 0.03194 |
| Southern Nigeria and Protectorate ... | 77,260 | 38.51 | 0.02597 |
| Senegal ... | 74,000 | 40.20 | 0.02488 |
| Rio de Oro, etc. ... | 73,000 | 40.75 | 0.02454 |
| Senegambia and Niger ... | 70,000 | 42.49 | 0.02353 |
| British Somaliland ... | 68,000 | 43.74 | 0.02286 |
| Dahomey ... | 65,000 | 45.77 | 0.02185 |
| Orange River Colony ... | 50,392 | 59.03 | 0.01694 |
| Tunis ... | 50,000 | 59.49 | 0.01681 |
| Eritrea ... | 45,800 | 64.95 | 0.01540 |
| Liberia ... | 40,000 | 74.36 | 0.01345 |
| Nyasaland Protectorate ... | 39,801 | 74.74 | 0.01338 |
| Natal ... | 35,371 | 84.10 | 0.01182 |
| Togoland ... | 33,700 | 88.26 | 0.01133 |
| Sierra Leone and Protectorate ... | 30,000 | 99.11 | 0.01009 |
| Portuguese Guinea ... | 13,940 | 213.22 | 0.00469 |
| Spanish Guinea (Rio Muni, etc.) ... | 12,000 | 247.88 | 0.00403 |
| Basutoland ... | 10,293 | 289.02 | 0.00346 |
| French Somali Coast ... | 5,790 | 513.74 | 0.00194 |
| Gambia and Protectorate ... | 4,500 | 661.02 | 0.00151 |
| Cape Verde Islands ... | 1,480 | 2000.00 | 0.00050 |
| Zanzibar ... | 1,020 | 2941.18 | 0.00034 |
| Réunion ... | 965 | 3082.46 | 0.00032 |
| Mauritius and Dependencies ... | 835 | 3562.37 | 0.00028 |
| Fernando Po, etc. ... | 814 | 3654.28 | 0.00027 |
| Comoro Islands ... | 620 | 4761.91 | 0.00021 |
| St. Thomas and Prince Islands ... | 360 | 8262.73 | 0.00012 |
| Seychelles ... | 160 | 19830.54 | 0.00005 |
| Mayotte, etc. ... | 140 | 21247.01 | 0.00005 |
| St. Helena ... | 47 | 63288.95 | 0.00002 |
| Ascension ... | 34 | 87487.65 | 0.00001 |
| Spanish North and West Africa ... | 13 | 228813.92 | ... |
| Total, Africa ... | 11,174,290 | 0.27 | 3.75660 |
| North and Central America and West Indies— | | | |
| Canada ... | 3,729,665 | 0.80 | 1.25385 |
| United States (exclusive of Alaska, &c.) ... | 2,974,159 | 1.00 | 0.99985 |
| Mexico ... | 767,005 | 3.88 | 0.25785 |
| Alaska ... | 590,884 | 5.03 | 0.19864 |
| Newfoundland and Labrador ... | 162,734 | 18.28 | 0.05471 |
| Nicaragua ... | 49,200 | 60.46 | 0.01654 |
| Guatemala ... | 48,290 | 61.61 | 0.01623 |
| Greenland ... | 46,740 | 63.65 | 0.01571 |
| Honduras ... | 46,250 | 64.31 | 0.01555 |
| Cuba ... | 44,000 | 67.61 | 0.01479 |
| Costa Rica ... | 18,400 | 161.55 | 0.00619 |
| San Domingo ... | 18,045 | 164.74 | 0.00607 |
| Haiti ... | 10,204 | 291.55 | 0.00343 |
| British Honduras ... | 8,598 | 345.96 | 0.00289 |
| Salvador ... | 7,225 | 411.52 | 0.00243 |
| Bahamas ... | 5,450 | 545.79 | 0.00183 |
| Jamaica ... | 4,200 | 708.23 | 0.00141 |
| Porto Rico ... | 3,606 | 824.90 | 0.00121 |
| Trinidad and Tobago ... | 1,868 | 1592.39 | 0.00063 |
| Leeward Islands ... | 701 | 4243.33 | 0.00024 |
| Guadeloupe and Dependencies ... | 688 | 4323.52 | 0.00023 |
| Windward Islands ... | 672 | 4426.46 | 0.00023 |

| Country. | Area. | Australian Commonwealth in comparison with— | In comparison Australian C'wealth. |
|---|-------------------|---|------------------------------------|
| N. & C. AMERICA & W. INDIES (continued)— | Sq. miles. | | |
| Curacao and Dependencies ... | 403 | 7381.09 | 0.00014 |
| Martinique ... | 381 | 7807.30 | 0.00013 |
| Turks and Caicos Islands ... | 169 | 17601.07 | 0.00006 |
| Danish West Indies ... | 138 | 21554.94 | 0.00005 |
| St. Pierre and Miquelon ... | 93 | 31984.74 | 0.00003 |
| Bermudas ... | 20 | 148729.05 | 0.00001 |
| Total, N. and C. America and W. Indies ... | 8,539,788 | 0.35 | 2.87093 |
| South America— | | | |
| Brazil (inclusive of Acre) ... | 3,292,991 | 0.90 | 1.10704 |
| Argentine Republic ... | 1,135,840 | 2.62 | 0.38185 |
| Peru ... | 695,733 | 4.28 | 0.23389 |
| Bolivia ... | 605,400 | 4.91 | 0.20352 |
| Colombia ... | 435,100 | 6.84 | 0.14627 |
| Venezuela ... | 393,776 | 7.55 | 0.13244 |
| Chile ... | 292,580 | 10.17 | 0.09836 |
| Paraguay ... | 171,204 | 17.37 | 0.05755 |
| Ecuador ... | 116,000 | 25.64 | 0.03900 |
| British Guiana ... | 90,277 | 32.95 | 0.03035 |
| Uruguay ... | 72,210 | 41.19 | 0.02428 |
| Dutch Guiana ... | 46,060 | 64.60 | 0.01548 |
| Panamá ... | 31,500 | 94.43 | 0.01059 |
| French Guiana ... | 30,500 | 97.56 | 0.01025 |
| Falkland Islands ... | 6,500 | 456.62 | 0.00219 |
| South Georgia ... | 1,000 | 2974.58 | 0.00034 |
| Total, South America ... | 7,416,671 | 0.40 | 2.49340 |
| Australasia and Polynesia— | | | |
| Commonwealth of Australia ... | 2,974,581 | 1.00 | 1.00000 |
| Dutch New Guinea ... | 151,789 | 19.60 | 0.05108 |
| New Zealand and Dependencies ... | 104,751 | 28.39 | 0.03522 |
| Papua ... | 90,540 | 32.85 | 0.03044 |
| Kaiser Wilhelm Land ... | 70,000 | 42.50 | 0.02353 |
| Bismarck Archipelago ... | 20,000 | 148.73 | 0.00672 |
| British Solomon Islands ... | 12,000 | 247.88 | 0.00403 |
| New Caledonia and Dependencies ... | 8,548 | 347.99 | 0.00287 |
| Fiji ... | 7,435 | 400.08 | 0.00250 |
| Hawaii ... | 6,449 | 460.83 | 0.00217 |
| New Hebrides ... | 5,000 | 594.92 | 0.00168 |
| German Solomon Islands ... | 4,200 | 709.22 | 0.00141 |
| French Establishments in Oceania ... | 1,520 | 1960.78 | 0.00051 |
| German Samoa ... | 1,000 | 2974.58 | 0.00034 |
| Caroline and Pelew Islands ... | 560 | 5311.75 | 0.00019 |
| Tonga ... | 390 | 7627.13 | 0.00013 |
| Marianne Islands ... | 250 | 11898.32 | 0.00008 |
| Guam ... | 200 | 14872.91 | 0.00007 |
| Gilbert Islands ... | 166 | 17919.16 | 0.00006 |
| Marshall Islands ... | 150 | 19830.54 | 0.00005 |
| Samoa (U.S.A. part) ... | 79 | 37652.92 | 0.00003 |
| Norfolk Island ... | 10 | 297458.10 | ... |
| Total, Australasia and Polynesia ... | 3,459,618 | 0.86 | 1.16306 |
| British Empire... | 11,454,862 | 0.26 | 3.85092 |

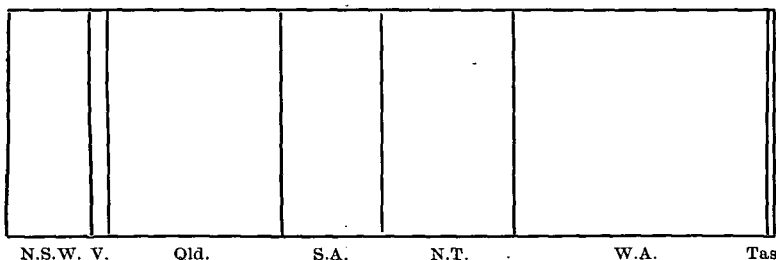
3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern Territory. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table :—

RELATIVE SIZES OF STATES AND COMMONWEALTH.

| State. | Area. | Ratio which the Area of each State and Northern Territory bears to that of other States and Commonwealth. | | | | | | | |
|------------------|------------|---|--------|---------|-------|-------|---------|---------|---------|
| | | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | N. Ter. | C'with. |
| | Sq. miles. | | | | | | | | |
| New South Wales | 310,372 | 1.000 | 3.532 | 0.463 | 0.817 | 0.318 | 11.840 | 0.593 | 0.104 |
| Victoria ... | 87,884 | 0.283 | 1.000 | 0.131 | 0.231 | 0.090 | 3.352 | 0.168 | 0.030 |
| Queensland ... | 670,500 | 2.160 | 7.629 | 1.000 | 1.764 | 0.687 | 25.577 | 1.280 | 0.225 |
| South Australia | 380,070 | 1.225 | 4.325 | 0.567 | 1.000 | 0.389 | 14.498 | 0.726 | 0.128 |
| West. Australia | 975,920 | 3.144 | 11.105 | 1.455 | 2.568 | 1.000 | 37.228 | 1.964 | 0.328 |
| Tasmania ... | 26,215 | 0.085 | 0.298 | 0.039 | 0.069 | 0.027 | 1.000 | 0.050 | 0.009 |
| North. Territory | 523,620 | 1.687 | 5.958 | 0.781 | 1.378 | 0.537 | 19.974 | 1.000 | 0.176 |
| Commonwealth | 2,974,581 | 9.584 | 33.847 | 4.436 | 7.827 | 3.048 | 113.469 | 5.681 | 1.000 |

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.532) and less than one-half the size of Queensland (0.463); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.584), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast: the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.
STATES AND CONTINENT.

| State. | Coast-line. | Area ÷ Coast-line. | State. | Coast-line. | Area ÷ Coast-line. |
|---------------------|-------------|--------------------|---------------------|-------------|--------------------|
| | Miles. | Sq. miles. | | Miles. | Sq. miles. |
| New South Wales ... | 700 | 443 | South Australia ... | 1,540 | 247 |
| Victoria ... | 680 | 129 | Western Australia | 4,350 | 224 |
| Queensland ... | 3,000 | 223 | Continent† ... | 1,310 | 261 |
| Northern Territory | 1,040 | 503 | Tasmania ... | 900 | 29 |

1. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. *Geographical Features of Australia.*—As indicated in the preceding issues of this Year Book, it is intended each year to give fairly complete information concerning some special geographical element. Thus No. 1 Year Book, pp. 60-68, contains an enumeration of Coastal features, No. 2, pp. 66-77, deals with Hydrology, No. 3, pp. 59-72, with Orography, and No. 4, pp. 59-82 with the Lakes of Australia. In the present issue the Islands of Australia constitute the special feature treated. An orographical or vertical relief map of Australia will be found on page 81.

§ 2. Islands off the Coast of the Commonwealth.

1. *General.*—The following section contains the latest available information regarding the islands off the coast of each State. Many of these islands are merely barren and precipitous rocks, while others are exceedingly fertile. In some cases, owing to incomplete surveys, the details available are extremely meagre.

2. *New South Wales.*—(i.) *Introductory.* The accompanying information regarding the islands of New South Wales has been compiled from particulars furnished by the Lands Department of that State. The name, position, area, etc., of each island will be found in the appended tabular statement.

(ii.) *Fauna.* (a) *Mammals.* Though some species of rats and bats doubtless occur on the islands off the New South Wales coast, there does not appear to be a record of any having been collected. The islands are too small and barren to support any of the larger Marsupialia. Three species of seals are known from the islands and mainland, and may occur anywhere northwards to Seal Rocks or even farther north. The Leopard Seal (*Ogmorhinus leptonyx*, Blainville) is recorded from Sydney and Newcastle; the Australian Fur-seal (*Arctocephalus forsteri*, Lesson), and the Australian Sea-lion (*Zalophus lobatus*, Gray), both occur on Seal Rocks.

(b) *Aves.* The avi-fauna of the insular areas contiguous to the coast of New South Wales is almost alike from its northern to southern boundaries. Naturally it consists principally, if not entirely, of sea or shore birds, on islands where there is no vegetation. Small islands covered with a dense but stunted vegetation are also tenanted by similar species to those found on the near mainland, chiefly by honey-eaters, thorn-bills or tits, warblers, scrub-wrens, silvereyes, swallows, finches, and flycatchers. Should there also be an expanse of open grass land, the Australian pipit or "ground lark" and possibly quail will be found. Islands of larger size carrying trees of great girth, in parts are also resorted to by shrike-thrushes, cuckoo-shrikes, butcher-birds, thick-heads, robins, pigeons, parakeets, etc.

Of all the sea and shore frequenting species inhabiting the contiguous islands of the coast of New South Wales the white-breasted or red-backed fish eagle (*Haliastur girrenera*, Vieillot), and the white-winged petrel (*Estrelata leucoplera*, Gould) are the only two species that are not found farther south than the Hunter River. On the other hand, the farther north one goes the rarer becomes the hooded dotterel (*Ægialitis cucullatus*, Vieillot), and the little penguin (*Eudyptula minor*, Gould). In the following list those

species only are included that one might reasonably expect to find on the different islands, according to their size and formation, for one would not look for shore-frequenting species on a rock-bound island coast; neither are here recorded those that are driven there by winds and gales from other parts:—White-bellied sea eagle (*Haliastur leucogaster*, Gmelin), white-breasted or red-backed sea eagle (*Haliastur girrenera*, Vieillot), white-headed osprey (*Pandion leucocephalus*, Gould), pelican (*Pelecanus conspicillatus*, Gould), gannet (*Sula serrator*, Banks), black cormorant (*Phalacrocorax carbo*, Linn.), little black and white cormorant (*Phalacrocorax melanoleucus*, Vieillot), little black cormorant (*Phalacrocorax sulcirostris*, Brandt), reef heron (*Demigretta sacra*, Gmelin), black swan (*Chenopsis atrata*, Latham), brown duck (*Anas superciliosa*, Gmelin), black duck (*Biziura lobata*, Spaw.), turnstone (*Arenaria interpres*, Linn.), white-breasted oyster-catcher (*Hæmatopus longirostris*, Vieillot), sooty oyster-catcher (*Hæmatopus unicolor*, Wagler), golden plover (*Charadrius fulvus*, Gmelin), double-banded dotterel (*Oethodromus bicinctus*, Jard and Selby), hooded dotterel (*Egialitis cucullatus*, Vieillot), red-capped dotterel (*Egialitis ruficapilla*, Temm.), curlew (*Numeaius cyanopus*, Vieillot), oriental whimbrel (*Numenius variegatus*, Scopoli), godwit (*Limosa novæ-zealandiæ*, Gray), greenshank (*Totanus glottis*, Temm.), sandpiper (*Totanus brevipes*, Vieillot), knot (*Tringa canutus*, Linn.), marsh tern (*Hydrochelidon hybrida*, Paffas), large-crested tern (*Sterna bergii*, Licht.), white-shafted tern (*Sternula sinensis*, Gmelin), Pacific gull (*Gabianus pacificus*, Latham), silver gull (*Larus novæ-hollandiæ*, Steph.), white-faced storm petrel (*Pelagodroma fregata*, Latham), wedge-tailed petrel (*Puffinus chlororhynchus*, Lesson), short-tailed petrel (*Puffinus tenuirostris*, Temm.), giant petrel (*Ossifraga gigantea*, Gmelin), white-winged petrel (*Diastrelata leucoptera*, Gould), prion (*Prion brevirostris*, Gould), crested grebe (*Podiceps cristatus*, Linn.), little penguin (*Eucyptula minor*, Gould).

(c) *Mollusca*. Most of the islands are too small and barren to afford shelter to an invertebrate fauna, but Cabbage Tree Island, off Port Stephens, is clothed with a luxuriant vegetation, and here have been found the following species of snails:—*Thersites jervensis*, Quoy and Gaimard; *rhytida capillares*, Ferussac; *tornatellina jacksonensis*, Cox, *laoma mortii*, Cox; *endodonta sericatula*, Pfeiffer; *vertigo strangei*, Pfeiffer.

(d) *Insecta*, *Arachnida*, etc. The islands off the coast of New South Wales have never been visited by naturalists interested in entomology, hence little or nothing is known of their insect and arachnid faunæ. There cannot be any doubt, however, that if they were systematically "collected" many species peculiar to the mainland would be discovered, because these little dots of land act as "traps" for insects that are wind-borne. In respect of the coleoptera, certain carabs and scarabs would most certainly occur, as also weevils and leaf-beetles. The butterfly fauna would naturally be very small, because these tiny islands are too bleak and barren to afford them suitable breeding grounds. Nevertheless, some of the hardier forms would certainly occur, such as the "Meadow Brown" (*Junonia villida*) and the "Painted Lady" (*Pryameis kershawi*), as well as a few of the sturdier blues, such as *Polyommatus baticus* (an almost cosmopolitan species) and *Zuzera labradus*, another widely distributed form. Again, some of the wandering whites, of which *Belanois java* is the commonest form, may also be found, because large numbers of them are at times met with by ships passing up and down the coast. The same remarks apply to moths, and to grasshoppers and locusts. Where there are trees, cicadas are almost certain to be found.

No matter how bleak the position may be, if there are any insects at all, spiders are sure to be found, and of these animals the hardier argiopidae are certain to occur, such as *Araneus productus*, *A. heroine*, and *A. brisbana*. These species are common, widely distributed, and, naturally, extremely variable in size and colour. Their snares are large and wheel-like, i.e., orbicular. Where there is scrub, certain crab-spiders (*Thomisidae*) and jumping spiders (*Sallicidae*) are certain to occur. The fact that wingless animals, such as spiders, are so widely distributed is due to their "ballooning" habits. Young spiders when leaving the "nursery" to start life on their own account, void long strands of silk. These latter float in the air and lift the baby spider-aviators, and carry them away. Many are drowned by falling into the sea during these journeys, but others succeed in locating themselves in localities that afford protection and an abundance of food.

(iii.) *Flora*. Comparatively little is known of the flora of the islands off the New South Wales coast. The accompanying details refer to those islands which have been more or less closely examined.

S. Solitary Island. For the most part smooth rocks, but in crevices *Monotoca elliptica*, *Eugenie australis*, *Nephelium coriaceum*, *Banksia integrifolia* from 6 inches to 3 to 4 feet. *Themeda forskalli* is the prevailing grass.

North Coffs or Mutton Bird Island. Covered with *Themeda forskalli* and dwarf *Myoporum* forming a roof over the numerous crevices wherein the birds build, etc., *Banksia integrifolia* being the principal timber. *Pandanus pedunculata* fairly common near the beach.

South Coffs Island. Small rocks with black soil (no water) grassed over with *Themeda forskalli*, *Banksia integrifolia*, small to normal size, *Hoya australis*, *Hibbertia volubilis*, *Senecio australis*, *Crotalaria*, *Ipomœa biloba*, *Westringia rosmariniformis*, *Sophora tomentosa*, *Canavalia obtusifolia*, *Lippia nodosa*, *Spinifex hirsuta*, *Convolvulus erubescens*, *Monotoca elliptica*, *Myoporum acuminatum*, var. *Pandanus pedunculatus*.

Boondelbah Island. Contains some rich timbers, affording good shade for picnic and fishing parties from Tea Gardens, Nelson's Bay, etc. The timber is composed of *Eucalyptus microcorys* (tallow-wood), *E. botryoides*, *E. saligna* (blue gum), *E. corymbosa* (bloodwood), *E. paniculata* (grey ironbark), *E. acmenioides* (white mahogany), *E. resinifera* (red mahogany), *Banksia serrata* (honeysuckle), *B. ericifolia*, *B. collina*, *B. robur*, var. *minor*, *B. integrifolia*, *Eugenia australis* (native cherry), *E. Smithii* (lilli-pilli), *Rhodomyrtus psidioides* (native guava), *Phyllanthus ferdinandi*, *Cupania anacardioides*, *Synoum glandulosm*, *Nephelium coriaceum*, *Acacia decurrens*, *A. longifolia*, *A. harpophylla* (?), *A. suaveolens*, and *A. linifolia*, *Melaleuca armillaris*, *Angophora lanceolata*. Near and about the trigonometrical station is a large patch of *Lasiopetalum longistamineum*. The south side of the island immediately facing the entrance to the port is precipitous and covered by a wind-swept, densely foliaged, and almost impenetrable scrub.

ISLANDS OFF THE COAST OF NEW SOUTH WALES.

| Name of Island. | Geographical Position. | | Area in acres (approximate). | General Description, etc. |
|--|------------------------|----------|------------------------------|--|
| | Lat. S. | Long. E. | | |
| Cook, 31 ch. N.E. of Fingal Point... | 28 11 | 153 36 | 10 | Precipitous sides except the north, 70 ft. high. Columnar basalt. |
| Juan and Julia, 1½ m. N.N.W. from Cape Byron | 28 36 | 153 39 | 1½ | Bare rocks 30 ft. high. Granite. A red fixed light on Cape Byron lighthouse, is visible only over these islets. |
| North Solitary, 7½ m. E. of Wooli Wooli River | 29 55 | 153 24 | 52 | 140 ft. high. No vegetation of any kind. Granite. |
| N.W. Solitary, 3½ m. S.E. Redbank River | 30 0 | 153 17 | 15 | 30 ft. high. No timber. Granite. |
| S.W. Solitary, 1½ m. E. Bare Bluff | 30 9 | 153 14 | 16 | Hilly country, no timber or trees, poor grass. Schist. |
| S. Solitary, 11½ m. N.E. of Coffs Harbour | 30 11 | 153 17 | 38 | Hilly country, no timber or trees, poor grass. Schist. Small wharf for boats to land stores. Revolving white light, 8-min. with flash of 7 secs. visible 20 mls. |
| Split Solitary, 5½ m. N.N.E. of Coffs Harbour | 30 13 | 153 11 | 6 | Hilly country, no timber or trees, poor grass. Schist. |
| North Coffs or Mutton Bird, 30 ch. from Coffs Harbour (leased) | 30 17 | 153 10 | 31 | Hilly country, no timber or trees, poor grass. Small wharf. Schist. |
| South Coffs, close to Coffs Harbour (part leased) | 30 18 | 153 9 | 31 | Hilly country, no timber or trees, poor grass. Schist. |
| Broughton, 9½ m. N.E. Pt. Stephens | 32 37 | 152 20 | 1145 60 | Rocky, 286 ft. high, covered with low scrub and grass. The southern extremity of larger island at low water is connected to a small islet 100 ft. high named South Rock. Carboniferous sandstone and volcanic rocks. Centre of lobster and other fishing. Good landing in Esmeralda Cove on S.E. and N.E. sides. |

ISLANDS OFF THE COAST OF NEW SOUTH WALES—Continued.

| Name of Island. | Geographical Position. | | Area in acres (approximate). | General Description, etc. |
|---|------------------------|----------|------------------------------|---|
| | Lat. S. | Long. E. | | |
| Cabbage Tree, 1½ m. N.E. Yacaaba Head | 32 41 | 152 15 | 68 | Rocky, 475 ft. high, covered with low scrub and grass with cabbage tree palms in the gullies. Porphyry. Landing can be effected on S.W. of island in smooth weather. |
| Little, 1½ m. E. of Yacaaba Head... | 32 42 | 152 15 | 3 | Bare rock, 30 ft. high. Porphyry. |
| Boondelbah, 2½ m. of Port Stephens | 32 42 | 152 15 | 34 | Rocky islet, about 180 ft. high, patches of low scrub exist. Porphyry. |
| Point Stephens, 1½ m. Pt. Stephens | 32 45 | 152 13 | 270 | Rocky Is., 250 ft. high covered with low scrub and grass, connected with mainland by narrow spit covered at high water. Porphyry. A lighthouse on extreme easterly point shewing revolving white and red light alternately; red and white every min., with 10 secs. eclipse between the colors; white light visible 17 miles, red 12 miles. |
| Moon, ½ m. E. of Lake Macquarie | 33 5 | 151 41 | 6 | Rocky, 20 ft. high, covered with grass and scrub. Sandstone, permo-carbonif. |
| Flat, 1 m. S. Catherine Hill Bay ... | 33 10 | 151 39 | 10 | Low flat Island, 15 ft. high |
| Bird, 3 m. N. of North Head, and ½ m. off shore | 33 13 | 151 37 | 30 | Rocky, 175 ft. high, covered with grass and low scrub, is inaccessible except in smooth westerly weather. Sandstones of Narrabeen series. Triassic. |
| "Five Islands"— Tom Thumb, No. 1, 2½ m. E. from Tom Thumb Lagoon | 34 27 | 150 57 | 6a 3r | Bare rock, 15 ft. high. Dolerite. |
| Tom Thumb, No. 2, 2½ m. E. from Tom Thumb Lagoon | 34 28 | 150 58 | 6b | Bare rock, 20 ft. high. Dolerite. |
| Big, off Red Pt. ... | 34 29 | 150 57 | 45a 3r | Rock and sand, light scrub, 70 ft. high. Dolerite. |
| Small, W. of Big Is., off Red Pt. | 34 29 | 150 56 | 1a 1r | Bare rock, 50 ft. high. Dolerite. |
| Small, E. of Big Is., off Red Pt. | 34 29 | 150 57 | 5a 3r | Bare rock, 30 ft. high, connected with Big Is. at low water. Dolerite. |
| Windang, ¼ m. E. Lake Illawarra | 34 32 | 150 54 | 5 | Bare rock and sand, about 20 ft. high. Sandstone permo-carboniferous. |
| Bowen, S. side of ent. to Jervis Bay | 35 7 | 150 47 | 132 | Rocky, with low scrub, 140 ft. high, well grassed. Sandstone, permo-carboniferous. |
| Green, ½ m. E. of ent. Cunjurong or Conjola Lake | 35 16 | 150 32 | 22 | Sand overlying rock, scrubby. Sandstone, permo-carboniferous. |
| Crampton (local name Tobouree), ¼ m. E. of Tobouree Lake | 35 26 | 150 26 | 10 | Rocky, partly grassed, about 150 ft. high, connected with main land very low tides. |
| Stokes, ¼ m. N.E. Termeil Point | 35 27 | 150 25 | 6 | Bare rock. |
| Brush, ¼ m. Murramarang Point... | 35 32 | 150 26 | 184 | 140 ft. high, good soil, well grassed, honey-suckle timber and scrub. Igneous. |
| Belowla, ¼ m. N.N.E. O'Hara Head | 35 33 | 150 24 | 20 | Rocky, about 50 ft. high, low scrub and coarse vegetation. Igneous. |
| O'Hara, 1½ m. S.W. O'Hara Head | 35 35 | 150 23 | 15 | Rocks, 15 ft. high. |
| Dawson, No. 1, ½ m. S. O'Hara Isd. | 35 35 | 150 22 | 3 | Bare rocks, 10 ft. high. |
| " No. 2 | 35 35 | 150 22 | 1 | " 10 " |
| Grasshopper, ¾ m. N. Point Upright | 35 38 | 150 21 | 3 | " 40 " patches vegetation. |
| Wasp, 2 m. from Point Upright ... | 35 40 | 150 20 | 2 | Rough rocks, 40 ft. high, lightly covered with sandy soil; surrounded by submerged reefs. |
| Flat Rock, 3½ m. N. North Head of Bateman Bay | 35 41 | 150 19 | 1½ | Bare rock always awash at high tide. |
| Tollgate, No. 1, 2½ m. S. Nth. Head | 35 45 | 150 16 | 12½ | Rough rocks, highest being 150 ft., with light covering of sandy soil, covered with a prickly scrub and marine growth and weeds, but no timber. Basalt. |
| " No. 2 " " | 35 45 | 150 16 | 7½ | |
| Broulee, 4 m. N. Moruya River ... | 35 51 | 150 12 | 85 | Rough rocks, covered with soil, trees, grass and scrub; surrounded by reefs. |
| Montague, 10 m. N.E. of Mount Dromedary | 36 15 | 150 14 | 285 | Split by a deep rocky chasm; the southern half attains an elevation of 250 ft. Long rank grass. The southern part is composed of granite formation and the northern of basaltic. Govt. wharf 20 x 15 ft. Landing is effected direct by boat from ship's side. Lighthouse on summit of island. The light is white, the period of system being 70 secs., composed of fixed 33 secs., eclipse 16 secs., flash 5 secs., eclipse 16 secs., visible for 22 miles. |
| Bullara or Lennards, 5½ m. E. S.E. Noorooma | 37 0 | 149 57 | 25 | Rock-bound island, 30 ft. high, fair soil, scrub-covered. Devonian sandstone. |

3. *Victoria.*—(i.) *Introductory.* The accompanying statement regarding the islands of Victoria has been compiled from information furnished by the Department of Lands and Survey, elaborated somewhat chiefly as regards fauna and flora from notes supplied by Mr. A. H. Mattingley, C.M.Z.S.

(ii.) *Origin.* It appears to be generally agreed that the Australian continent at one time extended some miles lower down than its present southern boundary, and that the islands on the Victorian coast represent the denuded summits of mountain ranges that once traversed the mainland. There is, however, some difference of opinion as regards the direction of these mountain chains. Some geologists affirm that the ranges traversed a land bridge connecting Tasmania with the mainland, while others again maintain that the islands are the peaks of mountain ranges that at one time extended along the coast of Southern Australia as far as the Great Australian Bight.

(iii.) *General Characteristics.* In view of their origin, as referred to above, it is not surprising that many of the Victorian islands are remarkable for their fantastic shape. Several of them are merely tremendous masses of wind-swept rock, devoid of all vegetation, with the exception of a few hardy mosses and lichens. In some cases, it is impossible to effect a landing unless under favourable conditions of wind and tide. Others, again, possess a scanty growth of tough grasses and stunted trees, while, as the list shews, a few are well watered and fertile.

(iv.) *Fauna and Flora.* As the islands are mostly small and isolated, and untenanted by predatory animals such as the dingo or native cat, it is not surprising that they are utilised as breeding grounds by large numbers of sea-birds. For example, it is estimated that between one and two millions of mutton birds regularly nest on Phillip Island, despite the fact that about 600,000 eggs are yearly taken from the island. Fur seals, penguins, and mutton birds are found on Griffiths and Lady Julia Percy Islands, etc. Space will permit of merely a passing reference to the variety of fauna and flora characterising the islands in Port Phillip. As far as possible the information given by Mr. Mattingley has been incorporated in the tabular statement below.

(v.) *The Principal Islands and Groups.* The accompanying information regarding the principal islands or island groups may be read in conjunction with that given in the appended tabular statement.

Anser Group. This group consists of three small granite islands about 4 miles to the west of Wilson's Promontory, of which Cleft Island is the most picturesque. The group has been reserved for the purposes of a National Park. Two small islets 40 to 50 feet high lie between Cleft and Middle Island, and a third is situated about 200 yards N.W. of Middle Island. There is a landing place on the northern end of Anser Island.

French Island. This island, which is situated in Western Port, is the largest of the Victorian Islands. It is sparsely populated, and generally hilly, with the exception of the low and marshy portion at the north-west corner. Mount Wellington, the highest point, is 314 feet above sea level. The shore line is shallow, the range of tides being from 8 to 12 feet. There are six jetties available to vessels of small tonnage. Along the western arm there is a deep water channel navigable for vessels of any size. There is a fair amount of timber on various parts of the island.

Gabo Island. This island is situated about 4 miles S.W. of Cape Howe. The northern end consists of low boulders and is separated from the mainland by a channel which sometimes fills with drifting sand. Inland, near the centre of the island, are a few sandhills whose bare sides face S.E. On the N.W. side there is a small sandy bay with good anchorage for one vessel in all but S.W. gales. The lighthouse at the S.E. extremity was built in 1862, and shews a first order catadioptric fixed white light 179

feet above sea level, and visible for 20 miles. A life-saving rocket apparatus is maintained, and the lighthouse which is also a signal station is connected by telephone with Green Cape and thence with Sydney.

Phillip Island. The southern coast line of Phillip Island, which is situated at the entrance to Western Port, consists of rugged cliffs and headlands rising in some instances to 150 feet above sea level. The Nobbys and Cape Woolamai are well-known points. Close to the former are the Seal Rocks, while the latter, which rises to a height of 340 feet, is noted as a mutton-bird rookery. The island is undulating and the soil is well adapted for agriculture and grazing. On the north side is the township of Cowes, a well-known holiday resort. There are also settlements at Rhyll, four miles east of Cowes, and at Newhaven opposite San Remo.

Raymond Island. In the Gippsland Lakes, this island separates the division known as Lake King from that known as Lake Victoria. The surface of the island consists of low sandy ridges with marshy flats in places. It is used as a village settlement, the soil being well adapted for fruit-growing and for root crops. The native vegetation consists of stunted gum, ti-tree, bracken, and heath. McMillan Strait on the west side of the island is navigable for vessels drawing up to nine feet, and is the approach to Paynesville, a fishing village on the mainland.

Seal or Direction Group. This group consists of several small rugged islets almost devoid of vegetation with the exception of a little coarse grass. Seal Island is the northernmost and largest. Close to this island is the White Rock, 33 feet high, and two smaller rocky islets. *Notch Island* is the second largest of the group. The notch is due to the two hills on the island. *Cliffy Island.* On this island a lighthouse was erected in 1884. The light, which is 180 feet above sea level, is a third order dioptric flashing white light giving five flashes and eclipses alternately in every minute, and is visible for 15 miles. A rocket life-saving apparatus is also kept here.

Snake Island lies between Corner Inlet and Port Albert. The island, which is reserved as a site for a public park, consists of high sand hills with intervening flats of sandy loam, and is gradually crumbling away into the sea. The narrower portion at the east end is over $1\frac{1}{4}$ miles in length, and is separated at high water from the main island. The vegetation comprises stunted gum, honeysuckle, ti-tree, bracken, heath, and tussocky grass. Most of the land birds from the adjacent mainland are found on the island. Wallabies, kangaroo, red deer, wild pigs, opossums, and native bears are also met with. Permanent water is available.

Sunday Island is situated two miles S.W. of Port Albert, and is composed of sand hills with intervening flats of sandy loam. Like the preceding island, Sunday Island is also gradually crumbling into the sea. At the eastern end there is a pilot station with fixed white light 32 feet above sea level. The vegetation is similar to that on Snake Island.

Swan Island lies in Port Phillip Bay, near Queenscliff. It is low and marshy with a ridge of sand hills along the western shore, and is connected with Queenscliff by a tramway across the shallow opening forming the south entrance to Swan Bay. The island is used almost entirely for military purposes.

Tortoise Island is in Western Port and close to French Island. It is flat-topped with a conspicuous headland on the southern portion known as Tortoise Head. Twenty acres of the island have been reserved for defence purposes. About 80 acres consist of highlands of rich volcanic soil, the remainder being flat salt marsh.

ISLANDS OFF THE COAST OF VICTORIA.

| Name of Island and Geographical Position. | Highest point above Sea Level. Feet. | Nearest distance to Mainland. Miles. | Greatest Length. Miles. | Greatest Breadth. Miles. | Area. Acres. | Geological Characteristics, Fauna, Flora, etc. |
|---|--------------------------------------|--------------------------------------|-------------------------|--------------------------|--------------|---|
| Anser Group— | | | | | | |
| Anser, 4½ m. W. of Wilson's Promontory | 498 | 1½ | 1 | ¾ | 190 | Granite. Flora and Fauna identical with that of the Glennie Group (see below) |
| Unnamed, ½ m. S.W. Anser | 312 | 2½ | ¾ | ¾ | 80 | Granite |
| Cleft, ¾ m. W. Middle Island | 371 | 2½ | ¾ | ¾ | 15 | |
| Barton (1) in Lake Victoria | — | — | — | — | 88 | Tertiary, sand, and mud |
| Baxter (1) or Pelican, in L. King | — | — | — | — | 22 | |
| Benison, in Corner Inlet | — | 1½ | — | — | — | Granite. Reserved for National Park and set apart for the preservation of native game |
| Bird Rocks, S. of Waratah Bay | 60 | — | — | — | — | 3 in number. Fauna—Sooty oyster catchers (<i>haematopus unicolor</i>), terns. Flora— <i>Mesembrianthemum</i> , moss. |
| Breakwater, nr. Warrnambool 200 yds. E. of Middle Island | 18 | ¾ | — | — | — | Tertiary, calcareous and sandy beds. The Breakwater pier, connected by rail with the Town of Warrnambool, extends from this rock about 1000 ft. in a N.E. direction, and is connected with the shore at the East of Merri Creek entrance by a timber viaduct |
| Bullock, near Welshpool, ½ m. E. of Little Dog Island | — | ¾ | 1½ | ¾ | 170 | Tertiary, sand and mud. See the remarks against Dog Island. 118 acres alienated |
| Bullock (1) in Lake King, at entrance to Cunningham Arm | — | ¾ | ¾ | ¾ | 12 | Tertiary, sand, and mud. A white light, visible 3 miles in clear weather, is shewn from the outer end of the rocky wall extending S.E. from Bullock Island, and marks the North side of the entrance to Cunningham Arm |
| Churchill, in Western Port, 1 mile N.W. of Newhaven | — | 1½ | 1½ | ¾ | 140 | Tertiary, older. Separated from Phillip Id. by a narrow passage. 140 acres alienated |
| Citadel | — | — | — | — | — | See Glennie Group |
| Cleft | — | — | — | — | — | See Anser Group |
| Cliffy | — | — | — | — | — | See Seal or Direction Group |
| Clonmel, 1 m. S.E. Sunday Id. | — | — | — | — | — | This Island has recently disappeared, the sea waters now breaking over it |
| Crescent (1) in Lake Victoria | — | ¾ | ¾ | ¾ | 24 | Tertiary, sand, and mud |
| Direction Group, nr. Wilson's Promontory | — | — | — | — | — | See Seal or Direction Group |
| Do-Boy, in Corner Inlet, 2 m. from W. Shore | — | 2½ | — | — | — | Granite. Reserved for National Park and the preservation of native game. Fauna—Mutton birds. Flora— <i>Mesembrianthemum</i> and coarse grasses |
| Dog, near Corner Inlet | — | ¾ | 1½ | ¾ | 460 | Tertiary, sand, and mud. Connected with mainland at low water. Flat, sandy loam. Vegetation—Ti-tree, bracken, and coarse tussocky grass. 415 acres alienated |
| Eagle's Nest Rock, 3 m. E. of Cape Patterson | 59 | ¾ | — | — | — | Mesozoic, sandstone shales and mudstones. A conspicuous rock. Ospreys (<i>pandion leucocephalus</i>) use it as a breeding ground |
| Elizabeth, in Western Port, ½ m. S. of French Island | 60 | 2½ | ¾ | ¾ | 64 | Tertiary, older basalt. Grass covered, no timber. 64 acres alienated |
| Flannagan's (1) in Lake King | — | ¾ | 2 | ¾ | 250 | Tertiary, sand, and mud. Separated from mainland by Reeves Channel. 193 a. alien. |
| Fraser (1) in Lake King | — | ¾ | ¾ | ¾ | 96 | Tertiary, sand, and mud. Separated from the islands on either side by a narrow channel. 70 acres alienated |
| French, in Western Port | 314 | 1½ | 11 | 7½ | 41300 | Tertiary, older basalt; Mesozoic, sandstone shales, and mudstones. 18,200 a. alienated |
| Gabo, 4 m. S.W. of Cape Howe | 171 | ¾ | 1½ | ¾ | 372 | Syenite |
| Glennie Group— | | | | | | |
| Great Glennie, 4 m. W. from Oberon Point, Wilson's Promontory | 455 | 4½ | 1½ | ¾ | 340 | Saddle-shaped, and strewn over with blocks of granite which give it a castellated appearance. This group has been set apart as a sanctuary for game. Flora— <i>Mesembrianthemum</i> , coarse grasses, and some unnamed shrubs. Fauna—Cape Barren geese, mutton birds, penguins, lizards |
| Unnamed, S. Great Glennie | 251 | 4½ | ¾ | ¾ | 65 | Granite |
| Citadel, S. Unnamed Island | 367 | 4½ | ¾ | ¾ | 40 | Granite. Is circular in shape and so named owing to resemblance of ancient fortress |
| Unnamed, E. Citadel Island | 215 | 4½ | ¾ | ¾ | 25 | Granite |
| Granite, in Corner Inlet | — | 1½ | — | — | — | Granite. Reserved for National Park and set apart for preservation of native game |

ISLANDS OFF THE COAST OF VICTORIA—Continued.

| Name of Island and Geographical Position. | Highest point above Sea Level, Feet. | Nearest distance to Mainland, Miles. | Greatest Length, Miles. | Greatest Breadth, Miles. | Area, Acres. | Geological Characteristics, Fauna, Flora, etc. |
|---|--------------------------------------|--------------------------------------|-------------------------|--------------------------|--------------|--|
| Griffith, off Port Fairy ... | 74 | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{1}{2}$ | 76 | Tertiary, newer basalt. The low portion at its N.E. end was formerly known as Rabbit Is. but has been joined by artificial means. Sand hummocks are the principal features of the island. On the E. end is a dioptric flash red light of the 4th order, elevated 41 ft. above sea level and visible 9 miles in clear weather. Fauna—Mutton birds in small numbers; also visited by smaller land birds from mainland. Flora—Similar to that of Lady Julia Percy Is. (see below) |
| Helen Rock, 6 m. W. Warrnambool | — | $1\frac{1}{2}$ | — | — | — | Tertiary, calcareous, and sandy beds. This rock is of pinnacle shape |
| Lady Julia Percy, 21 m. E. of Cape Nelson | 155 | $5\frac{1}{2}$ | 1 | $\frac{1}{2}$ | — | Tertiary, newer basalt. Is of triangular form flat topped and cliffs on all sides. Fauna—Rabbits, some few thousand seals, penguins, mutton birds. Flora—Native mallow, coastal wattle, mosses, lichens, pig-faced weed (mesembrianthemum), coarse grasses |
| Latrobe ... | — | — | — | — | — | See Snake Island |
| Lawrence Rocks, 1 m. S.E. of Danger Point, near Portland | 132 | $1\frac{1}{2}$ | — | — | — | Tertiary, newer basalt. Two small but conspicuous islets, visited by gannets, whale birds, mutton birds, penguins. On smaller islet—cormorants, black cheeked falcons. Flora—Mesembrianthemum (aquilaterale), moss, lichen |
| Little Dog, near Welshpool ... | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 170 | Tertiary, sand, mud. See remarks Dog Isd. |
| Little Snake, N.W. Snake Isd. | — | $\frac{1}{2}$ | 3 | $1\frac{1}{2}$ | 1200 | Tertiary, sand, and mud. Flat, sandy loam. Connected with Snake Isd. at low water. Vegetation—Messmate and gum, honey-suckle, ti-tree, heath, and bracken |
| Mangrove, in Corner Inlet ... | — | $1\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 750 | Tertiary, sand and mud |
| Merri, 100 yds. S.E. Pickering Point, Warrnambool | 47 | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $\frac{1}{2}$ | 14 | Tertiary, calcareous, and sandy beds. Connected with the shore at low water |
| Middle, near Warrnambool ... | 18 | $\frac{1}{2}$ | — | — | — | Tertiary, calcareous, and sandy beds. This island, together with Merri Is. and Breakwater Rock, form the Warrnambool Harbour, and is almost joined by rocks to Merri Island |
| Mud, in Port Phillip Bay ... | — | $3\frac{1}{2}$ | 1 | $\frac{1}{2}$ | — | Tertiary, raised beaches, sand, and mud. Low mud and sand banks. Fauna—Frequented by storm petrel (pelagodroma marina) and hosts of other sea birds. About 40 species of birds use island as a nesting place. Flora—About 20 varieties |
| Norman, $1\frac{1}{2}$ m. S. of Tongue Point, Wilson's Promontory | 315 | $1\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 125 | Granite. May be known by its two peaks, the highest and northern of which is 315 ft. Reserved for National Park purposes. Fauna—Penguins, mutton birds, Cape Barren geese, hooded dotterel, oyster catchers. Flora—Mesembrianthemum, coarse grass |
| Notch ... | — | — | — | — | — | See Seal or Direction Group |
| Pelican Islet, in Western Port | 4 | $\frac{1}{2}$ | $\frac{1}{2}$ | $1\frac{1}{2}$ | — | Tertiary, older basalt |
| Phillip, at entrance .. | 340 | $\frac{1}{2}$ | 12 | $5\frac{1}{2}$ | 24300 | Tertiary, older basalt, granite. 21,500 acres alienated. Fauna—Mutton birds, petrels, penguins, wallabies, rabbits and hares, snakes, lizards. Flora—Similar to mainland |
| Quail, in Western Port ... | — | 60 yds | — | — | 2000 | Tertiary, sand, and mud. A low, marshy island, scrub covered (ti-tree) |
| Rabbit, E. of Wilson's Prom. | 194 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 50 | Granite. Reserved for National Park. Is a good mark for vessels proceeding northward to Corner Inlet |
| Rabbit Rock, between Rabbit Island and the mainland | 50 | $\frac{1}{2}$ | $\frac{1}{2}$ | $1\frac{1}{2}$ | — | Granite. Fauna—Rabbits (introduced), penguins, silver gulls, oyster catchers. Flora—Mesembrianthemum, coarse grasses |
| Rag ... | — | — | — | — | — | See Seal or Direction Group |
| Raymond, E. of Paynesville... | — | $1\frac{1}{2}$ | $3\frac{1}{2}$ | 1 | 1950 | Tertiary, sand, and mud. 1310 ac. alienated |
| Reef, in the east arm, Western Port | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $1\frac{1}{2}$ | — | Tertiary, older basalt. Surrounded by rocks that also connect it with mainland |

ISLANDS OFF THE COAST OF VICTORIA—Continued.

| Name of Island and Geographical Position. | Highest point above Sea Level. Feet. | Nearest distance to Mainland. Miles. | Greatest Length. Miles. | Greatest Breadth. Miles. | Area. Acres. | Geological Characteristics, Fauna, Flora, etc. |
|---|--------------------------------------|--------------------------------------|-------------------------|--------------------------|--------------|---|
| Rigby (1) in Lake King ... | — | $\frac{1}{2}$ | $1\frac{1}{2}$ | $\frac{1}{2}$ | 350 | Tertiary, sand, and mud. Except the alienated land this island is reserved for public purposes. On an iron beacon, 28 ft. above sea level, is a fixed white light (shows red between S. 40 E. and S. 86 E.) 40 a. alien. |
| Rotamah (1) at entrance Lake Reeve, off Sperm Whale Hd. | — | $\frac{1}{2}$ | $2\frac{1}{2}$ | $\frac{1}{2}$ | 680 | Tertiary, sand, and mud. 88 ac. alienated |
| Rotten (1) in Lake Victoria ... | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 36 | |
| Sandstone, in Western Port ... | 50 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 55 | Palæozoic, sandstone, and slate. 55 a. alien. |
| Seal or Direction Group— | | | | | | |
| Seal, 16 m. N.E. Wilson's P. | 154 | $9\frac{1}{2}$ | $2\frac{1}{2}$ | $\frac{1}{2}$ | 45 | Granite |
| Notch, 1 m. S.E. of Seal Isd. | 123 | $10\frac{1}{2}$ | $1\frac{1}{2}$ | $\frac{1}{2}$ | 20 | " |
| Rag, $\frac{1}{2}$ m. S. of Notch Island | 94 | $10\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 12 | " |
| Cliffy, $1\frac{1}{2}$ m. S.E. " | 144 | $11\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 20 | Granite. Fauna—A few hundreds of fur seals, penguins, mutton birds, terns. Flora—Mesembrianthemum, coarse grass |
| Shellback, $1\frac{1}{2}$ m. N.W. of Tongue Point, Wilson's Prom. | 357 | $1\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 70 | Granite. The northernmost of the islands on the W. coast of Wilson's Promontory. Permanently reserved for National Park purposes. Summit 357 ft. high. Fauna—Penguins, mutton birds. Flora—Mesembrianthemum, coarse grass |
| Snake or Latrobe, between Corner Inlet and Port Albert | 60 | $1\frac{1}{2}$ | $8\frac{1}{2}$ | 3 | 11500 | Tertiary, sand and mud |
| Snake (1) in Lake King ... | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 7 | |
| St. Margarets or McCrae in Shoal Inlet, 5 m. N.E. of Port Albert | 72 | $\frac{1}{2}$ | $4\frac{1}{2}$ | $2\frac{1}{2}$ | 4500 | Tertiary, sand and mud. Flat sandy loam. Vegetation, small gum, ti-tree, bracken, heath, and coarse tussocky grass. 22 ac. alienated |
| Sunday, 2 m. S.W. Port Albert | 41 | $1\frac{1}{2}$ | $4\frac{1}{2}$ | 2 | 2650 | Tertiary, sand, and mud. 1858 ac. alien. |
| Swan, in Port Phillip Bay ... | — | $\frac{1}{2}$ | 2 | 1 | 773 | Tertiary, raised beaches, sand, and mud. Flora and fauna similar to Mud I., except that petrels are absent. Brown snakes occasionally met with. 773 ac. alienated |
| The Skerries (Rocks) South of Wingan Pnt., Croajingolong | 42 | — | — | — | — | Granite. Three in number, height 42 feet above the sea. Small colony of fur seals. |
| Tortoise, in Western Port ... | 101 | $1\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 220 | Tertiary, older basalt. 174 ac. alienated |
| Tullaburga, 3 m. W. Gabo Isd. | 28 | — | — | — | — | Granite, (?) Covered with mesembrianthemum & coarse grass. Infested by rabbits |
| Unnamed (1) one of a group in Lake Victoria | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 56 | Tertiary, sand, and mud. Separated from Waddy Is. and Jubilee Head by narrow channels |
| Unnamed (1) one of a group in Lake Victoria | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 20 | Tertiary, sand, and mud. Separated from Waddy Is. and Jubilee Head by narrow channels |
| Unnamed (Two) near Wilson's Promontory | — | — | — | — | — | See Glennie group |
| Unnamed, nr. Wilson's Prom. | — | — | — | — | — | See Anser group |
| Unnamed (1) in Lake Reeve ... | 20 y | $1\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | — | Tertiary, sand, and mud |
| Unnamed (1) S. end Lake Reeve | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 270 | Tertiary, sand, and mud. 230 ac. alienated |
| Waddy (1) in Lake Victoria ... | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 56 | " |
| Wallaby (1) | — | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 12 | " |
| Wattle, 1 m. S.E. of Wilson's Promontory | 270 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 60 | Granite. Permanently reserved for National Park purposes. Flora—Mesembrianthemum, coarse grass, etc. Fauna—Penguins, mutton birds, oyster catchers |

NOTE.—(1) Islands in the Gippsland Lakes. Slightly undulating with sand ridges. Vegetation—Apple, honeysuckle, ti-tree, and bracken.

4. **Queensland.**—The accompanying information regarding the islands off the coast of Queensland has been compiled from particulars supplied by the Lands Department of that State. These islands are all Crown lands, except where mentioned.

ISLANDS OFF THE COAST OF QUEENSLAND.

| Name of Island. | Geographical Position. | | Distance from Main'nd. Miles | Area in Acres. | Description. |
|------------------|------------------------|----------|------------------------------|----------------|--|
| | Lat. S. | Long. E. | | | |
| Wellesley Group— | | | | | |
| Fowler ... | 17 08 | 139 38 | 18 | 300 | |
| Allen ... | 17 03 | 139 19 | 3 | 2,600 | |
| Horseshoe ... | 17 01 | 139 21 | 6 | 400 | |
| Bountiful, North | 16 40 | 139 55 | 46 | 1,900 | |
| South | 16 43 | 139 55 | 49 | 200 | |
| Pisonia ... | 16 30 | 129 57 | 57 | 500 | |
| Forsyth ... | 16 49 | 139 13 | 7 | 5,100 | |
| Mornington ... | 16 35 | 139 30 | 12 | 217,600 | Sandy, about 300 feet high |
| Bentinck ... | 17 04 | 139 35 | 14 | 38,000 | Low and woody, desert sandstone |
| Sweers ... | 17 06 | 139 42 | 20 | 3,800 | 104 feet high |
| Deliverance ... | 9 31 | 141 35 | 100 | 800 | |
| Kassa ... | 9 12 | 142 18 | 99 | 800 | |
| Turnagain ... | 9 34 | 142 17 | 76 | 1,950 | |
| Maat Kaua ... | 9 11 | 142 05 | 98 | 1,400 | |
| Adabadana Kaua | 9 12 | 142 03 | 98 | 300 | |
| Kaua ... | 9 11 | 142 02 | 99 | 2,500 | |
| Talbot ... | 9 16 | 142 13 | 96 | 5,900 | Low and swampy |
| Belle Vue Group— | | | | | |
| No. 1 ... | 9 56 | 142 09 | 56 | 40 | |
| No. 2 ... | 9 56 | 142 10 | 56 | 60 | |
| No. 3 ... | 9 56 | 142 10 | 55½ | 90 | |
| No. 4 ... | 9 55 | 142 11 | 56 | 35 | |
| No. 5 ... | 9 55 | 142 11 | 56 | 20 | |
| No. 6 ... | 9 56 | 142 11 | 55½ | 30 | |
| No. 7 ... | 9 56 | 142 11 | 55 | 40 | |
| Jervis ... | 9 57 | 142 11 | 53 | 1,900 | Sandy on N.W., rocky on S.E., 525 feet high |
| North No. 1 ... | 9 57 | 142 13 | 54 | 1 | Rocky |
| No. 2 | 9 57 | 142 13 | 54 | 1 | " |
| Scott, North | 9 58 | 142 13 | 53 | 3 | " |
| South | 9 58 | 142 13 | 53 | 1 | " |
| Florence ... | 9 57 | 142 13 | 53½ | 25 | " 165 feet high |
| Passage ... | 9 59 | 142 15 | 51 | 15 | " 156 " |
| Rond ... | 10 05 | 142 16 | 44 | 20 | " " |
| North Possession | 10 05 | 142 20 | 43 | 20 | " 200 " |
| Tobin ... | 10 06 | 142 21 | 41 | 3 | " " |
| Portlock ... | 10 07 | 142 22 | 40 | 10 | " 205 " |
| North ... | 10 02 | 142 08 | 50 | 30 | " " |
| South ... | 10 03 | 142 08 | 49 | 10 | " " |
| Farewell No. 1 | 10 03 | 142 04 | 51 | 10 | |
| No. 2 | 10 03 | 142 04 | 51 | 2 | |
| Tree ... | 10 04 | 142 05 | 49 | 20 | |
| Round ... | 10 05 | 142 06 | 48 | 10 | |
| Obelisk ... | 10 06 | 142 06 | 47 | 10 | |
| Flat ... | 10 07 | 142 05 | 46 | 10 | |
| Mulgrave ... | 10 07 | 142 09 | 40 | 22,200 | Low and wooded on shores, rocky hills in centre, 686 feet high |
| Banks ... | 10 11 | 142 16 | 32 | 39,330 | Wooded near the coast, with Mt. Augustus in centre, 1310 feet |
| Green ... | 10 12 | 142 07 | 40 | 35 | |
| Clarke ... | 10 12 | 142 09 | 39 | 65 | |
| High ... | 10 12 | 142 10 | 38 | 35 | |
| Barney ... | 10 13 | 142 10 | 37 | 165 | |
| Browne ... | 10 13 | 142 09 | 38 | 50 | |
| Duncan Group— | | | | | |
| Spencer ... | 10 17 | 142 06 | 35 | 100 | |
| Phipps ... | 10 16 | 142 06 | 36 | 140 | |
| Whale ... | 10 16 | 142 05 | 38 | 150 | Rocky |
| Wilson, North | 10 13 | 142 05 | 41 | 10 | |
| Middle | 10 14 | 142 05 | 40 | 100 | Rocky |
| South | 10 14 | 142 05 | 39 | 40 | |
| Canoe ... | 10 20 | 142 07 | 32 | 13 | |
| West ... | 10 21 | 142 03 | 34 | 300 | |
| Hawkesbury ... | 10 22 | 142 08 | 29 | 960 | Rocky, 560 feet high |
| Channel ... | 10 21 | 142 14 | 28 | 5 | |
| Round ... | 10 32 | 142 12 | 19 | 12 | |
| Hammond ... | 10 33 | 142 12 | 17 | 3,500 | Rocky, 514 feet high |
| Goode ... | 10 34 | 142 10 | 20 | 400 | " 327 lighthouse |
| Booby ... | 10 36 | 141 55 | 35 | 15 | 63 feet high, lighthouse |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Main Land, Miles | Area in Acres. | Description. |
|----------------------|------------------------|----------|--------------------------------|----------------|--|
| | Lat. S. | Long. E. | | | |
| Friday ... | 10 36 | 142 10 | 18 | 880 | 366 feet high |
| Thursday ... | 10 35 | 142 13 | 16 | 800 | 374 " shipping guide |
| Wednesday ... | 10 32 | 142 19 | 14 | 1,500 | 303 " |
| Tuesday, North ... | 10 33 | 142 21 | 12 | 20 | 145 " |
| " South ... | 10 33 | 142 21 | 12 | 40 | 120 " |
| Horn ... | 10 36 | 142 17 | 10 | 11,970 | Mangrove swamp on N.W., wooded and hilly on S. and E., 376 feet, granite |
| Red Wallis ... | 10 51 | 142 02 | 10 | 20 | Rocky, 60 feet high |
| Woody Wallis ... | 10 53 | 142 02 | 8 | 50 | 40 " |
| North-west Islet ... | 10 39 | 142 07 | 18 | 10 | |
| Prince of Wales ... | 10 40 | 142 11 | 10 | 47,880 | High and rocky, 761 feet |
| Packe ... | 10 44 | 142 14 | 12 | 110 | |
| Turtle ... | 10 44 | 142 16 | 10 | 16 | |
| Chitropo ... | 10 41 | 142 17 | 9 ¹ / ₂ | 5 | |
| Entrance ... | 10 43 | 142 18 | 8 ¹ / ₂ | 1,000 | Hilly |
| Little Woody ... | 10 43 | 142 21 | 10 | 20 | |
| Great Woody ... | 10 42 | 142 21 | 10 | 120 | |
| Meddler ... | 10 42 | 142 23 | 3 | 70 | |
| Barn ... | 10 50 | 142 19 | 3 | 30 | |
| Red ... | 10 50 | 142 22 | 3 ¹ / ₂ | 90 | |
| Dayman ... | 10 45 | 142 23 | 2 ¹ / ₂ | 120 | |
| Possession ... | 10 43 | 142 24 | 1 ¹ / ₂ | 1,100 | |
| High ... | 10 43 | 142 25 | 1 ¹ / ₂ | 70 | |
| East Strait ... | 10 30 | 142 27 | 14 | 10 | |
| Double ... | 10 28 | 142 27 | 16 | 100 | Rocky, 218 feet high |
| Travers ... | 10 22 | 142 22 | 24 | 25 | 98 feet high |
| Mt. Ernest ... | 10 15 | 142 29 | 29 | 330 | Rocky, 233 feet high |
| Burke ... | 10 11 | 142 31 | 33 | 160 | " 400 " |
| Saddle ... | 10 10 | 142 31 | 36 | 170 | " 490 " |
| Tauan ... | 10 10 | 142 41 | 37 | 90 | 180 feet high |
| Kauamag ... | 9 25 | 142 32 | 83 | 750 | 795 " |
| Saibai ... | 9 22 | 142 42 | 87 | 1,000 | |
| Gabba ... | 9 24 | 142 40 | 84 | 25,340 | Low and swampy |
| Murray Group— | 9 45 | 142 38 | 61 | 1,100 | |
| Wyer ... | 9 57 | 144 02 | 103 | 50 | |
| Dowar ... | 9 57 | 144 01 | 102 | 160 | 605 feet high |
| Maer ... | 9 55 | 144 03 | 105 | 500 | 750 " |
| Darney ... | 9 35 | 143 45 | 107 | 960 | 610 " |
| Nepean ... | 9 35 | 143 39 | 103 | 20 | |
| Stephens ... | 9 31 | 143 33 | 102 | 70 | |
| Campbell ... | 9 34 | 143 30 | 96 | 45 | |
| Dalrymple ... | 9 37 | 143 19 | 87 | 160 | |
| Keats ... | 9 41 | 143 26 | 88 | 30 | |
| Marsden ... | 9 43 | 143 22 | 84 | 30 | |
| Bourke Group— | | | | | |
| No. 1 ... | 9 50 | 143 25 | 81 | 20 | Wooded and surrounded by coral reefs |
| No. 2 ... | 9 52 | 143 19 | 75 | 15 | |
| No. 3 ... | 9 52 | 143 24 | 78 | 35 | |
| No. 4 ... | 9 53 | 143 29 | 82 | 50 | |
| Yorke ... | 9 45 | 143 25 | 84 | 280 | |
| Rennel ... | 9 46 | 143 16 | 77 | 240 | |
| Aureed ... | 9 58 | 143 18 | 68 | 160 | |
| Arden ... | 9 52 | 143 10 | 67 | 10 | |
| Cocoa-nut ... | 10 03 | 143 05 | 54 | 120 | Cocoa-nut trees |
| Dove ... | 10 00 | 143 02 | 55 | 30 | |
| Warrior ... | 9 48 | 142 58 | 64 | 120 | |
| Dungeness ... | 9 51 | 142 55 | 59 | 1,500 | |
| Turtle-backed ... | 9 54 | 142 46 | 53 | 320 | |
| Long ... | 10 02 | 142 51 | 46 | 1,200 | |
| Bet ... | 10 09 | 142 49 | 40 | 40 | |
| Sue ... | 10 13 | 142 50 | 36 | 60 | |
| Poll ... | 10 16 | 142 50 | 34 | 40 | |
| Salter ... | 10 36 | 142 38 | 10 | 10 | 112 feet high |
| Little Adolphus ... | 10 36 | 142 37 | 8 ¹ / ₂ | 320 | 139 " |
| Eborac ... | 10 41 | 142 32 | 1 ¹ / ₂ | 15 | |
| Tree ... | 10 42 | 142 36 | 1 ¹ / ₂ | 5 | 40 " |
| York ... | 10 41 | 142 32 | 1 ¹ / ₂ | 50 | 275 " |
| Ida ... | 10 43 | 142 34 | 1 ¹ / ₂ | 60 | 142 " |
| Bush ... | 10 43 | 142 36 | 1 ¹ / ₂ | 20 | |
| Mai ... | 10 44 | 142 37 | 2 ¹ / ₂ | 40 | |
| Albany ... | 10 44 | 142 36 | 1 ¹ / ₂ | 1,330 | 294 feet high |
| Lacey ... | 10 37 | 142 37 | 8 | 70 | Rocky, 156 feet high |
| Keatinge ... | 10 38 | 142 40 | 9 | 10 | |
| Nicklin ... | 10 37 | 142 39 | 9 | 3 | " 55 " |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Mainland, Miles | Area in Acres. | Description. |
|------------------------|------------------------|----------|-------------------------------|----------------|--|
| | Lat. S. | Long. E. | | | |
| Mt. Adolphus ... | 10 38 | 142 39 | 7 | 1,400 | 490 feet high |
| Morilug ... | 10 38 | 142 41 | 9 | 5 | Rocky, 93 feet high |
| Akone ... | 10 40 | 142 40 | 7 | 5 | " 58 " |
| Tetley ... | 10 44 | 142 43 | 8½ | 2 | " 15 " |
| Turtle ... | 10 53 | 142 42 | 4 | 20 | Wooded and rocky, 58 feet high |
| Turtle-head ... | 10 56 | 142 40 | 5 | 2,800 | 136 feet high |
| Tern ... | 11 00 | 142 45 | 1 | 7 | Wooded, 32 feet high |
| Thomson ... | 11 02 | 142 45 | 3 | 3 | 55 feet high |
| Arnold ... | 11 01 | 142 59 | 15 | 4 | Wooded, 30 ft. high, surrounded by coral reefs |
| Sinclair ... | 11 07 | 143 01 | 16 | 8 | " 60 " " " " |
| Milman ... | 11 10 | 143 01 | 15 | 60 | " " " " " " |
| Douglas ... | 11 14 | 142 59 | 12½ | 8 | " " " " " " |
| Cairncross Islets— | | | | | |
| Cairncross East ... | 11 15 | 142 55 | 8½ | 10 | Densely wooded, 20 ft. high, sur. by coral reefs |
| " West ... | 11 15 | 142 55 | 8 | 15 | " 93 " |
| Bushy ... | 11 15 | 142 52 | 5 | 20 | 28 feet high, surrounded by coral reefs |
| Halfway ... | 11 23 | 142 58 | 7 | 3 | Surrounded by coral reefs |
| East Islets— | | | | | |
| Cholmondeley ... | 11 23 | 143 03 | 13 | 5 | " " |
| Jardine ... | 11 23 | 143 01 | 11 | 5 | " " |
| Wallace ... | 11 27 | 143 02 | 12 | 10 | Wooded, surrounded by coral reefs |
| Little Boydong ... | 11 29 | 143 02 | 13 | 5 | " " " |
| Boydong ... | 11 29 | 143 01 | 12½ | 40 | " " " |
| Hannibal Group— | | | | | |
| Hannibal East ... | 11 35 | 142 57 | 6½ | 8 | " " " |
| " West ... | 11 35 | 142 56 | 5½ | 20 | " " " |
| Bushy Islet ... | 11 35 | 142 54 | 3½ | 2 | 20 feet high, surrounded by coral reefs |
| Macarthur Group— | | | | | |
| No. 1 ... | 11 44 | 142 59 | 9 | 3 | Wooded, surrounded by coral reefs |
| No. 2 ... | 11 44 | 142 59 | 9 | 3 | " " " |
| No. 3 ... | 11 45 | 142 59 | 9 | 5 | " " " |
| No. 4 ... | 11 45 | 142 59 | 9 | 3 | " " " |
| Saunders ... | 11 42 | 143 10 | 15 | 8 | " " " |
| Sir Charles Hardy Grp. | | | | | |
| North ... | 11 54 | 143 27 | 15½ | 120 | 320 feet high " " |
| South ... | 11 55 | 143 28 | 16 | 180 | " " " |
| Cockburn Group— | | | | | |
| Pig ... | 11 50 | 143 19 | 10 | 10 | Wooded, 100 ft. high, surrounded by coral reefs |
| Manley ... | 11 51 | 143 18 | 9 | 8 | " 90 " |
| Bootie ... | 11 51 | 143 18 | 9 | 10 | " surrounded by coral reefs |
| Magra Islet ... | 11 51 | 143 17 | 8 | 8 | " " " |
| Bird Group— | | | | | |
| No. 1 ... | 11 46 | 143 05 | 9 | 7 | 60 feet high " " |
| No. 2 ... | 11 46 | 143 06 | 9 | 60 | Wooded " " |
| No. 3 ... | 11 47 | 143 05 | 8 | 10 | " " " |
| No. 4 ... | 11 48 | 143 05 | 7 | 10 | Low and wooded, surrounded by coral reefs |
| Rodney ... | 11 53 | 143 06 | 10 | 10 | " " " |
| Sunday ... | 11 56 | 143 13 | 14½ | 30 | 157 feet high |
| Home Group— | | | | | |
| Orton ... | 12 00 | 143 14 | 3 | 20 | 145 " |
| Gore ... | 12 00 | 143 15 | 3 | 130 | 145 " |
| Hicks ... | 11 59 | 143 16 | 1½ | 400 | 80 " |
| Clerke ... | 11 58 | 143 17 | 3 | 80 | 115 " |
| Harvey ... | 11 58 | 143 16 | 1½ | 15 | " " |
| Perry ... | 11 58 | 143 15 | 1 | 10 | 50 " |
| Nob ... | 11 57 | 143 16 | 2 | 5 | 85 " |
| Haggerstone ... | 12 02 | 143 18 | 5½ | 90 | 245 " |
| Kay Islet ... | 12 13 | 143 16 | 10½ | 1 | Lightship in vicinity |
| Piper Group— | | | | | |
| Fisher ... | 12 16 | 143 14 | 7 | 5 | Rocky, 40 feet high, beacon |
| Farmer ... | 12 15 | 143 14 | 8 | 6 | " 40 " " |
| Baird ... | 12 15 | 143 13 | 7½ | 2 | " 40 " " |
| Beesley ... | 12 15 | 143 12 | 7½ | 1 | " 6 " " |
| Forbes Group— | | | | | |
| No. 1 ... | 12 17 | 143 24 | 12½ | 160 | " 295 " |
| No. 2 ... | 12 18 | 143 24 | 12 | 40 | " " |
| No. 3 ... | 12 18 | 143 25 | 13 | 30 | " " |
| Pigeon ... | 12 31 | 143 17 | 1 | 5 | 50 feet high |
| Rocky ... | 12 35 | 143 25 | 1 | 12 | 108 " |
| Restoration ... | 12 37 | 143 27 | 1 | 140 | 380 " |
| Lloyd ... | 12 46 | 143 24 | 1 | 120 | 236 " |
| Chapman ... | 12 53 | 143 36 | 5 | 15 | Wooded, 20 feet high, beacon |
| Rocky ... | 12 53 | 143 33 | 1½ | 8 | 130 feet high |
| Sherrard Group— | | | | | |
| East ... | 12 59 | 143 37 | 7½ | 2 | " " |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Mainland, Miles. | Area in Acres. | Description. |
|-----------------------|------------------------|----------|--------------------------------|----------------|---|
| | Lat. S. | Long. E. | | | |
| Sherrard Group— | | | | | |
| West | 12 59 | 143 36 | 7 | 3 | Wooded |
| Night | 13 11 | 143 34 | 33 | 25 | |
| Binstead | 13 13 | 143 34 | 4 | 2 | 10 feet high |
| Lowrie | 13 16 | 143 36 | 5 | 5 | Wooded |
| Ellis | 13 22 | 143 41 | 8 | 2 | 6 feet high, beacon |
| Morris | 13 30 | 143 43 | 9 | 10 | Wooded, 8 feet high, surrounded by coral reef |
| Fife | 13 39 | 143 43 | 11 | 15 | 8 feet high |
| Hay | 13 40 | 143 41 | 9 | 5 | Wooded, 5 feet high |
| Wilkie | 13 46 | 143 38 | 7 | 80 | " 4 " |
| Hannah | 13 52 | 143 43 | 12 | 160 | " 3 " |
| Felican | 13 55 | 143 50 | 12 | 10 | " 8 " |
| Stainer | 13 57 | 143 50 | 11 | 1 | " 6 " beacon |
| Burkitt | 13 56 | 143 45 | 7 | 80 | " " |
| Cliff Group— | | | | | |
| No. 1 | 14 13 | 143 46 | 4 | 70 | 76 feet high |
| No. 2 | 14 14 | 143 46 | 3 | 5 | 34 " |
| No. 3 | 14 14 | 143 47 | 4 | 30 | 49 " |
| Flinders Group— | | | | | |
| Maclear | 14 13 | 144 15 | 3 | 30 | 80 " |
| Denham | 14 14 | 144 16 | 2 | 800 | 659 " |
| Blackwood | 14 13 | 144 13 | 2 | 400 | 583 " |
| Flinders | 14 11 | 144 15 | 4 | 3,000 | 1051 " |
| Stanley | 14 09 | 144 14 | 4 | 1,800 | 674 " |
| King | 14 06 | 144 20 | 11 | 350 | Low and woody |
| Pipon | 14 08 | 144 31 | 2 | 5 | Wooded, lighthouse |
| Hales | 14 11 | 144 32 | 4 | 5 | 53 feet high |
| Rocky Point | 14 14 | 144 35 | 4 | 10 | 67 " |
| Barrow Group— | | | | | |
| No. 1 | 14 21 | 144 39 | 4 | 10 | 115 " |
| No. 2 | 14 21 | 144 39 | 4 | 10 | 115 " |
| Stapleton | 14 19 | 144 51 | 13 | 5 | 15 " surrounded by coral reef |
| Noble | 14 30 | 144 46 | 2 | 100 | 400 " granite |
| Howick Group— | | | | | |
| Coquet | 14 32 | 145 00 | 7 | 80 | 52 " |
| Houghton | 14 31 | 144 59 | 7 | 140 | Wooded |
| Newton | 14 30 | 144 55 | 7 | 120 | " " |
| Howick | 14 30 | 144 59 | 7 | 850 | " 185 feet high |
| Warson | 14 28 | 144 54 | 9 | 20 | " " |
| Beanley | 14 26 | 144 53 | 10 | 10 | 20 feet high |
| Ingram | 14 25 | 144 53 | 11 | 10 | Wooded |
| Coombe | 14 24 | 144 54 | 12 | 5 | " " |
| Bewick | 14 26 | 144 49 | 7 | 320 | " " |
| Colé Group— | | | | | |
| Hampton | 14 34 | 144 53 | 3 | 40 | " " |
| Leggatt | 14 33 | 144 52 | 3 | 30 | 30 feet high |
| Sinclair | 14 33 | 144 54 | 3 | 5 | Rocky |
| Morris | 14 33 | 144 54 | 3 | 5 | " " |
| Murdoch | 14 36 | 144 55 | 1 | 5 | " " |
| Kew Islet East | 14 44 | 145 06 | 5 | 5 | Wooded |
| " West | 14 44 | 145 05 | 4 | 5 | " " |
| Eu | 14 39 | 145 15 | 6 | 140 | Low and wooded |
| Rocky Islet | 14 52 | 145 20 | 10 | 70 | Wooded, 150 feet high |
| Turtle Group— | | | | | |
| No. 1 | 14 42 | 145 12 | 9 | 25 | " " |
| No. 2 | 14 43 | 145 12 | 8 | 10 | " " |
| No. 3 | 14 44 | 145 12 | 7 | 50 | " " |
| No. 4 | 14 44 | 145 11 | 7 | 40 | " " |
| North Direction | 14 45 | 145 31 | 17 | 100 | 616 feet high |
| South | 14 50 | 145 32 | 13 | 100 | 583 " |
| South | 14 42 | 145 27 | 16 | 50 | 405 " |
| Saddle | 14 42 | 145 27 | 16 | 140 | " " |
| Lizard | 14 40 | 145 28 | 17 | 500 | 1179 feet high |
| Eagle | 14 42 | 145 23 | 13 | 5 | Low |
| Two Isles— | | | | | |
| No. 1 | 15 01 | 145 26 | 5 | 70 | Wooded, 56 feet high |
| No. 2 | 15 02 | 145 27 | 6 | 15 | " " |
| Wooded | 15 06 | 145 23 | 6 | 170 | Low |
| Three Isles— | | | | | |
| No. 1 | 15 07 | 145 25 | 9 | 70 | Low and wooded |
| No. 2 | 15 07 | 145 25 | 9 | 5 | " " |
| No. 3 | 15 07 | 145 26 | 10 | 50 | " " |
| Rocky | 15 36 | 145 20 | 1 | 20 | Lighthouse |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Main Ind. Miles | Area in Acres. | Description. |
|-------------------------|------------------------|----------|-------------------------------|----------------|---|
| | Lat. S. | Long. E. | | | |
| Hope Group— | | | | | |
| North ... | 15 44 | 145 28 | 6 | 10 | Wooded |
| South ... | 15 45 | 145 27 | 5 | 10 | |
| Snapper ... | 16 18 | 145 30 | 1 | 140 | 376 feet high |
| Low ... | 16 23 | 145 34 | 8 | 5 | Wooded, lighthouse |
| Double ... | 16 44 | 145 41 | 1 | 60 | 258 feet high |
| Haycock ... | 16 44 | 145 42 | 1 | 5 | 113 " |
| Green ... | 16 46 | 145 59 | 8 | 30 | Wooded |
| Fitzroy ... | 16 56 | 146 00 | 2 | 750 | 849 feet high |
| Frankland Group— | | | | | |
| High ... | 17 10 | 146 06 | 3 | 200 | 570 " |
| Normanby ... | 17 12 | 146 05 | 7 | 140 | 80 " |
| Russell ... | 17 14 | 146 01 | 7 | 20 | 330 " |
| North Barnard ... | 17 41 | 146 11 | 2 | 30 | Lighthouse |
| South ... | 17 45 | 146 10 | 3 | 40 | |
| Mound ... | 17 56 | 146 09 | 2 | 10 | |
| Family Group— | | | | | |
| Dunk ... | 17 57 | 146 10 | 2 | 1,400 | 320 acres freehold, 140 acres agricultural farm, 890 ft. high, wooded: echidna, rat, tern, pigeon |
| Hudson ... | 18 03 | 146 13 | 9 | 40 | 270 feet high |
| Bowden ... | 18 03 | 146 12 | 9 | 10 | 200 " |
| Smith ... | 18 02 | 146 12 | 9 | 10 | 210 " |
| Combe ... | 18 02 | 146 11 | 5 | 80 | 370 " |
| Wheeler ... | 18 02 | 146 10 | 6 | 50 | 310 " |
| Richards ... | 18 00 | 146 09 | 3 | 130 | 350 " |
| Thorpe ... | 17 59 | 146 09 | 2 | 40 | 280 " |
| Garden ... | 18 11 | 146 09 | 3 | 20 | 130 " |
| Hinchinbrook ... | 18 23 | 146 14 | 1 | 97,280 | 297 ac. agricultural farm, 3650 ft. high, quartz and granite, pine and hardwood |
| Goold ... | 18 10 | 146 11 | 3 | 1,600 | 1370 feet high |
| Brook Group— | | | | | |
| North ... | 18 08 | 146 18 | 5 | 220 | Wooded, 250 feet high |
| South ... | 18 10 | 146 19 | 5 | 30 | 170 " |
| Eva ... | 18 14 | 146 20 | 1 | 10 | 115 feet high |
| Agnes ... | 18 21 | 146 20 | 1 | 20 | 180 " |
| Palm Group— | | | | | |
| Pelorus or Nth. Palm | 18 33 | 146 30 | 9 | 700 | 924 " |
| Orpheus ... | 18 37 | 146 30 | 9 | 2,600 | 565 " |
| Fantome ... | 18 42 | 146 31 | 13 | 1,400 | 724 " |
| Curacoa ... | 18 41 | 146 34 | 14 | 1,050 | 971 " |
| Great Palm ... | 18 44 | 146 37 | 18 | 13,440 | 1818 " quartz |
| Eclipse ... | 18 46 | 146 34 | 17 | 40 | 206 " |
| Brisk ... | 18 47 | 146 33 | 16 | 300 | 229 " |
| Falcon ... | 18 46 | 146 33 | 16 | 50 | 194 " |
| Esk ... | 18 46 | 146 32 | 15 | 150 | 165 " |
| Fly ... | 18 50 | 146 32 | 14 | 5 | 115 " |
| Havannah ... | 18 50 | 146 33 | 14 | 320 | 507 " |
| Acheron ... | 18 58 | 146 39 | 12 | 120 | 188 " |
| Rattlesnake ... | 19 02 | 146 37 | 7 | 450 | 40 acres freehold, 377 ft. high |
| Herald ... | 19 02 | 146 38 | 8 | 150 | 173 feet high |
| Nares Rock ... | 19 46 | 148 22 | 15 | — | 26 " |
| Magnetic ... | 19 08 | 146 50 | 2 | 12,160 | About 250 ac. freehold, 100 ac. agricultural farm, 1628 feet high; granite |
| Bray ... | 19 15 | 147 04 | 1 | 10 | 40 feet high |
| Bare ... | 19 16 | 147 04 | 1 | 5 | 30 " |
| Bald ... | 19 17 | 147 04 | 1 | 5 | 10 " |
| Camp ... | 19 51 | 147 54 | 2 | 60 | 130 " |
| Holbourne ... | 19 44 | 148 22 | 17 | 80 | 360 " |
| Stone ... | 20 02 | 148 17 | 1 | 300 | 90 " |
| Thomas ... | 20 05 | 148 18 | 1 | 40 | |
| Poole ... | 20 06 | 148 19 | 1 | 45 | 39 " |
| Middle ... | 19 59 | 148 23 | 7 | 120 | 180 " |
| Gloucester ... | 20 00 | 148 27 | 1 | 6,400 | 1870 " |
| Saddleback ... | 20 04 | 148 33 | 1 | 100 | 322 " |
| Ratray ... | 19 59 | 148 34 | 6 | 53 | 340 " |
| Eshelby ... | 20 01 | 148 39 | 5 | 30 | 170 " |
| Grassy ... | 20 09 | 148 38 | 1 | 230 | 481 " |
| Olden ... | 20 06 | 148 36 | 2 | 90 | 269 " |
| Gumbrell ... | 20 06 | 148 38 | 2 | 150 | 287 " |
| Armit ... | 20 06 | 148 40 | 4 | 250 | 494 " |
| Double Cone ... | 20 06 | 148 44 | 5 | 60 | |
| Langford ... | 20 05 | 148 54 | 13 | 10 | 250 " |
| Arkhurst ... | 20 04 | 148 54 | 14 | 5 | 70 " |
| Hayman ... | 20 03 | 148 54 | 14 | 750 | 844 " |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Main Ind. Miles | Area in Acres | Description. |
|-------------------|------------------------|----------|-------------------------------|---------------|-------------------|
| | Lat. S. | Long. E. | | | |
| Dumbell ... | 20 11 | 149 02 | 15½ | 40 | 182 feet high |
| Deloraine ... | 20 10 | 149 05 | 19½ | 80 | 114 " |
| Border... .. | 20 10 | 149 03 | 16½ | 800 | 747 " |
| Hook ... | 20 07 | 148 56 | 9½ | 1,150 | 1478 " |
| Denman ... | 20 17 | 148 52 | 3 | 40 | 250 " |
| Planton ... | 20 16 | 148 52 | 3½ | 50 | 203 " |
| West Molle ... | 20 15 | 148 50 | 1½ | 80 | 184 " |
| North ... | 20 14 | 148 50 | 3 | 600 | 745 " |
| Middle " ... | 20 15 | 148 51 | 3½ | 25 | 206 " |
| Molle ... | 20 16 | 148 52 | 2 | 1,000 | 622 " wooded |
| Shute ... | 20 18 | 148 49 | 2½ | 60 | 217 " |
| Cid ... | 20 16 | 148 56 | 6½ | 900 | 683 " |
| Henning ... | 20 19 | 148 57 | 6 | 120 | 227 " |
| Esk ... | 20 14 | 149 04 | 15½ | 50 | 111 " |
| Peteril... .. | 20 12 | 149 08 | 20½ | 5 | 20 " |
| Ireby ... | 20 14 | 149 10 | 21½ | 40 | 164 " |
| Harold ... | 20 15 | 149 10 | 21½ | 80 | 247 " |
| Edward ... | 20 15 | 149 11 | 22½ | 150 | 347 " |
| Workington ... | 20 16 | 149 08 | 18½ | 160 | 320 " |
| Haslewood ... | 20 17 | 149 06 | 15½ | 1,850 | 666 " |
| Lupton ... | 20 16 | 149 07 | 17½ | 320 | " |
| Pine ... | 20 18 | 149 07 | 16½ | 60 | 356 " |
| Teague ... | 20 18 | 149 06 | 15 | 130 | 285 " |
| Whitsundy ... | 20 15 | 149 00 | 6 | 24,300 | 1426 " hoop-pine |
| Perseverance ... | 20 21 | 149 01 | 9½ | 60 | 326 " |
| Hamilton ... | 20 21 | 148 59 | 6½ | 1,720 | 775 " |
| Dent ... | 20 21 | 148 57 | 6 | 1,050 | 568 " lighthouse |
| Pine ... | 20 22 | 148 55 | 3 | 180 | 340 " |
| Long ... | 20 22 | 148 53 | ½ | 2,100 | 870 " |
| Pentecost ... | 20 24 | 149 03 | 9 | 280 | 941 " |
| Cumberland Group— | | | | | |
| Mansell ... | 20 28 | 149 09 | 13 | 360 | 630 " |
| Seaforth ... | 20 28 | 149 03 | 7½ | 70 | 176 " |
| Lindeman ... | 20 27 | 149 03 | 7½ | 1,800 | 712 " |
| Sidney ... | 20 27 | 149 02 | 6½ | 5 | 125 " |
| Maher ... | 20 25 | 149 09 | 11½ | 200 | 550 " |
| Brush ... | 20 29 | 149 04 | 8½ | 5 | 62 " |
| Baynham ... | 20 26 | 149 07 | 13 | 15 | Low and cliffy |
| Comston ... | 20 27 | 149 07 | 12 | 20 | " |
| Shaw ... | 20 29 | 149 05 | 7 | 4,000 | 1324 feet high |
| Triangle ... | 20 30 | 149 08 | 12 | 40 | 150 " |
| Pine ... | 20 30 | 149 06 | 10½ | 10 | 140 " |
| Keyser ... | 20 31 | 149 06 | 9½ | 200 | 250 " |
| Thomas ... | 20 33 | 149 07 | 11 | 680 | 445 " |
| Blackcombe ... | 20 35 | 149 12 | 17 | 10 | 116 " |
| Silversmith ... | 20 35 | 149 08 | 12 | 120 | 197 " |
| Anvil ... | 20 37 | 149 05 | 11 | 10 | 112 " |
| Anchorsmith ... | 20 36 | 149 05 | 10 | 15 | 267 " |
| Blacksmith ... | 20 37 | 149 04 | 10 | 640 | 534 " nearly bare |
| Hammer ... | 20 38 | 149 04 | 11 | 160 | 468 " wooded |
| Locksmith ... | 20 38 | 149 10 | 16 | 10 | Wooded |
| Goldsmith ... | 20 40 | 149 10 | 16 | 960 | 655 feet high |
| Linné ... | 20 40 | 149 12 | 17½ | 480 | 926 " wooded |
| Tinsmith ... | 20 41 | 149 13 | 17½ | 240 | 456 " " |
| Ingot ... | 20 42 | 149 10 | 14½ | 80 | 197 " |
| Allonby ... | 20 46 | 149 11 | 13 | 60 | 212 " nearly bare |
| Coffin ... | 20 43 | 149 15 | 17 | 10 | 180 " |
| Maryport ... | 20 45 | 149 17 | 18 | 10 | 123 " |
| Brampton ... | 20 48 | 149 17 | 14 | 1,280 | 720 " |
| Carlisle ... | 20 47 | 149 18 | 16 | 1,200 | 1277 " wooded |
| Cockermouth ... | 20 46 | 149 25 | 21½ | 340 | 651 " |
| Wigton ... | 20 44 | 149 29 | 26 | 640 | 418 " |
| Aspatria ... | 20 55 | 149 30 | 17½ | 80 | 160 " |
| Keswick ... | 20 54 | 149 26 | 14½ | 1,300 | 1034 " |
| St. Bees ... | 20 55 | 149 28 | 15 | 2,560 | 1240 " |
| Scawfell ... | 20 52 | 149 37 | 25½ | 2,560 | 1305 " |
| Calder ... | 20 46 | 149 38 | 31 | 400 | 441 " wooded |
| Bailey ... | 21 01 | 149 34 | 20½ | 10 | 120 " |
| Derwent ... | 20 58 | 149 47 | 35 | 200 | 415 " wooded |
| Bushy ... | 20 57 | 150 05 | 54 | 10 | 40 " |
| Redbill ... | 20 58 | 150 04 | 53½ | 10 | 93 " |
| Snare Peak ... | 21 06 | 149 57 | 42 | 50 | 300 " |
| Penrith ... | 21 00 | 149 55 | 42 | 400 | 490 " wooded |
| Tern ... | 20 54 | 150 02 | 53 | 20 | 102 " |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Mainland, Miles. | Area in Acres. | Description. |
|----------------------|------------------------|----------|--------------------------------|----------------|---------------|
| | Lat. S. | Long. E. | | | |
| Repulse Group— | | | | | |
| No. 1 ... | 20 34 | 148 53 | 3 | 80 | 265 feet high |
| No. 2 ... | 20 35 | 148 54 | 3 | 320 | |
| No. 3 ... | 20 36 | 148 53 | 4½ | 210 | |
| Midge ... | 20 41 | 148 48 | 2 | 40 | 175 " |
| Brothers ... | 20 46 | 148 53 | 1 | 10 | |
| High, North ... | 20 47 | 148 54 | 2½ | 15 | |
| " South ... | 20 48 | 148 54 | 2 | 10 | |
| Mausoleum ... | 20 51 | 148 57 | 1 | 10 | |
| Acacia ... | 20 51 | 148 56 | 1 | 48 | |
| Outer Newry ... | 20 50 | 148 57 | 1½ | 138 | |
| Newry ... | 20 50 | 148 56 | ½ | 180 | |
| Wedge ... | 20 55 | 149 04 | 1 | 20 | |
| Slade ... | 21 05 | 149 16 | 1 | 10 | |
| Flat Top ... | 21 09 | 149 16 | 1½ | 120 | Lighthouse |
| Round Top ... | 21 10 | 149 17 | 3 | 120 | 259 feet high |
| Victor ... | 21 19 | 149 21 | 1½ | 40 | 75 " wooded |
| Taffy ... | 21 28 | 149 25 | 1 | 30 | 166 " " |
| Irving ... | 21 27 | 149 29 | 5 | 40 | 305 " " |
| Cullen ... | 21 25 | 149 31 | 8 | 10 | 140 " " |
| Northumberland Group | | | | | |
| Frudhoe ... | 21 19 | 149 41 | 19 | 1,250 | 1074 " " |
| Reid ... | 21 22 | 149 40 | 15½ | 8 | 110 " " |
| Beverlac ... | 21 27 | 149 53 | 24½ | 60 | 320 " wooded |
| Hull ... | 21 28 | 149 54 | 25 | 60 | 272 " " |
| Still ... | 21 28 | 149 56 | 28 | 8 | 155 " bare |
| Henderson ... | 21 28 | 149 55 | 27½ | 80 | 260 " wooded |
| Noel ... | 21 29 | 149 54 | 25½ | 240 | 239 " bare |
| Digby ... | 21 29 | 149 55 | 27 | 250 | 327 " " |
| Keelan ... | 21 29 | 149 55 | 27½ | 50 | 224 " wooded |
| Penn ... | 21 29 | 149 56 | 28 | 10 | 110 " bare |
| Knight ... | 21 26 | 149 44 | 15½ | 320 | 438 " " |
| Waratah ... | 21 30 | 149 44 | 14½ | 30 | 102 " " |
| Double ... | 21 22 | 149 41 | 24½ | 180 | 258 " bare |
| Minster ... | 21 26 | 149 51 | 23½ | 160 | 409 " " |
| Renou ... | 21 25 | 149 50 | 22½ | 10 | 130 " " |
| Elamang ... | 21 28 | 149 41 | 10 | 20 | 259 " " |
| Curlew ... | 21 35 | 149 49 | 20 | 1,280 | 520 " " |
| Hirst ... | 21 34 | 149 50 | 22 | 20 | 154 " " |
| Bluff ... | 21 36 | 149 53 | 25 | 80 | 300 " bare |
| Dinner ... | 21 37 | 149 49 | 22 | 40 | 100 " " |
| Wallace ... | 21 35 | 149 47 | 19½ | 20 | 138 " " |
| Tinonee ... | 21 39 | 149 51 | 23½ | 320 | 620 " bare |
| Treble ... | 21 36 | 149 50 | 23 | 10 | 130 " " |
| Douglas ... | 21 40 | 149 48 | 20 | 100 | 276 " bare |
| High Peak ... | 21 57 | 150 42 | 27 | 400 | 718 " " |
| Alnwick ... | 22 01 | 150 24 | 22½ | 70 | 484 " " |
| Shields ... | 22 00 | 150 24 | 22½ | 70 | 198 " " |
| Steep ... | 22 02 | 150 28 | 20½ | 100 | 409 " " |
| Hexnam ... | 22 01 | 150 23 | 21 | 220 | 353 feet high |
| Berwick ... | 21 59 | 150 41 | 23½ | 20 | 41 " " |
| Tweed ... | 22 00 | 150 40 | 22 | 60 | 222 " " |
| Morpeth ... | 21 58 | 150 37 | 23½ | 15 | 110 " " |
| Cheviot ... | 22 05 | 150 41 | 17 | 120 | 307 " " |
| Otterbourne ... | 22 02 | 150 19 | 16 | 160 | 204 " " |
| Allendale ... | 21 58 | 150 24 | 23 | 20 | 102 " " |
| Rothbury ... | 22 01 | 150 40 | 21½ | 8 | 68 " " |
| Duke Group— | | | | | |
| Bamborough ... | 21 55 | 150 07 | 14 | 320 | 148 " " |
| Marble ... | 21 59 | 150 11 | 11½ | 1,440 | 484 " " |
| Tynemouth ... | 22 00 | 150 08 | 10½ | 480 | 382 " " |
| Hunter ... | 21 57 | 150 09 | 12 | 320 | 244 " " |
| Danger ... | 22 01 | 150 10 | 10½ | 30 | 100 " " |
| Bedwell Group— | | | | | |
| Innes ... | 21 49 | 149 47 | 20½ | 30 | 100 " " |
| George ... | 21 50 | 149 48 | 21 | 300 | 235 " " |
| Poynter ... | 21 50 | 149 49 | 22½ | 160 | 400 " " |
| Calliope ... | 21 51 | 149 48 | 21 | 70 | 154 " " |
| Temple ... | 21 36 | 149 30 | 1 | 240 | 134 " " |
| Ridge ... | 21 40 | 149 40 | 11 | 40 | 70 " " |
| Westhill ... | 21 49 | 149 30 | ½ | 960 | 983 " " |
| Connor ... | 21 43 | 149 40 | 11½ | 160 | 200 " bare |
| Flat Group— | | | | | |
| Red Clay ... | 21 56 | 149 39 | 10½ | 160 | 80 " " |
| Avoid ... | 21 58 | 149 40 | 9 | 230 | 110 " " |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Main'nd, Miles | Area in Acres. | Description. |
|--------------------|------------------------|----------|------------------------------|----------------|---|
| | Lat. S. | Long. E. | | | |
| Flat Group— | | | | | |
| Aquila ... | 21 58 | 149 34 | 3½ | 400 | 80 feet high |
| Bald ... | 21 57 | 149 35 | 5½ | 4 | |
| Reef ... | 21 57 | 149 37 | 6 | 8 | 20 " |
| Little ... | 21 59 | 149 40 | 10 | 5 | 20 " |
| Flock Pigeon ... | 22 08 | 149 35 | 2½ | 330 | |
| Roundish ... | 22 03 | 149 37 | 6 | 40 | 121 " thickly wooded |
| McEwen ... | 22 09 | 149 37 | 3 | 5 | 30 " |
| Turtle ... | 22 21 | 149 48 | 1 | 10 | |
| Coal ... | 22 09 | 149 53 | 7 | 20 | |
| Westside ... | 22 09 | 149 52 | 7½ | 20 | 82 " |
| North Point Group— | | | | | |
| Turn ... | 21 59 | 149 50 | 15½ | 160 | 280 " |
| Bush ... | 22 00 | 149 54 | 12½ | 10 | 30 " |
| Wild Duck ... | 22 00 | 149 53 | 13 | 1,120 | 367 " |
| Long ... | 22 09 | 149 55 | 2 | 19,520 | 610 " |
| Quail ... | 22 08 | 150 00 | 2 | 6,880 | 375 " |
| Percy Group— | | | | | |
| Sphinx ... | 21 31 | 150 10 | 43½ | 160 | 220 " |
| Pine Peak ... | 21 31 | 150 17 | 44½ | 640 | 748 " |
| Middle ... | 21 39 | 150 17 | 34½ | 4,480 | All under grazing farm: 816 feet high |
| South ... | 21 45 | 150 21 | 31½ | 4,000 | 632 feet high |
| Pine ... | 21 40 | 150 14 | 35 | 160 | 224 " lighthouse |
| North-East ... | 21 39 | 150 21 | 37½ | 640 | 440 " |
| Hotspur ... | 21 29 | 150 17 | 48 | 640 | 527 " |
| Walter ... | 21 39 | 150 21 | 39 | 60 | 300 " |
| Boat ... | 21 40 | 150 22 | 38 | 10 | 25 " |
| Hixson ... | 21 44 | 150 19 | 32 | 10 | 50 " |
| South-East No. 1 | 21 45 | 150 27 | 36 | 25 | 219 " |
| " No. 2 | 21 46 | 150 27 | 36 | 20 | 141 " |
| Marquis ... | 22 19 | 150 28 | 10 | 150 | 128 " |
| Raynham ... | 22 16 | 150 33 | 4 | 20 | 80 " |
| Bay ... | 22 20 | 150 20 | 5 | 5 | 97 " |
| Edward ... | 22 18 | 150 19 | 6 | 2 | |
| Ripple ... | 22 13 | 150 27 | 11 | 30 | 150 " |
| Cannibal Group— | | | | | |
| Collins ... | 22 15 | 150 20 | 9 | 640 | Wooded |
| Lingham ... | 22 14 | 150 17 | 8 | 140 | 60 feet high |
| Eliza ... | 22 14 | 150 19 | 9 | 10 | |
| Mumford ... | 22 11 | 150 23 | 14 | 8 | 60 " |
| Holt ... | 22 13 | 150 23 | 14 | 5 | 40 " |
| Annie ... | 22 14 | 150 19 | 10 | 5 | |
| Skull Group— | | | | | |
| Clara ... | 22 18 | 150 15 | 3 | 30 | 30 " |
| Sun ... | 22 18 | 150 16 | 3½ | 15 | |
| Osborn ... | 22 17 | 150 15 | 4 | 30 | 25 " |
| Swan ... | 22 19 | 150 14 | 1 | 45 | 188 " |
| Akens ... | 22 21 | 150 17 | 2 | 360 | 121 " |
| Townsend ... | 22 16 | 150 32 | 1 | 20,480 | Under past. lease, 475 ft. high, lightly timbered |
| Leicester ... | 22 15 | 150 27 | 10 | 4,160 | 150 feet high, wooded |
| Triangular ... | 22 22 | 150 32 | 2 | 160 | 82 " |
| Hervey Group— | | | | | |
| Clara Group... | 22 20 | 150 44 | 3 | 40 | 155 " |
| Dome ... | 22 25 | 150 46 | 2 | 60 | 357 " |
| Spit ... | 22 25 | 150 46 | 3 | 10 | 287 " |
| Entrance ... | 22 29 | 150 48 | 1½ | 30 | 190 " |
| Quoin ... | 22 34 | 150 49 | 2 | 10 | 310 " |
| Peak ... | 22 39 | 150 59 | 8 | 15 | 400 " |
| Flat ... | 22 44 | 151 01 | 10 | 70 | 175 " |
| Middle... .. | 23 10 | 150 56 | 7 | 100 | |
| Miall ... | 23 10 | 150 55 | 7 | 60 | |
| Barren ... | 23 10 | 151 05 | 16 | 180 | 548 " |
| North Keppel ... | 23 05 | 150 55 | 7 | 1,280 | 257 " |
| Great ... | 23 10 | 150 59 | 7½ | | 542 " |
| Mackenzie ... | 23 31 | 150 53 | 4 | | 147 " |
| Girt ... | 23 22 | 150 50 | 3 | | |
| Corroboree ... | 23 04 | 150 55 | 7 | 40 | 143 " |
| Sloping ... | 23 07 | 150 55 | 7 | 20 | 202 " |
| Halfway ... | 23 12 | 151 00 | 9½ | 20 | |
| Humpy ... | 23 13 | 151 00 | 9 | 120 | |
| Divided ... | 23 18 | 150 57 | 6 | 20 | |
| Pelican ... | 23 15 | 150 54 | 2½ | 30 | 151 " |
| Wedge... .. | 23 17 | 150 55 | 3½ | 60 | 200 " |
| Peak ... | 23 21 | 150 58 | 8 | 160 | 370 " |
| Flat ... | 23 32 | 150 53 | 2 | 480 | |

ISLANDS OFF THE COAST OF QUEENSLAND—Continued.

| Name of Island. | Geographical Position. | | Distance from Mainl ^d , Miles. | Area in Acres. | Description. |
|-------------------|------------------------|----------|---|----------------|---|
| | Lat. S. | Long. E. | | | |
| Hummocky ... | 23 26 | 151 10 | 6 | 320 | 418 feet high |
| Curtis ... | 23 36 | 151 10 | 4 | 11,200 | 425 ft. high, sandy and thickly wooded, permo-carboniferous and recent, 3 lighthouses |
| Capricorn Group— | | | | | |
| N.W. Islet ... | 23 18 | 151 44 | 34 | 240 | Wooded, surrounded by coral reefs |
| Wilson ... | 23 18 | 151 37 | 47 | 12 | " " " |
| Wreck ... | 23 20 | 151 39 | 49 | 20 | " " " |
| Heron ... | 23 27 | 151 37 | 41 | 80 | " " " |
| One Tree ... | 23 30 | 152 08 | 42 | 80 | " " " |
| Bunker Group— | | | | | |
| Hoskyn ... | 23 49 | 152 18 | 36 | 20 | " " " |
| Fairfax ... | 23 51 | 152 23 | 37 | 40 | " " " |
| Lady Musgrave ... | 23 54 | 152 25 | 37 | 50 | " " " |
| Erskine ... | 23 30 | 151 47 | 35 | 40 | Low, sandy, and scantily vegetated |
| Mast Head ... | 23 33 | 151 45 | 31 | 160 | Wooded, surrounded by coral reefs |
| Passage ... | 23 46 | 151 12 | 1 | 30 | |
| Mud ... | 23 49 | 151 15 | 1 | 40 | |
| Picnic ... | 23 49 | 151 17 | 1 | 50 | |
| Bushy ... | 23 50 | 151 22 | 2 | 5 | |
| Quoin ... | 23 49 | 151 18 | 2 | 140 | |
| Facing ... | 23 49 | 151 24 | 1 | 7,200 | Under pastoral lease; 105 feet high; permo-carboniferous and granite; lighthouse |
| Barubba ... | 24 44 | 152 25 | 1 | 1,280 | |
| Luck ... | 25 21 | 153 01 | 5 | 5 | |
| Lady Elliot ... | 24 07 | 152 45 | 48 | 80 | Wooded, lighthouse |
| Little Woody ... | 25 19 | 153 02 | 6 | 8 | Shipping guide |
| Woody ... | 25 18 | 153 00 | 2 | 2,240 | Two lighthouses |
| Fraser ... | 24 44 | 153 10 | 1 | 42,048 | About 100 acres freehold, 800 ft. high, sandy & wooded, Trias-Jura (lower?), hardwood & cypress pine, lighthouse & several ship. guides |
| Mangrove ... | 25 22 | 152 58 | 2 | 160 | |
| Walsh ... | 25 29 | 152 59 | 1 | 320 | |
| Moonboom ... | 25 36 | 152 57 | 3 | 320 | Shipping guide |
| Stewart ... | 25 37 | 152 59 | 3 | 320 | |
| Parker ... | 27 24 | 153 10 | 1 | 320 | Low and wooded, shipping guide |
| Fisherman ... | 27 24 | 153 12 | 1 | 480 | |
| Bribie ... | 26 59 | 153 09 | 4 | 640 | |
| | | | | 37,760 | 944 acres freehold, low wooded sand ridges, Trias-Jura (upper?), cypress pine |
| Green ... | 27 25 | 153 15 | 2 | 160 | |
| King ... | 27 27 | 153 15 | 2 | 40 | Low and wooded |
| Moreton ... | 27 10 | 153 25 | 9 | 45,760 | Few ac. as town allotments, 910 feet high, sandy Trias-Jura (upper?), lighthouse & ship. guides |
| Mud ... | 27 20 | 153 16 | 5 | 800 | Mostly mud and mangrove, beacon |
| St. Helena ... | 27 23 | 153 15 | 4 | 480 | Penal estab., 150 ft. high, good soil, ship. guide |
| Peel ... | 27 30 | 153 23 | 3 | 1,440 | 23 feet high, beacons |
| Bird ... | 27 30 | 153 24 | 5 | 5 | Sandy |
| Goat ... | 27 30 | 153 24 | 5 | 5 | |
| Pannikin ... | 27 37 | 153 21 | 3 | 800 | Mangrove |
| Tindappah ... | 27 37 | 153 21 | 3 | 320 | All freehold, mangrove |
| Ngudooroo ... | 27 37 | 153 24 | 3 | 320 | " 120 feet high, good soil |
| Tabby Tabby ... | 27 44 | 153 23 | 1 | 240 | " partly good soil |
| Karragarra ... | 27 38 | 153 23 | 2 | 320 | " 120 feet high, partly good soil |
| Kangaroo ... | 27 46 | 153 24 | 1 | 1,120 | |
| Woogoompah ... | 27 47 | 153 25 | 1 | 1,280 | All freehold, wooded |
| Coochie-mudlo ... | 27 34 | 153 21 | 2 | 320 | About 50 acres as town allotments, partly good soil, some cypress pine |
| Macleay ... | 27 37 | 153 23 | 2 | 1,440 | All hld., 120 ft. high, partly good soil, h'd wood |
| Russell ... | 27 40 | 153 24 | 2 | 3,520 | " 250 |
| Stradbroke ... | 27 40 | 153 27 | 2 | 78,720 | About 100 acres freehold, 739 feet high, chiefly sand hills with stunted timber, some cypress pine and hardwood. Trias-Jura (upper?) |

5. **South Australia.**—The accompanying information in regard to the Islands of South Australia has been compiled from particulars furnished by the Lands Department of that State.

ISLANDS OFF THE COAST OF SOUTH AUSTRALIA.

| Names of Islands. | Geographical Position. | | Distance from Mainland Miles | Area in acres (approximate). | Description. |
|--|------------------------|----------|------------------------------|------------------------------|--|
| | Lat. S. | Long. E. | | | |
| Albatross (c) ... | 35 3 | 136 12 | 12 | 15 | Rocky Island, South of Thistle Island. |
| Althorpe Islands (c) ... | 35 22 | 136 54 | 5 | 300 | Three islets with several rocks and reef, highest part 285 ft., lighthouse, cable communication |
| Beatrice (c) ... | 35 38 | 137 43 | 24 | 25 | Near Nepean Bay, low and sandy. |
| Bicker Islands (c) ... | 34 44 | 135 58 | 3 | 50 | Two small rocky islands near Port Lincoln. |
| Blyth (c) ... | 34 33 | 136 18 | 12 | 10 | In Sir Joseph Banks' Group. |
| Boston (f) ... | 34 42 | 135 57 | 2 | 2,000 | Near Pt. Lincoln, hilly, light wooded, 319 ft. high |
| Boucaut (c) ... | 34 38 | 136 22 | 17 | 25 | In Sir Joseph Banks' Group. |
| Busby (c) ... | 35 37 | 137 40 | 26 | 25 | Near Nepean Bay, low and sandy. |
| Cap (c) ... | 33 57 | 135 8 | 5 | 20 | West of Eyre's Peninsula. |
| Casuarina (c) ... | 36 3 | 136 42 | 57 | 10 | Near Cape De Coudie, known as 'The Brothers' |
| Dalby (c) ... | 34 33 | 136 15 | 8 | 30 | In Sir Joseph Banks' Group. |
| Dog (c) ... | 32 39 | 133 22 | 20 | 150 | One of St. Francis' Group in Nuyt's Archipelago |
| Duffield (c) ... | 34 39 | 136 20 | 15 | 22 | In Sir Joseph Banks' Group, includes sand spit, and rock. |
| Eba (c) ... | 32 41 | 134 17 | 1 | 300 | In Streaky Bay. |
| Egg (c) ... | 32 38 | 133 21 | 20 | 150 | One of St. Francis' Group, in Nuyt's Archipelago |
| English (l) ... | 34 38 | 136 12 | 9 | 10 | In Sir Joseph Banks' Group. |
| Evans (c) ... | 32 22 | 133 30 | 13 | 300 | In Nuyt's Archipelago. |
| Ewe (l) ... | 35 33 | 138 57 | 1 | 548 | In Lower Murray, swampy. |
| Eyres (c) ... | 32 21 | 133 50 | 3 | 2,500 | In Nuyt's Arch., sandridges & mangrove swamps |
| Fenelon (c) ... | 32 34 | 133 20 | 27 | 200 | In St. Francis' Grp., steep, rocky, highest 189 ft. |
| Flinders (l) ... | 33 44 | 134 31 | 18 | 9,000 | Largest of Investigator's Group, limestone cliff, sandy beach, undulating, wooded, pasture. |
| Franklin Islands (c) ... | 32 27 | 133 39 | 12 | 1,000 | Two ids. and a pyramidal rock in Nuyt's Arch. |
| Freeling (c) ... | 32 29 | 133 22 | 20 | 40 | One of St. Francis Group, Nuyt's Archipelago. |
| Four Hummocks The (c) ... | 34 44 | 135 3 | 17 | 200 | Four Islands in Whidbey Group, highest 362 ft. |
| Gambier Islands ... | ... | ... | ... | 2,500 | Comp. Wedge Id. and 3 islets, Spencer's Gulf. |
| Germeins (c) ... | 33 13 | 134 41 | 1 | 500 | In Venus Bay. |
| Goat (c) ... | 32 18 | 133 32 | 10 | 700 | In Nuyt's Archipelago, highest part 195 ft. |
| Goose (c) ... | 34 27 | 137 23 | 3 | 5 | In Spencer's Gulf, near Port Victoria. |
| Godfrey's Islands (c) ... | 37 5 | 139 43 | 2 | 100 | Near Cape Jaffa. |
| Granite (c) ... | 35 33 | 133 37 | 1 | 80 | Connected mainland by jetty, highest 140 ft., breakwater, pleasure resort, in Encounter Bay |
| Grantham (c) ... | 34 46 | 135 53 | 1 | 100 | Near Port Lincoln. |
| Greenly (c) ... | 34 49 | 134 49 | 18 | 500 | S.W. Coffin Bay, peaked summit 755 ft. high, locally known as "The Cow and Calf." |
| Grindal (l) ... | 34 54 | 136 2 | 2 | 250 | In Thorny Passage, 84 ft. high. |
| Harts (c) ... | 32 35 | 133 10 | 27 | 30 | One of St. Francis' Group, Nuyt's Archipelago |
| Hareby (c) ... | 34 34 | 136 19 | 12 | 60 | In Sir Joseph Banks' Group. |
| Hindmarsh (f 11,047 ac.) ... | 35 30 | 138 54 | 1 | 11,500 | Flat and swampy, near mouth of Murray River. |
| Hopkins (l) ... | 34 57 | 136 4 | 3 | 400 | Near Port Lincoln. |
| Investigator's Group ... | ... | ... | ... | ... | W. of Eyre's Peninsula, consists Waldegrave, Topgallant, Ward, Pearson's & Flinders Ids. |
| Jones (l) ... | 33 11 | 134 23 | 1 | 22 | In Beard's Bay. |
| Kangaroo (f 112,039 ac., l 417,125 ac., c 546,036 ac.) ... | 35 32 | 136 34 | 1 | 1075,200 | 3 lighthouses, cable communication, highest point 900 ft., reserve for native fauna & flora. |
| Kirkby (c) ... | 34 32 | 136 13 | 7 | 50 | In Sir Joseph Banks' Group. |
| Lacy Islands (c) ... | 32 23 | 133 23 | 13 | 300 | Two rocky islets & detached reef in Nuyt's Arc. |
| Langton or Milne (l) ... | 34 35 | 136 15 | 10 | 60 | In Sir Joseph Banks' Group. |
| Lewis (l) ... | 34 57 | 136 3 | 2 | 75 | Near Port Lincoln. |
| Liguanea (c) ... | 34 59 | 135 38 | 3 | 500 | S. of Eyre's Peninsula, highest part 127 ft., flat and barren, cliffs on coast, coral bottom. |
| Little (c) ... | 34 56 | 136 2 | 2 | 50 | Near Port Lincoln. |
| Lounds (c) ... | 32 16 | 133 23 | 5 | 50 | In Nuyt's Archipelago, highest part 67 ft. |
| Louth (c) ... | 34 34 | 135 58 | 2 | 450 | In Louth Bay, Spencer's Gulf, highest part 76 ft., rocky points and sandy bays. |
| Long (l) ... | 35 31 | 139 | 1 | 1,315 | In mouth of River Murray, swampy. |
| Lusby (c) ... | 34 32 | 136 16 | 9 | 30 | In Sir Joseph Banks' Group. |
| Marum (c) ... | 34 30 | 136 15 | 8 | 10 | |
| Masilion (c) ... | 32 33 | 133 20 | 25 | 500 | One of St. Francis' Group, Nuyt's Archipelago. |
| Milne or Langton (l) ... | 34 35 | 136 15 | 10 | 60 | In Sir Joseph Banks' Group. |
| Mundoo (f 2202 a., l 1942 a.) ... | 35 32 | 138 56 | 1 | 3,144 | In mouth of River Murray, sandy and swampy. |
| Neptune Ids.—South (c) ... | 35 22 | 136 7 | 26 | 500 | Three small rocky islands, lighthouse, granite cliff N.W. of Isle, 160 ft. high. |
| North (c) ... | 35 14 | 136 4 | 18 | 600 | |
| Nobby (c) ... | 35 58 | 137 18 | 52 | 30 | In Vivonne Bay, South of Kangaroo Island. |
| Nuyt's Archipelago ... | ... | ... | ... | ... | Comprises 4 Groups: St. Francis Isles, Franklin Ids., Purdies Ids., Lacy Isles, also St. Peter's, Goat, Eyre's and Evans' Islands. |
| Olive (c) ... | 32 44 | 133 58 | 5 | 30 | Near Streaky Bay, rocky, 60 ft. high. |

ISLANDS OFF THE COAST OF SOUTH AUSTRALIA—Continued.

| Name of Island. | Geographical Position. | | Distance from Mainland, Miles | Area in Acres (approximate). | Description. |
|-----------------------------|------------------------|----------|-------------------------------|------------------------------|--|
| | Lat. S. | Long. S. | | | |
| Pages, The (c) ... | 35 45 | 138 18 | 8 | 50 | Two groups of barren rocks about 60 ft. high, in Backstair's Passage, area 100 ac. at low water. |
| Partney (c) ... | 34 31 | 136 15 | 89 | 100 | In Sir Joseph Banks' Group. |
| Pearsons (c) ... | 33 57 | 134 18 | 40 | 700 | In Investigator's Group, sanctuary for seals and wallaby. |
| Perforated (c) ... | 34 44 | 135 11 | 10 | 300 | In Whidbey Group, S.W. of Eyre's Peninsula. |
| Penguin (c) ... | 37 30 | 140 | 2 | 5 | Rivoli Bay North, lighthouse station. |
| Pelorus (c) ... | 36 5 | 137 33 | 5 | 50 | Three islets S. of E. part of Kangaroo Island. |
| Price (c) ... | 34 42 | 135 21 | 1 | 145 | Near Coffin's Bay, one of Whidbey Group. |
| Purdies (c) ... | 32 16 | 132 17 | 5 | 100 | The N.W. of Nuyt's Archipelago, islet & rocks. |
| Pullens (c) ... | 35 33 | 138 42 | 4 | 25 | Near Port Elliot, rocky. |
| Rabbit No. 1 (l) ... | 34 36 | 136 | 3 | 50 | N.E. Port Lincoln. |
| " 2 (c) ... | 34 51 | 136 1 | 3 | 20 | S.E. " |
| " 3 " ... | 34 36 | 135 27 | 1 | 10 | In Coffin's Bay. |
| Reevesby (l) ... | 34 30 | 136 17 | 10 | 915 | In Sir Joseph Banks' Group. |
| Reedy (c) ... | 35 33 | 139 1 | 2 | 387 | Within mouth of River Murray. |
| Rocky No. 1 (c) ... | 34 15 | 135 18 | 3 | 40 | North of Coffin's Bay rocky islet, 17 ft. high. |
| " 2 " ... | 34 50 | 134 44 | 28 | 20 | S.W. Eyre's Peninsula, granite islet, 17 ft. high. |
| Roxby (l) ... | 34 35 | 136 20 | 13 | 200 | In Sir Joseph Banks' Group, highest part 74 ft. |
| Seal (c) ... | 35 34 | 138 33 | 2 | 3 | In Encounter Bay, rocky islet. |
| Sibsey (l) ... | 34 33 | 136 11 | 10 | 50 | In Sir Joseph Banks' Group, highest part 80 ft. |
| Sinclair (c) ... | 32 9 | 133 | 24 | 6 | In the Great Bight, rocky, highest part 53 ft. |
| Sir Joseph Banks Group | ... | ... | ... | ... | Comprises Spilsby, Reevesby, Stickney, Roxby, Partney, Winceby, Tumby, Hareby, Milne, Langton, Kirkby, Sibsey, Lusby, Boucaut, Duffield, Blyth, English, Marum, and Dangerous Reef, all in Spencer's Gulf. |
| Smooth (c) ... | 32 29 | 133 21 | 21 | 30 | One of St. Francis' Group, steep, round, and smooth, 115 ft. high. |
| Smith (c) ... | 34 58 | 136 2 | 2 | 90 | Near Port Lincoln, highest part 73 ft., slightly undulating with coarse herbage. |
| Spilsby (l) ... | 34 39 | 136 21 | 17 | 1,050 | In Sir Joseph Banks' group, low cliffs, sandy beaches, fresh water, wooded, 163 ft. highest. |
| St. Peters (l) ... | 32 17 | 133 36 | 3 | 8,200 | In Nuyt's Archipelago, part hilly, part sand bank, granite rock, fresh water, 144 ft. highest. |
| St. Francis Islands | ... | ... | ... | ... | S.W. Group of Nuyt's Archipelago, comprising St. Francis, Masillon, Fenelon, Egg, Dog, West No. 1, Harts, Smooth and Seal Islands. |
| St. Francis (l) ... | 32 30 | 133 20 | 22 | 2,000 | Largest of St. Francis' Group, in Nuyt's Archipelago, steep cliffs, highest part 264 ft. |
| Stickney (l) ... | 34 40 | 136 17 | 15 | 200 | In Sir Joseph Banks' Group, 100 ft. high, slightly undulating, with coarse herbage. |
| Tauwicheerie (c) ... | 35 34 | 139 | 1 | 356 | Near mouth of River Murray, swampy. |
| Taylor's (l) ... | 34 52 | 136 1 | 2 | 600 | Near Port Lincoln, fair pasture, rocky outline, highest part 227 feet. |
| Thistle (l) ... | 35 | 136 10 | 6 | 9,700 | At entrance to Spencer's Gulf, white and brown cliffs, fair pasture, highest part 772 feet. |
| Topgallant (c) ... | 33 43 | 134 38 | 15 | 50 | Small high islet, and 3 rocks in Investigator's Group, cliff 250 ft., rounded summit 330 ft. |
| Torrens (c) ... | 34 47 | 138 32 | 3 | 1,900 | In N. arm of Port Adelaide River, Quarantine Station, parts sandy and swampy, fair pasture |
| Troubridge (c) ... | 35 7 | 137 50 | 4 | 5 | In Gulf St. Vincent, Low Island, 15 ft. high, shoal and reef, lighthouse. |
| Tumby (l) ... | 34 24 | 136 9 | 1 | 75 | In Sir Joseph Banks' Group, cliffs 37 ft. high. |
| Waldegrave (l) ... | 33 36 | 134 49 | 2 | 800 | Two islands in Investigator's Group, steep cliff, flat top, grassy, 120 ft. high. |
| Ward Isles (c) ... | 33 45 | 134 19 | 33 | 50 | Two small islets in Investigator's Group, cliff, flat top, 162 ft. high. |
| Wauralte or Wardang (l) ... | 34 30 | 137 22 | 3 | 5,000 | In Spencer's Gulf, near Port Victoria, bold outline, sandy beaches, cliffs, 107 ft. high, pasture |
| West No. 1 (c) ... | 32 30 | 133 19 | 22 | 150 | In St. Francis' Group, in Nuyt's Archipelago, narrow bare island, highest part 25 ft. |
| " 2 " ... | 35 36 | 138 36 | 1 | 25 | Near Port Elliot, stony islet, scant herbage. |
| Wedge (f) ... | 35 9 | 136 23 | 24 | 2,340 | One of Gambier Islands, 3 sides cliffs, highest part S.E. end, 662 ft., good pasture. |
| Whidbey Isles | ... | ... | ... | ... | S.W. of Eyre's Peninsula, consisting of Perforated, Four Hummocks, Price, etc. |
| Williams (c) ... | 35 1 | 135 59 | 2 | 350 | S. of Cape Catastrophe, Eyre's Peninsula, rugged, nearly flat. |
| Winceby (l) ... | 34 23 | 136 17 | 10 | 100 | In Sir Joseph Banks' Group, slightly undulating with coarse herbage. |
| Wright's (c) ... | 35 35 | 138 37 | 3 | 5 | At Encounter Bay, stony islet, scant herbage. |

(c) Crown Lands. (f) Freshhold Lands. (l) Leased Lands.

6. Northern Territory of Australia.—(i.) *Introductory.* The accompanying information regarding the islands off the coast of the Northern Territory has been compiled from particulars supplied by the Secretary to the Department of External Affairs. A systematic survey of the whole of the islands has not yet been carried out, hence the number of lacunæ in the table.

(ii.) *The Goulburn and Other Islands.* In 1910, Mr. Nicholas Holtze, curator of the Botanic Gardens at Darwin, was instructed by the Government Resident of the Northern Territory to inspect the North and South Goulburn Islands, and as many other islands in the vicinity as time would permit. The notes herewith have been taken from Mr. Holtze's report.

South Goulburn Islands. Area 30 square miles. A fine sheet of fresh water was discovered in the north-western portion of the island. Separated from the sea by a sandy beach about 88 yards wide it follows the coast for $1\frac{1}{4}$ miles, and then turns at right angles into a paper bark swamp carrying water for another half-mile. This expanse is about four feet deep, and varies in width from 120 to 140 yards. The surrounding country is of a light sandy nature, but is eminently suitable for india rubber, sisal hemp, cocoanuts, peanuts, or cotton. Indeed, cotton of good quality of the sea island type was discovered growing wild. There are between 4000 and 5000 acres of this class of country. Other portions of the island would be very suitable for Para rubber and cocoanuts, while there is some fair pastoral country. Large quantities of chicken pearl-shell were noticed lying about the different natives' camps. The shell had been gathered for food from the inshore reefs, and its profusion would seem to indicate good pearling grounds in the deeper waters.

North Goulburn Island. Area 14 square miles. This island contains a large paper bark swamp surrounded with good loamy soil suitable for Para rubber, cocoanuts, or upland rice. Much of the remaining area could be used for growing sisal hemp, or for pastoral purposes. Fresh water can be obtained by sinking shallow wells.

Valentia Island. The higher ground on this island is composed of stony ironstone soil heavily timbered, chiefly with *Eucalyptus tetradonta*, and suitable for the cultivation of sisal hemp. The lower portions consist of light sandy soil well adapted for the growth of cocoanuts and sisal. Depressions along the coast contain well-grown trees of paper bark (*Melaleuca leucadendron*) and evidence the presence of water.

Templer's Island. Portions of this island could be utilised for the growth of sisal hemp and cocoanuts. Water could be obtained by shallow sinking.

Darch Island is about 3 miles long, with a width of $1\frac{1}{2}$ miles. There is some good timber, principally woolly-butt (*Eucalyptus miniata*), on the north-eastern point. The lower levels carry a heavy growth of grass. About 1000 acres would be suitable for upland rice, Ceará rubber, cocoanuts, and cotton, and the remainder of the island could be utilised for sisal hemp.

Croker Island. Area 126 square miles. Mr. Holtze reports that this island contains a large area of land very suitable for agricultural purposes. Surface water is plentiful. Numerous tracks of pigs, the progeny of those turned out years ago, were constantly met with. The southern point of a large bay on the north-west is well timbered with different species of eucalypts, and the soil appears fitted for the growth of upland rice, Ceará rubber, tobacco, cocoanuts, cotton, and sisal hemp. Inland, the soil is of a lighter texture, but well timbered and suitable for the growth of several tropical products. A large portion of the island consists of low, swampy country, which, when drained, would undoubtedly prove very fertile.

Melville Island. Area 2400 square miles. Here the first landing was effected at an unnamed point about 10 miles N.E. of Cape Keith. A jungle of large extent borders the long sandy beach, and the soil, though light in texture, would grow Ceará rubber, cocoanuts, cotton, or sisal hemp. A second landing was made at Cape Keith. The country in the vicinity consists of open forest, with light loamy soil of good character, well suited for the growth of tropical products. At Cape Gambier, where a third landing was made, the soil was found to be a light sandy loam, suitable for cocoanuts and sisal. Water can be obtained by shallow sinking in addition to that furnished by more or less permanent creeks. The buffalo was introduced on the island some years ago and there are now fairly large herds roaming in a wild state.

ISLANDS OFF THE COAST OF THE NORTHERN TERRITORY OF AUSTRALIA.

| Name of Island. | Area. Acres. | Nearest Point to Main- land. | Locality. |
|------------------------------------|-----------------|---------------------------------------|---|
| | | Miles. | |
| Alger | — | 4 | N.E. of Point Napier |
| Astel | — | 4 | One of English Co. Is., N.E. of Buckingham Bay |
| Bathurst | 503,040 | 39 | Adjoining Melville Is. |
| Barron | — | 1 | Near mouth of South Alligator River |
| Burford | — | 3 | Dundas Strait |
| Banyan | — | 3 | Castlereagh Bay, mouth of Goyder River |
| Bromby Isles | — | 5 | N.E. of Cape Wilberforce |
| Bickerton | — | 4 | Near Blue Mud Bay |
| Bustard | — | 19 | Near Groote Eylandt |
| Beatrice | — | 3 | Mouth of Limmen Bight River |
| Buchanan Islets | — | — | Near S. entrance of Apsley's Strait |
| Bosanquet | — | 4½ | One of English Co. Is., N.E. of Buckingham Bay |
| Clump | — | 3 | Near entrance to Fitzmaurice and Victoria Rivers |
| Croker (L) | 80,640 | 2 | Bowen Strait |
| Cowlard | — | 5½ | Mount Norris Bay |
| Copeland | — | 1½ | " " |
| Crocodile | — | — | Castlereagh Bay |
| Connexion | — | 20 | Near Groote Eylandt, Gulf of Carpentaria |
| Chasm | — | 27 | " " |
| Cunningham Isles | — | 16 | N.E. of Point Napier |
| Cotton | — | 2 | " Buckingham Bay |
| Craggy Isles | — | 11 | Sir Edward Pellew Group. Nr. mouth of McArthur River, Gulf of Carpentaria |
| Centre | — | 6 | Sir Edward Pellew Group. Nr. mouth of McArthur River, Gulf of Carpentaria |
| Drysdale | — | 11 | Brown Strait |
| Driftwood | — | 4 | Entrance to Victoria River |
| Darch | — | 11 | East of Croker Is. |
| Entrance | — | — | Mouth of Victoria River |
| Elcho | — | 4 | Cadell Strait |
| Edward | — | 1½ | Near Limmen Bight River |
| Endalgout | — | — | Sir George Hope Is., Van Diemen Gulf |
| Field | — | 2½ | Near mouth of Alligator River |
| Grose (L) | — | 4 | " Bynoe Harbour |
| Grant | — | 11 | East of Croker Is. |
| Goulburn Nth. Sth. (L) | 8,960 | 10 | Macquarie Strait |
| Groote Eylandt | 19,200 | 2 | Gulf of Carpentaria |
| Greenhill | 608,000 | 25 | Sir George Hope Is., Van Diemen Gulf |
| Haulround | — | 2 | Near mouth of Liverpool River, Boucaut Bay |
| Howard | — | 5 | Castlereagh Bay |
| Indian | — | 4 | Bynoe Harbour |
| Inglis | — | 2 | English Co. Is., N.E. of Buckingham Bay |
| Karslake | — | 1 | N. of Melville Is., between Shark and Snake Bays |
| Lawson | — | 18 | East of Croker Is. |
| Melville (L) | 1,536,000 | 16 | North of Port Darwin |
| Mallison | — | 1 | Arnheim Bay |
| Melville | — | 3 | Melville " |
| Morgan | — | 7 | Blue Mud " |
| Maria (L) | 8,320 | 10 | North of Limmen Bight River, Gulf of Carpentaria |
| Mogogout | — | 1½ | Sir George Hope Is., Van Diemen Gulf |
| Mayday | — | 8 | " " |
| McCleure | — | 18 | East of Croker Is. |
| North Point | — | 30 | North of Groote Eylandt, Gulf of Carpentaria |
| North East Isles | — | 40 | " " |
| New Year | — | 26 | North-east of Croker Is. |
| Nicols | — | 11 | Blue Mud Bay |
| North | — | 17 | Sir Edward Pellew Group, Gulf of Carpentaria |
| Oxley | — | 24 | East of Croker Is. |
| Perons Islands (L) | 8,320 | — | Mouth of Daly River |
| Pobassoo | — | 2 | English Co. Is., N.E. of Buckingham Bay |
| Quoin | — | 1½ | Entrance to Victoria River. Flooded at high tide |
| Quail (L) | — | 8 | Near Bynoe Harbour |
| Round Hill | — | 1 | " Blue Mud Bay |
| South West | — | 3 | Sir Edward Pellew Group. Nr. mouth McArthur R. |
| Sims | — | 2 | West of South Goulburn Is. |
| Templer | — | 9 | Mount Norris Bay |
| Truant | — | 20 | North-east of Cape Wilberforce |
| Vanderlin | 64,000 | 9 | Sir Edward Pellew Group. Gulf of Carpentaria |
| Valentia | — | 1½ | Mount Norris Bay |
| Woodah | — | 4 | Blue Mud Bay |
| Winchelsea | — | 25 | North of Groote Eylandt |
| Wessel Islands | — | 22 | North-east of Point Napier |
| West | — | 5 | Sir Edward Pellew Group, Gulf of Carpentaria |
| Wigram | — | 5 | English Co. Is., north of Cape Wilberforce |
| Sir Edward Pellew Group | — | — | Gulf of Carpentaria |
| Sir George Hope Islands | — | — | Van Diemen Gulf |
| English Company Islands | — | — | North-east of Buckingham Bay |
| Vernon (S), N.W., S.W. & E. | — | — | Clarence Strait, between mainland and Melville Is. |

(L) Leased

7. **Western Australia.**—(i.) *Introductory.* The information given herewith regarding the islands off the coast of Western Australia has been prepared from returns furnished by the Department of Lands and Survey of that State, and from notes dealing principally with geology and physiography furnished by Mr. H. P. Woodward, Assistant Government Geologist.

(ii.) *General.* In view of the fact that a complete survey has not yet been made, it is impossible to give a detailed description of the whole of the islands. They have therefore been divided into groups commencing from the north, and the salient features of each group are described below.

(iii.) *The Various Groups.* (a) In the first group are included the islands off the coast of the Kimberley division, between Cape Londonderry on the east to Collier Bay on the west. These islands consist of severed portions of the mainland tableland, and are composed of horizontally bedded shales and quartzites, presumably of Lower Carboniferous age. They rise abruptly from the sea to a height of 100 feet or more, and in many cases it is difficult, if not impossible, to effect a landing on them. Some of them are of considerable extent, as the list shews, but so far they have not been put to any practical use, while they do not promise to be of any value in the future except for pastoral purposes.

(b) *The Buccaneer Archipelago.* This group consists of a number of rough islands composed of crystalline rocks. Little is known about them, and with the exception of the magnificent iron lodes on Koolan Island they have not yet yielded anything of commercial value.

(c) *Lacepede Islands.* This group of islands, surrounded by shoals, is, as the list shews, situated in lat. 17.47 and long. 122.10 at about 17 miles from the mainland. They were at one time leased to a company which proposed to work the phosphate deposits found thereon, but, owing to the limited extent of the deposits, the project was abandoned.

(d) *The Dampier Archipelago.* This group consists of a number of large rock-bound islands lying off the N.W. coast, between long. 115° and 116° and lat. 20° to 21°. They are composed of andesites and vesicular lavas belonging to the older volcanic series. Nothing of any commercial value has, up to the present, been found in this group, but some of the larger islands are used as sheep runs. Depuch, which is an island of similar type, lies about 50 miles to the eastward of the group.

(e) *Monte Bello Islands.* The largest island of this group is Barrow Island, upon which, some years ago, a turtle fishery and preserving works were in operation, but the works have been abandoned.

(f) *Shark's Bay Group.* In this group are found the three largest islands on the coast, viz., Dirk Hartog, Bernier, and Dorre. They are composed of tertiary limestones. The first is used as a sheep station, while on the two latter are situated the Aboriginal Lock Hospitals maintained by the Government.

(g) *Houtman's Abrolhos.* This is a group of low limestone islands between 40 and 50 miles from the coast. They contain extensive deposits of phosphorised limestone, which, in consequence of the large number of sea-fowl nesting there, are slightly impregnated with ammonia, and hence are largely used as fertilisers. Owing to their position the islands were a constant menace to the old Dutch navigators, who, after rounding the Cape, made for the coast in their vicinity.

(h) *Rottneest, Garden, Carnac Islands.* These are recent limestone islands near Fremantle. Rottneest is used as a native penal settlement, and until recently salt was manufactured there by evaporation of sea water. The three islands are now being converted into health resorts.

(i) *Islands near Albany.* In this group are a number of rugged granite islands of which Breaksea is one of the largest. The islands are unproductive, and the pasturage is too scanty to maintain sheep.

(j) *Recherche Group.* This group consists of a number of small, low, granite islands on the south coast between Esperance and Israelite Bay. They contain limited deposits of phosphate of lime. On Middle Island, about the largest of the group, salt works have been established at some brine lakes.

ISLANDS OFF THE COAST OF WESTERN AUSTRALIA.

| Name. | Geographical Position. | | Approx. distance from Mainland | Area in acres (approximate.) | Remarks. |
|---------------------|------------------------|----------|--------------------------------|------------------------------|--------------------------|
| | Lat. S. | Long. E. | | | |
| La Crosse ... | 14 45 | 128 18 | 5 $\frac{1}{2}$ Mls. | 2,070 | |
| Adolphus ... | 15 06 | 128 09 | 14 $\frac{1}{2}$ | 18,000 | |
| Reveley ... | 14 22 | 127 45 | 1 | 720 | |
| Barnes ... | 15 10 | 128 10 | 1 | 360 | East arm, Cambridge Gulf |
| Fairfax ... | 15 10 | 128 07 | 1 | 700 | West " " " |
| Rocky ... | 14 02 | 127 30 | 2 | 90 | |
| Lesueur ... | 13 48 | 127 14 | 6 | 1,000 | |
| Stewart ... | 13 43 | 126 55 | 14 | 90 | |
| Graham Moore ... | 13 52 | 126 35 | 24 | 8,460 | Total area, 3 islands |
| Mary ... | 13 57 | 126 25 | 12 | 1,100 | |
| Long ... | 13 56 | 126 18 | 4 | 2,000 | |
| Jar ... | 14 09 | 126 15 | 1 | 800 | |
| Eclipse ... | 13 56 | 126 15 | 4 | 2,900 | |
| Jones ... | 13 46 | 126 21 | 15 | 2,000 | |
| Red ... | 13 53 | 126 07 | 43 | 90 | |
| Troughton ... | 13 45 | 126 08 | 11 | 400 | |
| Hecla ... | 13 57 | 126 00 | 1 | 100 | |
| Osborne ... | 14 17 | 126 00 | 1 | 3,500 | |
| Fenelon ... | 14 07 | 125 41 | 8 | 1,080 | |
| Institute ... | 14 09 | 125 45 | 10 | 650 | |
| Bird ... | 14 05 | 125 45 | 13 | 80 | |
| Pascal ... | 14 04 | 125 38 | 12 | 100 | |
| Randal ... | 14 09 | 125 34 | 6 | 50 | |
| Condillac ... | 14 06 | 125 33 | 10 | 150 | |
| Corneille ... | 14 10 | 125 42 | 5 | 680 | |
| Descartes ... | 14 09 | 125 39 | 34 | 800 | |
| Cassini ... | 13 57 | 125 33 | 23 | 1,450 | |
| Kater ... | 14 30 | 125 36 | 1 | 6,200 | |
| Vallaston ... | 14 32 | 125 30 | 1 | 6,200 | |
| Parry ... | 14 17 | 125 43 | 4 | 200 | |
| Bandin ... | 14 07 | 125 35 | 7 | 150 | |
| Cleghorn ... | 14 24 | 125 26 | 10 | 130 | |
| Tancred ... | 14 22 | 125 26 | 12 | 200 | |
| Bishop ... | 14 26 | 125 22 | 74 | 60 | |
| Branch ... | 14 27 | 125 20 | 7 | 50 | |
| Hawick ... | 14 21 | 125 24 | 124 | 50 | |
| Capstan ... | 14 33 | 125 14 | 4 | 270 | |
| Walker ... | 14 20 | 125 21 | 15 | 220 | |
| Fruithoe ... | 14 26 | 125 18 | 83 | 1,800 | |
| East Montalivet ... | 14 18 | 125 20 | 154 | 1,440 | |
| West " " | 14 19 | 125 16 | 174 | 450 | |
| Biggee ... | 14 32 | 125 14 | 1 | 50,000 | |
| Championnet ... | 14 30 | 125 06 | 11 | 50 | |
| Maret ... | 14 26 | 125 00 | 23 | 1,650 | Total area, 2 islands |
| Berthier ... | 14 30 | 125 00 | 19 | 1,080 | |
| Albert ... | 14 31 | 124 57 | 20 | 150 | " 3 " |
| Queen ... | 14 34 | 125 05 | 10 | 180 | |
| Jussieu ... | 14 37 | 125 00 | 12 | 400 | |
| Lamarck ... | 14 42 | 125 02 | 7 | 2,430 | |
| Anderdon ... | 14 56 | 125 11 | 12 | 800 | |
| Bat ... | 15 05 | 124 57 | 14 | 150 | |
| Coronation ... | 14 57 | 124 56 | 32 | 19,350 | |
| Buffron ... | 14 54 | 124 41 | 20 | 1,980 | |
| Colbert ... | 14 51 | 124 40 | 234 | 990 | |
| Kerandren ... | 14 56 | 124 37 | 204 | 800 | Total area, 3 islands |
| De Freycinet ... | 14 59 | 124 32 | 22 | 830 | |
| Brown ... | 15 07 | 124 30 | 164 | 100 | |
| Rocky ... | 15 06 | 124 32 | 15 | 150 | " 3 " |
| Jackson ... | 15 08 | 124 37 | 62 | 300 | " 6 " |
| Prowse ... | 14 01 | 123 37 | 275 | 200 | |
| Entrance ... | 15 14 | 124 39 | 5 | 1,440 | |
| Hummock ... | 15 16 | 124 36 | 34 | 180 | |
| Greville ... | 15 15 | 124 53 | 1 | 1,980 | |
| St. Andrews ... | 15 23 | 125 01 | 4 | 3,200 | |
| St. Patricks ... | 15 24 | 124 59 | 4 | 800 | |
| Augustus ... | 15 22 | 124 32 | 4 | 60,000 | |
| Brecknock ... | 15 27 | 124 35 | 4 | 510 | |
| Green ... | 15 29 | 124 34 | 24 | 180 | |
| Sheep ... | 15 29 | 124 35 | 12 | 120 | |
| New ... | 15 28 | 124 25 | 8 | 600 | Total area, 6 islands |
| Byam Martin ... | 15 21 | 124 25 | 15 | 11,880 | |
| Heywood ... | 15 21 | 124 21 | 15 | 4,000 | |
| Vulcan ... | 15 13 | 124 26 | 17 | 1,800 | " 4 " |
| Slate ... | 15 33 | 124 25 | 4 | 150 | |
| Highcliffe ... | 15 56 | 124 22 | 10 | 150 | |

ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

| Name. | Geographical Position. | | Approx. distance from Mainland. | Area in acres (approximate.) | Remarks. |
|--------------|------------------------|----------|---------------------------------|------------------------------|--|
| | Lat. S. | Long. E. | | | |
| Lizard | 15 57 | 124 26 | 4 | 100 | |
| Steep | 16 04 | 124 28 | 4 | 200 | |
| Champagny | 15 17 | 124 17 | 18 | 2,200 | Group, area of largest only |
| Expedition | 15 31 | 123 47 | 40 | 12,000 | |
| Adele | 15 31 | 123 13 | 50 | 800 | |
| Cockells | 15 47 | 124 03 | 26 | 800 | |
| Montgomery | 15 56 | 124 09 | 19 | 6,930 | |
| MacLeay | 15 59 | 123 39 | 8 | 810 | Group, area of largest only |
| Cockatoo | 16 05 | 123 35 | 3 | 1,700 | |
| Bathurst | 16 01 | 123 31 | 7½ | 1,260 | " " " |
| Cleft | 16 02 | 123 20 | 17 | 120 | |
| Caffarelli | 16 02 | 123 18 | 19 | 1,100 | |
| Hidden | 16 14 | 123 28 | 4 | 800 | |
| Tiderip | 16 17 | 123 17 | 15 | 1,100 | Total area, 4 islands |
| High | 16 21 | 123 22 | 10 | 1,000 | |
| Twin | 16 16 | 123 04 | 6½ | 100 | " 2 " |
| Roe | 16 21 | 123 12 | 10 | 650 | " 2 " |
| Sunday | 16 23 | 123 11 | 10 | 3,600 | Group, area of largest only |
| Tree | 16 22 | 123 18 | 16 | 250 | |
| Mermaid | 16 25 | 123 20 | 10 | 800 | |
| Long | 16 33 | 123 21 | 6 | 3,300 | |
| Fairway | 16 34 | 123 18 | 10 | 100 | |
| Helpman | 16 43 | 123 37 | 2 | 180 | |
| Valentine | 17 05 | 123 19 | 2½ | 270 | |
| Mary (North) | 17 16 | 123 33 | 3 | 1,800 | |
| Mary (South) | 17 19 | 123 33 | 2½ | 1,800 | |
| Lacedpede | 17 47 | 122 10 | 17 | 1,800 | Total area, 3 islands |
| Solitary | 19 56 | 119 55 | 1 | 200 | |
| Bedout | 19 35 | 119 06 | 28 | 360 | Lighthouse in centre of island 66 ft. above high water. Occulting light every 8 secs., period of light 2 seconds |
| Turtle | 19 54 | 118 56 | 13 | 220 | |
| East | 20 33 | 117 53 | 1½ | 630 | |
| Forestier | 20 36 | 117 47 | 4 | 450 | |
| Depuch | 20 38 | 117 43 | 3 | 3,200 | Four stone cairns (white) marking leads and anchorage |
| Picard | 20 41 | 117 16 | 2½ | 50 | |
| Jarman | 20 39 | 117 14 | 2 | 100 | Lighthouse in centre of isl'd, tower 97 ft. above high water, fixed white light, visible 15 miles |
| Bezout | 20 33 | 117 11 | 3 | 150 | |
| Delambre | 20 25 | 117 05 | 11 | 800 | |
| Haily | 20 24 | 116 58 | 8 | 360 | |
| Legendre | 20 20 | 116 52 | 8 | 8,000 | |
| Gidley | 20 23 | 116 47 | 6 | 3,200 | |
| Dolphin | 20 25 | 116 51 | 3 | 1,000 | |
| Angel | 20 27 | 116 47 | 1½ | 3,000 | |
| Malus | 20 28 | 116 38 | 8 | 1,000 | |
| Lewis | 20 31 | 116 36 | 5 | 6,000 | |
| Enderby | 20 33 | 116 26 | 8½ | 13,400 | |
| Goodwyn | 20 33 | 116 26 | 13½ | 700 | |
| Rosemary | 20 26 | 116 30 | 12 | 4,300 | |
| Dixon | 20 37 | 117 04 | 1 | 2,750 | |
| Mangrove | 20 55 | 116 11 | 1 | 180 | |
| Sholl | 20 57 | 115 57 | 5 | 3,200 | |
| Beagle | 21 10 | 115 33 | 7 | 200 | |
| Mary Anne | 21 16 | 115 30 | 4½ | 200 | |
| Barrow | 20 47 | 115 26 | 34 | 50,000 | |
| Double | 20 49 | 115 24 | 33 | 450 | |
| Lowendal | 20 40 | 115 23 | 36 | 520 | |
| Hermite | 20 30 | 115 24 | 47½ | 10,000 | |
| Flag | 20 30 | 115 20 | 45 | 400 | |
| South East | 20 28 | 115 24 | 48 | 250 | Monte Bello Islands |
| Tremouille | 20 25 | 115 21 | 49 | 1,160 | |
| North West | 20 23 | 115 25 | 55 | 1,030 | |
| Rosily | 21 13 | 115 00 | 30 | 2,000 | |
| Thevenord | 21 27 | 115 00 | 14 | 1,170 | |
| Direction | 21 34 | 114 59 | 6½ | 50 | |
| Table | 21 37 | 114 45 | 9 | 100 | |
| Long | 21 37 | 114 42 | 8 | 1,450 | |
| North Murion | 21 36 | 114 22 | 22½ | 1,400 | |
| South | 21 38 | 114 17 | 23 | 2,300 | |
| Fraser | 22 42 | 113 33 | 2½ | 100 | |
| Whitmore | 24 51 | 113 38 | 1 | 200 | |
| Babbage | 24 52 | 113 39 | 1 | 1,250 | Shipping jetty 4612 ft. long with 17 ft. of water at 4 w. at outer end, lighthouse near jetty 101 ft. above h. w., fixed white light visible 13 mls. |

ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

| Name. | Geographical Position. | | Approx. distance from Mainland. | Area in acres (approximate.) | Remarks. |
|------------------|------------------------|----------|---------------------------------|------------------------------|---|
| | Lat. S. | Long. E. | | | |
| Faure ... | 25 52 | 113 52 | 7 $\frac{1}{2}$ | 11,500 | Cape Inscription, lighthouse 127 ft. above h.w., occulting light every 2 $\frac{1}{2}$ secs., period of light 5 secs., leading beacons for inner bar |
| Pelican ... | 25 52 | 113 59 | 12 $\frac{1}{2}$ | 100 | |
| Hutchison ... | 26 08 | 114 12 | 3 $\frac{1}{2}$ | 360 | |
| Koks ... | 24 45 | 113 11 | 30 | 70 | |
| Bernier ... | 24 50 | 113 12 | 30 | 16,000 | |
| Dorre ... | 25 10 | 113 07 | 36 | 14,000 | |
| Dirk Hartog ... | 25 50 | 113 00 | 1 $\frac{1}{2}$ | 153,000 | |
| Slope ... | 25 49 | 113 36 | 1 | 100 | |
| Lefebre ... | 25 57 | 113 44 | 3 | 100 | |
| Kangaroo ... | 26 03 | 113 43 | 4 | 60 | |
| North Kangaroo | 26 02 | 113 43 | 4 | 60 | |
| Head ... | 26 06 | 113 43 | 4 | 100 | |
| Unknown ... | 26 03 | 113 32 | 4 | 100 | |
| Charlie ... | 26 08 | 113 47 | 4 | 50 | |
| White ... | 26 11 | 113 59 | 7 $\frac{1}{2}$ | 50 | |
| Wilds ... | 26 12 | 113 50 | 1 | 100 | Total area, 5 islands |
| Mary Anne ... | 26 15 | 113 54 | 3 | 150 | |
| Baudin ... | 26 18 | 113 52 | 1 | 100 | |
| Salutation ... | 26 20 | 113 59 | 4 | 540 | |
| Three Bays ... | 26 21 | 113 52 | 1 | 100 | |
| Smiths ... | 26 22 | 113 57 | 1 $\frac{1}{2}$ | 6) | Total area, 2 islands |
| East Wallabi ... | 28 25 | 113 39 | 35 | 863 | Wallabi Group |
| West ... | 28 27 | 113 37 | 37 | 1,510 | |
| North Pigeon ... | 28 26 | 113 39 | 36 | 14 | |
| South ... | 28 26 | 113 40 | 36 $\frac{1}{2}$ | 5 | |
| Pelican ... | 28 26 | 113 36 | 38 | 2 | |
| Goss' Monument | 28 28 | 113 41 | 36 | 16 | |
| Rat ... | 28 42 | 113 44 | 47 | 171 | Easter Group |
| Second ... | 28 42 | 113 44 | 47 | 2 | |
| Third ... | 28 42 | 113 44 | 47 | 21 | |
| Beacon ... | 28 43 | 113 44 | 47 | 4 | |
| Wooded ... | 28 44 | 113 45 | 45 | 50 | |
| Gun ... | 28 53 | 113 52 | 40 | 46 | Part Houtman Abrolhos Islands |
| Eight ... | 28 54 | 113 52 | 40 | 2 $\frac{1}{2}$ | |
| Seven ... | 28 54 | 113 52 | 40 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | |
| Six ... | 28 55 | 113 52 | 40 | 2 $\frac{1}{2}$ | |
| Five ... | 28 55 | 113 53 | 39 $\frac{1}{2}$ | 5 | Part Pelsart Group |
| Four ... | 28 55 | 113 53 | 39 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | |
| Three ... | 28 54 | 113 53 | 39 $\frac{1}{2}$ | 4 | |
| Two ... | 28 54 | 113 53 | 39 | 1 | |
| One ... | 28 54 | 113 53 | 39 | 5 | |
| Nought ... | 28 54 | 113 54 | 38 | 5 | |
| Middle... | 28 55 | 113 55 | 37 | 87 | |
| Jubilee ... | 28 53 | 113 55 | 36 | 1 | |
| Ship Rock ... | 28 55 | 113 55 | 36 | 1 | |
| North ... | 28 17 | 113 33 | 39 | 800 | |
| Beagle ... | 29 49 | 113 51 | 5 | 50 | |
| Fisherman ... | 30 07 | 113 56 | 2 | 100 | |
| Cervantes ... | 30 30 | 114 01 | 4 | 50 | |
| Green ... | 30 42 | 114 05 | 1 | 50 | |
| Wedge ... | 30 49 | 114 09 | 4 | 50 | |
| Lancelin ... | 30 59 | 114 16 | 4 | 100 | |
| Edward ... | 31 01 | 114 16 | 4 | 100 | |
| Favourite ... | 30 18 | 114 58 | 2 $\frac{1}{2}$ | 30 | |
| Long ... | 30 19 | 114 58 | 1 | 50 | |
| Escape ... | 30 20 | 114 58 | 2 | 30 | |
| Little ... | 31 48 | 115 40 | 1 | 30 | |
| Triggs ... | 31 52 | 115 41 | 4 | 20 | |
| Rottneet ... | 32 00 | 115 30 | 12 | 5,700 | Jetty for excursion steamers, depth at outer end 8 ft. 6 in., lighthouse in centre of island 264 ft. above h.w., flashlight every 17 seconds, visible 23 mls., lighthouse at Bathurst Point 98 ft. above h.w., fixed white light visible 15 miles, signal station |
| Mewstone ... | 32 08 | 115 39 | 5 $\frac{1}{2}$ | 15 | Two beacons leading across Parnelia Bank |
| Carnac ... | 32 09 | 115 39 | 5 $\frac{1}{2}$ | 260 | |
| Garden ... | 32 12 | 115 39 | 6 | 2,338 | |
| Bird ... | 32 14 | 115 40 | 4 | 20 | |
| Seal ... | 32 14 | 115 40 | 4 | 20 | |
| Penguin ... | 32 15 | 115 40 | 4 | 50 | |
| Hamelin ... | 34 13 | 115 01 | 4 | 40 | |
| Seal ... | 34 22 | 115 09 | 1 | 10 | |
| St. Alouarn ... | 34 24 | 115 12 | 3 $\frac{1}{2}$ | 25 | |

ISLANDS OFF THE COAST OF WESTERN AUSTRALIA—Continued.

| Name. | Geographical Position. | | Approx. distance from Mainland. | Area in acres (approximate.) | Remarks. |
|---------------------|------------------------|----------|---------------------------------|------------------------------|---|
| | Lat. S. | Long. E. | | | |
| Flinders ... | 34 24 | 115 12 | 4½ | 20 | |
| Flat ... | 34 51 | 116 00 | 4½ | 20 | |
| Sandy ... | 34 52 | 116 03 | 2 | 50 | |
| Chatham ... | 35 02 | 116 31 | 1 | 250 | |
| Saddle ... | 35 04 | 116 44 | ½ | 50 | |
| Goose ... | 35 05 | 116 44 | 1½ | 6 | |
| Stanley ... | 35 05 | 117 10 | 1 | 50 | |
| Richards ... | 35 05 | 117 39 | 2 ch | 6 | |
| Migo ... | 35 05 | 117 39 | 2 ch | 10 | |
| Seagull ... | 35 05 | 117 42 | 2 | 15 | |
| Shelter ... | 35 03 | 117 43 | 2 ch | 25 | |
| Stony ... | 35 06 | 117 48 | 2½ | 10 | |
| Green ... | 35 07 | 117 52 | 1 | 20 | Total area, 2 islands |
| Eclipse ... | 35 11 | 117 54 | 4 | 250 | |
| Seal ... | 35 04 | 117 58 | 1½ | 10 | |
| Mistaken ... | 35 04 | 117 57 | 4 | 44 | |
| Breaksea ... | 35 04 | 118 03 | 3 | 249 | Lighthouse 390 ft. above h.w., fixed white light visible 24 miles, Lloyd's signal station |
| Michaelmas ... | 35 03 | 118 02 | 1½ | 204 | |
| Geak ... | 35 03 | 117 55 | 8 ch | 6 | |
| Inner ... | 35 00 | 118 10 | ½ | 25 | |
| Coffin ... | 35 00 | 118 13 | ½ | 76 | |
| Bald ... | 34 55 | 118 28 | 2 | 2,000 | |
| Whale ... | 34 35 | 118 47 | 1½ | 10 | |
| Doubtful ... | 34 22 | 119 45 | 1 | 250 | |
| Glasse ... | 34 25 | 119 25 | 1 | 6 | |
| Red ... | 33 52 | 121 20 | 4 | 150 | |
| Capps ... | 33 59 | 121 41 | 7½ | 100 | |
| Boxer ... | 34 00 | 121 41 | 8 | 260 | |
| Hector ... | 34 00 | 121 41 | 7 | 10 | West Group |
| Figure of Eight ... | 34 02 | 121 36 | 10 | 700 | |
| Canning ... | 33 55 | 121 46 | 1 | 40 | |
| Observatory ... | 33 55 | 121 47 | 1 | 250 | |
| Charley ... | 33 55 | 121 53 | 3 | 250 | |
| Button ... | 33 53 | 121 54 | 2 | 20 | |
| Rabbit ... | 33 54 | 121 54 | 3 | 40 | |
| Gull ... | 33 55 | 121 55 | 3½ | 170 | |
| Black ... | 33 54 | 122 00 | 6 | 200 | |
| Magistrate ... | 33 55 | 121 59 | 6½ | 20 | |
| Woody ... | 33 57 | 122 00 | 5½ | 520 | |
| Thomas ... | 33 58 | 121 59 | 6½ | 220 | |
| Gunton ... | 33 59 | 122 00 | 6 | 220 | |
| Sandy Hook ... | 34 02 | 122 00 | 6 | 590 | |
| Hendy ... | 34 03 | 121 53 | 12½ | 30 | |
| Long ... | 34 03 | 121 58 | 9 | 340 | |
| Remark ... | 34 04 | 121 59 | 8 | 250 | |
| Goose ... | 34 04 | 122 00 | 7 | 190 | |
| Corbett ... | 34 08 | 122 00 | 10 | 230 | |
| Wilson ... | 34 08 | 121 59 | 10 | 200 | |
| Davy ... | 34 09 | 121 56 | 13 | 60 | |
| Howe ... | 34 09 | 121 01 | 11 | 170 | |
| Hood ... | 34 10 | 121 03 | 10 | 190 | |
| Round ... | 34 12 | 122 06 | 13 | 120 | |
| Lion ... | 33 52 | 122 01 | 2 | 40 | |
| Cliff ... | 34 01 | 122 05 | 1 | 30 | |
| Cloud ... | 34 03 | 122 05 | 2½ | 40 | |
| Pasco ... | 34 04 | 122 06 | 3½ | 80 | |
| Hastings ... | 34 05 | 122 07 | 6 | 60 | |
| Ram ... | 34 02 | 122 09 | 2 | 350 | |
| Hope ... | 34 06 | 122 10 | 5 | 85 | |
| Mondrain ... | 34 09 | 122 15 | 10 | 2,930 | |
| Station ... | 33 57 | 122 33 | 2 | 450 | |
| Mart ... | 34 01 | 122 35 | 4 | 1,100 | Total area 6 islands |
| High ... | 33 55 | 122 35 | ½ | 30 | |
| Draper ... | 34 13 | 122 00 | 19 | 450 | |
| Goose ... | 34 05 | 123 12 | 4 | 60 | |
| Middle ... | 34 07 | 123 12 | 6 | 3,000 | |
| Douglas ... | 34 09 | 123 11 | 9½ | 80 | Total area, 2 islands |
| Bellringer ... | 33 54 | 123 40 | ½ | 60 | " 2 " |

NOTE.—The whole of these islands are Crown Lands with the exception of the greater portion of Garden Island. Houtman Abrolhos, West Island of Lacepede Group, and La Crosse Islands are, however, at present under lease for the collection of guano.

8. *Tasmania*.—(i.) *Introductory*. The information regarding the islands of Tasmania in the tabular statement herewith is furnished on the authority of the State Crown Lands Office. Additional particulars concerning the more important islands have been extracted from the Crown Lands Guide and embodied in the paragraphs below.

(ii.) *The Principal Islands*. (a) *Furneaux Group*. This group, the largest islands in which are Flinders, containing about 513,000 acres, Cape Barren 110,000 acres, and Clarke Island 20,000 acres, lies in Bass Strait off the north-eastern corner of the mainland from which it is separated by Banks Strait, the latter being about 15 miles across in its narrowest part. Situated almost in a direct line between Cape Portland and Wilson's Promontory it forms one of the remaining links in the mountain system, which, according to some geologists, at one time connected Tasmania with the Continent of Australia. The rock formation of the group is almost exclusively granitic and tertiary, with, in places, metamorphic schists and sandstones. Tin has been found in small quantities on each of the islands in the group. Clarke Island is used for pastoral purposes, for which it is well adapted. As the list shews, a large proportion of Flinders has been taken up by selectors, and there are some small patches of good soil still available. Cape Barren Island is broken and rugged, and the soil is of poor quality. Some 4000 acres in the western end have been set apart as a reserve for the use of half-caste inhabitants. Some of the smaller islands such as Great Dog, Green, Preservation, and Kangaroo are very fertile. The sooty petrel, or mutton bird, resorts in great numbers to these islands, and their capture forms a profitable industry to the islanders. During the month of March the young birds are taken at night in hundreds from their rookeries. Large quantities of oil are obtained from the birds, which are then pickled for the outside market. Wild ducks are plentiful on the islands, and swans and Cape Barren geese are also found.

(b) *King Island*. This island is situated in Bass Strait, midway between the northern extremity of the mainland and Victoria. From north to south it is about 30 miles long, with an average width of 10 miles, and contains about 272,000 acres. The surface is undulating with a few hills here and there, of which the highest, known as Mount Stanley, is situated towards the southern end, and reaches an altitude of 700 feet.

The west coast of the island has so far proved the most attractive to settlers, and consists of open country with patches of ti-tree and comparatively young timber of the *E. globulus* variety. There is, however, evidence that large trees were plentiful at an earlier period, and that they have been destroyed by bush fires. On the sandy rises near the coast-line, mangrove, boobyalla, and ti-tree form the characteristic vegetation. Inland the flat open country is clothed with a thick growth of needle-rush, with tussocks of white native grass, and patches of low ti-tree scrub and bracken fern, and is moderately watered. There is some excellent land at the southern end of the island in the vicinity of Surprise Bay. Occasional outcrops of limestone are met with in this district. From Surprise Bay to Fitzmaurice Bay the unselected land is of poor quality, and is covered with stunted bracken, heath and ti-tree. At Fitzmaurice Bay there is some fine dairying country, and land of equal class extends almost along to the Ettrick River and Currie Harbour. Eight miles northward from Currie Harbour is found the settlement known as Porky Lagoon, where there is some fine well-watered country. Near Yellow Rock is the fine estate called Yambacoona, which contains about 7000 acres, including a fair amount under cultivation. From the south-east end of the island there is a fairly large extent of forest country extending northward beyond the Fraser River. The timber consists of blue and swamp gum, with some patches of blackwood. From sand and limestone the country changes along the east coast to granite formation for some miles.

Generally speaking the soil on the island is of a light, sandy nature, but it has been proved to form excellent pasturage land, while potatoes, turnips, mangolds, and all kinds of vegetables thrive to perfection.

(c) *Maria Island*. This island, so named by Tasman in 1642, is a prominent feature of the eastern coast, with which its principal place of communication is Triabunna,

distant 9 miles by boat. Along its north-eastern shore the island is rugged and precipitous, reaching its highest point in Mount Maria, 2329 feet in altitude. In the early days, Maria Island was a penal settlement, and the best land is found in the vicinity of the site of that settlement. Although the soil is suitable for cultivation, the great bulk of the available area is used for pastoral purposes.

The peaks of Mount Maria are composed of grey granite, while in the north-east corner of the island there are immense masses of fossiliferous limestone and on the west coast diabasic greenstone or trap, and sandstone. Tin, gold, and silver have been discovered in small quantities.

(d) *Bruni Island* (North and South) is separated from the mainland by D'Entrecasteaux Channel, and extends northerly from Bruni Head, off Southport, to the estuary of the Derwent, which is distant 13 miles from Hobart. The island is of very irregular shape, the two portions being joined by a narrow neck or isthmus at Adventure Bay. Of the total area, 90,000 acres, there still remains about 40,000 acres unalienated. The island possesses a very agreeable climate, and the soil has been proved to be very suitable for fruit-growing. Anthracite coal has been found on both divisions, but so far has not been turned to profitable account. Excellent fishing may be obtained at various spots. Beautiful land and seascapes are afforded at several points, while at Adventure Bay, with its sandy beach extending for several miles, the conchologist may reap a rich harvest.

(e) *Schouten Island*. This island lies to the south of Freycinet Peninsula, off Little Swanport. Its 8500 acres of more or less stony soil, while unsuitable for cultivation, form nevertheless excellent pasturage for sheep.

(f) *The Macquarie Group*. This group of islands, discovered in 1811 by seal-fishers from New South Wales, is situated in the South Pacific Ocean in lat. 54° 35' S., long. 159° east, and is distant about 600 miles in a south-westerly direction from New Zealand. Included in the group are Macquarie Island, 18 miles long by 5 miles broad; Bishop and Clerk, 30 miles to the south; and Judge and Clerk, 7 miles to the north of the main island. The surface is low-lying and destitute of timber. For many years the group was worked as a birding and sealing ground under the authority of the New Zealand Government in the belief that the islands came within the Dominion jurisdiction, but in recent years the licenses have been granted by Tasmania.

ISLANDS OFF THE COAST OF TASMANIA.

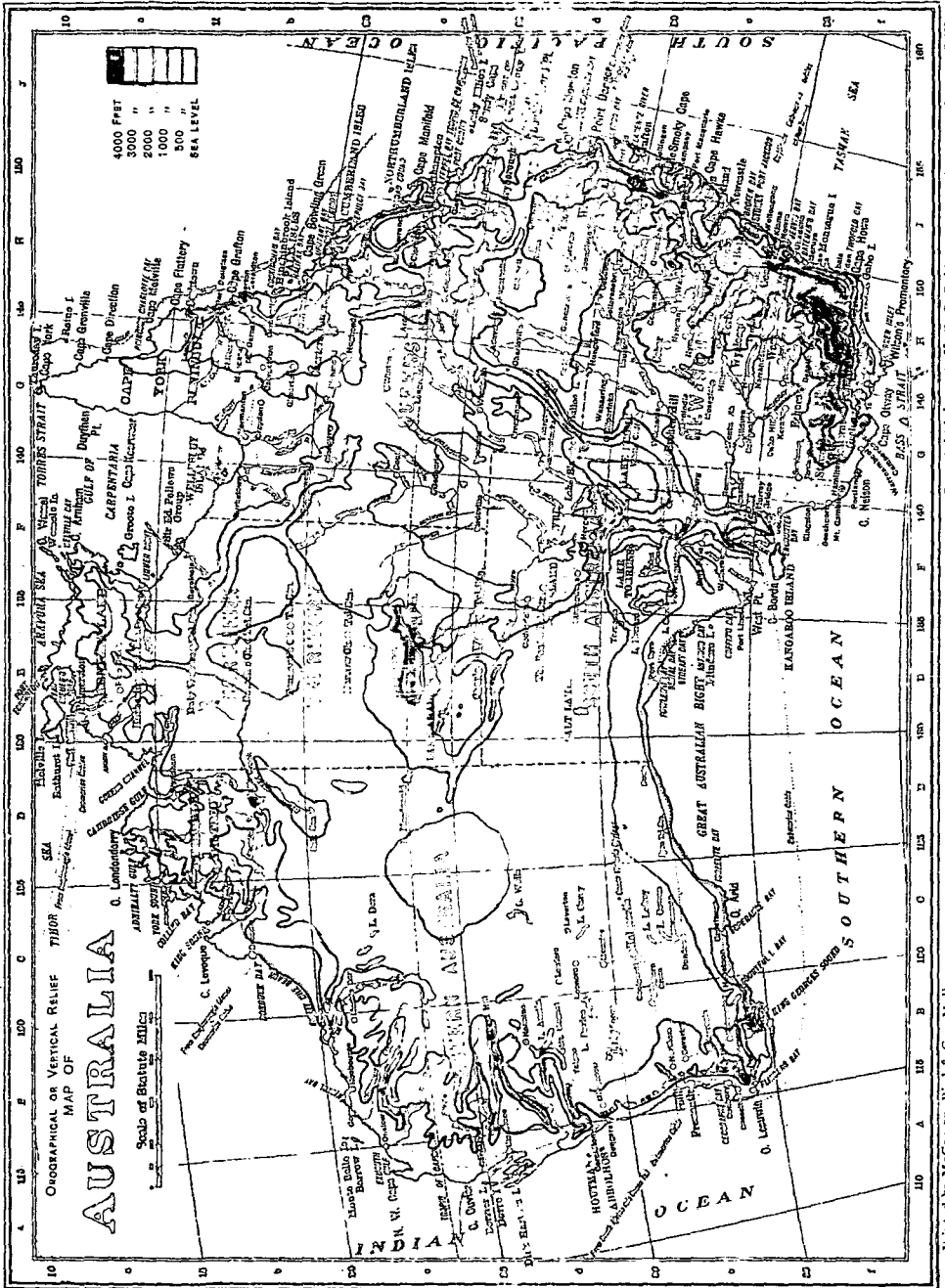
| Name of Island. | Geographical position or distance from mainland. | Area. | Area of alienated Land, June, 1911. | Area of Crown Land, June, 1911. | Remarks. |
|-----------------------------------|--|---------|-------------------------------------|---------------------------------|--|
| | Miles | Acres. | Acres. | Acres. | |
| North Western Group— | | | | | |
| King | 56 | 272,000 | 262,000 | 10,000 | Two lighthouses (Cape Wickham & Currie), wharfage accommodation at Currie Har. |
| Robin | 3 | 24,500 | 24,500 | — | |
| Three Hummock ... | 17 | 23,000 | — | 23,000 | |
| West Hunter or Barren ... | 3 | 21,000 | — | 21,000 | |
| Walker | 9 | 1,720 | 1,720 | — | |
| Other islands in this group are:— | | | | | |
| Albatross | — | — | — | 640 | Reserved as a sanctuary for birds |
| Petrel | — | — | — | 150 | |
| Stack | — | — | — | 75 | |
| Penguin | — | — | — | 100 | |
| Bird | — | — | — | 100 | |
| Steep | — | — | — | 75 | Reserved for Mutton bird hunting |
| Trefoil | — | 255 | 255 | — | |
| Harbour | — | — | — | 100 | |
| Murkay | — | — | — | 50 | |
| Perkins | — | — | — | 2,600 | |
| Kangaroo | — | — | — | 400 | |

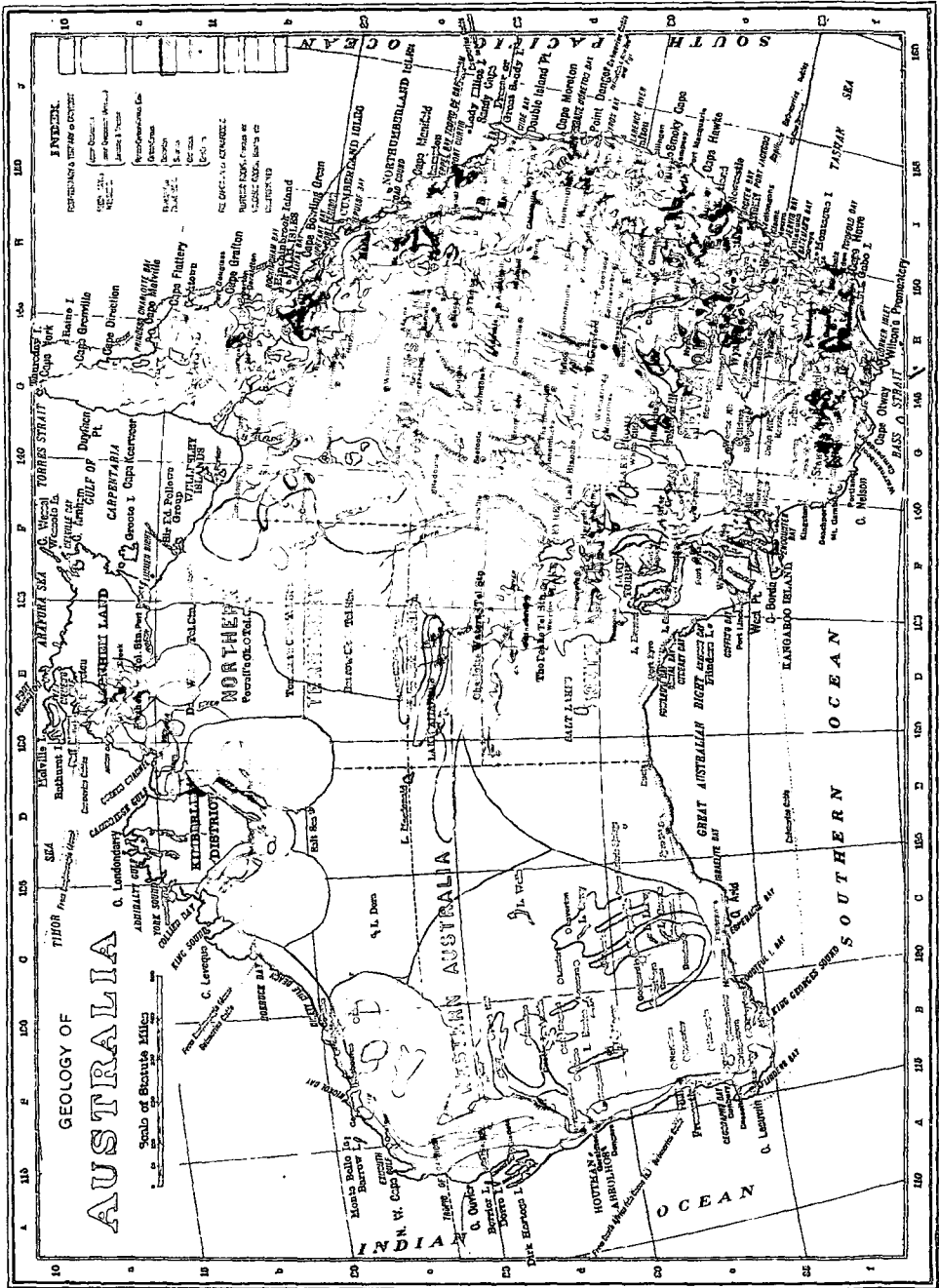
ISLANDS OFF THE COAST OF TASMANIA—Continued.

| Name of Island. | Geographical position or distance from mainland. | Area. | Area of Alienated Land, June, 1911. | Area of Crown Land, June, 1911. | Remarks. |
|-------------------|--|---------|-------------------------------------|---------------------------------|---|
| | Miles | Acres. | Acres. | Acres. | |
| Waterhouse ... | 2 | 420 | 320 | 100 | |
| Ninth ... | 7 | 75 | 40 | 35 | |
| Furneaux Group— | | | | | |
| Flinders ... | 34 | 513,000 | 400,000 | 113,000 | Wharfage accommodation at Settlement Point, White Mark and Ferguson's Jetty |
| Cape Barren ... | 21 | 110,000 | 112 | 109,888 | |
| Clarke ... | 15 | 20,000 | — | 20,000 | |
| North Sister ... | 77 | 1,000 | — | 1,000 | |
| South Sister ... | 74 | 1,500 | — | 1,500 | |
| Babel ... | 60 | 1,200 | 100 | 1,100 | Reserved for Mutton bird hunting |
| Cat ... | 60 | 75 | — | 75 | Reserved as a sanctuary for birds |
| Storehouse ... | 60 | 38 | — | 38 | |
| Vansittart ... | 37 | 1,500 | 500 | 1,000 | |
| Great Dog ... | 38 | 820 | — | 820 | |
| Little Dog ... | 38 | 250 | 200 | 50 | |
| Little Green ... | 39 | 230 | 60 | 170 | Reserved for Mutton bird hunting |
| Tin Kettle ... | 32 | 424 | — | 424 | |
| Gull ... | 31 | 150 | — | 150 | |
| Passage ... | 24 | 600 | — | 600 | |
| Penguin ... | 23 | 500 | — | 500 | Reserved for Mutton bird hunting |
| Rum ... | 19 | 30 | — | 30 | |
| Preservation ... | 19 | 450 | 50 | 400 | |
| Night ... | 19 | 25 | — | 25 | |
| Boxen ... | 26 | 30 | — | 30 | |
| Long ... | 27 | 740 | 40 | 700 | |
| Doughboy ... | 29 | 75 | — | 75 | |
| Woody ... | 32 | 393 | — | 393 | |
| Pelican ... | 35 | 10 | — | 10 | |
| Puncheon Head ... | 35 | 40 | 40 | — | |
| Badger ... | 31 | 2,100 | 100 | 2,000 | |
| Goose ... | 31 | 241 | — | 241 | Lighthouse |
| Mt. Chappell ... | 33 | 600 | 100 | 500 | |
| Kangaroo ... | 40 | 340 | 40 | 300 | |
| Green ... | 39 | 250 | 250 | — | |
| Isabella ... | 43 | 10 | — | 10 | |
| Chalky ... | 45 | 90 | — | 90 | |
| Prime Seal ... | 47 | 2,200 | — | 2,200 | |
| Low ... | 44 | 50 | — | 50 | |
| Rabbitt ... | 50 | 60 | — | 60 | |
| North Pascoe ... | 59 | 100 | — | 100 | |
| Middle Pascoe ... | 58 | 150 | — | 150 | |
| South Pascoe ... | 57 | 150 | — | 150 | |
| Sentinel ... | 64 | 25 | — | 25 | |
| Craggy ... | 75 | 10 | — | 10 | |
| Hogan Group ... | — | — | — | — | Long. 146° 59' E., lat. 39° 13' S. |
| Kent's Group ... | — | — | — | — | Ab't 32 m. N.W. of Flinders I. Lighthouse |
| Curtis ... | — | — | — | — | |
| Swan ... | 2 | 600 | — | 600 | Lighthouse |
| St. Helen's ... | 1 | 120 | — | 120 | |
| Schouten ... | $\frac{1}{2}$ | 8,500 | — | 8,500 | |
| Maria ... | $\frac{1}{4}$ | 24,000 | 6,500 | 17,500 | Two jetties—Settlement Pt. & Shoal Bay |
| Tasman ... | $\frac{1}{4}$ | 400 | — | 400 | Lighthouse |
| Wedge ... | $\frac{1}{2}$ | 100 | — | 100 | |
| Franklin ... | 1 | 420 | 420 | — | |
| Bruni ... | $1\frac{1}{2}$ | 90,000 | 52,000 | 38,000 | Six jetties, viz., Denne's Pt., Barnes' Bay, Mills' Reef, Daniel's Bay, Taylor's Bay, and Adventure Bay. Lighthouse |
| Maatsuyker ... | 3 & 8 | — | — | — | Lighthouse |
| Macquarie ... | — | — | — | — | Long. 159° 40' E., lat. 54° 35' S. |

§ 3. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.





§ 4. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

5. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appears in Year Book No. 4, pp. 82 and 83.

Barisal Guns. Reference may be made here to an interesting pamphlet published by Dr. J. Burton Cleland, in which the author sums up the available information regarding the peculiar explosive or booming noises heard at times in Australia as well as in other parts of the world. As far as inland Australia, at all events, is concerned, it seems clear that the explosions are of earth origin, and are probably due to the sudden sundering of immense rock masses, either as a result of climatic influences, or through folding movements in the earth's crust.

§ 6. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 82, shews the geographical distribution of the more important geological systems and formations.

§ 7. Climate and Meteorology of Australia.¹

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book 3, pp. 79, 80). In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a resumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Meteorological Bureau, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

¹ Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R.M.S.

The Bulletins of Climatology are as follows:—(a) No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. (b) No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the proposed Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern Australia, with 28 text illustrations.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. It is proposed to publish in an annual volume of meteorological statistics, complete rainfall and other climatological data.

3. General Description of Australia.—In the general description of Australia, page 45, it is pointed out that a considerable portion (0.530) of three States of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland, the Northern Territory and Western Australia, no less than 1,149,320¹ square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261² square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriansness and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

4. Meteorological Divisions.—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east

1. In the article "Australia" in the *Encyclopædia Britannica*, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

The population included within these boundaries on the 3rd April, 1911, was approximately as follows:—

| Division | I. | II. | III. | IV. | V. |
|------------|---------|---------|---------|-----------|-----------|
| Population | 282,000 | 429,000 | 607,000 | 1,540,000 | 1,597,000 |

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented herein-after, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

| Locality. | Height above Sea Level. | Latitude. | | Longitude. | | Locality. | Height above Sea Level. | Latitude. | | Longitude. | |
|---------------|----------------------------------|-----------|----|------------|----|-------------------|----------------------------------|-----------|----|------------|----|
| | | S. | E. | S. | E. | | | S. | E. | S. | E. |
| Perth ... | 197 | 31 | 57 | 115 | 51 | Port Darwin ... | 97 | 12 | 28 | 130 | 51 |
| Adelaide ... | 140 | 34 | 56 | 138 | 35 | Daly Waters ... | 700 | 16 | 16 | 133 | 23 |
| Brisbane ... | 137 | 27 | 28 | 153 | 2 | Alice Springs ... | 1926 | 23 | 38 | 133 | 37 |
| Sydney ... | 146 | 33 | 52 | 151 | 12 | Dubbo ... | 870 | 32 | 18 | 148 | 35 |
| Melbourne ... | 115 | 37 | 50 | 144 | 59 | Laverton ... | 1530 | 28 | 40 | 122 | 23 |
| Hobart ... | 160 | 42 | 53 | 147 | 20 | Coolgardie ... | 1402 | 30 | 57 | 121 | 10 |

5. *Temperatures.*—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Port Darwin, for example, the difference in the means for the hottest and

coldest months is only 8.6° , and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50° .

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth.* Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present Observatory was established. During the period 1897 to 1910, the mean annual shade temperature of Perth was 64° , about a degree higher than that for Sydney and Adelaide, nearly 6° higher than that for Melbourne, and 10° above that for Hobart, but, on the other hand, 5° below that for Brisbane. The average temperature for the month of January is 73.5° , and for July 54.9° .

The extreme maximum shade record of 107.9° was registered in December, 1904, and the lowest minimum shade temperature was 35.3° , in August, 1908.

(ii.) *Adelaide.* In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January is 74.2° , and February 74.0° , and that of July 51.5° . Records of the temperature having reached 100° exist for each of the six summer months from October to March, and of having exceeded 110° exist for each of those months with the exception of March and October. The highest record of shade temperature in Adelaide is 116.3° , registered in January, 1858, and the lowest 32.0° , a range of 84.3° . The freezing point has only once been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for fifty-four years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane.* In Brisbane the monthly mean shade temperature ranges from 77.2° in January to 58.0° in July, a difference of 19.2° . The extremes have varied from 108.9° in January to 36.1° in July, viz., through a range of 72.8° .

(iv.) *Sydney.* In Sydney the highest monthly mean is 71.6° , recorded in January, while the lowest, again in July, is 52.3° , giving a range of 19.3° .

The extremes of shade temperature recorded at Sydney over a period of half a century are 108.5° in January, 1896, and 35.9° in July, 1890, i.e., a range of 72.6° .

(v.) *Melbourne.* In Melbourne the January mean shade temperature averages 67.5° , and that of July 48.5° , the highest reading ever recorded being 111.2° in January, 1862, and the lowest 27.0° in July, 1869.

(vi.) *Hobart.* The mean temperature for the hottest month at Hobart is 62.1° in February, and that of the coldest 45.8° , in July, the highest reading ever recorded being 105.2° in December, 1897, and the lowest 27.7° in July, 1895, nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major

portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

In Tasmania also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii.) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 103) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

6. Relative Humidity.—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 103, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this season it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity at 9 a.m. is 63; the greatest monthly mean is 83, and is in June, and the lowest 45, in January.

(ii.) *Adelaide.* At Adelaide the mean annual humidity at 9 a.m. is only 56; the mean monthly humidity has been as low as 33 in January and December, and as high as 87 in July.

(iii.) *Brisbane.* In Brisbane the mean annual humidity at 9 a.m. is 68; the lowest monthly mean recorded is 47, and is in September, and the highest 85 in the months of March and May.

(iv.) *Sydney.* In Sydney the mean annual humidity at 9 a.m. is 73; the greatest monthly average, which occurred in May, 1891, was 90, while the lowest monthly mean, 54, occurred in the month of November, 1910.

(v.) *Melbourne.* The mean annual humidity derived from the 9 a.m. 3 p.m. and 9 p.m. observations in Melbourne is 71; the greatest monthly average 88, in June and July, 1858, and the lowest 49, in December, 1908.

(vi.) *Hobart.* Hobart's mean annual humidity at 9 a.m. is 71, the highest monthly mean 92, in June, and the lowest 51, in February and December.

From the above results, it is seen that, in respect of relative humidity, Sydney has the first place, while Hobart, Melbourne, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 103 shew the annual variations in humidity. It will be observed that the *relative* humidity is ordinarily but not invariably great when the temperature is low.

7. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance; since in its drier regions water has often to be conserved in "tanks"¹ and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketed tanks sunk into the ground, or in the case of Laverton (W.A.) from a jacketed vessel (8 inches in diameter) exposed on the surface.

The average total evaporation at Sydney is 37.42 inches; at Melbourne, 38.30 inches; at Adelaide, 54.44 inches; and at Perth, 66.01 inches, these results being based respectively upon 10, 38, 41, and 12 years' observations. For Brisbane the evaporation for the year 1910 was 48.61 inches.

In the interior of New South Wales the annual evaporation is as high as 84 inches; in Central Australia at Alice Springs the average for 20 years is 97.10 inches; at Coolgardie, Western Australia, the mean for twelve years is 86.60 inches, and at Laverton, in the same State, the yearly amount derived from the last 5 years is 146.79 inches, or over 12 feet.

(i.) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 104).

(ii.) *Loss by Evaporation.* In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anticyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 40° south latitude, breaks up into vast elliptically-shaped bodies

1. In Australia artificial storage ponds or reservoirs are called "tanks."

of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm eastern portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain, the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat, and loses its dryness for considerable periods after their visitations.

The distribution of rain by monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree, at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons, tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales.

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes in which the rains are universally good. Again, the condition of drought can hardly affect the whole of the continent at the same time. Nevertheless a more than ordinarily fortunate condition in one part of the continent ordinarily implies drought conditions in another, or *vice-versâ*. Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason it may happen occasionally that sheep may with advantage be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressure be the predominating influence, the country to the south of the Murrumbidgee River is benefiting at the expense of the remainder of the State. A good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the tablelands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and

anti-cyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator are also factors of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in the summer months, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Antarctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Mount Lyell the total for one year exceeded 140 inches, and even the average is 116.32 inches.

Anticyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent, and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 150 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 and 76.24 inches, or a range of 165.29 inches; Geraldton, 211.24 and 69.87 inches, or a range of 141.37 inches; Harvey Creek, 238.45 and 80.47 inches, or a range of 157.98 inches.

On three occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910 when 204.82 inches were registered. The record at this station covers a period of 18 years.

Harvey Creek in the shorter period of 14 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State show that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 107, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

| Average Annual Rainfall. | N.S.W. | Victoria. | Queensland. | South Aust. | Northern Territory. | Western Aust. | Tasmania. | Commonwealth. |
|--------------------------|-----------|-----------|-------------|-------------|---------------------|---------------|-----------|---------------|
| | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. | sqr. mls. |
| Under 10 inches | 44,997 | nil | 126,390 | 317,600 | 138,190 | 417,896 | nil | 1,045,073 |
| 10—15 " | 77,268 | 19,912 | 132,500 | 33,405 | 141,570 | 247,306 | nil | 651,961 |
| 15—20 " | 57,639 | 12,626 | 118,650 | 14,190 | 62,920 | 150,110 | nil | 416,135 |
| 20—30 " | 77,202 | 29,317 | 175,390 | 13,827 | 93,470 | 109,481 | 4,242 | 502,929 |
| 30—40 " | 30,700 | 14,029 | 67,310 | 984 | 40,690 | 37,498 | 7,397 | 198,608 |
| Over 40 " | 22,566 | 12,000 | 50,260 | 64 | 46,780 | 13,629 | 14,576 | 159,875 |
| Total area ... | 310,372 | 87,884 | 670,500 | 380,070 | 523,620 | 975,920 | 26,215 | 2,974,581 |

NOTE.—Western Australia and Queensland are subject to alteration.

Referring first to the southern capitals, it may be noted that the average at Melbourne from 67 years' records is 26.13 inches; the maximum 44.25, and minimum 15.61; the range therefore is 28.64 inches. At Adelaide the average determined from 71 years' totals is 21.15, the maximum 30.87, the minimum 13.43 and the range therefore 17.44 inches. At Hobart 23.38 inches is the average annual rainfall, 40.67 is the highest total for one year, 13.43 is the lowest; thus 27.24 inches is the extreme range. The average for Perth is 33.54 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total is 48.26 inches, its maximum 82.81 in 1860, and minimum 21.48 in 1849, thus the range is 61.33 inches. At Brisbane the disparities are greater still. There the average is 46.98 inches—a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 72.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Port Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 to 1910.

| Year. | PERTH. | | | ADELAIDE. | | | BRISBANE. | | | SYDNEY. | | | MELBOURNE. | | | HOBART. | | |
|--------|---------|--------------|------------------|-----------|--------------|------------------|-----------|--------------|------------------|---------|--------------|------------------|------------|--------------|------------------|---------|--------------|------------------|
| | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. | Amount. | No. of Days. | 10 Years' Means. |
| | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. | in. |
| 1840 | ... | ... | ... | 24.23 | 99 | ... | 29.32 | ... | ... | 58.52 | 150 | ... | 22.57 | ... | ... | ... | ... | ... |
| 1 | ... | ... | ... | 17.96 | 93 | ... | 49.31 | ... | ... | 76.31 | 142 | ... | 30.18 | ... | ... | 13.95 | ... | ... |
| 2 | ... | ... | ... | 20.32 | 122 | ... | 28.81 | ... | ... | 48.82 | 137 | ... | 31.16 | ... | ... | 23.60 | ... | ... |
| 3 | ... | ... | ... | 17.19 | 104 | ... | 51.67 | ... | ... | 62.78 | 168 | ... | 21.54 | ... | ... | 13.43 | ... | ... |
| 4 | ... | ... | ... | 16.88 | 136 | ... | 63.20 | ... | ... | 70.67 | 157 | ... | 30.74 | ... | ... | 26.25 | ... | ... |
| 5 | ... | ... | ... | 18.83 | 125 | ... | 39.09 | ... | ... | 62.03 | 132 | ... | 23.93 | ... | ... | 16.68 | ... | ... |
| 6 | ... | ... | ... | 26.89 | 114 | ... | 31.41 | ... | ... | 43.83 | 139 | ... | 30.53 | ... | ... | 21.96 | ... | ... |
| 7 | ... | ... | ... | 27.61 | 109 | ... | ... | ... | 41.83 | 42.80 | 142 | ... | 30.18 | ... | ... | 14.46 | ... | ... |
| 8 | ... | ... | ... | 19.74 | 114 | 21.07 | 42.59 | ... | ... | 59.17 | 137 | 58.33 | 33.15 | 28.22 | ... | 23.62 | ... | 19.24 |
| 9 | ... | ... | ... | 25.44 | 110 | (9 yr.) | ... | ... | ... | 21.48 | 140 | (9 yr.) | 44.25 | ... | ... | 33.52 | ... | (8 yr.) |
| 1850 | ... | ... | ... | 19.56 | 84 | ... | ... | ... | ... | 44.88 | 157 | ... | 26.98 | ... | ... | 14.51 | ... | ... |
| 1 | ... | ... | ... | 30.86 | 123 | ... | ... | ... | ... | 35.14 | 142 | ... | ... | ... | ... | 17.98 | ... | ... |
| 2 | ... | ... | ... | 27.44 | 118 | ... | ... | ... | ... | 43.78 | 145 | ... | ... | ... | ... | 23.62 | ... | ... |
| 3 | ... | ... | ... | 27.08 | 128 | ... | ... | ... | ... | 46.11 | 130 | ... | ... | ... | ... | 14.52 | ... | ... |
| 4 | ... | ... | ... | 15.35 | 105 | ... | ... | ... | ... | 29.28 | 136 | ... | ... | ... | ... | 30.54 | ... | ... |
| 5 | ... | ... | ... | 23.15 | 124 | ... | ... | ... | ... | 52.85 | 138 | ... | 28.21 | ... | ... | 18.25 | ... | ... |
| 6 | ... | ... | ... | 24.93 | 118 | ... | ... | ... | ... | 43.31 | 116 | ... | 29.76 | 134 | ... | 22.73 | 151 | ... |
| 7 | ... | ... | ... | 22.15 | 105 | ... | ... | ... | ... | 50.95 | 135 | ... | 28.90 | 138 | ... | 17.20 | 113 | ... |
| 8 | ... | ... | ... | 21.55 | 107 | 23.75 | 43.00 | ... | ... | 39.60 | 139 | 40.74 | 26.01 | 158 | ... | 33.04 | 129 | 22.59 |
| 9 | ... | ... | ... | 14.85 | 95 | ... | 35.00 | ... | ... | 42.06 | 128 | ... | 21.82 | 156 | ... | 23.31 | ... | ... |
| 1860 | ... | ... | ... | 19.67 | 119 | ... | 54.63 | 144 | ... | 82.81 | 182 | ... | 25.38 | 133 | ... | 21.05 | ... | ... |
| 1 | ... | ... | ... | 24.04 | 147 | ... | 69.45 | 155 | ... | 59.36 | 157 | ... | 29.16 | 159 | ... | 28.19 | ... | ... |
| 2 | ... | ... | ... | 21.85 | 119 | ... | 28.27 | 98 | ... | 23.98 | 111 | ... | 22.08 | 139 | ... | 21.72 | ... | ... |
| 3 | ... | ... | ... | 23.68 | 145 | ... | 68.83 | 146 | ... | 47.08 | 152 | ... | 36.42 | 165 | ... | 40.67 | ... | ... |
| 4 | ... | ... | ... | 19.75 | 121 | ... | 47.00 | 114 | ... | 69.12 | 187 | ... | 27.40 | 144 | ... | 28.11 | ... | ... |
| 5 | ... | ... | ... | 15.51 | 108 | ... | 24.11 | 52 | ... | 36.29 | 128 | ... | 15.94 | 119 | ... | 23.07 | ... | ... |
| 6 | ... | ... | ... | 20.11 | 116 | ... | 51.18 | 142 | ... | 36.81 | 149 | ... | 22.41 | 107 | ... | 23.55 | ... | ... |
| 7 | ... | ... | ... | 19.05 | 112 | ... | 61.04 | 112 | ... | 59.68 | 126 | ... | 25.79 | 133 | ... | 22.27 | ... | ... |
| 8 | ... | ... | ... | 19.99 | 113 | 19.85 | 35.98 | 110 | 47.55 | 43.05 | 127 | 50.02 | 18.27 | 120 | 24.47 | 18.08 | ... | 25.00 |
| 9 | ... | ... | ... | 14.74 | 117 | ... | 54.39 | 114 | ... | 48.19 | 134 | ... | 24.58 | 129 | ... | 23.87 | ... | ... |
| 1870 | ... | ... | ... | 23.84 | 119 | ... | 79.06 | 154 | ... | 64.22 | 178 | ... | 33.77 | 129 | ... | 27.53 | ... | ... |
| 1 | ... | ... | ... | 23.25 | 137 | ... | 45.45 | 119 | ... | 52.27 | 141 | ... | 30.17 | 125 | ... | 18.25 | 131 | ... |
| 2 | ... | ... | ... | 22.66 | 146 | ... | 49.22 | 131 | ... | 37.12 | 161 | ... | 32.52 | 136 | ... | 31.76 | 160 | ... |
| 3 | ... | ... | ... | 21.00 | 139 | ... | 62.62 | 138 | ... | 73.40 | 176 | ... | 25.61 | 134 | ... | 23.43 | 157 | ... |
| 4 | ... | ... | ... | 17.23 | 127 | ... | 38.71 | 135 | ... | 63.60 | 173 | ... | 28.10 | 134 | ... | 24.09 | 138 | ... |
| 5 | ... | ... | ... | 25.21 | 157 | ... | 67.03 | 162 | ... | 46.25 | 153 | ... | 32.87 | 158 | ... | 29.25 | 181 | ... |
| 6 | 28.73 | 100 | ... | 13.43 | 110 | ... | 53.42 | 130 | ... | 45.69 | 156 | ... | 24.04 | 134 | ... | 23.63 | ... | ... |
| 7 | 20.48 | 103 | ... | 24.85 | 135 | ... | 30.28 | 119 | ... | 50.66 | 147 | ... | 24.10 | 124 | ... | 20.82 | ... | ... |
| 8 | 39.72 | 143 | 29.64 | 22.08 | 112 | 21.24 | 56.33 | 134 | 53.53 | 49.77 | 129 | 54.02 | 25.36 | 116 | 28.11 | 29.76 | ... | 25.24 |
| 9 | 41.34 | 106 | (3 yr.) | 20.69 | 130 | ... | 67.30 | 157 | ... | 63.19 | 167 | ... | 19.28 | 127 | ... | 21.07 | ... | ... |
| 1880 | 31.79 | 116 | ... | 22.48 | 149 | ... | 49.12 | 134 | ... | 29.51 | 142 | ... | 28.48 | 147 | ... | ... | ... | ... |
| 1 | 24.78 | 101 | ... | 18.02 | 135 | ... | 29.59 | 117 | ... | 41.09 | 163 | ... | 24.08 | 134 | ... | ... | ... | ... |
| 2 | 35.68 | 103 | ... | 15.70 | 134 | ... | 42.62 | 121 | ... | 42.28 | 112 | ... | 22.40 | 131 | ... | ... | ... | ... |
| 3 | 39.65 | 122 | ... | 26.76 | 161 | ... | 32.22 | 114 | ... | 46.32 | 157 | ... | 23.71 | 130 | ... | 24.05 | 160 | ... |
| 4 | 31.96 | 92 | ... | 18.74 | 138 | ... | 43.49 | 136 | ... | 44.04 | 159 | ... | 25.85 | 128 | ... | 21.55 | 171 | ... |
| 5 | 33.44 | 110 | ... | 15.89 | 133 | ... | 26.85 | 112 | ... | 39.91 | 145 | ... | 26.94 | 123 | ... | 28.29 | 176 | ... |
| 6 | 28.90 | 89 | ... | 14.42 | 141 | ... | 53.66 | 152 | ... | 39.43 | 152 | ... | 24.00 | 128 | ... | 21.39 | 189 | ... |
| 7 | 37.52 | 105 | ... | 25.70 | 164 | ... | 81.54 | 242 | ... | 60.16 | 189 | ... | 32.39 | 153 | ... | 24.21 | 174 | ... |
| 8 | 27.83 | 117 | 33.29 | 14.55 | 131 | 19.30 | 33.08 | 143 | 45.93 | 23.01 | 132 | 42.95 | 19.42 | 123 | 24.66 | 18.45 | 151 | 23.65 |
| 9 | 39.96 | 123 | ... | 20.87 | 143 | ... | 49.36 | 155 | ... | 57.16 | 186 | ... | 27.14 | 125 | ... | 30.80 | 180 | ... |
| 1890 | 46.73 | 126 | ... | 25.78 | 139 | ... | 73.02 | 162 | ... | 81.42 | 184 | ... | 24.24 | 140 | ... | 27.51 | 173 | ... |
| 1 | 30.33 | 93 | ... | 14.01 | 113 | ... | 41.68 | 143 | ... | 55.30 | 200 | ... | 26.73 | 126 | ... | 23.25 | 160 | ... |
| 2 | 81.23 | 122 | ... | 21.53 | 137 | ... | 64.98 | 146 | ... | 69.26 | 189 | ... | 24.96 | 124 | ... | ... | ... | ... |
| 3 | 40.12 | 145 | ... | 21.49 | 129 | ... | 88.26 | 147 | ... | 49.90 | 208 | ... | 26.80 | 140 | ... | 27.46 | 146 | ... |
| 4 | 23.72 | 103 | ... | 20.78 | 134 | ... | 44.02 | 143 | ... | 38.42 | 188 | ... | 22.60 | 138 | ... | 27.39 | 151 | ... |
| 5 | 33.01 | 123 | ... | 21.28 | 130 | ... | 59.11 | 105 | ... | 31.86 | 170 | ... | 17.04 | 131 | ... | 19.93 | 119 | ... |
| 6 | 31.50 | 103 | ... | 15.17 | 121 | ... | 44.97 | 121 | ... | 42.40 | 157 | ... | 25.16 | 124 | ... | 20.88 | 136 | ... |
| 7 | 27.17 | 106 | ... | 15.42 | 119 | ... | 42.53 | 115 | ... | 42.52 | 136 | ... | 25.85 | 117 | ... | 20.45 | 153 | ... |
| 8 | 31.76 | 118 | 33.55 | 20.75 | 116 | 20.71 | 60.06 | 131 | 56.80 | 43.17 | 149 | 51.12 | 15.61 | 102 | 23.61 | 20.41 | 164 | 24.23 |
| 9 | 32.40 | 107 | ... | 18.84 | 119 | ... | 38.85 | 141 | ... | 55.90 | 172 | ... | 28.87 | 116 | ... | 20.68 | 170 | (9 yr.) |
| 1900 | 36.61 | 124 | ... | 21.68 | 133 | ... | 34.41 | 110 | ... | 66.54 | 170 | ... | 26.09 | 139 | ... | 19.14 | 135 | ... |
| 1 | 36.75 | 122 | ... | 18.01 | 124 | ... | 38.48 | 110 | ... | 40.10 | 151 | ... | 27.45 | 113 | ... | 23.66 | 147 | ... |
| 2 | 27.06 | 93 | ... | 16.02 | 123 | ... | 16.17 | 87 | ... | 43.07 | 176 | ... | 23.08 | 102 | ... | 21.92 | 151 | ... |
| 3 | 35.69 | 140 | ... | 25.47 | 134 | ... | 49.27 | 136 | ... | 38.62 | 169 | ... | 28.43 | 130 | ... | 25.86 | 139 | ... |
| 4 | 34.35 | 125 | ... | 20.31 | 117 | ... | 33.23 | 124 | ... | 45.93 | 155 | ... | 29.72 | 128 | ... | 22.41 | 139 | ... |
| 5 | 34.61 | 116 | ... | 22.28 | 131 | ... | 36.76 | 108 | ... | 35.03 | 144 | ... | 25.64 | 129 | ... | 32.09 | 168 | ... |
| 6 | 32.37 | 121 | ... | 26.51 | 127 | ... | 42.84 | 125 | ... | 31.89 | 159 | ... | 22.29 | 114 | ... | 23.31 | 155 | ... |
| 7 | 40.12 | 132 | ... | 17.78 | 125 | ... | 31.46 | 119 | ... | 31.32 | 132 | ... | 22.26 | 102 | ... | 25.92 | 167 | ... |
| 8 | 30.52 | 106 | 34.05 | 24.56 | 125 | 21.15 | 44.01 | 125 | 36.55 | 45.65 | 168 | 43.41 | 17.72 | 130 | 25.36 | 16.50 | 149 | 23.15 |
| 9 | 39.11 | 107 | ... | 27.69 | 138 | ... | 34.07 | 121 | ... | 32.27 | 181 | ... | 25.86 | 171 | ... | 27.29 | 170 | ... |
| 1910 | 37.02 | 135 | 33.54 | 24.62 | 116 | 21.15 | 49.00 | 133 | 46.98 | 46.91 | 139 | 48.26 | 24.61 | 167 | 26.13 | 25.22 | 205 | 23.38 |
| Aver. | | | | | | | | | | | | | | | | | | |
| No. of | | | | | | | | | | | | | | | | | | |
| Yrs. | | | (35) | | | (71) | | | (61) | | | (71) | | | (67) | | | (66) |

9. Remarkable Falls of Rain.—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, and South Australia, which have occurred within a period of twenty-four hours:—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1910 INCLUSIVE.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Albion Park ... | 8 Feb., 1895 | 10.00 | Leconfield... .. | 9 Mar., 1893 | 14.53 |
| Albury ... | 14 " 1898 | 10.70 | Liverpool ... | 23 Feb., 1874 | 10.39 |
| Alme Dorrigo ... | 22 Jan., 1893 | 10.27 | Macksville* ... | 23 Feb., 1908 | 10.00 |
| Anthony ... | 28 Mar., 1887 | 17.14 | Madden's Creek ... | 2 " " | 10.36 |
| " ... | 15 Jan., 1890 | 13.13 | Maitland W. ... | 9 Mar., 1893 | 14.79 |
| Arnold Grove ... | 28 May, 1889 | 11.13 | Major's Creek ... | 14 Feb., 1898 | 12.32 |
| " ... | 20 Mar., 1892 | 10.08 | Mittagong... .. | 6 Mar., 1893 | 11.71 |
| Araluen ... | 14 Feb., 1898 | 10.51 | Morpeth ... | 9 " " | 21.52 |
| " ... | 15 " " | 13.36 | Mount Kembla ... | 14 Feb., 1898 | 10.25 |
| Billambil ... | 14 Mar., 1894 | 12.94 | " " " | 2 Feb., 1908 | 10.27 |
| Bowral ... | 6 " 1893 | 11.94 | Myra Vale ... | 14 " 1898 | 10.00 |
| Bowraville... .. | 22 June, 1898 | 11.50 | Nambucca Heads ... | 3 Apr., 1905 | 10.62 |
| Broger's Creek ... | 14 Feb., " " | 20.05 | Nepean Tunnel ... | 14 Feb., 1898 | 12.30 |
| " ... | 19 July, 1910 | 12.22 | Newcastle... .. | 19 Mar., 1871 | 11.17 |
| Bulli Mountain ... | 19 Mar., 1894 | 10.45 | " ... | 9 " 1893 | 11.14 |
| " ... | 13 Feb., 1898 | 17.14 | " ... | 24 Feb., 1908 | 10.02 |
| Burwood ... | 28 May, 1889 | 11.75 | Nowra ... | 11 July, 1904 | 11.50 |
| Camden ... | 11 July, 1904 | 10.90 | Parramatta ... | 28 May, 1889 | 11.94 |
| Camden Haven ... | 22 Jan., 1895 | 12.23 | " ... | 20 Mar., 1892 | 11.01 |
| Canley Vale ... | 28 May, 1889 | 10.06 | Port Macquarie ... | 9 Nov., 1887 | 10.76 |
| " ... | 20 Mar., 1892 | 10.85 | Port Stephens ... | 9 Feb., 1889 | 10.15 |
| Castle Hill... .. | 28 May, 1889 | 13.49 | Prospect ... | 28 May, " " | 12.37 |
| Cockle Creek ... | 23 Feb., 1908 | 10.45 | Raymond Terrace ... | 28 Sep., 1903 | 10.32 |
| Colombo Lyttleton ... | 5 Mar., 1893 | 12.17 | Richmond ... | 28 May, 1889 | 12.18 |
| Condong ... | 27 " 1887 | 18.66 | Robertson... .. | 14 Feb., 1898 | 10.00 |
| " ... | 15 Jan., 1890 | 11.50 | " ... | 10 July, 1904 | 10.50 |
| Cookville ... | 1 Apr., 1892 | 11.31 | Rooty Hill ... | 27 May, 1889 | 11.85 |
| Coramba ... | 11 June, 1893 | 10.83 | Rylstone ... | 28 " " | 10.26 |
| Cordeaux River ... | 26 Feb., 1873 | 10.98 | Seven Oaks ... | 22 June, 1898 | 11.06 |
| " ... | 3 " 1890 | 11.51 | Springwood ... | 7 Mar., 1894 | 10.55 |
| " ... | 14 Feb., 1898 | 22.58 | Taree ... | 28 Feb., 1892 | 12.24 |
| " ... | 31 Aug., 1906 | 10.31 | Terara ... | 26 " 1873 | 12.57 |
| Cudgen ... | 15 Mar., 1894 | 10.23 | Tomago ... | 9 Mar., 1893 | 13.76 |
| Dapto West ... | 14 Feb., 1898 | 12.05 | Tongarra ... | 9 July, 1904 | 11.10 |
| Darkes' Forest ... | 8 " 1895 | 11.10 | Tongarra Farm ... | 14 Feb., 1898 | 15.12 |
| Dunheved ... | 28 May, 1889 | 12.40 | Towamba ... | 5 Mar., 1893 | 20.00 |
| Eden ... | 4 " 1875 | 10.52 | Tweed Heads ... | 14 Jan., 1890 | 10.53 |
| Fernmount ... | 2 Feb., 1890 | 10.36 | " ... | 14 Mar., 1894 | 11.40 |
| " ... | 2 June, 1903 | 11.29 | Trial Bay ... | 9 " 1893 | 11.13 |
| Goorangoola ... | 9 Mar., 1893 | 10.34 | Wollongong ... | 26 Feb., 1873 | 11.00 |
| Guy Fawkes ... | 2 June, 1903 | 11.30 | " ... | 5 Apr., 1882 | 10.00 |
| Hercynia ... | 28 May, 1889 | 11.85 | Woolgoolga ... | 11 June, 1893 | 10.83 |
| Holy Flat ... | 12 Mar., 1887 | 12.00 | Yellow Rock ... | 14 Feb., 1898 | 11.69 |
| " ... | 28 Feb., 1892 | 12.24 | South Head ... | | |
| Jamberoo ... | 14 " 1898 | 10.92 | (near Sydney)... .. | 29 Apr., 1841 | 20.12 |
| Kareela ... | 20 Oct., 1902 | 11.73 | " " ... | 16 Oct., 1844 | 20.41 |
| Kempsey ... | 10 Mar., 1893 | 10.34 | | | |

* 6.50 inches fell in 2 hours.

HEAVY RAINFALLS, QUEENSLAND, UP TO 1910 INCLUSIVE.

| | | | | | |
|--------------|---------------|-------|----------------|---------------|-------|
| Anglesey ... | 26 Dec., 1909 | 18.20 | Beenleigh ... | 21 Jan., 1887 | 11.30 |
| Ascot ... | 14 Mar., 1903 | 11.34 | " ... | 14 Mar., 1908 | 10.40 |
| Ayr ... | 20 Sep., 1890 | 14.58 | Bloomsbury ... | 14 Feb., 1893 | 17.40 |
| " ... | 25 Mar., 1891 | 10.19 | " ... | 27 Jan., 1896 | 10.52 |
| " ... | 26 Jan., 1896 | 10.50 | " ... | 10 " 1901 | 16.62 |

HEAVY RAINFALLS, QUEENSLAND—Continued.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Bloomsbury ... | 4 Mar., 1906 | 11.36 | Crohamhurst | | |
| " ... | 9 Jan., 1908 | 11.30 | (Blackall Range) | 9 Jan., 1898 | 19.55 |
| Boggo Road, Junction | 14 Mar., 1908 | 10.42 | " " ... | 6 Mar., " | 16.01 |
| Botanic Gardens, Bris. | " " | 10.80 | " " ... | 26 Dec., 1909 | 13.85 |
| Bowen ... | 13 Feb., 1893 | 14.65 | Crow's Nest ... | 2 Aug., 1908 | 11.17 |
| " ... | 20 Jan., 1894 | 11.11 | Croydon ... | 29 Jan., 1908 | 15.00 |
| Bowen Park ... | 16 Feb., 1893 | 10.38 | Cryna (Beaundesert)... | 21 " 1887 | 14.00 |
| " ... | 14 Mar., 1908 | 11.50 | Donaldson ... | 27 Jan., 1891 | 11.29 |
| Brisbane ... | 21 Jan., 1887 | 18.31 | Dungeness ... | 16 Mar., 1893 | 22.17 |
| " ... | 14 Mar., 1908 | 11.18 | " ... | 19 Jan., 1894 | 11.84 |
| Bromby Park (Bowen) | 14 Feb., 1893 | 13.28 | " ... | 17 Apr., " | 14.00 |
| " " " | 20 Jan., 1894 | 11.20 | Dunira ... | 9 Jan., 1898 | 18.45 |
| Brookfield ... | 14 Mar., 1908 | 14.95 | " ... | 6 Mar., " | 15.95 |
| Buderim Mountain ... | 11 Jan., 1898 | 26.20 | Eddington (Clonc'ry) | 23 Jan., 1891 | 10.33 |
| " " " | 9 Mar., 1898 | 11.10 | Emu Park ... | 31 " 1893 | 10.00 |
| Bulimba (Brisbane)... | 16 Feb., 1893 | 10.40 | Enoggera Railway ... | 14 Mar., 1908 | 12.14 |
| Bundaberg ... | 31 Jan., 1893 | 10.15 | " Reservoir | " " | 10.98 |
| Burketown ... | 15 " 1891 | 13.58 | Ernest Junction ... | " " | 13.00 |
| " ... | 12 Mar., 1903 | 14.52 | Esk ... | 21 Jan., 1887 | 10.70 |
| Bustard Head ... | 18 Feb., 1888 | 10.14 | " ... | 14 Mar., 1908 | 11.12 |
| " " " | 30 Jan., 1893 | 11.85 | Fassifern ... | 21 Jan., 1887 | 10.20 |
| Caboolture ... | 21 " 1887 | 10.00 | Flat Top Island ... | 22 Dec., 1909 | 12.96 |
| " ... | 10 " 1898 | 10.28 | Floraville ... | 6 Jan., 1897 | 10.79 |
| Cairns ... | 11 Feb., 1889 | 14.74 | " ... | 11 Mar., 1903 | 12.86 |
| " ... | 21 Apr., " | 12.40 | Geraldton | | |
| " ... | 5 " 1891 | 14.08 | (now Innisfail) | 11 Feb., 1889 | 17.13 |
| " ... | 19 Jan., 1892 | 10.56 | " " " | 31 Dec., " | 12.45 |
| " ... | 14 " 1909 | 11.56 | " " " | 25 Jan., 1892 | 11.10 |
| Caloundra ... | 21 " 1887 | 10.50 | " " " | 6 Apr., 1894 | 16.02 |
| Cape Capricorn ... | 17 " 1905 | 10.16 | " " " | 3 Mar., 1896 | 11.42 |
| Cape Grafton ... | 5 Mar., 1896 | 13.37 | " " " | 7 " 1899 | 10.25 |
| Cardwell ... | 18 " 1887 | 10.15 | " " " | 18 Apr., " | 13.20 |
| " ... | 30 Dec., 1889 | 12.00 | " " " | 24 Jan., 1900 | 15.22 |
| " ... | 2 Jan., 1890 | 10.06 | " " " | 6 " 1901 | 11.35 |
| " ... | 23 Mar., " | 12.00 | " " " | 29 Dec., 1903 | 21.22 |
| " ... | 18 " 1904 | 18.24 | " " " | 17 Mar., 1904 | 10.35 |
| Cedar Pocket ... | 26 Dec. 1909 | 11.36 | " " " | 30 Jan., 1908 | 11.76 |
| Central Kin Kin ... | " " | 10.17 | " " " | 14 " 1909 | 11.65 |
| Chiefswood ... | 14 Mar., 1908 | 11.01 | Gin Gin ... | 16 " 1905 | 13.61 |
| Childers ... | 6 " 1898 | 11.28 | Gladstone... | 18 Feb., 1888 | 12.37 |
| Clare ... | 26 Jan., 1896 | 15.30 | " ... | 31 Jan., 1893 | 14.62 |
| Cleveland ... | 13 " 1910 | 10.13 | Glass Mountains ... | 26 Dec., 1909 | 10.48 |
| " ... | 2 June " | 11.20 | Glen Broughton ... | 5 Apr., 1894 | 18.50 |
| Coen ... | 20 Apr., 1903 | 11.11 | Glen Prairie ... | 18 " 1904 | 12.18 |
| " ... | 1 " 1910 | 10.71 | Gold Creek Reservoir | 16 Feb., 1893 | 11.16 |
| Collaroy ... | 30 Jan., 1896 | 14.25 | " " " | 14 Mar., 1908 | 12.50 |
| " ... | 30 " 1910 | 10.25 | Goodna ... | 21 Jan., 1887 | 11.00 |
| Cooktown ... | 22 " 1903 | 12.49 | " ... | 14 Mar., 1908 | 11.03 |
| " ... | 19 " 1907 | 11.70 | Goondi Mill (Gerald'n) | 20 Jan., 1892 | 11.10 |
| Cooran ... | 1 Feb., 1893 | 13.62 | " " " | 6 Apr., 1894 | 15.69 |
| " ... | 9 June, " | 10.12 | " " " | 7 Mar., 1899 | 10.08 |
| " ... | 26 Dec., 1908 | 14.08 | " " " | 18 Apr., " | 14.78 |
| Cooroy ... | 9 June 1893 | 13.60 | " " " | 24 Jan., 1900 | 13.30 |
| " ... | 10 Jan., 1898 | 13.50 | " " " | 6 " 1901 | 10.70 |
| " ... | 6 Mar., " | 10.04 | " " " | 2 Mar., " | 10.67 |
| Cressbrook ... | 16 Feb., 1893 | 10.65 | " " " | 29 Dec., 1903 | 17.83 |
| Crohamhurst | | | " " " | 17 Mar., 1904 | 10.00 |
| (Blackall Range) | 31 Jan., " | 10.78 | " " " | 21 " 1910 | 10.38 |
| " " " | 2 Feb., " | 35.71 | Gympie ... | 9 " 1901 | 11.64 |
| " " " | 9 June, " | 13.31 | Halifax ... | 5 Feb., 1899 | 15.37 |

HEAVY RAINFALLS, QUEENSLAND—Continued.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Halifax ... | 8 Mar., 1899 | 11.00 | Landsborough ... | 26 Dec., 1909 | 14.00 |
| " ... | 6 Jan., 1901 | 15.68 | Low Island ... | 10 Mar., 1904 | 15.07 |
| " ... | 8 Feb. " | 10.50 | Lucinda ... | 4 Feb., 1899 | 11.10 |
| " ... | 26 Mar., 1903 | 10.07 | " ... | 17 " 1906 | 13.35 |
| " ... | 30 Jan., 1906 | 10.41 | " ... | 10 Mar., 1906 | 14.60 |
| Hambledon Mill ... | 7 " 1908 | 11.00 | Lytton ... | 21 Jan., 1887 | 12.85 |
| " " | 13 " 1909 | 13.80 | " ... | 13 Mar., 1892 | 10.60 |
| " " | 16 Feb., 1910 | 11.45 | " ... | 16 Feb., 1893 | 11.74 |
| Harvey Creek ... | 8 Mar., 1899 | 17.72 | " ... | 20 Mar., 1898 | 10.20 |
| " " | 25 Jan., 1900 | 12.53 | Mackay ... | 17 Feb., 1888 | 10.10 |
| " " | 25 May, 1901 | 14.00 | " ... | 15 " 1893 | 10.46 |
| " " | 14 Mar., 1903 | 12.10 | " ... | 3 " 1898 | 11.95 |
| " " | 21 Apr., 1903 | 10.10 | " ... | 5 Jan., 1904 | 10.45 |
| " " | 11 Jan., 1905 | 16.96 | " ... | 23 Dec., 1909 | 13.96 |
| " " | 28 " 1906 | 12.29 | " ... | 12 Mar., 1910 | 10.31 |
| " " | 20 " 1907 | 10.13 | Sugar Experimental | | |
| " " | 8 " 1908 | 10.31 | Farm, Mackay ... | 23 Dec., 1909 | 12.00 |
| " " | 30 " " | 11.31 | Macnade Mill | | |
| " " | 25 Mar. " | 11.84 | (Townsville) ... | 28 Mar., 1891 | 10.61 |
| " " | 14 Jan., 1909 | 14.40 | " ... | 15 " 1893 | 10.50 |
| " " | 16 Feb., 1910 | 10.90 | " ... | 18 Jan., 1894 | 12.56 |
| Haughton Valley ... | 26 Jan., 1896 | 18.10 | " ... | 17 Apr., " | 14.26 |
| Hillcrest (Mooloolah) ... | 26 Dec., 1909 | 13.35 | " ... | 5 Feb., 1899 | 15.20 |
| Holmwood (Woodford) ... | 2 Feb., 1893 | 16.19 | " ... | 6 Jan., 1901 | 23.33 |
| " " | 10 Jan., 1898 | 12.40 | Maleny ... | 14 Mar., 1908 | 10.95 |
| Homebush ... | 3 Feb. " | 12.04 | " ... | 26 Dec., 1909 | 14.76 |
| " ... | 21 Mar. " | 10.26 | Manly ... | 14 Mar., 1908 | 11.90 |
| " ... | 11 Jan., 1901 | 11.40 | Mapleton ... | " " | 14.29 |
| Howard ... | 15 " 1905 | 19.55 | " ... | 26 Dec., 1909 | 15.72 |
| Indooroopilly ... | 14 Mar., 1908 | 10.28 | Marlborough ... | 17 Feb., 1888 | 14.24 |
| Ingham ... | 18 Jan., 1894 | 12.60 | " ... | 29 Jan., 1896 | 10.84 |
| " ... | 7 Apr., " | 10.10 | Mayne Junction ... | 14 Mar., 1908 | 10.30 |
| " ... | 6 Jan., 1901 | 13.59 | Mein ... | 4 Apr., 1895 | 10.50 |
| " ... | 25 Dec., 1903 | 12.30 | Milton ... | 14 Mar., 1908 | 12.24 |
| Inkerman ... | 21 Sep., 1890 | 12.93 | Mirani ... | 12 Jan., 1901 | 16.59 |
| Inneshowen | | | " ... | 28 Mar., 1903 | 10.16 |
| (Johnstone River) ... | 30 Dec., 1889 | 14.01 | Monkira ... | 1 Feb., 1906 | 11.61 |
| Inskip Point ... | 13 Mar., 1892 | 10.65 | Mooloolah ... | 13 Mar., 1892 | 11.53 |
| Isis Junction ... | 6 " 1898 | 13.60 | " ... | 2 Feb., 1893 | 29.11 |
| Kamerunga (Cairns) ... | 20 Jan., 1892 | 13.61 | " ... | 9 June, " | 11.50 |
| " " | 23 Feb., 1894 | 10.10 | " ... | 6 Mar., 1898 | 14.43 |
| " " | 6 Apr., " | 14.04 | Morningside ... | 14 Mar., 1908 | 10.50 |
| " " | 5 " 1895 | 12.31 | Mount Crosby ... | " " | 14.00 |
| " " | 5 Mar., 1896 | 11.81 | Mount Gravatt ... | " " | 10.80 |
| Kamerunga ... | 8 " 1899 | 10.50 | Mount Perry ... | 24 Feb., 1887 | 10.00 |
| " " | 21 Apr., 1903 | 11.75 | Mourilyan ... | 14 Jan., 1909 | 13.00 |
| Kilkivan Junction ... | 10 Jan., 1898 | 11.08 | Mundoolun ... | 21 Jan., 1887 | 17.95 |
| Kululu, Mackay ... | 11 " 1901 | 11.70 | Mungar Junction ... | 10 Mar., 1901 | 10.20 |
| " " | 12 " 1905 | 10.94 | Murrarie ... | 14 " 1908 | 11.50 |
| Kuranda ... | 6 Mar., 1899 | 14.12 | Musgrave ... | 6 Apr., 1894 | 13.71 |
| " ... | 20 Apr., 1903 | 14.16 | Nambour ... | 9 Jan., 1898 | 21.00 |
| " ... | 14 Jan., 1909 | 12.37 | " ... | 7 Mar. " | 13.28 |
| " ... | 27 " 1910 | 9.40 | " ... | 27 Dec., 1909 | 16.80 |
| " ... | 28 " " | 9.28 | Nanango ... | 9 June, 1893 | 10.00 |
| Lake Nash ... | 10 " 1895 | 10.25 | Nerang ... | 15 " 1892 | 12.35 |
| " ... | 20 Mar., 1901 | 10.02 | " ... | 14 Mar., 1908 | 10.95 |
| Landsborough ... | 2 Feb., 1893 | 25.15 | Netley (Rockhampton) ... | 29 Jan., 1896 | 11.77 |
| " ... | 9 June " | 12.80 | Normanton ... | 14 " 1905 | 10.72 |
| " ... | 9 Jan., 1898 | 19.54 | North Pine ... | 21 " 1887 | 11.60 |
| " ... | 7 Mar. " | 10.35 | " " | 16 Feb., 1893 | 14.97 |

HEAVY RAINFALLS, QUEENSLAND—Continued.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Nundah ... | 14 Mar., 1908 | 12.00 | Taringa ... | 14 Mar., 1908 | 11.40 |
| One Mile, Gympie ... | 10 " 1901 | 11.40 | Tewantin ... | 10 Jan., 1898 | 10.51 |
| Oxenford ... | 14 " 1908 | 15.65 | " ... | 30 Mar., 1904 | 12.30 |
| Palmwoods ... | 4 Feb., 1893 | 12.30 | " ... | 14 Apr. " | 11.36 |
| " ... | 10 Jan., 1898 | 15.85 | The Hollow (Mackay) | 23 Feb., 1888 | 15.12 |
| " ... | 7 Mar. " | 13.02 | " ... | ? Mar., 1891 | 10.39 |
| " ... | 25 Dec., 1909 | 17.75 | Thornborough ... | 20 Apr., 1903 | 18.07 |
| Peachester ... | 26 " " | 14.91 | Tierawoomba ... | 2 Feb., 1898 | 10.36 |
| Pinkenba ... | 14 Mar., 1908 | 11.63 | Toooloombah ... | 29 Jan., 1896 | 11.70 |
| Pittsworth ... | 11 " 1890 | 14.68 | Toowong ... | 14 Mar., 1908 | 11.60 |
| Port Douglas ... | 5 " 1887 | 13.00 | Townsville ... | 24 Jan., 1892 | 19.20 |
| " " | 12 Feb., 1888 | 10.00 | " ... | 28 Dec., 1903 | 15.00 |
| " " | 20 Jan., 1892 | 11.50 | Victoria Mill ... | 6 Jan., 1901 | 16.67 |
| " " | 23 Feb., 1894 | 10.25 | Walkerston ... | 12 " 1905 | 10.60 |
| " " | 7 Apr. " | 10.00 | Walsh River ... | 12 " 1903 | 10.22 |
| " " | 10 Mar., 1904 | 16.34 | Woodford ... | 2 Feb., 1893 | 14.93 |
| " " | 29 Dec. " | 10.67 | " ... | 10 Jan., 1898 | 11.40 |
| " " | 11 Jan., 1905 | 14.68 | Woodlands (Yeppoon) | 10 " 1889 | 10.00 |
| Ravenswood ... | 24 Mar., 1890 | 17.00 | " " | 26 Jan., 1890 | 10.22 |
| " ... | 27 Jan., 1896 | 10.52 | " " | 25 Mar. " | 14.25 |
| Redcliffe ... | 21 " 1887 | 14.00 | " " | 31 Jan., 1893 | 23.07 |
| " ... | 16 Feb., 1893 | 17.35 | " " | 30 " 1896 | 11.91 |
| " ... | 10 Jan., 1898 | 10.25 | " " | 9 Feb. " | 13.97 |
| Riverview ... | 14 Mar., 1908 | 10.12 | " " | 7 Jan., 1898 | 14.50 |
| Rockhampton ... | 17 Feb., 1888 | 10.82 | Woodstock ... | 4 Nov., 1903 | 10.44 |
| " ... | 29 Jan., 1896 | 10.53 | Woogaroo ... | 14 Mar., 1908 | 11.20 |
| Rosedale ... | 6 Mar., 1898 | 12.60 | Woombye ... | 26 Dec., 1909 | 13.42 |
| Sandgate ... | 21 Jan., 1887 | 10.50 | Wynnum ... | 14 Mar., 1908 | 11.95 |
| " ... | 16 Feb., 1893 | 14.03 | Yandina ... | 1 Feb., 1893 | 20.08 |
| Sherwood ... | 14 Mar., 1908 | 11.08 | " ... | 9 June " | 12.70 |
| Somerset ... | 28 Jan., 1903 | 12.02 | " ... | 9 Jan., 1898 | 19.25 |
| Southport ... | 14 Mar., 1908 | 11.05 | " ... | 7 Mar. " | 13.52 |
| St. Helena ... | 16 Feb., 1893 | 11.20 | " ... | 28 Dec., 1909 | 15.80 |
| St. Helens (Mackay) | 24 " 1888 | 12.00 | Yarrabah ... | 14 Jan. " | 11.20 |
| " ... | 22 Mar., 1898 | 10.00 | Yeppoon ... | 31 Jan., 1893 | 20.05 |
| St. Lawrence ... | 17 Feb., 1888 | 12.10 | " ... | 30 " 1896 | 11.02 |
| " " | 30 Jan., 1896 | 15.00 | " ... | 8 " 1898 | 18.05 |
| Sunnybank ... | 14 Mar., 1908 | 11.40 | " ... | 8 Apr., 1904 | 10.70 |
| Tabragalba ... | 21 Jan., 1887 | 10.00 | " ... | 3 Feb., 1906 | 14.90 |
| Tallebudgera ... | 14 Mar., 1908 | 10.80 | Zillmere ... | 14 Mar., 1908 | 11.00 |
| Tambourine Mountain | 17 July, 1889 | 10.91 | | | |

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1910 INCLUSIVE.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|--------------|-------|---------------------------|---------------|-------|
| | | ins. | | | ins. |
| Arltunga ... | 1 Mar., 1910 | 1.02 | Port Darwin ... | 7 Jan., 1897 | 11.67 |
| " ... | 2 " " | 1.42 | Powell's Creek ... | 25 Feb., 1910 | 2.31 |
| " ... | 3 " " | 7.77 | " " | 26 " " | 1.21 |
| " ... | 4 " " | 1.85 | " " | 27 " " | 8.19 |
| " ... | 5 " " | 1.24 | Tennant's Creek ... | 26 " " | 1.18 |
| Borroluola ... | 14 " 1899 | 14.00 | " " | 27 " " | 1.02 |
| Lake Nash... | 21 " 1901 | 10.25 | " " | 28 " " | 9.22 |
| Pine Creek ... | 8 Jan., 1897 | 10.35 | | | |

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1910 INCLUSIVE.

| Name of Town or Locality. | Date. | Amnt. | Name of Town or Locality. | Date. | Amnt. |
|---------------------------|---------------|-------|---------------------------|----------------|-------|
| | | ins. | | | ins. |
| Balla Balla ... | 20 Mar., 1899 | 6.00 | Obagama ... | 18 Feb., 1896 | 7.22 |
| " " ... | 21 " 1899 | 14.40 | " " ... | 28 " 1910 | 12.00 |
| Boodarie ... | 3 Jan., 1894 | 10.03 | Point Torment ... | 17 Dec., 1906 | 11.86 |
| " " ... | 4 " " | 5.22 | Point Cloates ... | 20 Jan., 1909 | 10.87 |
| " " ... | 21 Mar., 1899 | 14.53 | Port Hedland ... | 7 Feb., 1901 | 3.56 |
| " " ... | 6 Feb., 1901 | 1.91 | " " ... | 8 " " | 9.55 |
| " " ... | 7 " " | 9.16 | Quanbun ... | 29 Apr., 1910 | 6.55 |
| Bamboo Creek ... | 22 Mar., 1899 | 10.10 | " " ... | 30 " " | 3.40 |
| Carlton ... | 11 Jan., 1903 | 10.64 | Roebourne... .. | 3 Apr., 1898 | 11.44 |
| Cherrabun ... | 28 Apr., 1910 | 2.90 | " " ... | 6 Mar., 1900 | 10.32 |
| " " ... | 29 " " | 7.78 | Tambrey ... | 6 " " | 11.00 |
| Cossack ... | 3 " 1898 | 12.82 | " " ... | 3 " 1903 | 10.46 |
| " " ... | 15 " 1900 | 6.89 | Thangoo ... | 17-19 Feb. '96 | 24.18 |
| " " ... | 16 " " | 13.23 | " " ... | 23 Dec., 1898 | 11.15 |
| Croydon ... | 3 Mar., 1903 | 12.00 | " " ... | 20 Nov., 1910 | 7.40 |
| Cocos Island ... | 29 Nov., " | 14.38 | " " ... | 21 " " | 4.56 |
| " " ... | 26 Dec., 1907 | 8.00 | Whim Creek ... | 2 Apr., 1898 | 7.08 |
| " " ... | 27 " " | 2.65 | " " ... | 3 " " | 29.41 |
| " " ... | 8 July, 1908 | 10.21 | " " ... | 20 Mar., 1899 | 8.89 |
| " " ... | 9 " " | 2.75 | " " ... | 21 " " | 18.17 |
| " " ... | 23 " " | 2.40 | " " ... | 6 " 1900 | 10.03 |
| " " ... | 24 " " | 7.00 | " " ... | 3 " 1903 | 10.44 |
| " " ... | 25 " " | 3.85 | Wyndham ... | 27 Jan., 1890 | 11.60 |
| Derby ... | 29 Dec., 1898 | 13.09 | " " ... | 11 " 1903 | 9.98 |
| " " ... | 30 " " | 7.14 | " " ... | 12 " " | 6.64 |
| Kerdiadary ... | 7 Feb., 1901 | 12.00 | " " ... | 13 " " | 4.20 |
| Millstream ... | 5 Mar., 1900 | 10.00 | Yeeda ... | 28 Dec., 1898 | 8.42 |
| Obagama ... | 16 Feb., 1896 | 3.95 | " " ... | 29 " " | 6.88 |
| " " ... | 17 " " | 6.30 | " " ... | 30 " " | 6.12 |

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent, and in the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are invariably associated with

tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. Barometric Pressures.—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.91 inches in the southern. The July mean pressure ranges from 29.90 inches at Port Darwin to 30.13 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 105.

13. Wind.—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty inland, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast-line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly (south-west to south-east) is the prevailing direction for August to April inclusive, and north-north-west to north-north-east for the midwinter months.

In *Adelaide* the summer winds are from the south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round, but more especially during the months January, February, March and April.

In *Sydney* from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

Melbourne winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* the prevailing direction for the year is from north-west.

Over the greater part of Australia January is the most windy month, i.e., is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

14. Cyclones and Storms.—(i.) *General.* The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path before reaching New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March inclusive. They apparently originate in the ocean, in the vicinity of the Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, have a distinct relation to the magnitude of pressure in the anticyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclones, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard. The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast-line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July, 1903, a strip of

land, only 80 miles in extent, was affected. But so severe was the gale within this region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate of gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of forty years, have been analysed with a view of ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles an hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sundown and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

The greatest number ever experienced in a single summer was sixty-two, the average being thirty-two.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling-off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward ;

and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

In North America, the "Northers" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Föhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

15. Influences affecting Australian Climate.—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

It is pointed out by Abercromby,¹ as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely² says, concerning "Heat Waves:" "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing

1. "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.

2. "American Weather." 8vo, London, 1888, p. 253.

evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.¹ In the Cordilleras, clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress in 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

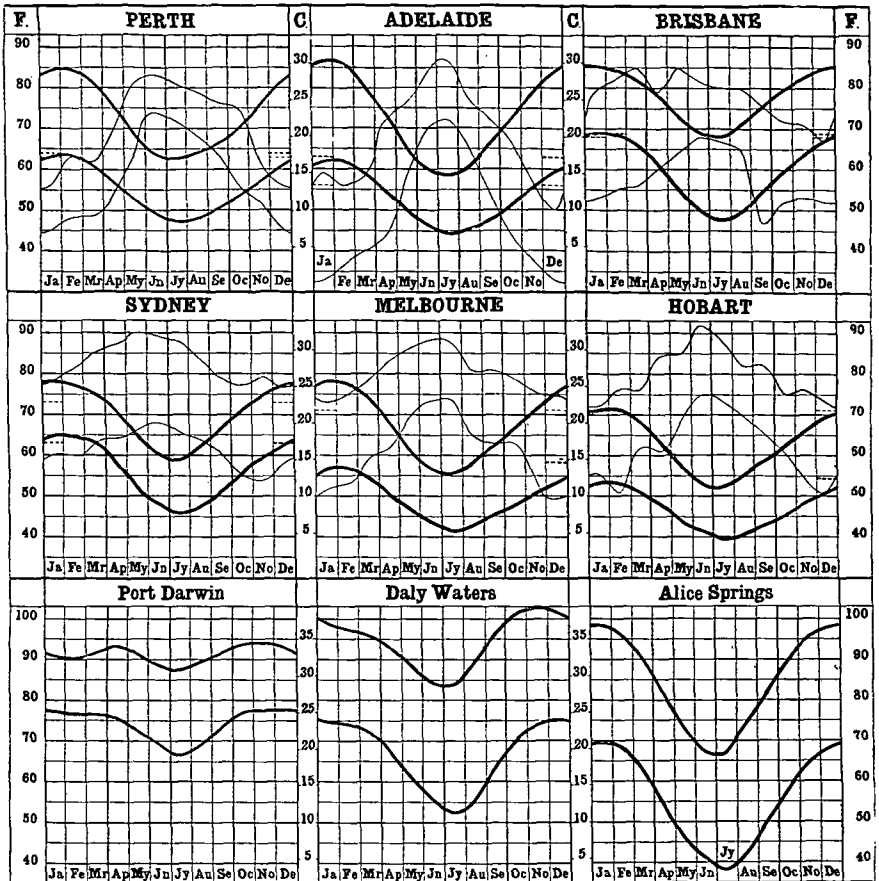
Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.²

16. Comparison of Rainfalls and Temperatures.—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the federal capital, and for the capitals of the Australian States:—

1. "Climatology," p 194.

2. See A. Woeikof, Petermann's Mittheilungen, 1835; and W. M. Fulton and A. N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1898."

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Port Darwin, Daly Waters, and Alice Springs.

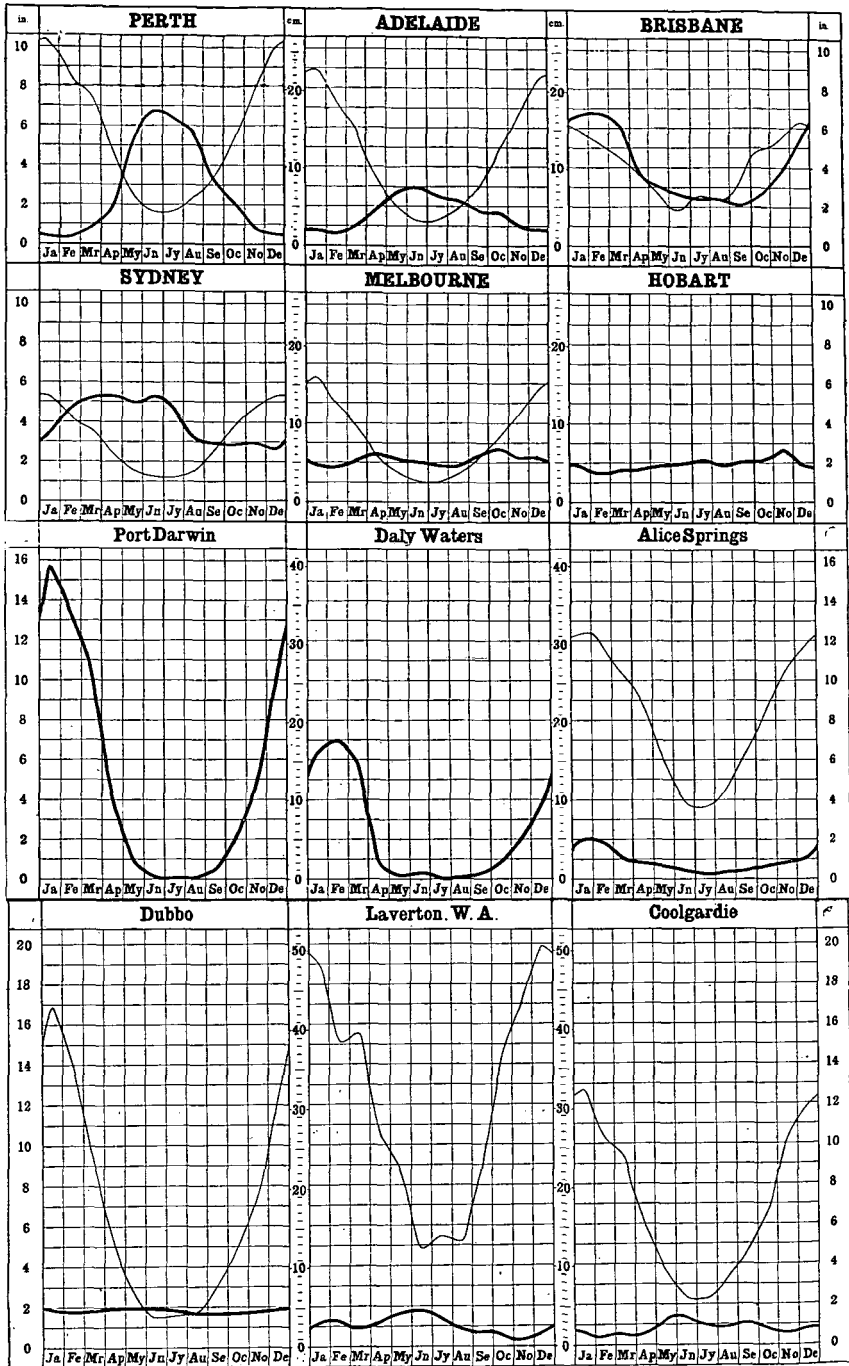
For the thin lines the degree numbers represent relative humidities, or the actual percentages of actual saturation on the total for the respective temperatures.

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 62° and the least mean humidity for the month 48°; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 62 % and 48 %

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For Explanation see next page.)

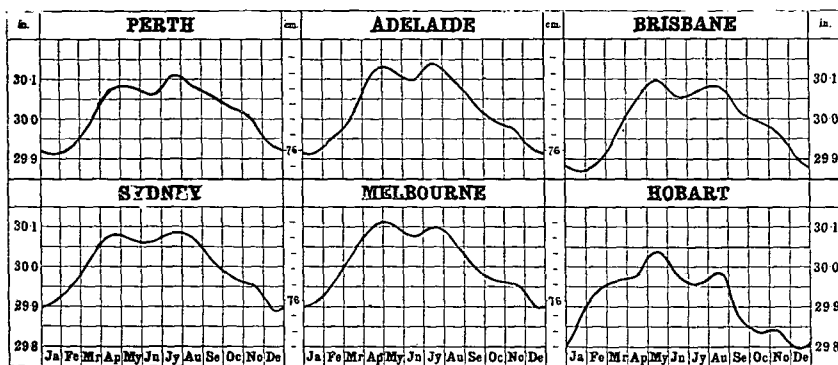
EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Port Darwin, and Daly Waters.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about $9\frac{1}{2}$ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about $1\frac{1}{2}$ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

| — | Rainfall. | Evapora- tion. | — | Rainfall. | Evapora- tion. |
|---------------|-----------|-------------------|--------------------|-----------|-------------------|
| Perth ... | 33.54 | 66.01 | Port Darwin ... | 62.12 | — |
| Adelaide ... | 20.62 | 54.44 | Daly Waters ... | 27.25 | — |
| Brisbane ... | 47.25 | 48.61 | Alice Springs ... | 11.09 | 97.10 |
| Sydney ... | 47.95 | 37.42 | Dubbo ... | 22.39 | 81.03 |
| Melbourne ... | 25.40 | 38.30 | Laverton, W.A. ... | 9.87 | — |
| Hobart ... | 23.38 | — | Coolgardie ... | 9.37 | 86.60 |

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE STATE CAPITAL CITIES.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about $2\frac{1}{2}$ times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.88 inches, and there are maxima in the middle of May and August of about 30.10 and 30.08 respectively. The double maxima appear clearly on each graph.

Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.

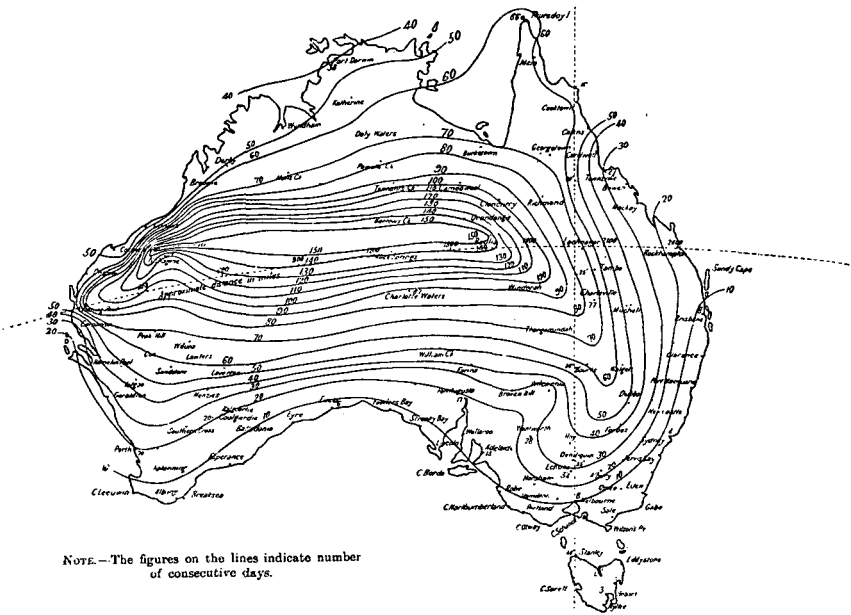
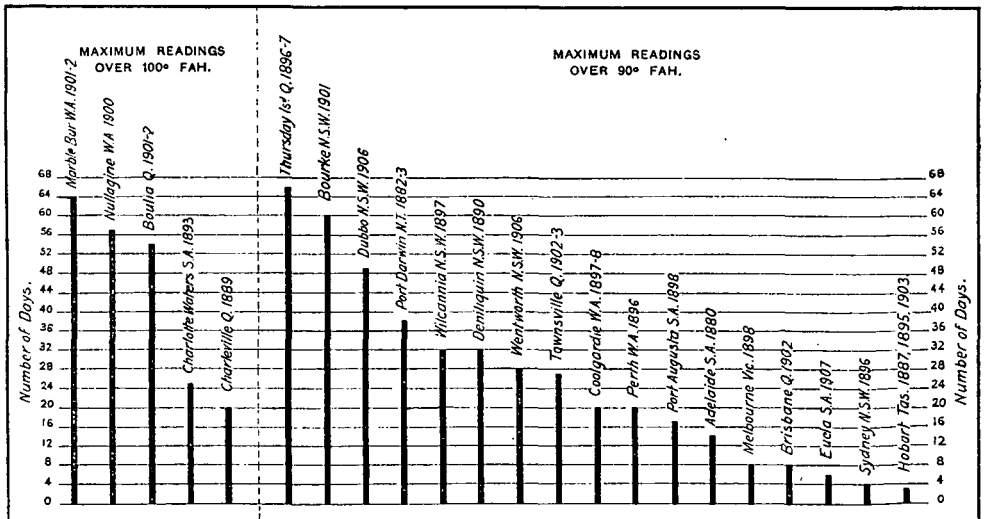
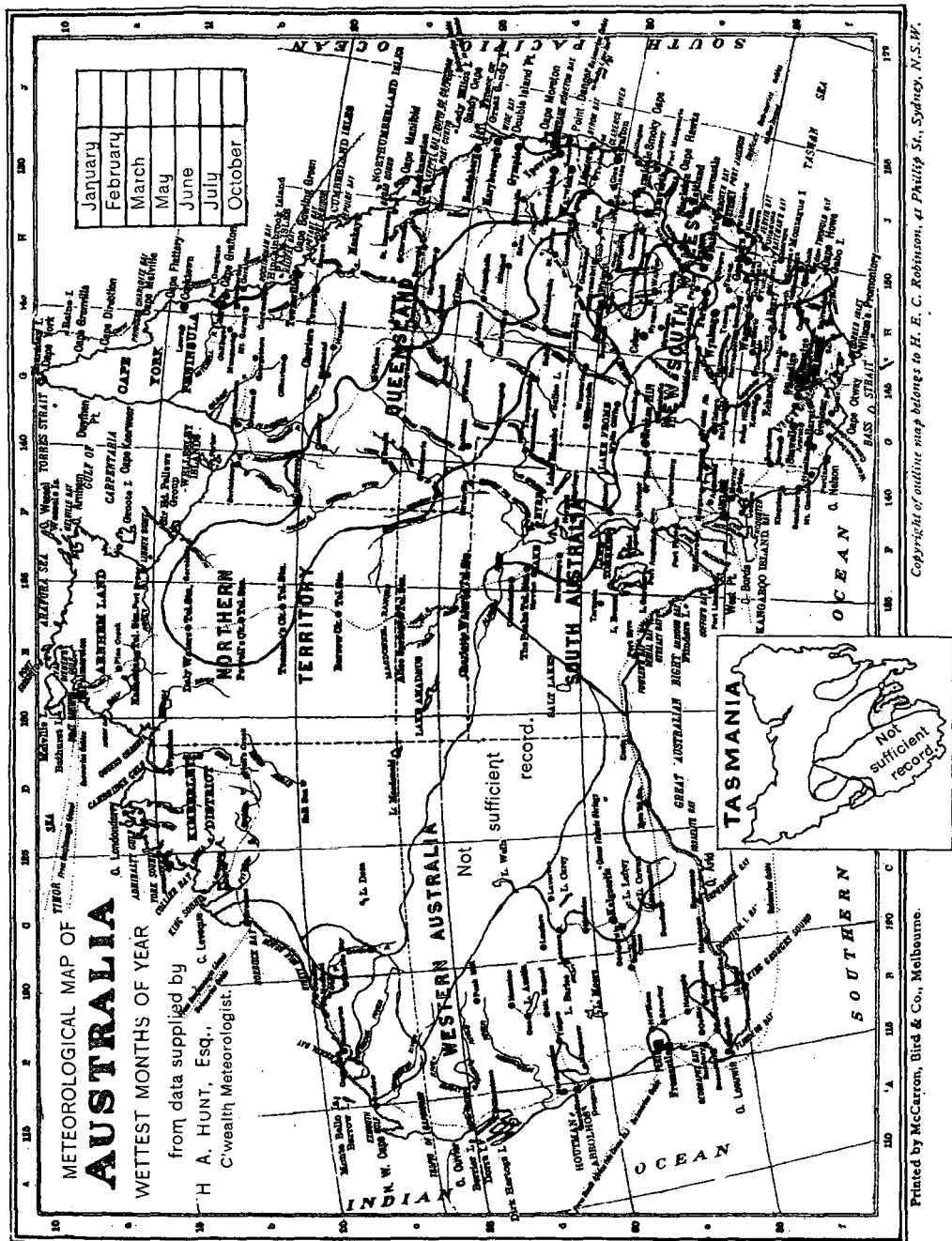


Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.





METEOROLOGICAL SUB-DIVISIONS.

- WEST AUSTRALIA.**
- No. 1. East Kimberley.
 2. West Kimberley.
 3. North-West.
 4. Gascoyne.
 5. South-West.
 6. Eucla.
 7. Eastern.

- SOUTH AUSTRALIA.**
8. Northern Territory.
 9. Far North and N.W.
 10. West.

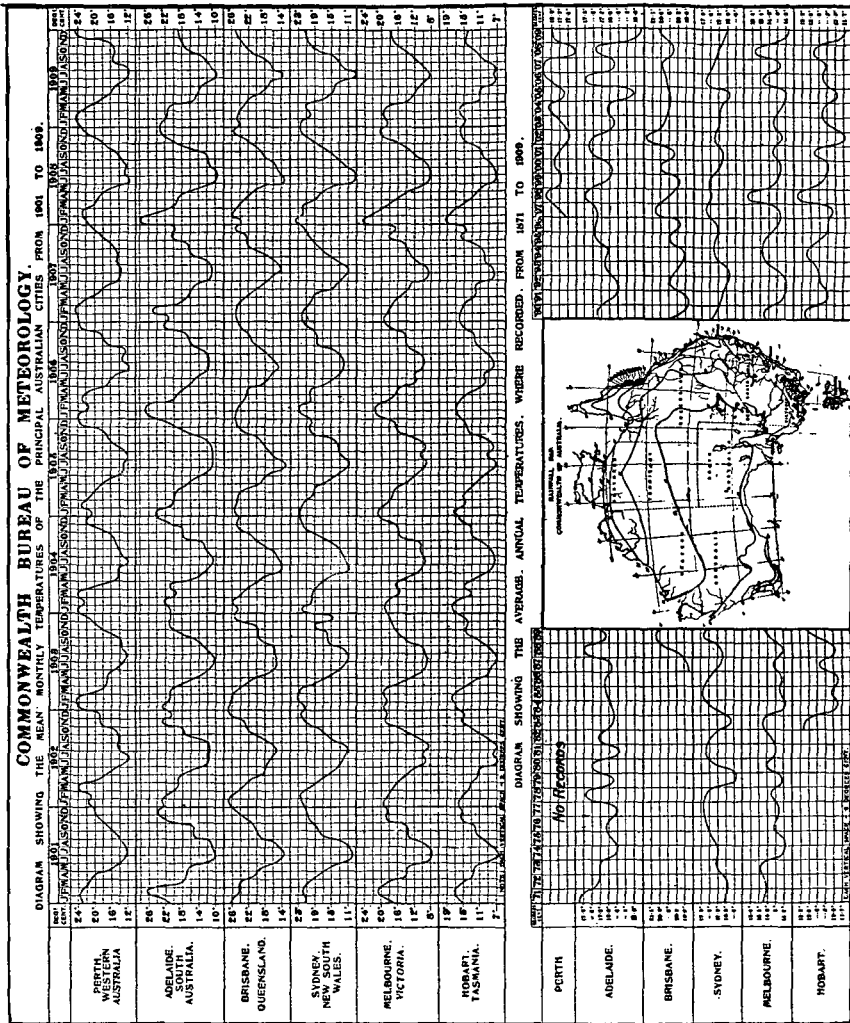
- QUEENSLAND.**
- No. 11. Upper North.
 12. North-East.
 13. Lower North.
 14. Central.
 15. Murray Valley.
 16. South-East.

- NEW SOUTH WALES.**
- No. 27. Western.
 28. North-West Plain.
 29. North-West Slope.
 30. Northern Tableland.
 31. North Coast.
 32. Hunter & Manning.

- VICTORIA.**
- No. 33. Central Tableland.
 - 33a. Metropolitan.
 34. Cent. Westn. Slope.
 35. Cent. Westn. Plain.
 36. Riverina.
 37. South-West Slope.
 38. Southern Tableland.
 39. South Coast.

- TASMANIA.**
- No. 43. North Central.
 44. Northern Country.
 45. Mallee.
 46. Wimmera.
 47. Western.
 48. Northern.
 49. W. Coast Mt. Region.
 50. Central Plateau.
 51. Midland.
 52. East Coast.
 53. Derwent.
 54. South-Eastern.

The above are the meteorological sub-divisions adopted by H. A. HUNT, Esq., C'wealth. Meteorologist.



EXPLANATION OF GRAPH.

The six continuous curves on the upper part of the diagram shew the fluctuations of mean monthly temperatures of the Australian capitals from 1901 to 1909. The base of each small square denotes one month, and the vertical side 2° Centigrade or 3.6° Fahrenheit.

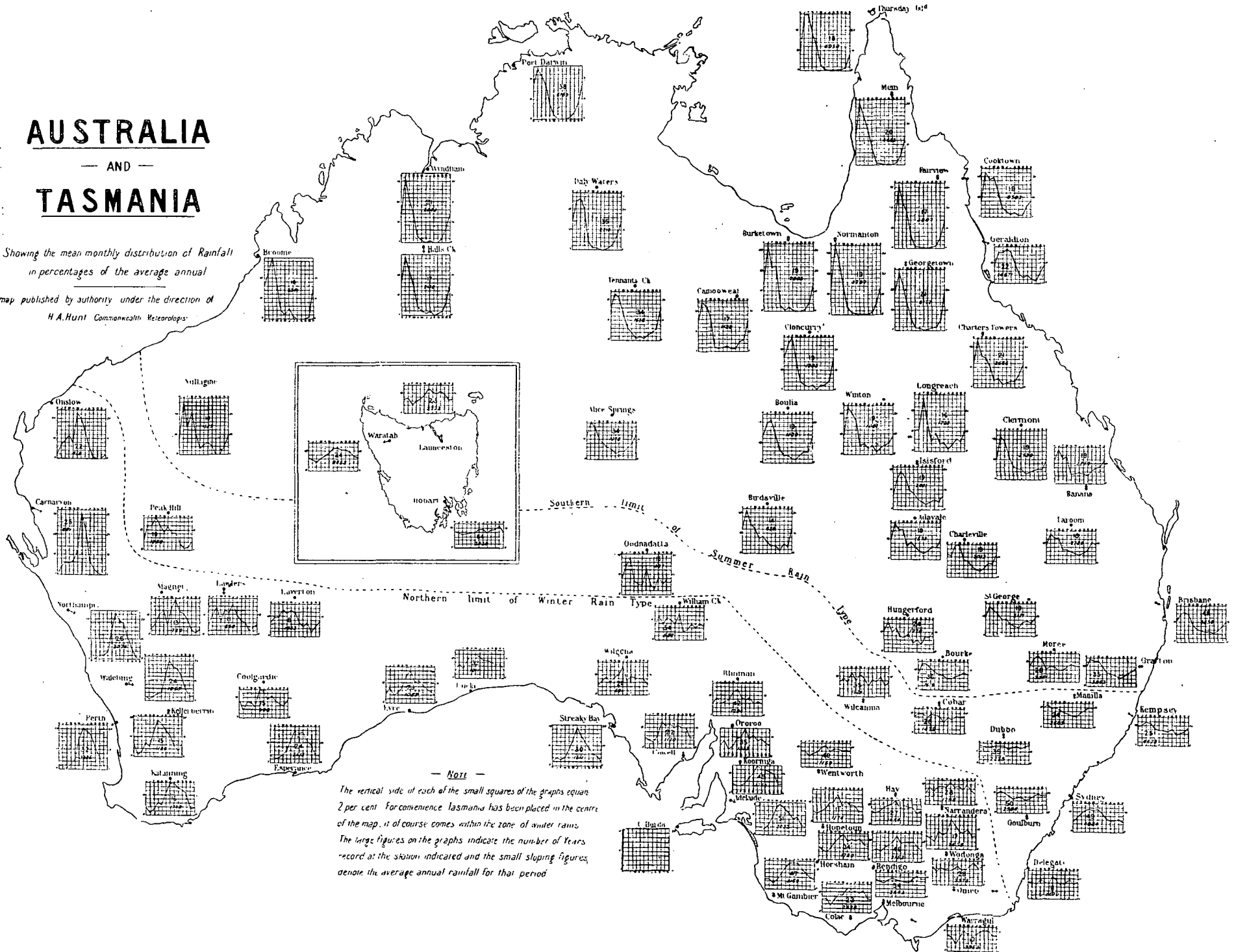
The six curves in lower portion of the diagram similarly shew the fluctuations of the mean annual temperatures, from 1871 in the case of Adelaide, Sydney and Melbourne, from 1883, 1887 and 1897 in the case respectively of Hobart, Brisbane and Perth. The base of each rectangle represents one year, and the vertical side 0.3° Centigrade or 0.54° Fahrenheit.

The map shews the areas affected by given amounts of annual rainfall, and is elsewhere given.

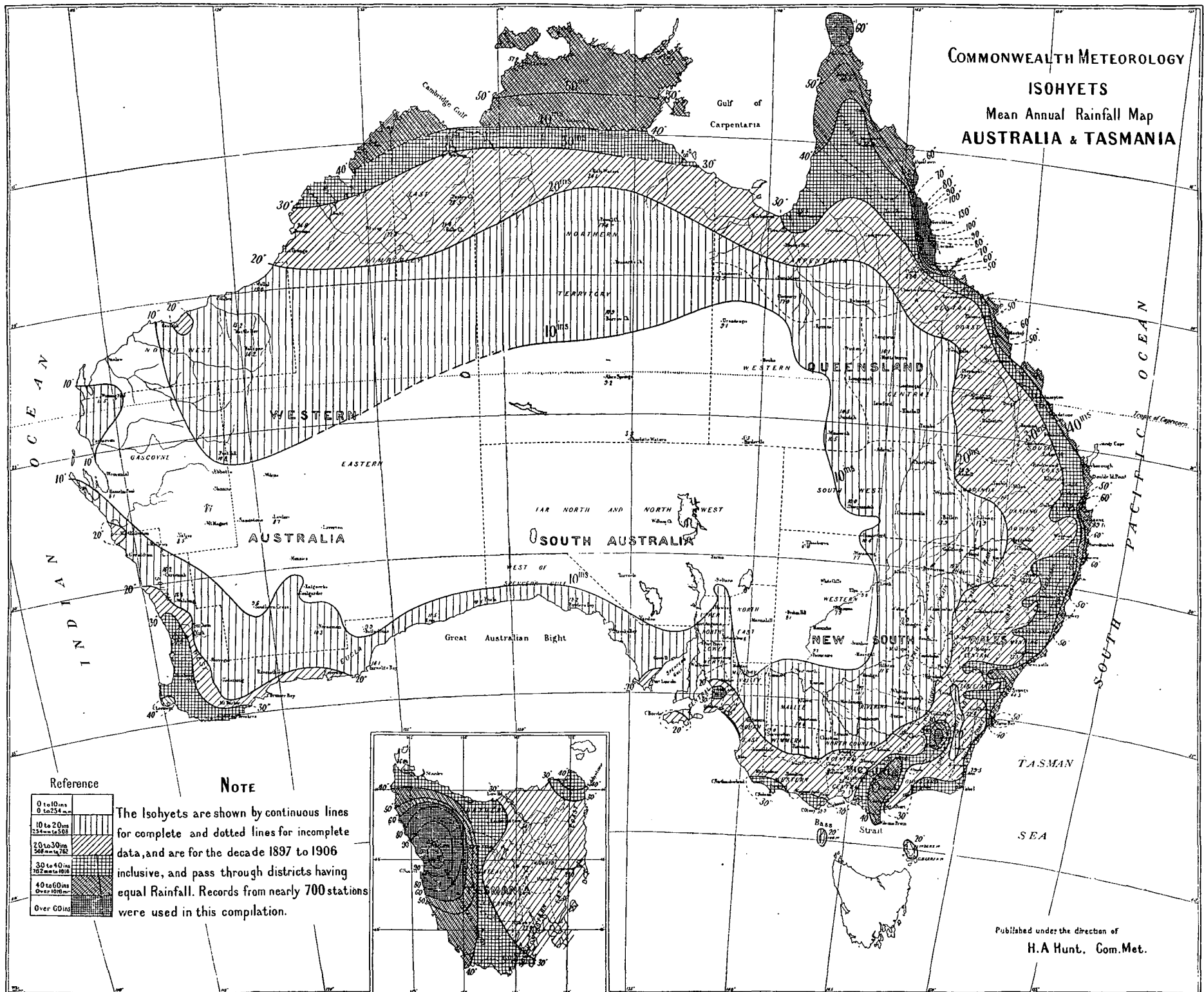
AUSTRALIA — AND — TASMANIA

Showing the mean monthly distribution of Rainfall
in percentages of the average annual

from map published by authority under the direction of
H.A. Hunt Commonwealth Meteorologist



COMMONWEALTH METEOROLOGY
ISOHYETS
Mean Annual Rainfall Map
AUSTRALIA & TASMANIA



**COMPARISON OF RAINFALLS AND TEMPERATURES
OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.**

| Place. | Height above M.S.L. | Annual Rainfall. | | | Temperature. | | | | | |
|-------------------|---------------------------|------------------|----------|---------|-------------------|-------------------|--------------------------|-------------------------|------------------------------|------------------------------|
| | | Average. | Highest. | Lowest. | * Mean Summer. | † Mean Winter. | Highest on Record. | Lowest on Record. | Average Hottest Month. | Average Coldest Month. |
| | Ft. | Ins. | Ins. | Ins. | Fahr. | Fahr. | Fahr. | Fahr. | Fahr. | Fahr. |
| Amsterdam | 6 | 27.29 | 40.59 | 17.60 | 63.2 | 36.8 | 90.0 | 4.1 | 64.4 | 35.4 |
| Auckland | 125 | 43.09 | 54.18 | 31.89 | 65.2 | 52.2 | 91.0 | 31.9 | 67.2 | 51.8 |
| Athens | 351 | 15.48 | 33.32 | 4.55 | 69.7 | 59.5 | 106.5 | 19.6 | 90.4 | 42.0 |
| Bergen | 146 | 89.10 | 102.80 | 73.50 | 56.8 | 34.5 | 88.5 | 4.8 | 57.9 | 33.6 |
| Berlin | 115 | 22.88 | 30.04 | 14.25 | 64.7 | 32.2 | 98.6 | 13.0 | 66.0 | 30.0 |
| Berne | 1,880 | 46.00 | ... | ... | ... | ... | 97.2 | 32.0 | 63.0 | 27.0 |
| Bombay | 37 | 71.15 | 114.89 | 33.41 | 83.0 | 75.2 | 100.0 | 55.9 | 84.8 | 74.2 |
| Breslau | 482 | 22.00 | 28.01 | 16.45 | 63.9 | 30.0 | 100.0 | 23.4 | 65.5 | 29.3 |
| Brussels | 328 | 28.35 | 41.18 | 17.73 | 62.6 | 36.0 | 95.5 | 4.4 | 63.7 | 34.5 |
| Budapest | 500 | 25.20 | 35.28 | 16.79 | 68.6 | 30.2 | 98.6 | 5.1 | 70.4 | 28.2 |
| Buenos Ayres | 72 | 36.82 | 80.73 | 21.53 | 73.2 | 51.5 | 103.1 | 25.9 | 74.2 | 50.5 |
| Calcutta | 21 | 61.98 | 89.32 | 39.38 | 85.1 | 66.9 | 108.2 | 44.2 | 85.4 | 65.5 |
| Capetown | 40 | 25.50 | 36.72 | 17.71 | 68.1 | 54.7 | 102.0 | 34.0 | 68.8 | 53.9 |
| Caracas | 3,420 | 30.03 | 47.36 | 23.70 | 68.3 | 65.3 | 87.8 | 48.2 | 69.2 | 63.7 |
| Chicago | 823 | 33.54 | 45.86 | 24.52 | 70.0 | 26.3 | 103.0 | 23.0 | 72.3 | 24.0 |
| Christchurch | ... | 25.24 | 35.30 | 13.54 | 59.7 | 43.1 | ... | ... | ... | ... |
| Christiana | 82 | 22.52 | 31.73 | 16.26 | 54.5 | 29.5 | 95.0 | 21.1 | 62.6 | 23.9 |
| Colombo | 40 | 83.83 | 139.70 | 51.60 | 81.5 | 79.9 | 95.8 | 65.0 | 82.6 | 79.1 |
| Constantinople | ... | 28.75 | 42.74 | 14.78 | 74.0 | 43.5 | 103.6 | 13.0 | 75.7 | 42.0 |
| Copenhagen | 46 | 22.33 | 28.78 | 13.94 | 60.7 | 32.1 | 90.5 | 13.0 | 62.2 | 31.4 |
| Dresden | 115 | 26.80 | 34.49 | 17.72 | 63.0 | 32.3 | 93.4 | 15.3 | 61.6 | 31.6 |
| Dublin | 47 | 27.66 | 35.56 | 16.60 | 59.4 | 42.0 | 87.2 | 13.3 | 60.5 | 41.7 |
| Durban | 262 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Edinburgh | 441 | 25.21 | 32.05 | 16.44 | 55.9 | 38.8 | 85.3 | 16.6 | 57.2 | 38.3 |
| Geneva | 1,328 | 33.48 | 46.89 | 21.14 | ... | ... | ... | ... | ... | ... |
| Genoa | 157 | 51.29 | 108.22 | 28.21 | ... | ... | ... | ... | ... | ... |
| Glasgow | 184 | 38.49 | 56.18 | 29.05 | 52.7 | 41.0 | 84.9 | 6.6 | ... | ... |
| Greenwich | 159 | 24.12 | 35.54 | 16.38 | 61.3 | 39.3 | 100.0 | 4.0 | 62.7 | 38.6 |
| Hong Kong | 110 | 84.10 | 119.72 | 45.83 | 81.3 | 60.3 | 97.0 | 32.0 | 81.8 | 58.1 |
| Johannesburg | 5,750 | 31.63 | 50.00 | 21.66 | 65.4 | 54.4 | 94.0 | 23.3 | 68.2 | 48.9 |
| Leipzig | 117 | 24.69 | 31.37 | 17.10 | 63.1 | 31.5 | 97.3 | 14.8 | 64.8 | 30.6 |
| Lisbon | 312 | 29.18 | 52.79 | 17.32 | 69.6 | 51.3 | 94.1 | 32.5 | ... | ... |
| London | 18 | 24.04 | 38.20 | 18.23 | 61.2 | 39.3 | 92.3 | 9.4 | 62.8 | 38.7 |
| Madras | 22 | 49.06 | 88.41 | 18.45 | 87.6 | 75.9 | 113.0 | 57.5 | 87.6 | 75.3 |
| Madrid | 2,149 | 16.23 | 27.48 | 9.13 | 73.0 | 41.2 | 107.1 | 10.5 | 75.7 | 39.7 |
| Marseilles | 246 | 21.88 | 43.04 | 12.28 | 70.3 | 45.3 | 100.4 | 11.5 | 83.1 | 56.3 |
| Moscow | 526 | 18.94 | 29.28 | 12.07 | 63.4 | 14.7 | 99.5 | 44.5 | 66.1 | 11.9 |
| Naples | 489 | 33.60 | 50.43 | 16.02 | 76.1 | 49.3 | 104.0 | 23.0 | 77.2 | 48.2 |
| New York | 314 | 42.47 | 59.68 | 28.78 | 72.1 | 31.7 | 100.0 | 6.0 | 74.5 | 30.3 |
| Ottawa | 294 | 33.40 | 41.44 | 26.36 | 67.2 | 14.1 | 98.5 | 33.0 | 69.7 | 12.0 |
| Paris | 165 | 21.92 | 29.56 | 16.44 | 63.5 | 37.1 | 101.1 | 14.1 | 65.8 | 36.1 |
| Pekin | 143 | 24.40 | 36.00 | 18.00 | ... | ... | 114.0 | 5.0 | 79.2 | 23.6 |
| Quebec | 296 | 40.46 | 47.57 | 32.12 | 63.0 | 12.4 | 95.5 | 34.3 | 66.3 | 10.1 |
| Rome | 164 | 33.58 | 57.95 | 20.71 | 74.0 | 46.6 | 100.4 | 19.6 | 76.5 | 45.7 |
| San Francisco | 155 | 22.83 | 38.82 | 9.31 | 59.0 | 51.0 | 101.0 | 29.0 | 61.0 | 50.0 |
| Shanghai | 14 | 44.13 | 62.52 | 27.91 | 77.4 | 39.4 | 79.7 | 37.4 | 82.7 | 37.7 |
| Singapore | 8 | 91.99 | 158.68 | 32.71 | ... | ... | 94.2 | 63.4 | ... | ... |
| Stockholm | 146 | 18.31 | 25.46 | 11.78 | 59.7 | 27.0 | 91.8 | 22.0 | 62.1 | 25.7 |
| St. Petersburg | 16 | 21.30 | 29.52 | 13.75 | 61.1 | 17.4 | 97.0 | 38.2 | 63.7 | 15.2 |
| Tokio | 70 | 59.17 | 77.10 | 45.72 | 73.9 | 38.9 | 97.9 | 15.4 | 77.7 | 37.1 |
| Trieste | 85 | 42.94 | 63.14 | 26.57 | ... | ... | ... | ... | ... | ... |
| Vienna | 663 | 24.50 | 33.90 | 16.50 | 65.7 | 30.4 | 97.7 | 8.0 | 67.1 | 28.1 |
| Vladivostok | 55 | 19.54 | 33.60 | 9.39 | 63.9 | 11.0 | 95.7 | 21.8 | 69.4 | 6.0 |
| Washington | 75 | 43.80 | 61.33 | 18.79 | 74.7 | 34.5 | 104.0 | 15.0 | 76.8 | 32.1 |
| Wellington (N.Z.) | 140 | 49.88 | 60.40 | 34.93 | 60.7 | 49.3 | 98.0 | 30.0 | 62.4 | 45.9 |

FEDERAL CAPITAL SITE.

| | | | | | | | | | | |
|------------------|--------------------------|-------|-------|-------|------|------|-------|------|------|------|
| Canberra (Dist.) | { 2,000 to 2,900 } | 22.52 | 40.29 | 10.45 | 67.5 | 41.8 | 104.0 | 11.1 | 68.4 | 39.7 |
| Queanbeyan | { 2,900 } | | | | | | | | | |

THE STATE CAPITALS.

| | | | | | | | | | | |
|-----------|-----|-------|-------|-------|------|------|-------|------|------|------|
| | | | | | * | † | | | | |
| Perth | 197 | 33.54 | 46.73 | 20.48 | 72.8 | 55.8 | 107.9 | 35.3 | 74.1 | 54.9 |
| Adelaide | 140 | 20.62 | 30.87 | 13.43 | 73.1 | 52.9 | 116.3 | 32.0 | 74.2 | 51.5 |
| Brisbane | 137 | 47.25 | 88.26 | 16.17 | 76.6 | 59.5 | 108.9 | 36.1 | 77.2 | 58.0 |
| Sydney | 146 | 47.95 | 82.81 | 23.01 | 70.9 | 53.9 | 108.5 | 35.9 | 71.6 | 52.3 |
| Melbourne | 115 | 25.40 | 36.42 | 15.61 | 66.4 | 49.9 | 111.2 | 27.0 | 67.5 | 48.5 |
| Hobart | 160 | 23.38 | 40.67 | 13.43 | 61.3 | 47.0 | 105.2 | 27.7 | 62.1 | 45.8 |

* Mean of the three hottest months. † Mean of the three coldest months.

17. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 51' E. HEIGHT ABOVE M.S.L. 197 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 32 F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. Readings | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. 9 a.m. & 3 p.m. | No. of Clear Days. |
|--|--|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|--|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 26 | 13 | 13 | 13 | 13 | 12 | 13 | 14 | 13 |
| January ... | 29.910 | 797 27/98 | 0.74 | 11,656 | S S E | 10.35 | 1.3 | 2.6 | 16.9 |
| February ... | 29.926 | 650 6/08 | 0.67 | 10,052 | S S E | 8.68 | 1.5 | 2.8 | 14.3 |
| March ... | 29.922 | 601 17/99 | 0.56 | 10,188 | S S E | 7.64 | 1.0 | 2.8 | 14.8 |
| April ... | 30.073 | 935 25/00 | 0.45 | 8,760 | S E | 4.79 | 0.8 | 2.4 | 6.0 |
| May ... | 30.077 | 722 22/10 | 0.37 | 8,246 | N E | 2.59 | 2.3 | 5.4 | 4.4 |
| June ... | 30.056 | 851 27/10 | 0.41 | 8,460 | N N E | 1.66 | 1.9 | 5.0 | 4.4 |
| July ... | 30.103 | 949 11/99 | 0.41 | 9,052 | N N E | 1.65 | 2.6 | 5.4 | 6.8 |
| August ... | 30.085 | 966 15/03 | 0.45 | 9,052 | W S W | 2.35 | 1.6 | 5.4 | 7.1 |
| September ... | 30.059 | 864 11/05 | 0.48 | 9,080 | S S W | 3.34 | 1.9 | 5.3 | 6.9 |
| October ... | 30.031 | 686 15/98 | 0.56 | 10,199 | S S W | 5.25 | 1.1 | 5.3 | 7.8 |
| November ... | 29.936 | 777 18/97 | 0.62 | 10,380 | S S W | 7.70 | 0.9 | 3.9 | 12.8 |
| December ... | 29.933 | 672 31/98 | 0.69 | 11,284 | S | 10.01 | 1.3 | 3.0 | 16.8 |
| Year { Totals | — | — | — | — | — | 66.01 | 17.8 | — | 123.1 |
| Year { Averages | 30.020 | — | 0.53 | 9,672 | S | — | — | 4.3 | — |
| Year { Extremes | — | 966 15/8/03 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water mn. 3 ft. below surface. |
|--|-------------------|-----------|------|----------------------------|--------------|-----------------|----------------------|------------------|------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 14 | 14 | 14 | 14 | 14 | 14 | 13 | 12 | — |
| January ... | 84.1 | 62.9 | 73.5 | 107.0 16/97 | 50.6 25/01 | 56.4 | 171.1 4/04 | 42.4 25/02 | — |
| February ... | 84.9 | 63.3 | 74.1 | 106.8 6/98 | 47.7 1/02 | 59.1 | 169.0 4/99 | 41.2 1/02 | — |
| March ... | 81.6 | 60.7 | 71.2 | 104.3 6/7/06 | 45.8 8/03 | 58.5 | 161.6 † | 36.7 8/03 | — |
| April ... | 75.9 | 56.8 | 65.4 | 99.7 9/10 | 42.4 2/01 | 57.3 | 152.0 11/01 | 35.0 2/01 | — |
| May ... | 68.6 | 52.5 | 60.6 | 90.4 2/07 | 39.9 * | 50.5 | 138.8 15/02 | 31.9 18/99 | — |
| June ... | 63.6 | 49.1 | 56.4 | 77.1 9/09 | 36.9 14/98 | 40.2 | 131.0 5/04 | 30.2 14/98 | — |
| July ... | 62.5 | 47.3 | 54.9 | 73.8 24/99 | 36.4 19/06 | 37.4 | 131.0 31/98 | 29.2 29/08 | — |
| August ... | 63.9 | 48.1 | 56.0 | 80.4 30/02 | 35.3 31/08 | 45.1 | 134.1 † | 29.9 31/08 | — |
| September ... | 65.9 | 50.2 | 58.0 | 86.4 28/00 | 39.0 18/00 | 47.4 | 144.8 19/02 | 33.2 15/99 | — |
| October ... | 69.0 | 52.7 | 60.8 | 93.4 17/06 | 41.2 10/03 | 52.2 | 152.6 30/01 | 33.4 1/10 | — |
| November ... | 74.7 | 56.0 | 65.3 | 100.9 27/01 | 42.0 1/04 | 58.9 | 161.5 17/03 | 35.5 6/10 | — |
| December ... | 81.0 | 60.7 | 70.8 | 107.9 20/04 | 48.0 2/10 | 59.9 | 168.3 20/04 | 39.1 2/10 | — |
| Year { Averages | 73.0 | 55.0 | 64.0 | — | — | — | — | — | — |
| Year { Extremes | — | — | — | 107.9 20/12/04 | 35.3 31/8/08 | 72.5 | 171.1 4/1/04 | 29.2 29/7/08 | — |

* 17 and 18, 1899. † 1/99 and 1/09. ‡ 29/1898 and 18/1902.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | | Rainfall. | | | | Dew. | |
|--|-------------|---------------|--------------|---------------|---------------------------|-------------------|----------------|----------------------|---------------------|-----------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days of Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. | Mean No. of days Dew. |
| No. of yrs. over which observation extends | 14 | 14 | 14 | 35 | 35 | 35 | 35 | 35 | — | 14 |
| January ... | 52 | 56 | 45 | 0.34 | 3 | 2.17 1879 | nil * | 1.74 28/79 | — | 2.0 |
| February ... | 54 | 63 | 48 | 0.32 | 2 | 2.30 1883 | nil † | 0.90 10/83 | — | 1.8 |
| March ... | 55 | 62 | 49 | 0.75 | 4 | 4.50 1896 | nil ‡ | 1.53 17/76 | — | 3.8 |
| April ... | 63 | 70 | 54 | 1.64 | 7 | 4.97 1882 | 0.05 § | 2.62 30/04 | — | 8.2 |
| May ... | 74 | 81 | 63 | 5.03 | 14 | 12.13 1879 | 0.98 1903 | 2.80 20/79 | — | 11.2 |
| June ... | 79 | 83 | 74 | 6.66 | 16 | 12.11 1890 | 2.16 1877 | 2.65 16/00 | — | 11.4 |
| July ... | 79 | 81 | 72 | 6.36 | 16 | 10.00 1902 | 2.42 1876 | 3.00 4/91 | — | 12.1 |
| August ... | 75 | 79 | 68 | 5.70 | 17 | 10.33 1882 | 0.46 1902 | 2.79 7/03 | — | 10.3 |
| September ... | 70 | 76 | 64 | 3.33 | 14 | 7.72 1903 | 0.69 1877 | 1.73 23/09 | — | 8.2 |
| October ... | 64 | 75 | 56 | 2.08 | 11 | 7.87 1890 | 0.49 1892 | 1.98 15/10 | — | 5.1 |
| November ... | 57 | 62 | 52 | 0.78 | 6 | 2.12 1880 | nil 1891 | 1.11 30/03 | — | 3.9 |
| December ... | 52 | 56 | 46 | 0.55 | 4 | 3.05 1888 | nil 1886 | 1.72 1/88 | — | 2.6 |
| Year { Totals | — | — | — | 33.54 | 114 | — | — | — | — | 80.6 |
| Year { Averages | 63 | — | — | — | — | 12.13 | — | — | — | — |
| Year { Extremes | — | 83 | 45 | — | — | 5/79 | nil § | 3.00 4/7/91 | — | — |

* 1888, 1894, and 1897. † 1885, 1891, 1896, and 1903. ‡ 1877, 1884, and 1886. § 1890 and 1894.

§ January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 32° F. Mm. Sea Level and Gravity from 9 a.m. and 3 p.m. Readings | Wind. | | | | Mean Amount of Evaporation | No. of Days Lightning. | Mean Amount of Clouds. 9 a.m. & 3 p.m. | No. of Clear Days. |
|--|--|--------------------------------------|------------------------------|--------------|-----------------------|----------------------------|------------------------|--|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 54 | 33 | 33 | 33 | 33 | 41 | 39 | 43 | 29 |
| January ... | 29.913 | 758 19/99 | 0.37 | 8,201 | S W & S | 8.99 | 2.3 | 3.5 | 7.5 |
| February ... | 29.952 | 691 22/96 | 0.31 | 6,953 | S W & S | 7.35 | 2.0 | 3.4 | 7.2 |
| March ... | 30.039 | 592 12/85 | 0.26 | 6,903 | S W to S E | 5.80 | 2.2 | 4.0 | 6.8 |
| April ... | 30.117 | 773 10/96 | 0.24 | 6,377 | S W & S† | 3.41 | 1.6 | 5.0 | 3.7 |
| May ... | 30.123 | 760 9/80 | 0.21 | 6,293 | N E to N | 1.99 | 1.8 | 5.7 | 1.6 |
| June ... | 30.096 | 750 12/78 | 0.27 | 6,775 | N E to N | 1.23 | 2.2 | 6.2 | 1.2 |
| July ... | 30.133 | 674 25/82 | 0.26 | 6,897 | N E to N | 1.29 | 1.6 | 5.8 | 1.2 |
| August ... | 30.100 | 773 31/97 | 0.29 | 7,333 | N E to N† | 1.85 | 2.2 | 5.7 | 1.8 |
| September ... | 30.042 | 720 2/87 | 0.32 | 7,469 | N E & S W† | 2.53 | 2.4 | 5.2 | 2.7 |
| October ... | 29.995 | 768 28/98 | 0.36 | 8,161 | S W & N E† | 4.73 | 3.5 | 4.9 | 3.7 |
| November ... | 29.974 | 677 2/04 | 0.36 | 7,836 | W S W to S | 6.56 | 4.0 | 4.5 | 5.5 |
| December ... | 29.920 | 675 12/91 | 0.36 | 8,190 | W S W to S | 5.41 | 2.8 | 3.8 | 6.9 |
| Year { Totals ... | — | — | — | — | — | 54.44 | 28.6 | — | 49.8 |
| Averages ... | 30.034 | — | 0.30 | 7,282 | S W | — | — | 4.8 | — |
| Extremes ... | — | 773 * | — | — | — | — | — | — | — |

* 10/4/96; 31/8/97. † With tendency N E. ‡ With tendency S W. || Equal.

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | *Sea water min. 3 ft. below surface. |
|--|-------------------|-----------|------|----------------------------|---------------|-----------------|----------------------|------------------|--------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 54 | 54 | 54 | 54 | 54 | 54 | 33 | 50 | 37 |
| January ... | 86.6 | 61.7 | 74.2 | 116.3 26/58 | 45.1 21/84 | 71.2 | 180.0 18/82 | 36.5 14/79 | 70.9 |
| February ... | 86.1 | 61.9 | 74.0 | 113.6 12/99 | 45.4 13/05 | 67.2 | 170.5 10/00 | 36.7 24/78 | 70.9 |
| March ... | 80.9 | 58.9 | 69.9 | 103.0 12/61 | 44.8 —/57 | 63.2 | 174.0 17/83 | 33.8 27/80 | 68.2 |
| April ... | 73.3 | 54.6 | 64.0 | 98.0 10/66 | 39.6 15/59 | 58.4 | 155.0 1/83 | 30.3 27/08 | 64.0 |
| May ... | 65.3 | 50.0 | 57.7 | 86.3 5/66 | 36.9 + | 51.4 | 148.2 12/79 | 25.9 10/91 | 59.0 |
| June ... | 60.2 | 46.6 | 53.4 | 76.0 23/65 | 32.5 27/76 | 43.5 | 138.8 18/79 | 24.5 20/79 | 54.7 |
| July ... | 58.6 | 44.4 | 51.5 | 74.0 11/06 | 32.0 24/08 | 42.0 | 134.5 26/90 | 25.0 17/90 | 52.2 |
| August ... | 61.8 | 45.8 | 53.8 | 82.0 25/62 | 32.3 17/59 | 49.7 | 140.0 31/92 | 23.5 7/88 | 53.7 |
| September ... | 66.2 | 47.7 | 57.0 | 90.7 23/82 | 32.7 4/58 | 58.0 | 160.5 23/82 | 26.2 15/08 | 56.4 |
| October ... | 72.5 | 51.3 | 61.9 | 100.5 30/59 | 35.0 —/57 | 64.5 | 153.8 19/82 | 28.5 7/96 | 60.7 |
| November ... | 78.8 | 55.3 | 67.0 | 113.5 21/65 | 40.8 2/09 | 72.7 | 166.9 20/78 | 31.5 2/09 | 65.2 |
| December ... | 83.5 | 58.8 | 71.1 | 114.2 14/76 | 43.0 † | 71.2 | 175.7 7/99 | 32.5 4/84 | 68.6 |
| Year { | Averages ... | 72.8 | 53.1 | 62.9 | — | — | — | — | 62.0 |
| | Extremes ... | — | — | — | 116.3 26/1/58 | 32.0 24/7/08 | 84.3 180.0 | 23.5 7/8/88 | — |

* Taken at Lighthouse at entrance to Port River. † 26/1895; 24/1904. ‡ 16/1861; 4/1906.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | |
|--|-------------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. Mean No. days Dew |
| No. of yrs. over which observation extends | 43 | 43 | 43 | 54 | 54 | 54 | 54 | 54 | 39 |
| January ... | 42 | 59 | 33 | 0.81 | 5 | 3.28 1870 | nil * | 2.30 2/89 | — 4 |
| February ... | 44 | 56 | 37 | 0.57 | 3 | 3.10 1858 | nil † | 1.81 5/90 | — 5 |
| March ... | 49 | 58 | 40 | 1.15 | 6 | 4.60 1878 | nil ‡ | 3.50 5/78 | — 10 |
| April ... | 56 | 72 | 44 | 1.83 | 10 | 5.65 1889 | 0.09 1888 | 3.15 5/60 | — 13 |
| May ... | 70 | 76 | 58 | 2.82 | 14 | 7.75 1875 | 0.20 1891 | 2.47 5/75 | — 15 |
| June ... | 78 | 84 | 70 | 3.01 | 17 | 6.02 1887 | 0.42 1886 | 1.45 25/84 | — 15 |
| July ... | 78 | 87 | 72 | 2.59 | 17 | 5.38 1865 | 0.36 1899 | 1.75 10/65 | — 17 |
| August ... | 72 | 77 | 65 | 2.38 | 16 | 5.59 1909 | 0.68 1860 | 1.44 31/03 | — 16 |
| September ... | 63 | 73 | 54 | 1.78 | 14 | 3.67 1877 | 0.45 1896 | 1.42 25/93 | — 15 |
| October ... | 54 | 67 | 44 | 1.79 | 12 | 3.83 1870 | 0.31 1888 | 2.24 16/08 | — 12 |
| November ... | 48 | 57 | 38 | 1.05 | 8 | 2.76 1909 | 0.04 1885 | 1.88 28/58 | — 7 |
| December ... | 43 | 50 | 33 | 0.84 | 6 | 3.98 1861 | nil 1904 | 1.32 2/61 | — 4 |
| Year { Totals ... | — | — | — | 20.62 | 128 | — | — | — | 133 |
| Averages ... | 56 | — | — | — | — | — | — | — | — |
| Extremes ... | — | 87 | 33 | — | — | 7.75 5/75 | nil § | 3.50 5/3/78 | — |

* 1878, 1906. † 1860, etc. ‡ 1859, etc. § January, February, March, and December, various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 32° F. Mean Sea Level and Standard Gravity from 9 a.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. 9 a.m. & 3 p.m. | No. of Clear Days. |
|--|--|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|--|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 24 | — | — | — | 24 | 1 | — | 24 | — |
| January ... | 29.869 | — | — | — | E | 5.87 | — | 6.2 | — |
| February ... | 29.890 | — | — | — | S E | 5.22 | — | 6.2 | — |
| March ... | 29.953 | — | — | — | S | 4.55 | — | 6.0 | — |
| April ... | 30.047 | — | — | — | S | 3.62 | — | 5.2 | — |
| May ... | 30.095 | — | — | — | S | 2.62 | — | 4.2 | — |
| June ... | 30.054 | — | — | — | S & W | 1.89 | — | 4.3 | — |
| July ... | 30.063 | — | — | — | S & W | 2.57 | — | 3.8 | — |
| August ... | 30.086 | — | — | — | S & S W | 2.40 | — | 3.2 | — |
| September ... | 30.027 | — | — | — | S | 3.33 | — | 3.2 | — |
| October ... | 29.995 | — | — | — | N & N E | 4.87 | — | 4.5 | — |
| November ... | 29.960 | — | — | — | N E & E | 5.40 | — | 5.2 | — |
| December ... | 29.885 | — | — | — | N E & E | 6.27 | — | 5.7 | — |
| Year { Totals | — | — | — | — | — | 48.61 | — | — | — |
| Averages | 29.993 | — | — | — | S'ly to E'ly | — | — | 5.0 | — |
| Extremes | — | — | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water 3 ft. below surface |
|--|-------------------|-----------|------|----------------------------|------------|-----------------|----------------------|------------------|-------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | — |
| January ... | 85.4 | 68.9 | 77.2 | 108.9 14/02 | 58.8 4/03 | 50.1 | 162.7 20/89 | 49.9 4/03 | — |
| February ... | 84.4 | 68.5 | 76.4 | 101.9 11/04 | 58.7 * | 43.2 | 165.2 6/02 | 49.3 9/89 | — |
| March ... | 82.1 | 66.5 | 74.3 | 96.8 16/88 | 55.6 30/95 | 41.2 | 160.0 1/87 | 46.0 28/02 | — |
| April ... | 78.7 | 61.5 | 70.1 | 95.2 † | 48.6 17/00 | 46.6 | 150.1 1/08 | 37.0 17/00 | — |
| May ... | 73.4 | 55.4 | 64.4 | 88.8 19/97 | 41.3 24/96 | 47.5 | 147.0 1/05 | 29.8 8/97 | — |
| June ... | 69.1 | 50.6 | 59.8 | 81.5 6/06 | 36.3 29/08 | 45.2 | 133.9 6/06 | 25.4 23/88 | — |
| July ... | 68.1 | 47.8 | 58.0 | 83.4 28/98 | 36.1 ‡ | 47.3 | 134.4 29/89 | 23.9 11/90 | — |
| August ... | 71.2 | 49.9 | 60.6 | 87.5 28/07 | 37.4 6/87 | 50.1 | 140.7 30/88 | 27.1 9/99 | — |
| September ... | 75.6 | 54.7 | 65.2 | 90.2 20/04 | 40.7 1/96 | 49.5 | 155.5 28/03 | 30.4 1/89 | — |
| October ... | 79.9 | 59.8 | 69.9 | 101.4 19/93 | 43.3 3/99 | 58.1 | 156.5 31/89 | 34.9 8/89 | — |
| November ... | 82.6 | 63.9 | 73.2 | 105.4 13/98 | 48.5 2/05 | 56.9 | 162.3 7/89 | 38.8 1/05 | — |
| December ... | 85.2 | 67.3 | 76.2 | 105.9 26/93 | 57.0 16/90 | 48.9 | 159.5 23/89 | 49.1 3/94 | — |
| Year { Averages | 78.0 | 59.5 | 68.8 | — | — | — | — | — | — |
| Extremes | — | — | — | 108.9 14/1/02 | 36.1 | 72.8 | 165.2 6/2/10 | 23.9 11/7/90 | — |

* 10-11/04. † 9/96 and 5/03. ‡ 12/94 and 2/96. || 12/7/94 and 2/7/96.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | |
|--|-------------|---------------|-------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. Mean No. days Dew |
| No. of yrs. over which observation extends | 24 | 24 | 24 | 59 | 51 | 59 | 59 | — | — |
| January ... | 65 | 79 | 53 | 6.68 | 14 | 27.72 1895 | 0.61 1882 | 18.31 21/87 | — |
| February ... | 69 | 82 | 55 | 6.72 | 14 | 40.39 1893 | 0.77 1904 | 8.36 16/93 | — |
| March ... | 72 | 85 | 56 | 6.15 | 16 | 34.04 1870 | 0.58 1868 | 11.18 14/08 | — |
| April ... | 72 | 79 | 60 | 3.74 | 13 | 15.28 1867 | 0.04 1897 | 3.93 20/92 | — |
| May ... | 75 | 85 | 64 | 3.00 | 10 | 13.85 1876 | 0.00 1846 | 5.62 9/79 | — |
| June ... | 75 | 92 | 68 | 2.59 | 8 | 14.03 1873 | 0.02 1895 | 6.01 9/93 | — |
| July ... | 73 | 80 | 67 | 2.34 | 8 | 8.46 1889 | 0.00 1841 | 3.54 † | — |
| August ... | 71 | 80 | 65 | 2.37 | 7 | 14.67 1879 | 0.00 * | 4.89 12/87 | — |
| September ... | 66 | 76 | 47 | 2.10 | 8 | 5.43 1886 | 0.10 1907 | 2.46 2/94 | — |
| October ... | 61 | 72 | 52 | 2.69 | 10 | 9.99 1882 | 0.14 1900 | 1.95 20/89 | — |
| November ... | 59 | 71 | 53 | 3.70 | 10 | 10.43 1846 | 0.00 1842 | 4.46 16/86 | — |
| December ... | 61 | 67 | 52 | 5.17 | 12 | 13.97 1910 | 0.35 1865 | 6.60 28/71 | — |
| Year { Totals | — | — | — | 47.25 | 130 | — | — | — | — |
| Averages | 68 | — | — | — | — | — | — | — | — |
| Extremes | — | 85 | 47 | — | — | 40.39 2/1893 | 0.00 † | 18.31 21/1/87 | — |

— signifies no record kept.

* 1862, 1869, 1880. † 5/1946, 7/1841, 8/1862, 1869, 1880, 11/1842. ‡ 15/76, 16/89.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 146 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 33° F. Mean Sea Level and Standard Gravity from 24 hrly. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|--|--|--------------------------------------|------------------------------|--------------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles, mean. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 52 | 44 | 44 | 44 | 52 | 10 | 47 | 49 | 47 |
| January ... | 29.904 | 731 1/71 | 0.38 | 8,322 | NE | 5.30 | 4.7 | 5.9 | 1.9 |
| February ... | 29.948 | 871 12/69 | 0.35 | 7,214 | NE | 4.22 | 4.0 | 6.1 | 1.2 |
| March ... | 30.023 | 943 20/70 | 0.26 | 6,915 | NE | 3.60 | 4.0 | 5.7 | 1.7 |
| April ... | 30.079 | 803 6/82 | 0.24 | 6,396 | NE | 2.49 | 4.1 | 5.1 | 2.5 |
| May ... | 30.068 | 758 6/98 | 0.23 | 6,475 | W | 1.58 | 3.5 | 4.9 | 3.1 |
| June ... | 30.063 | 712 7/00 | 0.31 | 7,329 | W | 1.26 | 2.3 | 4.8 | 3.3 |
| July ... | 30.081 | 930 17/79 | 0.29 | 7,363 | W | 1.20 | 2.6 | 4.3 | 4.5 |
| August ... | 30.076 | 756 22/72 | 0.28 | 7,126 | W | 1.50 | 3.5 | 4.4 | 4.5 |
| September ... | 30.015 | 964 6/74 | 0.32 | 7,345 | W | 2.50 | 4.2 | 4.4 | 3.5 |
| October ... | 29.972 | 925 4/72 | 0.35 | 8,010 | NE | 3.81 | 5.0 | 5.0 | 2.1 |
| November ... | 29.955 | 720 13/68 | 0.36 | 7,833 | NE | 4.68 | 5.6 | 5.6 | 1.5 |
| December ... | 29.867 | 938 3/84 | 0.36 | 5,208 | NE | 5.28 | 5.7 | 5.6 | 1.8 |
| Year { Totals ... | — | — | — | — | — | 37.42 | 49.3 | — | 31.3 |
| Year { Averages ... | 30.006 | — | 0.31 | 7,448 | NE | — | — | 5.1 | — |
| Year { Extremes ... | — | 964 6/9/74 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water min. 3 ft. below surface. |
|--|-------------------|-----------|------|----------------------------|--------------|-----------------|----------------------|------------------|-------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 50 |
| January ... | 78.3 | 64.9 | 71.6 | 108.5 13/96 | 51.2 14/65 | 57.3 | 160.9 13/95 | 44.2 18/97 | 71.4 |
| February ... | 77.2 | 64.8 | 71.0 | 101.0 19/66 | 49.3 23/63 | 51.7 | 162.1 16/98 | 43.4 25/91 | 71.9 |
| March ... | 75.4 | 63.0 | 69.2 | 102.6 3/69 | 48.8 11/86 | 53.8 | 172.3 4/89 | 42.3 13/93 | 71.0 |
| April ... | 70.9 | 58.2 | 64.6 | 89.0 4/05 | 44.6 27/64 | 44.4 | 144.1 10/77 | 38.0 13/92 | 68.4 |
| May ... | 65.0 | 52.0 | 58.5 | 83.5 1/59 | 40.2 22/59 | 43.3 | 129.7 1/96 | 30.9 7/88 | 64.2 |
| June ... | 60.4 | 48.2 | 54.4 | 74.7 24/72 | 38.1 29/62 | 36.6 | 123.0 14/78 | 28.7 30/95 | 59.9 |
| July ... | 58.9 | 45.6 | 52.3 | 74.9 17/71 | 35.9 12/90 | 39.0 | 144.3 15/98 | 24.0 4/93 | 57.3 |
| August ... | 62.2 | 47.5 | 54.9 | 82.0 31/84 | 36.8 3/72 | 45.2 | 149.0 30/78 | 27.7 30/95 | 57.6 |
| September ... | 66.3 | 51.3 | 58.9 | 91.1 24/07 | 40.8 18/64 | 50.3 | 142.2 12/78 | 30.1 17/05 | 60.0 |
| October ... | 71.0 | 55.8 | 63.4 | 99.7 19/98 | 43.3 2/99 | 56.4 | 149.9 13/96 | 32.7 9/05 | 63.3 |
| November ... | 74.2 | 59.6 | 66.9 | 102.7 21/78 | 45.8 1/05 | 56.5 | 158.5 28/99 | 38.8 1/05 | 66.9 |
| December ... | 77.2 | 62.8 | 70.0 | 107.5 31/04 | 49.3 2/59 | 58.2 | 171.5 4/88 | 42.2 8/75 | 69.6 |
| Year { Averages ... | 69.8 | 56.2 | 63.0 | — | — | — | — | — | 65.1 |
| Year { Extremes ... | — | — | — | 108.5 13/1/96 | 35.9 12/7/90 | 72.6 | 172.3 4/3/89 | 24.0 4/7/93 | — |

* Taken at Fort Denison.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | |
|--|-------------|---------------|--------------|---------------|---------------------------|-------------------|----------------|----------------------|---------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days of Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. |
| No. of yrs. over which observation extends | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 51 |
| January ... | 70 | 78 | 60 | 3.44 | 14.1 | 10.49 1883 | 0.42 1888 | 3.75 22/63 | 0.002 1.1 |
| February ... | 73 | 81 | 60 | 4.69 | 14.1 | 18.56 1873 | 0.34 1902 | 8.90 25/73 | 0.003 1.4 |
| March ... | 75 | 85 | 63 | 5.13 | 15.3 | 18.70 1870 | 0.42 1876 | 5.66 25/90 | 0.007 2.9 |
| April ... | 78 | 87 | 64 | 5.27 | 13.4 | 24.49 1861 | 0.06 1868 | 7.52 29/60 | 0.022 6.3 |
| May ... | 76 | 90 | 66 | 5.02 | 15.7 | 20.87 1889 | 0.21 1885 | 8.36 28/89 | 0.030 7.3 |
| June ... | 79 | 89 | 68 | 5.28 | 12.9 | 16.30 1885 | 0.19 1904 | 5.17 16/84 | 0.022 5.3 |
| July ... | 77 | 88 | 66 | 4.62 | 12.2 | 13.21 1900 | 0.12 1862 | 5.72 28/08 | 0.024 6.8 |
| August ... | 74 | 84 | 64 | 3.21 | 11.6 | 14.89 1889 | 0.04 1885 | 5.33 2/60 | 0.021 5.7 |
| September ... | 70 | 79 | 60 | 2.91 | 12.2 | 14.05 1879 | 0.08 1862 | 5.69 10/79 | 0.008 3.4 |
| October ... | 68 | 77 | 55 | 2.86 | 12.7 | 10.81 1902 | 0.21 1867 | 6.37 13/02 | 0.004 1.6 |
| November ... | 68 | 79 | 54 | 2.94 | 12.6 | 9.88 1865 | 0.19 1910 | 4.23 19/00 | 0.006 2.7 |
| December ... | 68 | 77 | 53 | 2.60 | 12.8 | 8.47 1910 | 0.45 1876 | 4.75 13/10 | 0.002 1.0 |
| Year { Totals ... | — | — | — | 47.95 | 158.9 | — | — | — | 0.151 45.5 |
| Year { Averages ... | 73 | — | — | — | — | — | — | — | — |
| Year { Extremes ... | — | 90 | 53 | — | — | 21.49 4/1861 | 0.04 8/1885 | 5.90 25/2/73 | — |

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50' S., LONG. 144° 59' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 32° F. Sea Level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|--|--|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 53 | 43 | 43 | 43 | 43 | 38 | — | 53 | — |
| January ... | 29.912 | 583 10/97 | 0.29 | 7,345 | S W, S E | 6.32 | — | 5.1 | — |
| February ... | 29.961 | 566 8/68 | 0.28 | 6,441 | S W, S E | 5.00 | — | 5.1 | — |
| March ... | 30.039 | 677 9/81 | 0.22 | 6,398 | S W, S E | 5.86 | — | 5.5 | — |
| April ... | 30.101 | 597 7/68 | 0.19 | 5,719 | S W, N E | 5.24 | — | 5.9 | — |
| May ... | 30.104 | 693 12/65 | 0.19 | 5,958 | N W, N E | 1.46 | — | 6.5 | — |
| June ... | 30.076 | 761 13/76 | 0.24 | 6,461 | N W, N E | 1.11 | — | 6.7 | — |
| July ... | 30.097 | 755 3/74 | 0.23 | 6,482 | N W, N E | 1.05 | — | 6.3 | — |
| August ... | 30.065 | 637 14/75 | 0.26 | 6,882 | N W, N E | 1.47 | — | 6.3 | — |
| September ... | 30.006 | 617 11/73 | 0.29 | 7,103 | N W, N W | 2.27 | — | 6.1 | — |
| October ... | 29.964 | 819 5/66 | 0.29 | 7,377 | S W, N W | 3.25 | — | 5.9 | — |
| November ... | 29.952 | 734 13/66 | 0.29 | 7,083 | S W, S E | 4.48 | — | 5.9 | — |
| December ... | 29.898 | 656 1/75 | 0.30 | 7,503 | S W, S E | 5.69 | — | 5.5 | — |
| Year { Totals | — | — | — | — | — | 38.30 | — | — | — |
| Averages | 30.014 | — | 0.26 | 6,730 | S W, N W | — | — | 5.9 | — |
| Extremes | — | 899 5/10/66 | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water min. 3 ft. below surface. |
|--|-------------------|-----------|------|----------------------------|--------------|-----------------|----------------------|------------------|-------------------------------------|
| | Mean Max. | Mean Min. | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 55 | 55 | 55 | 55 | 55 | 55 | 51 | 51 | — |
| January ... | 73.3 | 56.6 | 67.5 | 111.2 14/62 | 42.0 28/85 | 69.2 | 178.5 14/62 | 20.2 28/85 | — |
| February ... | 77.8 | 56.6 | 67.2 | 109.5 7/01 | 40.3 9/65 | 69.2 | 167.5 15/70 | 30.9 6/91 | — |
| March ... | 74.9 | 54.5 | 64.7 | 105.5 2/93 | 37.1 17/84 | 68.4 | 164.5 1/68 | 28.9 — | — |
| April ... | 68.5 | 50.7 | 59.6 | 94.0 6/65 | 34.8 24/88 | 59.2 | 152.0 8/61 | 25.0 23/97 | — |
| May ... | 61.5 | 46.6 | 54.1 | 83.7 7/05 | 31.3 26/95 | 52.4 | 142.6 2/59 | 23.2 21/97 | — |
| June ... | 56.8 | 43.9 | 50.4 | 72.2 1/07 | 28.0 11/66 | 44.2 | 129.0 11/61 | 20.4 17/95 | — |
| July ... | 55.4 | 41.5 | 48.5 | 68.4 24/78 | 27.0 21/69 | 41.4 | 125.8 27/80 | 20.5 12/03 | — |
| August ... | 58.7 | 43.2 | 50.9 | 77.0 20/85 | 28.3 11/63 | 48.7 | 137.4 29/69 | 21.3 14/02 | — |
| September ... | 62.5 | 45.4 | 53.9 | 82.3 30/07 | 31.1 16/08 | 51.2 | 142.1 20/67 | 24.7 13/07 | — |
| October ... | 66.9 | 48.1 | 57.5 | 96.1 30/85 | 32.1 3/71 | 64.0 | 154.3 28/68 | 25.9 3/71 | — |
| November ... | 71.5 | 51.0 | 61.2 | 105.7 27/94 | 36.5 2/96 | 69.2 | 159.6 29/65 | 24.6 2/96 | — |
| December ... | 75.4 | 53.7 | 64.5 | 110.7 15/76 | 40.0 4/70 | 70.7 | 170.3 20/69 | 33.2 1/04 | — |
| Year { Averages | 67.3 | 49.3 | 58.3 | — | — | — | — | — | — |
| Extremes | — | — | — | 111.2 14/1/62 | 27.0 23/7/69 | 84.2 | 178.5 14/1/62 | 20.4 17/6/95 | — |

* 17/1884 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | |
|--|----------------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|
| | Mean 3 a. 3 p. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. |
| No. of yrs. over which observation extends | 53 | 53 | 53 | 55 | 55 | 55 | 55 | 52 | — |
| January ... | 64 | 73 | 52 | 1.88 | 8 | 5.68 1904 | 0.04 1878 | 2.97 9/97 | — |
| February ... | 65 | 75 | 53 | 1.69 | 7 | 6.24 1904 | 0.03 1870 | 2.14 7/04 | — |
| March ... | 67 | 75 | 59 | 2.11 | 8 | 6.36 1874 | 0.18 1859 | 3.05 15/78 | — |
| April ... | 72 | 83 | 62 | 2.34 | 10 | 6.71 1901 | 0.33 1908 | 4.50 22/86 | — |
| May ... | 79 | 86 | 69 | 2.14 | 12 | 4.31 1862 | 0.45 1901 | 1.85 7/91 | — |
| June ... | 80 | 88 | 73 | 2.10 | 14 | 4.51 1859 | 0.73 1877 | 1.74 21/04 | — |
| July ... | 80 | 88 | 74 | 1.85 | 13 | 7.02 1891 | 0.57 1902 | 2.71 12/91 | — |
| August ... | 75 | 81 | 65 | 1.82 | 14 | 3.59 1909 | 0.48 1903 | 1.87 17/81 | — |
| September ... | 72 | 81 | 63 | 2.34 | 14 | 5.87 1870 | 0.52 1907 | 2.62 12/80 | — |
| October ... | 70 | 79 | 63 | 2.66 | 13 | 7.61 1869 | 0.57 1895 | 3.00 17/69 | — |
| November ... | 66 | 75 | 53 | 2.21 | 10 | 5.05 1881 | 0.25 1895 | 2.57 16/76 | — |
| December ... | 64 | 75 | 49 | 2.26 | 9 | 7.18 1863 | 0.11 1904 | 2.62 28/07 | — |
| Year { Totals | — | — | — | 25.40 | 132 | — | — | — | — |
| Averages | 71 | — | — | — | — | — | — | — | — |
| Extremes | — | 88 | 49 | — | — | 7.61 10/69 | 0.03 9/70 | 4.50 22/4/86 | — |

— signifies no record kept.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 58' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

| Month. | Bar. corrected to 32° F. Mean Sea Level and Gravity from 9 a.m. Readings. | Wind. | | | | Mean Amount of Evaporation. | No. of Days Lightning. | Mean Amount of Clouds. | No. of Clear Days. |
|--|---|--------------------------------------|------------------------------|--------------|-----------------------|-----------------------------|------------------------|------------------------|--------------------|
| | | Greatest Number of Miles in one day. | Mean Hourly Pressure. (lbs.) | Total Miles. | Prevailing Direction. | | | | |
| No. of yrs. over which observation extends | 16 | — | 27 | — | 25 | — | — | 27 | — |
| January ... | 29.849 | — | 0.51 | — | S E, N W | — | — | 6.3 | — |
| February ... | 29.939 | — | 0.51 | — | N W, S E | — | — | 5.4 | — |
| March ... | 29.965 | — | 0.51 | — | N W, S E | — | — | 5.2 | — |
| April ... | 29.977 | — | 0.47 | — | N W, S E | — | — | 6.5 | — |
| May ... | 30.037 | — | 0.47 | — | N W | — | — | 6.8 | — |
| June ... | 29.976 | — | 0.43 | — | N W | — | — | 6.6 | — |
| July ... | 29.955 | — | 0.43 | — | N W | — | — | 6.6 | — |
| August ... | 29.986 | — | 0.51 | — | N W | — | — | 6.0 | — |
| September ... | 29.572 | — | 0.63 | — | N W, S E | — | — | 5.2 | — |
| October ... | 29.833 | — | 0.63 | — | N W, S E | — | — | 5.2 | — |
| November ... | 29.833 | — | 0.63 | — | N W, S E | — | — | 5.9 | — |
| December ... | 29.793 | — | 0.63 | — | N W, S E | — | — | 5.9 | — |
| Year { Totals ... | — | — | — | — | — | — | — | — | — |
| Averages ... | 29.918 | — | 0.55 | — | N W, S E | — | — | 6.0 | — |
| Extremes ... | — | — | — | — | — | — | — | — | — |

TEMPERATURE.

| Month. | Mean Temperature. | | | Extreme Shade Temperature. | | Greatest Range. | Extreme Temperature. | | Sea water mn. 3 ft. below surface |
|--|-------------------|------|------|----------------------------|--------------|-----------------|----------------------|------------------|-----------------------------------|
| | Mean Max. | Mean | Mean | Highest. | Lowest. | | Highest in Sun. | Lowest on Grass. | |
| No. of yrs. over which observation extends | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 23a . | — |
| January ... | 70.9 | 53.2 | 62.0 | 105.0 1/00 | 40.3 2/06 | 64.7 | 160.0 † | 30.6 1897 | — |
| February ... | 71.1 | 53.0 | 62.1 | 104.4 12/99 | 39.0 20/87 | 65.4 | 165.0 24/98 | 28.3 1887 | — |
| March ... | 68.0 | 50.6 | 59.3 | 97.5 7/91 | 36.0 31/05 | 61.5 | 147.5 1/06 | 27.5 30/02 | — |
| April ... | 63.0 | 47.8 | 55.4 | 82.4 6/88 | 33.3 24/88 | 49.1 | 138.5 12/05 | 25.0 1886 | — |
| May ... | 57.6 | 43.5 | 50.6 | 75.3 3/88 | 29.2 20/02 | 46.1 | 123.0 1889 | 20.0 19/02 | — |
| June ... | 52.8 | 41.4 | 47.1 | 69.2 1/07 | 29.5 26/02 | 39.7 | 123.0 12/94 | 21.0 6/87 | — |
| July ... | 52.1 | 39.4 | 45.8 | 65.4 15/98 | 27.7 11/95 | 37.7 | 118.7 19/96 | 18.7 16/86 | — |
| August ... | 55.0 | 41.1 | 48.0 | 71.5 17/02 | 30.5 4/97 | 41.0 | 129.0 1887 | 20.1 7/09 | — |
| September ... | 58.5 | 42.9 | 50.7 | 79.5 * | 31.0 16/97 | 48.5 | 134.0 7/94 | 22.7 1886 | — |
| October ... | 62.6 | 45.3 | 54.0 | 86.0 29/07 | 32.0 12/89 | 54.0 | 146.0 1885 | 23.8 † | — |
| November ... | 66.4 | 48.2 | 57.3 | 98.0 23/88 | 37.0 † | 61.0 | 151.8 7/09 | 26.0 1/08 | — |
| December ... | 69.0 | 50.8 | 59.9 | 105.2 30/97 | 38.0 3/06 | 67.2 | 156.0 18/05 | 27.2 1886 | — |
| Year { Averages ... | 62.3 | 46.4 | 54.4 | — | — | 77.5 | — | — | — |
| Extremes ... | — | — | — | 105.2 30/12/97 | 27.7 11/7/95 | — | 165.0 24/2/98 | 18.7 16/7/86 | — |

* 30/91 and 17/97. † 24/84, 13/87, 11/85, and 7/00. ‡ 5/86 and 13/05. § 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

| Month. | Humidity. | | | Rainfall. | | | | Dew. | |
|--|-------------|---------------|--------------|---------------|------------------------|-------------------|----------------|----------------------|---------------------|
| | Mean 9 a.m. | Highest Mean. | Lowest Mean. | Mean Monthly. | Mean No. of Days Rain. | Greatest Monthly. | Least Monthly. | Greatest in One Day. | Mean Amount of Dew. |
| No. of yrs. over which observation extends | 16 | 16 | 16 | 66 | 53 | 66 | 70 | 28- | — |
| January ... | 63 | 72 | 55 | 1.85 | 9 | 5.91 1893 | 0.03 1841 | 2.59 30/05 | — |
| February ... | 64 | 76 | 51 | 1.48 | 8 | 9.15 1854 | 0.07 1847 | 1.60 22/03 | — |
| March ... | 68 | 76 | 62 | 1.61 | 9 | 7.60 1854 | 0.02 1843 | 1.45 1/83 | — |
| April ... | 74 | 84 | 61 | 1.81 | 10 | 6.50 1909 | 0.07 1904 | 5.02 20/09 | — |
| May ... | 78 | 85 | 68 | 1.80 | 12 | 6.37 1905 | 0.10 1843 | 1.62 31/05 | — |
| June ... | 82 | 92 | 75 | 2.21 | 13 | 8.15 1889 | 0.22 1852 | 4.11 14/89 | — |
| July ... | 80 | 88 | 73 | 2.13 | 13 | 5.98 1849 | 0.30 1850 | 1.56 8/94 | — |
| August ... | 78 | 82 | 70 | 1.81 | 13 | 10.16 1858 | 0.23 1854 | 2.28 13/90 | — |
| September ... | 74 | 82 | 65 | 2.10 | 14 | 7.14 1844 | 3.39 1847 | 1.57 24/85 | — |
| October ... | 68 | 75 | 60 | 2.18 | 14 | 6.67 1906 | 0.26 1850 | 2.58 4/06 | — |
| November ... | 63 | 76 | 53 | 2.54 | 12 | 8.92 1849 | 0.16 1868 | 3.70 30/85 | — |
| December ... | 59 | 73 | 51 | 1.88 | 11 | 9.00 1875 | 0.11 1842 | 2.27 27/07 | — |
| Year { Totals ... | — | — | — | 23.38 | 138 | — | — | — | — |
| Averages ... | 71 | — | — | — | — | — | — | — | — |
| Extremes ... | — | 92 | 51 | — | — | 10.16 8/1858 | 3.02 3/1843 | 5.02 20/4/09 | — |

— Signifies no record kept.