XV.—*On Norfolk Island, its Character and Productions.* *By* Charles Toogood Downing, *Esq.*, M.D. [*Read 8th August*, 1855.]

It was intimated at a recent meeting of this Society, that as Norfolk Island is about to pass into the hands of new occupants, it would be desirable to have some record of its natural history and resources. In accordance with the wishes of the members, I have drawn up a short paper on the subject, though with considerable diffidence, in the hope only that fresh facts will be elicited in the after discussion. The sources from whence my information has been drawn have been the histories of the early and later navigators—Cook, Anson, Hunter, Keppel; the narratives of those who have visited or resided at the place; and all those records, correspondences, and reports to which I could obtain access otherwise. As far as possible, I have verified the accounts of others by my own personal observation and experience during three visits to and short residences on the island. Still, this essay, should only be regarded as a *resumé*—as little more than a collection and arrangement of scattered facts, drawn up in the simple and terse style most suitable to this Society. To many gentlemen, some of whom are present, I am indebted for valuable suggestions and information, and am more especially under great obligations to Dr. Nixon, Bishop of Tasmania, for lending the beautiful drawings, (now submitted), taken by himself, and which will aid much in illustrating the subject.

Norfolk Island, discovered by Captain Cook in 1774, is a

small spot of land in the Pacific Ocean, south latitude 29° 2′, east longitude 168° 1′. From the capital of Tasmania, of which it is a dependency, it is 1200 miles distant, and about 900 from the port of Sydney. With it are associated Phillip and Nepean Islands on the southern side, and the Bird Islands, or Rocks, seven or eight in number, on the northern shore. The variation of the needle is 11°·00, E.

The group is isolated, not only from its distant position, but its inaccessibility. There is no secure harbour, and the surf beats so heavily on the coral reefs and igneous rocks with which the coast is guarded, that often for weeks together no landing can be effected. A moderate depth of water extends some miles from the shore, the bottom consisting of banks of coral sand mixed with shells,* and affording, although exposed, anchorage; but nearer in, and especially between the islands, the ground is hard and rocky, rendering the holding insecure and fouling frequent. The insecurity from this source is much increased by the force of the current, which often runs at the rate of $2\frac{1}{2}$ or 3 knots an hour between the islands.

The general tides are regular and usually equal, flowing by the shore six hours each way. They make, however, two hours sooner on the Norfolk Island coast than in the stream, or over towards Phillip Island.† The flood runs to the S.W. by S., the ebb to the N.E. by N. The rise is from 5 to 7 feet, and the flow, at full and change, $7\frac{3}{4}$ hours. Commonly speaking, the tides on this coast will carry a ship clear of danger, not into it. The only exceptions are with respect to the Bambora Rocks at the S.W. extremity of Norfolk Island, and a low point almost corresponding to them, projecting from the S. W. point of Nepean Island.‡ On both these the tides set

* Cook's Voyages, 148. † Burney's Report.

‡ Keppel's Voyage, vol. ii. p. 244.

almost directly, and as they are respectively at the east and west extremities of the bay in which the Settlement is placed, and not more than three miles and a half apart, they add much to the danger. On these Bambora Rocks the *Sirius* was wrecked from this cause in 1791.

Norfolk Island, of an irregular quadrangular form, is about seven miles in length from east to west, by four in breadth from north to south. From the survey taken by Major Burney, the Commanding Royal Engineer of New South Wales, in 1840, we learn that the superficial extent of the island, usually reckoned at 14,000, is 8960 acres;* of this, 1080 acres were then cleared for agriculture, and about 1000 were pasturage. The relative proportions of these have since varied, and rather more land has been brought into cultivation.

The average height of the island is from 300 to 400 feet above the level of the surrounding ocean, although the land is generally higher on the northern side. In this direction lofty perpendicular cliffs bound the shore, and Mount Pitt, with its double summit, rises to an elevation of 1050 feet above the level of the sea. From hence the surface has a gradual declension towards the south, and terminates in a level flat, but little above high watermark, on which the Settlement is placed. The surface is so irregular that, in the language of a sailor,† if correctly laid down in a plan, with all the hills and valleys accurately represented, Norfolk Island would very much resemble the waves of the sea in a gale of wind; for it is composed wholly of long, narrow, and very steep ridges of hills with deep gullies, which are as narrow at the bottom as the hills are at the top.

The soil of the island is very uniform, consisting of a

* Correspondence respecting Convict Discipline, 1846.

† Capt. Hunter's Voyage, 1791.

red, porous, ferruginous earth, originating in the decomposition of volcanic rocks (Wackè*) of ancient date, which occur in seams of various shades of colour like true strata, and pass insensibly into basalt; of which, sometimes columnar, the cliffs on the northern shore are formed. This friable earth alternates with white concretionary marl, both studded with boulders of porphyritic rock, gradually disintegrating. This is evident by their outer layers crumbling into dust under the finger, but gradually becoming denser towards the centre, where their texture is as hard and crystalline as granite. Pumice is found abundantly on the coast. In fact, the whole geological character of the island is indicative of volcanic agency. The low flat on the southern shore, previously alluded to, about a mile in extent from east to west, and a quarter broad, is alone of aqueous origin. It consists of coarse marine limestone, or calcareous grit of recent deposit, and is usually employed for building purposes, but yields on burning lime of great purity. Near this is also obtained sandstone, or calcareous grit of fine quality, from which dripstones and other porous vessels are manufactured.

The only metal found on the island is iron, in the mineral forms of red and yellow ochre. A chalybeate spring has been noticed at Orange Vale.

Phillip Island is about five miles distant from the Settlement. It is $1\frac{1}{4}$ mile long, $\frac{3}{4}$ths of a mile broad, the general elevation being greater than that of Norfolk Island, and averaging 800 or 900 feet above the level of the sea. In physical structure the two islands are identical, Phillip Island consisting of porphyritic rocks more or less disintegrated, and a small quantity of calcareous grit, known as the Sloop Rock, on the shore.

* Topographical and Medical Reports, 1849-50.

Nepean, situated within the former, is about 400 yards from the beach of Norfolk Island. It is a rugged, rocky islet, a quarter of a mile long, and of a horse-shoe form, open to the east. Formed entirely of marine limestone, it rises about 50 feet above the level of the sea, and serves as a habitation to birds, and to them alone.

Rocks, chiefly basaltic, which are separated from the northern coast of Norfolk Island by rapid currents, and worn into caverns by their waves, constitute the Bird Islands.

The briefest history is alone necessary. When first discovered, Norfolk Island was uninhabited. No human foot had previously touched its shores. Colonized from Sydney, in the hope of making it a granary, and subsequently abandoned, it has, chiefly on account of its isolated position and its inaccessibility, been used for many years past as a penal station.

From the cessation of transportation to these colonies, Norfolk Island is now once more deserted, and will shortly be given up to the Pitcairners, a patriarchal people, numbering about 200, descended from the mutineers of the *Bounty*. These particulars, which are of course well known, are adduced merely to show that sufficient time and opportunity have been afforded for observation as to the capabilities of Norfolk and the adjacent islands for the habitation of man, and what have hitherto been made of them. Nepean and Phillip Islands have never been inhabited, except for brief periods by runaway convicts.

The Settlement is situated, as I previously intimated, at the south side of the island, on a level flat of limestone. It consists of the Government-house, convict and military barracks, commissariat stores, a large lumber yard, gaol and hospital, with the private dwellings of the officials.

About a mile distant on the western side is the agricultural station of Longridge, containing extensive farm buildings; and at the back of the island, or northern face, the long since abandoned hamlet of Cascades: excellent roads lead from one to the other of these places.

The landing from boats is effected at the northern or southern side of the island, according to the direction and force of the wind. At Sydney Bay a small jetty has been constructed, with a flag-staff, in order to notify to mariners the condition of the water. Notwithstanding all precautions, accidents are of frequent occurrence. At the Cascades, so named from small streams of water falling over the basaltic cliffs on the shore, the sea is generally smooth when the wind is from the southward, so that landing can be easily effected on some rocks that project into the water. Anson's Bay is now deemed impracticable.

Norfolk Island is abundantly supplied with water of excellent quality. The streams are small and insignificant, but fountains will rise from the rock in every direction, and collecting, run as brooklets down the vallies. The rain which falls during the year is moderate in quantity. Sometimes, as might be expected in a country so near the Tropics, it falls abundantly. Yet, however heavy or long-continued the shower, no water accumulates, as the drainage is thoroughly accomplished by means of the deep gullies which radiate in all directions from the high land towards the sea. Vegetation is hence most luxuriant. Rain falls at all periods of the year, but chiefly during the winter. Fogs and mists are unknown. But few days occur in the course of the year in which the sky is not more or less clouded, and the horizon rarely presents that clear defined outline so common in the Australian Colonies.* In the

* Top. & Med. Report, 1847–49.

summer seasons the prevailing winds are generally dry and from the eastward. In the winter months they come chiefly from the opposite quarter, accompanied by clouds and showers. The few heavy gales are from the south. But the wind most dreaded is that from the north, which comes loaded with heat and moisture, and exercises a relaxing and baneful influence upon the human frame. The average duration of these winds is two or three days, and they usually occur three or four times in the month.

The temperature of the island may be considered both moderate and equable. The highest reading of the thermometer during the year 1847 was 87° Farenheit, the lowest 49° ; the mean annual temperature deduced from four daily observations, including the lowest at night and the highest by day, was 68½° ; the mean difference between the extremes of day and night 17°. In the year 1850, the highest reading of the thermometer in the shade out of doors was 85°, the lowest 51°, showing an annual range of 34°. The mean monthly temperatures during the same year were as follow :—

	°
January	74
February	74½
March	73
April	70
May	65½
June	63
July	62
September	64½
October	65
November	70½
December	72½

These figures indicate an extreme of mean monthly range for the year of 12½; less by 1½ than that of 1849; with an annual mean of 68°,—exactly the same as that of the previous twelve months.

The *Climate* of Norfolk Island, although somewhat relaxing, is considered salubrious. The chief diseases to which residents are subject, as gathered from the medical reports of many years, result from the prevailing heat and moisture, often producing debility and relaxation of the mucous membranes. Few escape without some symptoms of this on their first arrival. Dysentery, of a type intermediate between Tropical and European, is rather common, and may be attributed, in addition to the causes previously mentioned, to the inordinate use of lemons, guavas, and other wild fruit. It is in a measure endemic in the island. Opthalmia, chiefly conjunctival, prevails almost epidemically during the months of August, September, and October,* the exciting cause being atmospheric. Bronchitis again prevails during the winter months. The same may be said of the many rheumatic cases that occur, and which are almost all muscular; such as pleurodynia, lumbago, &c., the articular form being of very rare occurrence. Such are the ordinary ailments of the place; but it is by no means free from other occasional visitations. The scarlet fever, for instance, made its appearance on the island, without apparent propagation, at the time it prevailed as an awful scourge in Tasmania.

The soil of Norfolk Island is of exuberant fertility, so that the rewards of industry may be obtained without its exertion. Forest trees grow in great abundance, and beneath them a rich growth of underwood. This appears to have been the case at the time of its discovery, for

* Annual Med. Report, 1850.

Captain Cook remarked that the ground was so thick with shrubs and plants for about two hundred yards from the shore, that there was great difficulty in penetrating further inland. * This great navigator noticed the striking similarity in natural productions between this group and New Zealand. This was doubtless the case at the time he paid his visit: but since then, so many things have been introduced, so many plants have been cultivated, abandoned or suffered to grow wild, that it is no easy matter to determine at the present day which are and which are not indigenous. It will be well perhaps to describe the nature and economical uses of the more remarkable of these productions.

The most striking objects that meet the eye on nearing the land are the lofty tops of the Norfolk Island Pine, the *Araucaria excelsa* of botanists. This, one of the most elegant of the conifers, towers high above the surrounding forest, or takes its position singly or in clumps on the very verge of the ocean. It thus forms a characteristic feature in the landscape. In height, it may formerly have ranged from 150 to 200 feet, but of late years few trees of this latter elevation have escaped the axe. This pine, compared by some to those of Caledonia and New Zealand, resembles the Norway Spruce, although the tiers of its branches are more distant and regular. The timber is not of good quality, as it soon rots when exposed to the weather, and fearful ravages are made in it by the teredo or auger-worm, when exposed to its action. The bullock-fences of the island require renewal every two or three years. When employed for building purposes, such as flooring in the interior of houses, it is more durable. The knot of this pine is compact, hard, and fine in grain, and, from its translucency and rich dark tint, is admirably adapted to hollow

* Voyages, fol. edit., vol. 2., p. 148.

turnery. Beautiful specimens of this work, executed in this wood, were sent from Tasmania to the Paris Exhibition. These pine-knots, when defective, serve another very useful purpose. They make excellent fuel, and, on account of the rich hydro-carbons with which they are charged, burn with the brightness and persistence of the best English coal.

For economical purposes, the iron-wood, *Notelœa longifolia*,* or *Olea Apetala*,† is the most important and valuable of the indigenous timber-trees of Norfolk Island. It yields a fine, close-grained wood, very hard and durable. This is chiefly employed in wheelwright's work, but may be used with advantage by the cabinet-maker, as some specimens are remarkably well veined.

Among the many ornamental woods obtained from this ocean isle should be enumerated the rose-wood, believed to be a species of acacia, the beech, (so called), the maple, *Acer Dobinea*(?), the hop-wood, obtained from the *Dordonia orientalis*,‡ the hard yellow-wood, from the *Blackburnia pinnata*, the white-wood, and the cherry-tree,—a species of *Exocarpus;* the bark of this latter, rich in tannin, has been used in making leather.

Pursuing our investigation of the vegetable kingdom, we come to what is locally called the White Oak, the *Hibiscus*, or *Lagunea Patersonii*. It is perhaps the largest plant known to exist, belonging to the *Malvaceæ*, or Mallow Tribe. Attaining sometimes an elevation of sixty or eighty feet, and displaying a profusion of large pink flowers with leaves of whitish green, it would form an elegant addition to the shrubbery. In an economic point of view it is valueless, except for firewood.

* Keppel, vol. ii., 282.

† Tasmanian Contributions to the Paris Exhibition, p. 43.

‡ Query—*Dodonea*, sp.:—Ed.

The Cabbage-tree, *Areca*, or *Seaforthia sapida*, was noticed by Cook, and has been since well described by one who visited the island.* It is a handsome palm, with a trunk about twenty feet in height and from one and a half to two feet in circumference, with annular scars, left by the fallen leaves. The fronds form a princely crest at the top of this elegant column. They are pectinate, and are sometimes nineteen feet in length. They vary from nine to fifteen in number. The apex of the trunk is inclosed in the sheathing bases of the leaf-stalks, along with the flower-buds and young leaves. When the leaves fall, double-compressed sheaths are discovered, pointed at the upper extremity, which split open indiscriminately on the upper or under side, and fall off, leaving a branched spadix, or flower-stem, which is of ivory whiteness, and attached by a broad base to the trunk. The flowers are produced upon this spadix. They are very small, and are succeeded by round seeds, red externally, but white, and as hard as horn within. As the seeds advance towards maturity, the spadix becomes green. The young unfolded leaves of this cabbage-tree rise perpendicularly in the centre of the crest. In this state they are used for making brooms. Those still unprotected, and remaining inclosed within the sheaths of the older leaves, form a white mass as thick as a man's arm. This is eaten raw, boiled or pickled. In a raw state it tastes like a nut, and boiled it resembles artichoke bottoms. The seeds furnish food for the Wood-quest.

The *Freycinetia Baueriana*, or Norfolk Island Grass-tree, belongs to the tribe of *Pandaneæ*, or Screw Pines. Its stem, an inch and a half in diameter, and marked by rings as the former, lies on the ground, or, winding round the trunks of trees, climbs like ivy to their summit. The

* Backhouse, p. 264.

branches are crowned with crests of broad, sedge-like leaves. From the centre of these arise masses of red, pulpy fruit, four inches in length and as much in circumference. While in flower the centre leaves are scarlet, which adds to the splendid appearance of the plant.

In the open, grassy valleys, two or three species of tree-fern, the *Alsophila excelsa*, and *Cyathea medullaris*, exhibit with *Maranta elegans*, their rich crests among the surrounding verdure. They often measure forty or fifty feet in height, and have fronds of great length and magnificence. From the centre of the trunk a black wood is extracted, and used by cabinet-makers for stringing.

The Norfolk Island Bread-fruit differs much from that grown at Tahiti or the West Indies. It is the *Charlwoodia Australis*. Attaining twenty feet in height, it branches from within a few feet from the ground, and forms several heads with flag-like leaves, and long-branched spikes of greenish star flowers. These are succeeded by small purple berries, the food of parrots.

The native Spice-plant, by many thought to be the pimento, is the *Piper Psittacorum*, or *Ava* of the South Sea Islands. It yields fruit of a yellow colour and long cylindrical form, which has an aromatic taste, and may be employed as a pickle or preserve.

The Blood-tree yields on tapping a fluid of a bright red colour. This has been used as medicine as an astringent, but is more generally employed as a marking ink, as the stain on linen is indelible.

The Cotton-plant was once cultivated by Captain Maconochie with advantage. It is now wild, and overruns every part of the island to such an extent as to render the Bush almost impracticable.

The *Phormium tenax*, or New Zealand flax, has always

grown abundantly on the cliffs of the northern coast, and on the steep declivities of the hills inland. It is a large, handsome plant, with sedge-like leaves. It has not lately been cultivated for economical purposes. We are assured,* however, that two New Zealanders were once introduced to teach the people how to prepare it, but their process was so tedious that the scheme was abandoned.

The chief medicinal plants growing wild are the *Datura stramonium*, *Ricinus communis*, and the *Solanum nigrum*. This latter is a fine, ornamental shrub, the berries of which, reported poisonous in England, have been cooked and eaten here with impunity.

Many climbers of great luxuriance and beauty are seen winding round the trunks of fern and forest trees, or hanging in graceful festoons from stem to stem. The slender Jasmine, *Jasminum gracilis*, at home, a delicate hot-house plant, is one of the most distinguished of this group. Its twisted stems, of considerable thickness, may often be seen hanging like ropes from the lower branches of the pine, or white-oak, while its flowers cluster in the top. The rosy-pink petals of the *Ipomœa pendula*, greatly resembling those of the Convolvulus Major, and the purple and green pea-flowers of the *Wistaria*, deserve especial notice. Two species of passion-flower also grow in the Bush, and attract much attention.

Reserving for description presently the vegetable productions submitted to cultivation, I will now allude to the Animal Kingdom.

The Fauna of Norfolk Island is most insignificant. No quadruped of any size is, I believe, indigenous, and the only wild ones of the present day are cats, rats, and mice. On

* Backhouse, p. 256.

Phillip Island, however, hogs, goats, and rabbits are to be found.

A greater number and variety of the feathered tribes inhabit this lonely group, or visit it during the breeding season. The guinea-fowl was observed by the early navigators, but has now become quite extinct. There are three kinds of Parrot on Norfolk Island. The small crimson and blue Lory, the *Psittacus Pennantii*, one green with a red ring round the base of the beak, and another. These birds are easily entrapped. A dingy-plumaged Kingfisher, bold and fierce, is very common, and passes under the name of the Norfolker. The domestic pigeon has been naturalized, and breeds abundantly among the cliffs. Its numbers would be troublesome but for the ravages of the wild cat. A large and handsome species of pigeon, called the Wood-quest, with bronzed head and breast, is met with occasionally round the base of Mount Pitt, but has hitherto resisted all efforts at domestication. In addition, there is a variety of the blackbird, (so called), a robin, with a white head and scarlet breast, guava birds, white-eyes, and fan-tails. These last-named small birds are met with in the gullies, and are so tame as to perch upon the finger or a stick if held towards them. One specimen of the Avocet, the *Recurvirostra rubricollis*, was shot upon the island about a year and a half since, and sent up to this Society by Dr. Hueston; as well as a male and female spoon-bill, the head and feet of which are now laid upon the table.

Ocean-birds in great abundance surround the shore. Formerly, their head-quarters were at Mount Pitt, but since Norfolk Island has been inhabited, they have removed to the smaller isles. Nepean swarms with gannets and mutton-birds, while boatswain or tropic-birds and sea-swallows inhabit the rocks to the north.

No snake or other reptile, harmless or venomous, is found on Norfolk Island. It is free also from lizards and centipedes, both of which are to be found on a certain small portion of Phillip Island. The honey-bee has been naturalized, and often hives out in the Bush.

Fish in great variety and profusion are caught among the rocks, or on the soundings for miles around. The shark is not generally large, although a few of enormous dimensions have been noticed. There are two species of cod, one black, rising to 200lbs.,—the other brown, of about 17lbs.* The shoals yield king-fish, trevaley, salmon, snapper, groper, skip-jack, and trumpeter—all so called. Gar-fish are also driven within the reefs by their numerous enemies. All these fish, though dry, are palatable and take salt well. The turtle is occasionally seen upon the coast, more especially off Anson's Bay, where it deposits its eggs. The greater part of the land has, however, of late years been washed away, so that the visit of these animals is of rare occurrence.

In consequence of the heaviness of the surf, the greater number of things thrown upon the shore of these islands are damaged or destroyed. Still, moderately good collections of shells and corals have been made, which present, however, no very peculiar features.

The animals required for the food of man have thriven well on Norfolk Island. From enquiries at the Commissariat, I find that about the year 1846 there were 800 head of cattle, 6000 to 7000 Leicester sheep, and 500 pigs. The stock left when I was last at the Settlement amounted to about 3000 or 4000 Leicester sheep and 700 cattle, chiefly of the Devon and Hereford breed. The greater number of these have been sold for conveyance to New Zealand, it is

* Keppel, vol. 2, p. 245.

true, but it is understood that sufficient will be left to maintain the stock for the new residents.

Whilst a convict station, upwards of 1200 acres have been brought under cultivation for agricultural purposes. The chief produce has been rye, oats, and Indian corn. The soil and climate are not adapted to the growth of wheat; several times it has been tried unsuccessfully. The crops were most uncertain, chiefly owing to rust and smut. The fungi of these diseases were speedily developed, and proved destructive by their rapid dissemination. The farm operations have always been effected by manual labour; yet that it has not been unproductive is shown by the returns for three consecutive years, obtained from the Commissariat-office. There were harvested in

1845.....	425,365 lbs.	of maize, or about	8507 bushels.
1846.....	421,790 lbs.	ditto	8435 bushels.
1847.... ...	711,296 lbs.	ditto	14,225 bushels.

There were two large gardens belonging to the Government: one at the Cascades, the other at a lovely spot called Orange Vale. In these, as well as in the private grounds of the civil and military officers, the variety and luxuriance of produce were extreme, the chief labour arising from the necessity of constant weeding. At the dinner table of some of the residents I have observed seven or eight different kinds of vegetable obtained the same day from their gardens. It may be well to enumerate some of the things cultivated, in order to show the capabilities of the island in this respect.

The Coffee-plant thrives well, and yields berries of small size and good flavour,

The common or round potato is cultivated, but not with success, although four crops are produced yearly from the same soil. There is a great tendency to run to stalk, from

rapidity of growth, and the tubers are generally small and watery.

The Sweet Potato, or *Buck*, as it is called, the large tuberous root of the *Batatas edulis*, a plant of the convolvulus tribe, is the chief garden esculent. It yields good crops twice a year, and may be eaten roasted, boiled, or fried in slices.

The Arrow-root is very extensively and successfully cultivated in Norfolk Island. The starch is separated in the usual manner, in the months of September and October, and is found to be of superior quality.

Cayenne pepper, manufactured from pods of the capsicum grown in these gardens, has a quality and flavour equal to any that can be obtained. It is in much demand.

The Sugar-cane is seen in many places growing luxuriantly, but quite neglected. The first settlers introduced the plant, and made rum of its juice. Under the subsequent regime this distillation was forbidden, and hence the cane became valueless.

Garden fruits, though varied and abundant, are not always of good quality. The banana, strawberry, and grape grow freely, and may be cultivated to advantage. Raspberries grow vigorously, but do not fruit. The apple also fails, chiefly through blight. There are inferior qualities of pine-apple, fig, olive, pomegranate, almond, quince, melon, and peach. The loquat, originally derived from Japan by the way of Batavia, is rather plentiful during the season; as well as the passion-fruit. Orange and citron plants, introduced from Sydney, are now just beginning to bear; but it is considered doubtful whether the walnut and mulberry trees, brought by Mrs. Maconochie, will ever yield fruit.

Wild fruits are abundant in the Bush; limes and lemons may be gathered all the year round. The apple-fruited

guava is everywhere plentiful, as well as the *Physalis edulis*, or Cape gooseberry. A few orange trees may also be met with. There is a tradition that the fruit of this tree was once so abundant, and offered so much sustenance to absconders, that the then Commandant, (Major Morrisett), ordered them to be extirpated. Upon careful enquiry I find this statement incorrect. Oranges never were abundant. An attempt was once made to destroy the wild guava and lemon trees, but their very abundance at the present day proves that the effort was abortive.

It may be concluded from the preceding observations, that Norfolk Island offers every facility to the settlement and welfare of a limited community. The chief want is that of a harbour. But this might be obviated readily at a place called Ball's Bay, a mile or two eastward of the Settlement. A profitable fisherymight there be established. Many more tropical or semi-tropical plants, such as the real bread-fruit, cocoa-nut, yam, and mango, might be introduced; while the proper cultivation of those already there would yield surplus supplies for exportation. Coffee, maize, sugar, cotton, arrow-root, castor-oil, and cayenne have hitherto yielded well, even with forced unwilling labour, and manual industry. Much more may, therefore, reasonably be expected from steady perseverance, aided by all the appliances of modern husbandry. It must not be forgotten, however, that the very prolificness of the soil offers great temptations to indolence; and that, unless this vice be steadily resisted, the most virtuous people will rapidly, both socially and morally, degenerate.