

(1) பக்கங்களின் எண்ணிக்கை

(2) புதுக்கித் திருப்பிய நாள்

(3) ஆதாரம் குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

பெரியது துறை

(12)

அரசாணை எண்.	1410	அச்சகம்
மு. கோப்புத் தாள் எண்.		பலவகை
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நாள் : 28-9-1861		199

மடிக்கவோ துள், படி கையாள்வோ கூடாது.

ஆவண : sr. I-18,006-6-9-90.

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No. 107.

FROM

A. M. DOWLEANS, ESQUIRE,
*Secretary to the Central Committee for the Collection
of Works of Industry and Art in Bengal,*

TO

W. GREY, ESQUIRE,
*Secretary to the Government of India,
Home Department,
FORT WILLIAM.*

Dated the 28th August 1861.

SIR,

I HAVE the honor, by direction of the Honorable the President of the Central Committee, to annex copy of a Memorandum relative to the preparation of a Descriptive Catalogue of the various productions to be forwarded from India to the forthcoming Exhibition of 1862, and pointing out the means of procuring the required information.

2. The Central Committee are convinced that a work of the above description would be as desirable as it must prove useful, and should His Excellency the Governor-General in Council concur in these views, they would respectfully recommend that the Government of India may be pleased to issue orders to the several local Governments accordingly.

I have the honor to be,

SIR,

Your most obedient servant,

(Signature of A. M. Dowleães)
Secretary to the Central Committee.

செப்பனெடுவர் பெயர்
பி. அக்யல். குயக்
செப்பனெடுவதற்காக எடுத்துக்
கொள்ளப்பட்ட நாள் 7/2007
செப்பனெடு அத்த நாள் 1/2007
சாபார்க்கும் ஆரம்பித்தல் உதவி
முதலியோ. ஏ. யாளர்
கையொப்பம் கையொப்பம்

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MEMORANDUM NO. 3

RELATIVE TO

THE EXHIBITION OF 1862.

IN the year 1855 I had the honor of being deputed by the Government of India to proceed to Paris in charge of the Indian Collection. After the close of the Exhibition, I was, under the orders of the late Court of Directors, detained in London to assist the late Dr. Royle in the formation of the Museum at the India House, and in the disposal of the surplus collection. The constant enquiries which were being made at Paris about a variety of Indian productions showed the attention which the collection had attracted; but there is perhaps no greater proof of the practical interest taken in it than the fact, that I was repeatedly invited to attend meetings of manufacturers and others for the purpose of affording every possible information connected with the staple products as well as manufactures of India, the means and cost of inland transit, import and export duties, and such other details as are of value to commerce. English, French, Germans, and Italians constantly came to me for information, especially as they found it very convenient my being able to converse with them in their own language; and, indeed, much of my time was taken up with the preparation of *pro forma* invoices and such other papers as contained the required information in the most convenient form. As far as Bengal and its Dependencies, the North-West, the Punjab, the adjoining Independent States, Burmah, and the Martaban and Tennesseim Provinces are concerned, I was in a position to afford much information, the whole of the contributions from those Provinces having passed through my hands; but I was not able to reply to enquiries regarding the productions of Madras and Bombay, as I had nothing to guide me, except the printed catalogues of the Central Committees, which, though most excellently arranged, hardly afforded any information beyond the name of the localities where the articles were produced, the name of the sellers or contributors, and the price paid for the same.

2nd. I may here mention, that at first it was not in contemplation to forward specimens of the raw products of India to the Paris Exhibition, for the Court of Directors specially requested that none should be sent, as it was apprehended that the space allotted to India at the Paris Exhibition was too limited, and instructions were therefore received to confine the Indian Contributions to Manufactures, Works of Art, &c. Having been appointed Secretary to the Central Committee for Bengal, I deemed it my duty to point out to Government, that if any real advantage was to accrue to India from a representation of her Industry at the Exhibition, it must not be expected from local manufactures, but from the natural products of the soil, the real extent of which, even after the results of the London Exhibition, was but imperfectly known, and I suggested that the permission of Government be solicited to forward a complete collection of specimens of the mineral, animal, and vegetable products for transmission to the Exhibition. The late Governor-General concurring in these views, sanctioned the proposal; but, unfortunately, no orders to the same effect had been issued to the Local Governments of Madras and Bombay, and the consequence was, that whilst the collection formed by the Central Committee of Bengal, and obtained from

Bengal Proper, the North-West, Punjab, the Independent States, Arracan, Burmah, the Martaban and Tennasserim Provinces, and the Straits Settlements, comprised nearly 2,000 specimens, Bombay contributed only 234, of which 141 were furnished by the then Commissioner of Scinde alone. The number forwarded from Madras was 191, but the Central Committee of that Presidency, in para. 13th of their Report, remarked, "The Committee are of opinion that in any future exposition of this country, it would be only just that its raw materials should form a large portion of it."

3rd. It will thus be seen, that the collection of raw products consisted almost entirely of that forwarded through the Central Committee of Bengal, and yet, although thus representing only a portion of India, a Committee, consisting of Sir William Hooker, Sir Joseph Oliffe, Professors Owen, Wallis and Smyth, Messrs. Charles Knight, George Wallis, H. Cole, C. B., and Captain Fowke, R. E., reported as follows:—"If we have chosen the collection from India and its Dependencies as the first of our class and section to be noticed, it is partly because it is universally allowed to rank among the very foremost of its kind in extent and importance, and partly because it stands almost the first on entering the principal gate on ascending the gallery on the right hand side. The products occupy a considerable space in the Exhibition, and cannot fail to attract attention. It is to be regretted that there is no printed catalogue, so essential to assist the Jury in its investigation of the numerous objects, though this difficulty was in some measure compensated by the use offered to us of a manuscript (but not complete) catalogue." I have entered into the above details, to show the importance of exhibiting a complete collection of the natural products of India, and the necessity of a well-arranged and descriptive catalogue.

4th. But the compilation and publication of such a work was at no previous period perhaps so desirable as at the present moment, when active measures are being taken for encouraging enterprise, facilitating commerce, and attracting Foreign settlers and capital, thereby developing the productive resources of the country. It is obvious that a "hand-book," showing what those resources in reality are, and containing such further information as may be of use to persons interested in such productions, would be extremely opportune at the forthcoming Exhibition, where the various products themselves will be on view and open to examination. The cost of getting up such hand-book or catalogue would be but a trifle in comparison to its importance, which, in my opinion, ought not to be judged by the immediate outlay of Rupees, annas, and pies.

5th. The arrangements which have been made for forming a collection for the forthcoming Exhibition, afford an excellent opportunity for carrying out the above object, and, indeed, almost all that is wanted, is a hearty co-operation. To suppose for a moment, that such co-operation, if invited, could be withheld, would be a libel upon the British character, and, in fact, I feel convinced, that all will cheerfully unite in devoting a portion of their time to collecting information, the aim of which is to place before the world of Europe and America such details as may lead to a greater and speedier development of the natural resources of this country, by European agency, and Foreign capital, the result of which cannot fail to add to the stability of the British Empire in the East, and to the commonwealth of its subjects.

6th. Before devising the extent of information required, and the means by which it may be obtained, it will be desirable to advert to the products themselves, with reference to which such information will be particularly valuable. There is no doubt

* This Catalogue was compiled by me from mere invoices.

that by far the greater portion of the products of this country is obtained by indigenous processes and appliances, which at the present time hardly differ from those employed a century ago; and yet it is an undeniable fact that, even with such primitive appliances, a better result is invariably attained, whenever European superintendence is brought to bear its powerful energy and influence upon local industrial enterprise. Of this fact several of the principal staple exports of India afford an undeniable proof. Native filature silk has never been able to compete with that produced under English superintendence; the same is the case with *various kinds of cotton, with oils, and with a variety of other articles, each and all most important to trade, and susceptible of such improvements and extension, as to operate powerfully against competition of other countries, from which a large portion of the supply required by the markets of Europe is at present derived.* With this simple fact before us, it may be surmised what the result would be, if in addition to European superintendence the application of those mechanical contrivances and scientific principles were added, which in Europe in many instances supersede manual labour, reduce the cost of production, and yield an almost double return of product.

7th. ORES.—The mineral resources of India alone, open an almost unlimited field for industrial employment. Iron ores abound in Mugrownee, the Doab, Hazareebaugh, the Cossya Hills, Mirzapore, Beerbhoom, Assam, and the whole of the Tennasserim and Martaban Provinces. Indeed, with regard to the latter, it is stated that near the river side, about 3 miles from the town of Tavoy, there is a hill consisting almost entirely of magnetic Oxide of Iron, whilst Iron Pyrites abound throughout the whole of the Province. We then have Copper in Beerbhoom; Tin in the Tennasserim Provinces, Malacca, and the Malay Peninsula; Lead in Burmah, and Gold in Borneo: yet so little authentic information exists as to the extent of the hidden wealth, and the means available to secure it, that the same lies comparatively dormant, though the specimens forwarded to the London and Paris Exhibitions most unquestionably proved the richness of the ores, and the superior quality of metal they contained.

8th. FIBRES.—The same is the case with Indian Fibres. I will not allude here to Cotton, as the information now being collected sufficiently proves the universal interest evinced in favor of this staple; but there are many other fibrous substances, which, though not of that all-absorbing importance, are still of immense interest to the manufacturer at home. It will be recollected that not many years ago considerable alarm was caused at home by the falling off in the importation of rags, whilst owing to the breaking out of the war with Russia serious apprehensions were entertained in England regarding a sufficient supply of raw material for the manufacture of Cordage and other purposes. It was precisely at that period that the late Dr. Royle brought forth his excellent work on "The Fibrous Plants of India," and, indeed, such was the effect which this book produced, that all eyes were turned towards India as the Colony which was capable of supplying an almost unlimited quantity of every variety of Fibre suited for the manufacture of Cordage, Clothing, and Paper, rendering us independent of Foreign countries. Dr. Royle did not confine himself to mere theory, but practically proved the correctness of his theories. With the permission of the Court of Directors a number of experiments were tried, and I myself have seen specimens of Cordage made from a variety of Fibres, and among them some, which in point of durability and tension surpassed that made of either Manilla or Russian Hemp. These experiments, moreover, proved that, with reference to several Fibres a double advantage might be secured, as for instance with the Plantain tree, which, after yielding a portion of its substance for

Cordage purposes, leaves a refuse perfectly adapted for the manufacture of Paper. I have seen specimens of both Cordage and Paper. But perhaps the most convincing proof of the practical use of these Fibrous Plants of India is the fact, that, with proper attention to cultivation, and their after-manipulation, the material obtained from them might be sent forth to the market of the World in a form, defying competition from abroad, and yielding the cultivator a handsome profit; and yet what has been the practical result produced by Dr. Royle's most invaluable book? comparatively speaking, none.

because the increased demand for the article was such, that it was found ready purchasers at remunerating prices. Jute has forced itself into European market by its peculiar adaption for a variety of purposes and comparative cheapness; Assam Fibres have, by every possible means, been brought forward to public notice, and not without some degree of success; but, upon the whole, the results have not been such as might have been expected from a country like England, where the industry of the nation and the wealth of her people is always eager to seize upon any field of operations which holds out an adequate remuneration to the energetic enterpriser, and a fair return for the capital employed, however distant the prospect of such profitable returns may be.

9th. OIL SEEDS.—Looking at the staple exports from almost every part of India, it will be observed that they comprise a variety of Oil Seeds, which are chiefly shipped to England, America, and France, where the Oil is extracted therefrom by means of steam presses. No one will assert that a lengthy sea voyage, the greater portion of which has to be performed under a powerful tropical sun, will tend to improve or even preserve the intrinsic properties of such Seeds; indeed, it may be surmised, that the fact of their being locked up in the hold of a ship, and subject to the action of the heat which naturally must exist there, must have the effect of absorbing a portion, however small, of their oleineous substances. It must also be borne in mind, that Oil Seeds, however powerful the presses employed for the purpose, do not yield Oil altogether, but that there must be a certain percentage of refuse, which, though applicable for various other purposes, still brings only a trifling return. The expense of packing, export and import duty, freight, &c., has nevertheless to be paid on the quantity of seed actually shipped, and yet, with all this drawback, it appears that it answers better the purpose of commerce, to ship such Oil Seeds in their normal state than the product obtained therefrom by native Oil mills; but at the same time it is evident that, if the same machinery which is used in England, France, and America, were employed, on or near the spot, where Oil Seeds grow, a larger quantity would be secured, and could be sold at a smaller cost to the European consumers, because there would be no loss incurred in payment of freight, duties, &c., on that portion of the Seeds which constitutes the refuse.

10th. I have confined my remarks to Mineral Ores, Fibres, and Oil Seeds, because they afford an immense field for the employment of European industry and capital on a large scale, and are more likely to attract immediate attention than several other branches of the productive resources of India.

11th. It may perhaps be asked how it is that, with a variety of specimens of Ores shown at the Exhibition, the richness of which was practically tested; of Fibres, the adaption of which for Cordage, Clothing, and Paper purposes was most unquestionably proved; and of Oilseeds, the intrinsic properties of which admit of no doubt—no attempts have been made by parties at home practically to develop

these resources in India? A number of causes have been assigned, many of which were not valid, whilst others were greatly exaggerated; but even if partly operating as drawbacks, they no longer exist, since the avowed policy of the present Government is to encourage industry and enterprize by every fair and lawful means. The true reason, however, is the want of correct and authentic information on a variety of details, which form most important contingencies, and without a full knowledge of which the richest products of the soil are of comparatively little value.

12th. However great the metallic proportion of Ores may be, it is evident that no one would venture to engage upon a regular and systematic working of the mines from which obtained, unless first in possession of some statistical information regarding their probable extent, particulars of locality in which situated, and the nearest means at hand for smelting the Ores. If there be no Woods within reasonable reach whence to procure the necessary fuel, or if Coal had to be imported from some distance, it is clear that the value of the Ores would deteriorate in proportion to the increased cost of fuel, and thus in some cases actually negative the working of the mines. The same is the case with Fibres and Oil Seeds. It is not enough to show what kind of vegetable substances are produced, without some information regarding the extent of their wild growth or regular cultivation, and the practicability or otherwise of extending both, and the means of inland transit to either the nearest rail or river. I am quite aware that it would be next to impossible to furnish, and, in fact, to obtain such extensive information with regard to every specimen forwarded to the Exhibition; still, whenever practicable, it would be most invaluable, as it is sure to induce further enquiries, which eventually will lead to practical results.

13th. At the local Exhibition of Madras in 1855, a most extensive and extremely well-arranged collection of the Natural Products of that Presidency and of the adjacent Territories was on public view. It contained among its variety a great number of indigenous productions, of which no specimens had, to my knowledge, been exhibited either in London or Paris, and the catalogue prepared by Lieutenant H. P. Hawkes, Assistant to the Director of Arrangements to the Madras Exhibition, affords undeniable proof of the trouble which had been taken in procuring a collection calculated to afford a correct notion of the works of Industry and Art of the Madras Presidency. But beyond that, the catalogue afforded no information, which in point of commerce might have proved of practical interest, except the description given by Assistant Surgeon J. Kirkpatrick, M. D., of the Mysore Commission, of the medicinal properties of a large collection of drugs produced at Mysore, and the uses to which they are applied by native practitioners, to which were added "uses and remarks," as the result of Dr. Kirkpatrick's own experience. Nothing could have been more desirable to Medical Science, and had a similar collection, with similar information, been forwarded to the late Paris Exhibition, it would have considerably heightened the interest attached to the Indian Collection, and called forth the highest eulogium on Dr. Kirkpatrick.

14th. If information of such value to Medical Science can be furnished by one single individual, no difficulty ought to be experienced in procuring similar information in furtherance of the interests of Commerce by Committees. I have looked over the list of Central Committees, Local Committees, Sub-Committees, and

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Correspondents constituted throughout India, and find they comprise gentlemen of various professions, well known for their high attainments and intimate knowledge of the various productions of India. It is the co-operation of those gentlemen by which alone the information now sought can be collected and furnished in a manner which will carry with it the value of authenticity.

15th. The information which appears to me so desirable should be embodied in

viz. :—

- A. Raw products susceptible of greater development for the purposes of internal trade.
- B. Raw products susceptible of extended cultivation and improved manipulation for the purposes of export.
- C. Chemical substances and products as applied by natives to the different purposes of Art, Science, and Commerce.
- D. Manufactures of local consumption, which, by greater cheapness of cost of production and improved quality, might be superseded by importation from England.

16th. It being next to impossible to collect within a short period information bearing on all the productions of India, still a great step would be gained if it could be procured with regard to such articles as either already form important staples of the internal and external Commerce of India, or which, by the application of European energy, capital, and modern scientific appliances, may hold out the prospect of remunerative return and attract Foreign settlers. The information therefore should comprise—

MINERAL ORES.

VEGETABLE FIBRES.

OIL SEEDS.

MEDICINAL SUBSTANCES, and

MANUFACTURES.

and embrace the following details :—

MINERAL ORES.

- Geological description of mines.
- Nature of fuel available for smelting purposes.
- Distance of the same from the mines.
- Process applied in smelting.
- Proportion of fuel used in such process.
- Quantity of metal obtained from the Ores.
- Nature of mining operations.
- Cost of Ores.
- Cost of fuel.
- Cost of the Metal obtained.
- Means and cost of conveyance to the nearest market.

VEGETABLE FIBRES.

- Whether of wild growth or regularly cultivated.
- Extent of present cultivation.
- Capability of extending the cultivation.
- Native process of preparing Fibres.
- Proportion of prepared Fibre obtained from the raw material.
- Uses to which applied.
- Cost of the prepared Fibre.
- Means and cost of inland transport to the nearest place of export.

OIL SEEDS.

- Manner of cultivation.
- Extent of cultivation.
- Capability of extension.
- Process employed in the extraction of Oil.
- Cost of the Seeds.
- Cost of the Oil extracted therefrom.
- Proportion of Oil yielded by Native process of extraction.
- Means and cost of transport to the nearest place of export.

MEDICINAL SUBSTANCES.

- Mode of preparation.
- Uses to which applied by native practitioners.
- Manner and quantity in which administered.
- Whether tried by English medical gentlemen.
- The result of such experiments.
- Suggestions with regard to their applicability in Europe.

MANUFACTURES.

- Extent and value of quantity annually manufactured.
- Whether merely of local consumption, or exported to other parts of India.
- Whether exported to Europe and America.
- Whether used for general consumption, or by particular castes only.
- Whether limited to particular patterns.
- Whole-sale market value.
- Whether susceptible of increased consumption by improvement of quality.

17th. It would be unfair to expect that in every instance the desired details will be furnished; indeed, it will very often be difficult to obtain the information sought; still, if the efforts made of procuring it prove only partly successful, we shall have in the aggregate a mass of details such as have not been brought to public notice at any of the previous Exhibitions, and which would prove particularly valuable on the present occasion.

18th. It is however obvious that to attain the object in view, there must be a general co-operation throughout India, for unless the information be collected from

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every part of this Empire, the chief advantage of comparing the productive resources of the different Presidencies, and of the means of their practical development, would be frustrated. If each Central Committee prepared a classified Catalogue of its own Contributions on the principles above stated, a general catalogue, comprising the whole of the collections from India can easily be compiled, and I shall be happy to undertake the task if entrusted to me.

The subject be submitted for the consideration of His Excellency the Viceroy and Governor-General of India in Council, with a view to orders being issued by the Government of India accordingly, should the suggestion of preparing a descriptive catalogue of the productions of this Empire meet with approval.

A. M. DOWLEANS.

Calcutta, the 22nd August 1861.

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No. 107.

FROM

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(Signed) A. M. Dowleans
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3rd. It will thus be seen, that the collection of raw products consisted almost entirely of that forwarded through the Central Committee of Bengal, and yet, although thus representing only a portion of India, a Committee, consisting of Sir William Hooker, Sir Joseph Oliffe, Professors Owen, Wallis and Smyth, Messrs. Charles Knight, George Wallis, H. Cole, C. P., and Captain Fowke, R. E., reported as follows:—"If we have chosen the collection from India and its Dependencies as the first of our class and section to be noticed, it is partly because it is universally allowed to rank among the very foremost of its kind in extent and importance, and partly because it stands almost the first on entering the principal gate on ascending the gallery on the right hand side. The products occupy a considerable space in the Exhibition, and cannot fail to attract attention. It is to be regretted that there is no printed catalogue, so essential to assist the Jury in its investigation of the numerous objects, though this difficulty was in some measure compensated by the use offered to us of a manuscript (but not complete) catalogue."* I have entered into the above details, to show the importance of exhibiting a complete collection of the natural products of India, and the necessity of a well-arranged and descriptive catalogue.

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* This Catalogue was compiled by me from mere invoices.

that by far the greater portion of the products of this country is obtained by indigenous processes and appliances, which at the present time hardly differ from those employed a century ago, and yet it is an undeniable fact that, even with such primitive appliances, a better result is invariably attained, whenever European superintendence is brought to bear its powerful energy and influence upon local industrial enterprise. Of this fact several of the principal staple exports of India afford an undeniable proof. Native filature silk has never been able to compete with that produced under English superintendence; the same is the case with Indigo, with Cotton, with Oils, and with a variety of other articles, each and all most important to trade, and susceptible of such improvements and extension, as to operate powerfully against competition of other countries, from which a large portion of the supply required by the markets of Europe is at present derived. With this simple fact before us, it may be surmised what the result would be, if in addition to European superintendence the application of those mechanical contrivances and scientific principles were added, which in Europe in many instances supersede manual labour, reduce the cost of production, and yield an almost double return of product.

7th. ORES.—The mineral resources of India alone, open an almost unlimited field for industrial employment. Iron ores abound in Mugrownee, the Doab, Hazareebagh, the Cossya Hills, Mirzapore, Beerbhoom, Assam, and the whole of the Tennasserim and Martaban Provinces. Indeed, with regard to the latter, it is stated that near the river side, about 3 miles from the town of Tavoy, there is a hill consisting almost entirely of magnetic Oxide of Iron, whilst Iron Pyrites abound throughout the whole of the Province. We then have Copper in Beerbhoom; Tin in the Tennasserim Provinces, Malacca, and the Malay Peninsula; Lead in Burmah, and Gold in Borneo; yet so little authentic information exists as to the extent of the hidden wealth, and the means available to secure it, that the same lies comparatively dormant, though the specimens forwarded to the London and Paris Exhibitions most unquestionably proved the richness of the ores, and the superior quality of metal they contained.

8th. FIBRES.—The same is the case with Indian Fibres. I will not allude here to Cotton, as the information now being collected sufficiently proves the universal interest evinced in favor of this staple; but there are many other fibrous substances, which, though not of that all-absorbing importance, are still of immense interest to the manufacturer at home. It will be recollected that not many years ago considerable alarm was caused at home by the falling off in the importation of rags, whilst owing to the breaking out of the war with Russia serious apprehensions were entertained in England regarding a sufficient supply of raw material for the manufacture of Cordage and other purposes. It was precisely at that period that the late Dr. Royle brought forth his excellent work on "The Fibrous Plants of India," and, indeed, such was the effect which this book produced, that all eyes were turned towards India as the Colony which was capable of supplying an almost unlimited quantity of every variety of Fibre suited for the manufacture of Cordage, Clothing, and Paper, rendering us independent of Foreign countries. Dr. Royle did not confine himself to mere theory, but practically proved the correctness of his theories. With the permission of the Court of Directors a number of experiments were tried, and I myself have seen specimens of Cordage made from a variety of Fibres, and among them some, which in point of durability and tension surpassed that made of either Manila or Russian Hemp. These experiments, moreover, proved that, with reference to several Fibres a double advantage might be secured, as for instance with the Plantain tree, which, after yielding a portion of its substance for

Cordage purposes, leaves a refuse perfectly adapted for the manufacture of Paper. I have seen specimens of both Cordage and Paper. But perhaps the most convincing proof of the practical use of these Fibrous Plants of India is the fact, that, with proper attention to cultivation, and their after-manipulation, the material obtained from them might be sent forth to the market of the World in a form, defying competition from abroad, and yielding the cultivator a handsome profit; and yet what has been the practical result produced by Dr. Royle's most invaluable book? comparatively speaking, none. The cultivation of Cotton has extended, merely, because the increased demand for

~~such that Indian produce, with all its imperfections~~
found ready purchasers at remunerating prices. Jute has forced itself into European market by its peculiar adaption for a variety of purposes and comparative cheapness; Assam Fibres have, by every possible means, been brought forward to public notice, and not without some degree of success; but, upon the whole, the results have not been such as might have been expected from a country like England, where the industry of the nation and the wealth of her people is always eager to seize upon any field of operations which holds out an adequate remuneration to the energetic enterpriser, and a fair return for the capital employed, however distant the prospect of such profitable returns may be.

9th. OIL SEEDS—Looking at the staple exports from almost every part of India, it will be observed that they comprise a variety of Oil Seeds, which are chiefly shipped to England, America, and France, where the Oil is extracted therefrom by means of steam presses. No one will assert that a lengthy sea voyage, the greater portion of which has to be performed under a powerful tropical sun, will tend to improve or even preserve the intrinsic properties of such Seeds; indeed, it may be surmised, that the fact of their being locked up in the hold of a ship, and subject to the action of the heat which naturally must exist there, must have the effect of absorbing a portion, however small, of their oleaceous substances. It must also be borne in mind, that Oil Seeds, however powerful the presses employed for the purpose, do not yield Oil altogether, but that there must be a certain percentage of refuse, which, though applicable for various other purposes, still brings only a trifling return. The expense of packing, export and import duty, freight, &c., has nevertheless to be paid on the quantity of seed actually shipped, and yet, with all this drawback, it appears that it answers better the purpose of commerce, to ship such Oil Seeds in their normal state than the product obtained therefrom by native Oil mills; but at the same time it is evident that, if the same machinery which is used in England, France, and America, were employed, on or near the spot, where Oil Seeds grow, a larger quantity would be secured, and could be sold at a smaller cost to the European consumers, because there would be no loss incurred in payment of freight, duties, &c., on that portion of the Seeds which constitutes the refuse.

10th. I have confined my remarks to Mineral Ores, Fibres, and Oil Seeds, because they afford an immense field for the employment of European industry and capital on a large scale, and are more likely to attract immediate attention than several other branches of the productive resources of India.

11th. It may perhaps be asked how it is that, with a variety of specimens of Ores shown at the Exhibition, the richness of which was practically tested; of Fibres, the adaption of which for Cordage, Clothing, and Paper purposes was most unquestionably proved; and of Oilseeds, the intrinsic properties of which admit of no doubt—no attempts have been made by parties at home practically to develop

these resources in India? A number of causes have been assigned, many of which were not valid, whilst others were greatly exaggerated; but even if partly operating as drawbacks, they no longer exist, since the avowed policy of the present Government is to encourage industry and enterprize by every fair and lawful means. The true reason, however, is the want of correct and authentic information on a variety of details, which form most important contingencies, and without a full knowledge of which the richest products of the soil are of comparatively little value.

12th. However great the metallic proportion of Ores may be, it is evident that no one would venture to engage upon a regular and systematic working of the mines from which obtained, unless first in possession of some statistical information regarding their probable extent, particulars of locality in which situated, and the nearest means at hand for smelting the Ores. If there be no Woods within reasonable reach whence to procure the necessary fuel, or if Coal had to be imported from some distance, it is clear that the value of the Ores would deteriorate in proportion to the increased cost of fuel, and thus in some cases actually negative the working of the mines. The same is the case with Fibres and Oil Seeds. It is not enough to show what kind of vegetable substances are produced, without some information regarding the extent of their wild growth or regular cultivation, and the practicability or otherwise of extending both, and the means of inland transit to either the nearest rail or river. I am quite aware that it would be next to impossible to furnish, and, in fact, to obtain such extensive information with regard to every specimen forwarded to the Exhibition; still, whenever practicable, it would be most invaluable, as it is sure to induce further enquiries, which eventually will lead to practical results.

13th. At the local Exhibition of Madras in 1855, a most extensive and extremely well-arranged collection of the Natural Products of that Presidency and of the adjacent Territories was on public view. It contained among its variety a great number of indigenous productions, of which no specimens had, to my knowledge, been exhibited either in London or Paris, and the catalogue prepared by Lieutenant H. P. Hawkes, Assistant to the Director of Arrangements to the Madras Exhibition, affords undeniable proof of the trouble which had been taken in procuring a collection calculated to afford a correct notion of the works of Industry and Art of the Madras Presidency. But beyond that, the catalogue afforded no information, which in point of commerce might have proved of practical interest, except the description given by Assistant Surgeon J. Kirkpatrick, M. D., of the Mysore Commission, of the medicinal properties of a large collection of drugs produced at Mysore, and the uses to which they are applied by native practitioners, to which were added "uses and remarks," as the result of Dr. Kirkpatrick's own experience. Nothing could have been more desirable to Medical Science, and had a similar collection, with similar information, been forwarded to the late Paris Exhibition, it would have considerably heightened the interest attached to the Indian Collection, and called forth the highest eulogium on Dr. Kirkpatrick.

14th. If information of such value to Medical Science can be furnished by one single individual, no difficulty ought to be experienced in procuring similar information in furtherance of the interests of Commerce by Committees. I have looked over the list of Central Committees, Local Committees, Sub-Committees, and

every part of this Empire, the chief advantage of comparing the productive resources of the different Presidencies, and of the means of their practical development, would be frustrated. If each Central Committee prepared a classified Catalogue of its own Contributions on the principles above stated, a general catalogue, comprising the whole of the collections from India can easily be compiled, and I shall be happy to undertake the task if entrusted to me.

If the Central Committee concur in the above views, I would suggest that the subject be submitted for the consideration of His Excellency the vice-ray and Governor-General of India in Council, with a view to orders being issued by the Government of India accordingly, should the suggestion of preparing a descriptive catalogue of the productions of this Empire meet with approval.

A. M. DOWLEANS.

Calcutta, the 22nd August 1861.