

MARCELIN BERTHELOT AND INDIAN ALCHEMY

ARION ROSU

35, Crue Henri Simon, F – 78000 Versailles, France

Received: September 25, 1985

Accepted: December 8 1985

ABSTRACT: *Based on unpublished manuscripts, the article reveals the keen interest shown by Marcelin Berthelot in Indian alchemy. The French Savant has actually inspired and encouraged the first historical research in this field, undertaken at the end of the last century, in Calcutta, by the Bengali scientist Prafulla Chandra Ray.*

Marcelin Berthelot (1827 – 1907) was not only the famous scholar who, in 1860, heralded a new era for organic chemistry, but also the historian of science whose works mark the beginning of the scientific history of alchemy. Stimulated by an all – embracing curiosity similar to the wide ranging knowledge of Alexander von Humboldt, Berthelot had probably been attracted for a long time by the idea of a history of his discipline. Some biographers see a reflection, in this, from the intellectual exchanges with his friend Renan; other biographers remind us of the fascination with the question of origins for the French humanists of that time. Be that as it may, Berthelot was moved to a clearer idea of pursuing scholarly research during a trip on the Nile on the occasion of the inauguration of the Suez Canal (1869).

To assemble a Corpus of Greek alchemists that might provide him with a solid as well as an objective basis for research, Berthelot studied the old Graeco – Egyptian documents of alchemy with the collaboration of an Hellenist. Then, he

extended his enquiry, with the support of some Orientalists, to Syriac and Arabic manuscripts. After this enquiry concerning the old tradition of Greek alchemists, the French scholar was interested in the Western alchemical literature in Latin, derived from Oriental sources, always originating from the Greco – Egyptian world and disseminated abroad by the Arabs.

During his research on the origins and its diffusion throughout the Mediterranean lands and in the East, Berthelot became interested in the similar traditions in Asia (Persia, India, China). Several notes in the *Journal des savants*, reprinted in his last book *Archeologie et histoire des sciences*, bring Berthelot's alchemical interest to the fore. In the treatises of Greek, Syriac and Arabic alchemy, one can find some links between Persian and Greek alchemical traditions. The Arabic alchemists, who refer even to the Chinese, mention Indian science in relation to the Persian. The Syriac texts also cite Indian products. For lack of Persian and Indian sources, in order to study the diffusion of the Greek ideas and

processes throughout the Near East and in Eastern Asia, Berthelot resorted to information provided by communities preserving these alchemical traditions.

On account of his position as a famous scholar and statesman (he was twice minister), Berthelot had access to the printed documents and the manuscripts he required as well as to sound information, through his foreign contacts with scholarly and diplomatic circles. These contacts and this correspondence are clearly referred to in his works when they served his enquiry, The documents connected with this investigation, missing in the national collections of manuscripts and in the archives of Paris, can be found in the private collection belonging to Mr. Daniel Langlois – Berthelot, great – grandson of the scholar.

Certain autography letters contain information on Persian alchemy, one of the sources of which Berthelot hoped to find among the Parsees of Bombay, who had been visited by James Darmesteter in 1886, much to the benefit of Oriental studies in the West. Berthelot however was less favoured than his colleague who was a Zend – Avesta scholar at the College de France, for the Parsees did not have the texts on alchemy and magic which he had sought, with the help of Lord Dufferin, ex – viceroy of India (1884 – 1888). Appointed British ambassador to Paris in 1892, the Marquis of Dufferin struck up a close friendship with Berthelot, borne out by ten cordial letters in English or French, addressed to the scholar by Lord and Lady Dufferin.

The ambassador sought information on Persian alchemy in London for Berthelot. Sir George Bird wood, of the India Office, who had lived for a long time in Bombay and knew the Parsee community, replied in

four letters forwarded to Berthelot. Bird wood compiled a note on Persian magic also for the attention of Berthelot and forwarded the accurate questions put by the French chemist to the High Priest of the Parsees at Bombay. The latter answered by two letters and a report. The negative answers on Persian alchemy received from London and Bombay are confirmed latter by the eminent Orientalist Max Muller, a foreign member of the Institute de France with whom Berthelot had made acquaintance in Paris in 1895.

After his fruitless inquiry in Iran, namely about the Hellenized magus Ostanes, Berthelot turned towards India, where in 1897 he made contact with the chemists Prafulla Chandra Ray (1861 – 1944), professor at the Presidency College in Calcutta. The fact that the contact between both chemists was maintained by letters and publications is reflected in their works. Berthelot used Ray's communications in three articles of the *Journal des savants* (1897, 1898 and 1903) and Ray himself made a most favourable mention of Berthelot's works and letters in the prefaces to his *History of Hindu Chemistry* (1902 – 1909). This correspondence took the form of autography letters by P. C. Ray from 1897 to 1902, and a manuscript study entitled: *Materials for a neglected chapter in the history of chemistry or contributions on Indian alchemy*, reviewed by Berthelot in the *Journal des savants* (1898).

P. C. Ray confesses his disappointment with the work of historians such as Kopp, Hofer and Berthelot himself, who did not mention that the Indian, too, had practiced alchemy in the middle Ages. In a letter of February 9th 1898, he informed Berthelot that he would send him a manuscript on this forgotten chapter in the history of chemistry, in answer to a request of Berthelot to the young Indian scholar. Ray emphasized that

he was very anxious to demonstrated the indigenous origin of Indian alchemy. This disertation, which remained in manuscript, is in fact the origin of Ray's two – volume printed work on the history of Indian chemistry. He sees it as the counterpart of the Berthelot's works on Greek, Arabic and Syriac chemistry: "a work which will be as it were a kind of supplement to your great works on the allied subjects, which I shall always keep in view as my ideal" (letter of September 22nd, 1898).

In the preface to his first volume (1902), Ray shows the circumstances that led him to publish, such a book. In 1897, he wrote to the French scholar whose publications he already knew. This correspondence with Berthelot deeply influenced his historical research, which initially took the form of a manuscript dissertation and became the first published History of Indian chemistry. Today this work which has become quite rare, has been succeeded by a second edition which is a thorough revision of the original. The author acknowledges his debt to the interest shown by Berthelot in Indian alchemy: "The work owes its existence, as I have indicated in the preface, to the interest taken by you in Hindu alchemy" (letter of July 3rd 1902).

In the last letter of November 5th 1902, Ray shows his satisfaction with Berthelot's answer promising a detailed review of his book in the *Journals des savants* (1903). As Berthelot observes the lack of authentic documents on the original doctrines of Indian chemists, the French scholar, in his critical review of the book, thanks P. C. Ray for "this long and arduous work, and for having pointed out and analysed the new original documents made known to us. It is an interesting chapter added to the history of the science and of the human mind, a particularly useful chapter for the

knowledge of mutual intellectual relations which existed between Western and Eastern civilizations." Ray shares the sorrow Berthelot feels in that India has not yielded alchemical texts similar to Zosima's and Graeco – Egyptian alchemists ancient systematic treatises.

The review of the first volume encouraged the author from Calcutta to persevere in completing his work, although the scholar who had inspired and instigated it died in 1907 before the publication of the second volume (1909). In the preface, Ray expresses his grief concerning this loss, thus allowing him to dedicate the book only to the memory of Marcelin Berthelot: "The great chemist and savant, whose inspiration has been my guiding principle throughout the arduous task and whose lengthy and appreciate review of the first installment has been a stimulus in the continuation of it, is no more.... All that now remains for me is to dedicate this volume to his sacred memory".

Such sorrow and such a tribute can all the better be explained by the fact that both scholars, French and Indian, in addition to their correspondence for several years, also met in one occasion in Paris. Ray came on a "pilgrimage" to Paris in March 1905, when spoke for a long time with Berthelot and was welcomed as a visitor to the Academic des Sciences whose permanent secretary was Berthelot. The documents found in the family collection testify to the importance of the relationship between the two chemists and shed more light on the contribution of each, master and disciple, in the creation of the history of Indian chemistry. The enlightened and long-lasting interest shown by Marcelin Berthelot in Indian alchemy enlarged his sphere of historical research beyond the Mediterranean world, to which

his humanistic curiosity had been restricted
until that time.*

*(The full text in French of this paper will
be published in the *Bulletin de l'École
française d'Extrême-Orient* (1986).