

photo-lithographic processes which have from time to time been invented, including those of Donn , Fizeau, Niepce de Saint-Victor, Poitevin, Baldus, Garnier and Salmon, Albert, and Obernetter. The second chapter, under the title of "Photoglypty," is devoted to a description of the Woodbury process, after which follow two chapters on photo-sculpture and photo-graphic enamels. Chapter V. treats of photo-micrography, and is illustrated by several excellent engravings of photographs of microscopic objects. The following chapter describes the application of photography to war. The method of sending microscopic despatches by carrier-pigeons adopted during the siege of Paris will be of interest to our readers. The despatch having been printed was reduced by photography on to a collodion film, which was then rolled up and enclosed in a quill, which was fastened to the tail of the pigeon. We here reproduce a facsimile of one of these microscopic despatches. To read the despatches sent in this way the collodion film was unrolled by immersion in weak ammonia water, dried, placed between two glass plates and a magnified image projected on to a screen by means of a photo-electric microscope (see Fig. 2).

Chapter VII. treats of astronomical photography, and touches upon the results achieved in this branch of the art by Warren De la Rue, Secchi, Rutherford, Grubb, &c. The author is not quite accurate when he states that for astronomical photography "it is indispensable to make use of a reflecting telescope having a speculum formed of glass silvered according to Foucault's process." The experiments of Rutherford show that lenses may be used with excellent results. Chapter VIII. describes photographic registering apparatus, barometric, thermometric, magnetic, electric, &c.; and Chapter IX. is devoted to stereoscopic photography.

Chapter X. treats of the applications of photography to art, while the last chapter discusses the future of photography. The author expresses a hope that among other developments which the art is destined to undergo, the time may come when it will be possible to photograph by telegraphic means.

The foregoing sketch of the book will be sufficient to enable our readers to form an estimate of its contents. The translation appears to have been carefully made, and the engravings, of which there are over seventy, are excellent. The frontispiece portrait, by B. J. Edwards and Co.'s photo-tint process, is a beautiful example of permanent photographic printing. In conclusion, we can heartily commend M. Tissandier's book as a popular *expos * of photography.

R. MELDOLA

OUR BOOK SHELF

Morocco and the Moors: being an Account of Travels, with a General Description of the Country and its People. By Arthur Leared, M.D. Oxon, F.R.C.P., &c. (London: Sampson Low and Co., 1876.)

MANY readers, we believe, know less about Morocco than they do about Lake Tanganyika, the Fiji Islands, or the Arctic regions. Not that there are no easily accessible works on the country; no one, we conceive, who might be anxious to "get up" Morocco would have much difficulty in collecting trustworthy authorities,

both in English and French. The modern general reader, however, has so much to do to keep up with a decent percentage of the literature of the day, that, unless for a special purpose, he is not likely to unshelve works of travel of a past generation; therefore, even for countries near at hand and whose names occur almost daily in Reuter's despatches, it is useful now and again to have the narrative of a recent visit. Morocco, though comparatively near us, yet in many respects is so isolated and so far behind the age, that a trustworthy account of its condition is welcome. Dr. Leared was only a few weeks in this country in the autumn of 1872. He landed at Tangier, visited the neighbourhood, sailed down the coast to Mogador, calling at one or two places on the way, and at a time of great internal disturbance visited the city of Morocco, where an attempt was made to poison him, happily without success. He managed to make a very good use of his time and his eyes and his introductions, and the reader will find many interesting observations on the people and the country. Dr. Leared has, however, not confined himself to his own observations, but has evidently diligently studied various authorities on the country, and taken trouble to acquire information from various quarters. The results he presents throughout the work as he goes along, and especially in a series of concluding chapters on the country and the people, government, law, education, superstitions, agriculture, natural history, &c. The appendix contains a variety of valuable material, including meteorological observations for Tangier and Mogador. Dr. Leared is strongly impressed with the value of Morocco as a resort for phthisical patients, the climate in some parts, he thinks, being in this respect superior to that of almost any other place. To anyone wishing to have a pretty full, and on the whole trustworthy account of the present condition of Morocco, we can honestly commend Dr. Leared's book, which, we should say, contains a small map and numerous illustrations.

Tyrol and the Tyrolese: the People and the Land in their Social, Sporting, and Mountaineering Aspects. By W. A. Baillie Grohman. With numerous illustrations. (London: Longmans, 1876.)

WHATEVER other qualities Mr. Grohman's book may possess, it is at least intensely interesting. The author is by birth half a Tyrolese, and he has spent several years in the country, evidently living frequently in all respects as a native, and thus having unusual opportunities of becoming thoroughly acquainted with the country and the people. What we have said in speaking of Dr. Leared's work on Morocco, might be applied with equal force to Tyrol, which, although the yearly resort of hundreds of tourists, is known to most only on the surface. Mr. Grohman's chapters give one a very satisfactory idea of the character and customs and general life of the people, and his sketches of the mountain scenery and of the habits of the chamois and black-cock are interesting, and in the latter case may furnish naturalists with a few additional facts. The people themselves are evidently made of splendid stuff, but at present rough and raw, and sorely in need of being polished. They are overridden with superstition, and in many of their customs, especially in the matter of social morality, have a strong resemblance to what the Scotch were generally a generation or two ago, and are still in some remote districts. The book is mostly occupied with Mr. Grohman's personal adventures, and one is sometimes inclined to suspect that these have been pieced together so as to tell effectively. This, however, simply adds to the interest, and does not detract from the value of the work. One of the most interesting chapters describes an ascent of the Gross Glockner in the dead of winter by the author and four guides. The illustrations are very beautiful, and the book, we should think, is likely to find many readers.