

Edil.
6
809-29-3-00.
Educational (1900) Department.

ORDINARY MS.

G.O., No.

674

DATED

20. 12. 00

INDEXED

[Despatch Abstract.]

Recording letter from the Govt of India
for forwarding copy of a memorandum
by the Report on Economic products
on the organization of Indian Museum

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

20. Pub. 1. 1917
CURRENT No. 1627

1900.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE AND AGRICULTURE.

File No. 17 of 1900.

Serial No. 6.

ECONOMIC PRODUCTS.

Current No. 6630



To

LOCAL GOVERNMENTS AND ADMINISTRATIONS.

Circular No. 37-17-6.

Order Misc. 3019/21-11-00

Transferred to the
Educational Dept.

Marjorie Banks
1911/00

Dated Simla, the 9th October 1900.

Recd. 23rd Oct 1900

Reg. 23rd Oct 1900

Encl. one (1) in 28.11.01

SUBJECT.

Memorandum by the Reporter on Economic Products on the organization of Indian Museums.

To

The Educational Dept.

with copies of memos

G. C. Press, Simla.—No. 570 R. & A. D.—17-10-1900.—520.

aa
17.11.00

45/aa
16.11.00

This has been
been printed 3 we
ago

3

Circular No. 37-17-6.

FROM

E. MACONOCHE, Esq., I.C.S.,

Under-Secretary to the Government of India,

TO

The Secretary to the Govt of Madras,

Revenue Department.

Dept of Rev. & Agri.
Economic Products.

Simla, the 9th October 1900.

SIR,

I AM directed to forward for the information of the
Governor in Council

a copy of a memorandum on the organisation of Indian Museums prepared by the Reporter on Economic Products to the Government of India. Dr. Watt took the opportunity afforded him by his recent tour in India and Burma to visit a number of provincial museums with the main object of ascertaining whether it was possible to arrange some plan of co-operation and interchange of specimens between these institutions and the Calcutta Museum. This will explain Dr. Watt's standpoint. The memorandum appears to contain many practical suggestions, and may on this account prove of value to persons who are concerned in extending the usefulness of provincial museums.

I have the honour to be,

SIR,

Your most obedient Servant,

E. Maconochie

Under-Secretary to the Government of India.

20 spare copies of circular
with memorandum will
be forwarded by the Super.
Govt Printing, India.

Memorandum on the organization of Indian Museums

BY

GEORGE WATT, Esq.

5
Circular No. 37—17-6.

FROM

E. MACONOCHIE, Esq., I.C.S.,
Under-Secretary to the Government of India,

TO

LOCAL GOVERNMENTS AND ADMINISTRATIONS.

Dept. of Rev. & Agri.
Economic Products.

Simla, the 9th October 1900.

SIR,

I AM directed to forward for ^{the information of} ^{the Governor in Council} ^{His Honour the Lieutenant-Governor} ^{your information} a copy of a memorandum on the organisation of Indian Museums prepared by the Reporter on Economic Products to the Government of India. Dr. Watt took the opportunity afforded him by his recent tour in India and Burma to visit a number of provincial museums with the main object of ascertaining whether it was possible to arrange some plan of co-operation and interchange of specimens between these institutions and the Calcutta Museum. This will explain Dr. Watt's standpoint. The memorandum appears to contain many practical suggestions, and may on this account prove of value to persons who are concerned in extending the usefulness of provincial museums.

I have the honour to be,

SIR,

Your most obedient Servant,

E. MACONOCHIE,

Under-Secretary to the Government of India.

TO

The Secretary to the Government of	Madras.
"	Bombay.
"	Bengal.
"	the North-Western Provinces and Oudh.
"	the Punjab.
"	Burma.
"	Honourable the Chief Commissioner of the Central Provinces.
"	Assam.
"	Chief Commissioner of Ajmer-Merwara.
"	Coorg.
"	Resident at Hyderabad.

No. 37—17-6.

Copy, with copy of the memorandum, forwarded to the Foreign Department, for information.

No. 37—17-6.

Copy, with copy of the memorandum, forwarded to the Honorary Secretary to the Trustees of the Indian Museum, for information.

No. 37—17-6.

Copy forwarded to the Reporter on Economic Products to the Government of India for information, with reference to his letter No. 2504, dated 21st June 1900.

By order,

E. MACONCHIE,

Under-Secretary to the Government of India.

No. 2504, dated 21st June 1900.

From—GEORGE WATT, Esq., M.B., C.M., C.I.E., etc., Reporter on Economic Products to the Government of India,

To—The Under-Secretary to the Government of India.

In connection with the arrangements made for my recent tour to the chief commercial centres of India, the Government (by their letter No. 2850—40-5, dated the 22nd August 1899) permitted me to avail myself of the opportunity thereby afforded, to inspect the Museums of the towns visited, with a view to my offering suggestions as to some system of co-operation and exchange that might be established between the Provincial Museums and the Indian Museum, Calcutta.

2. *Museums visited.*—I have the honour to now report that I inspected, in the sequence denoted, the following Museums:—Delhi, Lahore, Karachi, Jaipur, Surat, Bombay, Bangalore, Madras, and Rangoon. I was unfortunately unable to visit Lucknow, Nagpur, Monghyr and Dehra Dun.

3. *Imperfections.*—I may as well remark here that I found such wide diversities in the administration; in the location of the Museum buildings and nature of their fittings; in the scope of the collections and in the classification pursued, as to very nearly preclude my formulating any scheme of exchanges to which immediate effect could be given. With one or two exceptions the entire series of Museums visited would require as a first step to be completely overhauled and a large percentage, very possibly, of their collections, rejected and destroyed. I feel myself thus unfortunately under the necessity to in some respects speak disparagingly of the labour that has been expended on these Museums.

But I desire to record that I am fully aware a few of them have been organised and maintained very largely without either State aid or scientific direction. Of some it might even be said that their very existence had been a labour of love with certain local officers or public-spirited private gentlemen, who deserve to be congratulated rather than condemned.

4. *Administration.*—Under this heading I include both Funds and Staff.

Funds.—The Lahore, Madras and Rangoon Museums appear to be directly supported by the Provincial Governments; Delhi, Karachi and Bombay are under the administration of and obtain their funds from the municipalities of their respective towns. Jaipur and Bangalore Museums being located in, and the property of, Native States, I propose to leave out of consideration, though both are deserving of considerable praise.

With the exception of Madras, not one of the Museums named would appear to receive a tithe of the financial support essential to place them in a position to discharge the duties expected of them. They are, in my opinion, one and all starved to a ruinous extent, and I regard State aid as not only indispensable but urgently needed.

Staff.—As a natural consequence (with the exception already named) the entire absence from all these Museums of any kind of scientific or technical supervision is very nearly stamped on every detail. A very large proportion of the zoological, botanical, geological specimens and the economic and art objects shown in these Museums may be described as wrongly named or as displayed in such a manner that their teaching value has been very largely destroyed.

Relation to the Colleges.—This state of affairs struck me as being significant since in every one of the towns where Museums are located there are colleges, in most cases fully equipped with scientific professors who are qualified to place these Museums on a perfectly satisfactory basis. Why the Museums have not been associated with the scientific staff of the colleges it is difficult to conceive. No scientific college or medical school can or should exist without a Museum, and the Museums to which I allude above, if properly organised, might become of the very greatest educational value and be directly utilized by the scientific departments of the colleges. Where therefore a Museum is not provided or cannot be provided with the funds to secure the services of a

special scientific superintendent of its own, comfortable residential quarters might, as it seems to me, be built in proximity to the Museum and free quarters offered to a scientific officer (or if need be to several officers) who would accept of these in exchange for devoting a few hours a day to the Museum.

In the case of the Albert and Victoria Museum, Bombay, one of the college professors has for years held the appointment of Curator, but as he lives many miles away from the Museum, and has numerous other public duties to perform, he cannot be expected to give much of his time to the Museum. In the case of the Lahore Museum, the Principal of the School of Art is Curator, but since the Museum embraces large and important sections on zoology, botany, economics, etc., with which he can have little personal knowledge, all but the art-ware department may be accepted as in a backward condition.

Remedy for these defects.—If it be found impossible to correct the defects briefly indicated by the appointment of a special scientific superintendent for each Museum, I would venture to offer three suggestions:—*viz.*, first, that it be taken into consideration whether some plan could be devised by which the various Museums in India could be periodically inspected and the collections named and arranged by the scientific officers under the Government of India; *second* whether all the Museums could not be placed directly under the administrative control of the Directors of Land Records and Agriculture, the necessary funds being provided by these departments in each provincial budget; and, *lastly*, whether the services of one or, if need be, several of the scientific officers of the colleges could not be secured to work up and arrange the various groups of natural and industrial exhibits shown in these Museums.

An Imperial supervision, if permissible, would no doubt effect great economies, but it would be futile unless there existed in each Museum an officer who could work with the Imperial officer. The local officer would have to procure the necessary cabinets, bottles, labels, etc., and provide the funds for all the contingent charges. As at present constituted it would be hopeless to send a scientific officer to name and arrange the collections in the Provincial Museums since in the majority of cases there are at present neither funds nor staff for such an undertaking. I would, therefore, urge that one or more of the scientific officers of the colleges be associated with each Museum, that either does not possess or cannot be furnished with an expert scientific superintendent of its own and that the annual allotments in the provincial budgets provide the necessary funds for administration on a more liberal scale than hitherto. In the face of the rapidly increasing demand for technical education to contemplate the closing of any one of these Museums would be nothing short of a calamity. That their improvement in the near future requires to be seriously entertained is, I think, an opinion that can hardly be disputed.

5. *Location of the Chief Provincial Museums.*—The Madras Museum, while somewhat remote from the educational and commercial centres of the city is otherwise admirably situated. It stands in the centre of a large park, is on the whole fairly well lit, and is commodious. But had it been constructed at one and the same time, the various galleries of which it is comprised would no doubt have been arranged upon a more convenient and systematic basis. To find for example the section devoted to economic products requires the aid of a guide. Instead of being adjacent to the gallery devoted to art-ware, the two are about as remote from each other as they very well could be. This is no doubt a disadvantage since the inquirer almost invariably desires to follow up his investigations from the raw to the manufactured articles and to facilitate such an object is essentially one of the directions by which a Museum can hope to become of educational and technical value.

The Albert and Victoria Museum, Bombay, is located in a remote suburb of the city and thus can neither hope to be of educational nor technical value. It is situated in the Zoological Gardens and for many years appears to have catered purely and simply to idle and ignorant curiosity. The building is about as ill designed for the purpose intended as could well be conceived. It is a large and handsome hall with a fairly broad gallery borne on richly and elaborately coloured pillars. But the major portion of the buildings has been devoted to securing scope for the production of a superb ceiling over a fine statue. The necessities of a Museum have apparently been of secondary consideration only with the architect.

The Lahore Museum forms part of the School of Art. It is conveniently situated and may be said to consist of two large galleries, right and left of a third gallery that runs at right angles to the other two. The building is commodious and in many respects well adapted for the purpose intended.

The Karachi Museum is conveniently situated. It constitutes a wing of the college and I believe was specially constructed for this purpose. The building on the whole is fairly well suited, according to the usually accepted ideas of a Museum, though some of the side rooms are badly lit. It comprises a large central hall with galleries running all round and a series of small side rooms that open off the main hall on the ground floor and off the galleries upstairs.

The Rangoon Museum is centrally situated in the public park, but it is like most Burmese buildings constructed of wood with the boardings so open that dust permeates through every part of the building. I understand the defects of this building are fully appreciated by the Local Government, and that a new building of a more satisfactory nature may shortly be expected to replace the present one.

6. *Essential features of Museum Buildings.*—I have mentioned the above existing Museum buildings because I desire to recommend to the Government the desirability of certain reforms in all future buildings. At first sight a spacious hall with galleries running round the four sides, commends itself as a desirable design. It is open and bright and the visitor can get from certain commanding positions a view of the entire collection. But in my opinion this is the very worst possible design for an Indian Museum. There is essentially an immense waste of space. In India the lofty ceiling becomes a source of positive danger. It acts like the glass of a conservatory in abnormally raising the temperature. To light a great central hall, the wall space has to be sacrificed to windows and in the warm months of the year the temperature is not only abnormally high in such buildings, but the great light destroys all the colour of the specimens exhibited.

An Indian Museum building to be both useful and comfortable should for the most part be unattractive as a public building. It should consist of a series of long rooms with side sky-lights near the ceiling. If windows are found necessary they should be confined as much as possible to north exposures. The light should be uniformly distributed and be possible of being kept well under control. But there should be few, if any, windows in the walls, since wall space is indispensably necessary for the collections. The walls themselves should be as thick as possible so as to keep down the temperature. To lower the temperature is not merely a matter of comfort for those who have to work in the Museum; it is a necessity for the safe custody of collections. A high temperature and too much light are exceedingly injurious to natural history and industrial art exhibits. In these respects the Economic and Art Museum, Calcutta, is about as badly designed as could well be imagined.

7. *Main Sections of an Indian Museum.*—It is preferable to have separate rooms devoted to the great sections of a Museum. The student of Zoology does not benefit by having alongside of him a crowd of people studying the archaeological or the art-ware treasures of the Museum. There should, as a rule, be seven great sections in each Museum building. These may be said to correspond to (1) Zoology and Botany, (2) Geology and Mineralogy, (3) Archaeology and Antiquities, (4) Economics and Arts, (5) Library, (6) Class-rooms and Laboratories for technical instruction and research, and (7) Offices.

Technical Education.—The smallest Museum building should, if possible, embrace these seven sections and for each section represented there should be a perfectly distinct room or gallery. Above all every Museum should be furnished with facilities for technical education. There should, for example, be a lecture hall and at least one laboratory. It should be accepted as quite indispensable to the programme of operations of a Museum to have to organise popular scientific lectures and to afford facilities for research, quite as much so as to exhibit collections of natural and industrial objects.

In this respect the Madras Museum is far ahead of Calcutta, since it has two lecture theatres, but has no laboratories, whereas Calcutta has two chemical laboratories.

8. *Fittings*.—I have already indicated the necessity to avoid windows (except near the ceiling) in order to afford wall space. There can be no doubt that the fittings of a Museum should uniformly be accepted as an integral part of the building itself and should cost about one-third of the total sum available. In all our Museums except the Indian Museum, Calcutta, this fact has been entirely overlooked. The architect has apparently considered his duty to end with the construction of a building. The Curator in consequence has found, to his annoyance, that it was impossible to subsequently have essential fittings made to exhibit the articles at his disposal. Certain attachments should have been provided for, while the walls were under construction, and the shape and size of the galleries should have been made in direct relation to the exhibits.

A Museum building has to be constructed for the collections, not the reverse procedure, if success is to be attained. In consequence of this fact having been ignored, all that the Curators of our Museums have been able to do has been to place odds and ends of cabinets against the irregular wall spaces and to be satisfied with an array of square glass boxes or long flat glass tables standing on feet and dispersed here and there along the central floor space, for the display of the natural or industrial exhibits at their disposal. A systematic arrangement has been thus rendered next to impossible, and a needless waste of space has been unavoidable. In my opinion no fittings can be more wasteful, impracticable and expensive in the long run than the odds and ends of cabinets and tables on feet.

Relation to Collections.—The fittings should cover every particle of wall space and follow every detail of the building, but at the same time they should be made to stand out or project from the walls at certain intervals so as to form bays or recesses, in direct accord with the classification of the objects shown. The passages should, as near as possible, be in straight lines, so as to give easy access to every portion of the gallery. The central fittings should be constructed to complete the divisions and sections of the classification indicated by the wall fittings. All the central fittings should consist of specially constructed cabinets or glass-cases with large plate glass windows extending from the very top to within a foot or so of the floor. The main supports or framework should be in iron, the wood-work should be reduced to a minimum and the shelves should be in strong plate-glass. Every cabinet should when closed be dust-proof and very nearly air-tight. There should be plenty of floor space around these central cases so as to allow of their contents being examined at some little distance.

A Museum in which the classification pursued does not impress itself even on the casual visitor loses very largely in value, and to the student it is next to useless. But economy of space is as essentially necessary as method and classification. I believe I am well within the mark when I say that, with the single exception of the Calcutta Museum, the collections in all the other Museums of India could with proper fittings be shown in half the space they at present occupy and with great advantage to the public. Useful and practical fittings directly adapted to the necessities of the collections are cheaper than additional buildings.

9. *Scope and Nature of Collections*.—For educational purposes I think there can be little room for doubt that all Museums should, as far as possible, embrace the main sections I have already indicated. The question has, however, been raised as to the geographical limits that should be fixed on the area from which the collections of each Museum should be drawn. The Madras Museum is essentially a provincial collection; the Indian Museum, Calcutta, not only embraces the whole of India but the whole of the world. It is probable that for teaching purposes in zoology and botany a provincial collection would in most cases suffice. But speaking of the special subjects with which I am more immediately concerned, *viz.*, economic and art collections, I am abundantly satisfied that arbitrary restrictions are neither desirable nor possible.

The Resolution of the Government of India, No. 239-Ex., of the 14th March 1883, laid down a desirable classification of Museums into three grades, *viz.*, first, Presidency Museums; second, Provincial Museums; and third, District Show-rooms or Museums. Of the first grade it was contemplated there would very possibly be only three, namely, Calcutta, Bombay, and Madras. These Presidency Museums were to embrace the geographical area of the whole of

A Pros.,
April 1883,
Nos. 1 to 9
File No. 16.

India. The Provincial Museums, on the other hand, such as those at Lucknow, Lahore, Nagpur, Karachi, and Rangoon were to be restricted to the area of the province; while the District Museums, such as those at Monghyr, Delhi, Surat, etc., were to be confined to the natural history and natural products and manufactures of their respective districts.

10. *Objections to Arbitrary Restrictions*.—During my conversation with Mr. Thurston I learned that he was opposed to the Madras Central Museum becoming anything more than a Provincial Museum in the sense of the above classification. But I noticed that in its Zoological Section that idea had not apparently been literally carried out. I was, however, mainly concerned with the Economic and Art Sections. I examined these with the greatest care, and it struck me that a collection restricted by so arbitrary a standard could not be expected to serve, to the full extent possible, the industrial objects of a Museum. I shall take only one or two illustrations. The lac-ware industry of Madras is very far behind that of Northern India or even of Mysore. To show the artisans in that industry only Madras Presidency examples is to deprive them of the opportunity of progression. So in the same way the beautiful painted trays, boxes, fans, etc., of Karnal, Vizagapatam and Cuddapah in which the pattern stands in relief, would be shown to greater advantage and be very much more instructive than at present if exhibited along side of the similar goods from Hyderabad and Bikaner.

In the economic collection an infinite series of illustrations might be given of the defects of a purely local Museum placed in the capital of a great commercial and manufacturing Presidency. For years past the effort has been made to participate in the jute trade, but the fibre that goes by that name in South India and which alone apparently has been there experimented with is not jute at all. To exhibit examples of the jute plant, of the jute fibre and of jute manufactures, would doubtless be of considerable interest and value to those engaged in the endeavour to establish the new industry.

In fact it may be said that from a commercial point of view there is comparatively little object in showing local produce. The great Madras firms that deal in cotton do not require to go to the Museum to see examples of the staples that they are daily handling. But doubtless numerous occasions might arise when it would be of advantage to be able to consult a Museum that showed them the standard staples of Western, Central, Northern and Eastern India.

11. *History of a purely local Economic Museum*.—The old Bengal (Provincial) Economic Museum sprang into existence in 1872 under the most favourable of circumstances, *viz.*, the support of an enthusiastic Lieutenant-Governor. It represented an organisation that had branch committees in every district throughout the province. But it may be said to have been from first to last a repository of provincial curiosities that bore no practical relation to the trade and commerce of the province. Within a decade of its birth it had passed beyond any possibility of resuscitation, and in 1884 the major portion of the collections were found quite useless. Practically all that remains now of that gigantic effort at a Provincial Economic Museum is a collection of over 5,000 samples of rice, representing very possibly the local varieties of the grain from every village in Bengal. Such a collection is certainly of scientific interest, and the possibility of there being even half that number of cultivated races of rice conveys in unmistakable language the vast antiquity of the cultivation of the staple food of the Lower Provinces. I presume the bottles in which that collection is stored could not have been purchased much under ₹7,000, but the practical and commercial value of the collection was and is absolutely nil. Only the other day a manufacturer asked permission to study the collection. He was desirous to see the modifications that would be necessary to adapt the Rangoon machinery for milling rice to the requirements of Bengal. After an hour or so he came to me in dismay since he had found that he would apparently have to design not one machine but over 100 before he could hope to deal with the problem of organising a Bengal rice milling industry. I then asked him to examine the half-dozen trace samples of Bengal rice which had recently been procured and which alone represent the Bengal rice trade and he at once obtained the suggestions he was desirous of securing. I mention this illustration to show that economic collections can never be made in disregard of commer-

A Pros.,
March 1884,
Nos. 1 to 9.
A Pros.,
June 1884,
Nos. 1 to 4.
A Pros.,
July 1885,
Nos. 1 to 4.

cial necessities and possibilities. Perhaps no Museum requires more personal study on the part of the technical staff than that of an Economic or Commercial Museum. Promiscuous collections are worse than useless.

In my opinion the object lesson therefore of the Bengal Economic Museum points conclusively to the absolute futility of any commercial or industrial Museum being restricted in its scope of operations by any arbitrary standards.

12. *Possible Limitations.*—If a limitation be required for the scope of an Economic and Industrial Museum, it should, in my opinion, be sought for in the possibilities of production and in the nature of existing industries. But it should expand beyond these restrictions the instant necessity had arisen for collections of a kind not represented.

There would very possibly be little prospect of the cultivators of the plains of Madras being ever able to produce the wheats, barleys or rices of the alpine tracts of the Himalaya. It may be even doubtful if they could ever grow the wheats of the Punjab plains. From the cultivator's point of view, therefore, there would be no great advantage in showing such wheats in the Madras Central Museum. But, on the other hand, the dealings of the merchants and manufacturers of South India are on an entirely different scale to that of the agriculturists. They are exporting or importing goods all over India and have often to compete in the self-same markets with their contemporaries from the remotest corners of the empire.

Proposed Ahmedabad Exhibition.—While I was in Ahmedabad the manufacturers expressed a desire to be permitted to examine the goods turned out by the looms of other manufacturing centres. That feeling of defective knowledge is, in my opinion, a very powerful argument against a provincial or district limitation in the scope of an Economic and Commercial Museum. The Ahmedabad manufacturers would very possibly take no exception to the entire omission of woollen goods from an exhibition held in their city since none of them are woollen manufacturers. They did not appear to wish to make a Museum of their own goods. The cotton weavers were anxious to see the goods turned out at Bombay, Cawnpore and Madras, so also the Kinkob manufacturers desired to see the Kinkobs of Surat, Delhi, and Benares. The principle involved gives in my opinion the only safe restriction or limitation in the scope of a Museum that can be laid down.

Every Economic and Commercial Museum must be constantly alive to the necessity of being in direct touch with the trade and commerce of the community, on whose behalf it exists. If governed by an arbitrary standard regardless of practical consideration, it must very rapidly become a store-house of useless specimens.

13. *Views of Dr. Forbes Watson.*—Many years ago the late Dr. Forbes Watson wrote an exceedingly instructive paper on the scheme of an Indian Commercial Museum for London with branches in the chief commercial towns of Great Britain, and all these in direct correspondence with a similar series of Museums in India. The collections were to be registered in such a way as to allow of their being employed by merchants in their correspondence one with the other. He remarked that it would be perceived there was underlying the entire scheme a conception of a Museum which was not commonly accepted. "This conception," he explained, "consists in considering the Museum not as a mere store of various more or less interesting or curious specimens, from which the casual visitors, or even the students are left to extract what information they may, but as a machine specially designed for the accomplishment of certain well-defined objects. It may be asserted that from the want of a clear insight in their purpose and possible uses, collections, which might be made to illustrate questions of practical and scientific importance, remain mere assemblages of specimens, unconnected by any thread of purpose or meaning, and of little use to any one but a few specialists who possess the knowledge and the time requisite for utilizing them. The first requirement of a Museum arranged with a view to efficiency is *specialisation of its contents.*" "The second principle which must be kept in view is a corollary from the first. The specialisation applies not only to the selection of the articles but also to their arrangement." "Most of the advantages of specialisation, however, may be lost, if the collection is classified and arranged according to some inappropriate or merely empirical method. A well arranged Museum should be articulate,

should speak a language of its own, using for the purpose objects or their images, instead of verbal designations, but always leading to obvious conclusions." "Thus a specific meaning will always be attached to the article in accordance with the leading idea of the group in which it appears, to the expression of which meaning every other consideration is subordinated. Collections arranged in an empirical manner, that is alphabetically, chronologically, territorially, or even according to some general classification not diversified to suit special modes of usefulness, can serve only for reference to individual articles. Whereas specialised collections arranged so as to represent some particular aspect of the country or of its trade, realize what has been before mentioned as a desideratum, namely, the application of the resources of the Museum to definite practical purposes." (*Conf. with paragraph on Economic Products, page 13*).

14. *Specialisation.*—I have ventured to extract the above passage from Dr. Forbes Watson's exceedingly valuable and thoughtful Report on the *Measures required for the efficient working of an Indian Museum, etc.* (published in 1874), because they not only express powerfully my own views but have not apparently been given the consideration which they deserve. But specialisation, on which Dr. Forbes Watson laid so much stress, can be made as completely dead to all utility as any empirical classification can ever be. I have seen more than one Indian Museum, specialised in so far as to have separate galleries assigned to economic products and to art manufactures, and also in which the contents of these galleries were even classified according to the usually accepted practical standards, but all the same the conviction was unavoidable that there was absolutely no vitality in these Museums. On one occasion the Curator took me to the economic gallery, remarking, as I entered it, that I would find my own classification faithfully adhered to. Certainly there was a section devoted to fibres, another to gums, and so on, but when I stood before the long glass-cases and witnessed the parallel bands of fibres arranged according to the scientific names of the plants from which they had been obtained, I realized how easy it might be to frustrate completely even the most carefully thought out schemes for the practical exhibition of the industrial resources of a country. If the Curator takes no practical interest in the economic gallery of his Museum, it very rapidly becomes a lumber room, until in time it may even be cited as demonstrating the worthlessness of all Economic Museums.

On another occasion I found tin boxes intended to display the economic products of India fastened against the walls of the Museum and extending from the level of the floor to a height of seven feet. To study the lower three rows it became necessary to stretch oneself at full length on the floor, and to see the upper three rows it was indispensable to carry with one round the gallery a fairly long ladder. The contents of these boxes moreover had neither been examined nor cleaned for many years. In the majority of instances the contents were quite rotten and the labels completely eaten away by insects. Here again the exhibition of economic products was reduced to an absurdity.

On a third occasion I was conveyed to a small room in one of our Provincial Museums and shown a collection of several hundred very inferior Italian statuettes in plaster-of-paris. I was told these had been presented, but in my opinion such a contribution should never have been accepted, since its exhibition is calculated to deprave the artistic feelings of the people. In showing examples of Western art alongside of the productions of this country, the greatest possible care is essential.

In still another Indian Museum I found that fully one-half of all the art objects shown consisted of a presentation collection of Chinese goods. Some of these articles were no doubt good of their kind, and possibly of interest historically, but I am strongly of opinion that our first duty is to secure and preserve master-pieces of our indigenous industrial arts before the doors of our Museums are thrown open to promiscuous contributions from other countries.

The problem of specialisation is not, therefore, solved by simply laying down general principles. It is indispensable that the purpose of that specialisation should be fully understood and loyally observed. Hence specialisation (as Dr. Forbes Watson tersely remarks) applies not only to the selection of the

articles but also to their arrangement. A collection of fibres may teach absolutely nothing, or it may be suggestive of possible improvements both in the agricultural production and textile manipulation of the country.

15. *Classification*.—These considerations lead, therefore, to the discussion of the classification that may be recommended in Economic and Art Museums.

It may be said that there are two great methods recognised in the Economic Museums of the world. These are (a):—A systematic assortment in which all the products derived from each natural order of plants are brought together and sub-divided according to genera and species. This is admirably adapted for Museums, such as those of Kew, which to a large extent may be spoken of as appendages to a great herbarium. The natural affinities of plants are exemplified in the similarity of the products they afford. And such a system can by no means be regarded as devoid of practical signification. A manufacturer interested in a particular bast fibre, on visiting a Museum of this kind, will find, in one place very nearly, all the varying qualities and conditions of bast from every known species and from every country of the world. (b) The second system may be called an industrial classification or one in which the basis of assortment is the uses of the products.

The classification of industrial art-wares may similarly be arranged according to either (a) the art conceptions manifested and the historic sequence of the appearance of these, or (b) according to the industries concerned. This latter method would bring all textiles together into one place, all stone-ware into a second and all wood-work into a third, and so on. Where the raw products are classified according to an industrial system, it is desirable to pursue an exactly parallel method with the industrial arts, so that a direct relationship between the two departments may be consistently preserved. This is the system that has been inaugurated by me, during the past eight years, and which has been carried very far towards complete realization in the Economic and Art Section of the Indian Museum. It may, therefore, be of interest and assistance to those in charge of other Indian Museums, if I endeavour to very briefly describe the classification I have adopted.

16. *Economic and Commercial Exhibits*.—The classification pursued, with exhibits of the nature indicated, may be said to be an elaboration of the system of paragraphing information, as given in the account of each product, in the Dictionary of Economic Products. While preparing the material for that work I came to the following conclusions, *viz.*, first, that there may be said to be eight great groups of products; second, that the description of each plant, animal or mineral, should, as far as practicable, be relegated to certain paragraphs, according to the products which it affords; and lastly, that these paragraphs should uniformly be taken up in the same sequence. This naturally led to the establishment of a classification which subsequent experience has only very slightly modified. I may here give the great groups of products as now accepted in the Indian Museum:—

- 1st.—Gums, Resins, Inspissated Saps, etc.
- 2nd.—Oils and Oil-seeds, Perfumery, etc.
- 3rd.—Dyes and Tans.
- 4th.—Fibres and Fibrous Materials.
- 5th.—Medicinal Products, Drugs, Chemicals, etc.
- 6th.—Edible Substances.
- 7th.—Timbers.
- 8th.—Metals and Minerals.

But at an early stage of operations it was recognised that there would have to be two or possibly three separate sets of products assorted within the eight sections of the gallery. These have come to be spoken of as:—

- (a) Index Collections.
- (b) Trade Samples, or collections representative of the condition of existing industries.
- (c) Large Handling Samples of articles of prospective importance.

(a) *Index*.—The index series consists of samples, a pound or two in weight or sufficient to fill a glass-fronted tin box measuring 8" × 4" × 2". This series is in time intended to represent every article of even-reputed value, as also every grade of local quality. It is arranged alphabetically according

to the scientific names, but the labels shown on the various boxes refer the visitor to the position in the gallery where full particulars can be seen and learned. The collection, as the name implies, is thus an index not only of the resources of India but of the Museum. The tin boxes are assorted within the recesses of each bay or section of the gallery, and are thus given a subordinate position to the collections indicated under (b) and (c). The wall fittings of the more conspicuous portions of the gallery have been set apart for the important products mostly of the class (c). These fittings consist, for each species, first, of an upright wall case, about 3 feet high 2 feet wide and 3 inches deep. Within this is shown a map of India giving the area of production, a botanical specimen of the plant, a photograph of the tree or of a field of the crop and small samples of every product or manufactured article, derived wholly or partly from the species; second, a sloping desk-shaped glass-case in front of the upright wall case. In this is displayed large handling samples of the chief commercial products of the species. The tops of these sloping desks are simply on latch and can be opened and the products examined by any person desirous of so doing; third, below the desk case there is a locker, the panels of which are in the timber of the species (if it yields a timber), and within the lockers are kept the store boxes of surplus stock, as also a box containing files of correspondence, special books or reports, etc., so that in one place every possible information is instantly available.

(b) *Commercial*.—The large glass-cases of the central portions of the gallery have been devoted to the great staples of Indian trade and commerce. For example, in the fibre section of the gallery there are numerous special trophies for cotton, silk, wool, jute, rhea, sisal, coir, paper, ropes, bristle, cane, etc. Within these great trophies have been displayed typical samples of the goods turned out by the Indian mills and factories. While, therefore, the wall fittings and index boxes display the details of the Native industries and the productive resources of the country, the great show-cases that occupy the centre space of the gallery exhibit the actual position of the manufacturing enterprise of the Empire.

(c) *Prospective*.—The assortment of the products of primary and secondary importance within each section of the gallery follows, however, no arbitrary standard. A few illustrations of the system pursued in Calcutta may help to elucidate the manner in which the articles of secondary importance are frequently employed in association with the important products. For example, in proximity with the jute trophy, have been displayed all the allied fibres or jute substitutes (prospective fibres) such as Sida, Triumfetta, Malachra, etc., etc. The jute merchant has thus an opportunity to study fibres of a possible better quality, which might be put to lightly higher purposes, but which could be dealt with on jute machinery. So in the same way near the special trophy for indigo, in the section of the gallery devoted to dyes and tans, all the indigo substitutes are displayed. Near the trophy to cutch are to be found the tanning extracts that have been suggested as possible substitutes for the Pegu article of commerce.

Association of Art-wares.—In the same manner the commercial products are often made attractive and instructive by their association with art-ware objects or scientific specimens. For example, within the bay set apart for resins will be found a special trophy for lac. This consists of: (a) a series of models in illustration of each stage of manufacture; (b) samples showing the article at the stage corresponding to the models; (c) a series of stick-lac from each of the important trees of production; (d) a similar set of samples in illustration of variations due to regions from which obtained; (e) trade samples of shellac, button lac, etc., etc., contributed by the leading manufacturers of India whose names are conspicuously shown on the samples; (f) a portion of tree showing lac incrustation and alongside samples of the lac insect and its parasites and enemies, so prepared that these may be studied by the visitor; (g) a collection of all the articles in which lac or lac dye is employed; and (h) a complete series of lac toys showing each of the five methods or processes resorted to in artistic decoration with that material. This last set of samples is of course a duplication to some extent of the collections in the art-ware gallery, but it would be impossible to study lac without entering into the consideration of the reasons why this form or that are regarded as being

specially suited for (or unsuited for) certain artistic handicrafts. Moreover, the art-wares shown in this trophy are exhibited in each stage of manipulation from the crudely turned wooden object to the finished lac toy.

Lastly, the illustration of tea may be cited. The central feature of the commercial trophy is of course a complete series of tea samples organised by the Tea Association. These not only exemplify every variation in quality but manifest the area of production, the methods of cultivation and manipulation (by appliances and models) and the capital at stake in the tea industry. Alongside are two additional cases, the one exhibiting samples of every known fungal disease of the tea plant. This consists of a series of samples, drawings, etc., calculated to instruct the visitor in how to recognise these diseases, but in addition a collection of tea bushes (or portions of bushes) are exhibited with the view to demonstrate the injury caused to the tea plant by each of these blights. Similarly, in the second glass-case has been displayed a complete series of all the known animal and insect pests of the tea plant. These have been associated with samples of the tea bushes in manifestation of the ravages accomplished by these pests.

Thus in one place it is contemplated to bring together every kind of information available, regarding each and every article of agricultural, artizan or manufacturing interest in India.

The principle followed in every instance is to bring the operations of the Museum into active touch with the trade of the country. Collections are not shown for the exclusive purpose of being collections but as possible new sources of commerce or new developments in handicrafts. Hence it follows that an Economic Museum that possesses only small samples of fibres arranged parallel to each other (in the sequence of their scientific names) has but an index collection. In fact in the vein of Dr. Forbes Watson's happy expression of an "articulate" Museum such a collection may be characterised as being the index to a book that has still to be written. And that book is the story of the agricultural prosperity and manufacturing enterprise of the area over which the Museum may be said to have its sphere of influence.

Names of Products painted on the cases.—In passing it may be added that the manner of painting the case numbers and scientific names of products in Calcutta is worthy of remark. White paint on the black wood-work was found to tarnish very rapidly. After some little trouble I succeeded in having the numbers and names painted in black, on the glass itself and underneath, so that they may be regarded as permanent, while at the same time much neater than if in white paint on the wooden frames of the cases. The advantages are obvious. The names show clearly through the glass; the painted letters are not liable to accumulate dust, nor to wear off through constant cleaning and handling, and, moreover, being right over each object, they are more effective than if shown, as is customary in most museums, on the wooden frame work of the cabinets.

Commercial Room.—A special feature of the Economic Gallery is the Commercial Room. This is a well lighted, commodious apartment at the eastern end of the Gallery. It is furnished with tables, chairs and all the latest trade reports, price currents, directories, maps, etc. Visitors may have brought to them for examination in this room articles desired, as also the files of correspondence and ledgers relating to these. Writing materials are supplied and notes may, therefore, be taken as thought necessary by the visitor, without fear of interruption since the room in question is specially reserved for the purpose.

17. Art-ware Exhibits.—The classification pursued in the Art-ware or Industrial Art Gallery of the Indian Museum may be said to be as follows:—

- 1st.—Fine Arts, *i.e.*, Painting, sculpture, illumination, etc.
- 2nd.—Architecture—Designs, models, old houses, doors, windows, etc.
- 3rd.—Personal Ornaments—Jewellery, enamels, etc.
- 4th.—Metal Manufactures—Gold and silver, bidri, niello, etc.
- 5th.—Wood Manufactures—Carving, inlaying, lac-ware, etc.
- 6th.—Stone-ware—Carved, inlaid, mosaic, lapidary.
- 7th.—Earthen-ware—Glazed, unglazed, painted pottery, models, etc.
- 8th.—Glassware.
- 9th.—Ivory, Horn, and Shell Manufactures.

10th.—Leather and Skin Manufactures—Boots, furs, kupis, etc.

11th.—Textiles—Cotton, wool, silk and mixed fabrics, etc. (plain dyed, printed, brocaded), etc.

12th.—Embroidery and Lace.

13th.—Basket-work, Matting and Braiding—Baskets, hats, mats, etc.

14th.—Carpets and Mats—Silk, woollen, hair, cotton, felts, etc.

Certain portions of the gallery have been assigned to each of the above Divisions and Sections. Our collections of fine arts and of architecture, I regret, are extremely poor. In fact these are the least represented of all the divisions. The Indian Museum collection may be characterised as for the most part a representative series of modern wares in illustration of the existing art industries of the country. The nucleus of the collection came from the Calcutta International Exhibition of 1884. The effort is being made to procure finer and older examples, but the acquisition of such treasures has become a matter of extreme difficulty. During the past 20 or 30 years, even the most remote rural tracts have been searched by the agents of art dealers, and every thing beautiful has been secured and for the most part carried out of the country. I may mention in passing that one of the greatest treasures the Museum has secured is a large slab of mosaic tile work from Herat. This, it is believed, dates from the fourteenth century and the beauty of design and richness of colouring in this fine old mosaic makes the ceramic collections from modern India look tawdry in the extreme.

It may be observed that the classification pursued in this gallery practically amounts to the following main sections:—Metal; Stone and Clay; Wood; Ivory; Horn and Leather; and, lastly, Textiles. It is thus possible to link together all the collections in the economic with those in the art gallery. For example, in the eighth section of the economic gallery are shown the metals and minerals. Under Stone and Clay occurs the materials for glass-making and also the examples of modern (or as often happens European) steam power production, such as the articles exhibited by Messrs. Burn & Co., Messrs. Henke & Co., and Messrs. Bird & Co., in the section of pottery, tiles, patent stone, etc., etc. But alongside of these has been placed a collection consisting of one sample of each class of Indian art pottery with a specimen of the clay used and of each of the colouring and glazing materials employed. The system of numbering that has been pursued is such that the visitor, after studying the materials employed, may pass to the art gallery to see a fuller exemplification of the results obtained by the native artizan. So in a like manner the visitor to the art gallery is referred to the above indicated collection in the economic gallery for information regarding the materials employed by the Indian potter. The seventh section of the economic gallery shows the timbers and reference will be found on each specimen of timber to the art-wares on view in the other gallery that exemplify the artistic uses to which it is put. I need not, therefore, multiply examples of the system by which all the exhibits shown in the Economic and Art Section of the Indian Museum are intimately associated with each other, in the demonstration of the natural resources and artistic and commercial developments of the Empire.

It may thus be repeated that a distinct feature of the work being accomplished in the art gallery of the Indian Museum is the elaboration of the materials and methods of manipulation of each art industry. For example, alongside of the Museum examples of Surat and Bombay sandalwood boxes has been placed a highly instructive collection of the woods, ivory, horn and tin, in illustration of the strips of these materials and the methods in which they are glued together in parallel bands and then cut transversely to form the ribbons that are veneered on the surface of these boxes. It is thus demonstrated that instead of being inlaid (as commonly described) the Surat sandalwood boxes are ornamented by process of Buhl-marquetry. The collection of materials has also been extended into one intended to demonstrate each and every pattern produced and the names given to these. The enquiry has accordingly been made to help very greatly to solve the vexed problem of the history of this curious industry.

So in the same way a series of studies from an Ahmedabad silversmith's shop is exhibited, in illustration of the manner in which the art of Katch

repoussé is taught to the hereditary pupils of the industry. A collection of sandalwood carvings in all stages and of the strips of ivory employed for inlaying, in a like manner, throws a flood of light on the Mysore sandalwood trade.

While recently on tour I made enquiry at the Lahore Museum as to the materials employed in the so-called Afridi wax-cloth industry. That Museum possessed neither the materials nor examples of the cloths. At Peshawar I accordingly gave this subject special consideration and was much surprised and interested to learn that the ornamentation in question was accomplished by a preparation of the oil from the seeds of the wild safflower (*Carthamus Oxyacantha*). The Economic and Art Museum, Calcutta, now possesses a highly instructive series of all the materials employed, alongside of a fairly complete set of both old and modern patterns. I mention this illustration as an example of the numerous local investigations that urgently call for solution. We have made a start by the collections, now arranged in Calcutta, but have hardly more than crossed the threshold of the vast unexplored field of the Indian industries. I might multiply such examples as the Afridi wax-cloths indefinitely. There is no Museum in India that does not possess a rich area of exploration extending from its very doors. The mere fact of opening a Museum and preserving the contributions made to it will never accomplish the work that has to be done. The Museum has to be brought into living and active co-operation with the natural resources and the industries and commerce of the area in which it is placed. It would not be difficult to prove that the backwardness of our knowledge regarding these features of India, proceeds primarily from the fact that the Provincial Museums have not fulfilled the function that naturally devolves upon them.

18. *Ethnological Exhibits.*—The Economic and Art Section of the Indian Museum possesses, however, a third department, viz., Ethnology. The objects usually classified in Ethnological Museums may be said to overflow into Anthropology and Antiquities just as Architecture merges into Archæology. So also Ethnology borders with Industrial Arts and Economic Products. The cruder wood carvings, the embroideries, the calico-prints, the jewellery, etc., etc., of the aboriginal tribes and of the rural communities would find a more fitting place, very possibly in Ethnology than in Industrial Arts. So in a like manner the investigation of the crops grown, of the wild roots eaten, of the tinctorial materials employed, etc., by the aboriginal tribes, are often more interesting ethnologically than from the standpoint of commerce. The lines that separate all these departments of investigation are of necessity exceedingly obscure. I have accordingly retained Ethnology as distinct from Industrial Arts and Economic Products as a matter of convenience. There is in reality very little in the Ethnology Gallery that might not find a place in either of the other two galleries. The following is the classification pursued by me in the Ethnology Gallery:—

- 1st.—Races of people—Models, casts, etc.
- 2nd.—Articles and materials of household construction and furniture—Timbers, stones, clay, mats, models of houses, etc., etc.
- 3rd.—Domestic utensils—Pots, plates, spoons, baskets, weights and measures, etc.
- 4th.—Articles of household consumption.—Food, beverages, etc.
- 5th.—Articles of personal dress, adornment—Costumes, ornaments, etc.
- 6th.—Articles of sport, amusement and warfare—Swords, guns, spears, bows and arrows, fishing nets, lines, etc., etc.
- 7th.—Agricultural requirements—Cattle, soils, implements, carts, machinery, etc.
- 8th.—Village manufactures and arts—Spinning, weaving, sugar and oil-making, dyeing, boot and shoe-making, etc.
- 9th.—Crops—Rice, wheat, pulses, oil-seeds, etc.
- 10th.—Educational objects, also curiosities, toys and games, etc.
- 11th.—Sacred articles—Idols, sacred plants, incense, etc.

19. I need hardly point out that the objects shown in the Ethnology Gallery are inseparably associated with those in the Economic and Art galleries. The ceramic cooking pots and the milk and water pails are in the majority of

cases only cruder examples of pottery than those shown in the art gallery. It is the shapes of these and the association of such shapes with certain races of the human family that gives them their interest in Ethnology. The particular woods employed in the construction of the bows and arrows is a subject of quite as much interest as the manner in which these weapons have been fashioned by the aboriginal tribes. The fishing nets and lines used by the various people of India afford numerous exceedingly valuable hints for the economic gallery. So long as we possess an Ethnology Gallery, most of the articles shown there need not, therefore, be repeated in the art and economic galleries, but the system of numbering has to be carefully attended to, so that the visitor may be able to trace from the Economic through the Ethnology to the Art Gallery all the developments of the particular product he desires to study. If the Museum did not possess an Ethnology Gallery, a very large percentage of the objects shown there would have to be given in the other two galleries, otherwise the field of enquiry into the resources and industries of India would be incomplete.

20. *Ledgers, Correspondence, Catalogues and Reports, etc.*—It is perhaps scarcely necessary to say that whatever system of classification be pursued in a museum it is essential that a direct parallelism be maintained with the method adopted to record the information available regarding the specimens shown. Incidentally I have mentioned "the Ledgers," and it may render the above particulars regarding the organisation of the Economic and Art Section of the Indian Museum a little more precise if I now describe very briefly the system established in this museum to record and publish useful information.

The Ledgers may be briefly described as a series of boxes designed for the accommodation and preservation of cuttings or extracts from Books, Pamphlets, Newspapers, Periodicals, Reports, Official and other Correspondence, etc., etc. The passages thus brought together contain useful particulars regarding, or corrections on, the corresponding accounts of the products in question as given in the *Dictionary of the Economic Products of India*. Every subject of importance receives a heading, mostly the scientific name of the plant, animal or mineral primarily concerned. The process of Ledgering, as it is called, is pursued as if directly intended to afford the material for periodically revised editions of the Dictionary. An alphabetical assortment is, therefore, rigorously adhered to.

When a passage deals with several products collectively, such passage is given in one position (that of presumed greatest importance) and cross references are furnished under each of the other products that may be mentioned. While every effort is thus made to bring useful information regarding products and manufactures under specific headings, it has to be added that collective headings are in certain cases unavoidable. Success in ledgering may, however, be said to be indicated by the paucity of collective headings.

The passages ledgered are pasted (in sequence of original date of publication) into blank books 14" x 9". These consist usually of 20 sheets each. Between the sheets are, however, sewn here and there tags or "guards" of strong paper about 2" wide. To these "guards" printed matter or additional pages can be interpolated as found necessary. The files or books thus formed are deposited within the boxes already alluded to. These measure 15" long, 9½" broad and 4" deep, inside measurement. The lids and fronts of the boxes open on cloth hinges so that the blank books may be readily got at.

The files or books of information are assorted after the fashion of a herbarium which had been arranged under genera and species, but in place of being classified under natural orders was distributed alphabetically. Each blank book therefore represents *one species*, but if more than one economic species occurs in a genus the various specific blank books are placed within an outer generic cover of strong paper.

The boxes are numbered, within each letter of the alphabet, and placed on racks made for the purpose. On the outer end of each box is affixed a label frame within which a card-board label slips and on which is written the contents of the box, e. g., ^{Abaca} to ^{Abutilon}. A visitor to the museum who desires information regarding a particular product (in any of the Galleries) is conveyed to the Commercial Consulting Room. The Dictionary number and the individual registration number having been noted on a slip of paper provided for the

purpose, the specimen or specimens required are conveyed to the Commercial Room, as also the Ledgers on these and placed in the hands of the enquirer. The Ledgers are thus but another step, though an important one, in the scheme of investigation which has been made the special feature of the Museum. The basis of both the Museum and the Ledgers is the Dictionary of Economic Products which might be described as the official detailed catalogue of a Museum written before that Museum existed. Every effort, in the organisation of the Museum has, therefore, been put forth to exemplify and elaborate the Dictionary.

Correspondence.—The system of correspondence, established in the joint offices of the Museum and that of the Reporter on Economic Products, may be stated briefly to be based on the Industrial Classification already fully exemplified. That is to say, all subjects of correspondence are grouped first under the eight Divisions of the Economic Gallery; the fourteen Divisions of the Industrial Art Gallery; and eleven Divisions of the Ethnology Gallery; and next under the various Sections of each of these Divisions. Definite file numbers have accordingly been assigned and fixed permanently for every possible important subject of correspondence under the name of the products or manufactures concerned. It may be useful if I give here a few illustrations:—

Economic Gallery Division I—Gums and Resins.—The more important products of this division, such as the sections on India Rubber (No. 32), on Cutch (No. 34), on Gum Arabic (No. 35), on Lac (No. 36), etc., have each had the abovenoted separate file numbers allotted to them permanently, while the unimportant gums and resins have been grouped under a common file designated "Gums and Resins not specified" (No. 43). So in the same manner with the division on Oilseeds and Oils; with the division on Dyes and Tans; or with the division on Fibres and Fibrous Materials, etc. By the use of roman numerals a further classification is made to bring connected papers together—thus should the correspondence on Cutch be with merchants, the file number would stand as 34—XIII; or if with the Forest Department on Lac the number would become 36—XXII; or with the Jail Superintendents on carpet weaving 255—XIV; or with the Schools of Art on pottery 245—VIII; or with private individuals on bows and arrows 208—XI. An obvious difficulty arises, however, with letters that deal with more than one subject. These are filed under the product or manufacture of greatest importance and cross references are placed in all the files of other products mentioned. In order to induce correspondents to as far as possible deal with only one subject in each letter, separate replies are sent in regard to each of the products dealt with in a combined letter or, if that be found impossible, the paragraphs of the reply each deal with only one product. Endeavour is also made to encourage correspondents to send economic or industrial information in the form of reports or appendices to a brief covering letter. It is then a simple matter to break up such communications under the various Ledger headings under which they have to be recorded.

As soon as sufficient material has been brought together under any subject the important papers are removed from the correspondence files. After being arranged province by province the papers we shall say on Gum Kino are sewn up in the form of a book and sent to the Economic Gallery to be placed alongside of the specimens. It is thus instantly available for inspection in connection with the more recent contributions to the Museum. But later on when a further book is sent to the Gallery on the same subject the previous one is removed and deposited in the Ledgers, for permanent record. Lastly when the material thus accumulated in the Ledger boxes seems of sufficient public interest, it is published as an issue of the department Official Journal known as *the Agricultural Ledger*.

Catalogues.—It need hardly be repeated that the Museum has been arranged according to a strictly Industrial system.

A visitor interested in Fibres, in Pottery, in Religious Emblems, etc., does not require to wander all over the building in order to study any one of such groups of articles. Within the Division and Section concerned he will find all that the Museum possesses. For example, fibres, the index collections are arranged alphabetically, and according to the numbering pursued in the

Dictionary, so that that publication as already explained, has become the *Museum Catalogue*. The fact that certain numbers are missing (owing to these representing products shown in other Divisions or Sections than that devoted to fibres) is found to be no inconvenience. The numbers that do appear as fibres are progressive, and that suffices for rapid reference. As part of the scheme of cataloguing however I have matured a system by which near each Division of exhibits will be placed what has been called a "Public Register." This is intended to be kept up to date and to record all articles whether described in the Dictionary or new articles discovered since the date of publication of that work. This consists of a series of card-board pages or descriptive sheets that fit into a wooden frame in such a manner that when placed on a table near the Cabinets of specimens, the pages may be turned over until the desired number has been found and the facts regarding it learned by the visitor without having to ask the assistance of the Museum staff. By means of a key that opens the wooden frame, a page may be removed or one added as found necessary without in any way disturbing the others, while after the frame has been locked the pages cannot be disturbed except to be turned over and consulted. On these cards is shown the registration number given to the specimen, its Dictionary number, its Ledger and File (Correspondence) number, also such other information as name and address of maker and names of Museums to which duplicates have been presented, etc. Should a visitor wish to be supplied with any further particulars a printed notice on each of these public registers will inform him that by calling at the enquiry office and noting the Ledger or File number he may be permitted to consult all the papers that have been brought together. In this way the Ledgers and and Files of correspondence become an essentially necessary feature of the Museum. The Public Registers remove the defect that very shortly after any Catalogue is printed, it falls out of date, through subsequent additions having been made to the Museum collections. As additions are acquired, new pages are added to the Public Registers, and when fresh editions of the Catalogues are called for, these can be readily prepared from the Registers and Ledgers.

By way of concluding this paragraph it may be mentioned that the subject matter in the Annual Report of the Economic and Art Museum is likewise referred to the Industrial Divisions and Sections already briefly indicated.

21. *Exchanges.*—I have found it desirable to go into the details recorded under paragraphs 16 to 20 of the system pursued in the Economic and Art Section of the Indian Museum, Calcutta, in order to prepare the way for a fuller comprehension of the necessities and difficulties that beset the problem of the organisation of an Imperial system of exchanges between the various Museums of India. Until these Museums are brought into some sort of common line of working, they can neither be expected to discover their own requirements nor to learn how far they would be capable of participating in any system of exchanges. I have ventured to remark that very possibly a large number of the economic collections presently in the Provincial Museums might, with advantage, be destroyed. A meaningless display of bottles is the besetting sin of most Museums. If collections cannot be studied there is no object in their exhibition. A public Museum is one thing, a departmental Museum a very different thing. In the latter all that is necessary is to know where certain specimens can be found. It is not required that they should be visible. Most Indian Economic Museums have been arranged as if they existed for the convenience of the staff, not for the public. They would accordingly be vastly improved by being overhauled and by having a large percentage of useless duplicates destroyed. If thereafter they were to be rearranged according to the classification detailed in paragraph 16, their imperfections would readily be discovered. The first step toward a successful system of exchanges is to realize fully the defects of the existing collections. It may be doubted, however, whether (except in the case of Madras) there is at present any one connected with the other Museums mentioned in this letter who could be regarded as qualified to say what the Museum has got or what it would be benefited by receiving. The first and most urgently necessary reform is to correct this defect.

Funds Required.—I have ventured to suggest (paragraph 4), however, that the Museums might be brought under the administrative control of the

Departments of Agriculture. I should now like to make another suggestion. Her Majesty's Secretary of State some few years ago sanctioned an annual expenditure of R10,000 in connection with the scheme for the provision of collections for the Imperial Institute, London, and the Indian Museum, Calcutta. Of that allotment it was recommended that each of the eight local Governments and Administrations should bear a sum of R500 on its Agricultural budget for the payment of the articles indented for by my Office. Since that scheme came into force many exceedingly valuable collections have been procured and the system has so far proved of the greatest possible value. The Madras Government may be said to have taken the keenest interest in the work, but Burma and Assam have not been far behind. Bengal, the North-Western Provinces, the Central Provinces and the Punjab have responded readily to direct indents made on them, but have never regarded seriously the annual programme (issued by my Office) as the detailed indent that had to accomplish without further correspondence or special requisitions. Bombay has hitherto declined to participate in the scheme.

Economic Products.—Although, as stated, much good work has been accomplished, the system of an annual programme to be adhered to in the expenditure of an annual allotment has been less successful than was anticipated. It is in fact feared that for some years past the majority of the provinces have never spent more than a small portion of the available funds. I would, therefore, recommend that it be suggested that the allotment of R500 a year should be regarded, by the Directors of Agriculture, as specially intended to provide specimens for the local Museums with duplicates for Calcutta and London, and that the Directors be accordingly requested to see that the available funds are expended to the full. All the collections made should in the first instance be sent to Calcutta. The supply intended for each Provincial Museum would shortly thereafter be returned with a printed label giving the name of the article and its registered number in the Indian Museum, Calcutta, and the Imperial Institute, London. This would gradually carry out Dr. Forbes Watson's scheme of articulate museums in India with collections arranged and catalogued on a uniform and corresponding system (*Conf. with paragraph 13*).

Without, therefore, giving effect to any immediate and wholesale reforms in the existing Museums, were the expenditure of the allotment of R500 more carefully attended to, properly arranged and named sets of the chief products and manufactures of the provinces could be gradually deposited in the Museums of India. In time, these would force the needed reforms in other directions, through the importance and value of these annual contributions. The sum of R500, if entirely spent on any one of the Museums visited by me, would be an insignificant contribution, but I am sanguine that, if expended in the manner here recommended, much more than at first sight might be deemed possible would be accomplished. Many of the collections required are often obtained free of charge from landholders, manufacturers and others interested. And this would be the more likely to take place in the future were the indents for products and manufactures to come from the local Directors of Agriculture. The Forest Department has hitherto responded most liberally to all requisitions made, either through the Provincial Directors of Agriculture or by myself direct. In fact I am safe in affirming that in the past the Forest Department have contributed, free of charge, more specimens than have been procured by the special allotments. The secret of this success lies very largely in the fact that the announcement of the Secretary of State having desired that collections should be made has encouraged private individuals and heads of departments to consider how far they might be able to help forward the scheme. And I trust that the result may even already have proved that while assisting they may at the same time be assisted. The rapidly increasing number of applications for technical help, for the determination of doubtful products, for reports on diseases of crops and for chemical analyses, prove that for some time the operations of the Economic and Art Museum in Calcutta have made progress in public estimation. I do not wish to enlarge on this aspect of the question further than to justify the contention that a properly worked Museum scheme is not necessarily an expensive one.

Art-ware.—The allotment of R500 would of course not suffice to admit of exchanges in art-ware. The bulk of the industrial arts of India are in the hands of petty artisans who could not be expected to make extensive contributions. The majority of the articles would have to be purchased. But a grant of R1,000 instead of R500 in each province would suffice for many years to come. It is the old and rare articles that are expensive and those would have to be procured through occasional and special grants. The sum I have named would suffice to enable a thorough enquiry to be instituted throughout India into the handicrafts of the people.

Bazar Investigations.—But there is one other consideration that I desire in conclusion to urge on the attention of Government. For some time past it has been felt that there was a serious defect in the system of an annual programme prescribing local investigations. While in Rangoon and Mandalay I devoted some time to the examination of the bazars of these cities. I came across such countless numbers of economic products not described in the Dictionary of Economic Products, and even artistic manufactures of which I was quite ignorant, that I realized to the full extent the great defect of the system of annual programmes. But I need make no invidious reference to Burma. I saw as many new products and industries in the bazars of Lahore, Peshawar and Karachi as in Rangoon and Mandalay. The principle I desire to advocate is equally applicable to every province.

Very possibly I might have remained for many years quite unable to indicate the desirability of collecting the articles to which I allude as seen in these bazars had I not made a special tour to the cities of India. The programme issued by my office asks for products of which possibly no local officer possesses any very special knowledge. An extensive correspondence ensues and numerous products may be sent with the object of discovering if they are the articles required. This correspondence I personally do not regret since in many cases I am made acquainted with articles even more urgently desired than those actually indented for, but I fear that the correspondence may often become irksome to the local officers on whose time and good nature I impose a heavy task. Now this defect seems to me to be removed very largely by the organization of direct local action. Were the Directors of Agriculture to specially request some Agricultural Inspector or Clerk in their offices to devote a certain time to study the bazars of the larger towns and to collect small samples of all the articles shown in these, the much needed direct relation to the Museums of India with their environments would be secured. And each sample as collected ought to have a number assigned to it. Information as to the vernacular name or names of the products might then be recorded; particulars as to their uses; the localities from whence obtained; the markets to which mainly destined, and the price at which procurable, etc., etc. If now a small proportion of each product so collected were to be forwarded to Calcutta they would be examined and, if recognisable, their scientific names communicated and specific indents submitted of the quantities required. In this way, as it seems to me, greater progress might be made and at less labour to the officers of the Local Governments than by the present system. It should be observed that this departure from the programme would necessitate no very great technical knowledge on the part of the person appointed to conduct enquiries and to collect specimens. But, as already stated, the immense advantage would be attained of bringing the local Museums (into which carefully named samples of all the articles collected would ultimately be deposited) into direct and personal touch with the resources of their respective provinces.

190

READ ALSO:—

190

ORDER No. 674, dated 20. 12. 1900

Recorded.

Aug. 12. 00

$$\begin{array}{r} 974 \\ 719 \\ \hline 1-12-00 \end{array}$$

12 12 1900

17-4-00

To

The Suppl-^y m- 240

with 5 copies of the memo

Board of Rev. (settlement depart) 80

When given for copying _____
When copied _____ } 190 .
When examined _____
When signed _____

READ AGAIN G.O., No. _____, DATED
190 .

CURRENT No.

ENCLOSURES TO G. No.

ORDER OF GOVERNMENT A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.

N.B.—

- A = Copy in full.
- B = Not to be copied.
- F = Copy abstract only.
- Q = Copy heading only.