The mineral wealth of Brazil

Jobim Jose
Title: The mineral wealth of Brazil

Author: Jobim Jose

This is an exact replica of a book. The book reprint was manually improved by a team of professionals, as opposed to automatic/OCR processes used by some companies. However, the book may still have imperfections such as missing pages, poor pictures, errant marks, etc. that were a part of the original text. We appreciate your understanding of the imperfections which can not be improved, and hope you will enjoy reading this book.
THE

MINERAL WEALTH

OF

BRAZIL

BY

JOSÉ JOBIM

Livraria José Olympio Editora
Rio de Janeiro
Brazil
PREFACE

It may be said that little is known of the true extent of the mineral resources of Brazil. The data which is divulged in publications or reports accessible only with difficulty by the public are, with rare and significant exceptions, antiquated and thus do not fully correspond to the needs of the interested.

Some years ago, while serving in the Brazilian Consulate in Yokohama, Japan, the writer had the opportunity of assisting Consul Raoul Bopp in the preparation of Geografia Mineral which had as its objective the evaluation of the international importance of the mineral wealth of Brazil. This book, published in Japan and distributed in Brazil, attained a popularity far beyond the expectations of its authors and was depleted with surprising rapidity. At practically the same time, there was edited in the city of São Paulo a book which described the mineral situation within the country, A Riqueza Mineral do Brasil, written by Mr. S. Froes Abren. Being the work of a technician of unquestionable authority in this field, it may be said to be one of the most complete upon this subject. Later, Consul Josias Leão of the Commercial and Economic Division of the Ministry of Foreign Affairs wrote a monograph of great value, Mines and Minerals in Brazil, for distribution in the United States in which was included much information hitherto unpublished. The edition of Mines and Minerals in Brazil is now completely exhausted, the editors continuing to receive requests for copies, principally from the United States. In preparing, in 1940, the annual edition of the survey of the Ministry of Foreign Affairs, Brazil, the writer, with the assistance of Harry S. Ikuta and Americo Cury, members of the Centro de Estudos Economicos, and the orientation of the Director-General of the Departamento Nacional da Produção Mineral, Dr. Luciano Jacques de Morais, organized a compilation of the above works which had been published. It was thus possible to present an actualized survey of the mineral situation which was further amplified with new data in another book by this writer, Historia das Industrias no Brasil, published in 1941.
This present publication is a continuation of the above works on minerals with additions of new information as it has become available. There was the guiding thought of presenting a retrospective panorama of the production and trade in minerals in the country and the avoidance of excessively technical aspects of the problem, bringing out the economic aspects, inasmuch as it is certain that the War will bring modifications of great importance to the mineral industry in Brasil. In this connection it is of interest to point out that, in 1913, minerals represented but 1.70% of the total exports of the country, rising to 6.42% in 1917. With the return of peace and the reorganisation of international trade, the importance of minerals declined and in 1935 accounted for 1.01% of the total. By 1939, its participation in the whole had increased, amounting to 5.40%, while in 1940 it had already attained 10.35%.

Today, the interest in minerals in the country is much more accentuated and in addition may be said to be more profound since the development of the iron and steel industry, metallurgical industry as well as the building materials industries has attained an impressing upward rhythm due in no small part to the increased capacity of absorption of the internal market. Upon this subject, the writer had the opportunity of describing in greater detail in a booklet, Chegou a Vez dos Minerais, published in 1939.

Taking a significant part in the development of the mineral industries is that of official action particularly evident during the Vargas Administration which in the legal aspects notes the enactment of the Codes of Mines and Waters which is the fundamental legal document on the industry. In the sphere of economics, the reader will note the progress made in a perusal of the statistics, which were purposely divided, whenever possible, into the decade previous (1920-9) to the installation of the Vargas Administration and in five-year periods which followed. An important phase of official action which deserves particular mention also is that on the part of the Ministry of Foreign Affairs which besides being in constant contact with overseas sources or markets be it in the field of the exportation of Brazilian minerals or the importation of foreign raw materials or production equipment, maintains relations with the official bodies. However, there is another phase in Brazilian diplomacy which has been exceedingly fruitful during the present term of Minister Oswaldo Arahna in which, besides the exceptionally large number of treaties and agreements signed which facilitate the exportation of Brazilian minerals, there were realised the huge loans which made possible the construction of the large scale iron and steel works of Volta Redonda in Estado do Rio and others which accelerated the improvement of the internal transportation system in order to accomodate, in no small part, the distribution of the minerals from mine to factory or export port.

There may be mentioned, in addition, the great interest manifested in the industry in the state of Minas Gerais, which in part may be traced to that which arises naturally, accounting as the state does for about 50% of the national total, and that which in greater part may be said to arise from the
desire of the State Administration to guide and maintain constant touch with
the activity. The thoroughness of the latter is apparent upon a perusal of these
pages in which there is evident the statistics on the production and industrial
organisation in that state for all minerals produced there these in reality, being
the resumé of more detailed data.

Although there was the desire to avoid highly technical data, there was,
necessarily, the inclusion of the principal geological aspects of the problem for
which there was freely used the valuable publications and suggestions of the De-
partamento Nacional da Produção Mineral whose members are realizing a
magnificent work which could little be improved. The writer also had the good
fortune of having at his disposal the facilities of the Library and Archives of
the Conselho Federal de Comercio Exterior through the kindness of the Director
of the Secretariat, Consul Raul Bopp, whose suggestions proved a great in-
centive in this work. In addition, the writer wishes to mention the collaboration
received from the Director of the Federal Serviço da Estatística Economica e
Financeira, Mr. João de Laurenço, Mr. Ribeiro da Costa, Director of the Depar-
tamento Estadual de Estatística of the state of Minas Gerais and Mr. Mario
Beni, Secretary-General of the Conselho de Expansão Economica of the state
of São Paulo.

Grateful acknowledgements are hereby extended to the valuable coopera-
tion of the members of the Conselho Federal de Comercio Exterior and Cen-
tro de Estudos Economicos, Americo Cury, Octavio Malta, Waldemar Pinna,
Dona Bluma C. Wainer, Dona Dulce Barbosa and Harry S. Ikuta, the latter
being entrusted with the translation and adoption of the text to the English.

In the attempt to present a statistical picture of the mineral industry
with the scanty elements at hand, it was necessary, in none too few cases, to
apply personal interpretations to the vague terminology utilized at times in the
references and may have given rise to shortcomings which are to be regretted.
It may be noted, however, that it was always with the view in mind of present-
ing as conservative an estimate as possible that guided the final word.

It must be pointed out that the colloquial terminology, "Estado do Rio"
(State of Rio), which refers to the state of Rio de Janeiro was adopted through-
out the book for purposes of clarity inasmuch at it would otherwise appear
as "Rio de Janeiro", and thereby give rise to the confusion which is unavoidable
due to the world-wide fame of the city of Rio de Janeiro which, in addition, is
itself a federated unit.

In view of difficulties often encountered abroad in the comprehension
of the terminology of the Brazilian monetary system which does not strictly
follow the orthodox decimal system, the writer wishes to add, by way of expla-
nation, that the mil-réis, the standard unit of currency, when translated means
one thousand reals, mil being one thousand and réis, the plural form of real in
Portuguese. One conto-de-réis which when abbreviated is conto and is equiva-
 lent to 1,000 milréis.

Rio de Janeiro, May 23rd., 1941.

JOSE JOBIM
THE MINERAL WEALTH OF BRAZIL

CONTENTS

I. PREFACE .............................................................. VII

II. GENERAL SURVEY .............................................. 1 — 14

III. METALLIC MINERALS ........................................... 15 — 70

1. General Survey ................................................. 17
2. Antimony ......................................................... 19
3. Arsenic .......................................................... 20
4. Aluminum (Bauxite) ............................................ 21
5. Beryllium ......................................................... 24
6. Bismuth .......................................................... 27
7. Cadmium ........................................................ 28
8. Chromium ......................................................... 28
9. Cobalt ............................................................ 30
10. Columbite and Tantalite ....................................... 31
11. Copper .......................................................... 32
12. Gold .............................................................. 34
13. Iron and Steel ................................................. 37
14. Lead and Silver ................................................ 48
   Lead ............................................................ 48
   Silver .......................................................... 51
15. Manganese ...................................................... 52
16. Mercury ........................................................ 55
| 17. Molybdenum | 56 |
| 18. Nickel | 57 |
| 19. Platinum | 59 |
| 20. Radio-active Minerals | 61 |
| 21. Tin and Tungsten | 61 |
| Tin | 61 |
| Tungsten | 64 |
| 22. Titanium | 65 |
| 23. Vanadium | 67 |
| 24. Zinc | 67 |
| 25. Zirconium | 69 |

IV. NON-METALLIC MINERALS

(Excluding Building Materials and Fuels) | 71 — 126 |

| 1. General Survey | 73 |
| 2. Asbestos | 76 |
| 3. Barite | 79 |
| 4. Diatomite | 80 |
| 5. Feldspar | 81 |
| 6. Fluorspar | 82 |
| 7. Graphite | 83 |
| 8. Kaolin | 84 |
| 9. Mica | 85 |
| 10. Mineral Fertilizers | 87 |
| General Survey | 87 |
| Nitrates (Natural) | 88 |
| Phosphates | 90 |
| Potash | 93 |
| 11. Mineral Water | 93 |
| 12. Monazite | 96 |
| 13. Precious Stones | 97 |
| General Survey | 97 |
| Diamonds | 98 |
| Carbonados | 102 |
| Esmeralds | 103 |
| Corundum | 103 |