

resemble the parts of South America and South Africa, that are situated in corresponding latitudes. The seaward districts of New South Wales seem in this respect to be like Southern Europe. The mean annual temperature of Sydney is 62° 4' Fahr., almost equal to that of Lisbon in Portugal. The inland plains of this colony, however, west of the Blue Mountains, which suffer much from evaporation, experience in summer a heat which rises to 100° Fahr. in the shade, and sometimes as high as 140°. There are highland districts, on the contrary, such as Kiandra, 4640 feet above the sea-level, where frost, snow, and hail are endured through the winter. On the Australian Alps, cold being more intense in the dry air, the limit of perpetual snow comes down to 7145 feet. The days on which rain falls in the coast regions of New South Wales average from 100 to 150 in the year, and the amount from 20 inches to 50 inches, decreasing generally farther inland.

In winter, in New South Wales, the prevalent winds blow from the west, with occasional storms of wind and rain from the eastward; while the autumn months have much cloudy weather, not accompanied by rain. January and February are the hottest months of summer, and July the coldest month of winter.

With regard to the climate of Victoria, Mr Robert Ellery, Government astronomer at Melbourne, in his report of 1872, furnishes exact information. The mean annual temperature at Melbourne during fourteen years was 57°·6, and that of the whole province 56°·8, including stations 2000 feet or 1400 feet above the sea-level at Daylesford and Ballarat. This is equivalent to the mean annual temperature of Marseilles and Florence, in the northern hemisphere, but the climate of Melbourne is much more equable than that of the Mediterranean shores. The lowest temperature yet recorded has been 27°, or 5° below the freezing point; the highest, 111° in the shade, occurring during one of the hot winds, called "brickfielders," which, loaded with dust, occasionally blow for a few hours in summer. At Sandhurst, 778 feet above the sea, the greatest extremes of temperature yet observed were 117° and 27°·5; at Ballarat the extreme of winter cold was 10° below freezing.

The amount of humidity in the air is liable to great and rapid variations in the summer months. It is sometimes reduced as much as 60 per cent. within a few hours, by the effect of hot dry winds. But this is compensated by an access of moisture upon a change of wind. The annual average rainfall at Melbourne, which for thirty years is stated at 25·66 inches, does not seem less than that of places in similar latitudes in other parts of the world. Yet it proves inadequate, because of the great amount of evaporation, estimated by Professor Neumayer at 42 inches.

The spring season in Victoria, consisting of the months of September, October, and November, is genial and pleasant, with some rain. The summer—December, January, and February—is generally hot and dry, though its first month is sometimes broken by storms of cold wind and heavy rain. In February the north winds assume the character of siroccos, and bush-fires often devastate the grassy plains and forests of the inland country. The autumn months—March, April, and May—are, in general, the most agreeable; and at this season vegetable life is refreshed, and puts forth a growth equal to that of the spring. The winter is June, July, and August, with strong, dry, cold winds from the north, alternating with frequent rain from the opposite quarter; there is little ice or snow, except in the mountain districts.

Botany.—A probable computation of the whole number of distinct vegetable species indigenous to Australia and

Tasmania has been made by Baron Ferdinand von Müller, the Government botanist at Melbourne. He believes that, omitting the minute fungi, there will not be found above 10,000 species of Australian plants. The standard authority upon this subject, so far as it could be known sixty years ago, but now requiring to be completed and extended, was the *Prodromus Floræ Novæ Hollandiæ*, published in 1810 by Mr Robert Brown of the British Museum. Besides making personal observations from 1802 to 1805, he had classified the collections procured by Sir Joseph Banks when Captain Cook's ship visited the eastern shore. Upon that occasion, in 1769, the name of Botany Bay was given to an inlet near Port Jackson, from the variety of new specimens found there. Baron von Müller's Report of 1857 on the researches made by him alone in the North Australian exploring expedition under Mr Gregory, exhibits 2000 new species, representing more than 800 genera, which belong to 160 different orders. He could discover no new natural order, or fundamental form of the vegetable kingdom, in a minute examination of the flora of Arnhem Land, the country around the Gulf of Carpentaria, and the Victoria River, but 60 genera were found that had not been noticed by any earlier Australian botanist.

The eastern parts of this continent, New South Wales and Queensland, are very much richer, both in their botany and in their zoology, than any other parts of Australia. Much was done here for the former science, half a century ago, by Mr Allan Cunningham, whose monumental obelisk fitly stands in the Botanic Garden at Sydney. In general, the growth of trees on the north and north-west coasts is wanting in size and regularity, compared with their growth in eastern Australia. To the last-mentioned region, for instance, the pines are entirely confined; here the Moreton Bay pine, and Bunya Bunya pine, of the genus *Araucaria*, growing to 150 feet in height, yield excellent timber. The red cedar, the iron bark, the blue gum-tree, and others useful to the carpenter, belong likewise to the eastern highlands. The *Casuarina*, or she-oak, is found on the shores of Carpentaria and in the interior, but not on the banks of the Victoria River to the north-west. Of the *Eucalyptus*, or gum-tree, Australia has 400 species; but the one most uniformly distributed is the *Eucalyptus rostrata* or *acuminata*, called the flooded gum-tree; its timber is durable, and takes a fine polish. Rosewood, tulip-wood, sandal-wood, and satin-wood, with other materials for the cabinetmaker's ornamental work, abound in the forests of Queensland. The forest scenery of the more northerly districts, within the tropics, and onwards to Rockingham Bay, is described as of great luxuriance. It consists of many kinds of large umbrageous trees, some of an Indian type, intermixed with noble araucarias, all matted together in an impervious thicket by lianes of the convolvulus, the calamus, and other plants, climbing or pendent, harbouring in their shade many parasitical orchids and ferns. Such forests overhang the seaward sides of the mountain ranges, where they inhale abundant moisture from the winds of the Pacific Ocean, and feed upon a congenial soil from the decomposition of schistose rocks.

A striking contrast is offered to the view beyond the coast ranges. The interior of Queensland presents either highland downs of basaltic origin, almost bare of trees, but with abundant herbaceous vegetation, good pasture grass, and an immense quantity of vervain, or the Brigalow scrub, merely shrubs and small trees, on a soil of argillaceous sandstone. The sandstone table-lands, again, naked and dry, produce but a few diminutive eucalypti, and sparse tufts of uncatable grasses, while the inland deserts have only the acacia to break the monotony of the scene. The character of the inland flora adds confirmation to the belief that the interior was formerly a marine soil, which

has not yet been deprived of its saline properties. In the districts farthest removed from the action of fresh water, hundreds of miles are covered with such plants as will grow on the sea-shore, e.g., the mesembryanthemum called pig's face or Hottentot fig. Other species belonging to the coastward uplands seem to have been conveyed into the interior by the action of water, as the belts of timber, and of pine or cypress scrub, are always found to extend along the line of direction taken by floods. They grow on sandy ridges, alongside of hollows, or depressed channels. On the north coast, so much of which is flat, and often swampy or sandy, the mangrove flourishes as in other tropical regions.

From the extreme aridity of the climate in most parts of northern Australia, there is a singular absence of mosses and lichens. North-west Australia possesses, in the *Adansonia Gregorii*, or gouty-stem tree, a counterpart of the West African baobab, or monkey-bread tree. It is worthy of remark that, with a few exceptions, the Australian trees are evergreens. They also show a peculiar reverted position of their leaves, which hang vertically, turning their edges instead of their sides towards the sun; and the eucalypti have the peculiarity of shedding their bark annually instead of their leaves. In Australia the native species of lily, tulip, and honeysuckle appear as standard trees of considerable size. The native grasses do not form a continuous and even greensward, as in Europe, but grow in detached clumps or tufts. None of the cereal plants are indigenous, and very few of the fruits or roots that supply human food; but many Australian plants are likely to be valuable for medicinal or chemical manufactures.

This continent, as might be expected, has some of the same botanical families that occupy South Africa, Polynesia, and South America. Its relations in that respect to Europe are shown by Alphonse de Candolle's tabular statements in the *Géographie Botanique Raisonnée*. He gives the exact number of species common to Australia and to France in each of the principal families or natural orders. It appears that of 3614 species of phanerogamic plants in France, only 45 belong to Australia. But it will be sufficient, without citing the numerical details, to quote Baron von Müller's list of the natural orders having the most numerous species of indigenous growth in South Australia. They are here arranged in succession, according to their comparative amounts of specific diversity, those which have the greatest number of species being mentioned first. Of the phanerogamic series, the leguminous and the composite families united form nearly one-fourth. Indeed, the half of the dicotyledonous plants, or exogens, that exist in the sub-tropical districts belong to these two orders. Next come the myrtaceous plants, the ferns, and the grasses; the Proteaceæ, which form a conspicuous feature of Australian botany; the Orchidaceæ, the epacrid family, and the parsley family, or Umbellifereæ; the Diosmeæ, a sub-order of the Rutaceæ or rue family; the Liliaceæ, the Labiatae or mint family, the Goodeniæ, the Scrophulariaceæ or figworts, and the Salsolaceæ. The Ranunculaceæ, the geranium family, the rosaceous plants, and the epacrid group, are not found in Australia north of the tropical line.

Animals.—The zoology of Australia and Tasmania presents a very conspicuous point of difference from that of other regions of the globe, in the prevalence of non-placental mammalia. The vast majority of the mammalia are provided with an organ in the uterus, by which, before the birth of their young, a vascular connection is maintained between the embryo and the parent animal. There are two orders, the Marsupialia and the Monotremata, which do not possess this organ. Both these are found in Australia, to which region indeed they are not absolutely confined;

but the marsupials alone constitute two-thirds of all the Australian species of mammals. It is the well-known peculiarity of this order that the female has a pouch or fold of skin upon her abdomen, in which she can place the young for suckling within reach of her teats. The opossum of America is the only species out of Australasia which is thus provided. Australia is inhabited by at least 110 different species of marsupials, which have been arranged in five tribes, according to the food they eat, viz., the root-eaters (wombats), the fruit-eaters (phalangers), the grass-eaters (kangaroos), the insect-eaters (bandicoots), and the flesh-eaters (native cats and rats). Of these tribes the wombats are closely allied to the phalangers, represented by the opossums and flying squirrels, with the native bear, while fossil remains of twenty extinct species have also been found. Of wombats now existing there are four species, all of nearly the same size, seldom exceeding 100 lb in weight. They all burrow in the ground, and their habitat is in New South Wales, Tasmania, and South Australia. There is but one species of the singular animal miscalled the native bear, which is more like a sloth in its habits. Three varieties of brush-tailed opossum are found, but one of them exists only in Tasmania; and there are three ring-tailed varieties in almost every part of Australia. The great flying phalanger (*Petaurista*) is nearly allied to the last-mentioned genus; it exists only in East Australia; as does the small flying phalanger (*Belideus*), which is restricted to mountain districts. The interior of Australia and the west coast are wanting in these species, but two or three of them occur on the north coast. The smallest phalanger (*Acrobata pygmaea*) is less than a mouse, and has a feathery tail. The little *Tarsipes rostratus* is almost toothless, but has a long hairy tongue, which it thrusts into flowers to suck their sweetness.

The kangaroo (*Macropus*) and most of its congeners show an extraordinary disproportion of the hind limbs to the fore part of the body. The rock wallabies again have short tarsi of the hind legs, with a long pliable tail for climbing, like that of the tree kangaroo of New Guinea, or that of the jerboa. Of the larger kangaroos, which attain a weight of 200 lb and more, eight species are named, only one of which is found in West Australia. There are some twenty smaller species in Australia and Tasmania, besides the rock wallabies and the hare kangaroos; these last are wonderfully swift, making clear jumps eight or ten feet high. To this agility they owe their preservation from the prairie fires, which are so destructive in the interior during seasons of drought. In the rat kangaroo there is not the same disproportion of the limbs; it approaches more nearly to the bandicoot, of which seven species exist, from the size of a rat to that of a rabbit. The carnivorous tribe of marsupials, the larger species at any rate, belong more to Tasmania, which has its "tiger" and its "devil." But the native cat, or *dasyurus*, is common to every part of Australia. Several different species of pouched rats and mice, one or two living in trees, are reckoned among the flesh-eaters. Fossil bones of extinct kangaroo species are met with, which must have been of enormous size, twice or thrice that of any species now living.

We pass on to the other curious order of non-placental mammals, that of the Monotremata, so called from the structure of their organs of evacuation with a single orifice, as in birds. Their abdominal bones are like those of the marsupials; and they are furnished with pouches for their young, but have no teats, the milk being distilled into their pouches from the mammary glands. Australia and Tasmania possess two animals of this order,—the echidna, or spiny ant-eater (hairy in Tasmania), and the *Platypus anatinus*, the duck-billed water-mole, otherwise named the *Ornithorhynchus paradoxus*. This odd animal is provided

with a bill or beak, which is not, like that of a bird, affixed to the skeleton, but is merely attached to the skin and muscles.

Australia has no apes, monkeys, or baboons, and no ruminant beasts. The comparatively few indigenous placental mammals, besides the dingo, or wild dog—which, however, may have come from the islands north of this continent—are of the bat tribe and of the rodent or rat tribe. There are four species of large fruit-eating bats, called flying foxes, twenty of insect-eating bats, above twenty of land-rats, and five of water-rats. The sea produces three different seals, which often ascend rivers from the coast, and can live in lagoons of fresh water; many cetaceans, besides the "right whale" and sperm whale; and the dugong, found on the northern shores, which yields a valuable medicinal oil.

The birds of Australia in their number and variety of species (reckoned at 690) may be deemed some compensation for its poverty of mammals; yet it will not stand comparison in this respect with regions of Africa and South America in the same latitudes. The black swan of West Australia was thought remarkable when discovered as belying an old Latin proverb. There is also a white eagle. The vulture is wanting. Sixty species of parrots, some of them very handsome, are found in Australia. The emu, a large bird of the order Cursores, or runners, corresponds with the African and Arabian ostrich, the rhea of South America, and the cassowary of the Moluccas and New Guinea. In New Zealand this order is represented by the apteryx, as it formerly was by the gigantic moa, the remains of which have been found likewise in Queensland. Of the same species as the birds of paradise is the graceful *Mœnura superba*, or lyre bird, with its tail feathers spread in the shape of a lyre. The mound-raising megapodes, the bower-building satin-birds, and several others, display peculiar habits. The honey-eaters present a great diversity of plumage. There are also many kinds of game birds, pigeons, ducks, geese, plovers, and quails.

The ornithology of New South Wales and Queensland is more varied and interesting than that of the other provinces.

As for reptiles, Australia has a few tortoises, all of one family, and not of great size. The "leathery turtle," which is herbivorous, and yields abundance of oil, has been caught at sea off the Illawarra coast so large as 9 feet in length. The saurians or lizards are numerous, chiefly on dry sandy or rocky ground in the tropical region. The great crocodile of Queensland is 30 feet long, there is a smaller one, 6 feet long, to be met with in the shallow lagoons of the interior. The monitor, or fork-tongued lizard, which burrows in the earth, climbs, and swims, is said to grow to a length of 8 or 9 feet. This species, and many others, do not extend to Tasmania. There are about twenty kinds of night-lizards, and many which hibernate. One species can utter a cry when pained or alarmed, and the tall-standing frilled lizard can lift its forelegs, and squat or hop like a kangaroo. There is also the *Moloch horridus* of South and West Australia, covered with tubercles bearing large spines, which give it a very strange aspect. This and some other lizards have power to change their colour, not only from light to dark, but in some parts from yellow to grey or red. Dr Gray, of the British Museum, has described fifty species of Australian lizard.

The snakes are reckoned at sixty-three species, of which forty-two are venomous, but only five dangerous. North Queensland has many harmless pythons. There are forty or fifty different sorts of frogs; the commonest is distinguished by its blue legs and bronze or gold back; the largest is bright green; while the tree-frog has a loud shrill voice, always heard during rain.

The Australian seas and rivers are inhabited by many

fishes of the same genera as exist in the southern parts of Asia and Africa. Of those peculiar to Australian waters may be mentioned the arripis, represented by what is called among the colonists a salmon trout. A very fine fresh-water fish is the Murray cod, which sometimes weighs 100 lb; and the golden perch, found in the same river, has rare beauty of colour. Among the sea fish, the snapper is of great value as an article of food, and its weight comes up to 50 lb. This is the *Pagrus unicolor*, of the family of Sparidæ, which includes also the bream. Its colours are beautiful, pink and red with a silvery gloss; but the male as it grows old takes on a singular deformity of the head, with a swelling in the shape of a monstrous human-like nose. These fish are caught in numbers outside Port Jackson for the Sydney market. Two species of mackerel, differing somewhat from the European species, are also caught on the coasts. The so-called red garnet, a pretty fish, with hues of carmine and blue stripes on its head, is much esteemed for the table. The *Trigla polyommata*, or flying garnet, is a greater beauty, with its body of crimson and silver, and its large pectoral fins, spread like wings, of a rich green, bordered with purple, and relieved by a black and white spot. Whiting, mullet, gar-fish, rock cod, and many others known by local names, are in the lists of edible fishes belonging to New South Wales and Victoria. Much interesting and valuable information upon Australian zoology will be found in a recent essay by Mr Gerard Krefft, curator and secretary of the museum at Sydney, and in the Count de Castelnau's report on the fishes of Victoria at the International Exhibition of 1873.

Aborigines.—The Papuan, Melanesian, or Australasian aborigines exhibit certain peculiarities which are not found in the African negro, to which race they otherwise present some similarity. In the Australasian the forehead is higher, the under jaw less projecting, the nose, though flat and extended compared with that of the European, is less depressed than in the African. His lips are thick, but not protuberant; and the eyes are sunken, large, and black. The colour of his skin is lighter—of a dusky hue—than that of the Negro. In stature he equals the average European, but tall men are rare, except in North Queensland; his body and limbs are well shaped, strongly jointed, and highly muscular. The hind parts are not, as in the African, excessively raised; and while the calf of the leg is deficient, the heel is straight. The natives of Papua have woolly spirally-twisted hair. Those of Tasmania, now exterminated, had the same peculiarity. But the natives of the Australian continent have straight or curly black hair. The men wear short beards and whiskers.

Their mental faculties, though probably inferior to those of the Polynesian copper-coloured race, are not contemptible. They have much acuteness of perception for the relations of individual objects, but little power of generalisation. No word exists in their language for the general terms tree, bird, or fish; yet they have invented a name for every species of vegetable and animal they know. The grammatical structure of some North Australian languages has a considerable degree of refinement. The verb presents a variety of conjugations, expressing nearly all the moods and tenses of the Greek. There is a dual, as well as a plural form in the declension of verbs, nouns, pronouns, and adjectives. The distinction of genders is not marked, except in proper names of men and women. All parts of speech, except adverbs, are declined by terminational inflections. There are words for the elementary numbers, one, two, three; but "four" is usually expressed by "two-two;" then "five" by "two-three," and so on. They have no idea of decimals. The number and diversity of separate languages, not mere dialects, is truly bewildering. Tribes of a few hundred people, living within a few

miles of each other, have often scarcely a phrase in common. This is more especially observed in New South Wales, a country much intersected by dividing mountain ranges. But one language is spoken all along the Rivers Murray and Darling, while the next neighbours of the Murray tribes, on both sides, are unable to converse with them.

It is, nevertheless, tolerably certain that all the natives of Australia belong to one stock. There appears reason to believe that their progenitors originally landed on the north-west coast, that of Cambridge Gulf or Arnhem Land, in canoes drifting from the island of Timor. They seem then to have advanced over the continent in three separate directions. By one route they moved, in the course of ages, directly across to the south coast, near the head of the Great Bight, Spencer Gulf, and the Gulf of St Vincent. Another division followed the west coast to Swan River, and round by King George's Sound. The third and most important body, turning eastward, crossed the head of the Gulf of Carpentaria, then split and subdivided itself amidst the rivers and highland ranges of Queensland, while some of its tribes crossing the Upper Darling occupied New South Wales, overspread the Riverina, and peopled the south-eastern quarter of Australia. The proofs and arguments upon which this hypothetical distribution is based are set forth by Mr Eyre in his interesting essay on the Australian aborigines (*Discoveries in Central Australia*, &c., by E. J. Eyre, resident magistrate, Murray River, vol. ii.) It is chiefly the prevalence of some peculiar customs, such as circumcision, or the removal of two upper-jaw teeth at a stated age of adolescence, that seems to mark the common descent of tribes, now widely distant in location, which appear to have belonged to one of the supposed main streams of population. The discontinuance of such customs among the tribes of the other main divisions is plausibly ascribed to local influences. From a comparison of their languages, the diversities of which have been already referred to, it appears that little aid is to be expected from them in ethnological grouping.

The natives of the north-eastern quarter—a tropical region of diversified surface, with many rivers and thick forests, as well as open highlands—are far superior in body, mind, and social habits to those of the rest of Australia. They bear, in fact, most resemblance to their neighbours and kindred in the island of New Guinea, but are still below these in many important respects.

If a general view be taken of the tribes of Australia, and the state in which they existed independently of recent European intercourse, two or three extraordinary defects exhibit themselves. They never, in any situation, cultivated the soil for any kind of food-crop. They never reared any kind of cattle, or kept any domesticated animal except the dog, which probably came over with them in their canoes. They have nowhere built permanent dwellings, but contented themselves with mere hovels for temporary shelter. They have neither manufactured nor possessed any chattels beyond such articles of clothing, weapons, ornaments, and utensils as they might carry on their persons, or in the family store-bag for daily use. Their want of ingenuity and contrivance has, however, undoubtedly been promoted by the natural poverty of the land in which the race settled.

The sole dress of both sexes in their aboriginal state is a cloak of skin or matting, fastened with a skewer, but open on the right-hand side. No headgear is worn, except sometimes a net to confine the hair, a bunch of feathers, or the tails of small animals. The bosom or back is usually tattooed, or rather scored with rows of hideous raised scars, produced by deep gashes at the age when youth comes to manhood or womanhood. Their dwellings, for the most

part, are either bowers, formed of the branches of trees, or hovels of piled logs, loosely covered with grass or bark, which they can erect in an hour, wherever they encamp. But some huts of a more commodious and substantial form were seen by Flinders on the south-east coast in 1799, and by Captain King and Sir J. Mitchell on the north-east, where they no longer appear. The ingenuity of the race is mostly to be recognised in the manufacture of their weapons of warfare and the chase. While the use of the bow and arrow does not seem to have occurred to them, the spear and axe are in general use, commonly made of hard-wood; the hatchets of stone, and the javelins pointed with stone or bone. The peculiar weapon of the Australian is the boomerang, a curved blade of wood, of such remarkable construction, that it swerves from its direct course, sometimes returning so as to hit an object behind the thrower. Their nets, made by women, either of the tendons of animals or the fibres of plants, will catch and hold the strong kangaroo or the emu, or the very large fish of Australian rivers. Canoes of bent bark, for the inland waters, are hastily prepared at need; but the inlets and straits of the north-eastern sea-coast are navigated by larger canoes and rafts of a better construction.

Without claiming permanent ownership of the land, each native tribe was accustomed, till the English squatter came, to enjoy the recognised manorial dominion of its own hunting-ground, perhaps ten or twelve miles square. This was subdivided between the chief heads of families. The affairs of a tribe are ruled by a council of the men past middle age who are still in full vigour of mind and body. One may be their president, but they have no hereditary prince. Their most solemn assemblies take place when the youth undergo one or other of the painful ceremonies of initiation into manhood. In every case of death from disease or unknown causes the sorcerers hold a public inquest, and pretend to ask the corpse how it was killed. Such deaths are invariably ascribed to witchcraft practised by a hostile or envious neighbouring tribe. The bodies of the slain in battle are sometimes eaten, or the fat of the kidneys, at least, is extracted for a feast of victory. But cannibalism in Australia is not confined to the flesh of enemies, nor is it generally associated with an insulting triumph. It is rather, like that reported of the ancient Scythians, a rite of funeral observance, in honour of deceased kindred and friends. The reality of this custom is proved by the testimony of trustworthy English witnesses, who have watched the revolting act. The only idea of a god known to be entertained by these people, is that of Buddai, a gigantic old man lying asleep for ages, with his head resting upon his arm, which is deep in the sand. He is expected one day to awake and eat up the world. They have no religion beyond those gloomy dreams. Their notions of duty relate mostly to neighbourly service and social interest; and they are not all thieves or liars, but are capable of many good deeds. The marriage bond is observed by the wife or wives, the penalty of its violation being death. But chastity upon any other account is a virtue beyond the native conception, though a certain delicacy of feeling in matters of sex is not unknown. The deplorable lack of moral restraint has involved this unhappy race in sufferings which may be easily understood, from their contact with the more reckless and vicious representatives of foreign nations.

The numbers of the native Australians are steadily diminishing. A remnant of the race exists in each of the provinces, while a few tribes still wander over the interior. Altogether it is computed that not more than about 80,000 aborigines remain on the continent.

Perhaps the most complete and trustworthy information on the Australian race is to be found in works published some twenty or thirty years ago, before the country

was occupied as it now is by the European settler. Mr Eyre's work above referred to, and Captain (afterwards Sir George) Grey's Discoveries in North-West and Western Australia, are authorities that may be relied upon.

Colonial History.—Of the five Australian provinces, that of New South Wales may be reckoned the oldest. It was in 1788, eighteen years after Captain Cook explored the east coast, that Port Jackson was founded as a penal station for criminals from England; and the settlement retained that character, more or less, during the subsequent fifty years, transportation being virtually suspended in 1839. The colony, however, from 1821 had made a fair start in free industrial progress.

By this time, too, several of the other provinces had come into existence. Van Diemen's Land, now called Tasmania, had been occupied as early as 1803. It was an auxiliary penal station under New South Wales, till in 1825 it became a separate province. From this island, ten years later, parties crossed Bass's Straits to Port Phillip, where a new settlement was shortly established, forming till 1851 a part of New South Wales, but now the richer and more populous colony of Victoria. In 1827 and 1829, an English company endeavoured to plant a settlement at the Swan River, and this, added to a small convict station established in 1825 at King George's Sound, constituted Western Australia. On the shores of the Gulf St Vincent, again, from 1835 to 1837, South Australia was created by another joint-stock company, as an experiment in the Wakefield scheme of colonisation.

Such were the political component parts of British Australia up to 1839. The earlier history, therefore, of New South Wales is peculiar to itself. Unlike the other mainland provinces, it was at first held and used chiefly for the reception of British convicts. When that system was abolished, the social conditions of New South Wales, Victoria, and South Australia became more equal. Previous to the gold discoveries of 1851 they may be included, from 1839, in a general summary view.

The first British governors at Sydney, from 1788, ruled with despotic power. They were naval or military officers in command of the garrison, the convicts, and the few free settlers. The duty was performed by such men as Captain Arthur Phillip, Captain Hunter, and others. In the twelve years' rule of General Macquarie, closing with 1821, the colony made a substantial advance. By means of convict labour roads and bridges were constructed, and a route opened into the interior beyond the Blue Mountains. A population of 30,000, three-fourths of them convicts, formed the infant commonwealth, whose attention was soon directed to the profitable trade of rearing fine wool sheep, first commenced by Mr John M'Arthur in 1803.

During the next ten years, 1821-31, Sir Thomas Brisbane and Sir Ralph Darling, two generals of the army, being successively governors, the colony increased, and eventually succeeded in obtaining the advantages of a representative institution, by means of a legislative council. Then came General Sir Richard Bourke, whose wise and liberal administration proved most beneficial. New South Wales became prosperous and attractive to emigrants with capital. Its enterprising ambition was encouraged by taking fresh country north and south. In the latter direction, explored by Mitchell in 1834 and 1836, lay Australia Felix, now Victoria, including the well-watered, thickly-wooded country of Gipps' Land.

This district, then called Port Phillip, in the time of Governor Sir George Gipps, 1838 to 1846, was growing fast into a position claiming independence. Melbourne, which began with a few huts on the banks of the Yarra-Yarra in 1835, was in 1840 a busy town of 6000 inhabitants, the population of the whole district, with the towns of

Geelong and Portland, reaching 12,850; while its import trade amounted to £204,000, and its exports to £138,000. Such was the growth of infant Victoria in five years; that of Adelaide or South Australia, in the same period, was nearly equal to it. At Melbourne there was a deputy governor, Mr Latrobe, under Sir George Gipps at Sydney. Adelaide had its own governors, first Captain Hindmarsh, next Colonel Gawler, and then Captain George Grey. Western Australia progressed but slowly, with less than 4000 inhabitants altogether, under Governors Stirling and Hutt.

The general advancement of Australia, to the era of the gold-mining, had been satisfactory, in spite of a severe commercial crisis, from 1841 to 1843, caused by extravagant land speculations and inflated prices. Victoria produced already more wool than New South Wales, the aggregate produce of Australia in 1852 being 45,000,000 lb; and South Australia, between 1842 and this date, had opened most valuable mines of copper. The population of New South Wales in 1851 was 190,000; that of Victoria, 77,000; and that of South Australia about the same.

At Summerhill Creek, 20 miles north of Bathurst, in the Macquarie plains, gold was discovered, in February 1851, by Mr E. Hargraves, a gold-miner from California. The intelligence was made known in April or May; and then began a rush of thousands,—men leaving their former employments in the bush or in the towns to search for the ore so greatly coveted in all ages. In August it was found at Anderson's Creek, near Melbourne, a few weeks later the great Ballarat gold-field, 80 miles west of that city, was opened; and after that, Bendigo, now called Sandhurst, to the north. Not only in these lucky provinces, New South Wales and Victoria, where the auriferous deposits were revealed, but in every British colony of Australasia, all ordinary industry was left for the one exciting pursuit. The copper mines of South Australia were for the time deserted, while Tasmania and New Zealand lost many inhabitants, who emigrated to the more promising country. The disturbance of social, industrial, and commercial affairs, during the first two or three years of the gold era, was very great. Immigrants from Europe, and to some extent from North America and China, poured into Melbourne, where the arrivals in 1852 averaged 2000 persons in a week. The population of Victoria was doubled in the first twelvemonth of the gold fever, and the value of imports and exports was multiplied tenfold between 1851 and 1853.

The colony of Victoria was constituted a separate province in July 1851, Mr Latrobe being appointed governor, followed by Sir Charles Hotham and Sir Henry Barkly in succession. The more rapid increase of Victoria since that time, in wealth and number of inhabitants, has gained it a pre-eminence in the esteem of emigrants; but the varied resources of New South Wales, and its greater extent of territory, may in some degree tend to redress the balance, if not to restore the character of superior importance to the older colony.

The separation of the northern part of eastern Australia, under the name of Queensland, from the original province of New South Wales, took place in 1859. At that time the district contained about 25,000 inhabitants; and in the first six years (as Sir George Bowen, the first governor, observed in 1865) its population was quadrupled, and its trade trebled.

It appears, from a general view of Australian progress in the last twenty years, that the provinces less rich in gold than Victoria have been enabled to advance in prosperity by other means. Wool continues the great staple of Australia. But New South Wales, possessing both coal and iron, is becoming a seat of manufactures while Queens-

land is also favoured with much mineral wealth, including tin. The semi-tropical climate of the latter colony is suitable for the culture of particular crops, needing only a supply of other than European labour. Meantime South Australia, besides its production of copper and a fair share of wool, has become the great wheat-growing province of the continent.

The separate colonies of Australia are still in a somewhat transitional state, emigration being so continuous, and the country to be yet occupied so extensive. For this and for other reasons, therefore, it may be more fitting to describe the several colonies, with respect to their industrial and social conditions, under their respective names. To enable the reader, however, to judge of the general posi-

tion of the provinces at a recent date, the following statistics are appended:—

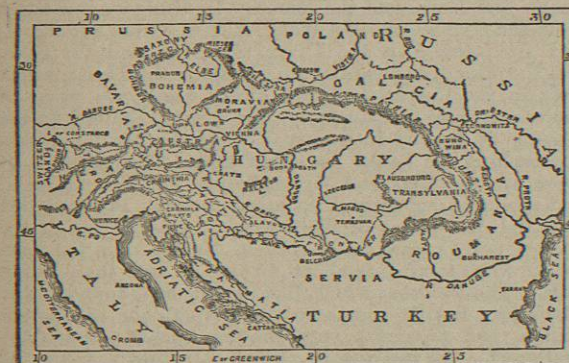
Name of Colony.	Estimated Population at Close of 1873.	Revenue of 1873.	Public Debt on Dec. 31, 1873.	Value of Imports for 1873.	Value of Exports for 1873.
Victoria	790,492	£ 3,943,691	£ 12,416,722	£ 16,633,856	£ 15,302,464
New South Wales...	560,275	£ 3,324,713	£ 10,842,416	£ 11,088,388	£ 11,815,829
South Australia	198,267	£ 937,648	£ 2,174,900	£ 3,829,830	£ 4,487,859
Queensland	146,690	£ 1,120,034	£ 4,785,850	£ 2,881,726	£ 3,542,613
Tasmania	104,217	£ 258,733	£ 1,477,600	£ 1,107,167	£ 895,556
Western Australia	25,761	£ 134,822	£ 35,000	£ 297,528	£ 265,217
Total for Australian Colonies...	1,625,692	£ 9,754,671	£ 31,762,487	£ 35,738,295	£ 36,407,428

(R. A.)

A U S T R I A

Plate III.

AUSTRIA, or more strictly AUSTRIA-HUNGARY (Ger. *Oesterreich* and *Oesterreich-Ungarn*), is an extensive country in the southern portion of Central Europe, lying between long. 9° and 26° E., and lat. 42° and 51° N. It thus extends through 17 degrees of longitude and 9 degrees of latitude, and has an area of about 240,000 English square miles. With the exception of the islands in the Adriatic, and the narrow projecting tract of Dalmatia, it forms a compact region of country, but of an irregular shape. It is surrounded on all sides by other countries, except where it borders upon the Adriatic, which is about one-fifth of the entire extent of its boundaries. Of the rest, about one-third on the W. and N. is formed by the German empire (Bavaria, Saxony, and Prussia), a third on the S. and E.



Sketch Map of Austria.

by the Turkish empire and the Danubian Principalities, and the remaining third by Russia on the N.E. and Switzerland and Italy on the S.W. The boundaries are formed in some parts by river courses, in others by mountain ranges, and sometimes they extend through an open country. As compared with France, Austria has a form nearly as compact, but its frontiers are by no means so well defined or so strongly protected by natural barriers. It ranks third in extent among the countries of Europe (after Russia and Sweden), and fourth in point of population (after Russia, the German empire, and France).

Austria is, after Switzerland, the most mountainous country of Europe, and about four-fifths of its entire area is more than 600 feet above the level of the sea. The mountains are frequently covered with vegetation to a great elevation. At the base are found vines and maize; on the lower slopes are green pastures, or wheat, barley, and other kinds of corn; above are often forests of oak, ash, elm, &c.; and still higher the yew and the fir may be

seen braving the fury of the tempest. Corn grows to between 3400 and 4500 feet above the level of the sea, the forests extend to 5600 or 6400 feet, and the line of perpetual snow is from 7800 to 8200 feet. In some parts, however, particularly in Tyrol, Styria, Carinthia, and Carniola, the mountains appear in wild confusion, with rugged peaks and bare precipitous sides, forcibly reminding the traveller of Switzerland. Tyrol in particular has, like that country, its cascades, its glaciers, its perpetual snows, and its avalanches.

The Alps occupy the south-west portion of the country, and form its highest lands. They are distinguished by various names, as the Rhaetian, Noric, Carnic, Julian, and Dinaric Alps. The Rhaetian or Tyrolean Alps enter Tyrol from the Swiss canton of the Grisons, and are the loftiest range in the country, a number of the summits rising to the height of 12,000 feet, and the highest, the Orteler Spitze, attaining a height of 12,814 feet above the level of the sea. They divide into three principal chains, the most southern of which occupies the southern portion of Tyrol, and contains the Orteler Spitze, and others of the loftiest points in the country. The middle or principal chain extends in an easterly direction to the borders of Salzburg and Carinthia, and has many of its peaks covered with perpetual snow. The northern chain is inferior in elevation to the others, and few of its most elevated points reach the snow-line. The Noric Alps are a continuation of the Rhaetian eastward, passing through Salzburg, Styria, Carinthia north of the Drave, Lower and Upper Austria, to Hungary, where they gradually sink into the plains. They comprise three chains, a main chain and two lesser chains proceeding northward—the one the Salzburg, the other the Styria-Austrian Alps. The main chain, the Noric Alps in a stricter sense, traverses Salzburg, Carinthia, and Styria, and has a length of about 170 miles, some of its peaks rising to the height of 12,000 feet. The Carnic or Carinthian Alps are also an offshoot of the Rhaetian Alps eastward, occupying the south-east of Tyrol, Carinthia, and the north of Carniola. They form several branches, and some of the summits are over 9000 feet high. The Julian or Carniolan Alps extend in a south-easterly direction through Carniola and Croatia. They present little of an Alpine character, and with one or two exceptions nowhere rise to the height of 5000 feet. They are for the most part bare and rugged. The Dinaric Alps are a continuation of the preceding, extending through Croatia and Dalmatia, and resemble them in character. The highest point, Mount Dinara, from which they take their name, is 5956 feet above the level of the sea.

After the Alps, the most important mountain system of Austria is the Carpathians, which occupy its eastern and north-eastern portions, and stretch in the form of an arch