

THE ROLE OF PHOTOCHEMICAL PROCESSES ON THE DEVELOPMENT OF COLOUR PRINTING IN THE XIX CENTURY CARTOGRAPHY

JARDIM, Maria Estela^(a), Isabel Marília Peres^(b), F. M. Costa^(c)

^(a) mejardim@fc.ul.pt, ^(b) mariliaperes@ciberprof.com, ^(c) facosta@fc.ul.pt

^(a) Faculty of Sciences, University of Lisbon, ^{(b) (c)} CCMM, Centro de Ciências Moleculares e Materiais
Chemistry and Biochemistry Department, University of Lisbon

During the decade 1860 -70, the French chemist Alphonse Poitevin (1819-1882) did research work on the photographic sensitizing properties of dichromate gelatine, which led to the development of several printing methods by photomechanical processes. This allowed significant advances in several scientific and technical fields such as cartography; production of printing maps was done with more precision and in an easier and economical way. The introduction of colour in the maps by photomechanical processes at that time led to remarkable changes in the cartographic photographic cameras and printing instruments produced by European makers.

The study of the chemical and physical principles of the most important photomechanical techniques used in the second half of the XIX century cartography will be presented, namely the three-colour photographic printing processes developed by Charles Eckstein in the Netherlands and José Julio Rodrigues (1843-1893) in Portugal. We also intend to relate their work with the photocolographic process (trichromy) developed in France by Louis Ducos du Hauron (1837-1920). In 1878, Ducos du Hauron presented at the Universal Exhibition of Paris his process of trichromy, but without obtaining any impression using photomechanical processes. At the same time Rodrigues researched and obtained coloured photomechanical prints. A parallel study of the optical, photographic and printing instruments specially designed for the XIX century cartography will be done.

Bibliography:

- DUCOS DU HAURON, A. (1897). *La Triplíce Photographie des Couleurs et l'Imprimerie, Systeme de Photochromographie de Louis Ducos du Hauron*, Paris, Gauthiers-Villars.
- ECKSTEIN, Charles (1876). *New Method for Reproducing Maps and Drawings*, Hague, Giunta d'Albani.
- KOEMAN, C., The Application of Photography to Map Printing and the Transition to Offset Lithography in WOODWARD, D. (ed.) (1975). *Five Centuries of Map Printing*, Chicago and London, University of Chicago Press, pp. 137-55.
- RODRIGUES, J. J. (1879). *Procédés Photographiques et Méthodes Diverses d'Impressions aux Encres Grasses*, Paris, Gauthiers-Villars.