

## Gem and Ornamental Stone Industry

Gems are the flowers of the mineral kingdom. They are some of the exquisite products of nature giving a great deal of pleasure and satisfaction to those who behold them and have fascinated mankind for thousands of years. Traditionally India has been in the forefront in the art of gem-cutting and polishing. Surprisingly, not much attention has been given to the study of gems by earth scientists in our academic institutions. No University in India, to our knowledge, is offering a special course in gemmology. This neglect is somewhat difficult to understand, especially, when it is realized that this industry is one of the most flourishing mineral industries today in India, with the value of exports amounting to very nearly Rs. 6,000 crores a year! No single item among our mineral resources, excepting perhaps oil, has reached this figure. Moreover, exports are to hard currency areas and the industry is, today, one of the biggest earners of foreign exchange. These facts, in our opinion, should be more widely known than at present.

The Geological Society of India recently organized a training programme to focus attention on this important mineral industry. A brief summary of the proceedings, written by one of the participants, appears separately in this issue.

### *India's Jewellery Industry*

India has a strong tradition of craftsmanship in the gem and jewellery industry. It imports raw materials in the shape of uncut diamonds and exports finished products in the form of cut diamonds and jewellery. This value-added export brings in a net revenue of as much as Rs. 670 crores in a year. 50,000 diamond-cutting units are operating in the country specially in Gujarat and Maharashtra, giving employment to over five lakh artisans. All this development has been made possible through individual effort, without any aid from Government or technological assistance.

We cannot refrain from comparing this with the situation obtaining in respect of some of our metallic minerals. In spite of all the development which we are fond of claiming and in spite of large amounts of money spent on development of infrastructural facilities, we still continue to export millions of tonnes of iron ore, manganese ore, and chromite in the raw state without any type of processing whatsoever. The price realized for the ore is a tiny fraction of the value of the metal contained in it and does not allow the payment of a decent wage to the men engaged in mining. While this is so, we are at the same time, importing pig iron, steel and ferro-alloys at prices 100 to 1000 times more than the price of the ore exported in the raw state. Our mineral resources are no doubt creating great wealth, but unfortunately not here but elsewhere. Other countries have become rich at our expense because they import raw material at minimal

cost and export finished products at very much higher prices. Resource utilization is an important factor in economic development. Prosperity is dependent on utilization. A tower of income will grow as the raw material is progressively transformed and utilized. The sooner we learn this lesson and orient our programmes the better will be our economic condition.

### *Vast scope for jewellery export*

It may surprise many to learn that the world jewellery market today is valued at Rs. 96,000 crores! India, however, is meeting only a fraction of this demand although it is stated to have the potential to produce more. An export target of Rs. 10,000 crores worth of jewellery, we are told, can be achieved without much effort. Possibilities of development are discussed in an informative article by Eswar, a diamond merchant, separately in this issue. It would appear that India should strive hard to establish a reputation for its gem and jewellery industry.

This industry today is the single largest export earner of foreign exchange amounting to nearly Rs. 5,500 crores. It is the world's largest importer of uncut diamonds and meets 30% of the world's demand in value terms and, processes 70% of all diamonds used in jewellery in the world! Indian craftsmen, we understand, have specialized in processing small diamonds in which they seem to have a monopoly. Domestic production is only 15,000 carats, while the annual requirement of rough diamonds is about 40 million carats. It is obvious more attention should be given to exploration for diamonds and other precious stones.

There is a Gem Development Corporation in Bombay which has developed three major Industrial Parks, one each at Surat in Gujarat, Jaipur in Rajasthan and Naini Tal in Uttar Pradesh. The Diamond Industrial Park at Surat is stated to have a capacity to accommodate 1000 diamond cutting units and is the only one of its kind in the world (*Mining Annual Review*, 1990, p. 95).

### *Ornamental Stone Industry*

Another related industry which has registered spectacular growth in the last ten to fifteen years is the ornamental stone industry. Interest has apparently shifted from minerals to rocks. Granite, which was being used till recently only in graveyards as a tombstone, has now found favour as a building stone par excellence. Thanks to advances in technology it has now become possible to quarry large blocks and cut them into thin slices. These thin slices take high polish. Granite tiles of various shades and colour are the most highly-priced building materials today. The world market for this commodity is stated to be Rs. 7,500 crores. India's share in this trade is just Rs. 170 crores. Efforts are being made to step it up to Rs. 500 crores by 1995 and Rs. 1000 crores by the end of the century. In spite of the existence of such rich potential, no systematic attempt is being made to assess the extent and availability of the different types of stone. The industry has largely remained unorganized. Resources are obviously abundant, capable of catering to any extent of

demand. The industry should be planned for a steady growth. Governments, both at the Centre and the State, should come forward to assist this growth and not create problems through frequent changes in rules and holding threats of nationalization of the industry. A museum has to be set up exhibiting the different varieties of building and ornamental stones available in different States of the Indian Union. A section should be devoted to an exhibition of the art of quarrying, cutting and polishing. Catalogues of building stones of different shades and colour have to be brought out. Scientists should endeavour to enrich the collections with materials of great beauty and geological significance.

#### *Minor Minerals Nomenclature – A Misnomer*

Government of India, at the time of framing rules for the exploitation of minerals, made a distinction between minerals used in industry and minerals used in construction. The first category was grouped under 'Major Minerals' with legislative powers vested with the Central Government while materials used for construction were considered to be of minor importance to be looked after by the States. Conditions have changed. The quantity and value of minor minerals have far exceeded that of industrial minerals. A time has now come to make the industry better organized. Reliable statistics of production should be collected and published annually. Rules have to be amended. For example, it would not be proper to restrict the period of lease to less than ten years with no assurance of renewal especially in an industry requiring investment in crores of rupees. No entrepreneur will risk his capital and come forward for development, if he is not assured of unfettered operation of the industry. By limiting the lease period, the industry is being condemned to remain unorganized. A rethinking is necessary on the part of Governments at the Centre and the States.

#### *Royalty on Minor Minerals*

There is a tendency on the part of State Governments to increase rates of royalty at frequent intervals. Royalty, it should be remembered, is a levy made to compensate the State for the loss of its mineral wealth. For certain commodities like metalliferous minerals, royalty is understandably high. But, for a commodity which is available in abundance, the levy by way of royalty should be reasonably low. Runaway profits can always be mopped up by other levies like sales-tax, income-tax and excise duties. In trying to squeeze the maximum out of this developing industry, we may end up strangling the goose laying the golden egg. On the other hand, States should come forward with liberal taxation measures to help the industry to grow in stature and compete in world markets.

#### *Scope for Research*

No thought is given to technological research in stone-quarrying. Even now, everywhere in the country, we witness the cruel sight of men and women sitting by the roadside, breaking stones by hand. A simple

jaw-crusher can eliminate this drudgery. Inhuman working conditions and exploitation of labour should end. Many advanced techniques are now available for quarrying which have the effect of eliminating hard labour. A variety of diamond tools are now employed for cutting and slicing. Our Institutes of Technology must direct their attention to solving the problems of this industry. Engineering properties of different types of building stones available in the country should be studied. Methods of testing quarried blocks for possible flaws should be devised. Research should be mounted towards providing quarry operators with simple equipment fabricated indigenously. At the same time, we must also ensure that traditional skills are not allowed to die in the wake of mechanisation. In the matter of dressing, cutting, grinding and polishing, skills of a very high order are even now existing which should be helped to grow. Machines should be employed to reduce only drudgery.

#### *Gemmological Institute of India*

Many of our earth scientists are probably not aware of the existence of a Gemmological Institute of India at Bombay. It was established in 1971 with a view to imparting knowledge about the gemstones of India and convince the trade to conform to international standards. It imparts education and training in the examination and testing of gemstones of all kinds. It offers specialized courses of study and research in gemmology and grants diplomas and certificates. It has a gem-testing laboratory recognized by the Department of Science and Technology. Our young men and women with an aptitude for gems should do well to take the course offered by the Institute. The Institute is located at present in a very cramped place at Gurukul Chambers, 187-189, Mumbadevi Road, Bombay 400 002. It is deserving of being provided with a more decent accommodation.

“In the culture of the future which evolves along new paths, stone as a beautiful material of nature will become part of daily life. A man will see it as an embodiment of matchless colour and nature's imperishability that only a personally inspired artist may touch.” —FERSMAN

We hope wise policies will prevail in building up the precious and ornamental stone industry on sound lines, thereby reviving the tradition and skills of ancient India.

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