

# E. A. MARTEL, THE TRAVELLER WHO ALMOST BECAME AN ACADEMICIAN

## E. A. MARTEL, POPOTNIK, KI JE SKORAJ POSTAL ČLAN AKADEMIJE

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### Abstract

UDC 551.44(44):929 Martel É. A.

*Pierre-Olaf Schut: E. A. Martel, the traveller who almost become an academian*

Edouard-Alfred Martel lives in Paris. Like his father he studies to become a lawyer. This social position, fruit of the paternal heritage, does not fulfil his desire to become famous in the field of science, which he considers as the source of progress for mankind. He has a passion for travelling and, in the course of his journeys, finds a way to satisfy his ambitions, which run far beyond his Parisian legal practice. Almost by chance, he comes across what he would soon institutionalize as a new branch of natural science: speleology, that is to say the study of natural, underground caves. Will Martel, the ambitious traveller, manage to distinguish himself in the scientific world? The man's biography, supported by an analysis of his writings and his correspondence, illustrates the career of a tourist who wished to be acknowledged as a scientist. Showing the anonymous member of the Club Alpin Français rising up to being candidate at the Academy of sciences, this biography illustrates the path of a self-made man right up to the highest spheres of science. It also demonstrates the distinction this illustrious man created between trips for tourist and explorations dedicated to scientific purposes.

**Key words:** History of speleology, Martel, France, tourism, science.

### Izvleček

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Edouard-Alfred Martel je živel v Parizu. Tako kot njegov oče je študiral pravo. Ta družbeni položaj, očetova dediščina, ni mogel izpolniti njegovih želja po slavi na polju znanosti, za katero je sodil, da je vir napredka človeštva. Zelo rad je potoval in ta popotovanja so bila zadoščenje njegovim željam in so visoko presegala njegovo pariško advokatsko prakso. Skoraj po naključju je naletel na, kar je sam kmalu uzakonil kot novo vejo naravoslovnih znanosti – speleologijo, to je preučevanje naravnih podzemeljskih jam. Ali se bo Martel, popotnik z visokimi cilji, uspel odlikovati tudi v znanosti? Biografija tega moža, podprta z analizo njegovih del in njegovega dopisovanja, prikazuje življenjsko pot turista, ki je želel biti priznan kot znanstvenik. Biografija prikazuje pot tega »samouka«, ki se je od anonimnega člana Francoskega planinskega društva (Club Alpin Français) povzpел do kandidata za Akademijo znanosti, to je prav v najvišje znanstvene kroge. Prikazana je tudi razlika, ki jo je ta znani mož ustvaril med turističnimi izleti in raziskovanjem v znanstvene namene.

**Ključne besede:** zgodovina speleologije, turizem, znanost, Martel, Francija.

## INTRODUCTION

The discovery and exploration of the furthest and most inhospitable areas of the world signals the end of the global conquest in the 19<sup>th</sup> and 20<sup>th</sup> centuries. These explo-

rations had been led by colonists and soldiers, but also by scientists and sometimes even plain tourists. Whatever their motivations, these men all opened up new

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spaces and gave them meaning according to the way they viewed them. This is where the traveller's personality plays an essential part. The underground world is one of these inhospitable places which became the objects of systematic exploration from the end of the 19<sup>th</sup> century. This happened under the influence of a man called E.A. Martel (1859 – 1938).

Through a biography of this active and somewhat ambiguous character – both a tourist by temperament and a scientist by inclination – we shall try to understand the meaning E.A. Martel gives to caves: are they to be considered as jewels for regional tourism; as privileged standpoints from which to observe natural phenomena: or both?

The scientific aspirations of a man who would turn out to be the world specialist in underground research – limited by his social position and his inclination for tourism – were to give a specific meaning to caves and the underground world for times to come.

Martel's passion for caves is an opportunity for us to search into both the development of tourism and the many scientific discoveries of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. We shall analyze, in the course of his life's events, the active role he played in the development of tourism and how he somewhat uncertainly went up the high spheres of science.

The biographic perspective leads us to use a corpus of documents essentially made of Martel's own publications<sup>1</sup> and his correspondence<sup>2</sup>.

<sup>1</sup> For a complete bibliography of E.-A. Martel, see: Chabert, C., Courval, M. de, 1971: E.-A. Martel 1859-1938 Bibliographie. – Travaux scientifiques du Club Alpin Français, Paris.

<sup>2</sup> E.-A. Martel's correspondence is published in: André, D., Casteret, M., Carlier, P., Gautier, A., Kalliatakis, G., Renouard, C. & L., 1997: La Plume et les gouffres. – Association E.-A. Martel, Hyelzas-Meyrueis.

## BOURGEOIS CHILDHOOD

The cradle which received young Edouard-Alfred in 1859 in Pontoise, Paris area, belongs to an upper middle-class family.

His father is a lawyer. Through hard work and a definite sense of money saving, he has managed to haul himself up to this conquering social class of the 19<sup>th</sup> century. His own father before him had also worked hard to ensure the future of his family. According to the inheritance strategy, Edouard-Alfred's father expects his son to follow in his steps and keep taking the family still a little higher up the social hierarchy.

Respectful of parental authority, the young man accepts his fate. He studies law, becomes a clerk in 1881 then graduates and takes up the function of lawyer to the Paris court of appeal in 1883. When, soon afterwards, he buys his Parisian practice, it seems like the natural reward for several generations of hard working lawyers in the Martel family.

To imitate the higher social classes, his family often goes on holiday trips (Boyer, 1999). At times when the father, dedicated to moneymaking, is too busy working, he sends off his wife and son alone. They follow the classic itineraries of the time, visiting Chamonix and Switzerland or the Pyrenees, which attract increasing numbers of visitors, thanks to their spas.

Then they start travelling abroad. After Germany and Austria, E.A. Martel makes the classic trip to Italy (Boyer, 2000). He is just a child, but his travel journal testifies of a definite taste for picturesque landscapes, which seem to

impress him more than any of works of art seen in museums or churches. This taste for natural beauties leads him to join the ranks of the Club Alpin Français. The latter, a scholarly society, gathers together middle-class people, tourists and scientists around a common passion for the mountain environment. Together they work for its development, especially from the point of view of tourism (Rauch, 1986; Hoibian, 2000; Lejeune, 1988). Soon Edouard-Alfred takes an active part in the activities of the club. In the Austrian Alps, for example, he climbs the Gross Venediger (3673 meters), the Dachstein (2996 meters) and the Gross Glockner (3789 meters) one after the other in difficult weather conditions. He also takes part in the social life of the club, giving conferences.

Even though his professional obligations forbid him to travel as much as he would like to, Martel is able to talk about many places around the globe as he reads extensively, especially the *Petermann's Geographische Mitteilungen* as well as the *Tour du Monde* magazines.

His keen interest in geography appears very early in his life – probably sparked by his family trips – and he later deepens his knowledge through reading. In high school he gets the first prize of the Paris schools geography contest, which gives him the opportunity to join the prestigious Société de Géographie. The latter's policy is to promote travelling in view of developing geographic knowledge. Martel's own knowledge was added to a topographer's skill, which led him to work at map adjustments in the Pyrenees and the Esterel.

## PICTURESQUE CEVENNES

In 1883, Martel discovers a region of France totally ignored by tourists, despite geographer A. Lequeutre's praise of it: the Cevennes. Tourists tend to all follow the same tracks, trying to see what ought to be seen and thus missing unknown picturesque places. From his very first, short stay in the Cevennes, E.A. Martel happens to row down the Tarn gorges. He is extremely impressed by what he sees: a lovely stream falling into the narrow gorges of a canyon, tall figures carved in the rock and even some mediaeval vestiges. This discovery was like a revelation to him, inviting him to write and share his enthusiasm with many. He writes an article for the annual publication of the Club Alpin Français. After praising the beauty of Haut Tarn, he tries to reorient the traditional tourist axis towards the Cevennes. He writes: "It is a shame to see, year after year, herds of French tourists invade areas turned fashionable by the English, when places like Haut Tarn remain ignored and neglected" (Martel, 1883).

The following year Martel goes back to that region. He discovers the Causse Noir and uncovers a natural site: Montpellier-le-Vieux (Martel, 1884). Heaps of stone blocks so strangely shaped as to appear hand carved, to the point that the name of the place evokes the picture of a long forgotten city. From then on, his admiration for the area is such that he starts officially promoting it with tourists. As a spokesman to the Parisian travellers, an experienced lecturer and an inspired writer, he starts a real campaign in favour of the Lozère area (Poujol, 1999).

The climax of this wave of enthusiasm is indisputably the publication of his book, *Les Cévennes*, in 1890. This work wins over a large number of readers always on the look-out for new journeys and practical books to organize them. The demand is such that it is reprinted several times. As luck would have it, the publishing and success of the book take place just before the setting up of an association which will be unequalled in its work for

tourism: the Touring-Club de France. Martel naturally becomes one of its first members and, due to the success of his book, he enjoys a special status. Inevitably, the Touring-club de France is influenced by his enthusiasm and directs its interest towards the regions Martel favours and promotes: the Esterel all the way to the Cevennes. Supported by the constant growth of the Touring-Club, his campaign is a success. But reducing his role to that of a propagandist would be too limiting. His true merit is to have uncovered the natural beauties of a region.

After the Tarn gorges and Montpellier-le-Vieux, Martel's attention turns to the dark caves that open up in several surrounding places. In Languedoc, the exploration of the Demoiselles cave by Marsolier des Vivetières (1785) had contributed to the tourist fame of the area. Well, the caves in Cevennes are shining with decorations and, entering them, Martel immediately senses their potential in terms of tourism development. Therefore he immediately starts planning this.

The Dargilan cave is one of the first ones he explores methodically in 1888. What he sees there makes him most enthusiastic. Martel's own reputation contributes to the fame of the Cévennes. The whole area soon becomes a favourite for the larger public. The French Touring Club, inspired by E.A. Martel's writings, organizes there its first cycling trip. A few years later it remarks that the whole area had benefited from a growing tourist success.

Martel's work begins with the discovery of the Cevennes in the early 1880s and stops only at his death. Indeed his last book, *Causse et Cévennes*, an updating of the first one, is published at a time when his health is already declining. The man is responsible for revealing the most popular tourist sites of the region. His unceasing work was consecrated by many trophies. But his enduring love for that place also pulled him into another adventure, one which he had aspired to since early childhood.

## A GREAT DISCOVERY?

Martel's interest for natural sites and tourism is mixed with a desire to understand the world in which he lives. Since an early age, as an inheritor of A. Comte's positivist philosophy, he has been especially sensitive to scientific progress and the understanding of natural phenomena. This is the reason why he reads so much. He reads magazines like *La Nature*, which informs him of the latest discoveries, as well as many scientific publications from scholarly societies. Thus, though a self-taught man, he

is perfectly aware of the latest acquisitions of knowledge in many scientific fields. For Martel this interest for science does not simply reflect a strong attraction; it is perceived as a path that will help him realize his full potential and deepest ambitions. He wants to acquire knowledge, but he also and mostly wants to be acknowledged for his work. However, whereas mountain tourism suits his social position, can his excessive scientific ambition – which we shall now study in detail

– adjust to the Parisian lawyer’s hard working life he has inherited?

The whole adventure starts in a Cévennes cave – the Nabrigas cave – that Martel has heard of from his guide, H. Causse. Causse was enthusiastic about the potential scientific interest of the prehistoric vestiges he had found there. As a matter of fact, since the beginning of the century, the cave had regularly been visited by famous palaeontologists and historians like N. Joly, M. de Serres, P. Cazalis de Fondouce and E. Cartailhac (André, 1999), but this does not deter Martel. He is extremely keen on this new science that keeps revealing information relative to the history of mankind. Martel, young, curious and ambitious, sees here an opportunity to bring his own contribution to science. This is how he starts working at excavations with the help of his brother-in-law, the geologist Louis de Launay. The latter finds part of a human jaw in a cave where many vestiges of *URSUS speleus* had already been discovered, thus confirming that the cave had been inhabited by men in the Palaeolithic era. Martel is enthused by this first discovery and throws himself into the work with redoubled vigour until he finds pieces of pottery. From then on, he senses that this is his opportunity to contribute meaningfully to scientific progress. His aim is to demonstrate through his findings that men in the Palaeolithic era mastered the art of pottery. Prehistory had been especially fashionable since the early 1860s (Groenen, 1994). Even though palaeontology had been legitimized by G. Cuvier, at the end of the 18<sup>th</sup> century, the religious taboo linked to

the existence of a form of evolving mankind kept pushing off further official study in Prehistory for half a century. Consequently, in the last third of the 19<sup>th</sup> century, discoveries are many, contributing to the celebrity of the great characters standing for it.

Soon Martel gets in touch with the most famous professors in order to present his work, confirm his hypotheses and get their support. When his work is done, his first report to the Academy of Science is read out by A. de Quatrefages. During the sitting following this presentation, E. Cartailhac answers E.A. Martel and L. de Launay, refuting their conclusions. Martel lashes back by publishing several articles answering the expert’s points one by one. Only academic customs manage to put an end to the debate. Martel’s penetration of the prehistorians’ circle is now compromised. Aware of it, he turns his back on that science, but several people in that field will keep a grudge against him.

This episode is evidence both of Martel’s pugnacity and of his will to become famous through scientific discoveries. It also shows how difficult such a task was to be. Well, if Prehistory, which had fascinated him so much up till then, rejected him, never mind! This was not going to dishearten him. There were many other sciences and he would find his own somehow. This sudden change of course shows not only how interested he was in science in general, but also how much he craved for acknowledgement from the highest scientific circles.

## CAVE STUDY

Soon Martel finds interest in something else: cave study. His journeys in the Cévennes and the excavation work in Nabrigas had taken him into a dark world that was only waiting for the lights of science to be shed on to it. Earlier on, as he was touring through the Causses, he had wondered about one of the many mysteries of the underground world: hydrogeology. In 1884 E.A. Martel had written: “How many mine explosives should be used, how many dangers should be faced, in order to discover the capillaries and reservoirs of the Causses and solve the mystery of the communication between the swallow-holes and the valley caves? Who knows if some day, a brave explorer will extract from these limestone plateaux the secrets of their hydrography.” (Martel, 1884). Little did he know then that he himself would be that “brave explorer” a few years later.

Martel’s new vocation can be understood on various levels. One thing is sure: this new path was all the more

attractive to him as it synthesized his deepest aspirations. Since early childhood he had been a dedicated traveller and this interest was confirmed in the context of the Club Alpin Français. Also as a tourist always on the lookout for picturesque landscapes, he finds under ground level the change of scenery and the natural beauties that have always fascinated him and that make this region so lovable to him. Lastly, as a potential scientist, he is facing uncovered mysteries in a field which has hardly been touched upon in Austria, but which seems to be starting to interest French science too. Indeed, in a book published in 1887, the eminent geologist, A. Daubrée, had opened the way to hydrogeology by showing the relationship between the localisation of water, its movements and the geological structures.

In the summer 1888, Martel starts on his first underground campaign. His objectives then are to cross the Bramabiau abyss and explore the Dargilan cave (Martel,

1888). This plan testifies again to the perfect mixture of his many interests in one and the same activity: as he draws a precise map of the cave and lists all its beauties, the fitting out of the cave can be set into motion for the greatest benefit of the Cévennes. As for the Bramabiau abyss, it is a hydrological special feature as well as a remarkably picturesque site. Next to Mont Aigoual, a small stream of water sinks underground and seems to reappear 440 meters further and 90 meters deeper. Everybody assumes that these two streams are one and the same, but E.A. Martel demonstrates it irrevocably by following the water upstream. In his report of this experiment, he makes interesting remarks regarding underground water circulation.

The success met during this first campaign encourages Martel to persevere along those lines. He soon gets in touch with A. Daubrée in order to have his opinion concerning his writings and also because the man is a member of the Academy of Science and, as such, can present his notes to his fellow academicians in his name. Indeed thanks to the man's support, he can publish his first reports to the Academy of science and develops his study of the underground. At first he concentrates on the Cévennes and Causses region, but then considers doing the same sort of work abroad. First because this would allow him to make comparisons and therefore generalize his results and then because it would keep him in touch with his predecessors in underground study, especially in Austria.

His acquaintances make it possible for him to set up a scientific project sponsored by the Ministry of Public Education. Through this project he meets his Austrian counterparts in the Austrian Karst. Thus completing his experience, bibliography and knowledge, E.A. Martel becomes an authentic expert in limestone massif hydrology. After six search campaigns in France and studies in the caves of Belgium, Greece and Austria, Martel decides

to publish a synopsis of his work in a book entitled *Les Abîmes*, in 1894. In this book, he does not just report the results of six years' research, but tries to put forth the basis of a new branch of natural sciences: speleology or the science of caves.

The very word "speleology" is brand new. Martel claims it was created by prehistorian E. Rivière. The Greek root *speleion* meaning "cave" and *logos*, meaning "discourse", give a scientific ring to the name of the practice. Martel defines a vast program for this new science. Subjects appear according to his personal logic. He mentions hydrology, geology and mineralogy, meteorology and topography, which are all fields in which he has already been distinguished. Next to these are a few specific aspects which either interest him personally or have been the object of subsidy requests to the Ministry of Public Education, like agriculture and public hygiene. Martel's definition also includes fields like fauna, flora, prehistory and palaeontology which brings everyone together by common consensus and through which he gets the support of famous scientists who have already worked in the underworld, like botanists and archaeologists (Gauchon, 1997).

This sense of compromise is based on a desire to see speleology obtain full status as a science and more specifically as a branch of natural sciences. The whole process was quite a touchy thing considering that the man was standing alone and had met with a few disappointments in the past. However, he now feels confident that he has found his own true path. Having associated his name to a specific field of research, his personal fulfilment and acknowledgment by the highest scientific institutions – and especially the Academy of Science – has to go through the legitimization of speleology, a science of which he would forever remain the precursor. But the point then was: could a Parisian lawyer, a "tourist", create a science?

## THE LEGITIMIZATION OF SPELEOLOGY AND THE CONQUEST OF THE SCIENTIFIC WORLD

The cultural atmosphere of the late 19<sup>th</sup> century is favourable to the development of sciences. More than ever, science is synonymous with progress in the widest sense of the term. Nevertheless society has its own ways and Martel knows it. He uses this knowledge to get the means to acquire the much coveted status. His strategy is developed on several levels that build up progressively. First, aware of the fact that he cannot achieve his aim alone, E.A. Martel, after publishing *Les Abîmes*, decides to cre-

ate a "Société de Spéléologie". His book ensures both the definition of speleology and its promotion. Its success confirms Martel's status as an expert in the field and makes it possible trustfully to consider support for the new Society. So in the year following the publication of his book, he starts recruiting the founder members of the Society.

On September 15, 1894, Martel sends off a mailing to individuals and societies and publishes the same letter in

several scholarly magazines like the *Bulletin de la Société Géologique de France* and the *Revue d'Anthropologie*. In return Martel finds 121 founder members ready to support the creation of the Société de Spéléologie on January 1<sup>st</sup>, 1895. As a lawyer living in Paris, he is a man of many connections. Being supported by celebrities in the world of science – like Dr Blanchard, member of the Academy of Medicine or G. Vallot, founder of the Observatory of the Mount Blanc – and the friend of influential politicians like the deputy F. Deloncle – is assuredly a strong advantage for this new scholarly society. In the first few years, the number of its members increases regularly.

Martel does not limit membership to the French territory. Indeed, as opposed to many scholarly societies, the name of the Société de Spéléologie does not imply any geographical limitations. Martel has obviously understood that science can only be an international affair. From the very early days, he attracts into his society foreign counterparts he had a chance to work with, like Greek and Austrian researchers. Later his many missions in England, Russia, the United States, Italy and Spain give him opportunities to make useful contacts and attract more members. The way he went about it has been called “a true international strategy” (Shaw, 1988). As a matter of fact, in 1895, one fourth of the Society members comes from foreign countries, numbers grow up to one third in 1904 and then remain in this proportion. This representation contributes to the credibility of the Society in France and to its recognition worldwide, thanks to a widespread diffusion of its works.

From the very beginning of the Society, E.A. Martel creates a review in which he publishes reports from its members' research. The Latin title of the review, *Spelunca*, stresses its scientific character. It is entirely edited by E.A. Martel himself. *Spelunca* soon turns out to be the main part of the Society activity, but this did not happen by chance. Martel is well aware that magazines are the perfect vehicle in the intellectual spheres of the late 19<sup>th</sup> century. They stress the legitimacy of a group and make their publishers and writers famous (Prochasson, 1991).

Besides the publication of magazines, Martel takes part in many congresses in which he explains what speleology is. These are perfect communication places for an interested public. They are aimed at an audience from various intellectual spheres, which contributes to the legitimization of sciences and groups. This is how, in 1893, Martel had announced the publication of his book *Les Abîmes*, by presenting a memoir on “speleology” at a congress organized by the Association pour l'Avancement des Sciences in Besançon. Every year, from 1896 onwards, speleology is represented at the Congrès des sociétés savantes through a couple of members from the Société de Spéléologie.

However Martel's battlelines would not be complete without speleology pushing open the doors of University. Indeed since its reformation, university has become the most favoured place for developing scientific research. In those days, the Sorbonne was inaugurating new courses in new subjects. E.A. Martel takes advantage of this opportunity. From 1901 he teaches a class on « Underground Geography ». The recent appearance of physical geography and its development at university may appear to Martel as an entrance door to this world. Indeed by then he was famous as a geographer, not only for his work about the Cévennes, but also as a member of the Société de Géographie. As a matter of example, the famous geographer O. Reclus asked for his services to complete his major work, *La Grande Géographie*, published in 1911 and 1914.

With regard to these realizations added to the sheer hard work of its promoter, speleology seems to acquire some destination or at least be acknowledged. Its spokesman benefits from it and by the end of the century he has become a celebrity. The Comité des Travaux Historiques et Scientifiques invites him to give a talk on speleology at their congress in 1899. He speaks after Mr Loude who talks about X rays and before Mr Lumière who presents his study on the photography of colours. Honoured and acknowledged by his peers, Martel feels ready to ask for the consecration he has always aspired to: a seat at the Academy of sciences.

## THE ACADEMY

Martel always attached a major importance to the Academy of Sciences (Choppy, 1999). Even though the least of his explorations is the object of several reports and publications; even though he regularly writes columns in *La Géographie*, a scientific journal, as well as more popular magazines like *La Nature* and is published by several tourist magazines like the *Annuaire du Club Alpin Français*, the *Revue du Touring-club de France*, the

*Tour du Monde* or *Causses et Cévennes*, E.A. Martel has a special reverence for the old institution. This is where he always sends the very first reports of his discoveries. By the time he applies for a seat there, he has sent 82 reports, 66 of which have been published. The Academy has honoured Martel with the Gay prize of physical geography as a tribute to his work, *Les Abîmes* in 1894 and with the Grand Prix des Sciences Physiques in 1907.

This success leads him to believe that he can apply for the seat left vacant by the death of J. Tannery in 1910. To this effect he writes a letter to the Academy on December 11 of that year, but his application is turned down. In 1911, in order to prepare his next application, Martel writes out a document in which he presents a detailed account of his work and publications. He applies for a vacant seat in the free academicians section in February 1913, but there again, he is turned down. That same year in May he applies for the seat left vacant by the death of E. Cailletet, only to be refused again. After this third failure, E.A. Martel has to face the truth: the Academy will never accept him. This is all the more obvious when he learns that he never got a single vote at any of his applications, not even from his own brother-in-law, L. de Launay. As a matter of fact, this was to become a matter of contention between them in the future.

Martel explains his failure by the absence of the people who had supported him in his early days. A. Daubrée, for example, with whom he shared many views on hydrogeology and whom he wished to emulate, had died in 1896. A. Gaudry, who had presented his prized works as well as thirty five of his reports to the Academy, had died in 1908. In the absence of these men, he could still hope that L. de Launay, his childhood friend and brother-in-law, would support him. The fact that he did not was a sore point for E.A. Martel. Getting a seat at the Academy had become a matter of personal importance to him. He wished to be at least equal to his brother-in-law in this respect. L. de Launay had often explored caves with him and shared his views on geology and other matters. As a professor at the Ecole des Mines, he was also interested in the richness of the underground and appreciated by the Academy for his discoveries. Why would E.A. Martel be less? Probably feeling bad when confronted with Martel's resentful disappointment, L. de Launay tried to make up for his disavowal by supporting him when the Academy awarded Martel the Joseph Labbé Prize in 1921 for his work entitled *Nouveau traité des eaux souterraines*.

E.A. Martel desperately needed a consecration of his work on caves as a compensation for a difficult private life. Indeed Aline, his wife, had had a miscarriage in an accident with a hot air balloon her husband had insisted she flew with him. After that she could no longer conceive babies and Martel's in-laws never quite forgave him for that. As for his own parents, they resented the fact that he had dropped his attorney practice to dedicate his life to the modest trade of an underground explorer. So E.A. Martel did not get the longed-for recognition from the scientific world, but the reasons may be found in the ambiguity of his position.

When he first started on his scientific career, E.A. Martel was just a traveller but not in the manner of a

tourist. He travelled in the way geographers used to at the beginning of the 19<sup>th</sup> century, bringing back from his trips precise observations and maps, thus contributing to the development of knowledge regarding known or unknown territories (Laboulais-Lesage, 2000). This way had been supported by the Société de Géographie since its creation in 1821, but it differs from that of physical geography which becomes an official institution entering the university in the 1890s (Broc, 1994). This explicative geography is totally different from the previous descriptive one. It is mainly based on a new concept coming from the famous American geographer, Davis and supported in France by Margerie. Being deeply nationalistic, Martel refuses to accept the theory presented by the American. In the same narrow-minded way, he is soon taken over by progress in geology, but keeps judging and criticizing the latest theories. As a consequence, more and more often he quarrels with the scientists of his time, defending his outdated views in his "aggressive lawyer's way" as he himself puts it. This is why P. Renault (1999) said about him: "Martel is a 19<sup>th</sup> century man who missed the 20<sup>th</sup> century transition for lack of a scientific mind".

His lack of scientific training appeared when E.A. Martel had to take position in a debate relative to dowsing. Unlike his colleague, E. Fournier, a geologist at Besançon University, who spent a long time studying this "divinatory science" to finally state it was scientifically null, E.A. Martel could never quite make up his mind about the subject and even once declared it of value.

Even his qualities as an observer were disparaged by some scientists besides the prehistorians. Thus R. Jeannel, a biologist researching cave fauna, went on a campaign with E.A. Martel, after which he reproached the speleologist with the somewhat careless character of his observations. It may not be a matter of chance that prehistorian H. Breuil collaborated with the biospeleologists for many years, whereas no archaeologist or biologist took part in the activities of the Société de Spéléologie.

E.A. Martel tried to make up for his lack of scientific training by reading a lot. He thus acquired a vast knowledge which enabled him to popularize many fields of science. This quality made him a popular writer, but discredited him with the scientific community. Indeed only scientists benefiting from a well established position can afford to produce such works without prejudice to their reputation.

In the end, E.A. Martel's scientific career raises many criticisms. Lack of scientific training and methodology, and difficulty in participating constructively in the debates of his time, contribute to keeping him on the fringe of the scientific establishment.

## CONCLUSION

E.A. Martel was deeply wounded by the rejection of the scientific institutions. Also the First World War, which breaks out the year following his double rejection by the Academy of Sciences, weighs hard on him. Being too old to fight at the age of 55, he volunteers as a nurse, but his own health is weakened by arteriosclerosis. Therefore, after the Armistice, he stops his exploration campaigns and does not do much to prevent the extinction of the Société de Spéléologie. He forsakes every ambition to enter the Academy of sciences, but keeps a scientific activity within the Société de Géographie of which he becomes president in 1928 and puts more effort into the development of tourism, especially in the context of the Touring-club de France. There he finds himself in a sphere where he is appreciated and praised. He receives many awards and, when he is still alive, even has the privilege to have his statue made in the Cévennes region he so much loved and glorified. His last work, at the end of his life, was to complete his action in favour of tourist development in the Causses and Cévennes.

This life story demonstrates the capacity of a self-trained man to assert himself in the late 19th century in-

tellectual spheres which were especially open to scientific initiatives. However integration has its limits: being allowed to express oneself does not mean being accepted and acknowledged by one's peers. Martel's law training and his tourist inclinations contributed to limit the quality of seriousness with which his works were evaluated. E.A. Martel felt he had not been well represented, but really his theoretical reflections were probably not up to what can be expected from an Academician. No matter how many caves he explored and how many plans he drew, a scientist's quality stays more with his analysis of data than with his collection of them.

However Martel certainly left his print in the discovery of the underground. Following his tracks and example, many speleologists went underground to discover new networks, taking precise notes in the course of their explorations. His inheritance is still alive in the way people keep exploring caves: drawing surveys and trying to understand the working of the water networks. Indeed such activities would otherwise be surprising on the part of people who are now considered as "sportsmen".

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