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Art in Modern Industry

THE attention which has been given in recent months to industrial design and the relations between art and industry has an important bearing on other profound problems of the machine age. In spite of their efforts to foster healthier relations between creative design and craftsmanship, Ruskin and his school must take a large share of responsibility for the belief that a machine could not produce a thing of beauty. While explaining that the wisdom of art consists in its unselfish devotion to the service of man, while insisting on the necessity for providing elements of beauty in the surroundings of the workman, and that art does its duty "in completing the comforts and refining the pleasures of daily occurrence and familiar service", Ruskin brought a somewhat rigid conservatism to bear on the use of new materials in art, particularly the use of metals.

This attitude to the products of mechanical industry is rapidly passing, and even the most fleeting visit to such an exhibition as the British Industries Fair reveals the extent to which methods of mass production are now providing us with things of intrinsic beauty alike in plastics, textiles and many other fields. Particularly is this to be observed in relation to the new constructional materials with which science is providing the building industry, the significance and utility of which are only now beginning to be realised by the public.

These new materials are now finding expression in new forms adapted to their own inherent qualities and the specific and sometimes novel needs of the community to-day. They are not being impressed rigidly into those forms in which craftsmanship of the past expressed the beauty and utility of older materials. The significance of this point can scarcely be over-stated. In fact, Ruskin's objection to the use of iron in architecture was to the use of iron in the way in which stone had been used in the past, rather than to its use in new ways adapted for the expression of its own valuable qualities. It would be difficult to adduce from his writings objections which could be validly advanced against the form which the use of steel in structural work is taking to-day.

We are, in fact, witnessing to-day the escape of industrial design from the fetters of the past, and an impetus is being given to the creative instincts

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the full effect of which is far from being felt. The manufacturer is now concerned less with imitating the past than with discovering new methods of artistic expression for the new powers and materials. Industrial design has acquired a new significance, none the less important because it permits the production of beautiful and artistic objects by the thousand or ten thousand where the old individual craftsman could turn out only units or at most dozens. It affords an opportunity of expression to these creative instincts of man which is akin to the opportunity afforded in the scientific researches that have provided industry with the new materials upon which such design is executed.

The reaction of science upon industry thus itself ensures that industrial art shall be dynamic. Design is influenced as much by the materials and methods at its disposal as by taste and education, and failure to respond to the resources in the way of new materials placed at its disposal by the development or adaptation of technique, can be as disastrous as failure to respond to æsthetic considerations, or lack of sympathy with the spirit of the age in which the designer or craftsman works.

Industrial design is thus more than the application of art to a product in accordance with the inclination of an artist. It goes deeper than the sketching of graceful lines and masses. The industrial designer must understand the desires and fancies of the public, whether as a result of careful surveys or constant familiarity with the qualities in an article which promote sales. He must not only be familiar with the relative advantages and disadvantages of the similar and competitive articles on the market but also understand something of the possibilities and limitations of the factory where the article is manufactured. For him the skilful selection which constitutes art depends as much on research as the manufacturing processes resulting in the article to which the designer's art is applied.

Under modern conditions, therefore, the task of the industrial designer has become ever more complex, and indeed almost insoluble except when he works in close alliance with the scientific worker as well as the artist. Only from science can he acquire full understanding of the properties of the materials of industry and the processes by which they are worked; for upon this knowledge alone can be based a technique and resourcefulness in design capable of giving full expression to the

possibilities of the materials or the highest satisfaction to man's artistic and æsthetic requirements. The note of service is as dominant in art as in science and is indeed one of their strongest links.

The improvement of industrial design and the development of closer relations between art and industry do not depend upon the manufacturer's efforts alone. Many of the industries concerned are traditional and dominated by the outlook and spirit of craftsmanship, with all its inherent advantages and defects. In such industries, side by side with the scientific worker's task of determining, by tactful and harmonious co-operation, the basic principles underlying traditional practice, sometimes of centuries standing, there is the task of assisting the craftsman to adapt himself to changed materials and changed conditions. The very strictness with which in the past the members of a craft have guarded their organisation, no matter how high their ideals of service or individual efficiency, has discouraged receptivity of new ideas and adaptation to new conditions.

This position is the more serious when—as today—under the influence of science, new materials and new techniques are being created which are outside the traditional experience of the craftsman and for which that experience affords little or no guidance. The essential task is thus one of education—of assisting the craftsman or designer to acquire the knowledge which will enable him to cope with the new conditions and use the new materials, while safeguarding the individual instincts and ideals of craftsmanship which inspire the finest work. In certain industries, such as building and decorating and the paint industry, such educational work is urgently required. Increased facilities in connexion with the teaching organisations with which such crafts are already equipped, for the systematic demonstration, examination and handling under practical conditions of the new materials now available, are highly desirable if the average craftsman is to be kept abreast of current scientific developments in industry affecting his occupation.

Developments along these lines should be of advantage to the manufacturers of the newer materials, as well as to those who use them and the public for whom the craftsman works. The lack of personal knowledge of the average painter or builder, for example, of many of the new pigments, oils, resins, diluents, plastics, etc., not merely hinders the artistic use and development of the new products, but also prevents the craftsman



adopting the critical and independent attitude that he adopts to the old and more familiar materials of his craft. Only slowly can he acquire the practical knowledge which at once frees him from dependence on manufacturers' recommendations and then permits the skilful selection which is the essence of art.

To some extent no doubt, developments in the training of those entering traditional industries or occupations may lead to a more scientific outlook and to greater receptivity to new ideas. With the present rate of industrial change and development, however, the need for practical experience of the new materials upon which we have touched will persist. The craftsman cannot work with new materials without experience of them, however ready he may be to adopt them in his work, and however much we may do to improve the facilities for the collection and dissemination of modern technical knowledge, or the scientific and technical side of the training of the recruits for such occupations, it is only with the co-operation of the producers of the new materials that the qualified craftsman can acquire the experience which enables him to transmute them into the forms most adapted for everyday service in designs

satisfying man's artistic as well as his material demands.

The question of utilising for the widest purposes of society the qualities and advantages of the new materials with which advancing technical and scientific knowledge has endowed mankind is thus not to be solved by the efforts of one class of workers alone. It demands the skill of the craftsman and artist, the technique and method of the scientific worker, whether in academic or in industrial work, the patience and inspiration of the teacher and the appreciation of the public for beautiful and serviceable things. Only as these are in harmony can the finest results be achieved, and in each there must be not the wanton discarding of that which is old but the skilful discernment between the old and new, based on definite knowledge which can select the most appropriate material or method for the purpose. In all this there is no room for blind prejudice. The frank acceptance of change, and the willingness to face all it means, are no less the secret of the development of new industrial art than they are of mankind's capacity to evolve a new order of society competent to handle the dangers and difficulties of the present age.

## Reviews

### Himalayan Geography and Geology

*A Sketch of the Geography and Geology of the Himalaya Mountains and Tibet.* By Col. S. G. Burrard and H. H. Hayden. Revised by Colonel Sir Sidney Burrard and Dr. A. M. Heron. Pp. x+359+xxxii+65 plates. (Delhi: Manager of Publications, 1933.) 28 rupees; 43s. 6d.

THE original edition of this work, which appeared in 1908, was intended to mark the centenary of the first expedition sent to the Himalaya by the Survey of India for geographical purposes, having for its immediate object the exploration of the source of the Ganges. After just a quarter of a century, a second edition has been brought out. During these twenty-five years a great deal of detailed exploration of the region has been accomplished and much new ground has been broken.

The book is divided into four parts dealing with (1) the high peaks of Asia, (2) the principal mountain ranges of Asia, (3) the rivers of the Himalaya and Tibet and (4) the geology of the Himalaya.

When the high peaks are classified, it is found

that of those the heights and positions of which have been determined by the Survey of India, there are no less than 135 more than 20,000 feet high. There is an interesting discussion on the errors of the adopted value of the heights of peaks. In the case of high mountains it has not been possible to observe reciprocal angles, that is, observations cannot be made from the peak itself on account of the physical difficulty involved in transporting instruments to the top. On this account we have to depend for accurate results on the assumption of a correct coefficient of refraction, since refraction, among other sources—for example, the deviation of gravity—is liable to produce the greatest error. An interesting detailed analysis is given of the height of Mount Everest and other high summits as obtained from the several stations of observation, the object being to show the degree of uncertainty attached to heights of great mountains by the limitations imposed on the surveyor. Since the first edition a great advance has been made in our knowledge of the effects of atmospheric refraction, due to the investigations of Dr. de Graaff Hunter, who has worked out a value for the coefficient dependent