

The Museum of Economic Geology

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Abstract : *Museum of Economic Geology was one of the notable achievements made by the Asiatic Society of Bengal. This paper wants to show the perspectives and significance of emergence of such initiative, along with the gradual development in collection process. It also demonstrates the role of the authorities to popularise the venture and response from the educated public.*

Key Words : *Asiatic Society of Bengal, Museum of Economic Geology, geological surveyors, curator, geological and mineral specimens, Committee of Papers.*

The Asiatic Society of Bengal was one of the oldest institutions in the world, where science was thoroughly cultivated. When Asiatic Society was formed, the Geological Sciences were in a transition stage in India. It attempted to provide an institutional base to the geological explorers.

With the accomplishment of the ongoing projects, Asiatic Society was engaged in creating a museum, which tried to incorporate both economic and academic geology. P. N. Bose stated the importance of the Society's Museum as 'one of the most conspicuous and permanent monuments of the Society's work'.¹ The members of the Asiatic Society had, since the Society's inception, felt the need of a proper repository for specimens of natural history. The Asiatic Society, being the region's premier scientific body, repeatedly and sincerely expressed concerns for making a museum, which included thousands of rock and mineral specimens, how should they be properly housed and displayed and that Calcutta should have a museum that would compete with institutions in Europe and would be 'a scientific

window' onto India.²

Initially, there were many attempts of specimen collections, which were proto-types of museums in India. At first, the geological observers started the process of personally collecting the specimens. East India Company's surgeon-naturalists, geological observers, surveyors and officials of different government departments became engaged in preserving the geological collections personally. Even, at first, many persons collected several specimens without any pretence of geological knowledge. Among them, the name of Benjamin Heyne, the Company's naturalist at Madras, Colonel Kirkpatrick, the mineralogist in Bengal, Francis Buchanan, surveyor and Thomas Hardwicke, naturalist are mention worthy.³ But, the maintenance of the personal collections, specially the storage and transport of large collections of specimens were found to be difficult.⁴ Several of those specimens were either lost or damaged. Sometimes such personal collections were acquired by different institutions, on the death or return to England of their owners. These reflected the growing importance of the rise of institutional framework and the power of state by its different agencies to possess and control the kingdom of geology. An effort was made by the naturalist Benjamin Heyne to solve that problem. He wrote to Lord Clive, Governor of Madras, in April 1802, suggesting establishing a small natural history museum by the Government in that Presidency. He mentioned that for the research work, the naturalists in India 'require in the eyes of the learned a positive proof only obtained by specimens'.⁵ Heyne expressed his view towards establishing museums. He felt that the formation of such museums was the only way by which the British could become better acquainted with the mineral resources and manufactures of India. Clive then agreed to his suggestion and for that purpose he set aside two rooms of the Government Garden House. He appointed Heyne as the Superintendent, Botanist and Naturalist to the Company at Madras. Though that attempt was short lived, it appeared to be the first colonial natural history museum in India.⁶

These initiatives paved the ground for establishing a large-scale museum, which materialized with the establishment of a museum under the direct

supervision of the Asiatic Society of Bengal. The first museum collection in India was started in 1796 under this institute, only 43 years after the inception of the British Museum in 1753.⁷ It was considered as the most important museum under the Company.

Though in the inaugural address of the founder no reference was made to a Museum, but the curiosity of the members generated the idea of having a suitable house for preservation of specimens. As early as on 29th September 1796, the Society announced their intention of establishing a Museum, and invited donations.⁸ Many persons were eager for this purpose. In 1799, John Howkesworth expressed his desire to William Hunter, the then Secretary, that he wanted to look after the proposed Museum and also the Library, free of charge.⁹ But, first proposal to build up a museum in a true sense of the term was made by the East India Company's Danish naturalist Nathaniel Wallich.

After the completion of the Society's own house in 1808, those steps were taken to carry out the object. On February 2, 1814, Dr. Nathaniel Wallich wrote a letter to the Society, strongly advocating the formation of a Museum. In his letter he remarked 'The vast regions which are comprised within the sphere of the Asiatic Society's views exhibit an inexhaustible and perhaps unparalleled treasury of the most wonderful and interesting productions of Nature.' Again he mentioned that 'The deplorable neglect to which the Natural History of this country has been exposed is very striking and must principally be attributed to the total want in India of that grand desideratum a public Museum.' Wallich believed that the 'means of getting access to animals, plants and minerals in India were more innumerable and comparatively easier than in many parts of the globe. Members of the Society in particular and the Europeans travelling in different parts of India or residing in its interiors in general would only be happy to exert themselves in collecting and depositing curiosities if a repository existed under the auspices of the Society, where specimens could be preserved and displayed for closer examination and comparison than what possibly could be bestowed upon them on the spot where they were found.'¹⁰ Wallich therefore urged the Society to establish a Museum without delay and for which all

lovers of arts and science should be invited to send their contributions. On this perspective, the Committee of Papers of the Society submitted the notes, in which the clear view of Society regarding the creation of a Museum was revealed. In this note, it was stated to collect the substances, 'which are the objects of Sciences' and it 'has always been one of the first steps taken by Societies instituted for the dissemination of specific or universal knowledge.'¹¹ Thus the Society gave a new institution to India, for educating the people and for assisting researches and investigation for revealing the past.

The Committee of Papers emphasized on collecting scientific materials and stated, 'It is, however, in the departments of science that a Museum in this country would be found most specially serviceable, and the facility of its accumulation is proportional to the extent of its utility.' Among the name of branches, Mineralogy was stated with due importance. The Committee also discussed that many objects with which the British were exceedingly familiar in this country were new or imperfectly known to general science, would contribute to the extensive results of western enquiry.¹²

In the resolutions of the Asiatic Society, the lists for the collecting materials were furnished, which were to elucidate the peculiarities of art or nature in the East. The intention was to make the public aware of the matter. In the list, 'Mineral or vegetable preparation peculiar to Eastern pharmacy', 'Ores of Metals', 'Native alloys of metals', 'Minerals of every description' etc. were included.¹³ The collections of the Society's Museum increased very fast. Nathaniel Wallich was the first who proposed separating the 'scientific' material from the rest. He argued, 'In natural history, botany, anatomy, chemistry, mineralogy and other branches, collection would accumulate rapidly'.¹⁴

Most of the Geological Surveyors sent their collected specimens to the Society to preserve those and to make analytical research on those for further detail analysis. It was revealed that the demand of economically valuable minerals for collection increased. The value of local geological and mineralogical specimens in that museum was obviously greatly enhanced by the presence of corresponding specimens from other parts of the world,

for the purpose of comparison and for registering the facts regarding local variation.

The geological and specially mineralogical collection owed its rapid growth owing largely to the zeal of surveyors. The Society's museum had the richest collection of minerals during the first half of the nineteenth century as they represented every part of the globe excepting America.¹⁵ Only some evidences are mentioned here. In 1795, John Macdonald wrote, 'I have the satisfaction of laying before the Asiatick Society a specimen of copper-ore, the production of the island of Sumatra'.¹⁶ It was kept in the Museum. Colonel Colin Mackenzie presented 28 specimens of minerals in 1818. In 1819, Society received 'An Account of a Stone fabrick near Bhilsa' from Lieutenant E. Fell.¹⁷ Dr. J. Adam presented to the Society's museum several specimens of minerals collected in Bundelkhand.¹⁸ In 1823, T. Thomason forwarded to Dr. Wilson 'five boxes containing fossils collected by Rev. I. Yaul from New South Wales'.¹⁹ The Society received 7 copper plates discovered in 1823 near Baruna Mullah at Benares.²⁰ In 1824, M/S Hamilton and Co. forwarded to W. L. Gibbons a piece of Gold Ore, found in Chilli.²¹ On 26 January, 1826, H. H. Wilson, Secretary, Asiatic Society, received 'a box containing specimens of the Minerals called Graphite' from J.D. Herbert, Superintendent of Geological Survey of Himalayan Mountains.²² On 12th March, 1826, James Low sent to Horace Hayman Wilson 'a box containing minerals for the Society's museum'.²³ On 23rd April, 1826, John P. Harriott sent to the Society 'a few specimens of stones and ores' found at Nasirabad.²⁴ On 15th June, 1826, Society's museum was enriched by a box of specimens of Gypsum, received again from Captain Herbert.²⁵ Society received a box of specimens of coal from T. Jenkins on 23rd February, 1827, some specimens of coal from Husingabad by Lieut. Finnis on 11th April 1827 and specimens of coal from the Indo-Gangetic tract of mountains by J. D. Herbert on 4th October, 1827.²⁶ A rich collection of minerals was presented by Capt. F. Jenkins on 2nd May, 1827. It included minerals containing specimens from Cuttack, Jabbalpur, Molmein and Martaban(Burma); rocks from Silhet; crystals from Jabbalpur; gypsum from Dehradun; sandstone and iron clay rocks from the Jamuna; kankar, limestone

etc from Allahabad, Bundelkhand, Murshidabad, Ajmer, Mungher, Rajmahal, Janjira and Golgong; and sands of Chunar.²⁷ On 10th March, 1832, A. Burne sent some specimens of the red salt earth, alum, native antimony and sulphur from Punjab to the Society.²⁸ In 1834, an article written by W. Cracroft, was published in the Journal of Asiatic Society of Bengal. In that article he wrote that during his journey from Cherapunjee to Assam, he collected a large scale of geological specimens, such as – granite, sandstone, mica, iron, coal etc. and deposited them to Society's museum in 1832.²⁹ On 12th April 1835, W. Foley sent to James Prinsep some specimens of ore found in the neighbourhood of Moulmein and requested him to analyse them.³⁰ On 22nd May, 1835, Society was presented by a box, containing sample of copper ore by Capt. Dixon.³¹ T. J. Newbold presented 'some geological specimens of the southern part of the Malaya Peninsula and Island of Singapore' on 6th July 1835.³² C.M. Rickett presented specimens of minerals from various parts of India, collected from Mysore, Udayapur, Malwa, Rajputana, Punjab, Goomadong Hills, Hoshungabad, Bihar, Orissa, Sylhet, Assam and other places.³³ Most of the surveyors sent their specimen collections to the Society for preserving in the museum. Gradually, minerals and geological specimens were collected from all over India. Not only specimens, maps were also preserved in the Museum. Besides the contributions of Voysey, Franklin, Calder, V. Blacker offered to the Society 'a copy of the latest published map of India'.³⁴ W. G. Young, Under-Secretary to the Government of Bengal, donated a map of the station and suburbs of Jessore for the use of the Museum of Economic Geology.³⁵

In the writings and reports of the investigators, some descriptions and analysis of the collected specimens were also revealed. P. M. Benza mentioned in his writings that he sent some geological specimens to the Society's museum and he made drawings of them. He collected a kind of Tripoli, which he thought of a species of iron flint found in primitive formations. Some of them had a great resemblance to the 'Eisnkeissel of Werner', according to Benza and he sent them to the museum. Benza not only sent the specimens to the museum, he was also very much aware about the collected specimens, which were then already deposited in the museum by

other observers. Such as, he mentioned about the specimens of a kind of magnetic iron ore, deposited by his friend Colonel Cullen in the museum, which he also saw during his observation. He also wrote that Cullen had also deposited two types of geological specimens, named as 'auriferous quartz, stratified' and 'auriferous micaschist'.³⁶ Benza's knowledge about the specimens deposited in the museum, was also revealed in his various remarks, such as, (i) 'I have seen in your museum a specimen sent by Struve from Norway, very much like the specimen I now send'; (ii) 'This rock is very like the specimen in your museum from Norway, marked 'large garnets in hornblende. Indeed I think that there is great analogy between the sienite zirconoenne of Norway and this rock of the Neilgherries' (it is about the rock prevailed in the Kaiti range, as well as in other places); (iii) 'The trap near Sagur', described by Captain Franklin, 'appears to have the same association of rocks as the one of which I send specimens'.³⁷

In 1842, an article, written by J. Adam, was published in the Journal of the Asiatic Society of Bengal. That was basically on the geological analysis and collections of geological specimens. Adam at first wrote about the true process of collection of specimens in the museum – 'The observations I have now the honour to lay before the Society, were originally intended to accompany a series of geological specimens, for the purpose of illustrating their relative positions and localities, or (according to the technical phraseology of the day) their geognostic and geographic situations, without a knowledge of which, no collection can be of much value.'³⁸ But that searching was on long before and because of unknown reason, the whole article was kept among some old records and was not published. At last it was recovered and his geological collections were safely placed beyond the risk of loss in the Society's cabinets. Total specimens were about 35 in number.³⁹ James Hardie in his observation on Central India wrote that his collected specimens were forwarded to the Asiatic Society.⁴⁰

Captain F. Jenkins was seen as a collector in his writings. He wrote an informative article on the minerals, collected at Nagpur and its vicinity, where he mentioned about the proposed sketch of that area. He collected various types of specimens, which were mainly geological.⁴¹ R. Everest

also submitted specimens in the Asiatic Society Museum.⁴² John Finnis collected and sent specimens of coal to the Asiatic Society from Nagpur and its vicinity.⁴³ In 1841, W. Dunbar wrote that he had collected some specimens of coal, though he faced some troubles.⁴⁴ In 1845, J. Abbott wrote on his inspection of the granite in the bed of Narmada, that he would write to Colonel Outram, his successor to forward specimens to the Asiatic Society.⁴⁵ In 1847, he wrote that he collected a specimen of gold from Beyas for inspection.⁴⁶ He also collected some black iron ore specimens and lignite from Huzaree district and sent them to the Asiatic Society.⁴⁷ In 1848, A. Fleming wrote he sent specimens of coal with a few remarks to the Asiatic Society in February.⁴⁸ It can be understood from J. C. Brooke's remarks that he sent to the Society some specimens of good zinc ore, inferior ore and ore mixed with quartz from Jawar, Rajasthan.⁴⁹

Later Captain J. D. Herbert's rich collection of geological specimens from the Himalayas was presented by his widow.⁵⁰ Dr. J. McClelland added to this collection of geological specimens from the Kumaon area with a descriptive catalogue.⁵¹ The catalogue is printed in the Journal of The Asiatic Society of Bengal in Volume No. 6, p.653 - 663. The geological specimens of Southern India were represented by Lt. Braddock.⁵² Central India was represented by a valuable series of geological specimens, arranged and catalogued by Dr. G. G. Splisbury.⁵³ Geological and mineralogical collections from Cape Comorin to Kashmir and from Kohat to Khasia Hills were assembled in the Society's Museum considerably by the contributions of the Society's members and geologists. Specimens of minerals also from Persia, Rotas, Tenasserim coast, Java, Ava, South Africa and Ireland were in the museum.⁵⁴ Foreign geological specimens were exhibited in the Society's Museum for the benefit of students who undertook comparative studies. Attention of the observers was primarily directed to the discovery of India's mineral wealth.

With the discovery of the coalfields of Raniganj and other mineral resources, Society felt the necessity to arrange the huge collected specimens. With the continuous collection process, the Society was simultaneously engaged in making its experimental policy for better result in creating a

museum in true sense. The classification and scientific display of the articles in the Museum received the attention of the Society at an early date. The mineral specimens in the collection of the Society's museum were scientifically arranged in 1818 under the direction of Dr. H. W. Voysey.⁵⁵ When Dr. John Adam took over the charge as superintendent of the Museum, he spared no time in arranging the specimens scientifically.⁵⁶ David Ross got the sanction of the Society to construct a number of cabinets for displaying mineralogical specimens.⁵⁷

The 1830s partnership between Sir Edward Ryan and James Prinsep as president and secretary respectively, led to a more serious dimension to geological collecting and research. This was best exemplified by their role in the collection of the newly discovered Siwalik fossils, which attracted much interest from European geologists of vertebrate palaeontology.⁵⁸ In fact, under the direct instructions of James Prinsep, a mineralogist and talented energetic secretary of Asiatic Society of Bengal, Society took various steps in geological studies. He distinguished himself by his varied services to the cause of science. He wrote, 'What the learned world demands of us in India is to be quite certain of our data, to place the monumental record before them exactly as it now exists, and to interpret it faithfully and literally'.⁵⁹ He recommended the arrangement of specimens for their display in a manner which will replicate their spatial relations in nature. For example, he suggested that a case of Himalayan specimens would be laid out from west to east, as they occurred in nature, with those collected from the highest altitude placed on the top shelf, and the others arranged on the lower shelves in the order of their area of location descending to the Gangetic Plain.⁶⁰ John McClelland, a prominent member of the Asiatic Society, praised such an arrangement of a general plan 'as much as possible in imitation of the simplicity of nature'.⁶¹ Thus, in the words of Lynn Merrill, the cabinet became 'the miniature world—a domicile ruled by its benevolent collector'.⁶² Sir Edward Ryan was aware of the role of museums as practical educational institutes of science in Europe. So he wrote to Governor General Lord Auckland for financial support for the Asiatic Society's museum in 1837, 'A national museum is indeed throughout Europe become an essential engine

of education, instructive alike to the uninformed who admires the wonders of nature through the eye alone, and to the refined student who seeks in these repositories what it would be quite out of his power to procure with his own means—the means of education in the natural sciences would be improved or rather created by the formation of a museum, the superintendent of which would always be able to devote a portion of his time to demonstrations and lectures'.⁶³

Society's strict observation regarding the appointment of a competent and professional naturalist as a Superintendent or Curator revealed its eagerness to do well for the museum as the services of a curator were found to be indispensable for the proper display, preservation and cataloguing of the collected specimens committed to the Society's trust. Dr. Wallich was appointed the Superintendent of the Oriental Museum of the Asiatic Society. The geological and zoological specimens were specially classified, arranged and preserved under his supervision as he was also appointed as the Curator. One Mr. Gibbon succeeded him as Superintendent with Rs. 50 per men sum⁶⁴, but a man of competent knowledge in Geology and Zoology was wanted. This type of deliberate bifurcation of knowledge and responsibility was a symptom of the increasing specialization in colonial scientific activity.⁶⁵ Charles Hutchins, who was appointed as a paid keeper or superintendent of the museum, tendered his resignation on or about 13th April, 1821.⁶⁶ After that, a long campaign was made with the help of the East India Company to recruit a competent curator of the museum, viewing the maintenance of the museum as a national object and with the calculation of immense importance to science. So, a professional naturalist was needed at the head, directing researches and systematizing information obtained from various sources, both public and private, in all the branches of Physical Science, and particularly in regard to the Natural History of British India and Asia at large Dr. John Adam held the office of the superintendent of the museum from 13th April 1821.⁶⁷ Finally, Dr. J. T. Pearson of the Bengal Medical Service was appointed as the Curator. But, in 1835, he gave his resignation to James Prinsep from the post of Curator of the museum because he lived at a far distance from the museum and it was difficult for

him to perform his duties, and he recommended bringing a successor from England.⁶⁸ He was succeeded by Dr. McClelland.

At that time a question arose within the Society as to whether a competent curator should be brought from Europe or one may be appointed from within India. Dr. Wilson selected Mr. Edward Blyth from England (the then London Agent of the Society) as Curator. But, two main problems appeared. One was about the knowledge of the Curator (specially his knowledge in Science, i.e. Geology etc.), which was the most essential criterion then. Mr. Blyth, though a naturalist, had not studied Geology to such an extent as to be considered fit as a Scientific Curator of that department.⁶⁹ The other problem was that in the meantime the Society had become the custodian of an important series of geological and palaeontological collections, which had been yearly growing in richness.

Captain George Borlase Tremenheere, the Executive Engineer of Tenasserim Division and Superintendent of the Government Forests took the main initiative in creating the Museum of Economic Geology. He returned to Calcutta on or about 24th December 1840 with a collection of mineral productions of England, sent out by the Court of Directors of the East India Company. 'Being authorised by the Honorable Court of Directors to deliver (these specimens) to the Government of India', they were handed over to the Asiatic Society under the orders of the Right Honorable the Governor of Bengal, on 13th January 1841. These collection included specimens of coal from South Wales and South Staffordshire Coal districts, coal, ironstone and limestone from the principal working beds near Birmingham, 50 specimens of copper and other metallic ores chiefly from Cornwall, and also specimens from South Wales. All these formed the nucleus of a Museum of Economic Geology.⁷⁰ For this purpose he also contacted with Henry De La Beche, founder of the Geological Survey of Great Britain. Henry De La Beche's opinion was that such type of museum may enable the British authority in India 'to understand the proper conditions under which mining should be attempted in various distant parts of the British Empire'.⁷¹ Not only preservation, but up to date information will also available in this process. De La Beche also stated that it would be helpful 'to advance knowledge of

and develop the mineral resources of that portion of the British possessions'.⁷² De La Beche's support for Tremenheere's scheme also had some personal interest as he foresaw a fruitful exchange of specimens and information between the Museums in London and India.⁷³ The Government of Bengal instructed their officers in the civil and military departments engaged in the revenue surveys and public works to increase the collection of specimens suited to the Museum of Economic Geology.⁷⁴

In 1839, at the December meeting, the 'Committee of Papers' submitted a Report on the Museum, in which it is stated, 'that the first object of the Society in remodeling its Museum should be to form a grand collection of minerals and fossils, illustrative of the Geology, Geography and Palaeontology of our British Indian possessions. A few of the existing minerals and some superb fossils in our Museum are available for this object, but it is clearly within the scope of the Society's influence to procure, within a few months collections of specimens from every part of India, and in such numbers as would find the Curator in ample employment'.⁷⁵ The report was signed by Sir Edward Ryan, President of the Society; Mr. H. T. Prinsep, Vice-President; Messrs. W. P. Grant, H. Torrens, J. C. C. Sutherland, W. B. O'Shaughnessy, David Hare, Col. D. McLeod, Dr. D. Stewart, Sir H. W. Seton, Major W. H. Forbes and Dr. N. Wallich.⁷⁶ Court of Directors and Board of Control approved the plan. Governor – General of India George Eden and Lord Auckland took active part. In the meantime, the maintenance of the museum was called for but the Society's funds did not permit to keep it in an efficient manner. In 1836, the society applied to the Government of India for a grant for this purpose, which was sanctioned. Thus the government recognized for the first time the utility of the museum in the life of a nation with the Museum of the Society.⁷⁷ Lord Auckland, himself an amateur geologist, made public funds available for the purpose.⁷⁸ He instructed the Military Board to circulate the objects and desiderata of the Museum to the Executive Officers of Public Works and Roads, in the hope that they would contribute sets of specimens to the Museum.⁷⁹

In 1841 the Museum of Economic Geology was inaugurated as a separate department to the Asiatic Society's museum. Its nucleus was

comprised of specimens of coal and other mineral ores, which had been brought from England and Indian territory. Mr. Henry Piddington officiated as the Joint Curator of the Museum of Economic Geology. Its objects and aims were clearly set forth in a brief statement drawn up by Piddington and widely circulated.⁸⁰ He was in charge of the collections of the Museum of Economic Geology along with its own Geological and Palaeontological specimens. It is also important and mention worthy that the collection, which belonged to the Government, was under the custody of the Society till 1856, when it was taken over by the Geological Survey of India which was then established.⁸¹

The Curator submitted fully complete monthly reports and the scientific public accepted him very cordially.⁸² Piddington hoped that 'every friend of India, whether connected with the Society or not', would 'aid in accomplishing the great ends, to which, by the liberality of the Court of Directors and of the Government of India, it may now aim; viz. the full development of the agricultural and mineral resources of the country'.⁸³ Piddington wanted to make the Museum of Economic Geology as 'Museum of Instruction', not only for gathering materials and neither a mere institute of entertainment. The Museum stood as the mediator between the ideas of 'purely scientific geologist and the merchant, the miner, the farmer, the manufacturer, and the builder.'⁸⁴ The establishment of such type of museum indicated positive attitude of the British to develop the study of applied geology. They thought that it was an integral part of the process of commercial and industrial development, and also for advancement of knowledge. Long after the establishment of Museum of Economic Geology, in 1859, Thomas Oldham expressed same view regarding the foundation of this museum. Oldham wrote, 'The extension of the Museum had been, therefore, essential, if it were to keep pace with the progress of knowledge, and to retain any of its value as a means and aid to instruction. With this view, the Right Hon'ble the Governor General in Council has given orders for the formation, on a much more extended scale than hitherto, of a general Geological Collection, with a special view to illustrate the geological structure, the mineral wealth, and the manufacturing resources of this Empire.'⁸⁵ At that time of beginning

of the museum, E. Blyth, a curator of the whole museum, tried to improve his own knowledge. Mr. H. Torrens, Secretary of the Society, asked him to take special care of the then new Museum. In reply he expressed his eagerness for that. In his letter to the Secretary dated September 22, 1841, he wrote, 'I think I may crave some indulgence on the part of the Society, if I do not, at the very first, prove alike proficient in every one of these several departments, confidently appealing to the experience of any practical naturalist for an acknowledgement of the reasonableness of the plea which I have here ventured to offer.' He himself stated that 'It is in the Mineral department, unfortunately, that I am at present less qualified, by previous study, to devote my immediate and first labours advantageously for the Society; but with the opportunities for study which are now before me, and with the liberal encouragement and support I may reckon upon receiving, I do not fear but that I shall soon render myself competent to discharge that portion of my duty which relates to the efficient management of the Museum of Economic Geology; this being a subject in which I feel the liveliest interest, and with the high importance of which I am deeply and thoroughly impressed.'⁸⁶ However, that difficulty was soon tackled. The satisfactory working of the coal- mines at Raniganj, and the reports of Dr. Helfer and other officers related to that science had invited the attention of Government to the mineral resources of the country.

The Museum grew under the custody of the Society until 1856, when the part of the collection under Government control was transferred to the newly established Museum related with the Geological Survey of India.

On the formation of a general Museum in connection with the then recently established department of Geological Survey of India, the Government desired to transfer the Museum of Economic Geology.⁸⁷ It proposed at the same time that the Society should deposit its own collection of fossils and other geological specimens there. Such a proposal led to a lot of discussion and was ultimately rejected⁸⁸.

A careful inquiry into the condition of the Museum, its growing importance, and the poor accommodation available in their building had insisted the Society with the necessity for the institution of a grand public

Museum in Calcutta, to which the whole of the Society's collection might be transferred under certain restrictions, as any partial transfer would probably have been detrimental to the accomplishment of this noble object. Negotiations were started by the Council of the Society with the Government on the subject, which culminated in the establishment of the present Indian Museum, the Society offering to make over its collections on the condition that a suitable building should be erected and that the collections should be placed under the management of a body of Trustees, which conditions were carried out and legally instituted by Act XVII of 1866.⁸⁹

The museum was not only intended for the reception of specimens, but also to exhibit those to the interested public. For this a systemized and catagorised display was essential. Regarding the management of huge geological and mineralogical materials collected in the museum, members of the Society sometimes became almost puzzled. It was reflected in various contemporary writings. In 1820 a writer expressed his feelings regarding the condition of museum in Calcutta Journal, 'I cannot resist the opportunity of remarking that I have lately observed with mingled feelings of surprise and regret, the most splendid collection of Minerals that has perhaps ever found its way to this country, obliged to be offered for disposal by lottery, evidently because no individual can be found to become sole purchaser'. He added that Dr. Wallich, as he himself an experienced mineralogist, 'should he have by this time commenced the arrangement of the jumbled Mineralogical specimens in the Society's museum'.⁹⁰ In another writing, the same writer expressed same feelings, 'As the museum, occupying the ground floor, is not yet in a state of proper arrangement, and its great hall is so dark and gloomy, that it would at all events be impossible to examine satisfactorily such specimens as are disposed here and there in the badly planned ranges of glazed cases, and shelves;- as there is no descriptive catalogue of the articles contained in them, such as they are,- and many of them, being without label or number, it is impossible to guess from whom or whence they have come'.⁹¹

The Society was deprived of the advantages of systematic arrangement of mineralogical and geological collections so necessary, or rather so

indispensable to its utility. 'Rich in specimens, it has been most unfortunately deficient in the means of arranging them, while difficulties of other kinds have interfered with the facility of classification to such a degree, as to leave the Society in doubt even as to the real extent and value of several of the collections it possesses',⁹² the Officiating Secretary confessed to a foreign correspondent. In 1839 N.M. Jameson wrote in almost the same tune, 'the miserable condition in which they (the collected materials) have been kept – packed in drawers one above another, without paper, or any other material intervening – has rendered many of them entirely useless and unfit to be placed in the collection.—In regard to labels, there were but few attached, and of these many wrong.—The Rocks, of which there is a most magnificent and extensive collection, would have been doubly valuable if they had been furnished with labels, indicating the locality from whence they had been obtained;—In fact such a collection is quite useless to a society; and even if some important mineral should be found in it, the value of the discovery could not be followed up. It would be of importance to intimate this to individuals engaged in making such collections'.⁹³ This condition was painful and pathetic to the members of the Society. It was reflected in Jameson's works. During his short tenure, he arranged a few of them and the system they have followed was 'that of Werner, as improved by modern authors'.⁹⁴

In spite of their utter devotion to make the specimens systematic, could not become fully successful. The Committee of Papers in their report of February 1840 confirmed, 'Our collection of minerals is an utter chaos, though rich in anonymous specimens - valuable in themselves as illustrations of abstract mineralogy, but devoid of interest in a geological or geographical light, owing to the neglect with which they have been treated by some preceding curators'.⁹⁵

Henry Piddington's services as officiating curator were secured by the Society when they were most needed. He assumed the office on 1st November and he was the first person to submit monthly reports on the museum regularly. His attention was initially directed to the sad dilapidation that had set in the museum. Piddington's report is the first of its kind we

have on record on the palaeontological, geological and mineral departments.⁹⁶ He pointed out the condition, 'nothing could be more lamentable and more discouraging to the progress of Indian Science, than the fact that collections, which men have almost literally laid down their lives to obtain, should thus be lost to their memory, and to the ends of Science'.⁹⁷ It took more than eight months for Piddington and his assistants to arrange and catalogue all geological, mineralogical and palaeontological specimens.⁹⁸ During this time recovery of five notebooks of the late Dr. Voysey from the papers of James Prinsep was a major breakthrough in identifying the specimens presented by that pioneering geologist.⁹⁹ The arrangement of the collections of iron, tin and copper ores brought out from England was completed by Piddington in March 1841 in such a manner that his system afforded every convenience as to distinctness of classification, while allowing additions to any extent to be made without disturbing that which was already done, and giving facility of reference for the student, visitors and the curator.¹⁰⁰ Since the first half of the nineteenth century, it was considered a function of the Asiatic Society's curators that besides superintending the museum, they should coordinate and supervise research into natural history.¹⁰¹

At the time of establishment of the Museum, it was discussed in the Society that the Museum should 'be serviceable to history and science'.¹⁰² It became true within a short while. The museum remained and grew in the Society's custody for fifteen years.

The exertions made for the establishment of it with the richest collection of specimens available in India, are acts for which the Society deserves high credit. To quote an elegant writer from the 'Calcutta Review', 'Had that Society done nothing else to promote science during the last ten years, it would have entitled itself to the gratitude of posterity for the vigour with which it has prosecuted to success a project fraught with so much public usefulness.'¹⁰³

With its limited resources the Society classified and arranged the Museum. Dr. Clarke Abel, joint secretary, before his death on 24th Nov, 1826, had prepared a catalogue of the minerals in the Society's museum.¹⁰⁴

Besides this, Society brought out a hand-list of the collection by Rajendralal Mitra(1849), 'Instruction for collecting Geological specimens'(1833), and 'Hints for preservation of objects of Natural History'(1835).¹⁰⁵

The museum attracted attention back at home no less than in this country. Indeed at that time it was the only place in India fit for receiving the geological and mineralogical specimens. Society also made communication with the British Museum.¹⁰⁶

The Society built up its museum out of its social sense. It was justified by its popularity. Obviously, it became a center for exchange of thoughts. It was made open for the visitors nearly since its inception. An anonymous writer, who visited the Asiatic Society's museum in 1814, wrote 'The Asiatic Museum is worth the attention of a stranger. Though, but, in its infancy, I remarked its fine collection of shells with infinite satisfaction; and, the various marine and mineral productions with which it is replete must afford information to every lover and inquirer into natural history'.¹⁰⁷ In 1816, it was suggested that it 'should be opened for the visitors only while the guards are in attendance'.¹⁰⁸ By then the collections of the Society's museum had begun drawing attention of the persons with academic interest. Captain J. D. Herbert made a proposal in 1830 that, 'the Museum and Library be open early in the morning, for the accommodation of such members as may find it convenient to visit them at that hour'.¹⁰⁹

The museum, which was kept open from 6 am to 4 pm (excluding Sundays, holidays and another three weeks for the purpose of cleaning), always attracted a large number of visitors, the Europeans as well as the Indians. In 1864, the number of visitors was 104640, i.e., a daily average of 395: European (male-2269, female-1147), Indian (male-94224, female-7000).¹¹⁰ Later, after a long while, in the year 1866, during the first six months, the total number of visitors to the Asiatic Society's museum amounted to 73198 with a daily average of 406.¹¹¹ People representing almost all the nations of Southern Asia visited the museum. In the Visitor's Book, the name of Bhooteas, Nepalese, Siamese, Burmese, Malays, Chinese, Polynesians, Andamaneese, Afghans, Kashmirees, Punjabees and other tribes of the North – West and crowds of Hindoos and

Mahomedans of Bengal. Such a list is a powerful argument in favour of the claims of an institution that has the power to draw together and create interest to such a diverse assemblage of men. They referred to their homes, their minds stored with new ideas, and their visit more over having the effect of spreading abroad knowledge of the wonders of European Science. The museum must in this way, prove a powerful stimulus to the intellectual development and civilization, of their respective races.¹¹²

David Arnold remarked that museums were important in Colonial India not just as sites for the pursuit of scientific knowledge but as a way of establishing the reputation and self-esteem of Colonial Science.¹¹³ Although vast quantities of geological and mineralogical specimens were sent to London to form part of the Company's India Museum or for distribution of continental collections, many were retained in India. Andrew Grout, in his writings, opined that the Museum of Economic Geology mainly acted as an 'advisor on geological questions on a number of occasions',¹¹⁴ but its role as a central repository of geological information and as a stimulator of investment in Indian raw materials, was not satisfied.¹¹⁵ In spite of that, it can be said, it has to face the obstacles and difficulties of first coming in the newly opened field, but it paved the way of future progress.

The museum was of great practical use, as its officers were constantly applied to for information, and to supply assays and analyses for companies and private individuals.¹¹⁶ The Museum of Economic Geology had thus a good beginning and its growth was assured by the whole-hearted support of the members of the Society and officers of the Government in various parts of India. Society was so much of its collections that it could not intent to give the change to the Government or any other institute.

Society's museum paved the way for future research by creating a totally new aptitude. At first it started with merely collecting, but soon it was transformed into preserving materials. During the Company Raj, this process was continuous and various experiments were made to upgrade the whole system. One of its main objects was to satisfy the demands of metropolitan science. Not only that, it also contributed in indirect way to

make the common people enthusiastic towards geological and mineralogical research activities. It made a certain type of applied study to know Indian geology better. It was a primary step to build a distinct discipline. It also helped in creating geological map as from the museums everyone can know the real place from where the specific minerals were found. A collection of geological specimens, if well documented and site specific, constitutes a primary information source that is vital for the construction of a geological map, and hence an understanding of the geology and mineral resources of any area.¹¹⁷

The museum of the Asiatic Society, in true sense, served the most perfect means, by which a definite conception about the scope of the relations in geology and its nature could be conveyed to the mind of the student. The geologists and minerologists acquired their knowledge from the recorded observations of others and direct observation of the specimens preserved in the museum. In this way more men became aware of the subject, it set before them in a symmetrical and compact form, enabling them in a very short time by careful observation and to acquire rapidly the information that was necessary for them and they advanced their career of discovery. For this museum, Society gained international prestige, both collectively and individually for its members.

The establishment of the Indian Museum was described as a result of a movement set on foot so far back by the Asiatic Society of Bengal. It is owing to the labours and researches of the Society for about half a century, the establishment of the Indian Museum was initiated. The Indian Museum was able to commence its existence with a collection that would do credit to many similar institutions in Europe.¹¹⁸ The idea of a National Museum for India was first broached in the Society's application for Government aid on 15th June 1837, 'The Asiatic Society or it may be allowable to say the metropolis of British India, has had the germs of a National Museum as it were planted in its bosom.'¹¹⁹ Regarding the establishment of the Museum of Economic Geology, it was written in 1859, 'The extension of the Museum had become, essential, if it were to keep pace with the progress of knowledge, and to retain any of its value as a means and aid to instruction. With this

view, the Right Hon'ble the Governor General in Council has given orders for the formation, on a much more extended scale than hitherto, of a general Geological Collection, with a special view to illustrate the geological structure, the mineral wealth, and the manufacturing resources of this Empire'.¹²⁰ The attitude of spreading geological knowledge is clearly shown in this statement. And on this basis, the progress of investigations, the nature of classifications and the phenomena with which it was concerned, all were increasing then by Geological Survey of India.

The establishment of the Museum of Economic Geology in Calcutta generated interest in other parts of India for similar institutions. We find an outline of a project for the elucidation of the economic geology of the North West Provinces, submitted by Lt. R. B. Smith in June 1841. The details of the project along with the tabular forms etc. prepared by Lt. Smith were referred to the Society by Mr. Thomason, Secretary to the Government of N. W. Provinces on 18th June. The Committee of Papers of the Society examined Lt. Smith's proposal and submitted their report (not on record) for further action.¹²¹ Dr. Wise, Principal of Hughli College, intimated that he was desirous of forming a museum in connection with the Hughli College.¹²² Another evidence is that under the management of Madras Literary Society, establishment of a museum was proposed, whose embryo only existed at 1836. It was thought at that time that the students of Natural History, might, at the outset of their career in India, obtain initial information, as to the advances at the time, made in Geology, Mineralogy, Zoology, Botany etc. and proceed to the interior, prepared to study and labour, with advantage to themselves and benefit to science.¹²³ In 1840, the editor of the Madras Journal of Literature and Science wrote that the Society's (Madras Literary Society) large mineralogical cabinet was then already receptacle for specimens.¹²⁴ The first public museum at Madras was the Central Museum, which incorporated the small collections of the Madras Literary Society and opened at the College of Fort St. George in 1851.¹²⁵

Thus, museums, by its different activities, created a way to promote theoretical geology under the guise of applied geology.

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