

No. 110.

G O L D C O A S T .

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ECONOMIC AGRICULTURE ON THE  
GOLD COAST, 1889.

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Presented to both Houses of Parliament by Command of Her Majesty.  
*August 1890.*

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1890.

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No. 110.

GOLD COAST.

GOLD COAST.ECONOMIC AGRICULTURE ON THE GOLD  
COAST.PREFACE.

Recommendations were contained in the report of the Select Committee of the House of Commons in 1842, and in the evidence before the Committee of 1866, for the establishment of a model farm or botanical garden in the Colony with a view to the promotion of agriculture. Accordingly about the year 1882 Sir Brandford Griffith, then Lieutenant-Governor of Lagos, introduced economic plants from the West Indies into Lagos and gave them the benefit of his own superintendence. After his appointment to the government of the Gold Coast Colony in 1886, Sir Brandford Griffith also brought the subject forward in Despatches, but pressure of business, internal disturbances, and other causes prevented practical effect being given to his ideas in this respect until 1889, when, whilst on leave in England, he secured the services of a trained botanical superintendent, with the co-operation of the authorities at the Colonial Office and Kew Gardens, and proceeded, as one of his first official acts upon his return to the Colony at the end of February 1890 to personally inaugurate the new botanical station at Aburi on the Akwapim Hills. Colonel White, when administering the government of the Colony during the Governor's absence in 1887, being in his turn impressed with the importance of taking steps for the development of local economic resources, brought the subject before the Legislative Council at the meeting of the 16th and 17th May 1887, with the result that a commission was issued by him on the 8th September 1887 appointing certain gentlemen to examine into and report upon the subject preparatory to the Governor's return. The present report is the outcome of the labours of that commission. Its secretary has been Mr. Hutchinson, a gentleman of local connexion and practical experience of the question, having had the enterprize to himself establish and work an agricultural farm in the neighbourhood of Cape Coast,

GOLD COAST.

probably the most comprehensive undertaking of the kind up to that date ever attempted on the Gold Coast. The contents of the report are briefly summarised in the fourth paragraph of the Governor's Despatch\* enclosing it. Tables are attached to the report showing the exports of agricultural produce from the Gold Coast during the past seven years, and furnishing statistical information relative to the exports of the staple article of trade, the produce of the oil-palm for the five years 1884-1888, together with an estimate of the value and quantity of palm kernels of which no commercial use was made during that period.

### REPORT.

The Gold Coast Colony is calculated to include an area of 29,401 square miles, lying along the coast of the Gulf of Guinea from 2° 40' W. to 1° 10' E., extending inland to an average distance of 50 miles, and throughout the greater part of its extent is covered with forest. In the Appolonia, Winneba, Accra, and Eastern Districts large open plains are found, but, as a rule, the country consists of rolling hills of an average height of 60 to 200 feet covered with heavy timber. Along the coast, to a distance of about five miles from the sea, the timber has been cleared away, and replaced by scrub, consisting of thickly growing ever-green shrubs rising to a height of 8 to 20 feet. Both forest and scrub are impenetrable to man, the former by reason of the thick undergrowth, and the latter by reason of its own close-growing habit. Behind Accra the Akropong Range rises to a height of 1,600 to 2,000 feet above the sea level. The principal river of the country is the Volta, navigable for a considerable distance, and forming the outlet of the rich oil district of Kroboe. Next in importance is the Prah (or Bosumprah), falling into the sea near Commendah, and forming in the upper part of its course the boundary between the Colony and the independent native empire of Ashanti. Besides these there are the Tanue (the boundary between the Colony and the French Settlements), the Archbra in the mining district of Axim, the Ammissah, near Salt Pond, the Ayinsu, near Winneba, and the Seccoom, near Accra. The Sweet River, which falls into the sea between Cape Coast and Elmina, and the Princes River (at Princes) are smaller than the foregoing, but each has numerous tributaries and drains an extensive tract of country. The fall in all these rivers is considerable, the current swift, and the course impeded by rocks and rapids. All are subject to great variations of volume according to the season, dwindling during the dry months, a few weeks after the rains have begun at their sources they rise with great rapidity, and, increasing in breadth and depth, flood the adjacent country when flat, or fill to the brim their steep and precipitous banks. All have

Physical  
features of  
Colony.

\* See page 45.

beds broad in proportion to their depth, and, running through soft soils, carry down enormous quantities of silt forming extensive and frequently shifting sandbanks in the larger rivers, and bars at the mouths of all. Each of these rivers has many tributaries which run for a portion of the year, each draining its own small area, and preserved from extinction probably by the heavy forests which protect them from evaporation.

GOLD COAST.

2. From the meagre meteorological returns available it appears that the thermometer ranges from 70° to 90° (Fahr.) throughout the year, with an average temperature of 82° F. The rainfall is about 67" per annum, nearly half of which falls during the rainy season. The air is always heavily charged with moisture, the difference between the wet and dry bulbs of the hygrometer averaging 6°, giving a comparative humidity of about 70°. These remarks apply to the coast line, where alone meteorological observations have been made; but as the land rises rapidly towards the interior, there is probably a considerable difference between the thermometric and hygrometric readings on the northern boundary and on the coast line.

Meteorological conditions.

3. The rains begin in the latter part of April or the beginning of May, continuing to the end of June or the early part of July. During this period there is a succession of heavy showers of rain, a fall of 2" or 3" in 24 hours being not uncommon. These are followed by a period of dry weather broken by tornadoes. The latter rains begin about the middle of October continuing to the end of November, falling in frequent showers of very small rain. These are followed by another stretch of dry weather till March, during which and the following month tornadoes are frequent. From October to March heavy night and morning fogs prevail in the interior. About Christmas the harmattan, a cold, dry northerly, wind blows in the mornings bringing with it a quantity of fine sand which it deposits on everything. The tornadoes consist of a strong wind from the E. or S.E., which is followed by a heavy downpour of rain, but they never attain the fearful power of the hurricanes of the West Indies and rarely damage buildings. Beyond blowing down a few branches of the forest trees, and laying crops, they do little injury. These remarks again apply only to the coast, the rains beginning earlier and being heavier and more regular in the forest country.

4. In this tropical country, where Nature repays every effort of cultivation by a hundredfold return, and the wants of man are confined almost exclusively to his daily necessary food, there is no incentive to exertion, and thus, although agriculture is the main occupation of the people, we have no hesitation in stating that probably no more than three per cent., certainly not more than five per cent., of the soil is brought under cultivation in any one year.

Agriculture, extent of

The population is estimated at 1,406,450 giving an average of 41.4 to the square mile. The greater number of these are scattered through the interior of the country, in small villages situated in clearings in the forest. There are a few towns, the

Population.

**GOLD COAST.** seats of the principal Chiefs, which may contain 1,000 to 2,000 inhabitants each, but as a rule the number is under 100. Each village is surrounded by a thick growth of plantains, which affords the principal food of the people, and in the neighbourhood are the small clearings where they grow their corn (maize), yams, and other vegetables. As a rule, each family grows its own food in a separate patch, these patches seldom exceeding an acre in extent, but when a whole village combines, an area of 10 to 12 acres is cleared and planted with maize, which appears to be the only crop grown in co-operation, and even in such cases the portion of each family is carefully marked off.

**Rural economy.**

5. Most of the land is held by families in common, the quantity in private hands being comparatively small. Each member of a family has the right to select a portion of the common land for cultivation, but cannot acquire exclusive possession thereof, and alienation can only be effected by the unanimous consent of the family. If, however, any member plants trees, he has an exclusive right to the fruit thereof, but cannot transmit that right to his descendants. The powers of the head of the family vary with his personal influence and character, but to him belongs the right of allowing strangers to cultivate, receiving the fees therefor (usually consisting of a flask of rum, a head of tobacco, and a shilling in money), and of permitting the cutting of palm trees for wine. When granting permission to cultivate, the privilege of cutting oil-palms is always reserved, but the temporary tenant does not appear to be restrained from gathering for his own use such nuts as may ripen during his occupation.

**Tenure of land.**

The boundaries between estates are marked by natural objects, such as rocks, trees, rivers, &c., but, as the memory of "the oldest inhabitant" is the only test, boundary disputes are frequent.

**Land bound-aries.**

5A. The leasing of land for a term of years is unknown. A man having no land of his own goes to a neighbouring landowner, and on paying the small fee mentioned above obtains leave to cultivate, but when he takes off his crop he vacates the land. Estates, however, are frequently pawned or mortgaged for money lent, the pawnee or mortgagee acquiring thereby the right to use the land as his own (except that he may not cut the oil-palms) until the loan is repaid, the use of the land standing in lieu of interest. In this manner estates are frequently transferred and pass from heir to heir of the mortgagee, the mortgagor, or his representatives, retaining the right to redeem the property by repayment of the loan at any time. Under similar conditions similar phenomena will always recur, and in the Gold Coast Colony, as in all poor agricultural communities, the money-lender is the tyrant of his neighbourhood. As far as his personal wants are concerned, the native of the interior of the Colony can live without money. He owns a few plantain-trees in the village patch which supply him with the material of his staple food, *zufuh*, his corn and vegetable patch not only give him enough for his own use, but a surplus to be bartered for fish or other necessaries or sold for money to buy cloth, tobacco, &c., the marketing being done by his wives, and he lives free from care. But if a death occurs in his

**System of land mortgage.**

family, if he be so unfortunate as to lose a wife, a child, his father, or, most important of all, an uncle, all is changed. "Custom" must be made regardless of expense. Guns must be fired, rum must be provided, and every comer must be entertained for at least a week after the death. The custom must be repeated after an interval of six weeks, and a third time after the lapse of a year. Sacrifices of goats and sheep must be made at the funeral, and at other times as directed by the fetishman, and perhaps fetish made to lay the ghost of the deceased. For this outlay the labour of himself and wives and family no longer suffices; he goes to the "Broompon," the rich man of the neighbourhood, and obtains a loan. Henceforth until the money is repaid he is a slave. Interest at 50, 75, or 100 per cent. is added to the principal, and until the loan is repaid the debtor must work for his creditor two days in each week, nothing being allowed for his labour. This may, and frequently does, go on for years, until the debtor is fortunate enough to find means to pay both principal and interest. A man may be held for the debts of his deceased relatives as well as his own. The man who makes the "custom" is responsible for the debts of the deceased, and in the courts of the Chiefs judgment will be given against him, and his person held until payment or an arrangement is effected. "Customs" are probably responsible for seven-eighths of the debts in the country, and weigh like an incubus on its prosperity by causing a vast amount of useless expenditure and implanting in the people a love of drink and idleness. The observance is enforced by superstition, and submitted to from fear; fear of the anger of the dead, fear of the wrath of the fetish and fear of public opinion, which applauds the man who makes a "big custom," and stigmatizes as "stingy" the man who spares on such an occasion with all the power which a small community can bring to bear on every member of it. In the coast towns the missionaries and the temperance societies have done much to diminish the exigency of "customs," and it is to be hoped that by improved communications they may soon be able to extend their influence to the interior. It is usually to pay for a "custom" that estates are pawned.

GOLD COAST.

Native  
"customs."

6. A patch of land having been selected, if it is to be planted with yams, the bush clearing takes place about Christmas; if for other crops, about the middle to the end of March. Clearing is effected by cutting down the bush, which is left on the ground till dry, which takes about a week. It is then set fire to and, with a hoe, the weeds are cleared away and the ashes dug in. The ground is then ready for planting, which is done in the clear spaces between the stumps of the bush, which are never grubbed up. About a month later the first weeding is carried out, and with three months' crops another cleaning is given at an interval of another month. With crops which remain longer in the ground, as yams and cassava, further cleanings are given at irregular intervals. The only implements used are the machet (of European manufacture) and the hoe (usually made in the country from imported bar-iron). The machet is used for cutting the bush. The clearing of the small growth, the planting, and the

Method of land  
cultivation.

GOLD COAST.

subsequent cleanings of the ground are all carried out with the hoe, which has a handle of 15 to 18 inches long and a blade about 3 inches square. Fire is the principal agent in clearing away the wild growth, and as no precautions are adopted to confine it to the area selected much valuable timber is thus destroyed annually. With such means the surface of the soil only is utilised, and as the natives have no idea of the use of manure, a new piece of ground is taken each year, except in the case of certain species of *Hybiscus* and *Solanum* used in soups, which are sometimes planted in succession to a crop of corn. Peppers (*Capsicum annum*) and the oil-palm (*Elais Guineensis*) are never planted; all the trees of these two kinds growing fortuitously from seeds scattered by the birds or animals which feed on the fruits. No work is done on the fetish days, usually Tuesday and Thursday in each week.

Rotation of crops.

7. As may be gathered from the foregoing description, the cultivation is of the rudest sort, hardly worthy of the name, a mere scratching of the surface; but so fertile is the soil, and so forcing the climate, that these easy toils are repaid by a return of one to two-hundredfold in the corn and other crops in proportion. A second crop might be taken from the ground in the following year, but experience, no doubt, has taught the native cultivator that soil thus taxed takes a long time to recover, and land being superabundant he has no motive to study economy in its use. After a crop of yams, ground is left untilled for five years; after other crops, for three years. Even within the shorter of these periods the bush will have so grown as to obliterate all signs of the ground having been cleared, and the ashes of the abundant growth again form an excellent manure, and is, in the absence of cattle, almost the only manure procurable. Along the coast, along a band of about five miles in breadth, only one crop per annum is sown, but beyond that limit two crops a year are the rule, the second planting taking place at the season of the latter rains, but on a different piece of land from the first.

Improvidence in food storage.

8. In the neighbourhood of the large coast towns a surplus of food is sometimes grown for sale to the townspeople, which is bartered at the bi-weekly markets (usually Tuesday and Friday) for fish, &c. but as a rule each grows only enough for his family's own use. Immediately after the gathering of the crop, abundance reigns, but, as nothing is carried over from one year to another, before the next crop is ripe everything becomes very scarce and prices rise to twice the amount at crop time. Thus, immediately after the crop is gathered corn costs about 6s. 9d. per 1,000 heads in the farming districts, while seven or eight months later the price will be 13s. 6d. to 18s. for the same quantity. A failure of the rains in their season for a single year would probably cause a famine; the consequence of two years' drought would probably be the death by starvation of half the population.

9. For convenience of description the products of the country may be divided into three classes—(A) Food-crops; (B) Fruits (C) Commercial products.

(A.) - *Food Crops.*

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10. The crop most extensively cultivated is undoubtedly maize. It is planted at the beginning of the rains and is ready for pulling in three months. The grains are soft and white, and give a good flour, but do not keep well, and are extremely subject to the attack of weevils. There is a red variety, but this is not extensively cultivated. This cereal was introduced by the Portuguese from America, and from want of proper culture has greatly deteriorated, running to stalks which are long and thin, and are blown down by the least wind, so that by the time the ears are ready to be pulled half the crop is laid on the ground. From the same cause the ears are small. The return is from 50 to 100-fold on the seed planted. The introduction and distribution of fresh seed of a large white variety, suited to a tropical climate, would be an immense boon to the country.\* From maize is made kanky, the bread of the country, various kinds of gruel, and pito, or native ale. Plantains are of equal importance in the native dietary with maize. They are principally consumed in the green state in the form of *fufil*, which is made from boiled plantains by beating in a mortar with a heavy wooden pestle till the whole forms a homogeneous mass, and is eaten with soup. In the ripe state they are roasted or baked and eaten with ground nuts as a dessert. Five varieties are distinguished, differing principally in size. Every village in the "bush" has its plantain grove, generally surrounding the village, which supplies the staple food of the owners without trouble to themselves, as no care is bestowed on the plants beyond cutting down the weeds once or twice a year, the suckers being allowed to grow freely, so that it is nothing extraordinary to see a dozen heads to a single stool. When the bunch of fruit has attained its full size it is cut off, the stalk is cut down and left to rot on the ground; this being the only manure supplied; at the same time the old dried leaves are cut off the remaining heads of the stool. Great improvement might be effected in the quality, and the quantity of fruit greatly increased by care in cultivation. The plantain is believed to be indigenous to the country, and to have been carried hence to Madeira and the West Indies.

Yams are another important article of food, being eaten boiled, baked, and (when new) roasted, and beaten up as *fufil* in the same way as plantains. There are three principal varieties, the large and the small white and the purple. The large white sometimes attains a size of 2 or 3 feet in length by 6 inches in diameter. The finest yams are grown in the Fanti district. The purple variety is only grown in small quantities. More care is bestowed on this product than on most others, but immense improvement would be caused by deeper cultivation and the use of suitable manures. The plants are trained up poles, a yam patch looking not unlike a badly kept hop-garden. It is considered the most exhausting of all the crops, and land which has been planted with it is left, as already remarked, for five years to recover. Cassada

\* I have ordered some to be sent out; it must be on its way. —W.B.G.

**GOLD COAST.** (the sweet variety) is grown in large quantities, and attains a great size. This plant seems to require the presence of salt in the soil or in the air, as the best quality is grown in the immediate neighbourhood of the sea. It is eaten in the same way as the yam; boiled, roasted, and beaten up as *fufull*, and forms the principal food of the Kruboys, who are so numerous employed in the country. The sweet potato is grown in considerable quantities, and in the Assin, Akim, and Aquapim districts a species of Arum, known as Ko-Ko, is grown for the sake of the root, which resembles the sweet potato in texture and the yam in flavour.

**Ground-nuts.** Ground-nuts are grown to a considerable extent in some of the districts, and formerly a large quantity was exported from Fetteh; but this trade has been killed by the development of the cultivation of this product in the Gambia and the East Indies, the nuts produced on the Gold Coast being small and poor in oil. The nuts grown are used as food, being made into soups or eaten with baked plantains, as before described. The ground-nut was introduced from the Brazils by the Portuguese.

**Peppers.** Peppers enter largely into the composition of every native dish. As before remarked, they are never planted, but when a tree is found it is kept clear of weeds, and the fruit plucked when ripe. Only a small quantity is exported, but the trade is capable of great expansion.

**Okros, &c.** Okros and other species of hibiscus and solanum are largely grown for use in soups. These are usually planted in succession to a crop of maize.

**Rice.** Rice is grown in the Axim and Quittah districts. In the former district a red variety is grown in the marshy plains in the neighbourhood of Appolonia and Axim. It is large, soft grained, and sweet, resembling the Sierra Leone rice. In the Quittah district an upland sort is grown on the hills about Ho and forms the staple food of the inhabitants. These two districts are capable of supplying the requirements of the whole Colony, and other districts are adapted to the growth of this crop in which a large and profitable foreign trade might be carried on, yet the Colony imports largely, as will be seen by the following table:—

Imports of.		£	s.	d.
	1880, 774 cwts. imported, valued at-	373	5	11
	1881, 2,977           "           "	1,423	5	9
	1882, 2,287           "           "	1,193	15	3
	1883, 742             "           "	372	3	0
	1884, 5,488           "           "	2,801	1	6
	1885, 9,450           "           "	5,058	15	6
	1886, 6,767           "           "	3,192	11	9
	1887, 4,863           "           "	2,387	12	4
	1888, 8,992           "           "	4,050	11	11

Taking the remarkable diminution in 1883 as a dividing line, we find that this grain is assuming an important position among the foods of the country, and that whereas from 1880 to 1883 the

average annual importation was only 1,683 cwts., (840*l.* 12*s.* 6*d.*), the average during the later five years has risen to 7,102 cwts. (3,498*l.* 2*s.* 7*d.*), with every likelihood of an increasing consumption. The more nutritious quality of the home-grown rice, which is not deprived of its gluten by the excessive cleaning which that imported from Europe undergoes, is recognised by the people, and the prospect for the cultivators of this grain is encouraging if a cheap method of transport can be found. For the purposes of foreign trade it would be advisable to introduce and encourage the cultivation of some of the hard-grained white varieties of other tropical countries.

GOLD COAST.

Cultivation of.

Improvement  
in seed of.

## (B.)—Fruits.

11. Oranges are plentiful and cheap, but, as a rule, poor. A fine variety, thin-skinned and sweet, is grown at Chama. The "tangerine" was introduced some years ago by the Rev. T. B. Freeman at Beulah, near Cape Coast, but appears to have died out. As a rule the oranges are thick-skinned, and the trees, being unpruned and untended, run greatly to wood. With proper cultivation very fine fruit could be produced and a profitable trade carried on in them.

Principal fruits.

Limes of excellent quality, but small, are abundant. This, again, arises merely from want of cultivation. They are principally used (by the natives) in the bath; the want of sugar has probably prevented the use of the juice as a drink. The sweet lime is unknown. Of mangoes there are two kinds, distinguished by size, both very stringy and with the "turpentine" flavour very strongly marked. Improved culture is wanted and the introduction of better sorts. The papaw, introduced by the Portuguese from the West Indies, is spreading all over the country and is a favourite fruit. The sort grown is small and full of seeds.

Sour-sops are fair sized though carelessly grown; sweet-sops are scarce; custard apples small but sweet.

Tiger nuts are used as a fruit when new, and are also the source of the well-known "tiger-nut milk." These are grown with more care than most of the crops, but only in small quantities. Manure is occasionally used in their culture, the nuts being smeared with dung before planting. The milk is supposed to act as an aphrodisiac.

Of bananas there are three kinds—the common, the silver, and the copper, of which the second is the smallest, but the finest flavoured. Bananas are usually grown together with plantains, and being seldom cleaned, and the suckers allowed to grow unchecked around the mother stem, the bunches are small and the fruit poor.

Of pineapples there are three different varieties—the black, the red, and the green, the fruits being of these colours when young. No care is taken in their cultivation, the sprouts or suckers from a newly-plucked fruit being stuck in the ground and allowed to

**GOLD COAST.** grow; they are never cleared from weeds or the root-suckers removed, consequently the fruit is poor in flavour and small, seldom exceeding five or six pounds in weight.

**Wild fruits.** Of wild fruits there are the miraculous berry, which leaves a persistent sweet taste in the mouth; the "velvet berry," the pericarp of which is mixed with water and used as a drink; the "tamarind," very rarely used; the "date," very small and poor; the "affoah," a black plum-like fruit, and the "abrowie," which is capable of improvement and might, under cultivation, become an agreeable fruit.

12. As may be gathered from the foregoing, the supply of fruit is small and poor, and the introduction of new and better sorts would be a boon to the Colony both from a culinary and from a sanitary point of view, as the doctors are constantly recommending a larger consumption of fruit, an instruction which the want of variety and the unsatisfactory quality of the supply available make their patients unable to follow. West Indian fruits take kindly to the soil and climate, and a supply might be obtained thence of their best varieties of orange, shaddock, mango, star and rose apples, fig-bananas, &c.

Introduction of improved kinds.

#### (C.)—Commercial Products.

**The oil-palm.** 13. (a.) Oil-producing plants. Of all the products of the Gold Coast the *Elaeis Guineensis* is undoubtedly the most important to the native. The fruit supplies him with a favourite food and two important articles of commerce; with the leaf-stalks he builds his house and barn and thatches them with its leaves, and from the stem he extracts a pleasant and (sometimes) intoxicating drink. The tree prefers a moist soil, flourishing in the warm, damp valleys, where it grows in extensive forests. It has never been made the object of systematic cultivation, but, as far as can be ascertained, it begins to bear in its fourth or fifth year, increasing till its fifteenth and continues to bear at least 60 years. It produces from four to seven bunches of nuts every year. As the "fatness" of the nuts (*i.e.*, the amount of oil contained in the fibre) differs greatly according to soil, the quantity of oil varies from three gallons per year in a moist soil to one gallon in dry. These nuts have a fibrous covering which contains the famous palm-oil. Three varieties of the tree are distinguished having orange, red, and black nuts respectively, the first giving the finest oil but small kernels, the others less oil but larger nuts. When the bunches of nuts are ripe they are cut and thrown into a hole in the ground till a sufficient quantity is collected to be made into oil. During this time the nuts appear to undergo a small amount of fermentation, and the produce is "hard" oil, the fresh nuts giving "soft" oil, which fetches a better price in the European markets. The quality of the "hard" oil is also deteriorated by the dirt which becomes mixed with the nuts while stored, to separate which no care is taken. When a sufficient quantity has

Conditions of growth.

Varieties of nuts.

been collected the nuts are boiled till the fibre is softened; they are then heaped up in stone troughs specially prepared for the purpose, and beaten with sticks till the fibre is loose. The heap of nuts is then covered with plantain leaves and left for 12 hours, during which time great heat is developed and a quantity of oil runs off. The nuts are then washed in hot water and the fibre separated and squeezed by hand. The oil is then boiled to separate it from the water taken up in the washing.

GOLD COAST.

—  
Process of  
manufacture.

This process is defective at every stage. To produce the finest quality and the largest quantity of oil the nuts should be treated when just ripe and fresh gathered from the tree. They should not be allowed to ferment, which darkens the colour of the oil and causes it to harden. The separation of the fibre by beating and hand squeezing is slow and gives very imperfect results, and should be replaced by machinery in the first stage and hydraulic presses in the second. At present quite 25 per cent. of the oil is lost, first by imperfect separation of the fibre, a large quantity of which is left adherent to the nuts, and second by want of power in the squeezing, which fails to extract the whole of the oil. Finally, the last boiling further darkens the oil, as palm oil changes colour according to temperature. A process which should extract the oil from the fibre without the addition of water and do away with the final boiling would greatly improve the quality.

Imperfections  
in.

This could be effected by separating the fibre from the nuts by a dry process, and then submitting it to hydraulic pressure to extract the oil. Pure fresh palm-oil has an agreeable smell (it has been described as resembling that of plum-cake), and is of a bright orange colour; but the oil of commerce, owing to faults of manufacture, has a stink absolutely indescribable, and every shade of colour between golden yellow and black. In the Western Province the quality is further deteriorated by adulteration. At Salt Pond a peculiar fine red earth is used for mixing by the middlemen, which it is almost impossible to separate by the most prolonged boiling, which process is in itself detrimental to the quality. In the Chama district the oil is mixed with over-ripe plantains and sour kanki, which is beaten up with the hard oil till thoroughly incorporated. Accra may be considered the dividing line of the two sorts, the oil made in that district and to the eastward being soft, that made to the westward being hard. The soft oils are in general purer than the hard; these being less able to incorporate foreign substances, the adulteration is almost confined to the mixture of water. It has been suggested that legislation should be adopted to punish the adulteration, but there are so many difficulties in the way that the Government cannot be expected to pass an Ordinance for the purpose. It would be necessary to establish a standard of purity, which could only be done after numerous and careful scientific analyses; to appoint qualified analysers to test all parcels of oil submitted to them, and inspectors with powers to take samples of and to seize suspected and adulterated parcels of oil. The machinery would be so costly that the fees necessary to cover the expenses would be

Adulteration.

Proposed  
remedies.

**GOLD COAST.** extremely heavy, and no doubt, on mature consideration, the merchants of the Gold Coast will prefer to rely on their own rough tests and the influence of prices to enforce purity of manufacture. But the immediate contact of the exporter and the producer by improved means of communication will probably be found most effective to this end. To show the effect of adulteration nothing more is necessary than to compare the position of Lagos oil (which is the purest known) with that of Gold Coast oil on the European market. When Lagos oil sells for 22*l.* 10*s.* per ton, Accra oil (which includes Addah and Quittah sorts) fetches 19*l.* 10*s.*, and Salt Pond (including Winnebah, Appam, and Chama sorts) 18*l.* only, or 20 per cent. less than Lagos sorts. No doubt some of the superiority of Lagos oil is inherent in the article, but having in view the amount of adulteration in the oil from the Gold Coast it is not unreasonable to expect that the production of a purer oil and the adoption of the Lagos "cold" process of manufacture (as distinguished from the Gold Coast "hot" process) would approximate prices. The average export of oil from the Gold Coast, taking the exports from 1882 to 1888 (see Schedule A.) as a basis, is 3,276,000 gallons, which, allowing two gallons per tree, would be the produce of 1,638,000 trees, probably not more than one half of the number of trees actually existing in the Colony. Allowing one fourth of this deficiency (a large estimate) for home consumption, we have nearly one and a quarter millions of gallons of the value of 51,700*l.* as lost to the Colony every year. A large quantity of the oil in the nuts subjected to manufacture is wasted owing to the defective methods employed, but a still larger quantity there is no attempt to use, the nuts being allowed to fall from the trees and rot on the ground.

**Price compared with that of Lagos oil.** 14. It is impossible to pass from this subject without referring to the fluctuations in the price of palm-oil which have occurred during the last few years (the effect of which is seen in the diminution of exports during 1886-1887, while the price was steadily falling, and in the increase in 1888, owing to a recovery of the market), and, considering the prospect in view of the competition of tallow, petroleum, and other oils, and the increased production which would be caused by the adoption of improved methods of cultivation, manufacture, and transport, there can be no hesitation in saying that, given a cheap method of transport, palm-oil can be profitably produced on the Gold Coast even though prices should fall considerably below their present level. It is the difficulty of transport that keeps the price on the Gold Coast at such a height as renders the present state of the markets in Europe unprofitable to the exporter, although the grower can produce it at a cost which would enable him to sell it with profit at 3*d.* to 4*d.* per gallon. Allowing 300 gallons to the ton, the cost to the exporter would be 3*l.* 15*s.* to 5*l.* per ton, which, after paying for caskage, shipping, &c., and allowing 1*l.* per ton for transport from the plantation to the beach, would enable him to place it on the European market at 13*l.* per ton. In view of the increasing use of other fats, displacing palm-oil in many directions, the inhabitants of the Colony have to face the probability of the

**Wasted produce.**

**Fluctuations in price.**

**Improvement of means of transport.**

price of palm-oil touching 15*l.* to 14*l.* per ton, and have the right to call upon their Government to perform its obvious duty by putting the roads in such a condition as to enable them to transport their produce at a reasonable cost, and to prevent their staple produce being driven from the market to the ruin of their trade.

GOLD COAST.

15. It is not here a question of building up a new trade, but how to preserve an established one. The intrinsic qualities of palm-oil have already placed it at the head of the vegetable fats.

"Palm oil must take precedence of all the host of vegetable fats, seeing that the imports of this one item into England almost equal in amount those of tallow, cocoanut, and the rest together."

Comparative  
superiority of  
palm oil.

(Report on Colonial Section: Colonial and Indian Exhibition, page 265.) No other oil is capable of being put to such a variety of uses. Its fine body, delicate aroma, and ready power of bleaching render it invaluable to the makers of the most delicate toilet soaps, and the superiority of French toilet soap is in some measure due to their extensive use of this oil. The soft sorts enter largely into the manufacture of the common varieties of soap, while the hard varieties, on account of the large quantity of palmitic acid which they contain, are chiefly used for candle-making. Its non-drying qualities render it valuable in other industries. "Besides its value in the soap and candle industries palm-oil finds a large applica-

Uses to which  
applied.

tion in South Wales and elsewhere in the manufacture of tin plate." (Report cited, page 266.) "For this latter purpose its non-drying qualities render it valuable as a preservative of the heated iron sheet from oxidation, until the moment of dipping into the bath of melted tin, the sheets being rapidly transferred to that from the hot oil-bath which consists almost entirely of palm-oil. The softest, purest, and most neutral oil is preferred for this purpose." (Spon's Encyclopædia of Industrial Arts, Manufactures and Commercial Products, Division IV. page 1407.) It is this application of the oil which gives the "Lagos" quality its superiority in the market, that being the most neutral (*i.e.*, non-rancid) and the cleanest. The Gold Coast planter should endeavour to extend the demand for his oil by preventing the mixture of impurities, the presence of which tends to partially decompose the oil and render it harder (Spon *op. et. loc. cit.*), and by increased consumption to compensate himself for the fall in price.

Excellence of  
Lagos oil.

16. After the manufacture of the oil the nuts are still valuable, as they contain the well-known palm kernels. For every ton of palm-oil there should be 2½ tons of clean palm kernels, and yet we find that the exports of this article are much below those of the oil (*see* Schedule A.). The direct loss to the Colony is enormous, and arises from the same causes as diminish the export of oil. Machines have been invented by Gunnell and others for the purpose of rapidly breaking the nuts, but they can never come into general use until it is possible to move large weights in carts along roads adapted to the purpose, as will be evident when it is considered that under present conditions four men are required to carry, on their heads, sufficient nuts (2 cwts.) to produce 56 lbs. of kernels,

Value of palm  
kernels.

GOLD COAST.

the value of which varies from 1s. 9d. to 2s. 3d. Owing to this cause 100,000*l.* worth of this one article are annually wasted (*see* Schedule B.), the nuts being piled in heaps and allowed to rot. Schedule B. is an eloquent argument for the establishment of good cart roads. The palm-kernels are exported to Europe, where the oil is extracted, but this might be done on the Coast if it were possible to put oil mills on the plantations, or to convey nuts cheaply to central mills, and would probably be found more remunerative than the exportation of the kernels. The average yield of the kernels being 30 per cent. of their weight in oil, the utilisation of the whole estimated crop would produce 8,700 tons of oil per annum, which at the price of cocoanut oil (which it closely resembles) would be worth to the Colony over 175,000*l.* To this must be added the value of the cake after the expression of the oil. The brown or black oil made by the process now in use in the country is not worth exporting, as it can be only slightly bleached and is therefore useless for soap-making. The native process of making the white oil is too slow to pay, and could not be worked on a large scale, but with the establishment of oil mills on the European system a good and profitable trade should arise, as the palm kernel oil expressed in England has to a large extent supplanted cocoa-nut-oil in the cheaper kinds of soap, in consequence of its not readily turning rancid, and thus imparting to the soap the strong smell which is always caused by the use of cocoanut oil; while its almost equal power of absorbing water renders it as remunerative to the soap-boiler.

Cocoanuts, free production of.

17. The cocoanut is largely grown, every town and village along the coast having its grove of palms at the edge of the beach, and most of the villages in the vicinity of the sea having a ring of these trees around them. The trunks are occasionally used as beams, but very little commercial use is made of the fruit, the exports of coprah reaching barely 1,000*l.* per annum. The nuts are also occasionally exported, but no use is made of the fibre. A clear white oil is extracted from the kernels by grinding and boiling, but the quantity made is extremely small, and is consumed locally for toilet purposes. The trees are planted promiscuously and left to grow unattended, consequently the yield is small and the supply would probably be too uncertain to justify the establishment of mills specially for the expression of cocoanut oil, though mills set up for the purpose of expressing palm-kernel oil might earn a subsidiary profit by operating on cocoanuts when palm-kernels were out of season. It is astonishing that no effort to utilise this source of wealth has ever been made by the laying out of plantations and the establishment of a trade in the produce of the trees. As is well known, the cultivation of the cocoanut forms a large and important branch of agriculture in the East Indies and Ceylon, while the industry has in comparatively recent years been successfully introduced into the Islands of the Indian and Pacific Archipelagoes. In the Madras Presidency alone there are nearly a quarter of a million acres under cocoanuts, while the value of the plantations of this tree in Ceylon was estimated a

Non utilisation of.

Cultivation in other places.

15,000,000*l.* in 1876, and in 1871 (since which date, however, the area under cocoanuts has been considerably reduced) the exports of the oil and fibre amounted to 300,000*l.*; the total production of the island has been recently estimated at 700 to 800 millions of nuts annually, worth 2,000,000*l.* The coast of Brazil for a length of 280 miles is covered with groves of this tree, and the exports from Pará alone to the United States amount to 130,000*l.* annually. The West Indian Islands are developing their coconut plantations with the result that from Trinidad the exports rose from a quarter of a million nuts in 1864 to 4½ millions (worth 18,000*l.*) in 1876. The coast of Guinea is as well adapted for the production of this valuable palm as any of the places which have been described, and it depends upon the inhabitants of the Colony whether they will gather the wealth that is within their reach from this source. The extent of the European demand for the products of this palm may be realised from the fact that the annual imports into the United Kingdom alone amount to 250,000*l.* for coconut oil and 170,000*l.* for coir fibre, yarn, and cordage; while, as we have seen, the United States import from a single port in Brazil 130,000*l.* worth of nuts per annum. Even if there is no attempt at making the oil on the spot, there is a profit to be made (with a smaller expenditure of capital) by exporting the copra and the fibre, the former being worth 11*l.* to 12*l.* 19*s.* per ton, and the latter from 8*l.* for short qualities to 30*l.* per ton for "fine, long, straight." This industry should recommend itself to the natives of the country, as the capital required is small, and the labour of cultivating the trees and collecting the nuts need not interfere with the cultivation of his food crops. It would be more profitable for small cultivators to sell their nuts to the large growers or to central mills than to attempt the manufacture of oil and fibre for themselves. Simmonds's "Tropical Agriculture" (page 227) gives the average production of a tree in full health and properly tended as 120 nuts per annum, which at 98½ trees per acre (planting 21 ft. × 21 ft.) would give a return of 11,500 nuts per acre, the value of which at 36*s.* per thousand would be 20*l.* 14*s.* 3*d.*, or three times as much as the value of an acre of maize. The only drawback to this culture is the length of time that elapses before any return can be obtained, the trees not coming into bearing till the tenth year, but this loss may be avoided by planting yams or other tuberous roots in the intervals between the trees. To capitalists who can afford to wait the necessary time, and to purchase the machinery required for the extraction of the oil and fibre, this industry should offer exceptional attraction, as the initial outlay is small and the upkeep cheap, while the plant being hardy and permanent but little anxiety need be felt as to the returns when they have begun to bear. Planted 21 ft. × 21 ft. the nuts from an acre of trees will give on an average 23 cwt. of oil, worth 27*l.* (40 nuts to an imperial gallon of oil), besides 52 cwt. of long and 11½ cwt. of brush fibre (5 cwt. of long and 1 cwt. of brush fibre per 1,000 nuts; Simmonds, *Op. cit.*, pp. 227 and 237), of the value of 70*l.*, making a total return of 97*l.* per acre per annum, "Trees grown in the most fertile soils will live for a century,

GOLD COAST.

Imports into  
United  
Kingdom.Value of  
produce.

GOLD COAST. " others less favoured from 60 to 80 years only; the former will yield their fruit commencing at the tenth year and with rare intervals continue until their sixtieth year, and then gradually decrease in fruitfulness till they decay" (Simmonds, *Op. cit.*, p. 229, quoted from "Agricultural Gazette of India," Vol. III.), so that a coconut walk once established will outlast more than one generation. No fear need be felt of overstocking the market, as the "civilised world of the temperate zone can absorb all the oil" and fibre the tropics are likely to send for generations to come, "however great the supply" (Simmonds, *Op. cit.*, p. 244). The "cake," or "ponnac," of the copra after expression of the oil forms a valuable cattle food. "The development of the growth of the coconut proceeds in the Lagos Colony in the hands of the Government, whose lead has been followed to some extent by the natives." (Moloney, *Sketch of the Forestry of West Africa*, p. 65.) This example might be advantageously followed by the Gold Coast Government with similar results. Such a tract of land as that lying between the beach and the road from Elmina to Cape Coast might be planted in coconuts by the Government, and the fruit worked up by the convicts in the Cape Coast and Elmina gaols, forming a source of revenue to cover their maintenance, and serving as an object lesson to the natives.

Castor-oil plant. 18. The castor-oil plant grows freely, and although the seeds are occasionally used medicinally no attempt is made to extract the oil. This plant forms an excellent hedge and is worth the attention of planters. The seeds might be exported, as they are worth about 6*l.* per ton in the European market, or the oil might be expressed. Large quantities of this oil are imported into Europe from the East Indies at a price of 2*d.* to 2½ *lbs.* = 1*s.* 3*d.* to 1*s.* 6*d.* per gallon; it is chiefly used for lubricating purposes on the Continent, as it is found not to diminish, and the demand for this purpose is likely to increase, especially in Germany.

Physic-nut. 19. From the fruit of the physic-nut (*Curcas purgans*) an oil is extracted by the Portuguese which is largely used by them for soap-making. It may thus be made a source of direct profit when planted as a hedge, for which purpose it is already extensively used.

Ground-nut. 20. The ground-nut has already been referred to under the head of food-crops. In order to re-establish the external trade in this article it will be necessary to import seed of a superior variety\*, as the native stock has so degenerated as to render the culture on a large scale unprofitable. The plants are so weakened as to produce few seeds, while the seeds themselves are deficient in oil.

#### Gums and Gum Resins.

Gum copal. 21. Gum copal is found in considerable quantities in the Colony, and a trade is carried on in it principally with the United States, but as it is not the produce of cultivation it does not come within the purview of this report.

\* I ordered some whilst on my way from England.—W.B.G.

Although the youngest of our industries, the manufacture of india-rubber is now only second in importance to that of palm-oil. Attention was first drawn to this valuable product by Mr. Alfred Moloney (now Governor of Lagos) when administering the Government of the Gold Coast Colony in 1882, by letters to the local press. The first practical experiments were made by Mr. F. C. Grant, of Cape Coast, whose example was quickly followed by others, and the undertaking proving remunerative, the collection of rubber began in every part of the Colony, and the quantity now produced annually ranges from 30,000*l.* to 40,000*l.* in value, although in the meantime the price has fallen considerably. The principal sources of supply are the various species of *Landolphia* and the *Urostigma Vogellii*, but a large quantity is also obtained from the *Tabernæmontani Crassus*. The preparation is slovenly, and a wet process is usually followed resulting in an inferior, wet, and ill-smelling article. "There are many applications where the inferior kinds, irrespective of their being cheaper, are better adapted than the finer descriptions." (Spon, *Op. cit.*, Div. III., p. 1143.) This fact will prevent the African rubber ever going entirely out of demand, but in order to ensure a large and constant sale the best quality should be the aim of the producers. The wet process causes the product to lose greatly in weight in the process of manufacture in Europe, which of course tends to lower the value still further. It would seem also that this defect is increasing. "Negrohead of good quality may be taken as losing 20 to 25 per cent.; 15 per cent. was formerly a fair figure, but the practice now is to pack the rubber in very large masses, and frequently to empty into it non-impissated juice, so that it reaches the English markets quite saturated." (Spon, *Op. cit.*, Div. III., p. 1144.) "The non-impissated juice mixed with the rubber gives it an unpleasant taste and smell when vulcanised, and the produce is softer than other qualities." (Spon, *Op. cit.*, p. 1143.) The German traders in the Colony obtain a higher price for the rubber shipped by them by cutting it into small pieces, pressing between grooved steel rollers to express the non-coagulated juice, washing it to get rid of foreign matters, again passing it through the rollers, and finally drying it. The process is long and tedious, but raises the value of the product by 50 per cent. All this trouble would be rendered unnecessary by proper treatment of the milk in the first instance. "The African rubbers are more adhesive and less elastic than the Pará article, and command an inferior price; the inferiority could be much reduced by an improved system of preparation." (Spon, *Op. cit.*, Div. V., p. 1656.) Various systems have been proposed with a view of producing a better article. The most feasible and simple appears to be to cause the rubber to rise to the surface of the milk by boiling; cutting the rubber into small pieces—say, 6 inches square by  $\frac{1}{2}$  to 1 inch thick; to thoroughly free it from water by means of a handpress, and then to thoroughly dry it by exposure to the sun. Rubber thus prepared sold in 1882 for 2*s.* 11*d.* per pound, and would probably sell even now for 2*s.*, the price of the ordinary

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India-rubber industry.

Species of plants.

Defects in preparation.

Suggested improvements.

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article being 10*d*. The plant required for this process is not costly, and can easily be made portable, so as to be moved from place to place as the supply of milk gets exhausted and the collectors migrate. Whatever process is adopted, the milk should be coagulated as soon as possible after collection, for decomposition rapidly sets in and materially modifies the character of the article. The use of salt and alum should be avoided, as these are injurious to the quality of the rubber on account of the "wetness" which is caused by the presence of saline particles, which are never completely removed by pressing. The following extract from "Christy's New Commercial Plants and Drugs" (No. 7, page 25) is worthy of attention:—"Sir John Kirk suggested to me to try the effect of spirit on the milk, and I did so. As soon as the spirit touched the milk it turned it into a solid body. . . . After the spirit has coagulated the juice or milk, it is a good plan to wash it with water." The necessity of thoroughly drying the rubber must never be overlooked. "This question of drying seems to have much to do with the quality of the rubber, and the inferiority of African to Pará rubber is largely attributed to its being sent into commerce in a raw, green state, whence possibly also arises its disagreeable odour, generated by decomposition. The desirability of introducing the *Attalea Excelsa* for the purpose of employing its nut (the *Urucari*) in curing African rubber as in Pará has even been discussed, but the slow smoky fire from any oily nut would probably have the same effect." (Spon, *Op. cit.*, Div. V., p. 1655.)

As long as no better use can be found for the palm-nuts, it might be worth while to use them for this purpose. It is to be feared that the present method of collecting the milk is by cutting the vines instead of tapping them, and that this will lead to an early exhaustion of the supply; already the collectors have been compelled to move to a considerable distance from the sea and the ports, the forests near the coast being exhausted. If it is impossible to regulate the mode of collection (as in Assam), steps should be taken to keep up the supply by planting. It has been suggested by Christy that the *Landolphia* should be cultivated in plantations, the vines being cut to the ground every year, the whole plant pressed between rollers, and the juice thus extracted treated with carbon bisulphide, which (he says) dissolves the rubber, but not the injurious gummy matter. As the *Landolphia* will grow in situations unsuitable for any other cultivation the experiment is worth trying.

(C).—*Timber.*

Timber supply.

22. The forests of the country form an untouched mine of wealth which only requires the introduction of a cheap method of transport to be developed. A large export trade might be carried on after all local wants are supplied, and yet the Colony is at present actually importing timber from the United States for building purposes. Here, as everywhere else, the enormous cost

Cultivation of  
*Landolphia*.

of carriage is the obstacle to the development of trade. The woods known to exist in the forests are edoom, dantah, cedar, ebony, camwood, and barwood, and other valuable kinds could doubtless be discovered if there were any prospect of their being profitably worked. The three first named are cabinet woods, and excellent furniture is locally made from them. If brought under the notice of English cabinet-makers and a regular supply ensured, an important trade would no doubt spring up. It is much to be regretted that advantage was not taken of the Colonial and Indian Exhibition to ascertain the commercial value of the timber and other products of the country. The neglect of the opportunity was so remarkable as to call forth the following pointed remark in the Report on the Colonial Section :--"In the West African Court " it is significant and illustrative of a remarkable feature in this " branch of the Exhibition that an English company had the " finest, indeed almost the only good, exhibit in the Court " (p. 265). It must, however, be admitted that full advantage has not been taken by the inhabitants of the Colony of the opportunities which exist for the development of this trade. The forests on the banks of the Ancobra, Prah, Anissah, Ayinsu, and Volta rivers contain millions of cubic feet of valuable timber which might be cut within a short distance of the stream, and floated down to the mouth at the smallest possible cost for transport. Such attempts as have been made to export timbers have been generally rendered unprofitable by seeking the timber inland, necessitating land carriage, instead of utilising the waterways; others have failed for want of capital, and hence no adequate effort on an extensive scale has been carried out, the failure of the smaller undertakings having effectually discouraged larger ones. The fact of failure has been taken as sufficient reason for not making further efforts, without attempting to discover the causes which led to it, and to ensure success by avoiding them. But while it is desirable to encourage the felling and exportation of timber, not only as a source of wealth, but as throwing open to cultivation new tracts of land, and, by drying the soil, diminishing the production of miasma, the concomitant dangers must not be overlooked. The example of too many countries teaches the consequence of reckless and excessive deforestation in droughts and soils rendered barren and uncultivable for want of water, and therefore the development of this industry should be carefully overlooked and accompanied by regulations for preserving and replacing an extent of forest sufficient to maintain the trade, and the flow of the rivers which depend so largely for their continuance during the dry seasons on the supplies of moisture retained by the vegetation at their sources.

GOLD COAST.

Prohibitive  
cost of  
transport.  
Species of  
woods.Suggested  
water  
transport.Evils of  
deforestation.(D.)—*Fibres.*

23. In fibres we have an important source of wealth awaiting development. Although cotton grows wild in the Colony it is totally neglected, except in the Volta district, where Messieurs

Cotton fibre.

GOLD COAST.

Export from  
Volta Valley.

F. and A. Swanzy have established a plantation. "I was glad to find in 1885 that a long established and prominent house of West African notoriety, Messrs. Swanzy, took the lead in the Gold Coast Colony in the matter of the development of the Volta Valley export cotton trade. They had and have a grand inlet and outlet in the Volta River, and deserve every encouragement and success. They intended to utilise the force of the river, and divert some of it towards the working of suitable machinery which they exported to the Gold Coast." (Moloney, *Op. cit.*, page 142.) As will be seen from Schedule A., the quantity exported is extremely small. The cotton growing wild appears to be of the Brazilian variety, of a good colour, but short in staple; for cultivation on a large scale it would be advisable to introduce Egyptian seed or some of the better American varieties, Messrs. Swanzy use Egyptian. Besides the fibre the seeds of the plant may be made a source of profit, either by exporting them as they are or by the expression and exportation of the oil which they contain. It is interesting to note that cotton is largely cultivated in the country behind Kumasi, and the yarn worked up into cloth in the country. The silk-cotton tree yields a fibre which is largely imported into Holland from the Indian Archipelago under the name of Kapok, and is used for stuffing furniture. The enormous number of silk-cotton trees existing in the Colony would yield a plentiful supply, if the people were aware that it is worth collecting and exporting. The timber of these trees is used for making fishing-canoes, each of which is cut out of a single trunk by burning away the wood along the central line of the hollow part of the intended canoe, and finishing off with an adze; the outside is then trimmed with a chisel.

Silk-cotton,  
value of.Pineapple  
fibre.

24. Besides its delicious fruit the pineapple yields one of the finest fibres known to commerce. As the leaves can be made into fibre after the fruit is cut, a double profit may be realised, but if it is intended to work up the leaves the fruit should be cut before it is ripe as this causes a considerable extra development of the leaves. If the plant is grown principally for the sake of the fruit it should be fully exposed to the light, but if for the fibre, under shade, which favours the growth of the leaves at the expense of the fruit. (Semler, "Die Tröpische Agrikultur"). As the plant grows wild in the country, and needs next to no care in cultivation, while yielding a most valuable fibre which can be manufactured into textile fabrics, makes an excellent rope, and good paper, it deserves attention. The example of the Bahamas, which have established a trade in the tinned fruit, might also be followed. Almost any part of the Colony could grow this valuable plant. "The simple mode of testing the capability of the soil for growing the pineapple in the Bahamas is by running a knife down it in dry weather, and if any portion of the earth adheres to the knife, it is considered by the planter an evidence of the suitability of the soil." (Simmonds, *Op. cit.*, page 449.) The average annual export of this fruit from the Bahamas is 600,000

Canned pine-  
apple trade.Suitability of  
soil test.

of the value of 40,000*l.* (Semler, *Op. cit.*, Vol. II., p. 147), but the fibre does not appear to be made use of. GOLD COAST.

25. The plantain might easily be made of even greater value to this Colony. The plantain and banana yield excellent fibres, immense quantities of which might be obtained from the plants already in existence. A plantain stalk will give on an average 4 lbs. of fibre of various qualities. The banana yields a smaller quantity of slightly inferior quality. Plantain and banana fibres.

The Rev. T. B. Freeman states that he has seen jute growing wild near Cape Coast. Jute.

26. In the present undeveloped state of West African botany it is impossible to give an exhaustive list of fibre-yielding plants, and the discovery and examination of such should be among the first duties of the Superintendent of the Botanic Stations. List of fibres required.

27. "The industrial application and commercial value of a fibre depend principally upon its physical qualities of length, strength, elasticity, firmness, colour, and upon its capacity for taking dyes. The majority of these qualities are affected more or less by the mode of cultivation, the period of harvesting, and the method of preparation." (Spon, *Op. cit.*, Div. III., p. 909.) The value of a fibre will vary according as it is adapted for (a.) paper-making, (b.) rope-making, or (c.) yarns and woven tissues. Value of fibres for different purposes.

28. (a.) For paper-making the fibres may be thin and short, but must have a curly disposition, such as felt, otherwise they can only be used as a sort of filling. Fibres intended for this purpose must be able to compete in cheapness with esparto-grass, which is put on the market at 6*l.* 10*s.* per ton.

29. (b.) For rope-making fibres may be coarse, but must be flexible and unite the two conditions of tenacity and resistance to climate. Lightness is an advantage, and they should be apt to absorb tar.

30. (c.) Fibres fit for weaving are the most valuable. They should be of a good colour, or capable of being easily bleached, long, glossy, flexible, and should have a natural twist. The whole subject of the microscopic and chemical examination of fibres is exhaustively treated in Christy's "New Commercial Plants and Drugs," No. 6, from which the above hints are extracted.

31. A sample of long white fibre sent from this Colony has been valued at 22*l.* per ton, which may be taken as an average value for fibres of Class C. The so-called aloes and the sanseverias are capable of yielding fibre of this quality, and as they will grow abundantly in soils unsuited for other cultivation they are worthy of attention. The main difficulty at present in this branch of agriculture is to effect the economical extraction of the fibre, but as the attention of European machinists is now turned to the problem it will probably soon be solved. For pineapples the machines of Sanford and Mallory give good results and might be easily applied to the aloes and sanseveria. For fibre-yielding grasses the machine known as Patrullo's is specially adapted, and great promise is held out by the newly-invented machines of Wallace for the treatment of flax, which might easily be adapted to Fibre-extraction machines.

GOLD COAST.

the extraction of other fibres. For the profitable exportation of fibre it is essentially necessary to reduce the bulk. The hydraulic press gives the maximum of power, but is costly; simple presses are now made in large variety; any of those intended for baling cotton are applicable to all other fibres.

(E.)—*Drugs.*

32. A large number of plants are used medicinally by the natives, but too little is known of this department to allow of particularization. No doubt examination of the flora by botanists will lead to the discovery of many plants as valuable as the *Strophanthus*, to which attention has been lately directed. Some specimens were sent to the Colonial and Indian Exhibition, but they appear to have been insufficient for the decision of their sources, for the reports contain but one short paragraph on the subject of West African drugs. "In the West African Courts a large number of native drugs were shown, and some among them would probably be worth further examination in regard to their composition and therapeutic effects; but so little is known respecting them that it would be of little use to refer to them more particularly." (Report cited, *supra*, page 257.)

Investigation  
of drugs.(F.)—*Coffee.*

33. Coffee has long been grown in the Aquapim district under the auspices of the Basel Mission, who introduced the seed from the West Indies in 1843. The early plantations were destroyed by the Ashantees in 1869, but were (at least in part) re-established, and nothing but perseverance and capital are required to develop this culture, as the following extract will show:—"In 1881 coffee was grown on the small plantation of a native near Nsatsi on the Aquapim Hills to the extent of 5 cwt. This crop was cleaned and packed by manual labour, and exported to Hamburg, with the result of a return at the rate of between 1s. to 1s. 1d. per lb., which speaks well for the natives' labour, and points to what can be done on those hills." (Moloney, *Op. cit.*, p. 108.) The following paragraph, translated from a letter dated Ho, 6th November 1888, from the Rev. Matthew Seeger, of the North German Missionary Society, will show that the cultivation is still maintained and promises success when the proper methods of preparation shall have been learnt:—"In the years 1860-69 coffee and tobacco plantations were established here. The former bore very well till they were destroyed by the Ashantees. Since then several coffee plantations have been laid out by natives (all Christians) and are cultivated with satisfaction and contentment. Failure in the necessary preparation, or rather utter ignorance, have hindered their development. The plants themselves thrive admirably." The coffee thus introduced appears to be the '*Coffea Arabica*,' but the Liberian variety offers

Introduction of  
coffee.Good growth  
of plants.

GOLD COAST.

Species recom-  
mended.

Value.

Shipment in  
"parclement."

greater advantages, as it can be grown on the plains and in the neighbourhood of the sea, while it is much more prolific. "An estate of 20 or 30 acres well looked after would yield as much coffee as one with 200 or 300 acres of 'Coffea Arabica or Ceylon.' Coffee berries are like plums, as big." (Christy, *New Commercial Plants and Drugs*, No. 1; page 5, quoted from "Ceylon Observer.") The first crop is generally only a few berries, but the tree goes on increasing until it becomes capable of yielding 20 pounds. "We have heard of trees giving 24 pounds each; those are very old trees" (ditto, p. 4). This is undoubtedly the first product to which intending cultivators should turn their attention. The last year has seen a considerable rise in the price in Europe, which is likely to be maintained in consequence of the falling off of supplies from Ceylon, Java, and Brazil, so that no produce gives a more promising outlook than this. African coffee is at present very low in the market owing to defective preparation, but this can be overcome by care, skill, and the use of proper machinery. As Liberian coffee, grown and prepared in Ceylon, realises 105s. per cwt., there is evidently no defect inherent in the seed to cause it to be valued at 65s. to 70s., as quoted for African. Careful cultivation and preparation should place African coffee on a level with any other. The experiment of shipping the coffee in the "parclement" to be cleaned and sorted in England has been recently tried by Southern India and Venezuela with encouraging results, and is worthy of the attention of coffee growers. In shipping coffee in this condition it is essential that it be thoroughly dried before shipment.

(G).—Cocoa.

Cocoa,  
advantages of.

34. This is another product worthy of every attention. Attempts on a small scale have been made to introduce it into the country, but no information is obtainable as to the results. The culture is cheap and the preparation simple, so that it should receive the attention of small cultivators. Its only disadvantage is the length of time (five years) before a crop is obtainable, but with so much unoccupied land the growers of cocoa can fill in the time by the cultivation of other crops in the intervals between the necessary handlings of the young trees.

(H).—Tobacco

Tobacco  
manufacture in  
interior.

35. Tobacco is largely consumed in the country, which draws its supplies from the United States. The plant grows wild throughout the Colony, but is not utilised, although considerable quantities are grown and manufactured for home consumption in Ashantee, Dahomey and the Niger country. The plant grows to a fair size, and the only difficulty to be overcome is that of curing the leaf, but the art might be learnt here, as it has been in Ashantee and Dahomey, and an article produced fit, at least, for local con-

GOLD COAST. —  
Cultivation attempted. **sumption.** The cultivation has been undertaken by Mr. R. A. Ferguson near Anamaboe, and by Mr. Arthur in the vicinity of Winnebah.

(I.)—*Sugar.*

Growth of sugar cane. 36. The sugar cane is grown in small quantities, and is only used for chewing. The production can be indefinitely developed, if the manufacture of sugar can be made profitable.

(K.)—*Kola-nut.*

Kola-nut, value of. 37. The kola has lately been attracting considerable attention in Europe, and may in the future become a valuable article of commerce. "Although the kola-nut, also called the gouru or orubené seed, has long been known, it has only recently been submitted to a careful chemical investigation, MM. Heckel and Schlagdenhauffen (*Comptes Rendus*, 20th, p. 802) point out that this seed is richer in caffeine than the best coffee, and that the alkaloid exists in it in a free state. It contains, in addition, the same alkaloid as cocoa, viz., theobromine, and a considerable quantity of glucose. It has the advantage over cocoa of containing but little fatty matter, and three times as much starch as cacao beans. As the fat is generally removed from cocoa and starch of some kind added, it is obvious that we have here a product which combines the best qualities of coffee and cocoa, and which might therefore form a most valuable basis for a new beverage, which, if appropriately treated and flavoured, might even supersede to a certain extent coffee and cocoa. Under such circumstances, the cultivation of the plant might form an important source of income." (Christy, *Op. cit.*, No. 6, p. 62.) The author of the pamphlet from which the above is quoted is making efforts to introduce the use of this nut as a substitute for cocoa and coffee, and has obtained most favourable opinions of its capacity from some of the most celebrated European chocolate manufacturers, who are willing to contract for supplies. The only obstacle to the development of the trade is the uncertainty of the supply. As the tree is indigenous to this country, and grows in vast numbers in Akim, Assin, and other districts, this Colony should be able to meet the demand, and attention given to this tree is likely to be highly profitable. It can be grown from seeds or cuttings, should be planted out at distances of 20 x 30 feet, comes into bearing in the fourth year, the crops increasing till the tenth year. A full crop is estimated at 120 to 150 lbs. per tree. The tree is hardy and is easily cultivated, will grow at any elevation below 1,000 feet, and at sea level on the sea-coast or interior, and its produce is likely to be in greater demand from year to year. A small trade is carried on in the nuts with "Lagos" (see Schedule A.), whence the nuts appear to be exported to Brazil. The nuts are purchased on the Gold Coast by natives of Lagos, who ship them fresh in large baskets lined and covered

Constituents.

Indigenous to Colony.

Method of planting.

Trade with Brazil.

with large green leaves. For the European market the nuts should be carefully and slowly dried, "IN THE SHADE, where a current of air will pass over them, there is then very little shrinkage and fine dry nuts are obtained." (Christy, *Op. cit.*, No. 8, p. 13.) Worm-eaten, shrivelled, and otherwise defective nuts are valueless.

GOLD COAST.

Preparation  
for shipment.(L.)—*Spices.*

38. The Guinea grain has long been an article of export from the coast of Guinea, and gives its name to the "Grain" Coast. Other and better spices have long displaced it from its high place in the culinary arts, and the demand for it at the present is small and spasmodic, but has recently increased considerably. It is cultivated on a small scale in various parts of the country, and is an ingredient in most native medicines. The plant does not seem to be adapted for cultivation on a large scale. There are many other spice seeds and barks used by the natives, the names and properties of most of which are unknown. The African cubeb is the only one which has received a botanical name, *Piper (Chavica) Clusii*.

Guinea-grain,  
export of.Native spices  
unknown.(M.)—*Dyes.*

39. There appear to be only two dyes in use amongst the natives, a brown and a black, the sources of which are unknown.

40. Camwood exists in great abundance throughout the country, and there are numerous varieties of indigo, but no use is made of them in the Colony, although in the interior and at Lagos indigo of a fair quality is made and extensively used for dyeing both native and European fabrics. Mr. Moloney (*Op. cit.*, p. 153) states that a sample of Yoruba indigo taken home by him in 1883 was valued at 4s. to 4s. 6d. per lb., although it contained a good deal of earthy matter. A more careful preparation would lead to a better price, and the cultivation might be made as profitable on the Gold Coast as it has been found to be in the East Indies.

Camwood dye.

Value of  
indigo.

41. Although the Gold Coast Colony is adapted for the raising of almost any tropical growth, it exports hardly any agricultural produce, save palm-oil and kernels, the products of the *Elais Guineensis*. The question naturally arises why, with a fertile soil, an enormous extent of forest and an agricultural population, is there not a large trade in timber and the other products of the country? It is too often taken for granted that the fault lies with the natives of the Colony: that they are too lazy to work. This has a specious air of truth. The native of the Gold Coast is indolent because he has few wants, and these being easily gratified he has small inducement to continuous labour; but under proper superintendence he is capable of heavy and continuous work, and is willing to undertake it for a fair wage. He does not make use of the valuable products of his country because, in most cases, he is ignorant of their value. The rapid development of the trade in india-rubber is a proof that the natives of the Gold Coast are

Paucity of  
produce  
exported.Rapid progress  
of india-rubber  
trade.

GOLD COAST.

Difficulties of transport.

Absence of roads.

Establishment recommended.

Amenability of natives to improvement.

capable of taking advantage of their opportunities when they are made aware of them, and that they are willing to incur the labour necessary to develop the resources of their country if they see promise of an adequate return, but they naturally do not care to undertake labour which is to be its own reward. The principal reason of the neglect of native products is the difficulty of transporting cumbersome goods, which arises from the want of roads, as, too often, the vendor, having collected his produce and brought it to market, finds the value is swallowed up by the cost of transport. Except in the immediate vicinity of the largest coast towns there are no "roads" in the country. The so-called roads are mere footpaths, 12 to 18 inches broad, with the high bush on each side, tortuous, blocked with fallen trunks, flooded with water in the rainy season, interrupted by bridgeless rivers which must be waded, and crossed by unbridged gullies which must be descended on one side and scrambled up on the other. Even in travelling between the principal towns the journey must in great part be performed along the beach through heavy sand for want of a highway. Nowhere in the Colony are there to be found roads fit for carriage traffic which can be made available for bringing to the ports the produce grown in the interior. Under such circumstances a large trade in produce is impossible. The only available beast of burden is man, the weakest and most costly of all. All the produce that is exported is brought down from the plantations to the coast on the heads of men and women, and in every case the cost of transport at least doubles the cost. This gives his opportunity to the middleman, who steps in and makes his profit out of producer and exporter, and injures the trade of the country by adulteration. The first step towards developing the resources of the country must be the establishment of good roads between the producing districts and the ports of shipment. Whatever may be the cost of covering the Colony with roads it will be amply repaid, not only by increased trade and increased revenue arising therefrom, but by the spread of enlightenment and civilisation through the interior by frequent communication with the coast. Along the roads trade will flow, merchants will follow the trade to its sources, missionaries will establish their schools, new desires will be implanted in the people, and they will be aroused to industry by the wish to gratify those wants. The English nation has accepted the government of this country with the avowed object of civilising and raising the people to Christianity. These objects cannot be effected by a string of settlements on the sea-shore. The people of the interior must be brought into immediate contact with the advantages of civilisation before they can appreciate them. As proof that the contact will be effective we point to the progress made by the coast towns within the last 50 years. With such evidence in view it cannot be denied that the native of the Gold Coast is ready to adopt improved methods and new manners. Instruct him in improved methods of cultivation, and point out to him the valuable products of his country, and he will readily adopt the one

and utilise the others. It only required to be shown that india-rubber was obtainable in the country and was valuable in Europe for this resource to be availed of, bringing into existence a new branch of trade which has risen from an export of 64 cwt. and a value of 170*l.* in 1882 to 1,163 cwt. and 62,430*l.* in 1887. At present, for want of proper roads, communication between different parts of the country is slow and infrequent, travelling is difficult and expensive, the interior of the Colony is practically unknown, the riches of the country are unutilised, and the inhabitants of the interior are no further from savagery than they were when the country was first visited by white men. The country is unfortunate in not possessing waterways, but this is only one reason the more for making good and numerous roads. In the work of civilisation ten strokes of the spade will be found worth a ton of Ordinances. With good roads beasts of burden will be introduced and the cost of transport will be thereby reduced, raising the price payable to the producer, and thus encouraging him to increased production. The contact of exporter and producer will lead to the introduction of improved methods of manufacture, and the sight of the products of Europe will spur the planter to draw from the soil its utmost production to enable him to possess them.

GOLD COAST.

—  
Progress of  
rubber trade.Introduction of  
beasts of  
burden.

The time favours the enterprise. The trade of the country is suffering under a double calamity. The long-continued disturbances in Ashantee have paralysed the trade with the far interior, while the heavy fall in the price of palm-oil has struck a serious blow at the internal trade. New resources are urgently required to restore the prosperity of the country, and where can these be found so well as in its own productions? a solution which the public mind has already grasped, as shown by the general desire to find the means of trade within the Colony, so that it may cease to be dependent on the political condition of its neighbours. The timber of the forests of the Colony and the productions of its soil are unexplored and unworked mines of wealth, which can only be utilised by improved means of communication and transport. In the work of exploration the Government must lead. It is beyond the capacity of private purses, nor are the people as yet sufficiently enlightened to appreciate the value of such labours until it is practically shown them. By the establishment of good roads, by the introduction of beasts of burden, by the opening of experimental gardens as training schools for young native agriculturists, the minds of the natives will be turned to the sure foundations of prosperity, agricultural labour intently directed, and the wide bases of trade to be found in a large variety of commodities produced in the country. By such steps the prosperity of the country will be raised to a level never yet reached, the balance of the revenue will be restored, and means obtained for the introduction of other instruments to a still higher advancement. Not in its gold-bearing rocks, but in its fertile soil will the Gold Coast find an inexhaustible and certain fund of wealth, and every step in that direction will lead to further advance. "Agriculture,"

New resources  
required.Initiation of  
work by  
Government.

GOLD COAST.

says Carlyle, "is the mother of manufactures," and the foundation of the prosperity of every State will be found in the produce of its soil wrung out by the labour of its people.

Direction roads should take.

42. The direction which these roads should take is pointed out by the present trade routes. There are eight principal lines of trade having their outlets at Dixcove, Chama, Elmina, Cape Coast, Salt Pond, Winnebah, Akusi, and Quittah. The line to Cape Coast is principally used by the Ashantee traders, but a considerable trade in india-rubber is carried on along it, which is capable of development by reducing the cost of transport, and there are timber and other products in which a large trade could be done between that town and the country behind it on the same condition.

Cart roads to oil centres.

43. From each of the other towns named a road should be run to the oil-producing district behind it, broad enough for carts, with moderate gradients so as to be available for small power, and with all rivers and gullies bridged. It is impossible to travel through the oil districts without being struck by and lamenting the enormous waste of produce which is everywhere apparent. One walks among thousands of splendid trees in full bearing with the nuts falling off ungathered, and at the places where the oil is made heaps of nuts, worth hundreds, and, collectively, many thousands, of pounds are seen rotting, because, with his defective means, the owner cannot bring them to market. The oil is made in the most careless and wasteful manner, the quality being thereby injured and the price reduced, while the process of cracking the nuts by hand is so slow that there is not the time to carry it out. Contact with the European merchant and the discovery that pure clean pays better than bad and dirty oil will effect a revolution in oil making and an enormous increase in the out-turn; while the introduction of the kernel-cracking machines of Gurnell and other makers will render it possible to utilize the whole of the kernels, or oil-mills will turn them into a fine and valuable oil. Such improvements are not worth attention as long as the cost and difficulty of conveying the produce to market render the labour unremunerative. Improved means of communication will lead to a great and immediate increase in the exports of palm-oil and kernels, but the country's prosperity will always be subject to violent shocks while it rests on a single product. Efforts should be made, therefore, to render it independent of the state of any single market by broadening the basis of trade by the introduction of foreign products and the exploitation of native growths. The plants which have been found profitable in other countries should be introduced and tried, and the forests searched for economic plants. Steps should be taken to bring to the knowledge of the people new staples and to instruct them in their cultivation. No better means can be used than the establishment of experimental gardens under trained botanists, men capable not only of dealing with known plants, but also of developing such as are indigenous to the country and whose qualities are at present unknown. The examples of the botanic gardens of the Lagos and Niger Govern-

Present waste of produce.

Improved transport conducive to improved manufacture.

Multiplication of staples. Establishment of botanic gardens.

ments are encouragement to the effort. Besides the above purposes these gardens should be utilised as training stations for young natives to teach them civilised methods of cultivation to enable them either to cultivate the soil for themselves or to take charge of plantations established by others. This is the more important in view of the unsuitability of the climate for the prolonged residence of the natives of northern climates. While "petite culture" will no doubt be largely followed by natives, large plantations must for many years be dependent on European capital, but no European will think of starting a plantation unless he is able to find someone to take charge of it when he is obliged to leave the Colony for his health's sake. No greater boon could be bestowed on the country than such an opening for the employment of its youth who now flood the clerical market and have almost reduced the rate of wages below the means of living. All our towns are filled with young men seeking in vain a livelihood in clerical offices while vast fields of labour are left untouched. The enormous benefits conferred on the West Indian Islands by their botanic stations are proofs of the value of these institutions which render amplification unnecessary. A liberal grant from the revenue for the establishment of such a station will be a profitable investment.

GOLD COAST.

Agricultural  
training  
stations.

44. In connexion with this question of communication must be considered the means of transporting the produce. At present everything is carried on the heads of human beings, the ordinary load being 50 lbs. to 60 lbs., and the average pay 2s. 6d. per day's journey of about 10 miles. As a gallon of oil weighs  $7\frac{1}{2}$  lbs., a load will be about 8 gallons, making the cost of transport nearly 4d. per gallon. The market price varies from 6d. to 9d., more often approaching the former figure than the latter. The average price may be taken at  $7\frac{1}{2}$ d., leaving  $3\frac{1}{2}$ d. per gallon to pay for the labour of cultivating and manufacturing and manufacturer's profit. After purchase the oil costs the shipper 2d. per gallon for caskage and 2d. more for conveyance to the beach and shipping, so that out of a total cost of 1s. per gallon f.o.b. at the port of shipment, carriage accounts for 6d. or 50 per cent. It is therefore evident that improved means of carriage will enable the manufacturer to obtain a higher price and thus lead to an increased output. It has been said that it is useless to make wide roads, because the people accustomed to walk in single file will only use a small portion. The custom cannot be disputed, but it arises from the people being restricted to the narrow paths which do duty as roads in this country. If the natives of the interior of the Colony will not use the wide roads, the traders of the coast will be glad to do so in order to come into contact with the growers and to crush out the middleman, and in order to increase their profits will make use of carts to cheapen the carriage of their goods and produce. The fact that no beasts of burden are used in the country is accounted for in the same way: there are no roads adapted to the purpose. Oxen and horses live and thrive, amongst other places, at Appollonia, Elmira, Anamaboe, Appam, and Accra, and the question

Statistics of  
cost of oil  
transport.Introduction of  
beasts of  
burden.

## GOLD COAST.

Veterinary  
surgeon  
required.

whether they will live at other points has never been fairly tried, as no competent veterinary has ever resided on the Coast. An incalculable service would be rendered by the attachment to one of the botanical stations of a skilful veterinary surgeon entrusted with the duty of studying the diseases of cattle in the country, instructing natives in their management, and making suggestions for the improvement of native breeds. Even European cattle will live on the coast, as about 1850 Heer Vander Eb, Governor of the Dutch Settlements, had Dutch cows at Elmina from which he bred. The cattle of Salaga or the Niger would probably afford safer stocks for crossing the indigenous breeds, which are deficient in size and strength. At places where the presence of the Tsetse renders the introduction of oxen and horses impossible, the mule and ass can take their place, as these latter do not succumb to the attack of the fly. This is a point of such vast importance that it is deserving of a persevering effort. By developing traffic the use of cattle will pave the way to the profitable introduction of railways, which, if laid down under present circumstances, would be obliged to spend an unprofitable period in that task. The introduction of cattle will also lead to the use of ploughs and other improved implements, and thus tend powerfully to improve agriculture. The sight of yokes of oxen drawing Government carts would lead to a rapid and general adoption of the system by private individuals, if they could avail themselves at need of the services of a person competent to deal with the ailment of their beasts. No one, however, will make the experiment with the prospect of losing his cattle by the first indisposition, as must happen when there is no one at hand with any knowledge of the proper treatment.

Improved  
agricultural  
implements.

Attraction of  
European  
capital.

Road grants-in-  
aid.

45. Besides the question of communications there is that of capital. The country is undoubtedly poor, and the resources of the people have been diminished by the long period of depression which has prevailed for many years, so that they cannot hope to undertake large agricultural operations without assistance. It will be necessary to attract European capital, and in order to do this a liberal policy on the part of the Government will be necessary. The examples of Ceylon and the Straits Settlements should be studied and followed as far as practicable. Planters should be encouraged by constructing roads to facilitate the transport of their produce; grants-in-aid of such roads as are not of sufficient public importance to warrant their being made solely by the Government should be given; and, if a means of securing the revenue from loss can be devised, advances might be made to owners of plantations undertaking cultivation in proportion to the amount of capital sunk by themselves. A mere "benevolent interest" on the part of the Government will not tend to encourage efforts in this direction. The Government must take visible and active part in the movement. If it is to perform its duty to the country, it must extend a helping hand to any genuine effort to develop the resources of the country by civilised methods of culture.

46. For direct aid by irrigation works and bounties the time will arrive only when some progress has been made in the development of agriculture by private enterprise and capital, but the following steps are recommended to the Government for immediate adoption with a view of increasing the production of the staples of the Colony, giving an impetus to improvement, and encouraging the introduction of new products:—

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|--|-------------------------|
| <p>A. The construction of roads suited for carriage traffic.<br/>         B. The establishment of experimental gardens.<br/>         C. The passing of an Ordinance legalising the principle of "limited liability."</p> | <p>Recommendations.</p> |
|--|-------------------------|

47.—A. The roads should be not less than 15 feet broad, with all gullies and rivers bridged, and with easy gradients so as to be suited for small power. These roads should run from the following ports to the oil districts behind them, viz., Dixcove, Chama, Elmina, Salt Pond, Winnebah, Akusi, and Quittah. A road should be run from Cape Coast to Prabsue for the development of the rubber and timber trades, as well as for the use of the traders from the interior; another line from the same town to Abrakrampa would lead to a considerable trade in palm-oil and palm-kernels and to the development of the Abra district. The road from Salt Pond should run to Ejumaku and Aborah, throwing off a branch at Ayinnaim to the Ayin district. The road from Winnebah should be run so as to tap the Goomoah district. The road from Akusie should run into Krobo. The line from Quittah should proceed via Anyaku, Abloun, and Adaklu to Hô. Along all these lines a considerable trade is already carried on even under the difficulties of transport already existing, which trade will receive considerable impetus from facilities of carriage.

48.—B. If it is impracticable to establish more than one botanic station, it should be in the neighbourhood of one of the principal towns, so as to keep it under the attention of the greatest possible number of educated natives, who are the portion of the community most likely, at present, to benefit by the example. The station should be in charge of a skilled botanist whose duties should be to study the native flora and ascertain its capabilities of development and industrial application; to make experiments in the cultivation and improvement of native products; to introduce foreign products; to make his station a distributing centre for new and useful economic plants, and improved varieties of old; to afford information and guidance to persons actively engaged and interested in agriculture; to keep a regular meteorological record; and to instruct and train young natives in practical and scientific agriculture. The duties of a superintendent of such a station are so well set out in the "Suggestions (with modifications capable of easy adoption in West Africa) for the information of Colonial Governments about to appoint Superintendents of Botanical Gardens, and for the guidance of the Superintendents themselves" quoted in Mr. Moloney's admirable and useful work on

GOLD COAST.

Recommendations.

Description of roads.

Location of botanic stations.

Duties of superintendent.

GOLD COAST.

Limited  
liability,  
principle of,  
advantageous.

the "Forestry of West Africa" (pp. 259 *et seq.*), that it is only necessary to refer to it.

49.—C. The passing of an Ordinance establishing the principle of "limited liability" will overcome one of the chief difficulties in the way of the development of the Colony by facilitating the raising of capital for agricultural and other industrial undertakings on a large scale. The Commission would fail in its duty if it did not endeavour most earnestly to impress upon the Government of the Colony the immense importance of the subject under review from every point of view, financial, political, commercial, and sanitary. By the diffusion of the wealth to be brought into existence by the development of its agricultural resources the Colony will be relieved from the financial difficulties which threaten it; by the contact with civilisation which will follow from easy and rapid communication, civilisation will be spread in the interior of the Colony where it has yet hardly reached; the resources of the country will be increased by the introduction of new branches of trade, and the commercial crises attendant on the ever-recurring disturbances of the peace of the interior, and the depression of the present single staple of trade with Europe, will be avoided; and finally, by the clearing away of the forests (the nursing mothers of miasma) and the exposure of the moist soil to the influence of the sun, the sanitary condition of the Colony will be improved. But even when the Government has fulfilled its duty to the utmost, and provided the necessary facilities for the development of agriculture, it is on themselves and on their own efforts that the inhabitants of the Colony must finally depend for success. It is for them to decide whether they will enter into the wide fields lying within their reach, or sink into the position of hewers of wood and drawers of water to the more energetic race that shall seize the opportunity. The Government can but sow the seed, the crop must be raised and harvested by the people. Those who have received the benefits of education must take the lead and set an example of industry and enterprise to their less enlightened countrymen. The effort will lead to wealth, though no doubt in some cases success will be dashed with failure, but undaunted by that they must push on until perfect success is reached. They must set before themselves the ideal of raising their country and their countrymen. For long enough has the country remained in the old groove, content with things as they are; it is time that efforts were made to rise to greater things. "It appears to be as true in regard to the life of a nation as of an individual, that in order to rise, morally and intellectually, it must be possessed of some great idea, in the pursuit of which its best powers must be appealed to and perseveringly exercised. As a man will never become worthy of his manhood who lives on from day to day, merely taking what comes, and neither endeavouring to raise his conceptions of what he might be, nor to live up to such notions as he has, so neither can a nation keep up its nationality which has no aims and no ideal." Let this be the general aim, to raise the country and its position

Necessity for  
self-exertion by  
natives.

among men by developing its resources to the highest pitch. A beginning once earnestly made, perseverance and courage will alone be required to ensure success. Every effort will be a step towards the goal, and an incentive to further effort until the time shall be reached when the wild tangled forests and jungles shall be replaced by cultivated fields, "when the wilderness and the desolate place shall be glad, and the desert shall rejoice and bloom as the rose." GOLD COAST.

W. F. HUTCHISON,  
Secretary.

Approved and adopted, Accra, 1889.

J. DESMOND MCCARTHY, M.D.,  
President

} Members.

Approved and adopted, Cape Coast, 31st December 1880.

W. F. HUTCHISON,  
Vice-President.

J. P. BROWN,  
W. E. PIETERRON, } Members.

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## EXPORTS OF AGRICULTURAL PRODUCE

Articles.	1882.		1883.		1884.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Bamboo canes	10 bales.	£ s. d. 1 10 0	—	£ s. d. —	—	£ s. d. —
Barwood	—	7 0 0	—	—	T. C. 4 8	22 4 6
Bees-wax	2 barrels.	14 0 0	13 cases.	64 2 6	C. Q. L. 1 2 15	12 15 0
Bark	—	—	—	—	—	—
Beans	—	—	1 package	5 0 0	—	—
Calabar beans	C. Q. L. 51 0 24	154 11 0	C. Q. L. 24 3 5	68 6 5	C. Q. L. 6 0 6	10 1 0
Calabashes	—	—	9 packages	12 0 0	—	—
Camwood	T. C. Q. L. 170 9 0 16	1,051 18 8	T. C. Q. L. 191 12 3 18	1,680 15 11	T. C. Q. L. 62 10 0 2	354 7 3
Cocoa	—	—	—	—	121 lbs.	6 1 0
Cocoa-nuts	—	—	1,394	9 7 6	—	—
Coffee	—	—	1 case	11 10 0	C. Q. L. 2 1 14	5 11 6
Coprah	T. C. Q. L. 32 7 0 9	202 4 0	T. C. Q. L. 114 7 1 9	1,277 13 11	T. C. Q. L. 259 15 0 17	1,604 7 0
Cotton	—	—	26 6 2 0	1,307 13 1	9 6 2 8	297 1 2
Drugs, unspecified	—	—	—	—	2 packages	3 0 0
Fibre	T. C. Q. L. 5 13 0 12	114 9 2	897 lbs.	5 5 0	—	—
Ginger	0 9 0 0	42 13 6 <sup>7</sup>	—	—	T. C. Q. L. 0 5 1 12	5 0 0
Ground-nuts	1 0 0 0	13 13 3	T. C. Q. L. 888 1 2 7	1,923 15 3	216 5 3 25	2,077 12 6
Guinea grains	47 12 1 10	5,665 13 3 <sup>7</sup>	82 7 3 7	1,645 0 8	68 9 1 27	1,460 19 4
Gum copal	294 1 2 18	7,860 15 6	19 12 1 23	530 15 3	99 14 2 9	992 18 3
Kola nuts	16 4 0 10	123 16 6	—	15 0 0	448 packages	632 2 0
*Mahogany nuts	—	—	—	—	—	—
Maize	2 cwt.	4 10 0	T. C. Q. L. 43 19 2 20	123 6 0	100 packages	75 5 2
*Indigo	—	—	1 case	1 19 8	—	—
Palm-kernels	T. C. Q. L. 5,181 10 3 15	60,816 16 5	T. C. Q. L. 7,428 10 2 18	61,542 19 3	8,930 tons	76,530 0 0
Palm-oil	gallons 2,021,022	178,508 9 2	2,655,014	298,721 4 8	3,033,533	282,398 0 0
Pepper (bird's-eye)	189 lbs.	2 7 8	—	—	—	—
Rubber	70 lbs.	0 12 6	T. C. Q. L. 23 17 0 9	2,371 12 0	T. C. Q. L. 99 18 2 11	13,619 17 7
Seeds, bamboo	T. C. Q. L. 9 10 3 20	54 10 0	—	—	—	—
„ castor-oil	26 lbs.	1 2 0	—	—	1 cwt.	0 6 9



## Exports of Agricultural Produce from

Articles.	1882.		1883.		1884.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Seeds, cotton - -	—	—	T. C. Q. L. 22 2 0 23	£ s. d. 52 0 0	T. C. Q. L. 17 12 1 2	£ s. d. 55 9 0
.. croton - -	—	—	—	—	—	—
.. unspecified - -	—	—	—	—	—	—
Shea butter - -	C. Q. L. 8 1 20	16 15 0	C. Q. L. 5 1 10	15 5 0	C. Q. L. 39 3 10	83 12 6
Shallots - -	—	—	13 0 0	37 9 3	—	—
Timber, odoom - -	2 planks.	0 6 0	—	—	—	—
.. ebony - -	—	—	837 lbs.	5 2 0	—	—
.. teak - -	—	—	—	—	13 planks	5 13 0
.. unspecified - -	—	—	17 pcs.	7 13 0	958 ft.	15 19 4
Tiger-nuts - -	—	—	—	—	—	—
Vegetables - -	—	—	10 packages	6 3 0	18 packages	31 1 3
Total - -	—	244,537 12 3	—	231,449 19 10	—	350,163 5 8

DULE A.—*cont.*the Gold Coast Colony, 1882-1889—*cont.*

1885.		1886.		1887.		1888.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
—	£ s. d.	—	£ s. d.	—	£ s. d.	—	£ s. d.
6 packages	5 7 6	—	—	—	—	—	—
—	—	1 package	1 0 0	40 packages	26 13 0	—	—
14 packages	134 0 0	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	49 cwt.	6 0 0	1 ton.	6 0 0	—	—
—	—	—	—	—	—	—	—
—	—	360 ft.	3 12 0	240 ft.	4 0 0	476 ft.	17 16 0
2 packages	6 16 3	13 packages	30 10 0	3 packages	4 1 0	—	—
21 packages	31 19 1	1,696 pkgs.	185 17 9	unspecified	48 8 0	—	—
—	372,013 11 5	—	278,469 17 1	—	262,785 2 10	—	262,850 0 8

GOLD COAST.

## SCHEDULE B.

Table showing (a) quantity of Palm-oil exported; (b) quantity of Palm-kernels produced; (c) quantity of Palm-kernels exported; (d) quantity of Palm-kernels unutilized; (e) value of same, 1884 to 1888.

Date.	a.	b.	c.	d.	e.	—
1884	Tons. 12,112	Tons. 30,220	Tons. 8,930	Tons. 21,350	£ 106,750	This table is based on the estimate of 300 gallons palm-oil = 1 ton, and 2½ tons palm-kernels per ton of oil ( <i>see</i> report, pp. 18 and 19).
1885	13,571	33,927	4,991	28,336	144,680	
1886	10,544	26,360	9,426	16,934	84,670	
1887	10,255	25,637	8,022	17,615	88,975	
1888	11,369	28,422	13,330	15,092	75,460	
Total	—	—	—	99,927	499,635	

## APPENDIX.

Sir W. B. GRIFFITH to LORD KNUTSFORD.

Government House, Christiansborg Castle,  
Accra, July 1, 1890.

MY LORD,

ON the 8th of September 1887 Colonel White, who, at the time, was administering the Government of the Colony, appointed a Commission composed of six gentlemen—Dr. McCarthy, the Chief Medical Officer, being President, and Mr. William Francis Hutchison, of Cape Coast, Vice President—to be Commissioners for the purpose of inquiring into the best means, and recommending such steps as they might think would be most practicable to promote economic agriculture in this Colony. The Committee has been employed for about two and a half years collecting information for the purpose of their inquiry, and the report was transmitted to me by Dr. Eason who had succeeded Dr. McCarthy as President of the Board, and was received by me at Aburi on the 27th of March last.

2. I regret, my Lord, that I have not been able to transmit this interesting and valuable Report at an earlier time to your Lordship, and even now I am only able to forward it with a few remarks, as since its receipt I have not been able to read it

second time, owing partly to great pressure of work and also to my recent unfortunate illness. I think it best, however, to send on the Report at once with a few general remarks, and to request that your Lordship will be so good as to cause it to be printed.

3. I think 300 copies of the document should be printed, and possibly your Lordship would be pleased to cause to be prefixed to it this Despatch and that which I shall follow it up with as soon as practicable, when I will deal at some length with various matters in the Report which appear to me to possess interest, not only for the people in the Colony, but for others abroad who may take an interest in this portion of West Africa.

4. The Report presents a description of the geographical features of the Colony, the extent of country under cultivation, the methods of agriculture adopted by the natives; the system of land tenure, and some account of the practice and cost of "native customs" and the injurious consequences resulting from their performance; a description of the agricultural products of the country, imported and indigenous; and suggestions for improvements in the direction of the advancement of the agricultural interests of the Colony.

5. Special attention is drawn to the limited extent of the country under cultivation as compared with its immense area, and the great waste of natural products of commercial value, chiefly from the indolence of the people on the one hand, and the bad state of roads on the other.

6. The demoralising effect of the native funeral "customs" is graphically detailed. The light of education, which is gradually but steadily diffusing its rays over the Colony, is, however, the only remedy for this evil. But it is a question for consideration whether it will not be advisable for the Legislature presently to consider measures for the protection of the poorer classes from the exorbitant and extravagant impositions of money-lenders.

7. The Report gives a fairly accurate description of the agricultural products of the Colony; two important subjects are referred to in it, roads and deforestation, the former of which has been under the consideration of the Government, as your Lordship is aware. But time is necessary to mature and put forward schemes of improvement in a young Colony so peculiarly situated as this is, and which is only 16 years old. For some years past the native Chiefs, through whose towns the main roads to the interior pass, have been subsidised by the Government to keep the roads clean. This plan has not been found to act as satisfactorily as was anticipated, however, owing to the want of supervision. To meet this difficulty a new appointment has been created, which, it is hoped, will prove remedial in the regard stated. In the meantime however, it must be remembered that the building of bridges, making of roads, laying down of lines of railway, extension of telegraph communication, and bringing pure water into the large towns, and providing a forestry staff, and building houses for public schools, &c. cannot be carried out without a considerable

GOLD COAST.

outlay of money, which, as it cannot be provided from the revenue of the Colony, will have to be raised by loan on its credit, if these public works are to be undertaken.

8. The advisability of the enactment of legislative measures for the prevention of deforestation of the country has not been lost sight of, but for various reasons it has not been considered prudent to press the question for the present.

9. With reference to the suggestion for the improvement of certain agricultural products by the introduction of improved varieties of plants, it may be remarked that it was for this purpose, among others, that the botanical station at Aburi was started, and I have imported large quantities of coffee, cocoa, corn, cotton, and other seeds of valuable economic plants and trees, large portions of which have been planted at Aburi, and the surplus will be distributed to persons in the Colony who take an interest in the propagation of the seeds mentioned.

10. As already stated, I will do myself the honour shortly of again addressing your Lordship on the subject of the Report now transmitted.

11. I annex to this Despatch a copy (in duplicate) of the Commission issued by Colonel White for the appointment of the Commission on Agriculture in order to its being prefixed to the Report now forwarded when the latter is printed.

I have &c.

(Signed) W. BRANDFORD GRIFFITH,  
Governor.

The Right Hon. Lord Knutsford, G.C.M.G.  
&c. &c. &c.

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Enclosure in Appendix.

No. 9a.

1887.

GOVERNMENT GAZETTE.  
ACCRA, GOLD COAST, WESTERN AFRICA.

*Friday, September 30th, 1887.*

By His Excellency Frederick Benjamin Price White, Lieutenant Colonel Commanding Her Majesty's 1st West Indian Regiment, Colonel Commanding the Land Forces on the West Coast of Africa, Administering the Government of the Gold Coast Colony.

GREETING,

WHEREAS at a meeting of the Legislative Council of the Gold Coast Colony held on the 16th May last it was deemed advisable to appoint a Commission to inquire into the best means of promoting economic agriculture in this Colony;

Know ye that I, the Administrator of the said Colony, relying on your integrity, loyalty, industry, and ability, have constituted and

appointed you, and by these presents do appoint you, the said James Desmond McCarthy, Christian Henry Eyles, Thomas Birch Freeman (senior), William Francis Hutchison, Joseph Peter Brown, and William Edward Pieteron, to be Commissioners for the purpose of inquiring into the best means, and recommending such steps as you think may be most practicable, to promote economic agriculture in this Colony, of examining witnesses and of reporting to the Officer Administering the Government of the said Colony thereon: And further I do hereby constitute and appoint you, the said James Desmond McCarthy, to be President, and you, the said William Francis Hutchison, to be Vice-President, of this Commission, and I do by these presents order that this Commission shall continue in full force and virtue until otherwise determined, and that you, the said James Desmond McCarthy, President, or you, the said William Francis Hutchison, Vice-President, of the said Commission, with any one or more of the other members thereof, shall and from time to time and at any place or places within the said Colony proceed in the execution thereof.

GOLD COAST.

Given under my hand and the public seal of the Gold Coast Colony at Government House, Victoriaborg, in the said Colony, this Eighth day of September in the year of our Lord One thousand eight hundred and eighty-seven.

By His Excellency's Command,

PERCIVAL HUGHES,  
Acting Colonial Secretary.

GOLD COAST.

Enclosure 5 in No. 2.

The FIRST ASSISTANT COLONIAL SECRETARY to the  
DISTRICT COMMISSIONER, Cape Coast.

Colonial Secretariat, Victoriaborg, Accra,

SIR,

July 19, 1889.

I HAVE to draw your attention to the recommendations which have been made in the sanitary reports of last year for the patrolling of the sea beach with a view to the avoidance of nuisances and the excavation of cesspits in a suitable locality for the reception of private sewage by means of prison labour.

I shall be glad if you find yourself able to give effect to the latter recommendation at once while you have so large a number of prisoners at your disposal, and if you will also give your special attention to the former important subject. It may be that until the requisite number of latrines can be provided by the Government you will find it desirable to set aside a special portion of the beach to the leeward of the town to which the people can be allowed to resort, and which can be scavenged daily by a gang of prisoners. This course is about to be adopted in Accra.

It has further been mentioned as desirable that the wells from which the natives obtain their water supply should be preserved from pollution by organic matter, or by people washing around them. I request that you will also give your attention to devising some inexpensive means for remedying this. It may be casks sunk in the springs without bottoms would protect them sufficiently, but you will be the best judge of whether anything and what can be done with the means at the disposal of the Government.

I have, &c.

(Signed) PERCIVAL HUGHES,  
1st Assistant Colonial Secretary.

The District Commissioner,  
Cape Coast.