



Rem: Revista Escola de Minas

ISSN: 0370-4467

editor@rem.com.br

Escola de Minas

Brasil

Barbosa da Silva, Christiano

Claude Henri Gorceix: the man, teacher and work

Rem: Revista Escola de Minas, vol. 67, núm. 3, julio-septiembre, 2014, pp. 319-340

Escola de Minas

Ouro Preto, Brasil

Available in: <http://www.redalyc.org/articulo.oa?id=56432116012>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

Claude Henri Gorceix: the man, teacher and work

Claude Henri Gorceix: o homem, o mestre, a obra

Prof. Christiano Barbosa da Silva

1910- 2XXX

Civil, Mining, Geological, Mineralogical and Metallurgical Engineer graduated at the School of Mines of Ouro Preto, class of 1935, Full Professor of Organic and Inorganic General Chemistry, Chemistry, and Physical-Electrochemistry.

Once André Malraux said that “as it is impossible to resuscitate the dead, we resuscitate the dreams” and popular wisdom complements: “it is the most beautiful teaching that can be linked to the youth of today and the men of tomorrow”.

Herein, one of these dreams is relived. It begins 150 years ago with the birth of CLAUDE HENRI GORCEIX in Saint Denis des Murs (Haute Vienne), a small village of only four houses, on October 19, 1842, son of Antoine Gorceix and Valerie Cecile Gorceix.

When he was almost 9 years old, his father died and his mother, together with her seven children, went to live in Saint Leonard. At 12 years of age, he obtained a scholarship at the Liceu de Limoges, where he distinguished himself for his active intelligence and devotion to his work. He attributed his successes to his professors for whom he preserved an undisputable remembrance until the end of his life. After receiving his diploma in 1860, his scholarship was transferred to the Liceu de Douai, where a mathematics course prepared him for the École Normale (sciences), the preparation of which was completed at the Instituição Massin in Paris. The following year, he entered the École Normale (Sciences).

Here, he demonstrated a passion for Geology and Mineralogy, subjects in which he was said to be not only brilliant, but also very active, forecasting a career as a geologist. He finished the course in 1866 with a “Generalist in physical sciences and mathematics” diploma.

Appointed Professor of Physics at the Liceu de Angoulême, he returned to École as aggregated preparer of Geology and afterwards was sent to Athens as a science professor at the famous L'École française d'Anthènes.



Reproduction of daguerreotype
of the Prof. Claude-Henry Gorceix
Paris - 1889



Probable location of the house where Gorceix was born on October, 19, 1842, in Saint Denis-des-Murs, district of Saint Léonard Haute-Vienne , France.

Gorceix, the French patriot

Then along came the French-Prussian War in 1870. At that time, the students of the École Normale Supérieure and all of those involved in teaching were dispensed from military service. But then, the disasters continued: Sedan, the rendi-

tion of Metz. The students at École, as well as the alumni who were young enough to handle a rifle, abandoned their privilege and set out to fight and became known as the “normaliens” of 1914.

Gorceix was in Athens, far from the

battlefields; it would have been excusable, despite his conscience, if he did not make the long trip to become a soldier, of which he was dispensed by law. But he made the trip, enlisted, and was sent as Ensign for the 26th battery of the 9th Artillery Regiment.

Gorceix and the practical character of teaching

After the peace treaty was signed, he returned to Athens and, in 1874, regressed to Paris, reassuming his position as aggregate preparer at the École Normale. The Emperor D. Pedro II appointed Daubrée to indicate someone who could organize a teaching of Geology and Mineralogy in Brazil. Daubrée indicated Gorceix, who at the Imperial Legation of Brazil in Paris

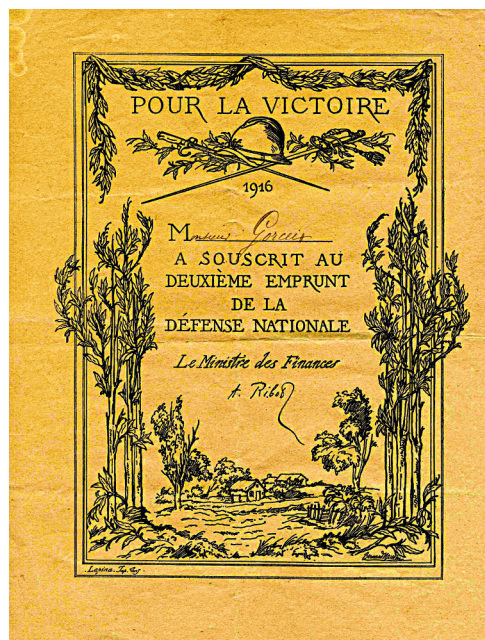
signed a contract on March 28, 1874 to provide the services in Brazil that were established in Article 12 of the contract:

"Article 12: Mr. Gorceix promises to go to Rio de Janeiro, at the service of the Imperial Government, to organize the teaching of Mineralogy and Geology".

Gorceix said that:

"In 1874, having been commis-

sioned to Brazil to organize the teaching of Mineralogy and Geology, I became aware that it was necessary to install these teachings with a practical character that would be of general utility, under the penalty that all of my efforts would be in vain. In effect, the physical and natural sciences being, as they are still today (1884) banned in higher education, could I not have the



Gorceix enlisted as sub-lieutenant in the 26th artillery regiment of the 9th battery (from the collection of the space allocated to Claude-Henri Gorceix – Pace de l'Église, Bujaleuf – France). Photo by Guy Royer

care to open courses in which Geology and Mineralogy would be taught only as branches of human knowledge; very few students would be willing to accompany them and perhaps none would want to dedicate themselves to studies that were not immediately sanctioned by society to obtain salaried jobs.

I could not tentatively think of obtaining the necessary reforms that would permit delegate to the teaching of these sciences, the necessary development that in our times should be in the whole rational system of education. I would be immediately hindered by the unsurmountable difficulties that, for sure, I would have to face and my projects for the reorganization of the public schooling would fail, defended and sustained by men who have, in the country, legitimate and uncontestable influence.

The creation of a school of mines would avoid these embarrassments and assure, for a future that I believe is not very remote, the triumph of ideas that should make them disappear.

In effect, Mineralogy and Geology and the other sciences that group around them, support them or by them are assisted. The exploration of Mines, Metallurgy and Others presented as having the finality of permitting the students to become knowledgeable about the riches of the land, will teach them how to benefit from it. These same students, initiated in the work and research methods that these sciences require, could in turn, propagate in other establishments, the ideas already acquired.

The School of Mines should, after all, have the finality of graduating mining engineers, explorers of the land, and professors of natural sciences when they enter into programs of secondary education, whose reform is so indispensable and in the technical teaching that would be so

useful to create".

And he added:

"I propose the creation of a School of Mines that has the intention of developing in the country not only the passion for studying the sciences, a knowledge of which is necessary for a mining engineer, sciences like Mineralogy and Geology that would have very few students if they were not presented with immediate industrial applications, but also to create an establishment where these sciences could be taught with the same methods of my Masters and where it would be possible to submit students to work, one method that maintains theory and practice at the same time".

When he presented an invitation to the Emperor Pedro 11 and Empress D. Thereza Christina to be godparents for his daughter Cécile Pierrette Thérèse Gorceix, he referred to the School of Mines as being his "oldest daughter".

From the time of his arrival in Brazil, Gorceix maintained contact with the Escola Politécnica do Rio de Janeiro from which he received his first assistants and students in the practical laboratory of Mineralogy and Geology that was quickly organized in Rio de Janeiro on Rua do Lavradio, 94, where minerals, ores and rocks collected by him in his excursions or coming from special offers were studied and where the students did practical work, forming the first nucleus of assistants in the pursuit of his activity in Brazil.

When the occasion was opportune, Gorceix presented a detailed report about what would be the organization of the School of Mines, with the statute and distribution of courses.

With the complete approval of Daubrée, these papers were sent to the Minister of the Empire, José Bento da Cunha e Figueiredo, who then passed them on to the acting Director of the

Escola Politécnica, together with the information provided by the engineer of the Ministry, Francisco Pereira Passos, with the recommendation: "That you sir, after hearing the Congregation of this School, give your opinion with brevity, indicating the alterations that you deem convenient".

Besides the Eng. Passos and the Congregation of the Escola Politécnica, the Viscount of Rio Branco, Director of the Escola Politécnica made a series of observation about the work of Gorceix, who in turn, gave an appropriate response, saying:

The Minister has received opinions that radically modify my plans, substituting them for projects, the adoption of which would have the most pernicious results for the future of the Escola which is to be founded.

By his words, Gorceix portrayed himself to be a tough person, and by his acts to be someone who could be rather rude, which at times shocked those who were not used to the austere and inflexible side of his character, compared to that of his penetrable personality.

In all of the conversations that preceded the signing of his contract with the Brazilian Government, Gorceix always mentioned the need to have a furnished place to be able to work in comfort. When he arrived, noticing that his request had not been attended to, he was very explicit when he addressed the Minister:

I ask that you indicate to whom I should transfer, in Ouro Preto, the direction of the organization of the School and in which bank I should deposit the sum of 1: 197\$517 resulting from economies I have realized from 2 accounts that were advanced to me for the transportation of the objects destined for the School, and 240\$000 that was not entirely spent for the Mineralogy Laboratory, the sum of which I should only report on at the end of the year.

Gorceix and the poor students

The installation of the school was threatened not to happen on October 12, 1876. Having been registered in the School, the students: Francisco de Paula Oliveira, Antônio Veríssimo de Mattos Júnior and Leandro Dupré Júnior sent to the Minister of the Empire, José Bento da Cunha e Figueiredo, a petition asking for the concession of monetary aid so they could stay in the Province of Minas Gerais, as they are poor and without this aid would be forced to cancel their

registration.

Gorceix commented on this request saying:

"The School's Budget for the year of 1876-7 was established in such a way that, even with this increase in expense, it would still be possible for me to save money. But, by reason of superior orders, I do not have permission to give aid to these students, and consequently, makes it impossible to open the School. I would feel very happy and proud to be

called upon to facilitate the installation of the establishment of which I have had the honor to organize. As such, I ask of you Mr. Minister, to take from my salary, half of the amount necessary to cover the maintenance of three students in the School of Mines of Ouro Preto, and solicit your generosity in the complementation of this aid.

Having been educated at the École Normale Supérieure of Paris, under similar conditions, I contracted a debt



First School of Mines of Ouro Preto
Pintura a óleo sobre bateia [1899?-],
by Honório Esteves do Sacramento.
Photo: Pil Gloor

with my parents which, happily, I will liquidate in Brazil, where I have the honor of being in a service for which my Masters taught me to love, independent of the country that I serve.

The response came on the same day with the expedition of an order to pay a pension of fifty thousand réis (50\$000)

monthly negotiated with each one of the petitioners. Later, this pension was increased to sixty thousand réis (60\$000), due to the increase in cost of living in Ouro Preto, and due to the installation of the School of Pharmacy and the Appellation Court; this quantity corresponded to what was strictly necessary”.

The pension for the students without financial resource received criticism from the adversaries of the School (and they were not few!) that said: “To have students at the School, it is necessary to pay them!” associating them with the small number of students that the School had.

Gorceix and his right-hand man

Gorceix, upon starting his job of getting the School to function, found himself overloaded with the reconstruction of the old building designated for the School and with all of the tasks required in its organization, for example the obligation of constantly having to go to the Court to solve the cases that at every instant appeared.

It became necessary to contract an assistant; the support of a person of confidence that would take care of the pending services in Ouro Preto and guard the objects pertaining to the School. Gorceix hired as his assistant, Mr. Francisco Luiz Maria de Brito and upon verifying his capacity for the service, fought to obtain his nomination as Secretary of the School. The proposal could not be accepted because the candidate was over qualified, having a university diploma and a seat in the Legislative Assembly. The maximum achieved by Gorceix was to be able to designate, in his absence, this man to oversee the reconstruction of the building, take care of the conservation of the objects of the School, having under his care all of the writings pertaining to the Library and to the Secretariate, for which he had the total approval of Gorceix, assum-

ing responsibility until the arrival of the nominated Secretary, Bel. José Eufrosino Ferreira de Brito.

Francisco Luiz Maria de Brito, although he was the right-hand man of Gorceix in the practical phase of organizing the School, remains until today unrecognized in the history of the School of Mines. His name only appears as a signature on the Act of the Installation of the School with the letterhead of the secretariat that he was not permitted to serve. It was he, however and without a doubt, the initial organizer of the Library and Secretariate of the School, where his name should be placed in evidence.

As for José Eufrosino Ferreira de Brito, he was a nightmare for Gorceix. To this respect, Gorceix said:

“In Brazil, as in France, I believe that an establishment like the School of Mines of Ouro Preto should remain completely apart from all of the political fights. I have made this rule, my law. I was forced to violate this law by nominating last year for the position of Secretary, a man who was recommended above all for the part he would take in these fights. Forced to accept the collaboration of this person, I have sought to diminish the difficulties he

creates. My age, my quality as a stranger, perhaps give little weight to the observations that I seek to portray to a man, who by his political position, considers himself above the Director and uses this position to diminish the authority of said person.

So many were the absurdities committed by this secretary that Gorceix was obliged to say to the Minister:

Under such conditions, Mr. Consular, it will be impossible for me to continue directing the reconstruction that was entrusted to me, since my fatigue is great. I have had to abandon my research work to which I would return with great pleasure if I would not be permitted to conduct toward a good end the organization to which I was entrusted”.

As such, I ask you with great humility, Mr. Consular to come to my aid, to overcome a difficulty that in quality of Minister could be easily resolved with the approval of Your Excellency”.

On September 14, 1877 came the reply: “In view of what the Director has said about the position of the acting Secretary, he is dismissed”. This case of the Secretary strongly reflected in a session of the Provincial Legislative Assembly of September 13, 1877.

Gorceix and the notebook enginers of science

In the teaching method brought from France by Gorceix, there were no textbooks adopted for the classes. To study, the students used notebooks to take notes in class that had advantages, such as: creating the habit of writing quickly with an obliged frequency, and paying attention to the professor during the class. The truth: CUM MENTE ET MALLEO (with mind and hammer) was a constant until the final culmination: an engineering degree.

The confection of the notebooks was not only a spontaneous attitude of the students because they had to study without textbooks. It was also obliged because it was an integral part of the teaching method brought to Brazil by Gorceix and documented in the 2nd, 3rd, 4th and 5th Regulations of the School, respectively in the years: 1882, 1885, 1891 and 1893, where, in all of them the article was found written in the same manner:

"Of the school exercises: Article: The students should have special notebooks where they will take notes relative to the lessons of each of the subjects of the courses of the School and the practical works. When they are integrated, they will present their notebooks to the slow learners or the repeaters so that these can correct the errors committed in the writing of the same notes".

The sixth regulation of May 11, 1901 no longer had such requirement that had obliged been in vigor for 25 years.

As the *"use of a pipe makes the mouth crooked"*, the custom of confecting notebooks in the class continued for dozens of years, and as Gorceix said:

Their good results were sanctioned by experience". The most illustrious sons of the School of Mines that were honored in their professional life were all: NOTEBOOK ENGINEERS OF SCIENCE, as they were called by the adversaries of the School.

In the opinion of Gorceix:

"Certainly the books published by the science Masters are better written; more deeply thought out than the oral lessons of the professors. However, if they are up to par with the position they exercise, the students would profit more from the teachings of the professors than the silent study of the books, and the benefits would be much greater if, as in the School of Mines, each lesson was followed by questions and practical work, where the professor upon reading, as a matter of saying, the spirit of the student would perceive the difficulties that the student encounters, and demonstrate a manner in which to overcome them.

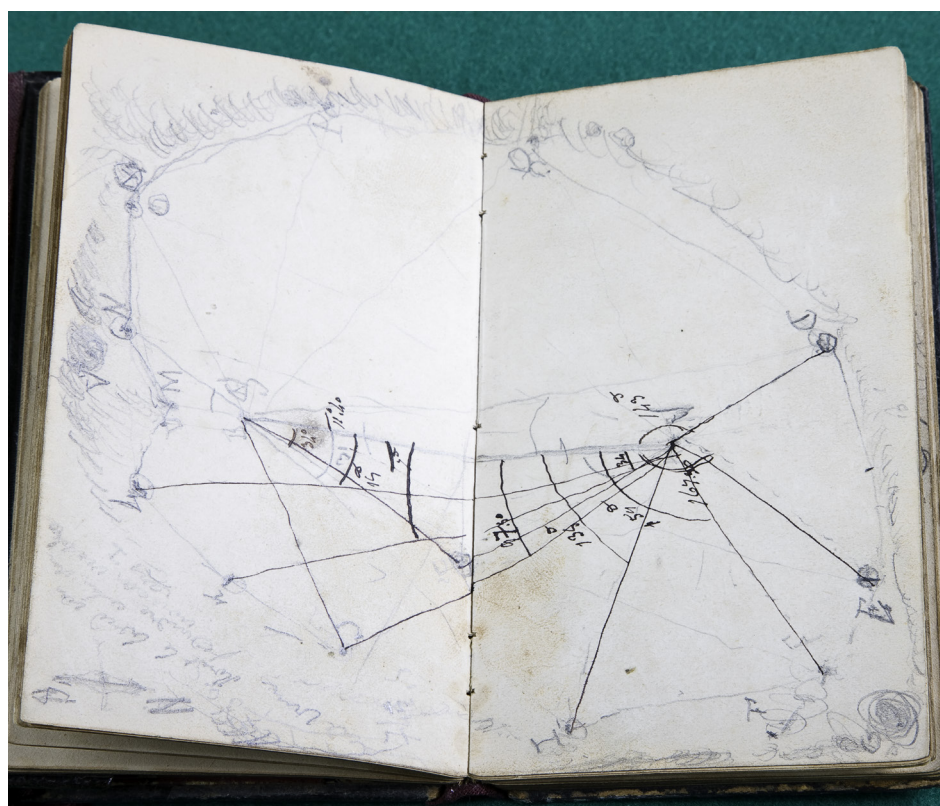
It is nothing more than by assidu-

ously following these series of exercises and lessons, the teaching of a School can compensate the sacrifices that the Nation makes to maintain it, and as that they that are favored by those that make these sacrifices, their obligation is to be assiduous in all of these works.

Having been a Professor for many years, educated in the École that graduates the professors for the French University, these are the only ideas that I have always heard defended and practiced and whose good results have been sanctioned by experience".

Analyzing the complaints of the students in regards to the teaching method adopted by the School, Gorceix said:

"I am persuaded that, later, when the experience of life and the maturity of age permits you to well understand the relationships that should exist between diverse members of the same society, and when you face life in its reality and not through the prisms of youthful illusion, you will be the first to recognize the utility of the Regulations that today you attack, and perhaps you will feel that the measures of providence taken in the school life should have been more numerous to protect you against the dangers and failures that many times manage to make the most intelligent stray from the working path".



Notebook personal
of Claude-Henry Gorceix.
Photo: Pil Gloor

Gorceix and the graded and high school education

Another permanent preoccupation he had while he was in Brazil was the deplorable situation of the existing graded and high school education. He said:

"Without primary education, there is no secondary education; without secondary education, there is no superior education; and without superior education, there will be no Brazilian engineers or men useful to their country".

It was with this preoccupation that he wrote to the Governor of the Province of Minas Gerais:

"I have the honor to inform you that on every Thursday at 10:00 a.m., starting the 15th of this month, I will be at the disposition of the teachers of primary education in the capital.

I pretend to give some conferences to expose the method by which I understand should be taught "things" in primary schools and in the secondary schools, the notions of elementary physics and chemistry.

It would be convenient if the person assigned to implement these teaching in the high school be also present in these works. I would ask my listeners to redirect the material presented in the conferences that would afterwards serve as a guide for those that wish to introduce these teaching methods in primary education.

However, since I have taken the liberty to share my thoughts with Your Excellency, especially about the teaching of physics, chemistry and natural sciences in secondary education, I believe these courses should be of the simplest application, so that they could be used in domestic life. In this way, these students, if they were located in small places, could become useful consulars and as such would increase the consideration and importance that the educators of youth should have in a well-organized state.

May God guard Your Excellency
H. Gorceix.

A week later, Gorceix returned to the Governor and said:

"I have the honor to participate with you that according to the combined purpose, yesterday, I found myself in the Physics Department of the School at the disposal of the primary education teachers of the Capital. Not only had I prepared an exposition of the idea of the model by which the "usual things" should be taught in primary schools, but also I displayed samples that should be used in this type

of teaching. Even more, to give my explanation a practical result, I prepared what was necessary for what I proposed to do in a lesson about a special point.

It was with sadness that I waited until 11:00 a.m. without any of those invited appearing. Transmitting this fact to Your Excellency, I have to affirm, that because of this, I am not discouraged and will always be ready to employ all of my forces to facilitate the introduction of the teaching methods that I deem will be useful to the development of primary instruction in this Province.

May God guard Your Excellency
H. Gorceix

"Having been called to Brazil to there organize the teachings of Mineralogy and Geology, he deemed that his responsibility should not be limited to only registering rules on paper, but also to generate students. All of his efforts were directed towards making them capable, and in turn, knowledgeable of the methods obtained from their teachers and apply them for industry. The experience, if launched by his hand, could be proven, if he achieved his objective".

To the Minister of the Empire, he confidently said:

"If Your Excellency deems useful, I will not hesitate to put on my toga as professor of the University of France and demonstrate by employing all of my resources, what are the values of the methods that I have learned with my Masters".

"Dedicating myself to teaching, which I enjoy, and to education, as well as having the desire to serve my country with the best service possible in a position that I have the honor to occupy, I cannot stop insisting on the state of the causes that bring on the most disastrous consequences, a matter of such throbbing interest for the country. Once again, I repeat, few students have a sufficient secondary scientific education when they enter into superior courses. This comes from the inferiority of the first teachings of these materials and causes the sterility of all the measures of means taken to elevate them without having given them the base, which they lack.

This defect comes from teaching methods, from the people employed in it, and from the mode in which the preparatory exams are done that serve as the sanction. All know, all repeat them: the scientific education should principally fo-

cus on the development of reasoning and instill in people the spirit of investigation.

But to achieve these results, it is not enough to have oral lessons; it is necessary to have frequent discussions, numerous exercises, written compositions in which, with the aid of books, in a determined time, the students should expose their ideas about a determined issue, resolve problems.

The memory should be placed on the second level, as an auxiliary and not as the base of instruction. To apply these methods, it is necessary that the professors learn to teach and above all, have a superior knowledge of what they are to teach. It is not enough to know what you teach to be able to make others understand. This condition is necessary, but far from being sufficient. One needs to know much more than what is to be taught, and above all, know means to make others understand.

Secondary education will be, for a long time, the choice (I fear) of the sinking of superior education in Brazil and intending to create it without teachers, is nothing more than a vicious circle from which there is no escaping, and will make useless the most beautiful programs of the world and the best calculated reforms.

The professor should encounter in the value of his teachings and in his moral influence, the necessary force to impose on his disciples the respect and consideration that they should have regarding him, not only within the School, but outside it, also.

The students should have the habit of solving problems, whose solutions depend on the theories exposed in the course, so that an inventive spirit is instilled in them without which science would be sterile. I do not know of a better intellectual exercise than that of teaching the students to reason and getting them used to the spirit of research. It is good, without doubt, to have knowledge of all that great men of other peoples have produced; however, better yet is to know how to make use of what they have achieved to produce new discoveries. In industry, even in agriculture, this spirit of invention is above all, useful. Copy, fervently repeat ways the other countries do things is fatally condemned to failures, of which there are many to register in Brazil.

This inventive spirit is acquired from young on in the classrooms of

primary and secondary educational institutions. I say with regret that this is not available for most of the students that I know.

One can make as many regulations as one wants, change them every year, copy what the best foreign authors write about a subject, but in spite of this, public education will not gain anything,

absolutely nothing, until the teachers, professors and examiners are not what they should be!

The greatest difficulty one finds now and will find perhaps during many more years in Brazil, in a School of superior education is to find students who have received a scientific secondary education that places them at a level to

be able to understand the most elaborate scientific theories and to plunge into the spirit of the methods in order to, afterwards, be able to approach application of these methods. Without this, they are performed only with the aid of practical rules, without value, which many times lead to very deplorable and lamentable errors for the Country".



Personal equipment
of Claude-Henry Gorceix.
Photo: Pil Gloor

Gorceix and the school equipment

During the epoch of Gorceix, the equipment employed in the laboratories of the School of Minas were acquired in France, principally from the ROUSSEAU et FRERES shop, not only as a measure of economy, but also principally because of the willingness of Daubr e, Del sse, and des Cloizaux who were in charge of supervising the fabrication, the functioning, and the delivery of the devices.

Gaudry and des Cloizaux, mem-

bers of the Academy of Sciences, professors of the Museum of Natural History of Paris, once offered to the School of Mines a present of some Paleontological pieces of utmost importance, listed below:

The assembly of an Ichthyosaur, a natural grandeur;

The assembly of a Teleosauro, a natural grandeur;

A Paleotherium head;

An Anoplotherium head;

A Glyptodont head;

A Heparin head, as well as large and diverse parts of the skeleton of this solipede.

According to Gorceix,

"These pieces are molded with artistic perfection and will be of great use for our teaching of Geology in the School of Mines. It is a present of great value and for which the intervention of des Cloizaux and Gaudry has been of great benevolence".

Gorceix and internal discipline

On a certain occasion, a problem surged in the School whose solution Gorceix thought he would have to retire. The incident occurred with students and referred exclusively to the internal discipline of the establishment, but reprehensible maneuvers gave him an importance that would be attributable. As such, Gorceix informed the Minister:

"A professor, Arthur Charles Thir , when passing under the window of a

classroom was hit by water poured from a cup by a student, a simple listener of the Preparatory Course. In a moment of vivacity, the professor that was hit stormed into the room where this listener was assisting a lesson given by another professor, and without pronouncing some imperious words or making threats, broke the water jug and saucers belonging to the School which he found on top of the table and threw them out the window.

The most complete satisfaction was, afterwards, given by him to the de-authorized professor who had been trying to exercise of his functions.

It is natural to think that this would terminate the incident. However the students of the first year of the Annexed Course, united with those of the rest of the School, and declared that their dignity had been offended, stating that they would abandon the course of the School until

they received satisfaction".

This is how the students expressed themselves in a petition addressed to the Director:

"Honorable Mr. Director of the School of Mines

The below signed, students of the School of Mines of Ouro Preto, driven by righteous indignity, protest in front of Your Excellency against the unusual and outrageous procedure that happened with Dr. Thiré towards them and Dr. Domingos José da Rocha, professor of the first year of the Annexed Course of this School.

Yesterday, when the elementary Mathematics course was being given, one of the students threw a glass onto the patio of this School. A portion of water fell casually, on the same Dr. Thiré, who infuriated, stormingly penetrated the room in which we were receiving explanations and de-authorized the professor, disrespected the students and threw out the window objects that served the same.

As far as we know and understand, the reciprocal duties under whose dependence the students and professors find themselves in an educational establishment, we declare then our revolt. The procedure of Dr. Thiré either was or wasn't reflection; In the first case, we demand from the same an explanation; in the second case, we take this fact to the knowledge of Your Excellency, who should take the necessary measures so that these acts against the rules do not occur again and will be punished by censorship of the affront he exposed us to.

The students of the first year of the Annexed Course await the measures that will permit them to continue their work, temporarily interrupted.

God guard Your Excellency".

(Signatures follow)

Gorceix continued:

"As Director, I cannot admit, any type of similar claim: the professor is in charge of his class, and within it, is

completely responsible for maintaining order and the observance of discipline. Nobody can just penetrate it without his authorization and whatever contempt practiced there is unique and directly directed towards him. As such, only he has the right to receive the appropriate satisfactions.

As I can see, it will be impossible to ad mister an establishment where at each pass, the students deem to directly intervene in the internal policy, giving orders to the Director and imposing on him to take disciplinary measures.

As for the determination of the students to make a front, in part this can be explained by the excitement of young people who live in common in this small city of Ouro Preto, where there is a complete lack of distractions, and the exaltation of certain poorly balanced spirits or disorderly friends, who, in continuous meetings, propagate and impose upon the well-intentioned, misleading them into a false idea of solidarity.

Unfortunately however, I deem it is necessary to see in this act, the influence of imprudent words from people that have nothing to do with the matter nor should they have been in any way been involved with it. They should not have left traces of false and very deplorable considerations that would generate antagonisms between the foreign and national professors. Even so, this incident would have been of short duration, if there had not been other more deplorable manifestations. Irresponsible articles printed in the newspapers, telegrams and passionately termed publications that were of the most imprudent nature from the professor of another School, came to give the incident an importance that it could not have.

Thanks to the intervention of highly placed people who are dedicated to the School, these manifestations did not provoke the deplorable effects that were to be feared and the interruption of

the courses by the students lasted only two weeks and for some, twenty days. The works of School suffered very little with this incident of which the only consequence was the removal of some students, who naturally would lose the year, due to the great number of unjustifiable absences".

After the incident was settled, Gorceix said:

"Today, I can no longer doubt the strange intervention in the insubordination of the students in view of the signed telegrams and publications in the *Gazeta de Notícias e Folha Nova*.

The action of Dr. Enes de Souza, professor of Metallurgy at the Escola Politécnica, about the resolution of the students is evident. His procedure is as much unqualified as his entertaining the idea of a good relationship with me; I have not had the ability to communicate to serious people about the nature of this fact, taking care not to say anything more, I have only referred to the telegrams sent by the students.

I will further aid that it is notoriously public having been manifested by him various times that he desires to be nominated professor and Director of the School of Mines of Ouro Preto. I cannot but associate this intention with the fact that he created difficulties for the actual Director, to obtain my dismissal".

At the beginning of this incident, when Gorceix proposed as a solution his dismissal from the School, furnished his indications for his new organization. He said:

"In this matter there is certainly some animosity against the French professors. They are betrayed at every instant and I believe that this is where we should seek the cause of this unexpected insubordination. My completely lively character and my brusque manners are intrinsic here. My disappearance would also lead to this cause".

Gorceix and the enemies of the School

The first years of life of the School of Mines were accompanied by difficulties and the natural struggles of the functioning of a new teaching establishment, such as: bureaucratic delays, obtaining professors, incomprehension, and petty rivalry from other teaching establishments, etc.

In this respect, Gorceix said to the Emperor:

"The number of attacks directed

against the School in Parliament, even the way it was defended, has led to the belief that there could be a possible suppression of this institution. This noise has been explored by a certain number of members from other teaching establishments that for no reason have seen us as enemies or rivals".

An example of this is found in the tentative made by the mining engineer

Luiz Felipe Gonzaga de Campos, who before beginning his professional activities, wanted to participate in the contest for a seat in Mineralogy and Geology of the Escola Politécnica through the insistence of Gorceix, who in his opinion:

"He could there create a type of teaching that did not exist". But, according to Gorceix, "he was rejected by the professors who declared that his

engineering diploma was not sufficient for his admission to the contest. I regret this and feel sad with such facts.

From the beginning, it seems that there is the desire to ostracize the School of Mines! The titles of Doctor in absence given by foreign Faculties are enough to obtain the nomination for applied science professors, while our students are being deterred from the contest".

At a later time, still talking to the Minister about the issue, he said:

"In the actual conditions of the country, I do not believe that there exists a professional that better fits these functions; in any case, the petitioner would only like to demonstrate in public the proof of his skills before judges of whose competence I could discuss.

When the Regulations of that school were organized, the School of Minas of Ouro Preto did not exist. If at that time, this School had been organized, I would not have harmed the organizers of that Regulation, in the thinking that it would not be them giving our diplomas the same value that they give to the titles of foreign faculties, of which a certain number sell scrolls without obliging the candidates to follow their courses.

Consequently, I come to ask Your Excellency that if you deem convenient, please disappear with this gap, or consider the mining engineer diploma from Ouro Preto as being sufficient to register in the contest for a seat in natural sciences of Chemistry, Chemical Poison Testing, and Mining and Metallurgical Exploration of the Schools of Brazil, or concede to them that power to confer Bachelor

and Doctor titles. Since its creation, this School has been an incessant target of live attacks, not only in the courts, but also in the press, that are based on only one consideration and that is, its small number of its students.

Having been called to Brazil to organize the teachings of Mineralogy and Geology, I deem that my mission should not be limited to consolidating on paper the regulations and programs, to create collections and to collect certain works whose honor and advantages would be only mine. I deem it more useful to the country to create a School that graduates engineers, explorers of the mineral riches of this country's land, and professors of Geology and Mineralogy.

Upon validating the negative decision in the case of Mr. Sr. Gonzaga de Campos and others that soon will want to imitate him, in my opinion, the role of mining engineer from this School will be greatly reduced, giving more force to those that constantly attack them and contribute to the annihilation of my efforts; it would diminish the number of our students. It would favor an association that in its egoism, would oppose the development of education so as to always be the class in power.

I was called to Brazil, where the teaching of Mineralogy and Geology did not exist and by prohibiting the students that I graduate to participate in contests that could prove, in public, that which they know how to do, and consequently, afterwards, could have them organize the Escola Politécnica in a teaching area that still does not exist and will not seri-

ously exist if the Director continues to, under all aspects, close the vicious circle of interpretations of the anti-liberal and harmful Regulations to the interest of an immense number of citizens.

I understand what repels our students: they have fear of the light!

And it is for this light, the mother of progress, that I plead, without any thought of denigration or personal animosity, only obeying what I believe to be my responsibility".

Finally, on February 14, 1880, the Bill nº 7628 was published that altered various dispositions regarding the School of Mines of Ouro Preto, in which cited below are 4th and 10th articles:

Art. 4 – The diploma of mining engineer, awarded by the School of Mines of Ouro Preto, enables the person to participate in the bid for a seat in the Escola Politécnica, whose teachings in this school have not had made major developments.

Art. 10 – The final exam results for Arithmetic, Algebra, Geometry and Trigonometry, given by the Preparatory Course, will be valid for registration in any of the establishments of superior instruction.

Luiz Felipe Gonzaga de Campos entered the Service of Geology and Mineralogy of Brazil, working with Orville Derby, then Director of this government bureau. Gonzaga de Campos came to substitute Derby, who died, on the Board of Directors of the Service of Geology and Mineralogy of Brazil, giving it a new focus for the work there performed. He died in 1926.

Gorceix and scientific research

In the School, Gorceix was always sad because he could not work in the research sector, as was his desire:

"I find myself very frustrated as I am obliged to devote all of my time to lessons connected to the most varied of subjects and without any relationship between them: industrial physics, mineralogy, chemistry, geology, and chemical poisoning testing! It is impossible for me to concentrate on a single subject; and yet, this concentration is the only means to arrive at a point that others have not seen".

A born researcher, particularly in geological and mineralogical phenomena, Gorceix was of the opinion that it was of general utility for society to aid the scientific studies, even if these did not im-

mediately result in material advantages.

He said:

"Of all of the sciences, Geology is certainly the one has to be solved, or at least, to be studied for the problems that are of the utmost interest for the history of humanity. At each moment, the geologist sees with his own eyes admirable proofs of the order that rules the great phenomena that have agitated and modified the world in which we live; at each moment he finds certain proofs of the intervention of a supreme intervention and perhaps it is better to say, from the sky, the Earth celebrates the greatness of its Creator. Very happy are those that can dedicate their lives to such studies".

Gorceix enjoyed keeping the Em-

peror Pedro II up to date with his geological observations, as for example, he did in December of 1879, saying to the Emperor:

"I dedicated my vacation during the months of June through August to give a glance at the North of the Province of Minas which attracts the exploration of diamonds and research of deposits of colored stones: Gymophanes, Tryphanes (kunzite), Beryls, Andaluzes, etc, that I know exist in this region.

During as much time as was permitted me, 54 days, I was able to gather some interesting collections and make some curious observations. My opinion about the primitive diamond deposit in the quartz veins is that they could have been formed by satellites of titanium minerals, by way

of their formation by the dissociation of vapors from fluorite or carbon chlorite, being fortified little by little.

As others could have preceded me with this order of ideas, as my isolation does not permit me to place hands on all of the documents that would enlighten me, I had to, before someone publishes them, submit my draft to one of my Masters, Mr. Deless.

A complete study of the diamantiferous gravel that I myself collected or could search for, should furnish me with the best proofs in support of my opinions. Unfortunately very serious symptoms of my eyesight alteration have come to momentarily suspend these researches.

In the industrial point of view, my trip to the North, of which I have given a detailed account to the President of the Province, was in no way unfruitful. I saw how the diamond extraction processes were primitive, and how little progress has been made since the last century. As professor of exploration, I immediately insisted that the students should direct their attention on introducing into these processes, a mechanical preparation with corresponding classifiers to be employed in the exploration of certain iron ores.

Even more, I do not doubt that in the bed of the Jequitinhonha River, below the explored part, rich deposits of virgin alluvium exist, but that they will only be able to be reached by scientific processes.

These improvements would save the diamond exploration from the ruin to which they are threatened, as much by the impoverishments of services, where many times, the current miners rewash what was rejected by their predecessors, as for the inherent difficulty of the new working conditions in the explorations where until now, only slaves were almost exclusively employed. Regarding the colored stones, I am sure that their deposit

is located in a geological horizon below the diamantiferous terrain and belong to the mica-schists and gneiss upon which the quartzites rest and the phyllades that constitute the greater part of the upper plateau of Minas and continues on to the Andes. These stoned are found in quartz veins and from pegmatites interspersed in micaceous rocks, principally located in the Setúbal, Gravatá, and Piauí Basins and the affluents of the Arassuahy River.

Like the diamond, they were found in the beginning of the alluvium deposits that very well comprise the formation dated in the Quaternary Era. This Era was registered in Brazil as oscillations of the ground and the elevation of a ridge which possibly continues in our times. These movements would be continuous, much weakened volcanic convulsions to which they were due, at the end of the Tertiary Era; the formation of the volcanic axis of the Andes. This elevation would very well explain the actual situation of the course of the Jequitinhonha River that at certain points runs over gravel deposits of 10, 20 m of thickness, being deposited in part of its former bed.

Parallel to these new studies, I am proceeding with others that I began a long time ago, about the local metamorphic phenomena where in my opinion, the iron pyrites that are so numerous in certain terrains were transformed into limonites, oligists and even magnetic iron oxides. It is for sure that it was from the very shiny oligist crystals that the species Martita was generated, considering the iron oligist to be dimorphous.

Demorphism is an exception to one of the great laws of Crystallography, and I believe that its occurrence is infrequent as are all exceptions to the laws of nature.

My observations would disappear in this case, and permit their connection to the same causes a great number of phenomena, such as the presence of gold

with pyrites in the quartzites, while there does not exist and sulphures mineral with it in the itabirites.

My observations have raised some objections and I have just responded to them. I hope that they will be sufficient and that my observations will be published in the Comptes Rendus of the Academy.

I feel committed, Sir, to great prudence. I have a fear of being wrong and at almost every step, I find confirmations of the facility with which errors appear in observations and I do not want in any way to fall into the same errors that reprove those who occupy themselves with the Geology of Minas.

I have continued urge to my colleagues Bovete and Thiré to occupy themselves with the mineral and iron deposits of the Province, a subject of utmost importance for the Country; even in Goiás, in the middle of the mineral mountains, an arroba of iron is worth 22\$000! More than 25 times of what it costs in Europe!

Not having obtained this work as quickly as I would have liked, I myself put my hands to the work, and without accidents to my eyesight, have been able to deliver it to the public.

My efforts were not in vein. Some men have already presented themselves with the intention of going ahead with the manufacture of iron.

Unfortunately, as always happens, speculation immediately emerged and the first amongst them, without any technical knowledge, only guided I believe by the ideas of speculation could compromise their work instead of facilitating its realization. Such are, Sir, my private works; there is, and I am the first to admit, more good will than results acquired, but Your Majesty can be sure that this occurs due uniquely to my positions of professor and Director, which occupy a greater part of my time.

Gorceix and his technical advice, companies, monopolies.

A constant task for Gorceix was to examine and give technical advice on the exploration and mining of mineral deposits of the most varied types that were always sent him by the Governor. We reproduce below one of these technical advices: request of a gold exploration Company in São João Nepomuceno, about which Gorceix presented the following considerations:

"In my opinion, and in principal ad-

missible for all, every industrial company of whatsoever nature should encounter in the Government all possible animation and assistance possible. Thus, as the first consequence of this principal, the administration should not hinder in any way a private initiative, either by laws presented to the Parliament or by regulations that should govern the implementation of these laws. Especially, they should neither become very costly for the private compa-

nies nor should it become very difficult to obtain the amount needed to execute the projects. However, this ease with which the Government should receive the permission requests for research necessarily has a limit when treating, in particular, the mineral industry that without this permission would not achieve the goal it has in mind; and Government intervention would become more harmful for society than a complete disinterest in

the matters relative to the exploration of mines. If, for example, the administration continues to give poorly defined, poorly limited permissions, including square leagues of surface area, the situation would quickly come to the point where there would not be within Minas Gerais and perhaps other Provinces, a single square inch of land that has not been conceded to those who do not have the will or the means, which frequently follow, to make any use of the permissions called by them privileges, or to avoid others from exploring the deposits who are incapable of discovering or mining.

In this manner, they will go on establishing and I could easily present examples, the true monopolies that become perpetual due to the easy age with which these concessionaries obtain constant new deadlines to present documents, blueprints, maps, etc., etc., required on paper by the administration. From this is born the difficulties that serious companies encounter when they want to establish. They find claims based on research permissions conceded with excessive ease by the Government and it became too expensive for company organizations, causing them to abandon projects elaborated with enterprising spirit.

In relation to the definite concessions, analogous considerations can be made. When the State concedes them, on one side he deprives the owner in favor of a third party the use of his property; on the other side, he gives the concessionary new rights, such as use of the water, misappropriation of the land necessary to establish the exploration work, conceded rights that could hurt the fundamental principles of the property.

Even more, in my point of view, by the very act of concession, the State to some extent compromises its responsibility. In effect, according to the adopted rules, the administration demands, and with reason, blueprints, studies, reports, maps, etc., etc. about the research work, documents that, given the concession, remain “*ipso facto*”, approved by the Government.

However, these documents have no purpose except to prove the existence of the deposit, to know the nature of the minerals, their abundance, etc., etc., and even sometimes the concessionaries deem to place calculations in them about the value of the mine and the benefits that it could produce.

This approval of the idea that the

State guarantees the accuracy of the calculations of the concessionaries of the mine is only a moat to transpose, if it is very deep, but only a little wide, many times some speculators do not hesitate to transpose it, serving themselves in this manner and with authority of the Government to call stockholders to join the company that is soon to become in ruins.

In fact, at first sight, the Government by its complacency facilitates the organization of industrial companies, but many times, in detriment of a great number of citizens and in benefit of some speculators little worthy of the benevolence, which certainly is not moral.

In second place, in a new country, whose financial mores are not yet well established, it would take only one or two of these disasters to deter for a long time the capital of companies that to the contrary, offer all of the guarantees for the risks that in all the countries in the world mining the mines presents.

Therefore, the State has the right and responsibility to take certain precautions in the concession of mines and to make it not so easy to obtain similar concessions, demanding from the petitioners' guarantees that prove their capability to utilize the deposits along with documents that clarify for the administration the nature and importance of these.

The company, Companhia São João Nepomuceno, has or not fulfilled these conditions and today brings or not new documents that can clarify the matter. This is what needs to be examined. In 1883, the President of the Province of Minas Gerais sent me asking for information about a request made by the engineer Thimotheo da Costa and others for the concession of the gold deposits in the Fazenda do Gamma, Municipality of São João Nepomuceno. They proposed to explore for this company, the same that today asks to amplify the surface area of the land conceded.

The original petition of these applicants was accompanied by the same blueprint, of the same report presented today by the same company. It made me see in my information that it is impossible for me to verify the accuracy of these documents that under the scientific point of view were incomplete, adding then that attending to the circumstances of the mining industry; maybe it was not very convenient to be more demanding regarding these documents.

In this observation, I had in mind

to facilitate for each company the execution of its works and avoid all that could hinder their first attempts.

Besides this, it made me notice that by the quite brief report presented by the petitioners, it could be seen that the deposits in question were superficial and that, in sequence, could be considered as being part of the property of the soil and in case my opinion was accepted, they were the owners could have access to the mine as they considered convenient and could do all the studies and exploration work of the alluvium without any intervention of the Government.

This opinion did not prevail and the Government gave to Timotheo da Costa and others a concession that gave them new rights, but at the same time gave the petitioners new obligations to the State, obligations that as far as I know were not complied to.

In summary, in spite of this, the Companhia asked as a new favor, a concession of “some favors” one of which the need to canalize the water necessary for their work.

From the terms employed by the applicant, the result is that the company intends to obtain, with the concession of the new mineral favors, the means for the misappropriation of the land that they need; to the contrary the request in question would not have a reason to exist.

However, by the first study of this request, I noted with surprise the words “some favors” to designate the surface of the concession that they wished to obtain. A term so vague could not be accepted to serve as a base for a concession. A well-organized company should know what it needs and the Government cannot concede, in any case, land without knowing its extension.

I also do not understand what they want to say with the following words of the request: “It is included in the blueprint”. The blueprint only contains the property of the Company along with some neighboring lands! Nothing indicates and makes it impossible to know by examining the blueprint what would be the limits of the property belonging to the Company. In this respect I should add that they have presented to me the same blueprint for the second time that served as the base for the first request, I call this to the attention of Your Excellency.

As I still have reservation about the accuracy of this document, I cannot help

but notice its insufficiency, which I did not do in my first technical advice so as not to embarrass the organization of the Company.

About the blueprint, only the names of the Descoberto River and three small creeks that are its affluents can be seen; no point of reference exists; one does not know if the arrow indicates True North or magnetic North; there is no scale indicated; the small creeks seem to pass over the undulations of the land.

It would be very difficult, if not impossible, for the agents of the Government to verify the accuracy of the work. In favor of its request, the Company claims: 1st) that their works are in full activity; and 2nd) that they had already spent more than 50:000\$000 in this

company.

To these two claims, I responded that I did not have the least news of the reports that they had published about the nature of their work and the results obtained; the few pages entitled "Primary studies of the gold mine at Fazenda de Gramma" for which they used the engineer Thimotheo da Costa and others to obtain the concession of the gold deposits do not supply the information today necessary to recognize the actual state of the Company.

About the blueprint, there is no indication of the points already mined by the company; much less the place from which they plan to take the water, not even a trace of the canal that should transport the water. Therefore, to know-

ingly judge the petitioner's application, it seems to me that it should:

I) – Indicate exactly the number of mineral favors requested;

II) – Furnish a complete blueprint, captured and designed according to the rules adopted, not only the lands that are today the property of the company but also the land of the new favors requested, indicating therein the canal projected.

III) – A report of the installation of the works, their importance and their current conditions. I do not deem that these demands can be considered as difficult to be informed because in all well-organized and directed companies, it is these that are furnished to the stockholders, and as such, for a strong reason, should also be in the hands of the Government.

Gorceix and a threat to his permanence in the school

Once more, in December of 1889, the permanence of Gorceix in the School of Mines is placed at risk. A warning alert from the Minister of the Interior, directed to the President of the State of Minas Gerais, was ridicule only attributable to the high degree of myopia governmental, and would be the cause of the dismissal of Gorceix. Against this warning, the students and professors of the School directed a petition to the Minister:

"Citizen Minister of the Interior

The School of Mines has just been informed of a warning dispatched from you to the Governor of the State of Minas Gerais that Chair of Mineralogy, Geology, Chemical Poison Testing, Chemistry and Physics industries, so well ruled by the founder of this School, the wise Director Dr. Henri Gorceix will be put into contest.

So as not to lose his nationality, among other reasons, this citizen will not run for the position, as such dismissing from this School the one person to whom we most owe our existence, who did not spare efforts for the development and ranking that the School enjoys.

His studies and works about Brazil in regards to his specialty are proof superior to that which can be demanded in rigorous contest. The students of the School of Mines, and numerous monographs published in scientific journals,

exuberantly attest to the lively interest for the aggrandizement of our country that has been adopted by him, to which he has dedicated all of his activities for a greater part of his life.

In this manner, the School fulfills a debt of deep gratitude at the same time providing a benefit to the education of the nation, in asking that you, by any form, preserve his post as Master, who while working teaches us to work.

Attending our request will be an act of Justice and Patriotism by you practiced for the good of Brazilian progress.

Health and Fraternity

Ouro Preto, December of 1889".

(60 signatures follow)

Still in May of 1890, the problem continued in suspense. When asking Gorceix information about the bid that would be opened for the registration of the candidates for the Professor of the seats of Mineralogy, Geology, Chemical Poisoning Testing, Chemistry and Physics industries, which had been governed by himself since the creation of this School, he stated: Inform me if this bid, which has never more been published since last December, should be cancelled, awaiting your orders about me in view of the representation that was directed to the Governor by the students and professors of this School asking for the non-dismissal of my person from the School.

On March 9, 1891, he again wrote to the Minister:

"I have the honor to inform you that I deem my duty, even though I have not yet received the circular published some days ago in the journals regarding the accumulation of jobs, I bring to your knowledge that in case the positions of Director and Professor of this School are incompatible, I would opt for the job of Director, asking however to remain, without remuneration, in the seat of Mineralogy and Geology that I have occupied for more than 15 years, since the day in which I organized this School.

More than 17 years ago, I was called to Brazil to organize the teachings of Mineralogy and Geology, and during this large span of time, I have devoted all of my efforts to fulfill this mission that was entrusted to me without me occupying with whatsoever other matters outside of the works of the School, seeking in all measures by me proposed, only the development and good of education.

It is to be able to continue to follow this path that I ask to be preserved in the teaching of science to which I have occupied by entire life and where I deem I can still be of service to the country, satisfying a deep desire that I have to be as useful as possible to the country I consider to be my adoptive homeland and to which I owe a lot".

Gorceix and the Crévaux medal

The Society of Commercial Geography of Paris conceded to Gorceix the

CRÉVAUX medal destined for America in the year of 1890.

The President of the Commission in charge of distributing the awards said in

his report: "It was our intention to render homage to a man that competes to maintain our moral influence in the greatest state of Latin America – Brazil.

It deals with the influence of France as a focus of intellectual culture, an influence that acts upon a group of elective spirits and that, in some way is a combination of reflected esteem connected with charm. It is this genre of links that is necessary to develop between France and Brazil. It would be an illusion to believe that our supremacy can be maintained without effort,

even in the countries of Latin America. There too exists active competition.

But in these regions, a man can do a lot, principally when he is given, as occurred with Mr. Gorceix, qualities that unite the wise with the organizer.

For three months, we have here listened to Mr. Gorceix tell us, as he has always done, about his trips, the resources and the future of Minas Gerais that is today his second homeland.

In the past year, Mr. Gorceix founded the Society for Economical Geography

in Ouro Preto, modeled by us. It is in this manner that he does not lose an occasion to popularize, in Brazil, the works of France, and to propagate in France the knowledge and esteem of Brazil; these are the qualities that we propose to compensate by awarding Mr. Gorceix with the CRÉVAUX medal."

It was in this Society of Commercial Geography of Paris that in a meeting on November 18, 1889, Gorceix said: "*Minas is a heart of gold: a heart of gold in breast of iron*".

Gorceix and the esteem of D. Pedro II

The Emperor Pedro II had a special esteem for Gorceix. Since 1885, he had recommended him to his colleagues in the Academy of Sciences for a place in this Academy in the Geology and Mineralogy Sector and Daubrée responded: "*Sir, the scientific titles of Mr. Gorceix were very much appreciated on the part of each one of us and we have a great desire to give him homage, providing it is possible that this testimony is agreeable with Your Majesty*".

But Gorceix was not nominated. His competitor was Albert de Lapparent who came to publish his great Treaty of Geology (*Traité de Géologie*), and the working methods of the two competitors were very different.

On June 27, 1885, Gorceix married with a young woman belonging to a traditional Brazilian family, Miss Constança da Silva Guimarães, daughter of Judge Joaquim Caetano da Silva Guimarães and his wife Mrs. Maria Izabel da Silva

Guimarães, who was also the niece of the poet and novelist Bernardo Guimarães.

Upon applying for the DELESSE award created by Ms. Delesse in memoir of her husband, Gorceix presented his works about the tertiary basins of Gandarela and Fonseca to which he attached the studies about the diamantiferous deposits, the rocks of Minas and the topaz deposits. The jury, consisting of Daubrée, Fouqué, Des Cloizeaux, Gaudry and Hebert gave him the award in 1887.



D. Pedro II emperor of Brazil
Oil on Canvas
Autor: unknow
Photo: Pil Gloor

Gorceix and siderurgy using a blast furnace

Gorceix still had the opportunity to see one of his dreams come true for Minas Gerais: a blast furnace that substituted the Catalan forging and open hearth furnaces.

Therefore, he sent one of his recent graduated students to France to refine his

knowledge, financed personally by the Emperor Pedro II; the only fact occurring during his Directorship of the School. He recommended that the student should include in his activities to which he should dedicate, a traineeship at the siderurgi-

cal plant of the Compagnie des Forges d' Audincourt in France (Valay - Haute Saône). The choice of this plant came about because of its two furnaces that worked with wood charcoal, exactly the type indicated to be established in Brazil,

being the traineeship destined to the learning of its construction and direction of these types of blast furnaces.

During this traineeship, the young engineer always insisted on trying to convince the Director of the plant, Jean Albert Gerspacher, to come to set up the blast furnace in Minas Gerais, and upon the young engineers return to Brazil, managed to get the approval of Gorceix, who offered all of his help for the organization of a society that could put his plan into practice.

In June of 1887, Jean Albert Gerspacher and his son Joseph Albert Fidele Gerspacher left for Brazil, where after a series of hindrances, established the company Amaro da Silveira/Jean Albert Gerspacher that under the technical direction of this latter, began in Itabira

do Campo, MG (today, Itabirito), the construction of a siderurgical plant containing a blast furnace and casting system and was called Usina da Esperança (Plant of Hope).

For a blast furnace, special refractory bricks are necessary, not only to resist the action of fire, but also the ashes of the fuel.

Some time ago, Gorceix was asking: *"In Minas Gerais, where does there exist a type of clay to fulfill such conditions? It could exist, but tests and analysis demonstrating the possibility to obtain it must be presented. The matter is of great interest and I am now mentioning this to all the people that might desire to help in its solution."*

I always cite the example of the Intendente Câmara. Its first blast fur-

nace was constructed with bricks from the country; they did not resist. For the second, the refractory material came from England.

Jean Albert Gerspacher in his written notes about the forges that he visited in Minas Gerais before beginning the construction of his blast furnace said: "the refractory bricks needed to construct the furnace will be made at the site, and it is there that the refractory clay is found with very good quality".

On June 24, 1891, the blast furnace was put to function by Joseph Albert Gerspacher, due to the death of Jean Albert on October 1, 1889 during its construction. It was the first blast furnace installed in Minas Gerais that functioned with great success, after the Independence of Brazil.



The first Latin American blast furnace built with Cuirass steel in 1916 that received the name of Usina Esperança (Itabirito, Minas Gerais, Brazil), and Jean Albert Gerspacher founder of the first steel mill

Gorceix and the lighting in Ouro Preto

One hundred years ago, the city of Ouro Preto was illuminated with more than two hundred gas lamps, each one of them corresponding to the light of 6 stearin candles.

Ending on June 1, 1882, the end of the public bid for their substitution by an electric lighting system and not have appeared any candidates, Dr.

Antônio Gonçalves Chaves, Presidente of the Province of Minas Gerais turned to Gorceix to obtain clarification about the most practical means to achieve this improvement.

As Gorceix was leaving to the North of the Province to continue his studies on the diamantiferous deposits, he could only present a summary of the

question, saying:

"The means to illuminate the city can be grouped into two very distinct systems, subdividing each of them into a certain number of processes:

I) Illumination by means of carburated gas combustion.

II) Illumination by means of electricity.

After a series of considerations about each process of the above systems, I propose an experience of easy installation.

A gutter wheel exists near the bridge in Barra; it would be easy to repair it and make use of it to, by means of the GRAMME machine that the School possesses, and we could proceed with the experiences that I and my colleagues, Thiré and Ferrand, would conduct with great satisfaction. Besides the Gramme machine, the School has a series of ac-

cessories that could be utilized.

We would begin by first illuminating the internal patio of the School, and afterwards, if the results were satisfactory, we could focus on the Praça da Independência".

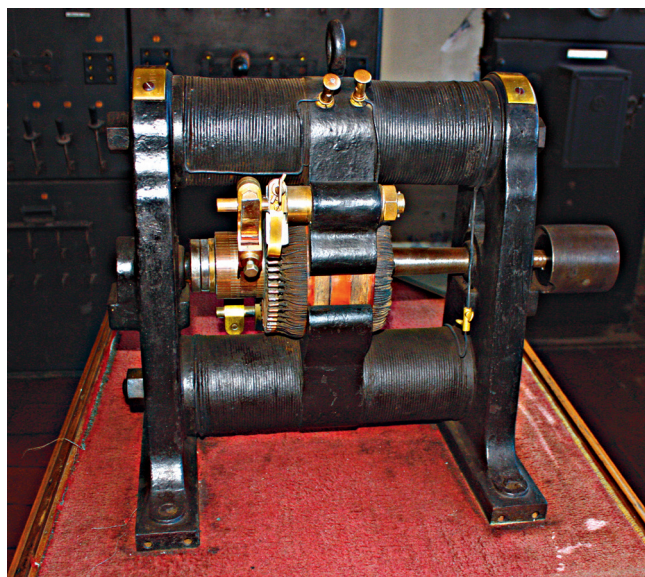
Besides the scientific interest of this research, it would give us the advantage of permitting everyone involved to judge if the problem is being solved.

Ignoring whether or not the experience was performed, one can only affirm that Gorceix, before his definite dis-

missal from the School, was able to assist on September 7, 1891, the illumination of the streets of Ouro Preto with electric lighting only in the center of the city.

The Companhia Industrial Ouro-pretana furnished the electricity utilizing the Tombadouro Waterfall located in Freguezia de Antônio Dias. This company was installed on September 12, 1889 with its central office in Rio de Janeiro on Rua João Alfredo (former Quitanda), nº 58 – Upper Floor – Post Office Box Number 602.

The Gramme machine (1869), a Dynamo (device that convert mechanical energy into electrical energy) capable of generating a continuous tension that was much higher than the dynamos of that time. (from the collection of the School of Mines – UFOP)



Gorceix and his first conferences

At the beginning of his activities in Brazil, Gorceix in 1876, with the hopes of attracting an appreciable number of students, had the initiative to give conferences in the Museu Nacional, destined to "call attention to the gold mines of Ouro Preto".

These were immediately published and well widespread. The result did not wait long, and in a letter to the emperor on September 14, 1876, he said:

"My efforts were not completely

in vain. Seven students from the Escola Politécnica, who have already finished their general courses, have registered. However, two of them were very afraid of the difficulties of the bid and of the reputation, really little merited, of the severity of the jury, and have cancelled their registration".

Of the five candidates that participated in the exam, four were admitted, forming the first four students of the Escola de Minas de Ouro Preto.

The first of the conferences in the Museu Nacional talked about: *"The Past of Gold Mining in the Province of Minas Gerais"* and the second: *"The Present and Future of Gold Mining in the Province of Minas Gerais"*.

Gorceix also had the occasion to give his third conference in the Palace of the Provincial Assembly in Ouro Preto about the "Mineral Riches of the Province of Minas Gerais" assisted by S.S. .M.M. Imperials on May 31, 1881.

Gorceix and his big dream: a geological map of Minas Gerais

In reports directed to the Governor of the Province of Minas Gerais, in official letters to the Minister and Secretary of the State of Business of the Empire, Gorceix always found occasion to deal with that which was a constant thought: *"The project that would be for me, if someday I could realize with success the crowning of my career: the confection of a geological map of this Province."*

"A truly patriotic undertaking, so

useful for the country as glorious for those whose names would become legendary in the realization of the geological map of the Province of Minas Gerais.

Since I have arrived in Minas, it is an idea I have studied under all points of view and whose realization I will undertake, cost what it may. However, I am well persuaded that if this only depends on my efforts, it will materially be impossible for me to achieve".

For as great as would be my zeal, certainly the Director of the School could not undertake the direction of all of the points of this company for as modest as it is; However the Government will find in the person of the illustrious geologist Orville Derby, the most precious and will prepared assistant for that part which regards the paleontology of this work.

And I repeat: *"this does not deal with a costly company, but one with a*

Despesas Mensais		
A	Diretor Geral dos serviços, encarregado de coordenar todos os documentos, dirigir as classificações, análises e escolher o pessoal e dar as necessárias instruções:	
	Diretor da Escola de Minas	0
B	Três ajudantes	
	Repetidor de Mineralogia e Geologia	0
	Repetidor de Física e Química	0
	Repetidor de Física e Química	0
C	Topografia (*)	0
	Diretor dos trabalhos de escritório:	0
	Lente de Topografia da Escola	0
	Ajudante:	0
	Professor de Desenho da Escola	100\$000
D	Trabalho de Campo	
	1ª Seção de Geólogos	
	Um Chefe de Seção	350\$000
	Dois Ajudantes a 250\$000	500\$000
	2ª Seção de Topógrafos	
	Um Chefe de Seção	350\$000
	Um Ajudante	250\$000
	Trabalhadores para transporte de instrumentos, balisas, abertura de picadas, etc ..	100\$000
	Diárias de 6\$000 para cada um dos geólogos ou topógrafos, tomando-se para termo médio 200 dias de trabalho de campo por ano(**)	500\$000
E	TOTAL DA DESPESA MENSAL	2:150\$000
	* Este pessoal receberá uma diária de 6\$000 para pagamento de despesas de viagens quando tiver de fazer trabalhos no campo.	
	** A despesa é, anualmente, de 6:000\$000	

Budget presented by Gorceix for the elaboration of the geological map of Minas Gerais, Brazil.

modest beginning and I have the firm conviction that with a collaborator like professor Derby, the results will be such that no criticism could be made for this work of such great utility to the country.”

“It is a work that is of great interest to agriculture, the industry and the colonization of the area, a work very much in demand and that, because of poorly presented projects with exaggerated expenses and poorly developed ideas, it has been deemed difficult and costly for execution.

A geological map for the country absolutely needs to be done, the study of soils is completely abandoned, and the little that the foreigners know about it is doubtful.”

“The sum that is spent in the beginning will be well repaid by the results, and the sacrifice well compensated by the painful experiences that could be avoided;

experiences extremely costly and harmful to the realization of a dream for all.”

There is not any country, except Brazil, even in South America, that does not have at least a draft of a geological map.

“The physical and political history of the Republic of Argentina done at the cost of the State by Dr. Martin de Mossy is today very advanced, thanks to the works of Burmaister and Dr. Moreno; that of Chile, due to Gay is being continued by Domeyko and Pissis and their numerous students.

I do not speak of the United States of North America, or of the States of Europe that many years ago have achieved a considerable share of geological map publications, a work for which a large number of persons is always employed.

“I would not here defend the idea

of renovating the great plan adopted by the wise professor Hartt, whose death is for science and above all for Brazil lamentable, for it is a plan that no one better than to bring it a successful execution.”

“Our works at the School and the matters that occupy the time available for the lessons given are all directed towards one end: to be able to one day write the physical and geological history of the Province of Minas Gerais. However, seeing today that I will be alone, it would be impossible to achieve this goal; I need collaborators to also deal with the undertaking of the geological map of the Province of Minas survey, so that it can be accurate with the aid of quick surveys by the methods that the wise Sr. d’Abbadie employed in Africa and whose implementation he personally recommended to me.”

“I confess that there is no work that

has interested me more than the study of the riches of the Province of Minas and in it I press on bitterly feeling that I cannot dedicate all of my time. It was a dream that I nurtured since my arrival in Brazil and that today I cannot hope to fulfill."

"The jobs for the execution in Minas of a geological map would certainly lead other Provinces to undertake similar works that, according to what I understand, have already been initiated in the Province of São Paulo under the direction of the illustrious Derby, with the aid of two engineers, graduated from this School: Francisco de Paula Oliveira and Luiz Felipe Gonzaga de Campos, two active defenders of economic geology."

"The men in charge of similar works are modestly called geologists; men who have studied the Earth and it are to them that the United States owes works, such as those of Rogers about Pennsylvania, the Ouves about Wisconsin, and who made a scientific fortune from their authors and ensured development and riches of the country."

"I do not talk about the geodesic surveys or the cadastral plans for a region as rugged as Minas, bigger than France."

"Utilizing all of the information that I have collected and that was furnished by former students of the School, I believe that in 5 years I could guarantee the execution of this plan. The Escola de Minas de Ouro Preto would have the occasion to prove what it can do and everything leads me to believe that the example given by Minas Gerais will be imitated by other Provinces."

"The Gerger Map in quadruple scale would serve as a base, undergoing all of the corrections indicated and others to be made immediately, due to the studies of the soil, and rapid topographic surveys and designs for the railroad."

"Having myself, at the beginning of my career, collaborated with my wise Master Delesse in the organization of a geological map in France, I have the complete conviction that I could conduct a similar work or at least the most complete one possible for the State of Minas Gerais, if the Governor deems that the Director and Professor of the School of Mines can continue to merit your full confidence."

"In the preliminary plans organized by myself, relative to the realization of the geological map of the Province of Minas Gerais, I have always been guided by the idea of utilizing the maximum information possible in these works. The people

and material of the Escola de Minas de Ouro Preto, without this implying in any inconvenience or hindrance to their courses and superior goals, would to the contrary, seek in these same works a greater development for the teaching of the material to which I think they are strictly connected. In effect, under the conditions in which the Escola de Minas now finds itself, all of the work of classification and analysis can be done here, as well as the necessary designs and once more I count on the dedication and good will of the professors. "

Using as assistants, the repeaters of Mineralogy, Geology, Physics and Chemistry, the professor of design of the School, except for this latter whose salary would be a mere salary of '100\$000 monthly, the others would be the completely voluntary service of the repeaters. Thus, it is certain that the increase in their work, far from disturbing the ordinary service of the School will be well-compensated by the facility with which the number of examples could be multiplied by the professor, acquiring new knowledge in the material of geological map. For these, I request a daily expense account of 6\$000 when during vacation, they would have to travel in excursions relative to the geological map. These daily expenses, as well as the transportation expenses, impressions, etc. will be paid by the provincial funds that aid the School, since, according to the technical advice of the budget commission, the Minas Assembly would simply add to the chapter "Aid to the School of Minas", the words "and for the geological map ".

These expenses, in my point of view, do not exceed 8 contos and could be paid by the remnants of the provincial grant that has been applied in combinations until now and would not burden in anything the overall budget.

It does not follow, however, for same professor of design, whose work and all of the material will not bring any new knowledge but whose salary is already inferior to that of any other professor and this should be considered. As for the necessary accommodations for these works and a storage area for the material collected, I am certain that these encountered in the School are sufficient. The laboratories built at the expense of the Province are large enough for the analyses of the material furnished by the Commission of the Geological Carta without disturbing in any way the ordinary service

of the School.

The old laboratories existent in the building, also belong to the Province, with their areas could be transformed into storage area and collections for which they are spacious enough. It is very modest salary that is found in the chart for the engineers responsible for the geological and topographic parts; I think that it is a normal remuneration for those that, upon leaving the School, would find a means to exercise their profession, gaining more skills in the material of their specialties, acquiring probabilities and rights for promotions to chiefs of the survey service for a geological map in other Provinces.

As for the expenses incurred with people employed solely for the geological and topographical survey, they will be totally paid by the General Government and in my opinion should not surpass 2:150\$000 monthly according to the annexed chart.

The need, utility and urgency of this work are so much greater than I considered them to be, not as a simple map in which will be indicated the diverse species of land that compose the underground of the Providence of Minas and the places that occupy a series of formations, constituting the solid crust of the world. This work, as such is limited in the sense that at first light, it only appears to have scientific interest and, thus, in itself is very useful for the mining researches, for fossil fuel, etc. To complete it, it would be necessary to link it with other researches that perhaps have a more immediate application, more practical in all of the matters that regard the progress of agriculture and industry.

In the first place, indicated in this geological map would be all of the gold mines and other metals until today discovered, insisting in the reports that would accompany this work about the history of each one of them and the mineral deposits utilized in industry, such as diamonds, topazes, amethysts, cymophanous, tourmalines, quartz, mica, sulphate of barite, serpentine, stone 01 air, etc., etc. Equally, there would be indicated the situations of navigable waters with some news written in text about them.

In the second place and along these same lines, there would be adjustments to these indications about the industrial establishments already existent, according to their order of importance.

Completed this first part of the program destined for industry itself, I would

do a second chapter especially dedicated to agriculture. This last part would include the execution of a certain number of maps referring one of them particularly to the relief of the soil and the nature of the crops already established in this Province.

I would divide this Province into a certain number of zones whose average altitude would vary, for example, 200 meters. Here would not be treated an impossible leveling to be executed, however, it would be data collected with a precise barometer. Each one of the zones would be represented by conventional colors, the principal crops used by their inhabitants, and with luck, at a simple glance at the map, one would immediately be able to have an idea of the current state of agriculture in the Province, and the zones that, because of their altitude, should be preferentially chosen by the immigrants because of the good probability of these to acclimatize new cultures.

A brief description of these diverse zones, their orography, hydrography, the economic state, indications of their population, means of communication, and average value of the lands would complete this last part. A third map would refer, especially, to the composition of the topsoil determined by brief analyses. In these would be indicated, by means of particular colors, the nature of the soil, using characteristic for classification, or the predominance of certain elements such as clay, sand, limestone, etc., etc., or the proportions of certain substances useful for vegetation such as lime, alkali, and phosphoric acid etc., etc.

It is this that certainly will require more work and laboratory research; in compensation, however, a great number of persons would collaborate by sending easily collectable samples.

I myself, having begun my scientific career taking part in a work of this genre, employed throughout all of France by my Master Delesse, I know all of the difficulties and the long duration of the project, and it is exactly because of this that I believe that this work will be a success.

Its importance is capital for agriculture, since by some analyses of the soils of this Province, as well as some of the rocks, those soils that lack lime can be indicated, being the addition of this abundant substance of major necessity. Then, there are other soils that, by the abundance of phosphorous acid and alkaline, are perfectly appropriate for the cultures of cereal, pastures and that which today

is covered with Kermes oak. I have also come to know that in innumerable points of the Province, there exists in mass or in layers that by their composition furnish a soil as rich as the famous black soil of Russia or purple soil of São Paulo.

These rocks, many times profoundly altered, do not only furnish very fertile soil, in certain cases reduce to powder that can serve to improve soils of inferior quality.

This practice, many time following that of Europe, could at first sight appear to be very complicated and little worth the attention in a country where today all that has been required is sun and humidity, using and abusing the riches of the principal fertilizers accumulated during thousands of years on virgin lands.

The gold of this age is exhausting and in the new order of things, nothing should be dispensed to make the land produce all that it can give in the most economical manner possible.

I could cite many other examples in favor of my proposition; however, I will cite only one.

Samples of granitic rock from the Matipo River were brought to this School, and the microscopic exam of a small fragment from them showed a remarkable abundance of lime phosphate and minerals rich in alkaline, which is enough to permit the affirmation that the land from the decomposition of this rock is certainly of great fertility.

This slight glance at the work that I have just described eliminates any doubt of its use and importance.

However, how can it be implemented: How to include it in the sacrifices that the Province imposes to perform it? I would like to make this principal a complete work but this would condemn it to do nothing, so vast would be the field to explore, so great would be the costs and so numerous the people needed.

The first difficulty encountered would be the lack of a topographic map, the base of all of the works. For the general traces, it became necessary to accept what the Province ordered to organize and whose publication could not delay. According to it, it would divide the Province into 20 districts, for example, those which by a quick survey that I will explain further on, rectify the position of the most important points and draw the principal traces of the directions of the mountain ranges and the waterways. At the same time, I would make geological

recognitions and studies that would give a sufficiently accurate idea of the relief of the soil and the climatic and agricultural conditions of the region. The samples of ground and rocks carefully collected would afterwards be studied in the laboratory.

It is not indispensable, but understood, that the beginning of the works would be at the same time in all of the points of the Province. It would be easy to undertake this, beginning with the Municipalities of Ouro Preto, Mariana, Queluz, Santa Bárbara and Barbacena.

I know enough of the geology of this region to be able to, in short term, terminate this first part.

As for the topography, the professor of the Escola de Minas, Engineer Antônio Olyntho dos Santos Pires has already begun the survey of the surroundings of Ouro Preto; his measurements are based on the most accurate equipment that the School has the opportunity to own. This base will permit the determination of the exact horizontal distance between two culminating points quite far from each other that in turn, serve as the vertices of a series of triangles that would fix the position of a great number of more distant points by afterwards, continuing the traces.

At the end of the first vacation, I believe we could terminate the canevas of the zone that is included in the area of the Ouro Branco Range: between Itabira and Cocaes; However, in spite of all of his zeal, the engineer Olyntho can only dedicate to this work during his vacation time and some days that he has free during the school year.

I experience the same difficulties with the continuation of my geological researches. During the school year, these become impossible because they require some days of work; as such, 2 or 3 collaborators that no have no other tasks and can dedicate their time to this service are indispensable.

The analyses of the ores, minerals, soils and mineral waters could be done in the new laboratory of the School that within a year will be concluded and that has all of the accommodations that would make this research quick and easy. For its execution, I can count on various collaborators from the School and this service would not require any sacrifice on the part of the Province. We are, as such, in a much better condition than any other Province because the installation

of the special laboratories and salaries of capable people are always a source of great expense.

I would deem to be very content if I was given the general direction of this work to which I have dedicated my free time between my daily course of which I have dealt with the most varied material, time that until then I had dedicated to researches whose results were compensated by the Science Academy of France. I would deem myself content if as the only compensation of these works would be to be able to do this service for the Province of Minas.

Gorceix leaves the School of Mines

During the direction of Gorceix, the School of Minas many times was the victim of disturbances due in a great part to the differences between the professors and Gorceix because of his dominating personality, which at times, seemed very aggressive.

This tense and hostile atmosphere was growing in intensity along the times, reaching its maximum at the end of the year 1891 when Gorceix found himself in the position of being obliged to ask for dismissal from the direction of the School.

The tense atmosphere could be felt during this year by the blunt criticisms that appeared in newspapers, such as: *Jornal do Brasil*, *Jornal do Comércio*, *Gazeta de Notícias do Rio de Janeiro*, and the newspapers of *Ouro Preto*, such as *Epoca – O Movimento* and *Estado de Minas*; criticisms signed by the professors of the School attacked the Director as much personally as for his administration.

At this time, in the School, there were courses that had become extremely overburdened with material and it came to the point that some of them had to have two professors; courses that at the *Escola Politécnica do Rio de Janeiro* were taught by four professors and two substitutes. From this resulted the fact that if a member of the teaching staff was absent, and this was frequent, the discipline would depend on the good will, never contradicted, of one of the other professors who was not remunerated for this and who would have to deal with issues that were entirely unrelated to his own discipline.

In view of the complaints by a majority of the professors, he attempted to redistribute the material of the courses, so that it would be more in line with the needs and conveniences of teaching.

*As designed, the plan for this considerable work seems reasonable to me. It certainly departs from that which is followed in other countries, as for example, the United States. However, it is similar to that adopted in France, where the central service of the Geological Map was confided with great economy to the public budget, the professors from the School of Mines, the *E'cole de France e Sorbonne*, joining them with a certain number of technical assistants that dedicated their time to these works, receiving certain remuneration.*

Once more, counting with the

As such, the former disciplines taught by Gorceix: Mineralogy, Geology, Chemical Poison Testing, Physics and Chemistry for industries were divided into two courses: i) Mineralogy and Geology and ii) Chemical Poison Testing, Physics and Chemistry for industries.

For the first, Gorceix was nominated on June 10, 1890 Director of the School and for the second, on May 06, 1891, the engineer Carlos Tomás de Magalhães Gomes Filho was nominated, who had been a repeater-preparer for these disciplines for more than 4 years.

The teaching of the disciplines of Mineralogy, Geology, Chemical Poison Testing, Physics and Chemistry for industries by Gorceix that had been from the beginning going through successive contract renovations, would now be passed on to him by nomination for only the teaching of disciplines of Mineralogy and Geology.

On March 9, 1891, Gorceix said:

"I received a great proof of consideration and confidence with my nominations as professor and Director by the Bill passed on June 10, 1890. Until today, I have been serving under these conditions, continuing to teach Mineralogy and Geology, Chemical Poison Testing, Physics and Chemistry for industries that however were not mentioned in the title of my nomination, but by the old Regulation, should still apply to the students currently registered, as these have been part of my seat of Mineralogy and Geology.

More than 17 years ago, I was called to Brazil to organize the teachings of Mineralogy and Geology and during this long span of time, I have dedicated all of my efforts to fulfill this mission that to me was entrusted, without occupying myself without any other matters outside

enlightened zeal and dedication of Your Excellency for all that regards the progress and development of the country, I await from Your Excellency the powerful aid that would move forward such an important improvement and ask that Your Excellency see fit to make sure that my this my exposition arrives in the hands of competent power.

God guard You Excellency.

Illustrious Mrs. Consul José Fernandes da Costa Pereira Júnior,

M.D. Minister and Secretary of the State of the Business of the Empire".

H. Gorceix

of the works of the School, seeking in all of the measures proposed by me, only the development and good of education.

All of these professors of the redistributed disciplines were nominated without previous proof of an exam and in view of the reform processed at the School on January 10, 1891, from which surged the Regulation that was confirmed with the Decree n° 1258 of January 10, 1891, Article 3 of the Republic, gave the redistribution of the other disciplines the same situation as that of Mineralogy, Geology, Chemical Poison Testing, Chemistry and Physics for industries.

The inauguration took place at the end of the school year, on May 6th for Professor Carlos Tomás de Magalhães Gomes Filho who taught the disciplines of Dr. Costa Sena, at that time, with the consent of the Congress of Minas, but since the inauguration date he is considered to be the acting professor in exercise.

Having finished his vacation, the Director declared in an official notice to Dr. Carlos Tomás that his course would not be able to function yet and designated him to each the disciplines of Dr. Costa Sena (Physics and Chemistry of the General Course).

Carlos Tomás, who was convinced that when the school year started, he would be teaching the materials of his course as acting professor, did not accept the designation.

As such, when the school year began at the School, there was Carlos Tomás going to initiate his course and upon arriving, encountered the Director, who ordered the monitor for the class to close the classroom doors so that the students could not enter, declaring then that he,

as Director, as of now suspends all of the classes of the discipline in question until new orders arrive from the Minister.

On September 25, 1891, Gorceix received from the Minister of Business for Public Education, Post Office and Telegrams:

Section 1 - N° 572 Federal Capital on September 25, 1891

The professors nominated for the School of Mines of Ouro Preto, Engineers

Carlos Tomás de Magalhães Gomes Filho, etc. , appealed to this Minster about Your deliberation to deny them their responsibility to exercise teaching in the present school year.

.....
In presence of the facts that have occurred, the documents existing in this Ministry, and evidencing the certificate furnished by the Treasury of this State showing that Professor Carlos Thomás

de Magalhães Gomes Filho, on this last May 6th was inaugurated and took up his position for which he was nominated, receiving, in this character the respective salaries until August 31; a fact that completes the act of his nomination and that after this, it is not legal to deny him the exercise of his position.

I have resolved that the Eng. Eng. Carlos Tomás de Magalhães Gomes Filho and the others that are in entirely identical



Gorceix is the ninth from the left. Photo taken in homage of the students of the School of Mines and its Director Henri Gorceix upon leaving the direction of the school on October 12, 1891 (from the collection of the space allocated to Claude-Henri Gorceix – Pace de l'Église, Bujaleuf – France).
Photo: unknown

conditions continue to be considered in exercise; this is what I communicate for your knowledge and due effects.

Antônio Luiz Afonso de Carvalho Sr. Director of the School of Mines of Ouro Preto".

Upon receiving this communication, Gorceix immediately replied the next day, saying:

N° 669 - Escola de Minas de Ouro Preto – On September 26, 1891".

"Honorable Mr. Minister.

I have the honor to ask Your Excellency, if you so deem, to concede my resignation from the position of Director of this School for which I was nominated by Decree on June 25, 1890 and that since 1875 I have exercised by contract renovations. I also ask that you accept the resignation from the functions that I have had as professor of Mineralogy and Geology, which I have exercised under the same conditions.

I thank Your Excellency for the numerous proofs of confidence and consideration that have always been given to me, and also for the those I have received

from predecessors of Your Excellency, that have also exercised the high functions that today, Your Excellency occupies with such dignity. I have already had the honor to mention to Your Excellency, some of the motives that have led me to make this decision. The words of benevolence and consideration that until now Your Excellence have directed towards me left me with great respect and admiration and of them I will cherish grateful remembrances.

The difficulties of administering the School that day by day increases the requirements of my functions of professor, and the state of my health do not permit me to have the time and spiritual needed to continue my research works which are now only in drafts about the rocks and minerals of this State and with my permanence in the School, certainly will be impossible for me to finish.

It is with great sorrow that I leave this Establishment by me created, where I have spent a greater part of my life, especially when I see myself surrounded with studious and dedicated students that

I consider my good friends and where I have found collaborators that are still the best assistants that one could wish for.

I sought to apply, in this School, the methods of teaching that I learned with my wise Masters and the results confirm that they are the best to make this technical school capable of supplying professionals useful for the country. The already obtained results and those that the future will show, if this standard of work continues to be observed, will more than compensate the animosities that I have encountered during my direction and the attacks where I was and still am the target.

I leave the School that I installed in 1876 with four students in a modest house and which now has 126 studious students who well understand their duties. The laboratories, the collections, and the library are sufficient for providing all of the assistance for the studies that one could desire, and upon leaving, I have the most sincere hope that the School will continue to prosper and that it will be useful, as desired, to the country and especially to the State of Minas Gerais".

Position of the students of Ouro Preto regarding the decision of Gorceix to resign from the School of Mines

From the students of the
School of Pharmacy

Honorable Mr. Dr. Henrique
Gorceix

"We, the undersigned students of the School of Pharmacy of Ouro Preto, zealous for the progress of this beloved State, cannot but lament the loss that your absence as the Director of the Escola de Minas of the Capital threatens.

You are a man well-known for the culture of your spirit and for the gifts from your heart whose kindness translates in the frankness of your character.

We all know of the glorious crusade in which you embarked and whose goal is the preparation of youth, whom you teach with rare wisdom, dispersing the fruits of your great talent, and as

such, contributing to the reconstruction of our beloved homeland.

No stranger to your ardent and patriotic words, which have uncovered the doubts that hover over our beloved country, turning you, in this way, known and admired. Now that you wish to leave, we cannot remain in silence and appeal to your kindness in the intent to save us from the realization of such a disastrous project.

Accept, then, the protests of our esteem and consideration".

Ouro Preto, October 1, 1891
(48 signatures follow)

From the students of
the School of Mines

"Beloved and wise Master Dr. Henrique Gorceix

We, the below signed students of the School of Mines of Ouro Preto, knowing that you have taken the decision to resign from this School, come to manifest our sorrow, asking you at the same time to revoke this decision, certain that in doing so, it would be one more great service by you given to the cause of education.

Accept these few and insignificant lines as an expression of true sentiments from those that to you tribute friendship and eternal gratitude"!

Ouro Preto, September 28, 1891
(104 signatures from the students of the School follow).

Gorceix manifests publicly

In the newspaper "JORNAL DO BRASIL" of October 3, 1891 Gorceix published the following text:

In the Editorials – The School of Mines of Ouro Preto

About a month ago, a campaign of attacks and offensive concepts were launched against me.

This pretext gave rise to a similar campaign, a refusal that gave opus to the intentions of a professor nominated for one course and who deemed it his right to teach in another, the pretext of which no longer matters!

My person and my character are the only things being questioned. I do not have the right to defend myself against this cause. Everyone understands the reservation it imposes on me. I seek to practice to the maximum the wisdom – know yourself by you yourself – and I am getting ready for when everyone wants me to submit to a public confession and practice it sincerely, to do as others and confess my faults.

It is said that I drove away people who wished to work in the Laboratories of the School with my shouting and my rude expressions. I very much regret this, as much for these people as for me, but in spite of such, others will continue that work and of this I am satisfied.

Maybe this is proof of the patience of these latter, but maybe, it also demonstrates that my shouting were not as terrible as the public was told.

Those, whom I bothered, drifted

away. They were in their rights. They followed the precept of the well-known proverb, just like I am in my rights to resign from the School of Mines because of the burst of angers that currently takes place against my character. I have only considered three assertions.

If, my shouting and my severe words have hurt good men, as is said the anonymous, that says Jornal do Comércio, ignoring whether authorization was received to present these claims to the public, I have always in any instance done justice to the newspaper's value and to all of its merits; and I do not believe I have asked the aid of anyone to defend its professional determination, which I hope that of this they are convinced. I did not offend, either with words or writings.

During 16 years, I have received from the press evidence of the most flattering benevolence and charm. I sincerely thank those that helped me to serve the School of Mines of Ouro Preto. It is to them that I direct my praise and it is above all, through them that I was able to boast myself.

I very seldom frequented the vestibules of the Ministers. All of them found it reasonable, which I consider a great honor, to dispense this formality and permitted me to report directly to them; not for me, but for the students of the School, who in it had become distinguished, many of whom are professors today. If I have proceeded so poorly, who has the competence to censor me? Is my character so

incomprehensible? It is a matter of appreciation. Incomprehensible causes for some are very clear for others, and I believe that my character has been comprehensible for a majority of my disciples.

I hope they will not hesitate to declare it and with proof this assertion, I ask you to publish a copy with the signatures of 104 of them that expresses their sentiments. This was delivered to me when they learned of my request to resign which I had sent to the Governor. I am certain that it gives justice to my character, if you consider the profound sentiments and not the style in which it was written! If among them, as among their predecessors, there is someone to whom this style is offensive, I declare to them that I am the first to regret it.

But then, I have to concede that the robe does not make the Monk!

Having untangled my authority and my absorbing personality, I sincerely desire that the School of Mines of Ouro Preto, which I have created and organized well, or poorly, with the assistance of other people, and according to what I have said and many times written, continues to be the center of work and studies. I hope it prospers more than when under my direction, proving that my last act was dictated, as were all of the others, by a sincere desire to see this institution merit the praise that until now, it has never lacked.

Ouro Preto, September 28, 1891
H. Gorceix

Mission fulfilled

October 5, 1892

To Dr. Medrado

Mr. Dr.

Having asked exoneration as Director of this School, and not being able to further exercise the functions of this position, I request with dignity that you assume the functions of this position, according to that stated in Article 59 of the Regulation in force.

H. Gorceix

October 6, 1891

To Dr. Professor of the School of Mines

Mr.Dr.

I communicate to you that yesterday the Director of this School, Dr. Henri Gorceix passed on to me the direction of this position.

A. Medrado

Formal letter to the President of the State of Minas Gerais, October, 6, 1891

I have the honor to communicate to you that yesterday I assumed the functions as the ad interim Director of this School.

Archias Medrado

Secretary of the State of Business from Public Instruction, Post Office and Telegraphs

1st Section - N° 631 – Federal Capital, October 30, 1891

By order of the honorable Minister, and in response to your letter under number n° 681 of October 22 of this year, I communicate to you that you should remain in the same building of this School, which belongs to the State, the furniture that was delivered to the ex-Director of the same School, Dr. Henrique Gorceix, until they are given a convenient destination.

Pedro Velloso Rebello

General Director

Mr. Director of the School of Mines of Ouro Preto

The spirit of Gorceix

(Augusto Barbosa da Silva - Director of the School of Mines, *Annals of the School* n° 16, 1920)

Upon resigning from the School at 49 years of age, Gorceix had an elevated stature, with an opening hairline that signaled impending baldness, a dominating voice with a strong timbre and disarticulated and broad gesticulations.

With a straight soul, and integral spirit and gentle manner, there was however in his words one who wants to be tough and in his acts such rudeness that sometimes he was resented by those who were not used to this feature of his rigid, ostentatious and independent character. He had a not very full blonde beard, used a “pince-nez” that permanently attenuated his strong myopia. A physical character trace was a permanent smile that seemed to translate into slight irony in contrast with the kind expression of his light eyes.

In Gorceix was encountered the most complete educator that Brazil could have found for the School of Mines.

The primordial and characteristic trait of his fruitful action in the creation and direction of this institute remain here marked and fixed. It was his greatest merit and most eminent service as he knew how to awaken in his first students a state of

spirit that consolidated and was transmitted as a sacred inheritance and that after almost half a century (1876-1920) is still alive in the current generation: in their minds is fixed the sentiment of duty, the love of work with total and voluntary subordination for whatever the interests of the public service.

It is this state of spirit, created by the suggestive value of his example, his energy for work, with luck penetrated and spread in the deepest layers of the conscience, that each one executes his duty with satisfaction and enthusiasm.

It is without doubt, the explanation I think, for the reason that the School of Mines, although far from the vestiges of the Government, far from the big cities that are, in our country, the great industrial centers and focus of an intense culture, lacking *dest’art* the environmental stimulus, the first condition for all human efforts, remains faithful to its traditions, honoring the superior education of the Republic.

Having founded the School of Mines under modest molds, Professor Gorceix however already had in mind almost all of the improvements that future administrations adopted and even more, there is still noticed the persistent influence of

his ideas, the security of orientation that left its impression on the organization of this School.

It was intolerable grief to think about the possibility that in the future the School could lose its character, that is, its reason to exist, straying from its principal objective that is the formation of the engineers, geologists, mineralogists and metallurgists.

As such, although the School of Mines is a collective work, the integral result of a series of continuing forces of men this good will, it is, in truth that it is still the spirit of Gorceix that directs it.

Having dedicated the best years of his life to the School, the most beautiful part of his productive activities, Gorceix died donating to it all of his scientific books, his mineralogical collection and his laboratory instruments.

Honor and eternal gratitude from the School of Mines goes to its founder, Professor Gorceix.

Despite his advanced age, He could still serve his country in World War I, having the supreme consolation of having died as a soldier in 1919, taking in his eyes already closed by the shadow of death, the radiant vision that his glorious homeland was a winner.

Article published in English in REM-Revista Escola de Minas, v.45, n.3, pp. 229-250, 1992, to commemorate the 150th anniversary of the birth of the founder of the School of Mines: Translation: Harriet Konkel Reis