RESEARCHING THE PERSONAL ARCHIVE OF GEORGE CONSTANTINESCO AT SCIENCE MUSEUM WROUGHTON

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REZUMAT. Unul dintre cei mai cunoscuți români din întreaga lume, deopotrivă inginer, inventator prolific și matematician, care și-a petrecut cea mai mare parte a vieții în Regatul Unit, a fost George – Gogu – Constantinescu (1881-1965), despre care s-a scris destul și care apare frecvent în literatură științifică, dar și în articole de presă și emisiuni radio și TV în domenii precum: "Români celebri", "Personalități ultate", "Dosare secrete", "Inventatori/genii care au schimbat soarta omenirii", "Românul care a inventat o nouă știință" și altele de aceeași varietate. Mulți cercetători, jurnaliști, profesori universitari etc. îl "redescoperă" periodic pe ilustrul inginer, aceasta fiind mai degrabă o formă tipică de ratașare parazitară (exploatarea reputației altula sau a lucrărilor acestul), decât un demers de adevărat științific sau cercetare jurnalistică. Cu toate acestea, la un studiu atent, deși literatura menționată mai sus este destul de bogată, deși mulți șiau făcut cunoscut numele publicând lucrări despre Constantinescu, despre el nu se știe suficient. În afară de o monografie, scrisă imediat după ce i s-a acordat primul doctorat honoris Causa al Institutului Politehnic din București (3 octombrie 1961) și primirea ca membru de onoare al Academiei Republicii Populare Române (3 februarie 1965), care a apărut, din păcate, după moartea savantului, opera a doi dintre prietenii săi apropiați, ion (lancu) Jianu, coleg de liceu din Craiova, și lon Basgan, unul dintre discipolii săi, care a studiat și aplicat sonicitatea, sunt câteva articole mai serioase, dar restul publicațiilor par să fie doar reinterpretări ale acesteia. Spun "reinterpretări" în principal pentru că unele dintre erorile cuprinse se regăsesc la aproape toți autorii: Constantin Gheorghiu, Matei Marinescu, Alexandru Măruță, Ioan Pop etc. Consider că este timpul pentru o investigație reală a vieții și activității. a acestui "Sound man", pe seama surselor autentice, și mă refer aici în mod explicit la arhiva personală a lui George Constantinesco, pe care am identificat-o în Marea Britanie, la National Collections Center - Science Museum, din Wroughton, lângă Swindon și care conține un total de 165 cutii mari de arhivă, documentele nu au fost încă inventariate, identificate sau cercetate. Am început să studiez această arhivă în martie 2023 din postura de cercetător independent și până acum am reușit să parcurg un număr de aproximativ 30 de cutil și să scanez aproximativ 7000 de pagini de documente. Pe baza acestora se va putea scrie, la finalul acestel munci grele, o monografie precisă. În plus, am avut șansa neașteptată să trec prin locurile în care a locult și a lucrat, dar și să-i cunosc pe câțiva dintre membrii familiei sale, încă în viață. Îmi face o onoare deosebită să o menționez pe doamna Susan (Sue) Bowen, nora sa vitregă, care păstrează în casa ei din Torver, Coniston, relicve importante ale bibliotecii, efecte personale (dintre care cele mai importante sunt pianul, biroul si planseta de desen) și alte bunuri care au aparținut lui Constantinescu, dar înaintea acestora se află un tezaur uman de amintiri. Trebule să mentionez că o primă formă a acestui articol a fost prezentată online la Medias, în data de 12 mai 2023, la sesiunea organizată de Comitetul Român pentru Istoria și Filosofia Științei și Tehnologiei (C.R.I.F.Ş.T.) al Academiei Române. Din perspectiva românească, este deosebit de important că printre colectiile de la Wroughton se regăsește și The Constantinesco Papers, arhiva personală a savantului, inginerului și inventatorului românobritanic. Au fost donate lui Science Museum de către fiul său vitreg său, Robert Litton. Această arhivă a lui G. Constantinesco, dezvoltată pe o perioadă de timp între 1910 și 1965, conține corespondență, note, manuscrise, fotografil, desene, specificații de brevet și pliante tipărite referitoare la opera lui Constantinescu, dintre care menționez: echipament întrerupător, teoria sonicității, aplicarea sonicității, convertizorul de cupiu, vagoane și feronul.

Cuvinte chele: Muzeul Științei, aerodromul Wroughton, George (Gogu) Constantinescu

ABSTRACT. One of the best-known Romanians worldwide, alike engineer, prolific inventor and mathematician, who spent most of his life in the United Kingdom, was George – Gogu – Constantinesco (1881-1965), who was written about enough and which frequently appears in scientific literature, but also in press articles and radio and TV shows in fields such as: "Famous Romanians", "Forgotten personalities", "Secret files", "Inventors/scholars who changed the fate of mankind", "The Romanian who invented a new science" and others of the same variety. Many researchers, Journalists, university professors, etc. they periodically "rediscovers" the Illustrious engineer, this being rather a typical form of parasitic wandering (exploiting another person's reputation or their works i.e. rataşare parazitară, in Romanian), than an endeavor of true scientific or journalistic research. However, upon careful study, although the literature mentioned above is quite rich, although many have made their name known by publishing works about Constantinesco, not enough is known about him. Apart from a monograph¹, written immediately after

Buletinul AGIR nr. 2/2024 • aprilie-iunie

¹ Ionel Jianu, Ion Basgan, Liviu Macoveanu, *George Constantinescu*, Editura Științifică, Colecția "Savanți de pretutindeni", București, 1966 (sic, because the text was given to linotype typing on September 8, 1966, and proofreading and printing license was only given on February 28, 1967!).

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he was awarded the first honorary doctorate by the Polytechnic Institute of Bucharest (October 3, 1961) and the reception as an honorary member of the Academy of the Romanian People's Republic (February 3, 1965), which appeared, unfortunately, after the death of the scholar, the work of two of his close friends, lon (lancu) Jianu, a classmate in high school in Craiova, and ion Basgan, one of his disciples, who studied and applied the sonics, there are a few more serious articles, but the rest of the publications all seem to be only reinterpretations of it. I say "reinterpretations" mainly because some of the contained errors can be found in almost all the authors: Constantin Gheorghiu, Matei Marinescu, Alexandru Măruță, Ioan Pop, etc. I believe that it is time for a real investigation of the life and activity of this "Sound man", on account of authentic sources, and I refer here explicitly to the personal archive of George Constantinesco, which I identified in Great Britain, at the National Collections Centre - Science Museum, in Wroughton, near Swindon and containing a total of 165 large archive boxes, the documents have not yet been inventoried, identified or researched. I started studying this archive in March 2023 as an independent researcher and so far, I have managed to go through a number of about 30 boxes and scan about 7000 pages of documents 2 . Based on them, it will be possible to write, at the end of this hard work, a precise monograph. In addition, I had the unexpected chance to go through the places where he lived and worked, but also to meet some of his family members, still alive. It gives me special honour to mention Mrs. Susan (Sue) Bowen, step daughter-in-law, who keeps in her house at Torver, Coniston, important relics of the library, personal effects (the most important of which are the piano, desk and the drawing board) and other possessions that belonged to Constantinesco, but above these is a human treasury of memories. I must mention that a first form of this article was presented online at Medias, on May 12, 2023, organized by the Romanian Committee for the History and Philosophy of Science and Technology (C.R.I.F.Ş.T.) of the Romanian Academy³. From the Romanian perspective, it is particularly important that among the Wroughton collections is found The Constantinesco Papers, the personal archive of the Romanian-British scientist, engineer and inventor. They were donated to the Science Museum by his son-in-law, Robert Litton⁴. This archive of G. Constantinesco, developed over a period of time between 1910 and 1965, contains correspondence, manuscript notes, photographs, drawings, patent specifications and printed leaflets relating to Constantinesco's work re: interrupter gear, theory of sonics, application of sonics, the torque converter, railcars and feron.

Key words: Science Museum, Wroughton airfield, George (Gogu) Constantinesco.

1. SCIENCE MUSEUM GROUP AS REPOSITORY AND REAL RESEARCH CENTRE

In 2017, the top 10 science museums around the world⁵, it looked like this, after judging a science-tourism ranking, I think there are real chances that things have evolved, and today we have the Science Museum Group in the first place in the world⁶:

- 1. National Air and Space Museum, Washington DC, USA:
 - 2. Deutsches Museum, Munich, Germany;
 - 3. City of Science and Industry, Paris, France;
 - 4. Science Museum, London, UK;
- 5. Shanghai Science and Technology Museum, China:
- 6. Academy of Natural Sciences, Philadelphia, USA;

- 7. Science City, Kolkata, India;
- 8. Ontario Science Centre, Toronto, Canada;
- 9. Natural History Museum, London, UK;
- 10. Artscience Museum, Singapore.

The Science Museum Group in the UK cares for an astonishingly diverse and internationally significant collection of 7.3 million items from science, technology, engineering, medicine, transport and media. Together these objects tell the story of our world – from the rise of the Indus Valley civilisation over 3,000 years ago to the microchips powering our connected planet today. Science Museum Group have embarked on an ambitious project to transform how they care for and share this remarkable collection with the world. This once-ina-generation project will dramatically improve public access to many thousands of historic items, enabling the public to explore more of the collection than ever before.

² Special thanks to Jessica Bradford, Head of Collections and Principal Curator for the Science Museum, responsible with oversight of the Library and Archive Collections in London and at the National Collections Center (NCC) in Wroughton, I started research into the George (Gogu) Constantinesco Papers at the NCC.

³ https://www.crifst.ro/sesiunea-stiintifica-istoria-stiintei-si-tehnologiei-preocupari-actuale/.

⁴ This claim is based on the statement of Mrs. Sue Bowen, Robert's wife, mentioned above.

⁵ https://www.smh.com.au/traveller/inspiration/traveller-10-science-museums-20171027-gz9ed7.html.

⁶ If only the Science Museum in London is in fourth place in the world, it is likely that the Science Museum Group – a real *archipélago*, as Professor Liviu Sofonea called it and conceived – is today in first place, after adding its Wroughton airfield. The word dates back to the early 16th century: from Greek arkhi - 'chief' + pélagos - 'sea'. The word was originally used as a proper name (the Archipelago meaning 'the Aegean Sea'); the general sense arose because the Aegean Sea is notable for its large numbers of islands (https://www.encyclopedia.com/places/spain-portugal-italy-greece-and-balkans/greek-physical-geography/archipelago).

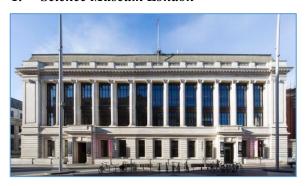
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The Science Museum's collections include:

- 140,000 medical items, including the long-term loan of the Wellcome Collection;
- 38,000 items relating to railway locomotives, technology and railway life;
 - 26,000 scientific instruments;
- 17,000 items of photographic, cinematographic and televisual technology;
 - 7,000 artworks

The public can visit objects from the collections of each of the museums open under the Science Museum dome, namely:

1. Science Museum London



2. Science and Industry Museum Manchester



3. National Science and Media Museum Bradford



⁷ The above data and photos of the various museums comes from the museum's official website: https://www.sciencemuseumgroup.org.uk/about-us/.

4. National Railway Museum York



5. Locomotion Museum Shildon



The interested people can view objects and archive and library materials which are not on display by appointment at:

- Dana Research Centre and Library at the Science Museum in London;
- Collections and Research Centre at the National Science and Media Museum, Bradford;
- Collections Centre at the Science and Industry Museum, Manchester;
- **Search Engine** at the National Railway Museum;

• Library and Archive at the National Collections Centre in Wroughton, Wiltshire⁷.

During the Second World War, after the launch of the Battle of Britain, numerous airfields appeared in Great Britain to support aviation production and aerial counteroffensives. Among these is the one at Wroughton, near Swindon, in Wiltshire (England) was used with the main role for the assembly and storage of aircraft during the Second World War. With three main asphalt runways of 1,430 meters, 1,050 meters, respectively 1,110 meters and equipped with numerous hangars, bunkers, workshops and administrative buildings. Out of the operational activity of the British

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Ministry of Defence in 1972, it passed into the administration of the Royal Navy, becoming the Royal Naval Aircraft Yard Wroughton in 1972, to be reused for a short period during the Falklands War.

Since 1979, over 220 hectares of the former airfield belongs to the Science Museum Group and is home to the National Collections Centre, which houses the group's large-object storage and library. In 2016 a 50 MW solar farm was completed on about 67 hectares of the airfield, with over 150,000 solar panels. This was a joint project of Public Power Solutions (a commercial arm of Swindon Borough Council) and the Science Museum Group. A collection of approximately 35,000

objects is currently stored in six of the hangars and a purpose-built store. These include the world's first hovercraft, MRI scanners, computers, (de-activated) nuclear missiles and much more. In 2007 the collection of the Science Museum Library and Archives was also relocated to new facilities at the site. In 2018 the site was rebranded as the National Collections Centre to reflect the use of the facility by the Science Museum Group as its primary collections management facility. The 26,000 square meters purpose-built facility was completed in 2021 which will eventually house and provide access to over 400,000 objects from the collection.





Some of the objects in the collection currently stored at the center are: SRN1 Hovercraft; Douglas DC-3 aircraft; Ford Edsel motor car; Boeing 247 aircraft; de Havilland Comet 4B G-APYD, Hawker Siddeley HS-121 Trident 3B G-AWZM and Lockheed Constellation N7777G, the only Constellation preserved in the United Kingdom; a double-decker bus; a TV detector van; the world's first amphibious hovercraft; early 20th-century electric vehicles; the Wood Press, the last hot metal printing press in Fleet Street.

Among the prestigious collections of the Science Museum Library & Archives collections are: Charles Babbage's notebooks, engineering plans, certificates, social diary and letters; Barnes Wallis's plans for the bouncing bomb; Pearson PLC engineering papers and photographs; Walt Patterson nuclear collection; Humphry Davy's letters; George Parker Bidder's papers; The New Cyclopaedia, or, Universal Dictionary of the Arts and Sciences. (Rees's Cyclopædia) et al.

The concern for the history of science and technology, for their continued progressiveness, can be seen today in the permanent increase in the number of museums of science and technology and in their continued accumulation and preservation of the heritage of this form of knowledge. In a very special way, the science museums of the UK, the country par excellence of the Industrial Revolution, are repositories and real research centres of the scientific knowledge of mankind and technical progress.

2. HOW DID I DISCOVER THIS ARCHIVE?

John Berry, in his book *Discovering Swallows & Ransome*⁸, tells of his childhood on the shores of Lake Coniston of the atmosphere around the well-known writer Arthur Ransome⁹. John Berry's book, about the

⁸ John Berry, *Discovering Swallows & Ransomes: An Autobiography Inspired by Arthur Ransome and his Real-Life Characters*, edited and introduced by Jim Andrews, Sigma Leisure, Wilmslow, Cheshire, England, 2005, ISBN: 1-85058-814-7, pp. 69-74.

⁹ Arthur Ransome (1884-1967) was an English author and journalist. He is best known for writing and illustrating the Swallows and Amazons series of children's books about the school-holiday adventures of children, mostly in the Lake District and the Norfolk Broads. The entire series

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real-life places and personalities behind Ransome's fictional characters, with absorbing information of both historical and local interest, is not just for socalled Ransome enthusiasts, with its wealth of data and emotion, conveying the message that there is a plausible alternative to today's nanny state culture. The account takes on an enthusiastic and appreciative tone when it tells of the Constantinesco family, the occupants of Oxen House, and introduces George (Gogu) Constantinesco and some of his inventions, largely based on the compressibility of liquids (unrecognized by some even in those days). It was from this book that I learned for the first time that Gogu Constantinesco's personal archive is stored at Wroughton, and I began making my way past the Science Museum to gain access to it 10. It is possible that in addition to all the documents and images that clarify the aspects of his life and activity, surprises await me (us): maybe even a brilliant and unknown part of his vast body of engineering work, maybe also unpatented inventions from the last years of his life!

Later, visiting the Lake District, in Cumbria, following in the footsteps of George Constantinesco, I discovered his grave in Lowick Cemetery (his wife Eva is also buried there!), which I diligently cleaned, as has probably never happened before, I found and visited the house where he lived, Oxen House, his workshop with rails for a mobile carriage used in experiments, and the machine-gun post on the banks of Coniston Water at the bottom of the garden, just by the boathouse and its own harbour, I met - and I was kindly received by - his step-daughter-in-law and her present husband, from whom I received information and precious gifts. The most precious, however, refer precisely to this personal archive, displaced at the time of the sale of the Victorian house, too rigid for Robert Litton's nature, he built a new house face-to-face with

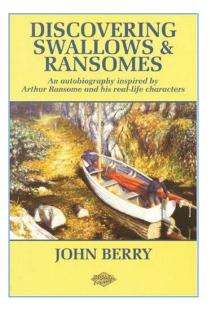
remains in print, and Swallows and Amazons is the basis for a tourist industry around Windermere and Coniston Water, the two lakes Ransome adapted as his fictional North Country lake. He was a friend of Constantinesco, to whose house he came once a week to listen to the piano and to play chess with him (https://en.wikipedia.org/wiki/Arthur-Ransome). They both had Dr. Ernst Altounyan as a mutual friend.

¹⁰ John Berry, states, contrary to what Sue Bowen (see above the note 4), that Ian Constantinesco, the inventor's son, would have donated to the Science Museum this archive and also the models of his invention, with the exception of a few that ended up at the Dimitrie Leonida Technical Museum in Bucharest. This matter will be clarified by requesting the deed of donation held by the National Collections Centre at Wroughton.

¹¹ Ian Constantinesco (1918-2013), son of G. Constantinesco and Alexandra (Sandra), née Cocoresco,

the old one. This, along with models found in the engineer's workshop and laboratory were donated to the Science Museum. After the death of Ian Constantinesco¹¹, Susan Bowen wanted to give the family of his son, John Constantinesco, some artifacts and documents left in her possession. She was very surprised at his refusal – the nephew of George Constantinesco! – and his request never to be bothered with the subject again.

John Berry's book, with references to Constantinesco¹²



3. STUDYING THE GEORGE CONSTANTINESCO PAPER

I have been living on the English Riviera¹³ (Torquay, South Devon, England) for several years and after I got a little interested in Henri Coanda¹⁴, I started

agricultural engineer and former United Nations expert, died at the Royal Lancaster Infirmary, aged 95 years. His last residence was in Ambleside. He was married to Peggy, father to John and the late Diana, and grand-father to Amanda and Sara (https://www.thewestmorlandgazette.co.uk/news/10790934.Ia n_Constantinesco/?ref=arc).

¹² Courtesy of AbeBooks.co.uk (https://www.abebooks.co.uk/9781850588146/Discovering-Swallows-Ransomes-Autobiography-Inspired-1850588147/plp).

¹³ The English Riviera is famous for its award-winning sandy beaches and exotic palm trees, but also for its rich history.

14 There is much to say, but even more to do for the famous Henri Coandă: I have published several articles about his British journey, and now I am trying, with the support of the Royal Aeronautical Society (RAeS), to mount a commemorative blue plaque on the house in who lived in Henbury-Redland or on the aeronautical museum building at

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following George Constantinesco. After locating his archive, described in the previous paragraph, the representatives of the Science Museum told me that I could not research it, because it was not inventoried and they did not know what it contained, but they finally accepted my request and allowed me access starting from March 2023 to these documents... They also made me "Independent Researcher". I have scanned a huge number of pages of documents and images so far and have been to the archives about 30 times (they are open to the public once a week, on Fridays, and occasionally hold events when outside researchers are not accepted). They also gave me a recommendation from SciMus to get funding 15... After the online publication of the program of the Session from Medias and the summary of the work, I was contacted by Mr. Dănuț Şerban, vice-president of C.R.I.F.Ş.T., History of Technology Division, who requested some information from me and told me that he found out of this archive from a Romanian PhD student in the UK^{16} .

The work is going slowly: there are, as I have shown before, 165 large archive boxes, of which I have researched about 30 so far; on a typical day I manage to go through about two boxes, but there are exceptions. I do it all on my own money without any help, I drive 150 miles from Torquay to Wroughton which is over 300 miles round trip every Friday when I have access to the reading room¹⁷. There are days, for example, I saw only one box, because there were floods on the highway and diversions were made, and the journey took 8 h 40 min round trip, and I spent 4 h 30 min in the archives. On the way back I was frequently behind the wheel unable to go more than a few miles per hour on the motorway (M5) for quite a long time, being the end of the week.

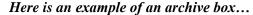
Basically, I went through the period 1910-1925, but not everything is properly ordered. I clean dust, I throw dead bugs in the trash, I collect cobwebs and weathered paper, I straighten bent sheets, I change rusty metal clips, etc. However, I am glad that I managed to scan a large number of pages¹⁸, which I am going to use in the future.

Filton, which was the factory where he worked as principal designer.

The Science Museum archives, where I have worked since April 2023



The documents are in a relatively good condition for their age and in relation to the fact that no one has so far taken care of sorting them, inventorying them and making the necessary interventions for conservation and preservation. It is remarkable that — being in climate-controlled warehouses — they are protected from moisture and temperature variations. And I, their first researcher, take them sheet by sheet and clean them, copy them and put them back in the boxes, somewhat refreshed.





is located and directed to the National Collection Centre) and I obtained consent to research it.

¹⁵ Under the signature of Mrs. Jessica Bradford, previously mentioned in the note 2.

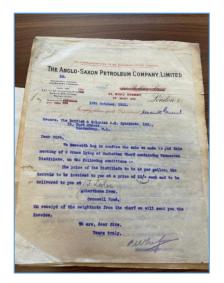
¹⁶ Mrs. Daniela Dandeş, PhD student at Manchester University. I specify that the information appeared on the Science Museum website only after I got in touch with them, in writing (in fact, I wrote to all the museums in the Science Museum network, until they answered me where the archive

¹⁷ The new headquarters of the archives was to be inaugurated from April 2024, where it will be possible to work daily; I don't know if this fact came true, as health problems kept me away from activity and forced me to stay in Romania for a while.

¹⁸ Using my iPhone and a scanner app Genius Scan (PDF documents & OCR), developed by The Grizzly Labs.

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...And here some document



4. FUTURE DEVELOPMENTS OF THE PROJECT

I will continue to study, starting from September 2024, the archive of Gogu Constantinesco, at Wroughton, and I hope to have the strength to complete the work started: to go through the 165 archive boxes in their entirety, to make an index of them, but more with the intention of continuing to scan the documents from this rich and unknown to the public documentary source, a real gold mine.

I think that so far more than 6,000 pounds of my own money have been spent on this activity (transportation, food, occasional accommodation, supplies and subscriptions to scanning and photo software, with the mini-vacation from Coniston, but also with the listing of scanned documents, etc. and putting them in folders). I hope to receive help from some interested institutions (the Romanian Academy, the Romanian Cultural Institute, AGIR, the Mayor of Craiova), in this sense establishing some contacts. By

19 ICR organized a few years ago, in 2015, an event Romanian Traditions on the Move, where Mr. Sorin Mihăilescu gave the conference: Gogu Constantinescu, a scientist of planetary dimension.

²⁰ Sir George Iacobescu CBE (born 1945) is the Chairman and former CEO of Canary Wharf Group, the London-based owners and developers of the Canary Wharf estate in London Docklands. His successor, Shobi Khan, now runs the group and Sir George Chairs the board. He is one of the most successful Romanian-born businessmen. He is the only Romanian-born person to date to receive a substantive British knighthood (https://en.wikipedia.org/wiki/George Iacobescu).

the way, Professor Mihai Mihăiță, the president of the General Association of Romanian Engineers (A.G.I.R.), offered to publish a volume about Constantinesco, at the expense of AGIR, and Professor Gheorghe Manolea also offered to talk with Lia Olguța Vasilescu, the mayor of Craiova, for a financial support.

I would like to establish a foundation in the UK called "The George Constantinesco Trust", now I am looking for members for the Board of Trustees; that way it would be more convenient to work, "institutionally", to establish links with organizations such as: The Prince of Wales Trust, with the British Council, with the Raţiu Family Foundation, with the Romanian Cultural Institute¹⁹, with the Ministry of Education, with the millionaire Sir George Iacobescu²⁰ – the only living Romanian fully knighted!

My library shelf containing part of the Constantinesco archive



With or without support, I will continue with the desire to publish on a website (why not The George Constantinesco Trust's website?) my own Project Gutenberg²¹: the edited and unpublished work of George Constantinesco and the main works on his life and work.

²¹ Project Gutenberg is a volunteer effort to digitize and archive cultural works, as well as to "encourage the creation and distribution of eBooks." It was founded in 1971 by American writer Michael S. Hart and is the oldest digital library. Most of the items in its collection are the full texts of books or individual stories in the public domain. All files can be accessed for free under an open format layout, available on almost any computer. As of February 13, 2024, Project Gutenberg had reached 70,000 items in its collection of free eBooks (https://en.wikipedia.org/wiki/ProjectGutenberg). He is a recognized publicist in the history of aviation in Brasov and beyond. He has published articles and books on the history of aviation and the history of technology, recognized nationally and internationally.

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