

ANHEMBI MAGAZINE AND NUCLEAR ENERGY

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ABSTRACT

From 1952 to 1962, a scientific and cultural periodic, named “Revista Anhembi, was sold monthly. The magazine target was Brazilian and foreign schools and universities, his students and whoever was interested on culture, science, politics or signed articles. This publication purpose was to be the divulgation vehicle of new cultural and scientific ideas, most of them produced by Brazilian researchers, intellectuals and artists. Together with the cultural production of authors like Carlos Drummond de Andrade, the magazine also covered the major happenings from Brazil and the world. The editorials were signed by the magazine director – Paulo Duarte – one of the intellectuals with participation in the University of São Paulo foundation. Other researchers, already well-known at that time, such as José Reis, Florestan Fernandes and others, published in Anhembi, regularly. Their articles presented always a favorable content to democracy and the country development. What was out-of-date and its “agents”, the dictatorships, the corruption were open enemies of the magazine, which criticized governments, like for example, General Salazar’s, in Portugal. The criticisms, sometimes contrary to the status quo, finally justified the circulation prohibition in some countries, like in Portugal, and also a diminishing of the advertising sponsorship. Not only because of these problems, the increase in the paper cost made, in the long run, the publication of Anhembi impossible to continue. Meanwhile, the national nuclear policy and its defenders, like Alvaro Alberto da Motta e Silva, besides some other researchers, was not one of the routine issues covered by the magazine. Despite the magazine reported, in every new edition, a series of occurrences and claims - new universities and research centers foundation in the country, the struggle for funds, the national commissions asking for the full-time dedication regime for research, the nuclear issue focused, mainly, bombing tests by the summit nations, the United States and the Soviet Union (now Russia). Almost by the time that the magazine activities discontinued, it finally changed its intellectual posture concerning nuclear technology – one of the few items of news treated with prejudice, at least until 1957 – had been nuclear related subjects.

1. INTRODUCTION

Anhembi Magazine was a scientific-cultural periodical that circulated among households, schools and universities in Brazil and other countries. The magazine proposal was to be a divulgation vehicle of new cultural and scientific ideas, most of them produced by Brazilian researchers, intellectuals and artists.

Enriched by cultural production of poets as Carlos Drummond de Andrade, the magazine, also, presented news on the main political, cultural and scientific events, which took place in São Paulo, other Brazilian states and in the world. The editorials were signed by the magazine director – Paulo Duarte, one of the founders of São Paulo University (USP) – and

other scholars of that time, as José Reis, a biologist, researcher, journalist and science man. The theater plays summaries performed in that period were written by Paulo Mendonça, theater history professor of the former Drama Arts School (EAD), cradle of the modern theater in Brazil. He was, also, the magazine editor.

Editorials and columns were always written with themes favorable to the democracy and the country development. The old-fashioned and its agents, such as dictatorships and the corruption, were declared enemies of the magazine, which criticized governments like that of General Salazar, in its pages. The critics to governments, as Portugal dictator, considered “undesirable person” by the magazine, led to its circulation prohibition in some countries, clearly exemplified by Portugal, also causing the advertisement diminution, allied to those who had become enemies along the magazine issues.

The decrease of advertisements and the increase in the paper cost, along the time, caused “Anhembi” publication not to be feasible any longer¹. In 1962, it closed, after changing its view of nuclear technology – one of the few items which had been presented with prejudice, as it will be seen later in this analysis, at least until 1957.

The national nuclear policy and its authors, as Álvaro Alberto da Motta e Silva and others leaders of public scientific institutes of Brazil, was not a target of significant attention by the magazine, as it will be showed later. In spite of the country research, besides the articles on claims that had occurred in these institutions, there was, also, the report of what took place in national commissions for the implementation of full period regime dedicated to research, but, the interest in nuclear field was focused, mainly, on bombing tests by the world powerful States, the United States and the Soviet Union.

The magazine, for a long time, informed, basically, studies and discussions from the international community, with the connection between nuclear technology and deaths, by bombs or irradiation, subsequent to tests carried out around the world.

Nevertheless, the incidence of this type of news diminished along the time, while the peaceful uses of nuclear technology started to gain space in the magazine science sector. This was always headed by José Reis articles, under the name “Ciência em 30 days”.

Emphasis was given to the possibility of fusion reactors² and the newly-born national research, with punctual citations to the Brazilian nuclear physicist, Marcello Dammy de Souza Santos³ and the University of São Paulo reactor, installed at the just created Atomic Energy Institute. The myth eradication of some damages caused by the nuclear energy, also, occurred, e.g., the claim by some scientists that nuclear bomb tests caused irradiations, which would, certainly, modify the human DNA and put an end to the Earth.

Brazil participation in the Atoms for Peace Program, as well as the work done by Admiral Álvaro Alberto to foment and develop Brazilian nuclear research were left aside, even with

the magazine insisting on its editorials that the national research should be valued, so that Brazil could grow independent from technology importation.

This is the proven incoherence of this work. In a magazine, with an editorial proposal, very clear in other science articles and, even in other editorials, of dealing with all themes respectfully, aiming to strengthen points of view free from any myth, created, by mistake, the myth of “bad science” for nuclear science and technology.

In spite of the magazine being aware of its error, in its last years, and started to fight the vision of “nuclear research - devil art”⁴, it is found that the Brazilian nuclear research and policy was left aside. The political discussion, which could have changed the nuclear policy, had not been addressed.

2. THE COVER OF NUCLEAR TECHNOLOGY IN ANHEMBI MAGAZINE

2.1 Anhembi Magazine

As it was highlighted, Anhembi magazine was monthly published in Brazil, edited in São Paulo. The personality of the “paulistano” Paulo Duarte helps to understand the editorial line of this communication vehicle.

Anhembi was a Paulo Duarte’s dream made true, as well as São Paulo University, the Culture Department and the Pre-History Museum, all of them with Duarte intense participation.

Paulo Duarte fought in the Constitutional Revolutions of 1930 and 1932; he was also a state representative, eminent journalist and a science and culture defender.

He never abandoned opposing any type of dictatorship or ante-democratic government. Because of this, he was exiled several times and compulsorily retired from his post as USP professor in the decade of 1960.

For the same reason, the magazine was prohibited in Portugal and Angola, exactly for its critics to regimes considered authoritarian and corrupt, in these countries.

Duarte, also, endeavored, together with other important people from his time, to create São Paulo University, a future environment for the development of cultural, intellectual and scientific elites.

Anhembi Magazine foundation is a connected action with USP creation. Not only the University creation, but the cultural movement “Semana da Arte Moderna”, in 1922, which, also, had Duarte support.

Therefore, Anhembi is seen very close to the university, reporting much of what occurred there, such as arguments among professors, Butantã campus construction, FEA creation – considered an Ademar de Barros caprice, by Anhembi journalists⁵.

With a huge section of articles, the editorial front, the magazine is published monthly to its readers. Paulo Duarte was not limited to talking about national and international politics, but he, also, introduced poetry and theater criticism, cinema, music and sports comments, in addition to the daily news. Besides Brazilian poetry, even Charles-Pierre Baudelaire work would be found in the magazine, together with Manuel Bandeira and João Cabral de Melo Neto. It was on Anhembi pages that Carlos Drummond de Andrade published, for the first time, (in August 1961) the famous narrative poem "The two vicars"⁶.

Each section had the same features that the publisher had undertaken in the first issue, published in December 1951: to defend the science, culture, freedom of thought and criticism, reflecting on all issues that affect the society in the fields of social relations among Brazilians, in order to improve the citizens' quality of life, knowledge and culture awareness. A journalism of the highest level was used, aiming to be more pluralistic, objective, and reflective as possible. The magazine shows an extremely critical, educational, and informative posture in their articles. All articles published in the discussion section, which were conducted by the editorial in the first ten pages, were written in a conscious and skilful way, to inform the reader in the best possible way.

Moreover, Paulo Duarte had as collaborators notable representatives of science and culture of his time. There were names such as, José Reis, G. Riccioti (Bari Univ.), A. Duzat ("Ecole des Hautes Etudes"), A. Whaler (Bahia Univ.), A. Bragaglia (Rome Theater School), Carlos Drummond de Andrade, C. Baudoin (Genoa Univ.), Mira y Lopez, Erico Verissimo, Gilbeto Freyre; Jairo Ramos (Esc. Paul. Méd.) Jean Hyppolite (Sorbonne), Luis Martins, Manuel Bandeira, Moyses Vellinho, Murilo Mendes; Otoniel Mota; Paul Claudel ("Ac. Française"), Roger Bastide (São Paulo Univ.), Sergio Buarque de Holanda, Sérgio Milliet, Florestan Fernandes, Paulo Ronái, Fernando Henrique Cardoso, among many other respected scholars and intellectuals.

As it may be seen, the magazine gave the best treatment for the education and development of the criticism strength of mind of its readers. As a consequence, it became known worldwide, subscribed by several foreign universities. It was considered the Brazilian "Spirit", with more subscriptions in Europe than in Rio de Janeiro. It served as a rampart against Brazilian politicians, considered dictators and corrupt, as Getúlio Vargas and Adhemar de Barros. He, also, declared war against all anti-scientific or anti-national thought that dominated the minds of a great part of Brazilian conservative elites. There are articles with strong critics, attacking persons and groups despised by the magazine publishers, some even against bad professors, negatively deemed by students and by the magazine.

There was, also a tradition of publishing articles, news and reports that criticized the state of education and science in the country. Anhembi's director thought that with this attitude, a pro-science and research culture would be formed, allowing Brazil to have autonomous technological development. He, also, defended the Brazilian literature and culture, without prejudice. For instance, the magazine reviewed and highly appraised João Guimarães Rosa's novel, "Grande Sertão: Veredas".

In fact, Anhembi always paid a tribute to those who had been, in life, important in science, arts and culture, in general. A biography, usually with five pages, on average, was released in the publication. This was the case, for example, with the deaths of Antonio Mendonça and André Dreyfus⁷. The way science, culture and reflections on daily life, social and political

aspects were placed and reported, are rare in the Brazilian written press today. Taking into account the great sensationalism in the mass media nowadays, the creation of Paulo Duarte deserves high admiration and respect. In Brazil, there has never been a scientific and cultural publication as well organized and produced.

Anhemi, in addition to critical texts, also, presented varied news and reports in "hardnews" style. Therefore, it did not omit to act like a common periodic and its editorials would cover, not only scientific news but, also, world politics, science and technology, theater, sports, literature, everyday events and factual, even musical events were included. However, the magazine, as a whole, was difficult to be understood by a layman. Its reading could be enjoyable and beneficial to a student, or a high school student work, at least. Its reading and full comprehension required a good educational and cultural level. The editorial line certainly did not follow the premise of being the type of journalism, in which the material concerned simple and easy subjects to be accessed by most of the population. In fact, few articles were appropriate for the reading of most Brazilian citizens, who barely had access to the first level of education, at that time.

Recurrent were the critics to the dictatorships in the world, especially Salazar's and governments that were not in agreement with what the magazine thought of an ideal government – nationalist, while defending education, research and technology and promoting the welfare of the population, plus democratic. The United States and Soviet Union⁸ were not saved either. Nor were Charles De Gaulle or Fidel Castro, even with the magazine supporting the Cuban Revolution. However, magazine is coherent with the view of Paulo Duarte's point of view expressed in one of its editorials: that the best policy proposal for a nation is the "humanitarian socialism", an upper stage to the "authoritarian socialism", then, supporting the communism, the communist party and other leftist sectors. The "humanitarian socialism" appeared to be somewhat outside from the democracy that was in progress in most of the world.

This ambiguous behavior is also present when the magazine is said to be nationalist, but did not adequately cover bad agreements related to the exchange of radioactive ore from Brazil, exported to the U.S in exchange for wheat. Not only the issue of minerals and wheat was left out and little discussed. Until the creation of an exclusive section on science (Science in 30 days or *Ciência em 30 dias*) on issue # 39 (1954), the atomic matter comes to be mentioned only as intrigues of nations that disputed the hegemony of the world. The section 'Science in 30 days' was a decisive milestone for a magazine that wanted to be closely linked with education, science, research and technology.

2.2 Science in 30 days

Anhemi Section 'Science in 30 days' was a space for scientific articles and also served as a teaching space for scientific journalism. The diversity of reports on it was remarkable. José Reis, in some issues, opens the session with articles criticizing the situation of teaching and research in the country, alternating the critics target among government, university and CNPq. Although praising the CNPq creation, the magazine criticized it sometimes. It is also noticeable that in contrast to many scientific journals seen today, Anhemi science section presented a balanced quantity of articles of the three major scientific fields of knowledge:

humanities, science and biology. The fact that the current press of large circulation still ignores most of the humanities research done in the country, this is a regrettable regression, when compared to the “Revista Anhembi”.

Some articles deserve to be remembered here, as one on "What cancer is"⁹, which attempts to explain, in the most informative way of teaching, how the cancer works and what its possible causes are. Another article explains an interesting discussion related to the implementation of the full dedication regime to the researchers from USP, which was taking place in the university corridors and CNPq's¹⁰. The article shows, along five pages of a strong position, the magazine support for the development of science in the country, through the indispensable regime of exclusive dedication.

Finally, the magazine does not save itself from discussing the science situation in the country. There are many interesting articles that criticized tobacco smoking and accused it as a possible cause of deaths. Scientific discoveries and international intrigue are also disclosed. However, the magazine had serious problems in defining the ideological guidelines of articles related to nuclear power in the country. This problem had existed since before the creation of Science in 30 Days.

Much space was given to atomic policies worldwide. However, for a reader of the magazine, the country had alienated this matter, both in research and technology, as for agreements with other countries. There were, also, the obstacles that a conservative elite created to prevent the development of nuclear technology in Brazil.

3. AN ANALYSIS OF SHORT ARTICLES RELATED TO THE ATOMIC ENERGY SUBJECT, PUBLISHED IN ANHEMBI MAGAZINE

3.1 The coverage of nuclear research in the ten years of Revista Anhembi

All the issues of Anhembi MAGAZINE, since its creation (1952) to the year 1956 were studied, searching for articles in the magazine on nuclear technology, the research developed in Brazil (or attempts to develop this technology), the research developed abroad and on the negative aspects that the Cold War inflicted on the area. The research continued to verify whether the articles explicitly showed a supportive attitude or if they were against the nuclear area. From the creation of the magazine in 1952, to 1956, there are few articles describing the possibility of its peaceful use. What prevails are articles criticizing researchers in the field, in the world, placing them as bellicose in their majority, and insensitive to the bombs effects.

Another evidence of this predisposition is the association between nuclear technology and genetic abnormality, as some studies showed, at that time, correlating human DNA mutations and radiation from bomb tests. This points to a destructive perception of “the nuclear”, as something that could cause the end of the world, directly (by war) or indirectly, by the effects of radiation. From 1957 until the end of the magazine, in December 1962, the number of articles on nuclear power had increased, as well as articles on science in general, in a few magazine issues. There is an editorial change, marked mainly by the emergence of a national research, the U.S. research on reactors fueled by thorium and for the spread of nuclear fusion, as a method of obtaining energy for the future.

Revista Anhembi became a supporter of nuclear research even though it could be used to develop the bomb, it, also, had peaceful essential uses for the survival of the species. Especially, the case of a future fossil fuels crisis, already mentioned in Anhembi pages, in the early 1960's¹¹. However, the magazine ended soon after this news. It discontinued by the pressure of groups that were antagonistic to the magazine, usually associated with politicians, who disapproved it and were accused, by Anhembi, as corrupts. Such pressures convinced major advertisers to quit the magazine and, according to the magazine editorial, sabotaged the physical distribution of the magazine, interfering in its sales and causing subscribers to be unsatisfied with the delays in receiving their magazines.

2.2.2 Coverage of nuclear research in the ten years of Revista Anhembi

Over ten years, Anhembi magazine published about 1211 reports on science, research and technology. Among them, 1203 were published in the 'Science in 30 days' section, started in February 1954. Nuclear subject articles totaled only 8.5% of all scientific reports. These could be divided, according to the main line used in the narrative text of each, in six major groups. There is a comparative table bellow, which gives some facts and figures on the articles published. The predominant themes, within the reports presented in the magazine, are showed, according to readers' preferences.

Nuclear's themed articles Subject	Year of publication											Total
	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	
General nuclear research	0	1	2	0	3	3	4	4	1	2	1	21
Medical applications	0	1	0	1	0	1	0	0	0	0	0	3
Bombs, radiations and genetics	0	0	1	5	6	6	4	8	4	3	0	37
Energy production	0	0	0	0	1	2	7	1	0	0	0	11
Nuclear development in Brazil	0	0	0	1	3	2	3	0	3	2	0	14
Cold War	1	1	1	2	1	3	3	1	1	1	1	16
Total	1	3	4	9	14	17	21	14	9	8	2	102
Scientific articles in each year	*	*	*	*	*	218	189	175	159	120	91	1211

* Observe that the number of scientific articles, published in each of the initial 5 years of Anhembi, was not showed. Nevertheless, as a whole, 259 scientific articles are estimated to be presented in the magazine, in that period.

It can be seen that there were higher and lower peaks of distribution of all subjects along the years and the Cold War was the only theme present in all years. However, the bombs and radiation, which caused the most damaging type of articles for the readers' nuclear

perception, is the subject of many articles on nuclear power. Almost everything was speculated in Anhembi pages: from mutations in future generations (to be born-in the 1980s) to food radiation¹². The panic had reached the point where scientists and commissions identified a problem of "mental hygiene"¹³ in people, who were, in general, too much exposed to the media exaggerated atomic coverage. The problem was not only here, but apparently in the whole world. After this campaign ran by scientists, Anhembi showed a more positive coverage. More conscious features arose. They were less and less desperate to the readers.

In one of its articles, the magazine admits that the subject had gained too much prominence and had been discussed "too much". Thus, radiations should not be a major topic anymore. Another finding is that, the peaceful purposes of nuclear energy research, received little attention by Anhembi reporters for a long time. Only from 1957, the research for pacific uses started to receive enough space in the magazine. Thus, the readers could change their opinion about the nuclear technology, although much has been spoken of the fusion¹⁴ reaction - until now difficult to be executed - but not much has been spoken of fission.

It is the dissemination of Marcelo Dammy¹⁵ work, and the efforts of José Reis¹⁶ that punctuated the reality of the Brazilian nuclear research. An article by Goldemberg is remarkable in the magazine. His assumption of fossil fuels scarcity and nuclear energy to replace them is the final proof of a change in Anhembi: nuclear energy is the future of all energy matrices. And that goes against a number of reports which had been published in more than 15 editions of the magazine (around# 13 to #29). There is a great set of texts written by various experts, who questioned and discussed the energy crisis the country was undergoing. That time, those specialists pointed the construction of more dams as the solution of the problem. Comparing the two halves, it is evident that there was a change of mindset, encouraged, perhaps, by local scientists. Some themes still remained, such as radiation and the Cold War.

The Brazilian research only began to appear in the magazine with the purchase of the idea of nuclear energy to produce electricity. However, it restricted to superficial comments by Jose Reis, to Marcello Damy and to the plan of São Paulo reactor - the research reactor IEA. Anyway, it was a significant change. The reading of all the magazine articles, published throughout its existence, shows that despite the bad start to the nuclear issue, it had progressed in reporting the subject. The magazine changed, from partial and sensational coverage, to the acknowledge of the existence of specialists in the field, in Brazil. Only the "thorium group" stories and the national policy for nuclear were not reported in the magazine.

Taking into account the delay with which the magazine developed the theme of monazite sands and nuclear energy, it seems that these issues omitted before, would, also, be analyzed, in the long run. Unfortunately, the magazine ended before this subject could be addressed.

3. CONCLUSIONS

Anhembi magazine always stated that science should be developed for Brazil to become a developed country with high levels of life quality. Thus, extensive reports and articles discussed a wide range of subjects. Made by the finest Brazilian intellectuals, the journal had

news, reports and dissertations extremely diverse and impartial, as much as the theme allowed. The objective was to debate until exhaustion, so that lessons were taken and points of view examined. It served as a trench for several fights. From an open clash against several Brazilian politicians to the problems that democracy was experiencing in the world; to defend the ideals of the modernist movement; the cultivation of culture, music and theater in Brazil. However, for a reader who had focused, extensively, on the areas in which nuclear energy had been mentioned, the coverage of the periodical was very inconsistent. The way scientific methods and the operation of nuclear machinery is not to be criticized here. This work focus on the prejudice the research in nuclear technology was dealt with in almost all the articles, and, later, the change in the magazine posture, showed in the articles by José Reis and José Goldemberg; in addition, the numerous reports on research carried out with thorium and fusion, outside Brazil. The magazine, after neglecting nuclear technology subject, ignoring the impact of their coverage to research, was redeemed. It can be said that a new possibility, beneficial to the humanity survival, is connected with nuclear research: the production of energy to replace fossil fuel combustion. Today, with the world concern with the greenhouse effect, the nuclear theme is again being discussed. Nevertheless, Anhembi always ignored any attempt to stimulate research on, at the time, newly created field of physics. Contrary to its habit of reporting power backstage actions, even of CNPq's executive direction, the publications remained aloof, without any reference to the Brazilian nuclear policy tribulations.

It appears then, from this analysis of the texts published in Anhembi magazine, that the always encouraged ideals of scientific journalism, keeping aside any harmful prejudice to a national development, were injured.

The nuclear policy conducted in Brazil is not clear: the treatment chosen to the nuclear related issues changes, from the folklore to the fusion reactor and the developing Brazilian research.

Among possible new studies on the subject there are:

A study on the economic situation of the time to investigate why the journal discontinued, since, according to the publishers, the rise in paper price was considerable and affected the budget. Moreover, a thorough survey on the history of nuclear energy research in Brazil, in the time range between 1957 and 1962, would compare better the historical data with data from the magazine.

Another interesting study in view is to research, for the time of a year, an international journal in order to investigate the bias and emphasis given to nuclear research and, then, compare with the case of the Brazilian Revista Anhembi. Then, a study of the discourse analysis would be done, contrasting the two surveys conducted by each of the publications.

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