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NOTE.—There are many subjects in Africa, such as Racial Characteristics, Labour, Disease, Currency, Banking, Education and so on, about which information is imperfect and opinion divided. In none of these complicated and difficult questions has Science said the last word. Under these circumstances it has been considered best to allow those competent to form an opinion to express freely in this Journal the conclusions to which they themselves have arrived. *It must be clearly understood that the object of the Journal is to gather information, and that each writer must be held responsible for his own views.*

THE CULTIVATION OF COTTON IN WEST AFRICA

AMONG the various possible modes of promoting the material welfare of the native races in tropical and sub tropical Africa, there are few, perhaps none, that seem at first sight more practicable, or more likely to be extensively useful than that of the methodical cultivation of raw cotton. The fibre has, in times far beyond the reach of exact records, been gathered as a spontaneous product, and spun and woven in many parts of Africa; but nowhere, except in Egypt, has it yet become the subject of regular and sustained industry. Attempts, well meant and liberally supported, were made during the "cotton famine" of 1861-5 to establish the growth of cotton permanently in West Africa, and some fairly considerable success followed, but these experiments must be regarded as failures in so far as lasting results are concerned. Now as before West African

cotton is gathered from the indigenous perennial tree. It is in fact a "jungle" product; and although merchants now and then pick up and export to England a few bales of it from time to time, there is nothing like regular cultivation of cotton in West Africa with the intention of making it an article of profitable commerce, either for internal consumption or for export. The natural product suffices no doubt for small local requirements, but if the growth of cotton is to become an important source of wealth and a means of training the people in habits of steady industry, cotton must be systematically planted and grown as an annual. Only in this way can West African cotton take its place as a successful competitor in the markets of the world, and as an important article of commercial exchange. Occasional instances are to be met with of the introduction of exotic seed and of good crops of excellent cotton having been grown from it, as at Mombasa, or in experimental plots in West Africa, but no effort has yet been made to introduce the industry as an important and continuous business undertaking.

Circumstances are at the present moment favourable for thoroughly testing the possibility of establishing the cultivation of cotton in West Africa on a large scale. Notwithstanding the increased area devoted to this product in the United States and in Egypt, the entire supply from these sources within the last two or three years has not been sufficient to keep the machinery of Europe and America continuously going. The insufficiency has no doubt been aggravated by the partial failure of the Indian crops, consequent upon insufficient rainfall, but apart from that additional cause, the scarcity towards the close of each of the last three or four seasons has aroused much interest amongst spinners in Lancashire and elsewhere in the question of securing one or more new and extensive cotton fields which may provide a substantial measure of assurance against bad seasons in the United States, the chief source of the longer stapled varieties. The American plant is especially liable to seasonal vicissitudes, which often cut down the yield during the later stages of growth, and disappoint the expectations raised in the earlier period.

The spinning industry of Europe—and of America too—has thus during the later period of the crop delivery season at least,

been repeatedly the victim of scarcity prices, and the trade in cotton goods throughout the world has been checked and perturbed by uncertainty and violent fluctuations. This frequently recurring evil is aggravated by the modern method of entering into forward contracts for supplies of manufactured goods to the distributing markets all over the world to be delivered in subsequent months. The losses and other troubles consequent upon a fall from scarcity prices have therefore made merchants and dealers in cotton manufactures exceedingly unwilling to buy in periods of temporary short supply of the raw material. At such times the current demand for goods is always very small, the full production of the mills cannot be got rid of, and machinery and workpeople are partially and for a time thrown out of employment.

What is the cure for these recurring disturbances? The conviction has taken hold of the minds of many thoughtful persons in Lancashire and elsewhere, that the most likely method of averting them, or of lessening their painful consequences, is to multiply the important sources of supply of raw cotton, and some are turning their minds with hopeful anticipation to Africa as the most promising region. They have ample justification. The marvellous progress of Egypt as a cotton field within the last twenty-five years, and the certainty of its extension into the Soudan before very long, where 15,000,000 acres of suitable land and abundant water facilities await it, are full of encouragement. Indeed, from the Nile Delta to Natal, and from Sierra Leone to Mombasa, there are probably few extensive regions in which the more valuable qualities cannot be grown.

But elsewhere than in Egypt and the Egyptian Soudan the systematic and profitable cultivation of cotton on a large scale is a problem yet to be solved. Enough is known of the climate, the rainfall, and the soil of large territories in other parts of the continent, including West Africa, to warrant the most encouraging expectations of success. But there are other conditions to be considered, to which I shall refer presently. Meanwhile it is instructive to note that, in so far as the production of the better qualities is concerned, all that we know of these other regions leads to the belief that Africa, west, east, and south offers a

very much more promising field than India, and it is of the better qualities especially that the need for new supplies is most urgent.

India has large areas over which plenty of cotton can be and is raised, but the quality of the fibre is inferior, and notwithstanding repeated and persevering efforts to coax exotic superior varieties within the last fifty years, it has been found impossible to maintain the quality of the original type. Degeneration has hitherto proved to be the fate of such varieties when introduced into the dependency. The class of cotton known as Dharwar was grown at first from seed brought from the United States just sixty years ago, and during the Cotton Famine it took an important position in the Liverpool market as a substitute for American cotton, but for many years past the quantity produced has been quite small, and although it is still quoted in the price lists, it does not command anything like the same price as American. The Dharwar district was selected as the very best for the cultivation of this superior variety, because it receives the benefit of both monsoons, and because from its high elevation its climate is comparatively temperate. Yet in the reports of Mr. Harry Rivett-Carnack, the Cotton Commissioner for the Central Provinces and Berar, and particularly in the one for the year 1868-9, there is abundant evidence to the effect that not only in the Dharwar district, but in all parts of India, the persevering efforts which had then for several years been made by public officers and private individuals to introduce the longer and finer stapled varieties had been unsuccessful. From time to time since then experiments have been undertaken with a view to introducing the longer staples into India, but with no better success than before, and good authorities have come to agree with Mr. Rivett-Carnack and his coadjutors in the great efforts which were made in his time, that the hope of India as a cotton producer lies in the improvement of the indigenous varieties and not in attempts to bring in exotic growths. For these the climate and seasons of India are unsuited, and there is no probability that she will ever become a serious competitor with Africa in regard of the better qualities.

Turning our attention to West Africa the first question to be answered is, Have we any experience of attempts to grow

cotton there with a view to the provision of a substantial supply for export? Travellers into the interior, English and foreign, bear witness to the growth of cotton in almost every part of West Africa, and of its handicraft manufacture by the natives from immemorial times. But they never speak of its systematic cultivation, and there is reason to believe that the increased quantity of West African cotton which came to Europe during and after the American war, attracted by the high prices of those years, was almost entirely the product of the indigenous perennial shrub.

The records of the Cotton Supply Association, founded in Manchester in 1857, furnish some instructive material for our present purpose, although this is not so abundant nor so specific in several respects as could be desired. Its establishment occurred four years before the outbreak of the American war. The serious political dangers attending the institution of slavery in the South, and the apparent impossibility of extending the growth of cotton there, under the then-existing circumstances, so as to provide sufficient raw material to meet the constantly increasing needs of the cotton manufacturing industry, were the main motives for the founding of the Association, which was not dissolved until 1871. As an auxiliary to its principal operations, the issue of a journal called the *Cotton Supply Reporter*, at first monthly, and afterwards twice a month, was begun in 1858. The first number contains the record of an address delivered in the Town Hall, Manchester, on 6th August, 1858, by Consul Campbell, of Lagos; for at that time Consular representatives were maintained by the British Government in our own West African Colonies. He referred to the abundant production of cotton in the whole region between the coast and the bend of the Niger, but directed his remarks and his proposals chiefly to the Yoruba country and the adjacent regions, where he said the people were exceedingly fond of agriculture. From Yoruba even cotton cloth woven in native looms was sent to Brazil every year. With a view to assisting the main work of the Association he sketched out a plan by which an extended growth of cotton might be best promoted in that part of the continent. An agent should forthwith be stationed at Abeokuta, with power to appoint

native sub-agents in the numerous towns in the interior. Through these channels gins and presses should be distributed at suitable places, and provision made for utilising the river communications by small steamers tugging canoe or boat cargoes to Lagos. Mr. Campbell declared that native African cotton could then be laid down in Manchester at 4¼*d.* per lb. If this was of the same quality as the occasional shipments now received from Lagos, it must have been worth very nearly as much as Middling American of which the price, at that time, was 7¼*d.* per lb. He made no reference to the more methodical cultivation of cotton, assuming apparently that if means were provided for the ginning of it by machinery, for packing and conveying it cheaply to the coast, the natives would have sufficient inducement in the price they received to see to the enlargement of production themselves.

But even before that year and for a long time afterwards Mr. Thomas Clegg, of Manchester and Lagos, had spent much money and effort in endeavouring to bring cotton in large quantity from Lagos and Liberia to England. Unfortunately no records of his work are accessible, and there are only occasional references to it in the *Reporter*. In one of its earlier numbers there is further information as to the cotton resources of the Lagos hinterland from Mr. D. J. May, who conducted an official expedition to the Niger territory, passing through Yoruba on his return to Lagos. From the river to Yoruba three-fourths of the whole country was under cultivation, chiefly of grain. No mention is made of cotton fields; but Mr. May says:—"In every hut is cotton spinning [by hand wheel presumably], in every town is weaving (Yoruba is famous for its cloth), dyeing, often iron smelting, pottery works by no means despicable, or other useful employments to be witnessed. Lastly, from town to town for many miles the entire road presents a continuous file of men, women, and children carrying these articles of their production for barter or sale." Raw cotton is also mentioned as a commodity thus carried, along with palm oil, probably for export, in part at least from Lagos. Mr. Gerald Ralston, then British Consul-General in Liberia, writes to Mr. Henry Ashworth upon the prospects of cotton cultivation in that country. He evidently refers to

the methodical planting of cotton, for he says writing in 1858 that undoubtedly the production of coffee, sugar, palm oil, camwood, and arrowroot was more likely to be immediately profitable to the Liberians than that of cotton, and yet he thinks well of the prospects of the latter, since he urges that seed and gins should be sent out for their use. Mr Newnham, answering a series of questions which the Association had distributed widely in possible new cotton fields, gives more encouraging views. He says that although the Liberians themselves neither grew nor wove cotton at all extensively it was both cultivated and woven more largely in the native country of the interior. Cotton of the indigenous, perennial description was produced to some extent in Liberia, and he was of opinion that if they were supplied with superior seed they would gladly take to its cultivation.

An important effort was made in 1859, to encourage the growth of cotton in the Gold Coast territory. An association was formed under the title of "The Agricultural Society of the Eastern Districts." Prizes were offered for the growth of cotton at the rate of twenty shillings for every 100 lb. of cleaned cotton produced, and the sale of it was guaranteed at the rate of 1*d.* per lb. Subsequent records show that a considerable measure of success attended the operations of the Society although there are no means of presenting it statistically.

On one point, however, the *West African Herald*, of 1st March, 1860, expresses an opinion adverse to the introduction of exotic varieties into the Gold Coast country, which it will be useful to note for the consideration of those who may take up the enterprise of promoting the growth of cotton there. "We are very desirous," the circular runs, "to impress upon the minds of the members of our Agricultural Society, as well as all persons who are growing cotton, that they must positively abstain from planting any American or other foreign seeds. These have been tried over and over again, and nothing but failure has been the result. In 1851 a very large cotton plantation was formed at Napoleon, near Cape Coast, on which a great deal of money, care and time were expended. The late Mr. Samuel Bannerman had a still larger plantation at Winnebah, and others again in the Bush. He bestowed very great attention on these. The

proprietor of this journal spent all his means, and all his time in the cultivation of cotton at Winnebah during the years 1851 and 1852. All these plantations apparently flourished at first The trees were beautiful, and within six months gave forth an extraordinary abundance of fine large pods." The writer then goes on to say that the cause of the disaster which destroyed his hopes of a crop was insect pests, and this happened to plants raised from American seed. The native plant, he continues, is hardy, it flourishes in any soil, and it yields most abundantly. He adds that in the garden of the house occupied by the agent of Messrs. Swanzy, presumably at Accra, there are several native cotton trees which have been there, yielding a good deal of cotton without any attention, and growing in "wretched soil."

These remarks, coming as they do from one who has had unfortunate experience in cotton planting in West Africa, are no doubt impressive. Since they were written, however, means have been devised for dealing pretty effectually with these insect parasites. The knowledge of such means and of the method of applying them are evidently indispensable to the successful growth of exotic varieties there, and this unfortunate experience in the Gold Coast country is adduced only for the purpose of emphasising the importance of providing the cultivators of exotic varieties with the skill and the materials required for dealing successfully with insect pests.

What has been the result of all the enterprise and the expenditure of money, of which even the *Reporter* gives but an imperfect notion, in trying to establish the cultivation of cotton in West Africa, more than forty years ago? Unfortunately the statistics of exports from the coast and those of imports of West African cotton to the United Kingdom afford but very imperfect means of estimating it. From 1859 to 1862 the imports are apparently all entered as from "West Africa." In those four years the entire quantity thus recorded was only 8,712 cwt., equivalent to 2,440 bales of 400 lb. each. Then follow two years in which apparently no cotton was received from that part of the world. It is probable, however, that not only in these two years, but also in the previous four years, and even subsequently, some West African cotton was entered

among the miscellaneous receipts as from "Other countries." In the five years 1866–70, the quantity from West Africa is stated to have been 26,844 cwts. or 7,516 bales. But within the same period there occur also for the first time records of the quantity imported from the Gold Coast. This was 45,039 cwt. within the five years, or 12,611 bales of 400 lb.

These figures, if they are anything like an adequate representation of the fruits of the labours of our predecessors in the stimulating times of the cotton famine, are certainly at first sight not very encouraging. But circumstances have altered very considerably in the interval. The growth of cotton in West Africa is and must be mainly carried on up-country, and until recent years transport thence to the coast has always been highly expensive. Railways are now carried a fair distance into the interior and they will be extended. The opportunity seems to have come to set about the establishment of an important service of cotton supply for our mills in that part of the world under conditions vastly more favourable than those which existed forty years ago. The political settlement of the hinterland also, though by no means completed is much further advanced toward the securing of orderly government and other encouragements to peaceful and regular industry than it was then. It is probable that at this moment, less cotton is grown in West Africa than in the period from 1860 to 1870. At all events the quantity now coming to the coast for shipment is a mere trifle, notwithstanding the better means of transport. Probably this fact may be attributed to the much larger supplies of manufactured cotton goods now sent to West Africa. Even thirty years ago it was found that these goods were penetrating more and more into the interior, and that the native handloom weaving was beginning to decline, and the change has made great progress in the interval. What more natural than that the growth and gathering of raw cotton should decline with it?

There is, however, every reason to believe that, if suitable means are adopted to that end, the cultivation of cotton in Lagos, in the Niger territories, in the Gold Coast, and even in Sierra Leone, as well as in Liberia, is capable of very great extension, and that substantial, and perhaps large supplies of

it may be drawn hither for the use of our spindles and looms with profit to all concerned. The first requisite is the supply of gins and the instruction of the natives in their use, as well as the organisation of buying agencies, or some equally effective mode of enabling the growers and ginners to find a ready market for their cotton. It will probably be found advantageous, at first to encourage regular cultivation from native seed, and afterwards to discover, by experiment, whether or not the production can be improved and increased either by the planting of exotic seed, or by hybridisation. Native cotton, when properly ginned compares very favourably in length and strength of fibre with American, and in these respects it is vastly superior to Indian. Upon the question of cost of production we have not much exact information, but if the statement of Mr. Campbell already referred to, that in 1858 Yoruba cotton could be laid down in Manchester at $4\frac{1}{4}d.$ per lb. was correct, its cost to-day should be very much less. Indeed so long as American Middling continues to command over $4d.$ per lb. it is not extravagant to hope that with modern means of cheap carriage there will always be room for the realisation of a profit on West African cotton, if proper means be adopted to encourage its growth and to bring it to market.

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