

Humanity's First Recordings of its Own Voice

The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

ID Code:

1 Summary

The world's audio memory begins here. Édouard-Léon Scott de Martinville invented sound recording when he conceived of a machine that would do for the ear what the camera did for the eye. His “phonograph” inscribed airborne sounds onto paper, over time, to be studied visually. He called his recordings “phonautograms.” Collections of his work lay silent in venerable French institutions for 150 years—their provenance indisputable and their chain of custody uninterrupted. Historians have recently located six collections containing 50 sound recordings made between c.1853 and 1860. Neither Scott de Martinville nor his contemporaries conceived of playing back his recordings; however, modern scholars and technologies have coaxed nearly 20 to speak and sing to date.

These are humanity's first recordings of its own voice. In recognition of their technological and cultural significance, the United States' Library of Congress inducted these recordings into its National Recording Registry in 2011. In 2017 institutions in France and the United States will further raise awareness as they commemorate the bicentennial of Scott de Martinville's birth. **Induction onto the International Memory of the World Register will transcend national boundaries and celebrate humanity's first voice recordings as the patrimony of all mankind.**

2 Nominator; Relationship; Contact

Association for Recorded Sound Collections (ARSC) & First Sounds Initiative

In 2008, Mr. Giovannoni and other members of the First Sounds Initiative established the existence, primacy, and efficacy of Scott de Martinville's phonautograms, and announced their initial playback at ARSC's Conference at Stanford University in California. In close cooperation with the four custodial institutions, the Initiative has since created digital images of the phonautograms and related manuscripts for preservation and access; developed playback technologies; published extensively; and provided free and universal access to its research and primary sources, including images of and sounds from the recordings, at www.firstsounds.org.

I certify that I have the authority to nominate the documentary heritage described in this document to the International Memory of the World Register.



David Giovannoni
First Sounds Initiative &
The Association for Recorded Sound Collections

31 March 2014

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

3 Identity and description of the documentary heritage

The fonds comprises 50 sound recordings and associated manuscripts held in six catalogued collections across four custodial institutions. The title, custodian, and catalogue data for each collection is listed below. Facsimiles prepared by the First Sounds Initiative thoroughly detail each collection.

Title: **Principes de Phonautographie (1857)**
Custodian: Académie des sciences—Institut de France
Catalogue: No. 1639 (1857)
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_01.pdf

Title: **Brevet d'Invention (1857); Certificat d'Addition (1859)**
Custodian: Institut national de la propriété industrielle
Catalogue: No. 17,897 (1857); No. 31,470 (1859)
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_02.pdf

Title: **Graphie du Son (1857)**
Custodian: Académie des sciences—Institut de France
Catalogue: No. 1688 (1857)
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_03.pdf

Title: **Dossier: M. Scott's procedures for the graphic fixation of the voice (1857)**
Custodian: Société d'Encouragement pour l'Industrie Nationale
Catalogue: S.E.I.N. Archives 8/54
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_04.pdf

Title: **Fixation et Transcription du Chant (1860)**
Custodian: Bibliothèque de l'Institut de France
Catalogue: MS. 2935, No. 89095, Registres de M. [Henri Victor] Regnault
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_05.pdf

Title: **Inscription Automatique des Sons de l'Air au Moyen d'une Oreille Artificielle (1861)**
Custodian: Académie des sciences—Institut de France
Catalogue: No. 324 (1861)
Facsimile: http://firstsounds.org/publications/facsimiles/FirstSounds_Facsimile_06.pdf

The sound recordings are chemically-fixed tracings on lampblack-coated paper. Dr. Patrick Feaster's catalogues of the documentary heritage, plus his transcriptions and English translations of accompanying manuscripts, definitively define both the carriers and content of the fonds:

Patrick Feaster, "Édouard-Léon Scott de Martinville: An Annotated Discography," *ARSC Journal* 41:1 (Spring 2010), 43-82.
<http://firstsounds.org/publications/articles/scott-discography.pdf>

Patrick Feaster, ed. and transl., *The Phonautographic Manuscripts of Édouard-Léon Scott de Martinville* (Bloomington, Indiana: FirstSounds.org, Dec. 2009).
<http://firstsounds.org/publications/articles/Phonautographic-Manuscripts.pdf>

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

3 Identity and description of the documentary heritage (continued)

The following experts may be contacted to discuss the value and provenance of the documentary heritage:

Name: **Dr. Patrick Feaster**

Qualifications: **Leading researcher and expert on the history and culture of sound recording; author of numerous publications about Scott de Martinville's recordings and methods**

Name: **Pr. Gérard Emptoz**

Qualifications: **Historian of science; expert on Scott de Martinville's contributions**

Serge Benoit, Daniel Blouin, Jean-Yves Dupont et Gérard Emptoz, "[Chronique d'une invention: le *phonautographe* d'Édouard-Léon Scott de Martinville \(1817-1879\) et les cercles parisiens de la science et de la technique,](#)" *Documents pour l'histoire des techniques* 2009;17(juin)

Name: **M. Laurent Scott de Martinville**

Qualifications: **Custodian of the Scott de Martinville family's papers related to the phonautograph**

Direct descendent of Édouard-Léon Scott de Martinville

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

4 Legal information; Accessibility

Legal ownership and administrative responsibility for the preservation of the documentary heritage lie unambiguously with each of the custodial institutions. The custodians and their designated contacts are listed below. Official attestations in support of this nomination have been prepared at the highest levels of each institution and are presented in Appendix 2.

Custodian: Académie des sciences—Institut de France
Contact: **Mme Florence Greffe**
Directeur du service des Archives et du Patrimoine de l'Académie des sciences

Custodian: Institut de France
Contact: **Mme Mireille Pastoureau**
Directeur de la bibliothèque de l'Institut de France

Note: **Mme Françoise Bérard** will succeed Mme Pastoureau as of April 26, 2014.

Custodian: Institut national de la propriété industrielle
Contact: **Mme Valérie Marchal**
Responsable du pôle archives

Custodian: Société d'encouragement pour l'industrie nationale
Contact: **Pr Gérard Emptoz**
Member, S.E.I.N. Commission d'histoire

Qualified individuals may request physical access to the documentary heritage via custodians' established procedures. In partnership with each custodian, the First Sounds Initiative facilitates remote access to the documentary heritage in three ways:

1. The Initiative has presented high resolution digital images to custodians for ingestion into their electronic access services, making the documentary heritage readily available through existing institutional systems.
2. The Initiative maintains universal and free Internet access to facsimiles of the documentary heritage (see Section 3). In each case the custodian has granted permission to distribute the facsimile(s) via Internet, and appropriate reproduction fees have been paid where required.
3. The Initiative encourages, facilitates, and enables the education (playback) and publication of these sound recordings. Examples can be heard at <http://firstsounds.org/sounds/scott.php>.

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

5 Assessment against the selection criteria

All items in this fonds have unimpeachable provenance, their chains of custody unbroken. Scott de Martinville deposited all but one collection with venerable French institutions to document his experiments, approaches, and accomplishments pertaining to the recording of airborne sounds. These were logged upon receipt and reported in contemporaneous publications. The other collection, an album of phonautograms presented to Henri-Victor Regnault, has been in the possession of the Institute of France since its accession of Regnault's papers upon his death in 1878. Experts agree that all items in this fonds are authentic.

In this fonds lie humanity's first recordings of its own voice—each seminal, unique, and irreplaceable—the first human vocalizations captured from the air by machine, inscribed onto a permanent medium, and sent into the future to be heard after the death of the speaker. They precede every other recorded and retrievable airborne sound. The audio memory of the world begins here.

Scott de Martinville first imagined an apparatus to gather and fix airborne sounds, patterned after the human ear, while editing Professor Longet's *Traité de Physiologie*. In 1853 or 1854 (he cites both years) he began work on "le problème de la parole s'écrivant elle-même" ["the problem of speech writing itself"]. By the end of 1857, with support from the Société d'encouragement pour l'industrie nationale, his phonautograph was recording sounds with sufficient precision to be adopted by the scientific community. As a laboratory instrument it contributed for decades to the nascent science of acoustics.

However, Scott de Martinville's vision was as much aesthetic as scientific. He was captivated by the phonautograph's power to register the ephemeral onto paper—both for current study and future generations: "Pourra-t-on conserver à la génération future quelques traits de la diction d'un de ces acteurs éminents, de ces grands artistes qui meurent sans laisser après eux la plus faible trace de leur génie?" ["Will one be able to preserve for the future generation some features of the diction of one of those eminent actors, those grand artists who die without leaving behind them the faintest trace of their genius?"]

In his writings Scott de Martinville imagined many uses for sound recordings. But what he didn't imagine was a day when the recorded voices would be heard again. Nor did anyone until, with notable synchronicity in mid-1877, Charles Cros sketched the idea of his paléophone in France and Thomas Edison began work on the phonograph in the United States.

In 2008 the First Sounds Initiative located and played back one of Scott de Martinville's recordings made 17 years before Edison invented the phonograph. The editors of *The New York Times* considered this development (and sound) so significant that they broke the story ahead of its embargo on the paper's front page. Within hours it was international headline news: Scott de Martinville had sent a human voice into the future and researchers had just recovered it. Granted, inscribed in a haze of smoke it had not pierced the veil of time unscathed. Like all recordings in this fonds it is crude by today's standards of fidelity. Nonetheless it is aurally interpretable, and retains the indisputable distinction of being among the earliest reproducible recordings of the human voice.

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

5 Assessment against the selection criteria (continued)

In the same way that his invention opens a window in time, Scott de Martinville's recitations and songs reveal the mind of a man of letters living in mid-19th century Paris. During experimentation he recited from *Othello* (Jean-François Ducis, 1792); *Phèdre* (Jean Racine, 1677); and *Aminta* (Torquato Tasso, 1573, which he recited in its original Italian). He sang melodies from Luigi Cherubini's "Et Incaratus Est" (*Missa Solemnis* in D minor, 1811); Victor Massé's "La Chanson de l'Abeille" (*La reine Topaze*, 1856); and perhaps most endearingly, "Au Clair de la Lune"—a song known by every French child. (Thomas Edison would later use an American children's verse—"Mary Had a Little Lamb"—for his phonograph experiments in 1877.)

Paris during the Second French Empire was an international center for the arts and sciences. The recordings in this fonds are clearly products of this time and place—both technically and aesthetically. Chosen for his contemporaries while addressed to future generations, Scott de Martinville's selections are worthy ambassadors of humanity's first recordings of its voice.

6 Contextual information—rarity and integrity

Scott de Martinville wrote that he conducted thousands of experiments between c.1853 and 1860. However, methodical searches of archives around the world have yielded only the items contained in this fonds. All items were identified in 2007 and 2008; no additional phonautograms have been found since. With minor exceptions the recordings have survived in remarkably good condition.

7 Consultation with stakeholders

The primary stakeholders are the four custodial institutions (see Section 4). Representatives of each institution have been consulted, and official attestations in support of this nomination have been prepared at the highest levels (see Appendix 2).

Other stakeholders include international organizations dedicated to preserving the world's recorded audio legacy. The nominating organization (ARSC) is one of these bodies; it counts in its membership the leading experts on Scott de Martinville and his recordings. Representatives of other foremost associations have been consulted, including the Association of Moving Image Archivists, the Audio Engineering Society, the Coordinating Council of Audiovisual Archives Associations, the United States' Library of Congress, and the International Association of Sound and Audiovisual Archives. Discussions regarding the nomination have been positive and encouraging.

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

8 Assessment of risk

The sound recordings in this fonds are inscribed as fine undulations traced in lampblack. They remain highly vulnerable to abrasion despite their chemical fixation to paper carriers. The paper itself is susceptible to all of the injuries that handling, no matter how careful, can cause.

The documents have been superbly preserved for 150 years in the venerable institutions into which they were entrusted. They remain today in the competent care of professional, world-class conservators. **But risk to humanity's first sound recordings increases with recognition of their stature.** Scholars, media, and others will multiply their demands for access, thereby compelling custodians to further enhance protective measures. The high resolution images made by the First Sounds Initiative (see Section 4) can help mitigate physical risk by satisfying many if not most of these requests.

9 Preservation and access management plans

Preservation and access management plans for the six collections comprising this documentary heritage are being evaluated by the custodial institutions.

10 Any other information

Humanity's first recordings of its own voice are well preserved and freely available to all due to the collaborative efforts of the custodial institutions, international organizations, and private individuals. The Memory of the World Program can offer this success story as a model of international as well as public-private cooperation.

Induction onto the International Memory of the World Register will generate public interest in hearing all of these recordings, which may attract the means to make audible those that have yet to be educed (played back).

Commemorations of the bicentennial of Scott de Martinville birth in 2017, currently in planning in France and the United States, will publicize UNESCO's recognition of the fonds and its International Memory of the World Register.

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

Appendix 1
IMAGES & SOUNDS

A representative image from the collections of each of the four custodians is provided below. Click on an image or the Download link to obtain a high-resolution version for reproduction.

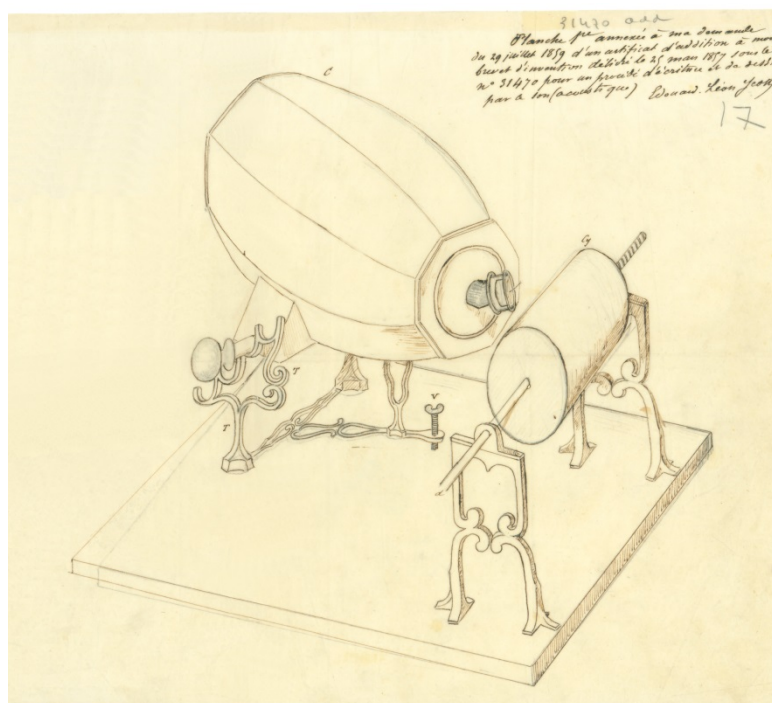
Title: Earliest surviving recording of the human voice on a helically-recorded phonautogram
Source: S.E.I.N. Archives 8/54-3 (July 1857)
Custodian: Société d'encouragement pour l'industrie nationale

[Download
IMAGE](#)



Title: Patent drawing of Scott de Martinville's phonautograph, 1859
Source: Brevet d'Invention, Certificat d'Addition No. 31,470 (July 1859)
Custodian: Institut national de la propriété industrielle

[Download
IMAGE](#)



Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

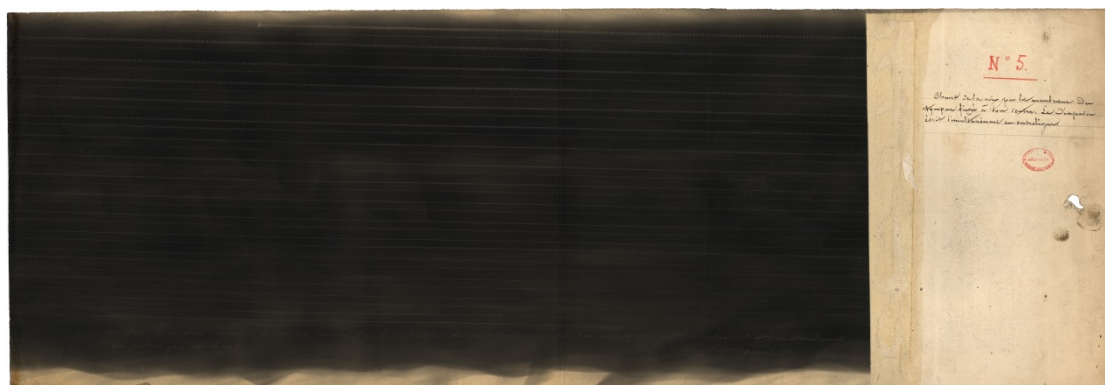
Appendix 1
IMAGES & SOUNDS (continued)

The two phonautograms shown on this page have been played back. Click on the Download SOUND links to obtain sound files for distribution.

Title: No. 5—Au Clair de la Lune (April 9, 1860)
Source: No. 324 (1861)
Inscription Automatique des Sons de l'Air au Moyen d'une Oreille Artificielle
Custodian: Académie des sciences—Institut de France

[Download
IMAGE](#)

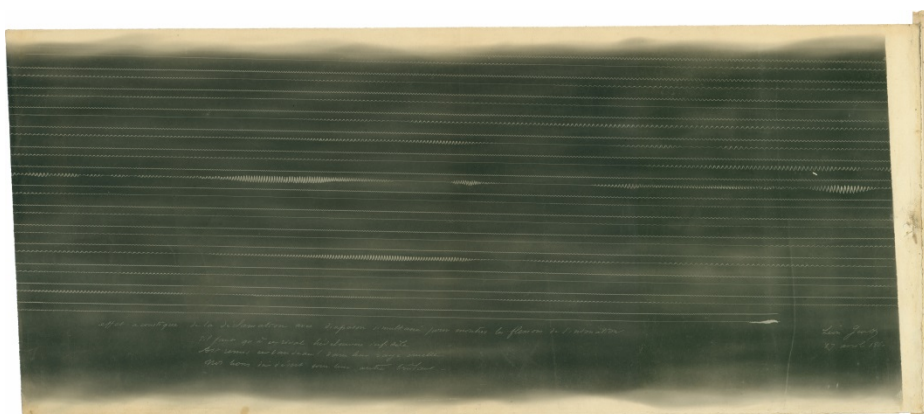
[Download
SOUND](#)



Title: Excerpt from Ducis's *Othello* (April 17, 1860)
Source: MS. 2935 (1860), No. 89095, Registres de M. [Henri Victor] Regnault
Custodian: Institut de France

[Download
IMAGE](#)

[Download
SOUND](#)



*“S’il faut qu’à ce rival Hédelmone infidèle
Ait remis ce bandeau! Dans leur rage cruelle
Nos lions du désert, sous leur antre brûlant....”*

Scott de Martinville hoped that his phonautograph would be used to capture the nuances of great dramatic oratory, and he repeatedly used this passage from Ducis's *Othello* as a test recitation. This particular example, from the Regnault papers in

the library of the Institut de France, is the earliest record of spoken language we can play back at its exact original speed. Even though the speech articulations were poorly captured, the intonations should faithfully reflect those of the original oration.

Nomination: International Memory of the World Register
Humanity's First Recordings of its Own Voice
The Phonautograms of Édouard-Léon Scott de Martinville (c.1853-1860)

Appendix 2

LETTERS OF ATTESTATION FROM CUSTODIAL INSTITUTIONS

The following letters attest to each custodial institution's support of this nomination.

Catherine Bréchignac
Secrétaire perpétuel de l'Académie des sciences
Académie des sciences—Institut de France

Gabriel de Broglie
Chancelier de l'Institut
Institut de France

Jean-Marc le Parco
Directeur Général Délégué
Institut national de la propriété industrielle

Olivier Mousson
Président
Société d'encouragement pour l'industrie nationale



Paris, le 25 mars 2014

ATTESTATION

L'Académie des sciences possède dans ses archives les premiers enregistrements de la voix humaine obtenus avec le phonautographe inventé par Édouard-Léon Scott de Martinville (1817-1879). Ces enregistrements ont été déposés à l'Académie des sciences le 26 janvier 1857 sous forme d'un pli cacheté. Ce dernier a été ouvert à la demande de l'inventeur lors d'une séance de l'Académie des sciences le 15 juillet 1861.

Il s'agit de neuf planches de papier enduit de noir de fumée sur lesquelles sont tracées au moyen d'un stylet l'enregistrement de sa voix. Elles sont classées avec le mémoire explicatif dans le dossier biographique de l'inventeur.

L'Académie des sciences soutient la démarche entreprise par l'Association of Recorded Sound Collections de faire inscrire ces documents au registre international de la Mémoire du Monde de l'UNESCO, dans le cadre de l'appel à propositions d'inscription lancé par l'UNESCO en février 2014.

Cette inscription ne peut entraîner aucune atteinte aux conditions de conservation, de manutention et d'usage que connaissent actuellement ces documents

Catherine BRÉCHIGNAC

Secrétaire perpétuel de l'Académie des sciences

INSTITUT DE FRANCE

23, QUAI DE CONTI
75006 PARIS
TÉL. 01 44 41 43 30

Le Chancelier

Paris, le 28 février 2014

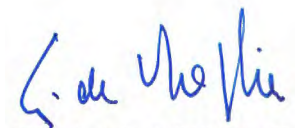
ATTESTATION

La bibliothèque de l'Institut de France possède des phonautogrammes réalisés par Édouard-Léon Scott de Martinville (1817-1879) datant de 1860 (soit dix-sept ans avant le phonographe de Thomas Edison).

Ils sont conservés dans les manuscrits du scientifique Victor Regnault, sous la cote Ms 2935. Il s'agit de huit bandes de papier enduit de noir de fumée sur lesquelles courent des lignes ondulatoires tracées au moyen d'un stylet, à l'instar du sillon d'un disque actuel.

L'Institut de France soutient la démarche entreprise par l'Association of Recorded Sound Collections de faire inscrire ces archives d'Édouard-Léon Scott de Martinville au registre international de la Mémoire du Monde de l'UNESCO dans le cadre de l'appel à propositions d'inscription lancé par l'UNESCO en février 2014.

Cette inscription ne peut entraîner aucune atteinte aux conditions de conservation, de manutention et d'usage que connaissent actuellement ces documents.



Gabriel de BROGLIE

A l'attention de
Madame Joie SPRINGER
Spécialiste du programme
Registre international de la Mémoire du monde
UNESCO
7, place de Fontenoy
75352 PARIS 07 SP

27 MARS 2014

LE DIRECTEUR GÉNÉRAL

ATTESTATION

L'Institut national de la propriété industrielle conserve dans ses archives le dossier de brevet d'invention n° 31 470 déposé par Edouard-Léon Scott de Martinville le 25 mars 1857 : « procédé au moyen duquel on peut écrire et définir par le son (acoustique), multiplier graphiquement les résultats obtenus et de faire des applications industrielles », contenant des phonautogrammes qu'il a réalisés vingt ans avant le phonographe de Thomas Edison, le mémoire technique et les dessins décrivant la machine permettant d'effectuer ces phonautogrammes.

L'ensemble de ces documents est conservé sous la cote 1BB31470.

L'Institut national de la propriété industrielle soutient la démarche entreprise par l'Association of Recorded Sound Collections visant à inscrire ces archives d'Edouard-Léon Scott de Martinville au registre international de la Mémoire du Monde de l'UNESCO.

Cette inscription ne peut entraîner aucune atteinte aux conditions de conservation, de manutention et d'usage actuellement en vigueur au sein de l'INPI pour ces documents.



Jean-Marc LE PARCO
Directeur Général Délégué

Madame Joie SPRINGER
Spécialiste du programme
Registre international de la Mémoire du Monde
UNESCO
7, place de Fontenoy
75 332 PARIS 07 SP

Siège
15 rue des Minimes - CS 50001
92677 COURBEVOIE Cedex
Téléphone : 0820 213 213
Télécopie : +33 (0)1 56 65 86 00

INPI Direct : 0820 210 211
www.inpi.fr - contact@inpi.fr

Établissement public national
créé par la loi n° 51-444 du 19 avril 1951

ATTESTATION

La Société d'Encouragement pour l'Industrie Nationale possède une série de trente-deux phonautogrammes réalisés par Édouard-Léon Scott de Martinville (1817-1879) datant de 1857.

Édouard-Léon Scott de Martinville a déposé en 1857 un dossier que la SEIN conserve dans ses archives et dans lequel il y a un ensemble de documents manuscrits et imprimés, ainsi que des enregistrements annotés sur bandes de papier enduit de noir de fumée sur lesquelles courent des lignes ondulatoires tracées au moyen d'un stylet. Le Comité des arts économiques avait examiné ces enregistrements. Le rapport fait par le physicien Jules Lissajous a été publié dans le Bulletin de la Société d'Encouragement pour l'Industrie nationale (vol.57, p.140-145) en janvier 1858. Jules Lissajous a alors souligné l'intérêt de cette technique d'enregistrement et d'analyse des phénomènes vibratoires.

De nos jours, Monsieur Laurent Scott de Martinville, son descendant, reste très attaché à la conservation des ces enregistrements innovants.

La Société d'Encouragement pour l'Industrie Nationale soutient la démarche entreprise par l'Association of Recorded Sound Collections de faire inscrire ces archives d'Edouard-Léon Scott de Martinville au registre international de la Mémoire du Monde de l'UNESCO dans le cadre de l'appel à propositions d'inscription lancé par l'UNESCO en février 2014.

Cette inscription ne peut entraîner aucune atteinte aux conditions de conservation, de maintenance et d'usage que connaissent actuellement ces documents.

Olivier Mousson
Président

