

PAINTS AND PIGMENTS.

Analysis of Mixed Paints, Colour Pigments, and Varnishes. By Dr. C. D. Holley and Prof. E. F. Ladd. Pp. xii+235. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd., 1908.) Price 10s. 6d. net.

Modern Pigments and their Vehicles. By Frederick Maire. Pp. xi+266. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd., 1908.) Price 8s. 6d. net.

THE book written by Dr. Holley, with the assistance of Prof. Ladd, on the analysis of mixed paints, colour pigments, and varnishes, should prove of considerable practical value, especially in America, and should be of assistance to analysts who have work of this kind to do, as it brings together much information which is otherwise scattered, and contains a good deal which is not to be found in the well-known manual by the late Mr. Hurst. Owing to the very large development of the ready-mixed paint trade in the United States, and the recent legislation there dealing with adulteration, the analysis of ready-mixed paints is of far more frequent occurrence than it is in this country, where it is very rare for a public body or an architect to have a proper examination made of the pigments and varnishes that they use.

The part of the book which deals with the determination of the covering power and tinting power of a pigment might certainly have been more developed. For a great many practical purposes this is a most important question. If, for instance, we take an ochre which is going to be used either to cover a surface by itself or to be mixed with white, the analysis of the ochre gives us little information of any practical value compared with its careful examination for covering power and tinting strength, yet comparatively little is said in the text-books about this method of assaying pigments. The most useful practical instrument for this purpose up to date has been the Lovibond tintometer, which enables the whole matter to be reduced to the plotting of comparative curves of tinting power, and also enables the actual covering power of a white lead to be exactly and accurately measured. The Lovibond tintometer is, however, an instrument which requires a great deal of practice before accurate results can be obtained, and recently Mr. Ives has introduced a new tintometer which may possibly replace the Lovibond tintometer for such purposes. The experiments that were made in this direction by Captain Abney resulted in the development of a most ingenious application of the spectrum, but in practice the Lovibond tintometer has so far proved the more useful instrument.

There is another direction in which the information in the book is somewhat imperfect, and that is the practical testing of varnishes, although the authors can hardly be blamed for this, as so little has yet been done to make the testing of varnishes thoroughly complete and efficient. The practical difficulties are great, and weather tests in the hands of different observers have proved to be very delusive. One of the most important questions on which there is need for far

more accurate information is the durability of paints, prepared from different pigments and with different vehicles, when used for the protection of iron and steel structures. This is rapidly becoming a very serious question, as the use of steel in construction is greatly on the increase, and it is not yet possible to give very accurate information upon this matter. While, therefore, this book by Mr. Holley and Prof. Ladd may be regarded as bringing up to date the information both on the analysis of pigments and vehicles, and on the practical testing of their properties, to which the attention of chemists might well be directed, it reveals very clearly that in this department of applied chemistry a great deal more information is required to enable us to determine the facts upon which the suitability and durability of various vehicles depend.

The little book by Mr. Maire does not pretend to be a scientific treatise, but merely brings together much helpful information about modern vehicles and pigments, which is stated in a simple manner, without going into chemical details, and it should therefore prove of use to architects and house-painters and decorators who wish to have some general information as to the materials they use from day to day, and who are yet unable to understand a thoroughly scientific treatise. A fair number of the pigments which are mentioned by Mr. Maire belong rather to the artist's palette than to painters and decorators, but there is no reason why these should not be included and some reference made to them. The main difficulty of the modern decorator is, however, due to the introduction of a large number of pigments which are prepared from coal-tar dyes, fresh ones constantly coming into the market, which may be fugitive or have the property of bleeding, and about which he necessarily has no information. These pigments are introduced with fancy names, each colour maker choosing such names as may suit himself, and consequently a great deal of trouble has resulted in the painting and decorating trade. It is hardly possible for any text-book to deal efficiently with this subject, beyond giving certain general warnings that before using any new pigments, outside those already recognised, careful tests should be made by the architect and decorator.

Both these books can be regarded as thoroughly useful, the one for the analyst and the other for the architect and decorator, and should do something to encourage a more scientific study of these questions in this country.

A. P. LAURIE.

OUR BOOK SHELF.

A Dictionary of Spanish and Spanish-American Mining, Metallurgical, and Allied Terms, to which some Portuguese and Portuguese-American (Brazilian) Terms are Added. By E. Halse. Pp. xiii+380. (London: C. Griffin and Co., Ltd., 1908.) Price 10s. 6d. net.

IN view of the magnitude of the mining industries of Spain, Mexico, Central America, Peru, Chile, Bolivia, and other South American countries, there can be no doubt that there is a large and increasing