The Word of Science: Popularising Darwinism in Romania, 1859-1918

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COSMIN KOSZOR-CODREA

DEPARTMENT OF HISTORY, PHILOSOPHY AND CULTURE

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Abstract

This dissertation explores the popularisation of Charles Darwin's evolutionary theory in Romania from 1859 to 1918. Placing Darwinism in the Romanian context is important in several ways, as not only gives a picture of the interconnectedness between the political and the scientific construction of knowledge, but also reveals how cultural hegemony was formed in the European periphery. The research traces the multidirectionality of scientific ideas, highlighting its top-down and bottom up character. It focuses on the social staging of Darwinism, materially and culturally (in printed texts and institutions), politically (in ideological contests and outcomes), and scientifically (in epistemological negotiations). Finally, it explores the relationship between these historical agents.

Special attention is given to science popularisation journals, pamphlets, manuals of natural history and museum artefacts in Romania, which addressed the evolutionary theory and its role for the adoption of the biological perspective in studies of ecology. To this end, the dissertation provides a detailed analysis of the social context in which scientific institutions and associations operated, exploring how Romanian naturalists acquired scientific authority, while deciding which scientific theories circulated in the public sphere. At the same time, the dissertation highlights how Darwinism was intertwined with ideas of racial, social and gender inequalities. Drawing on relevant comparisons with other countries, it reveals the development of a scientific public in Romania at the end of the nineteenth century, and the role played by popular knowledge and counterpublics in scientific debates.

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Finally, I dedicate this thesis to my sister Ana-Maria, diagnosed with polio, whose daily struggle is a continuous source of motivation and inspiration.

Contents

Introduction

During the spring of 1877, the Romanian philosopher Vasile Conta (1845-1882) received several letters of appreciation from some of the most authoritative voices in Western philosophy and natural science. Among these letters, one arrived from Down, in the county of Kent in England. This was the home of Charles Darwin (1809-1882), the main proponent of the mechanism of evolution by natural selection. Written by Emma Darwin (1808-1896), the letter conveyed Darwin's thanks to Conta for sending him the French translation of his essay "Theory of Fatalism" and assured the Romanian philosopher that Charles would take the time to read his text properly. No second letter from Darwin to Conta materialised. By 1882, both had passed away. Vasile Conta's works were well known to scientific luminaries of the time such as Ernst Haeckel (1834-1919) and Ludwig Büchner (1824-1899), making him one of the most widely read Romanian philosophers during the latter part of the nineteenth century. Conta cannily relied on correspondence with Western scientists, and the translations of his studies into French, to publicise his ideas as much as possible.

Charles Darwin, on the other hand, after his return in 1836 from the colonial voyage around the world on HMS Beagle, used his vast correspondence and the perusal of popular science periodicals, such as the British *Magazine of Natural History*, *The Gardener's Chronicle* and *Science-Gossip*, to gather information about flora and fauna he could not find otherwise.[1] He also knew that the success of his theory of natural selection depended on its acceptance by the

[1] Gowan Dawson, Chris Lintott and Sally Shuttleworth, "Constructing Scientific Communities: Citizen Science in the Nineteenth and Twenty-First Centuries," *Journal of Victorian Culture*, Vol. 20, 2 (2015): 246-254.

scientific establishment and by the wider Victorian public.[2] Conta was hardly as influential as Darwin, but the two had much in common beyond their fleeting correspondence. Both were immersed in a male-dominated European culture of scientific exchange; both relied on print-based media and public institutions to disseminate their work; and both nurtured certain racial views that would be appropriated and challenged in diverse and unexpected ways by liberal elites, religious commentators, and scientific professionals, not to mention anarchists, socialists and secularists across Europe and beyond.

Yet, while the work of Darwin and its reception has been much studied, we still know little about other figures like Conta, who developed their work in the distinctive context of Romania during the second half of the nineteenth century. Formed in 1859, on the periphery of the European Empires, Romania was, at the time, an overwhelmingly agrarian country, with high rates of illiteracy and many feudal structures still in place. Importantly, it had only abolished slavery in 1856 in the territories that were to compose the new country.[3] Hence, discussing Darwinism in the Romanian context offers a powerful case study in the international reception of evolutionary science outside of the Western intellectual framework. Given the lack of complete Romanian translations of his major works, *Origin of Species* (1859)[4] and *The Descent of*

Bernard Lightman, "Darwin and the Popularization of Evolution," *Notes and Records of the Royal Society*, Vol. 64 No. 1 (2010): 6.

Kenneth Jowitt, "The Sociocultural Bases of National Dependency in Peasant Countries," in *Social Change in Romania, 1860-1940: A Debate on Development in a European Nation* Kenneth Jowitt (ed.), (Berkeley: University of California Press, 1978); Manuela Boatcă, "Semiperipheries in the World-System: Reflecting Eastern European and Latin American Experiences," *Journal of World-Systems Research*, Vol. 12, Issue 2, (2006): 321-346; Viorel Achim, *The Roma in Romanian History* (Budapest: CEU Press, 2004) 87-143; Ciprian Necula, "The cost of Roma slavery," *Perspective Politice*, Vol. V, Nr. 2 (2012): 33-45; Adrian-Nicolae Furtună, *Sclavia Romilor în Țara Românească* (București: Editura Centrului Național de Cultură a Romilor, 2019).

By the turn of twentieth century, *The Origin of Species* had been translated into French, German, Italian, Russian, Danish, Hungarian, Polish, Spanish, Dutch, Norwegian, Serbian, Bulgarian, Japanese, and Chinese; by the interwar period it had been translated into Arabic, but even at this time there was still no complete translation of Darwin's works into Romanian.

Man (1871), Darwin's evolutionary theory was made available to his Romanian audiance through public lectures, popular journals, school manuals, pamphlets, newspapers and, at the turn of twentieth century, by artefacts in the Museum of Natural History in Bucharest, all of which were dedicated to the popularisation of science. Considering this complex nexus of factors, the overall ambition of this dissertation is to offer a case study of the process of knowledge circulation, one that Adriana Novoa and Alex Levine describe as "peripheral science" in their discussion of the reception of Darwinism in Argentina.[5] In detail, the aims of this dissertation are as follows:

First, to highlight the importance of popular science journals for the introduction of Darwinian evolution in Romania, while insisting on the importance of scientific opinion once it crossed into the public domain. The analysis of the first debates on evolution in Romania also sheds light on which scientific traditions were relevant to those, such as the editors of popular journals, who contributed to the dissemination of Darwinism among the educated Romanian public.

Second, to provide a detailed analysis of the social context in which scientific institutions and associations operated in Romania. For instance, it will show how some Romanian naturalists produced their scientific authority, while deciding which scientific theories circulated in the public sphere. It needs to be emphasised that, in Romania as elsewhere, Darwinian evolution was discussed and took shape in relation to various ideological background; thus, evolutionary ideas were intertwined with the justification of racial, social and gender inequalities.

Adriana Novoa and Alex Leviene, *From Man to Ape: Darwinism in Argentina, 1870-1920* (Chicago: University of Chicago Press, 2010), 6; For more on how science was practised within and across the peripheries of the Austrian-Hungarian and Russian empires, see Jan Arend, "Science and Empire in the European Continental Empires: An Introduction" in Jan Arend (ed.), *Science and Empire in Eastern Europe Imperial Russia and the Habsburg Monarchy in the 19th Century* (Göttingen: Vandenhoeck & Ruprecht, 2019), 1-22.

Third, to reveal the existence of counterpublics in Romania, which shaped not only popular opinions about Darwinism, but also the ways that scientists put their ideas into practice. Socialist revolutionaries, in particular, represent an interesting case study and here I explore how their popularisation networks critically challenged the authority of both national and Western scientific texts. While co-opting science and laying emphasis on information accessibility, these counterpublics attempted to transform public opinion. The acceptance of Darwinism in Romania in the late nineteenth century occurred only after the radical transformation of the public sphere.

Fourth, to assess the importance that popular knowledge and evolutionary science held in the shift towards the so-called "biological perspective" promoted by Romanian studies of ecology, and in the scientific collections assembled for and then presented at the Museum of Natural History in Bucharest, particularly after its modernisation during the 1890s. The shift towards the "biological perspective" is best perceived in the works of the ichthyologist and marine ecologist Grigore Antipa. After extensive training in Jena with Ernst Haeckel and after field research in oceanographic zoological stations with Anton Dohrn (1840-1909) and Karl Möbius (1825-1908), Antipa was one of the first Romanian naturalists to break away from the morphological and phylogenetic research tradition, pleading for the adoption of studies that concentrated on ecology rather than organisms taken in isolation.

The Romanian Historiography of Darwinism

Darwin's reception in Romania is generally discussed in connection with various commemorative events. Most of the scholarship was published during the first decades of the communist regime when Romanian biologists were coming to terms with the Soviet scientific ideologies of Lysenkoism and Michurinism.[6] These studies reflected the ideological and public propaganda conducted by the Society for the Spread of Science and Culture, established in 1949, for which the study of evolution was seen as a vehicle for enforcing the official materialism promoted in the newly established Romanian People's Republic.[7]

On the 75th anniversary of Darwin's death, in January 1957, the botanist Emil Pop (1897-1974) delivered a paper entitled "The Origin of Darwinism in Our [Country]" in which he aimed to bring together Darwinism and historical materialism.[8] In the same year, the first complete Romanian translation of Charles Darwin's magnum opus *Origin of Species* was published by an editorial team consisting of herpetologist Ion E. Fuhn (1916-1987), zoologist Nicolae Botnariuc

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Cristina Oghina-Pavie, "The National Pattern of Lysenkoism in Romania," in William de Jong-Lambert and Nicolai Krementsov (eds.) *The Lysenko Controversy as a Global Phenomenon. Genetics and Agriculture in the Soviet Union and Beyond*, Vol. II (Palgrave Macmillan, Springer International Publishing 2017), 73-102; Marius Turda, "Subversive Affinities: Embracing Soviet Science in late 1940s Romania," *Studies in History and Philosophy of Science*, Part C, Vol.

(2020): 1-8; Nikolay Krementsov, "Darwinism, Marxism, and genetics in the Soviet Union," in *Biology and Ideology from Descartes to Dawkins*, Denis R Alexander and Ronald L. Numbers (eds.) (Chicago: University of Chicago Press, 2010), 215-246.

In its five years of activity, the Society held thousands of conferences in Bucharest and throughout the country on various themes, including evolution. See Gelcu Maksutovici, "Din activitatea pentru răspândirea cunoștințelor științifice și culturale în rândul populației Bucureștene între anii 1949-1964," in *Materiale de Istorie și Muzeografie*, Florian Georgescu (ed.) (București: Muzeul de istorie al orașului București, 1965), 247-256.

Emil Pop, "Începuturile darwinismului la noi (Pînă la 1880)," in *Studii și Cerce tări de Biologie*, Anul VIII, Nr.1-2 (1957): 1-39.

(1915-2005) and physician Vasile Mârza (1902-1995).[9] In addition to a detailed introduction, this complete edition included a chapter dedicated to the history of Darwinism in Romania written by Mârza.[10]

A second commemorative session was held in 1958 at the Academy of the Romanian People's Republic. Once again, Darwinian evolutionism was interpreted in accordance with the prevailing scientific materialism, a move that was in line with the views of Frederick Engels' (1820-1895) that credited both Karl Marx (1818-1883) and Charles Darwin as representatives of historical materialism. During this period, Romanian historiography gradually moved from a general discussion of the reception of Darwinism to the study of various evolutionary scientists.[11]

Next came the "atheist" anthology, which was published when the "scientific brigades" were sent all around the country to popularise the accomplishments of secular science and "materialist scientific reasoning."[12] Edited by the historian of philosophy Simion Ghiță (1922-1997), this volume brought together some of the most important articles published in the nineteenth century journals that, in one way or another, endorsed Darwinism.[13]

Charles Darwin, *Originea speciilor prin selecție naturală sau păstrarea raselor favorizate în lupta pentru existență*, Translation Ion E. Fuhn (București: Editura Academiei Republicii Populare Române, 1957). Ten years later Charles Darwin's *Descent of Man* was translated by Eugen Margulius.

See "Darwinismul în țara noastră," and "Bibliografie asupra Darwinismul în țara noastră," in Charles Darwin, *Originea speciilor prin selecție naturală sau păstrarea raselor favorizate în lupta pentru existenţă* (Ion E. Fuhn Trans.) (Bucureşti: Editura A.R.P.R., 1957) XLIX-LXXXII.

"Sesiunea comemorativă din 19 decembrie 1958 „Charles Darwin"," in *Analele Academiei Republicii Populare Romîne*, Vol. VIII (București: Editura Academiei Republicii Populare Romîne, 1959); Simion Ghiță, "Dezvoltarea materialismului naturalist din România în periada 1860-1890," in C.I. Gulian eds., *Din Istoria filozofiei în România* (București: Editura Academiei Republicii Socialiste România, 1960); Simion Ghiță, "Din istoria biologiei generale in România," in Nicolae Botnariuc, *Din Istoria Biologiei Generale* (București: Editura Științifică, 1961), 459-578.

Mihu Achim, "Modificări ale conștiinței țărănimii colectiviste oglindite în activitatea brigăzilor științifice," in *Cercetări filozofice*, Anul 10, Nr. 5 (1963): 1075-1094.

Simion Ghiță, *Antologia Ateismului din România* (București: Editura Științifică, 1962).

During the 1970s, Michurinism returned, shaping the ways in which the history of science was discussed in Romania. One volume marked by this return was published in 1975 by the biologists Emil Pop (1897-1974) and Radu Codreanu (1904-1987).[14] Other studies were published by researchers affiliated to the Romanian Committee for the History and Philosophy of Science and Technology, who in 1956 established the journal *Noesis: travaux du Comité roumain d'histoire et de philosophie des sciences*. Most of these studies are characterised by a Whiggish interpretation of Romanian science. Nevertheless, one study, published by Radu Iftimovici in 1977, attempted to avoid the nationalist communist ideologies, while integrating the history of Romanian biology into a wider international perspective.[15]

How heavily subordinated Romanian scholarship was to official politics became clear in the autumn of 1981, when more than one thousand historians from fifty countries gathered in Bucharest for the 16th International Congress of the History of Science. This may have been the moment when gender studies were recognised as an independent field, but Romanian scholars, complying with the party politics of the time, adhered to a nationalist and protochronist narrative, which also included investigations of the so-called "hermetic character of Dacian science."[16]

The same Whiggish approach, fuelled by views of national exceptionalism, can also be identified in most of the scholarship produced after 1989, which avoided the social history of

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Emil Pop and Radu Codreanu (eds.), *Istoria științelor în România: Vol 4. Biologia* (București: Editura Republicii Socialiste România, 1975).

Radu Iftimovici, *Creație Românească în Biologia Universală* (București: Editura Albatros, 1977).

Protochronism is a Romanian cultural nationalist ideology connecting modern Romanians with their ancient Dacian ancestors. See I.M. Ștefan and Edmond Nicolau, *Scurtă istorie a creației științifice și tehnice Românești* (București: Editura Albatros, 1981), 19; Ion Horațiu Crișan and Valeriu Cazacu, "Creația științifică și tehnică la geto-daci," in Ștefan Pascu (ed.), *Istoria gîndirii și creației științifice și tehnice Românești. Din antichitate pînă la formarea științei moderne* (București: Editura Academiei Republicii Socialiste România, 1982), 171-203.

science on the grounds of its Marxist background. Scholars began to discover "evolutionist anti-Marxist" authors before Darwin and to illustrate outstanding Romanian achievements in science, going as far as locating the beginnings of modern ichthyology in the work of the anatomist and political figure Apostol Arsaki (1783-1874) in 1813.[17] The studies authored by the medical historian Octavian Buda, for instance, adopted a top-down diffusionist approach, claiming that Darwinism was discussed solely by "elite scientists."[18]

A much more balanced overview of Darwin's legacy on biology has been provided by the Romanian-born French biologist Denis Buican and the philosopher Mircea Flonta.[19] This has eventually led to attempts to bring together the philosophy of science and the history of science, although the latter is rarely perceived as a discipline in its own right.[20] In terms of the history of science popularisation, it is worth mentioning Simona Atonescu's study.[21] She deals with numerous aspects of science popularisation within "the social context," focusing on the main Romanian journals, actors, institutions, and also on questions of gender. However, her study does

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Constantin Bălăceanu-Stolnici and Octavian Buda, "O lucrare ,,darwinistă'' a unui (a)român din vremea lui Caragea Vodă,"*Revista Astra* Anul III, Nr. 3-4 (2012): 19-26. Detailed scholarship concentrating on the political activity of Apostol Arsaki (1783-1874) eventually showed that his "anti-comunist" views regarding the "agrarian question" contributed to the intensification of peasant exploitation by the boyars. See Lidia Trăușan-Matu, "Doctori care au fost: Apsotol Arsaki (1783-1874) – doctor, politician, filantrop," *Caiete de antropologie istorică*, An XIV, Nr. 1-2 (2015): 93-109.

Octavian Buda, *Identitate naţională şi medicină socială: antropologie culturală, psihiatrie şi eugenism în România: 1800-1945* (Bucureşti: Muzeul Naţional Al Literaturii Române, 2013) 112-165; Octavian Buda, "Darwin și domnii doctori. Evoluționismul și gândirea biomedicală din România – doctrine, concepții, controverse," *Lettre Internationale. Ediția Română*, Nr. 91 (2014): 65-68.

Denis Buican, *Charles Darwin* (Paris: Criterion, 1992); See also Mircea Flonta, Laurențiu Staicu and Virgil Iordache, *Darwin și Gândirea Evoluționistă* (Giurgiu: Editura Pelican, 2010). On the philosophy of science, see Mircea Flonta, *Darwin și după Darwin. Studii de filozofie a biologiei* (București: Humanitas, 2010).

Dana Jalobeanu and Mihnea Dobre, "New Future: Now History of Science in Romania," *Centaurus* Vol 58, Issue 4 (2016): 348.

Simona Antonescu, *Literatura de popularizare a științei în a doua jumătate a secolului al XIX-lea și începutul secolului XX în România* (București: Editura Ars Docendi, 2007).

not mention any popular contributions to science, and barely engages with the enormous scholarship on science popularisation.

Another important contribution is George Iavorenciuc's doctoral dissertation on the history of the institutionalisation of Romanian science. It is overly ambitious in scope, aiming to discuss all scientific disciplines. It includes a section on "the reception of Darwinism", albeit one that neglects important social elements of the process of scientific institutionalisation. According to Iavorenciuc, Romanian science progressively developed solely in imitation of much-acclaimed Western European achievements.[22]

As part of a collective work that looked at Darwinism in a comparative European perspective, Victoria Tatole's study merely lists some of the most important Romanian scientists influenced by Darwin, without properly discussing their influence on the public sphere.[23] However, an attempt similar to the one undertaken in this dissertation can be found in Anca Mândru's 2019 doctoral dissertation, which contains one chapter dedicated to science popularisation, acknowledging the socialist influence on Romanian evolutionary scientists and the creation of their own alternative public sphere.[24] In addition, in 2020, Călin Cotoi published his work on the history of nineteenth century Romanian anarchist networks and their importance in theorising the social question, and greatly challenged the top-down and the Western scientific influence on modern Romania.[25]

George Iavorenciuc, *Cunoaștere și ocidentalizare. O istorie a științei românești de la jumătatea secolului XIX până la începutul secolului XX* (Cluj-Napoca: Editura Mega, 2018).

Victoria Tatole, "Notes on the Reception of Darwin's Theory in Romania," in *The Reception of Charles Darwin in Europe*, Eve-Marie Engels and Thomas F. Glick (eds.) (London: Continuum, 2006), 263-279.

Anca Mândru, *Socialism of Sentiment: Culture, Progress and Community in the early Romanian left 1870-1914* (PhD diss., University of Illinois, 2019).

Călin Cotoi, *Inventing the Social in Romania, 1848-1914: Networks and Laboratories of Knowledge* (Leiden: Brill Verlag Ferdinand Schöningh, 2020).

The "commemorative approach" continues, however, to dominate the official historiography promoted by the Romanian Academy. In 2017, it republished the 1957 edition of *Origin of Species*. A new introduction on the "Popularisation of Darwinism in Romania" was written by Dumitru Murariu and Octavian Popescu, who argue that today Darwin's theory is "unknown not only to the wider Romanian public, but also to the educated elite."[26] This statement mirrors Ion Cojocaru's conclusion, that in Romania "Darwinism is not censored [but] is not included in the [school] curricula. There is no state policy either pro-Darwinian or anti-Darwinian."[27]

Building on this scholarship, but also in part departing from it, this dissertation will critically re-examine the evolutionary theory proposed by Charles Darwin and the significant role it played in shaping both public opinion and the scientific community in Romania. The history of Darwinism in Romanian is important in many ways, as it gives us not only a picture of the interconnectedness between the political and the scientific construction of knowledge, but also reveals how cultural hegemony was formed in a non-Western context. Thus, the dissertation provides a much fuller picture of the impact and reception of Darwinism in a peripheral country, building upon, and in some respects challenging, existing work on the popularisation of science. Drawing on relevant comparisons with other countries, it will also reveal the peculiarities of the development of a scientific public and various counterpublics in modern Romania. Finally, it will trace the social staging of Darwinism materially and culturally (in printed texts and institutions),

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Charles Darwin, *Originea Speciilor* (Ediție revizuită) Trad. Ion E. Fuhn (București: Editura Academiei Române and Editura Herald, 2017), IX.

Ion Cojoaru, "Darwinism in Romania, between Science and Ideology," *Analele Științifice ale Universității Alexandru Ioan Cuza din Iași* Vol. 63 (2017): 72.

politically (in ideological contests and outcomes) and scientifically (in epistemological negotiations) and will explore the relationship between these various historical agents and elements.

The Historiography of Science Popularisation

Around the 1990s, several studies focusing on the varied material culture of science grew into a rich body of scholarship on what is known as "science popularisation".[28] The initial impetus was provided by Roger Cooter and Stephen Pumfrey, who were among the first to suggest that more studies should be written "from below" in order to concentrate "on the sites, the methods — the theatrics — and the individuals involved in the different social tailorings and legitimations of scientific knowledge."[29] In a similar vein, new analytical tools have been provided by numerous investigations keen to show the importance of other printing formats and non-academic figures in the construction and circulation of scientific knowledge, including amateur scientists and

Roger Cooter, *The Cultural Meaning of Popular Science: Phrenology and the Organization of Consent in Nineteenth-Century Britain* (London, New York: Cambridge University Press, 1984); Steven Shapin, "Science and the public," in R. C. Olby et al., eds., *A Companion to the History of Modern Science* (London: Routledge, 1990) 990-1007; James A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2000); Bernadette Bensaude-Vincent, "A genealogy of the increasing gap between science and the public," *Public Understanding of Science*, 10 (2001): 99-113; James Secord, "Knowledge in Transit," *Isis*, Vol. 95, No. 4 (2004): 654-672; James A. Secord, *Visions of Science: Books and Readers at the Dawn of the Victorian Age* (Oxford: Oxford University Press, 2014); Bernard Lightman, *Victorian Popularizers of Science: Designing Nature for New Audiences* (Chicago: University of Chicago Press, 2007); Aileen Fyfe and Bernard Lightman (eds.), *Science in the Marketplace: Nineteenth-Century Sites and Experiences* (Chicago: University of Chicago Press, 2007); Jonathan R. Topham, "The Scientific, The literary and the popular: Commerce and The Reimagining of the Scientific Journal in Britain, 1813–1825," *Notes and Records* Vol. 70 (2016): 305-324.

Roger Cooter and Stephen Pumfrey, "Separate spheres and public places: Reflections on the History of Science Popularization and Science in Popular Culture," *Hist. Sci.,* XXXII (1994): 243.

artisan knowledge.[30] Other studies, however, have shown that the emergence of new forms and formats of popularisation texts created an "intersectional" and socially diverse audience, which included women, children, and the working class.[31] However, aside from a few notable examples focusing also on indigenous knowledge,[32] most of these have concentrated on the circulation of scientific ideas in Western European and Transatlantic historical contexts. My understating of the subject matter, however, is in line with Fa-Ti Fan's emphasis that "the image of circulation tends to impose too much unity, uniformity, and directionality on what was complex, multidirectional, and messy", and which in one way or another "[does not] encourage a critical analysis of, say, power relations in science."[33]

Morris Berman, "'Hegemony' and the Amateur Tradition in British Science," *Journal of Social History* Vol. 8 (1975): 30-50; Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review* Vol. 48 (1983): 781-795; Adrian Desmond, "Artisan Resistance and Evolution in Britain, 1819-1848," *Osiris* Vol. 3 (1987): 77- 110; Penelope Anne-Secord, *Artisan Naturalists: Science as Popular Culture in Nineteenth-Century England* (Ph.D. diss., University of London, 2002); Jane R. Camerini, "Wallace in the Field," *Osiris* Vol. 11 (1996): 44-65; Samuel J.M.M. Alberti, "Amateurs and Professionals in One County: Biology and Natural History in Late Victorian Yorkshire," *Journal of the History of Biology*, Vol. 34 (2001): 115-147.

Margaret W. Rossiter, "Women and the History of Scientific Communication," *The Journal of Library History (1974-1987)*, 21 (1986): 39-59; Aileen Fyfe, "Young readers and the sciences," in Marina Frasca-Spada and Nick Jardine (eds.), *Books and the Sciences in History* (Cambridge: Cambridge University Press, 2000), 276-290; Erin McLaughlin-Jenkins, "Common Knowledge: Science and the Late Victorian Working-Class Press," *Hist. Sci.*, XXXIX (2001): 445-465; Aileen Fyfe, "Conscientious Workmen or Booksellers' Hacks? The Professional Identities of Science," *Isis*, Vol. 96, No. 2 (2005): 198; George Cotkin, "The Socialist Popularization of Science in America, 1901 to the First World War," *History of Education Quarterly*, Vol. 24, No. 2 (1984): 201-214; Nick Hopwood, ''Producing a Socialist Popular Science in the Weimar Republic" *History Workshop Journal*, No. 41 (1996): 117-153; James T. Andrews, *Science for the Masses: The Bolshevik State, Public Science, and the Popular Imagination in Soviet Russia, 1917–1934* (Texas: A&M University Press, 2003); Álvaro Giron Sierra and Jorge Molero-Mesa, "The Rose of Fire: Anarchist culture, urban spaces and management of scientific knowledge in a divided city," in Oliver Hochadel and Agustí Nieto-Galan (eds.) *Barcelona An urban history of science and modernity*, 1888–1929 (Abingdon: Routledge, 2016), 115-135.

For works focusing on non-Western science and indigenous knowledge see Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in Southeast Asia and Europe, 1650-1900* (New York: Palgrave Macmillan, 2007); Faidra Papanelopoulou, Agustí Nieto-Galan and Enrique Perdiquero (eds.)*, Popularizing Science and Technology in the European Periphery, 1800-2000* (Aldershot: Ashgate Publishing, 2009); Marwa S. Elshakry, "Knowledge in Motion: The Cultural Politics of Modern Science Translations in Arabic," *Isis*, Vol. 99, No. 4 (2008): 710-730; Lindy A. Orthia, "Strategies for including communication of non-Western and indigenous knowledge in science communication histories," *Journal of Science Communication*, Vol. 19, No. 2 (2020): 1-17.

Fa-ti Fan, "The Global Turn in the History of Science," *East Asian Science, Technology and Society: An International Journal*, Vol. 6 (2012): 252.

Following the so-called "participatory shift" in science popularisation studies, my approach will therefore show that scientists were not alone in managing the circulation of scientific knowledge. Building on this scholarship, this dissertation will uncover the differences and communalities between Western and Romanian popularisers of science, emphasising on the geographical "multidirectionality" and both its top-down and bottom-up character. To this end, I will critically reassess the "diffusionist model" of Romanian historiography, which maintains that science in general is disseminated from the upper echelons of society downwards, towards a passive audience, allegedly unequipped with the necessary knowledge for the understanding of science.[34]

As Nieto-Galan has shown, when it comes to the construction of scientific knowledge, there are different levels of amateur participation, and in public areas the two categories of "orthodox and heterodox practices" frequently overlapped.[35] Similarly, Bernard Lightman, explained in detail how "[t]he scientific naturalists pushing for what they thought of as professionalization were not fanatically opposed to the participation of all amateurs."[36] Drawing on this scholarship, however, this dissertation shows how some Romanian naturalists trained in French academia "police[d] the frontiers of their field, determining who and what methods did and did not count as proper science."[37]

Richard Whitley, "Knowledge Producers and Knowledge Acquirers: Popularization as a Relation between Scientific Fields and Their Publics," in Terry Shinn and Richard Whitley (eds.), *Expository Science: Forms and Functions of Polarization* (Dordrecht, Boston, Lancaster: Reidel Publishing Company, 1985) 3-28; See also Stephen Hilgartner, "The Dominant View of Popularization: Conceptual Problems, Political Uses," *Social Studies of Science*, Vol. 20, No. (1990): 519-539.

Agusti Nieto-Galan*, Science in the Public Sphere: A History of Lay Knowledge and Expertise* (Abingdon: Routledge, 2016).

Bernard Lightman, "Popularizers, Participation and the Transformations of Nineteenth-Century Publishing: From the 1860s to the 1880s," *Notes and Records*, 70 (2016): 356.

Jonathan Conlin, *Evolution and the Victorians: Science, Culture and Politics in Darwin's Britain* (London: Bloomsbury 2014), 49. For a historical account of the concept of "boundary work" between academic science and non-science

On the other hand, building on Alex Cizsar's investigation of the development of high-standard scientific journals, this dissertation will also illustrate how Romanian printing development was marked by problems relating to public access, debates over scientific authority, changing formats and genres, scientific gatekeeping, delineations between outsiders and elite scientific communities, issues of borrowing scientific news.[38] Moreover, I will also follow up on Robert Fox's investigations of the relationship between the state and academic scientists, and also trace the Romanian encounters with the so-called "radical synthesis" of positivism, materialism and Darwinian evolution.[39]

Turning to the popularisation of Darwin's theory of evolution more broadly,[40] we now have a solid body of scholarship dealing with the history and impact of Darwinism on the development of eugenics, scientific racism, gender and sexuality.[41] Moreover, in terms of the

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see. Thomas F. Gieryn "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review*, Vol. 48, No. 6 (1983): 781-795. For more details on the relationship between French academic science and lay audience, see Bensaude-Vincent Bernadette and Libbrecht Liz, "A public for science. The rapid growth of popularization in nineteenth century France," *Réseaux. The French journal of communication*, Vol. 3, No.1 (1995): 87

Alex Csiszar, *The Scientific Journal. Authorship and the Politics of Knowledge in the Nineteenth Century* (Chicago: University of Chicago Press, 2018), 156-157; Pietro Corsi, "What do you mean by a periodical? Forms and Functions," *Notes and Records* 70 (2016): 330.

Robert Fox, *The Savant and the State: Science and Cultural Politics in Nineteenth-Century France* (Baltimore: The Johns Hopkins University Press, 2012), 159-174.

For a transnational perspective, see Alfred Kelly, *The Descent of Darwin: The Popularization of Darwinism in Germany, 1860-1914* (Chapel Hill, N.C.: University of North California Press, 1981); Alexander Vucinich, *Darwin in Russian Thought* (Berkeley: University of California Press, 1989); James R. Moore, *The Post-Darwinian Controversies : A Study of the Protestant Struggle to Come to Terms with Darwin in Great Britain and America, 1870-1900* (Cambridge and New York: Cambridge University Press, 1981); James Reeve Pusey, *China and Charles Darwin* (Cambridge: Harvard University Press, 1983); Eve-Marie Engels and Thomas F. Glick (eds.), *The Reception of Charles Darwin in Europe*, Vol. I, (London: Continuum, 2006); Adriana Novoa and Alex Leviene, *From Man to Ape: Darwinism in Argentina, 1870-1920* (Chicago: University of Chicago Press, 2010); Katalin Straner, *Science, Translation and the Public: The Hungarian Reception of Darwinism, 1858-1875* (PhD. diss., Central European University, 2012); Marwa Elshakry, *Reading Darwin in Arabic, 1860-1950* (Chicago: University of Chicago Press, 2013).

Peter J. Bowler, *Evolution: The History of an Idea* (London: University of California Press, 2003); John S. Haller, *Outcasts from Evolution: Scientific Attitudes of Racial Inferiority, 1859-1900* (Urbana: University of Illinois Press, 1971); Nancy Stepan, *The Idea of Race in Science: Great Britain, 1800-1960* (London: Macmillan,1982); Evelleen Richards, "Darwin and the Descent of Woman," in David Oldroyd and Ian Langham (eds.), *The Wider Domain of Evolutionary Thought* (Dordrecht: Springer, 1983) 57-111; Ronald L. Numbers and John Stenhouse, *Disseminating*

social reception of evolutionary ideas, different social strata engaged with Darwin's theory in different ways.[42] Therefore, it was not just scientists who played an important role in the dissemination of Darwinism but a wide range of groups, from liberal intellectuals, freethinkers and radical anarchists, to feminists and religious dissenters.[43]

Reflecting on the aforementioned historiographic issues, this dissertation uncovers valuable material dealing with the social and political outcomes of science and Darwinism. In doing so, it will engage with Jürgen Habermas's sociological inquiry into the history of the formation and development of the so-called "public sphere."[44] His study is of crucial importance for dealing with science popularisation, as well as for looking at aspects of power relations, the legitimisation of the scientific enterprise and the "public's attitude towards science."[45] To gain a better understanding of this process, I follow what Antonio Gramsci (1891-1937) described as "hegemony", which creates "consent" among different social classes.[46] For Gramsci, intellectuals did not use force to impose their views, but persuasion with the help of cultural agencies and

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Darwinism: The Role of Place, Race, Religion, and Gender (New York and Cambridge: Cambridge University Press, 2001); Richard Weikart, "Progress through Racial Extermination: Social Darwinism, Eugenics, and Pacifism in Germany, 1860-1918," *German Studies Review* Vol. 26, No 2 (2003): 273-294; Kimberly Hamlin, *From Eve to Evolution: Darwin, Science and Women's Rights in Gilded Age America* (Chicago: University of Chicago Press, 2014); Ross Brooks, "Darwin's closet: the queer sides of The descent of man (1871)," *Zoological Journal of the Linnean Society*, Vol. 191, Issue 2 (2021): 323-346.

Alvgar Ellegard, *Darwin and the General Reader: The Reception of Darwin's Theory of Evolution in the British Periodical Press*, 1859-1872 (Gothenburg: Elanders Boktryckeri Aktiebolag, 1958), 24; Bernard Lightman, "Darwin and the popularization of evolution," *Notes Records of the Royal Society*, Vol. 64 (2010): 6.

Suzanne Paylor, *Scientific Authority and the Democratic Intellect: Popular Encounters with 'Darwinian' Ideas in Later Nineteenth-Century England, with Special Reference to the Secularist Movement* (Ph.D. diss., University of York, 2004).

Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (Cambridge: MIT Press, 1991).

Bernadette Bensaude-Vincent, "A Genealogy of the Increasing Gap between Science and the Public," *Public Understanding of Science*, 10 (2001): 101.

Antonio Gramsci, *Prison Notebooks* (New York: Columbia University Press, 1996), 200-201.

education. The use of Gramsci in the history of science is sporadic but nevertheless persuasive.[47] It is hoped that this dissertation, by providing new material from Romania, will also document the ways in which scientists used popularisation discourse to self-fashion their own image in order to build their public authority.

By drawing attention also to non-academic discourse, this dissertation will criticise the so-called "openness" of the public sphere. In nineteenth century Romania, we see the phenomenon described by Nancy Fraser as a "counter public sphere", one critical of the official discourse and which was "formed under [the] conditions of dominance and subordination" of a patriarchal society.[48] In this case, the Romanian "counterpublics", to use Michael Werner's term, were aware of their "subordinate status." Yet they were "self-organised" and often challenged the established discourses.[49] By the late nineteenth century, these counterpublics consisted of anarchists, women activists, and secular networks,[50] which also engaged with Darwin's evolutionary theory and rebelled against the authority of the mainstream scientific narratives represented by both Romanian and Western naturalists. Likewise, I will concentrate also on those

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One of the first historians of science to acknowledge Gramsci's work was Morris Berman, *Social Change and Scientific Organisation: The Royal Institution 1799-1844* (London: Heinemann, 1978); N.P. Edwards, *Borderland in Science: A Study in the Integrative Regeneration of Science in the English 'Popular' Scientific Journal c1865-c1919* (PhD diss., University of Leicester, 2001); Agustí Nieto-Galan, "Antonio Gramsci Revisited: Historians of Science, Intellectuals, and the Struggle for Hegemony," *History of Science*, 49 (2011): 453-478; Kostas Gavroglu, "Science Popularization, Hegemonic Ideology and Commercialized Science," *Journal of History of Science and Technology*, Vol (2012): 87; Francesca Antonini, "Science, History and Ideology in Gramsci's *Prison Notebooks,*" *Journal of History of Science and Technology*, Vol. 9 (2014): 64-80.

Nancy Fraser, "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy," *Social Text*, 25/26 (1990): 70.

Michael Werner, *Publics and Counterpublics* (New York: Zone Books, 2005), 65.

For more details on Anarchism as a counterpublic, see Kathy Ferguson, "Anarchist Counterpublics," *New Political Science*, Vol. 32, No. 2 (2010): 193-214.

"knowledge producers," who according to Andreas Daum, built networks through translations or lectures, which often functioned outside the official public sphere.[51]

Moreover, in terms of Darwinian epistemological outcomes, following Lynn Nyhart's investigation of German scientific development, I argue that, for the particular case of Romania, the analysis of science popularisation printings and the museum artefacts dealing with Darwinian evolution is equally important to understanding the emergence of the "biological perspective," eventually leading to the development of ecology studies.[52] These, in turn, are reflected through numerous neglected sources published by Romanian scientists, some of whom, under the influence of Russian revolutionary involvement in popularisation, went on to train in Germany under the supervision of Ernst Haeckel (1834-1919). The analysis of their work provides a better historical contextualisation, one that goes beyond the one-way directional distribution of scientific knowledge and shows how science was conceptualised locally in Romania.

Sources for the Study

Given the complexity and number of the historical agents that contributed to the development of Romanian science and the local discussions of Darwinism, this work will take into consideration multiple primary sources, comprised of journals of science popularisation, scientific periodicals, pamphlet series, and natural history manuals. In identifying the appropriate

Andreas W. Daum, "Varieties of Popular Science and the Transformations of Public Knowledge: Some Historical Reflections," *Isis*, Vol. 100, No.2 (2009): 324, 328.

Lynn K. Nyhart, *Modern Nature: The Rise of Biological Perspective in Germany* (Chicago: University of Chicago Press, 2009).

journals, I have made extensive use of the collections published by Nerva Hodoș (1869-1913) and Alexandru-Sadi Ionescu (1873-1926), namely, *Publicațiile Periodice Românești (Ziare, Gazete, Reviste) (1790-1918)* [*Romanian Periodical Publications (Newspapers, Gazettes, Magazines)*] and *Bibliografia Analitică a Periodicelor Românești (1790-1858)* [*Analytic Bibliography of Romanian Periodicals*] coordinated by Ioan Lupu (1899-1982). For scientific works and Darwinian texts, I used the four volumes coordinated by Gabriel Ștrempel (1926-2020), *Bibliografia Românească Modernă* (1831-1918) [*Modern Romanian Bibliography*], and Simion Ghiță, *Antologia Ateismului din România* [*Romanian Anthology of Atheism*]. In terms of cultural and scientific societies, these were documented by using Petre Dan's work, *Asociații, Cluburi, Ligi, Societăți: Dicționar Cronologic* [*Associations, Clubs, Leagues and Societies: Chronological Dictionary*].

These sources give a nuanced picture of individuals' perspectives on what they perceived as science popularisation and how they dealt with the appropriations and misappropriations of Darwinism. The examination of changes in the form and format of periodicals reveals their social, political, and epistemological consequences, as reflected through the editors aims and the growing number of articles by authors of a socially diverse background. Focusing on printing developments helps to identify the amateur contribution to and engagement with academic science, while it also uncovers the transformation of the gendered structure of the Romanian scientific enterprise. In the same way, the development of natural history manuals and popularisation pamphlets reveals precious information for understanding the shift from the science of systematics (grouping species by forms and function) to the rise of a biological perspective (grouping species by their geographical distribution and their relationship with each other and the environment) and to the latter's incorporation in natural history museum displays

and ecology studies. The evolution and diversification of the Romanian printing market also contributed to the mass commercialisation and commodification of Darwinism, as exemplified by the pocket-size editorial collection series.

Finally, to obtain a better social contextualisation of the discussion, materials from libraries and archives in Bucharest, Iași, Craiova and Cluj-Napoca were used for highlighting some of the printing politics of Romanian editors in the nineteenth century. Equally important in analysing the social dynamics of the scientific enterprise are private correspondence and scientific memoirs dealing with Darwinism. In this way, by using all of these sources, instead of focusing on the exclusively Western analysis of Darwinian popularisation, a much better sense of the multidirectional circulation of knowledge is gained, one attuned to how each cultural context developed its own unique way of engaging with the science of evolution during the latter part of the nineteenth century.

The Organisation of the Chapters

Chapter 1, "Stories of "Natural Wonders" in popular science journals" examines how Darwinism was discussed in three different popular science periodicals. I contend that the first discussions of Darwinism, published by the Jewish physician Iuliu Barasch (1815-1863) in his journal *Nature*, were refracted through the lens of the German Romantic movement of *Naturphilosophie*, while promoting racial taxonomies and an anthropocentric evolutionary worldview. Next, I show that Barasach's disciple Dimitrie Ananescu (1831-1885) continued to rely on racial taxonomies and developed a social Darwinist view of evolution. The analysis of the

second journal, *The Romanian Magazine of Science, Literature, and the Arts*, in which the agronomist Pană Buescu's (1833-1904) published one of his studies, shows that the idea of a common descent was discussed with reference to the natural and artificial selection observed in cattle breeding. I also show that a relevant shift in the popularisation format is associated with the public and academic ascent of the most famous nineteenth-century Romanian geologist, Gregoriu Ștefănescu (1836-1911). This is a notable example of how the practice of science popularisation mingled with the monopolisation of the geological mapping of the country and with the construction of his scientific authority. I argue that even if Ștefănescu extensively discussed Darwinian evolution, he was still promoting an anthropocentric view of organic evolution.

Chapter 2, "The 'Apostles of Science': Cultural associations, scientific and academic societies", explores how Darwin's theory was discussed by a plethora of Romanian naturalists in various lectures delivered at cultural, scientific, and academic societies. I demonstrate that, in all these platforms, not only did naturalists exercise their hegemony on the public sphere, but eventually established the orthodox standards and methodologies used in national scientific explorations. Around the same time, Codrat Grigorovici, in a lecture delivered at the Romanian Society in Vienna in 1867, was the first Romanian to acknowledge the evolution of species through gradual transformations, without making any references to divine intervention. Back in Romania, however, I argue that the abuse of Darwinian ideas by public figures such as Titu Maiorescu (1840-1917) and Ion Ghica (1816-1897), not only promoted racial hierarchies of human classification, but also justified gender and racial inequalities. In parallel, I show that the members of the Romanian Academy worked to promote the gatekeeping of scientific literature

and highlight the way in which national progress mingled with science, as manifested in the annual meetings of the Romanian Association for the Advancement and Spread of the Sciences.

In Chapter 3, "The radical synthesis": Darwinian and non-Darwinian theories of evolution", I deal with another group of Darwinian popularisers. Beginning with Ștefan C. Michăilescu (1846-1899), their debates openly questioned creationist investigations of science, while insisting on a shift to materialist interpretations of nature. However, when Bogdan P. Hașdeu (1838-1907) joined the debates, he expanded the limits of Darwinian interpretation, insisting that "Spiritism" is a validation of spiritual and organic evolution. However, the most controversial representative of the so-called "radical synthesis" was the philosopher Vasile Conta (1845-1882). I show that Conta's evolutionary system – which he termed "the universal ondulation theory" – was in agreement with Darwin's on many levels; yet was still at odds with the mechanism of "natural selection". Turning to physicians, I also show that the instrumentalisation of non-Darwinian theories of evolution by Victor Babeș (1854-1926), and Gheorghe Marinescu (1863-1938), eventually led to eugenics and the promotion of racial hygiene.

Chapter 4, "Darwinism for the People", reveals how anarchist revolutionaries placed the popularisation of Darwinism at the heart of their movement. These intertwined with their plans to empower those situated at the fringes of society, looking forward to the emancipation of peasants, women, and urban workers. I argue that, in opposing the Romanian academicians, by pointing to practices of plagiarism and the monopolisation of scientific research, their socialisation platforms gave rise to a counterpublic sphere. In addition, I show that the brothers Ioan and Gheorghe Nădejde were the first to teach Darwinism in secondary schools. Likewise,

the critical appraisals written by Grigore Maniu (1860-1911), Zamfir Arbure (1848-1933) and Garabet Ibrăileanu (1871-1936) of the ascent of social Darwinist ideas, highlight how local revolutionaries co-opted and eventually challenged the liberal and political instrumentalisation of evolution. In this regard, articles published by Panait Mușoiu (1865-1944) and Panait Zosîn (1873-1942) unmasked the scientific racism inherent in the biological explanation of human diversity. In the last part of this chapter, I deal with the emancipation of women and show that the socialist feminist Sofia Nădejde (1856-1946) stood out for turning the tables with scientific arguments against the abuses of Darwinism, which were justified gender inequalities.

Chapter 5, "Darwinism and the Secularisation of the Public Sphere" maps how evolutionary ideas overlapped with the Romanian freethought movement based on Ernst Haeckel's monism. Its main figure, Constantin Thiron (1853-1924), not only promoted a secular lifestyle, the suppression of religious ceremonies and the separation of Church and state, but also intensified the conflict between science and religion. I show that their publishing practices also appealed to popular science pamphlets and journals, further producing short translations of evolutionary studies by Darwin (1909), Wilhelm Bölsche (1911), Ernst Haeckel (1913) and Luigi Molinari (1920). Most of these pamphlets addressed the working-class and spoke much about the role played by "natural selection" in the evolution of species, the common descent of humans and monkeys, and the importance of "mutual aid" and solidarity in the process of evolution. The second part of this chapter shows how some Orthodox theologians were troubled by the idea that evolution together with scientific materialism led society towards atheism, and ascribed humans a random place among animal species. I also demonstrate that other religious

commentators partially accepted evolution and claimed that Darwin's theory was indeed a great achievement in the study of biology.

In Chapter 6, "Darwinism Understood and Misunderstood", I argue that adherence to Darwinism emerged around the turn of the twentieth century, following radical transformations of the public sphere. The chapter begins with the Moldavian parasitologist Nicolae Leon, who became one of the most important popularisers of evolutionary theory in Romania, and the first to officially introduce Darwinism into the school curriculum in 1899. His popularisation texts, together with other natural history manuals, are viewed as forerunners of the "biological perspective" in Romania. The chapter also documents how, together with Dimitrie Voinov, Leon engaged in tireless discussions on evolution and spontaneous generation with the anti-Semitic physician Nicolae Paulescu. Another evolutionist of the twentieth century, the zoologist Paul Bujor, was also engaged in rejecting the creationist ides of the origins of life.

The shift from systematics (grouping organisms by type and similarity) to studying species geographic and ecological place in the world was also based on science popularisation and Darwinism, and this view was implemented in the reorganisation of the Natural History Museum in Bucharest. In carrying out the latter, Grigore Antipa made extensive use of anglers' knowledge of the Danube fishery; after appointing his janitor Constantin Daianu as assistant custodian of the museum and working together with the painter Richard Canisius (1872-1934), they produced the first museum dioramas. At the same time, and going beyond the science of ecology professed by Antipa, I show that his views were marked by racial and anti-Semitic arguments regarding the assimilation of Romania's ethnic minorities.

Finally, Chapter 7, “Darwinism Commercialised” deals with editorial collection series, namely short translations of Darwin’s work in pocket pamphlet format. These cheap editorial collections flourished around the turn of the twentieth century, when publishers incorporated into their eclectic series numerous evolutionary writings, contributing to the commodification of Darwinism.

Chapter 1. Stories of "Natural Wonders" in science popular journals

"[…] indeed, monkeys are our relatives, we resemble each other; however, while we climbed to the highest position on Earth and claimed all its possession, these poor relatives stayed behind."[1]

Iuliu Barasch (1815-1863)

Introduction

Before the creation of modern Romania in 1859, investigations into natural history were mainly influenced by two scientific traditions. The first was represented by the Greek scholars based in the two major cities of Bucharest and Iași.[2] These scholars promoted the "science" of Pan-Hellenism which focused on mathematics, natural sciences and modern philosophy.[3] A second scientific tradition emerged in the 1830s, after Prussian Consulates were established in Moldavia and Wallachia.[4] According to Dan Bădărău (1893-1968), during the 1840s, "Romanian investigators of nature engaged with naturalism as a philosophy rather than as a science."[5] This tradition is best identified with the German Romantic movement of *Naturphilosophie*.

Quoted in Moses Schwarzfeld, *Dr. Iuliu Barasch, iunie 1815- 30 aprilie 1863: omul, opera, bucăți alese din operele sale* (București: Editura Cercului ''Libertatea", 1919), 515. All translations from Romanian are my own unless otherwise indicated. I would like to thank Iulian Doroftei for his precious help with the transliteration of Cyrillic.

Cornelia Papacostea-Danielopolu, *Intelectualii Români din Principate și Cultura Greacă. 1821-1859* (București: Editura Eminescu, 1979).

For more details on Greek influence on the development of Romanian natural science see Dimitris Dialetis, Kostas Gavroglu and Maolis Patiniotis, "The Sciences in the Greek Speaking Regions During the 17th and 18th Century," in Kostas Gavroglu (ed.), *The Sciences in the European Periphery During the Enlightenment* (Dordrecht: Springer Science and Business Media, 1999), 41-71; George Iavorenciuc*, Înaintarea științei în România: A doua jumătatea a secolului XIX- începutul secolului XX,* (Cluj-Napoca: Editura Mega, 2018), 61-83.

Vasile Docea, *Relații Româno-Germane Timpurii. Împliniri și eșecuri în prima jumătate a secolului XIX* (Cluj-Napoca: Presa Universitară Clujeană, 2000) Idem., "Profesori germani în Iașii primei jumătăți a secolului XIX," *Anuarul Institutului de Istorie și Arheologie 'A.D. Xenopol'*, Vol. 32 (1997): 159-184.

Dan A. Bădăreu, *O sută de ani de naturalism în România* (Iași: Tipografia Opinia, 1930), 65.

Naturphilosophie developed in university centres such as Göttingen, Heidelberg and Jena, the latter even becoming known as the "citadel of Darwinism." Its main representatives were figures such as Wolfgang von Goethe (1749-1832), Friedrich Schelling (1775-1854) and Lorenz Oken (1779-1851). For these *Naturphilosophen* "God's plan becomes a purposiveness immanent in nature, sacred history is transposed into the history of the cosmos, and theology is absorbed into natural history."[6] On the other hand, their "Romantic subversion of the Enlightenment commonwealth of polite learning paved the way for the empire of natural science."[7] More recently, scholars have reconsidered the differences between the German Enlightenment and the Romantic view of *Naturphilosophie*, acknowledging that the two traditions were closer than previously believed.[8] In addition, Darwin himself and his devoted disciple, Ernst Haeckel (1834-1919), were influenced by the German Romantic tradition.[9]

On the other hand, in the Romanian Principalities, the Moldavian bishop Amfilohie Hotinul (1730-1800) and the member of the Transylvanian School, Gheorghe Șincai (1754-1816), both expressed interest in natural history.[10] Neither, however, managed to publish their teaching manuals.[11] As a result, the first to publicly discuss natural science in the Romanian language was

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Nicholas Jardine, "*Naturphilosophie* and the kingdoms of nature" in Nicolas Jardine et.al. (eds.), *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996), 243.

Ibid., 244.

For more details on the closeness between the two German traditions, see Andrea Gambarotto, *Vital Forces, Teleology and Organization: Philosophy of Nature and the Rise of Biology in Germany* (Cham: Springer International Publishing, 2018).

Robert J. Richards, *The Meaning of Evolution: The Morphological Construction and Ideological Reconstruction of Darwin's Theory* (Chicago: University of Chicago Press, 1992).

Liliana Soare, *Din începuturile terminologiei științifice romanesti* (Pitești: Paralela 45, 2013); Sidonia Puiu, "Istoria Naturei sau a firei de Gh. Șincai- cel dintâi manual de istorie naturală în limba romană," *Librăria. Studii și cercetari de bibliologie* (Târgu Mureș: Mediaprint, 2004); Al. Borza, "Prima istorie naturală românească – Istoria naturei sau a firei de Gh. Șincai," *Transilvania* Anul LII, Nr. 9-12 (1921): 825-836.

Alexandru Borza, "Prima istorie naturală românească. Istoria Naturei sau a firei de Gh. Șincai," in *Transilvania* LII, 9-12 (1921): 825-836; N.A Ursu, *Formarea terminologiei științifice românești* (București: Editura Academiei, 1962), 30-32.

the physician Iacob Czihac (1800-1888). Born in the German city of Aschaffenburg, he studied medicine in Heidelberg, graduating with a thesis on ectopic pregnancy under the supervision of the famous anatomist Friedrich Tiedemann (1781-1861). After a short trip across Europe, he moved to Moldova in 1825, when the region was severely affected by cholera.[12] Once settled in the city of Iași, in 1829, he established the local "Medical Reading Circle" and in 1833, together with Mihail Zotta (1806-1887) founded the Society of Physicians and Naturalists (Societatea de Medici și Naturaliști).[13]

In 1834, the Public Instruction Office of Moldavia invited Czihac to give lectures on natural history, which he held twice a week (1837-1843) for the students of the Mihăilean Academy (Academia Mihăileană), an institution of higher learning founded in Iași by the Prince Mihail Sturza (1794-1884).[14] To help with his lectures, Czihac published the *Manual of Natural History* (*Manual de Istorie Naturală*) in 1837, considered the first Romanian scientific textbook. In it, he translated technical terminology and endeavoured to popularise elements of natural history. It is important to note that Czihac was also among the first authors in Romania to discuss the racial classification of human varieties.[15]

In parallel with almanacs and calendars, the appearance of the first Romanian newspapers, which frequently addressed political issues, paved the way for the emergence of the so-called public sphere, around the 1830s. Historically, the first attempts to publish newspapers in the Danubian Principalities can be dated to the beginnings of the 1790s, with the

Paul Pruteanu, *Iacob Cihac* (București: Editura Științfică, 1966), 13-38. Călin Cotoi, Ibid., 93-152.

Dana Baran, *Societatea de medici și naturaliști, Iași – 1833. Prima Academie Europeană a spiritului național* (Ediția a II-a) (Iași: Editura ,,Gr. T. Popa", 2019), 24-52.

Paul Pruteanu, Ibid., 99-106.

Jacob Cihac, *Manual de istorie naturală* (Eșii: Institutul Albinei, 1837), 16.

Russian military journal the *Moldavia Courier* (*Courrier de Moldavie*) (1790), the Transylvanian *Walachische Zeitung für den Landmann* (*Wallachian Newspaper for Land Workers*) (1791), followed by *Leipzig's Fame* (*Fama Lipschii*) published in Leipzig in 1827.[16] Ion Heliade Radulescu's *The Romanian Courier* (*Curierul Românesc*) began its publication in 1829 in Wallachia, at the same time with Gheorghe Asachi's *The Romanian Bee* (*Albina Românească*) in Moldavia. As Peter Gross has observed, these newspapers "created a public forum [for] the discussions of Romanian problems" and served as a "catalyst for the mobilization of public opinion" for national political ends.[17] Until the emancipation of the enslaved Roma, some of these publications also played an important role in promoting the economic benefits of slavery.[18]

In 1833, *Curierul Românesc* announced the translation into Romanian of Ioan Sebeni's work on the solar system and on the comet that was later believed to hit Wallachia in 1834.[19] Sebeni's other articles about eclipses and comets were also published in the magazine of *National Museum: Industrial and Literary Gazette* (*Muzeu National: Gazeta Literară și Industrială*) in 1836. Other articles of science popularisation were published in the newspaper of *Romania* (*România*)

The Hungarian bibliographer Jakab Elek (1820-1987) mentions Ioan Piuariu-Molnar's (1749-1815) initiative to publish the journal *Walachische Zeitung für den Landmann* (*Wallachian Newspaper for Land Workers*) in 1789. See Ion Bianu, "Introducere," in Nerva Hodoş and Al. Sadi Ionescu, *Publicaţiunile periodice româneşti – ziare, gazete, reviste – tom I, Catalog alfabetic 1820 – 1906* (București: Librăriile Socec et comp. şi C. Sfetea, 1913), vii-ix. See also Marina Cristea, "Primul ziar românesc ,,Fama Lipschii", o valoroasă contribuție la istoria presei române," *Muzeul Brukenthal. Studii și Comunicări*, Vol.13 (1967): 273-282.

Peter Gross, "Trials, Tribulations, and Contributions: A Brief History of Romanian Press," *East European Quarterly*, XXII, No.1 (1988):1-22.

Marian Petcu, "Publicitatea pentru comerțul cu robi în Țările Române," *Tyragetia* Vol. VIII, Nr. 2 (2014): 155-160; For more details concerning news on abolitionism in periodical journals see Raluca Tomi, "Mişcarea abolţionistă din principate şi impactul ei asupra legislaţiei de dezrobire (1849-1856)," *Revista Istorică*, Vol. XXI, Nr. 1-2 (2010): 57-71; See, also Adrian-Nicolae Furtună, *Sclavia Romilor în Țara Românească* (București: Editura Centrului Național de Cultură a Romilor, 2019).

Known also as Sibineanu, he was born in the Transylvanian village of Micăsasa and became the quarantine physician of the city of Giurgiu. See, Pompei Gh. Samarian, *Medicina și farmacia în trecutul Românesc 1775-1834* Vol II (București: Tipografia Cultura, 1938), 229-230.

in 1838, explaining in plain language how stalagmites and stalactites formed in caves.[20] Another example is *Prosperity. Scientific and Literary Paper* (*Propășirea: Foaie Științifică și Literară*), which in 1844 published an article signed by Ion Ghica (1816-1897) explicating, for an informed reader, the specialisation of scientific reasoning in fields such as chemistry, mineralogy, geology, astronomy, and medicine.[21]

Meanwhile at Czihac's initiative, the Society of Physicians and Naturalists attempted to publish the first Romanian scientific journal, called *Osiris*, in 1836. Failing to gather enough subscriptions, their studies were published in 1840 in book format under the title *The Peasant's Teacher* (*Dascălul Săteanului*). However, the Society's initial plan was taken up by Costache Vârnav (1806-1877), who launched the popular journal *Health and Economy Adviser* (*Povățuitorul sănătății și economiei*) in 1844. This was followed, in 1851, by the first Romanian scientific journal published by a naturalist society, *The Broadsheet of Society of Physicians and Naturalist from the Principality of Moldavia* (*Foaia Societății de Medici și Naturaliști din Principatul Moldovei*).[22]

Although the audience consisted mainly of wealthy boyars, by the 1820s the opening of reading cabinets in bookshops, brought in merchants, artisans and state functionaries.[23]

Gheorghe Bulgăr, "O contribuție la dezvoltarea stilului publicistic: România primul nostru cotidian (1 ian.-31 dec. 1838)," *Limbă și literature* Vol.4 (1960): 35-38.

Ion Ghica, "Ochire Asupra Științelor," in Mariana Costinescu and Petre Costinescu eds., *Propârșirea. Foaie Științifică și Literară* (București: Editura Minerva, 1980), 213.

The 1851 journal ran for only two years and was relaunched in 1887 as *Bulletin of The Physicians and Naturalist Society from Moldavian Principality* (*Buleitnul Societății de medici și naturaliști din Iași*) See Paul Pruteanu, op. cit., 95-97; Dana Baran, op. cit., 239-278;

Frederic Walbaum opened the first reading cabinet in Bucharest in the 1820s and eventually published his book catalogue in 1838. Shortly afterwards two more opened in Iași by Ioan Bogusz, Adolf Hening (1843) and C.A. Rosetti & Winterhalder (1846). For more details on social stratification of the Romanian readership and reading preferences in this period, see Dorina Grăsoiu, "O cercetare soiologică asupra stratificării publicului românesc din prima jumătate a secolului XIX," *Revista de Istorie și Teorie Literară*, 23, 2 (1974): 227-238.

However, even if in the 1860s popular science journals such as *Isis or Nature* [*Isis sau Natura*] aimed to reach "every single social class", during this period most of the readership consisted of small literate groups. The level of illiteracy in Romania was very high: 87 % of the total population

was unable to read.[24] Peasants therefore had to rely on their local priest to read to them. This is how the Moldavian government imagined the newspaper circulation in rural areas in 1839:

> Every village of over fifty people was legally constrained to subscribe. The system of distribution was as follows. The Department of the Interior sent it to *ispravnici*; the *ispravnici* entrusted it to the school inspectors who were then to extract a receipt from the village priest and to have it sealed with the village seal, the form of the receipt to be published in the first issue of the Bulletin. These receipts were then to be returned periodically to the Interior Department. After church [service] on the first Sunday after the receipt of the Bulletin, the priest was obliged to read out the paper 'so that all may hear', and the village sentinels were to sign on the paper's margin that it had been read.[25]

Publishers subsequently struggled with high printing costs and with unpaid subscriptions. Self-financed authors, who were publishing books and journals and who did not want to incur on high typographic production costs, appealed to subscription lists (prenumeranți) which readers paid in advance. Another option was to sign a contract with a bookseller, who would sell their

Alex Drace-Francis, *The Making of Modern Romanian Culture: Literacy and the Development of National Identity* (New York: Tauris Academic Studies, 2006), 41.
Ibid., 126.

books in exchange for a commission on the earnings, a practice that led to the emergence of the so-called editor-bookseller.[26]

1.1. *Isis or Nature: A Journal for the Spread of the Natural and Exact Sciences*

One of the most important Romanian periodical journals dedicated to the popularisation of natural history was *Isis or Nature* (*Isis sau Natura*) first published in 1856.[27] In its layout and woodcut illustrations, the journal mirrored the German periodical, *Nature: Newspaper for the Dissemination of Scientific Knowledge for Readers of All Levels* (*Die Natür. Zeitung zur Verbreitung naturwissenchaftlicher Kenntnis und Naturanschauung fur Leser alle Stande*), published in Halle in 1852 by Otto Ule (1820-1876), Karl Müller (1818-1899) and Emil Adolf Rossmässler (1806-1867).[28] Its main editor was the Jewish progressive physician Iuliu Barasch (1815-1863) who used transitional characters from Cyrillic to Latin and aimed to reach every single social group. In terms of circulation, prospective subscribers were sent a free issue together with a "Notice" (înștiințare), describing the aims of the publication as follows:

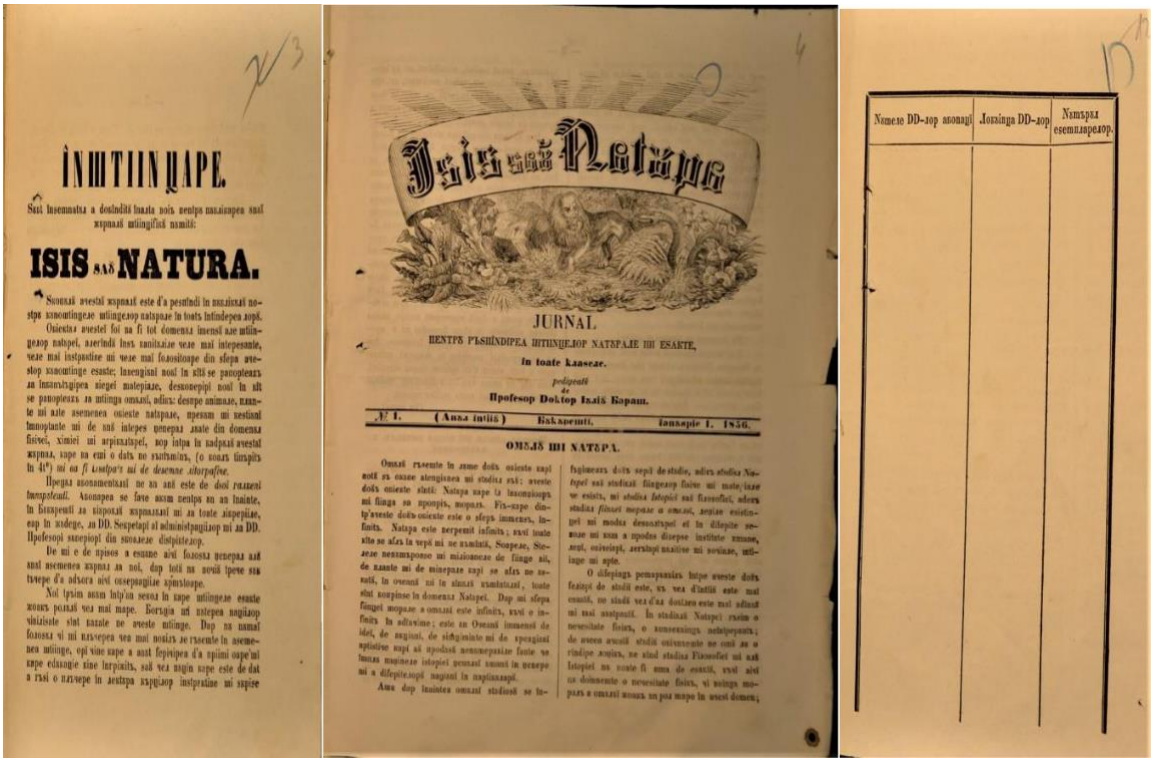
> The objective of this journal is to focus on the vast domain of the natural sciences […]; new inventions, beneficial to the betterment of material life, new discoveries which relate

Bogdan Popa, *Comerțul cu carte în România: proiect național și proiect economic (a doua jumătate a secolului al XIX-lea – începutul secolului al XX-lea)* (Cluj-Napoca: Academia Română, Centrul de Studii Transilvane, 2015) 69.

The name *Isis* was borrowed from Egyptian mythology, representing the patron of nature, and the same female personification can be seen on the cover of the Romanian journal where Isis is portrayed in the midst of nature. The same name was also given by Lorenz Oken to his natural science journal in 1817. For more details on the feminisation of nature, see Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins, 1990).

Andreas Daum, *Wissenschaftspopularisierung im 19. Jahrhundert Bürgerliche Kultur, naturwissenschaftliche Bildung und die deutsche Öffentlichkeit 1848-1914* (München: Oldenbourg Wissenschaftsverlag, 2002), 346-353.

to the human sciences, in other words, [information] about animals, plants and natural objects; both interesting and important matters in the domain of physics, chemistry and agriculture, [will be] published once a week in octavo and illustrated with lithographic drawings.[29]



ÎNTIINȚARE.

ISIS SAU NATURA.

JURNAL

Nume DD-lor abonați | Locuința DD-lor | Numărul esemplarelor.

Figure 1.1. "Notice" sent by Iuliu Barasch accompanying by the first issue of the journal *Isis* and a blank subscription list. Courtesy of Direcția Arhivelor Naționale Istorice Centrale, Fond Ministerul Cultelor și Instrucțiunei Publice, Bucharest

Barasch's public call included also the programmatic statement of the journal, which emphasised the social benefits of scientific dissemination for the modernisation of the Romanian

[29] Direcția Arhivelor Nationale Istorice Centrale, Fond Ministerul Cultelor și Instrucțiunei Publice, Dosar No. 8, Anul 1856, Fila 3.

Principalities. “Nowadays we live in a century in which the natural sciences play one of the most important roles. The wealth and power of civilised nations are based on these sciences.”[30] Moreover, he was also willing to publish articles by anyone who adjusted their studies to the journal’s format. However, by 1859, Barasch was barely able to keep up with the printing costs and soon ended the publication of the journal. During the following year, he lobbied the Minister of Public Instruction to compensate his financial losses and requested that the minister buy 300 copies, which, he added, could be awarded to students as a graduation prize.[31]

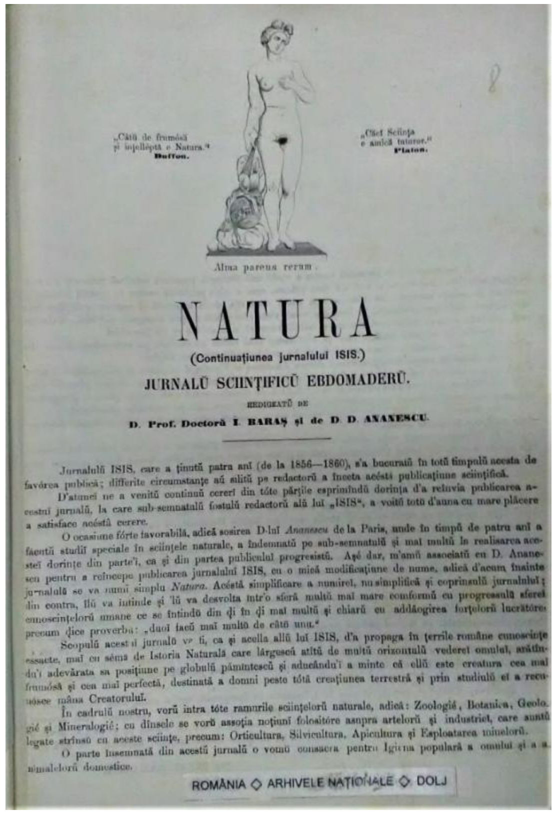
The second period of the journal’s publication occured in the year 1862, when the journal was jointly edited by Barasch and one of his former students, Dimitrie Ananescu (1831-1885), under the title, *Nature! A Journal for the Dissemination of Natural Sciences in Romania* (*Natura! Jurnal pentru răspândirea stiinteloru naturale în România*). In the second statement written for administrative officials, the editors said that although they “will do [their] best to use a popular language, […] from time to time, scientific articles will also be included.”[32] Soon afterwards, on 15 March 1862, the editors appealed to the public to assist with the costs arguing that “*Nature* is very wealthy; that is why it gives without asking for anything back. However, the journal *Nature* is not so wealthy; that is why on the one hand, it offers, and on the other, it is obliged to ask for something back.”[33] On this occasion, due to the many unpaid subscriptions, the journal folded for a second time.

Ibid., Fila 3v.

Direcția Arhivelor Nationale Istorice Centrale, Fond Ministerul Cultelor și Instrucțiunei Publice, Dosar No. 20, Anul 1861, 147/1861, Fila 3-4.

Direcția Generală a Arhivelor Statului, Fond Prefectura Județului Dolj Serviciul Administrativ, Dorsa Nr. 57, Anul 1862, Fila 8-9. On the appearance of the second series of the journal *Nature*, Barasch pledged that he would add a supplement, *The Peasant* (*Țăranul*) in which issues of public hygiene and animal health would be discussed, and also asked the government to ensure subscriptions in rural schools.

Natura. Jurnal Pentru Răspândirea Sciințelor Naturale în România, Anul 5, No. 10 (1862).



„Cătŭ de frumósă și înțeleptă e Natura." Buffon.

„Căcĭ Sciința e amică tuturor." Platon.

Alma parens rerum.

NATURA

(Continuațiunea jurnalului ISIS.)

JURNALŬ SCIINȚIFICŬ EBDOMADERŬ.

REDIGEATŬ DE

D. Prof. Doctorŭ I. BARAȘ și de D. D. ANANESCU.

Jurnalulŭ ISIS, care a ținută patru anĭ (de la 1856—1860), s'a bucurată în totŭ timpulŭ acesta de favórea publică; differite circumstanțe aŭ silitŭ pe redactorŭ a înceta acéstă publicațiune sciințifică.

D'atuncĭ ne a venitŭ continuŭ cererĭ din tóte părțile esprimîndŭ dorința d'a reînvia publicarea acestuĭ jurnalŭ, la care sub-semnatulŭ fostulŭ redactorŭ alŭ luĭ „ISIS", a voitŭ totŭ d'auna cu mare plăcere a satisface acéstă cerere.

O ocasiune fórte favorabilă, adică sosirea D-luĭ *Ananescu* de la Paris, unde în timpŭ de patru anĭ a făcentŭ studiĭ speciale în sciințele naturale, a îndemnatŭ pe sub-semnatulŭ și maĭ multŭ la realisarea acesteĭ dorințe din parte'ĭ, ca și din partea publiculuĭ progresistŭ. Așé dar, m'amŭ associatŭ cu D. Ananescu pentru a reîncepe publicarea jurnaluluĭ ISIS, cu o mică modificațiune de nume, adică d'acum înainte jurnalulŭ se va numi simplu *Natura*. Acéstă simplificare a numireĭ, nu simplifică și coprinsulŭ jurnaluluĭ; din contra, îlŭ va întinde și 'lŭ va desvolta într'o sferă multŭ maĭ mare conformŭ cu progressulŭ sfereĭ cunoscințelorŭ umane ce se întindŭ din ḑi în ḑi maĭ multŭ și chiarŭ cu addăogirea forțelorŭ lucrătóre, precum ḑice proverba: „duoĭ facŭ maĭ multŭ de câtŭ unu."

Scopulŭ acestuĭ jurnalŭ va fi, ca și acella allŭ luĭ ISIS, d'a propaga în țerrile române cunoscințe essacte, maĭ cu séma de Istoria Naturală care lărgescă atâtŭ de multŭ orizontulŭ vedereĭ omuluĭ, arătându'ĭ adevărata sa posițiune pe globulŭ pămîntescŭ și aducându'ĭ a minte că ellŭ este creatura cea maĭ frumósă și cea maĭ perfectă, destinată a domni peste tótă creațiunea terrestră și prin studiulŭ eĭ a recunósce mâna Creatoruluĭ.

În cadrulŭ nostru, vorŭ intra tóte ramurile sciințelorŭ naturale, adică: Zoologiĕ, Botanica, Geologiĕ și Mineralogiĕ; cu dînsele se vorŭ assoția noțiunĭ folositóre asupra artelorŭ și industrieĭ, care suntŭ legate strînsŭ cu aceste sciințe, precum: Orticultura, Silvicultura, Apicultura și Esploatarea minelorŭ.

O parte însemnată din acestŭ jurnalŭ o vomŭ consacra pentru Igiena populară a omuluĭ și a animalelorŭ domestice.

Figure 1.2. The second programmatic statement of the journal *Nature* in 1862, a loose-sheet format handed over to the local prefects in charge of gathering rural subscriptions. Courtesy of the National Archives Branch, Dolj

The third and final appearence of the journal *Nature* came out after the death of its first patron and performed a double function. From 1865 onwards its editors were Dimitrie Ananescu and Constantin Esarcu (1836-1898), who used it first as the official journal of the Romanian Society of Natural Science (1864) and then as the mouthpiece of the Bucharest Romanian Athenaeum.[34]

In 1905, Gheorghe Țițeica (1873-1939) and Gheorghe Gh. Longinescu (1869-1939) relaunched another popular journal that used the name Nature: A Journal for Science Popularization (Natura: revistă ştiinţifică de popularizare).

Subscriptions for *Nature* were 63 lei per year in 1865, making it quite expensive. It was available in urban locations and through rural administrative intermediaries, for instance, at the bookshop owned by A. Danilopol, at the editorial headquarters on Seraphim Street No. 10 in Bucharest, or, for people in the provinces, the county prefects were in charge, empowered by the Ministerial Order No. 5115/1862 to gather subscription lists from the rural sub-prefects.[35] Hence, in 1865, one of the journal's articles announced that subscribers all over Romania received the publication, but the greater part, including those in Calarași, Caracal, Dorohoi, Piatra and Iași, were not paying their subscriptions and the journal had trouble keeping pace with the costs of publication.[36]

Its main editor, Iuliu Barasch, is best remembered as one of the most important popularisers of science and popular medicine. He was also among the first to introduce Darwin's theory to the Romanian public.[37] Born into a Jewish family in 1815, in Brody, in the Austrian-Hungarian province of Galicia, Barasch was brought up in the tradition of Haskalah (Jewish Enlightenment).[38] In 1836, he went to Leipzig to study philosophy and subsequently earned a

Direcția Județeană a Arhivelor Naționale Dolj, Fond Prefectura Județului Dolj. Serviciul Administrativ, Dosar Nr. 57/1862, Fila 6-7.

"Anunțiu,"*Natura*, Anul VI, No. 24 (1865): 1.

Iuliu Barasch first mentioned Charles Darwin together with Hermann Melville in *Isis* in 1856, when describing travel literature and the language of animals. See Ioan Lupu, Dan Berindei, Nestor Camariano and Ovidiu Papadima, *Biliografia Analitică a Periodicelor Romanesti*, Vol. II, 1851-1858, Partea a III-a (București: Editura Academiei Republicii Socialiste România, 1972) 1007-1008.

For more details on the Jewish influence on Romanian culture, see Simona Fărcășan*, Intelectuali evrei de limbă română in secolul al XIX-lea* (PhD diss., Universitatea Babes-Bolyai, 2003), 89-92. For more details on the Jewish tradition of Haskalah in East and Central Europe see Shmuel Feiner, *The Jewish Enlightenment* (Philadelphia: University of Pennsylvania Press, 2002); Shmuel Feiner, *Haskalah and History: The Emergence of a Modern Jewish Historical Consciousness* (Portland: The Littman Library of Jewish Civilization, 2002).

degree in medicine at the University of Berlin, supervised by Professor Johann Lukas Schönlein (1793–1864).[39]

Figure 3.1. Iuliu Barasch (1815-1863) portrayed here with his popular book *Wonders of Nature* (1852). Courtesy of the Romanian Academy Library, Bucharest

As he was not allowed to practise medicine in Iași in 1841, Barasch left for Bucharest in 1842 where he could work as an ophthalmologist. In 1843, he was appointed as a quarantine physician in Calarași, and, two years later, he became the official physician of Dolj County.[40] Finally, he returned to Bucharest in 1851 where he taught several courses on natural history at

Angela Petrescu, Iorgu Petrescu, "Dr. Iuliu Barasch (1814-1863), Primul professor de științele naturii în Țara Românească?," *Studii si Comunicari/ DIS* 8 (2015): 251-252.

Moses Schwarzfeld, *Dr. Iuliu Barasch, iunie 1815- 30 aprilie 1863: omul, opera, bucăți alese din operele sale* (București: Editura Cercului "Libertatea", 1919), 36.

St. Sava National College, and was among the first to teach anthropology at the Military School, botanical forestry at the Agricultural School, and comparative physiology at the School of Medicine.[41]

It is during this period that he published his most famous treatise *Wonders of Nature* (*Minunile Naturii*) (1850-1852) and his encyclopaedic work, *Thesaurus Scientarum* (*Ozar Ha-Hockham*) (1856) in Hebrew.[42] Amongst his other quests to popularise science was the reformation of the traditional Jewish communities of Eastern Europe, the Mediterranean and the Orient, from the viewpoint of the *maskilim*, by publishing several books and journals on the topic.[43] He was by far one of the most talented popularisers of science in Romania, and his conversational style always avoided didacticism. Aware of the social and ethnic disparities of the period, he published statistical data concerning the economic contribution to the Wallachian State Treasury by Roma taxpayers after the abolition of slavery in 1856.[44]

Barasch's travels across Moldavia and Wallachia exposed him to various superstitions, which he perceived within the local Jewish community. However, as in other European countries, the Jewish communities in Romania were without political and social rights until 1878, when the Congress of Berlin enacted a revision of the 1866 Romanian Constitution, eliminating religious

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Simona Fărcășan, op. cit., 92-95; In his biography of Iuliu Barash, Moses Schwarzfeld mentions him as the first to teach zoology and anthropology in Bucharest and the first to use statistics in medical research. See Moses Schwarzfeld, op. cit.,36-37; 42.

Moses Schwarzfeld, Ibid., 36-37; 42.

Lucian-Zev Herscovici, "Judaism and its relationship to other religions according to Yehudah Ben Mordechay (Julius) Barasch," *Studia Hebraica* Vol. 6 (2006): 152-154.

"Classification de la population dans rapports avec le fisc. 1857" and "Contributions annuelles directes et indirectes, imposes aux différentes classes de la population," *Isis sau Natura*, An II, Nr. 43 (1857): 340-344. For more details on the abolition of slavery and taxation see Viorel Achim, "The Gypsies in the Romanian Principalities: The Emancipation Laws, 1831-1856," *Historical Yearbook*, Vol. I (2004): 93-120; Idem, *The Roma in Romanian History*, 94-112.

restrictions, and granting civil and political rights to Jewish minorities.[45] Thus, it was his ideological background in Haskalah that prompted Barasch "to do something about the cultural integration of the Jews" within the national traditions.[46]

As already mentioned, the first generation of Romanian naturalists was greatly influenced by the scholarly tradition of German *Naturphilosophie*. After first flourishing in Moldavia at the beginning of the 1830s, its presence was felt in the public sphere in Wallachia, especially in the popular journals, and in the teaching manuals dealing with systematics published by Iuliu Barasch. Following Lorenz Oken's pantheist view and adding some elements of natural theology, Barasch carefully traced every object and every law in the natural system to the plan of a designer. Therefore, it was the job of naturalists to discover the "final causes" of the perfect harmony between the organic and inorganic worlds: "God has constructed the laws of nature, which work consistently in eternity […] the wise man searches always for the nearest physical cause produced by the Watchmaker's work; that is to say, the study of nature should always search and follow for these physical causes."[47]

Throughout his popular articles on natural history, Barasch provided the incipient Romanian scientific culture with views of the history of the earth, the formation and origin of species, as well as racial taxonomies. When it came to the history of the earth, he identifies its beginning in accordance with the Genesis story. Following the famous French geologist Georges Cuvier (1790-1832), he identified three main strata of the formation of the earth and

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Keith Hitchins, *A Concise History of Romania* (Cambridge: Cambridge University Press, 2014), 118.

For more details see Lidia Trăușan-Matu, "Istoria a două gazete din Valahia la mijlocul veacului al XIX-lea: „Isis sau Natura" și „Israelitul Român"," in Gheorghe Ilie Fârte and Daniel Rareș Obadă (eds.), *190 de ani de presă în spațiul de limbă română (1829-2019)* (Iași: Editura Universității Alexandru Ioan Cuza, 2020), 147-158.

Quoted in Gulian I. Constantin, *Din Istoria Filozofiei in Rominia*, Vol. III (București: Editura Academiei Republicii Populare Romine, 1960): 113.

differentiated them according to fossil characteristics as primary, secondary and tertiary. He also recognised that "the observation of these strata assures us without doubt that the surface of the earth suffered many changes due to some physical revolutions, which killed all its living beings […], thereafter the memories of the cataclysm was known in *popular tradition* as the *flood."*[48]

Debates within the German tradition also dealt with gendered differentiations based on the duality between polyps and plants. Scientific discussions were hence, submitting the female by analogy to a passive role in reproduction, while the active force belonged to the white, European male.[49] In a similar vein, in his article series published in 1858 dealing with human taxonomy, Barasch reassessed his views of reproduction and reasoned in line with racial and gendered Eurocentric investigations:

> If the father comes from a noble race and the mother does not, the inferior race will [flourish], and if the father belongs to an inferior race, the children will degenerate. Therefore, marriages between a white woman and a black man […] will tend towards infertility, and if a child is born from this ugly combination, [their union] will degenerate the race. In contrast, marriages between a white man and a [black] woman are fruitful because the race will improve, while children will resemble their father. Thus, nature itself is looking forward to improving the race, namely the white race at the expense of all the others.[50]

Quoted in Liliana Soare, *Din începuturile terminologiei stiintifice romanesti Medicina; Stiinte ale Naturii* (Pitești: Paralela 45, 2013), 200-203.

Peter Hanns Reill "The Scientific Construction of Gender and Generation in the German late Enlightenment and in German Romantic Naturphilosophie," in Susanne Lettow (ed.), *Reproduction, Race and Gender in Philosophy and the Early Life Science* (New York: State University of New York Press, 2014), 75-76, 80.

Iuliu Barasch, "Omul IV. Viitorul raselor oamenesti," *Isis sau Natura* An. III, No.4 (1858): 30.

Analogies between racial and gender differences were widespread across the European scientific spectrum in the first half of the nineteenth century. When it came to matters of reproduction, Nancy Stepan observed that:

> Athough analogies between women and blackness had been drawn before, […] her bio-psychological differences from men had been discussed by scientists mainly in terms of reproductive function and sexuality, and the most important analogies concerned black females (the "sign" of sexuality) and lower-class or "degenerate" white women. Since males of all races had no wombs, no systematic, apparently scientifically validated grounds of comparison between males of "lower" races and women of "higher" races existed.[51]

For the same reasons, Barasch's views of reproduction reflect to some extent the old legislation concerning marriage between Romanians and enslaved Roma, aimed at preventing racial mixing until a new law changed this state of affairs in 1839.[52] In terms of human taxonomies, Barasch reproduced the famous Blumenbachian "five-race scheme" of Caucasian, American, Ethiopian, Mongolic and Malayan, at the same time providing their specific somatic characteristics, but without leaping to anthropoid analogies. However, he finally acknowledged

Nancy Leys Stepan, "Race and Gender: The Role of Analogy in Science," *Isis* Vol. 22, No.7 (1986): 269.

Alina Felea, "From the History of Mixed Marriages. Marriages with Gypsies in the Romanian Space in the 18th and First Half of the 19th Century," *Zarzadanie w Kulturze* 14, (2013): 281-288; Viorel Achim, op. cit., 107-108.

that “the facts prove an important philosophical idea for the future of humankind, in particular the tendency of the white race to exterminate all the others.”[53]

By 1862, he also brought into the debate news of the appearance of early human fossils discovered across the world, for which he apologised to the reading public, not wanting to be considered an atheist.[54] He also expanded his views on the law of nature that rejected the “fixity of species”. Thus, the process of metamorphosis identified by Johann Wolfgang von Goethe (1749-1832) in 1796, after his morphological investigation of plants, caterpillars and tadpoles,

and finally applied to the vertebrate skull,[55] constituted a perfect theory on which Barasch could build. Similarly, in his early work, *Wonders of Nature* published in 1852, he emphasised that, “among other fundamental laws of nature, one has to speak also of the law of corporeal metamorphosis. Everything that exists is based on this law; there is no material being that remains for even one minute in an unchangeable state.”[56]

The journal *Nature* and the first debates on Darwinism

According to Iuliu Barasch, the transformation of species could not explain the evolutionary links between humans and apes. In this case, he argued that “of all animals, monkeys are the most similar to the nature of humans; however, there is no certain truth that

Iuliu Barasch, “Omul IV. Viitorul raselor oamenesti,” *Isis sau Natura* An. III, No.4 (1858): 30.

Iuliu Barasch, “Omul și Pământul, De cându esistă omulu pe pământu,” *Natura! Jurnal Pentru Răspândirea Sciintelor Naturale în România*, An 5, No. 7 (1862): 49-52.

Robert J. Richards, *The Meaning of Evolution: The Morphological Construction and Ideological Reconstruction of Darwin’s Theory*, (Chicago and London: University of Chicago Press, 1992) 36-37.

Quoted in Liliana Soare, op. cit., 194.

we are siblings and that humans [developed] from monkeys."[57] Nevertheless, he published a new article on 15 January 1862 on the Darwinian question of common descent. This time, he began with a short history of evolutionary ideas, starting with the Comte de Buffon (1707-1788) and ending with Charles Darwin (1809-1882). Barasch claimed that "Darwin showed that with the passage of time, organic species, after losing their primitive forms, will acquire other forms […] In a word, we humans are descended from the apes. Nothing less! Such a lofty aristocratic [inheritance] for humans."[58]

Meanwhile, the "harmony of the great chain of being" was further disrupted by the comparative anatomy debates between Richard Owen (1804-1892) and "Darwin's bulldog" Thomas Henry Huxley (1825-1895). In the aftermath of Charles Darwin's publication of *Origin of Species* (1859), the dispute that focused on the "hippocampus controversy", the question of whether, based on skull anatomy, apes and monkeys had a posterior lobe as humans have, became a touch point for all future racial classifications. As Nicolaas Rupke has argued, scientific racism became the norm after "Huxley's rule" won the debate and showed that "the differences between the lowest and highest ape, is much larger than the highest ape and the lowest human."[59]

In this regard, when Barasch published his article on the same topic, he took great pains to follow the latest scientific controversies, including those in Oxford. In doing so, he insisted

Quoted in L. Miros, "Ideile Filozofice si Social Politice Progresiste ale Doctorului Iuliu Barasch," in Gulian I. Constantin ed. *Din Istoria Filozofiei in Rominia*, Vol. III, (București: Editura Academiei Republicii Populare Române, 1960) 119.

Iuliu Barasch, "Omul și Maimuta," *Natura! Jurnal pentru răspandirea sciinteloru naturale în România*, An 5, No. 3 (1862): 22.

Nicolaas Rupke, "The origins of scientific racism and Huxley's rule" in Nicolaas Rupke and Gerhard Lauer (eds.), *Johann Friedrich Blumenbach: Race and Natural History, 1750–1850* (Abingdon and New York: Rutledge, 2019), 238-

that, "of all the monkeys without a tail, the Gorilla is the most similar to humans. A little after come the Chimpanzee and the Orang-utan."[60] However, after drawing attention to some of the anatomical similarities between the two species, Barasch observed that differences would appear when measuring either the weight of the skull or the "facial angle." Like most European Jewish anthropologists who answered to anti-Semitic arguments with their own racial classification system,[61] Barasch described the gap between the two species, and promoted racial hierarchies:

> [The method of skull weight measurement] consists of filling the empty skull with lentils or with cereal millet […] in order to show the differences between Gorillas (129-157 drachms), the African [according to Barasch, one of the most imperfect human races] (289-414 drachms) and the European (460 drachms).[62]

After presenting all of his anthropometric arguments, Barasch returned to the recent (1857) discovery of the Neanderthal, which revealed that there was a close relationship between the two species. Although he noted that "now the Darwinians shout, Victory!" his Lamarckian conclusion was rather unambiguous: "The result of all these debates is that, it is for certain that [the progress of] civilisation improved the human physical form, which can be seen by looking at the head, which is nobler and more intelligent."[63]

Iuliu Barasch, "Omul și maimuța," *Natura* An. V, No. 3 (1862): 23.

John M. Efron, *Defenders of the Race: Jewish Doctors and Race Science in Fin-de Siècle Europe* (London: Yale University Press, 1994), 7.

Iuliu Barasch, op. cit., 24.

Ibid., 24.

Barasch's popularity in Romania was uncontested, yet some of his unorthodox ideas had their critics. In the aftermath of his death in April 1863, the newspapers reported that around three thousand people gathered to pay their respects to the philanthropist Jewish naturalist. Even if the number in attendance may have been exaggerated, the public recognition of his work demonstrates both the validation of the naturalist intellectual and the Romanian Orthodox politics of assimilation. For instance, C.A. Rosetti (1816-1885) remembered that the two of them read passages from the anarchist Pierre-Joseph Proudhon (1809-1865) on the question of

death.[64] In the same newspaper, the obituary written by his disciple, Dimitrie Ananescu, highlighted that Barasch viewed death as the most obvious of natural laws, and his testament pleaded for the cremation of his body.[65] However, as happened with other secular funerals in the nineteenth century, his last wish was overturned by Romanian officials and Barasch was buried according to the Orthodox tradition.

Another Romanian naturalist, one who continued the popularisation of science and elaborated the mechanism of Darwin's theory, was Barasch's former student, Dimitrie Ananescu (1831-1885). Born in the city of Craiova, Ananescu completed his studies in Bucharest at St. Sava National College in 1851, after which he went to Paris, where he specialised in natural science. When he returned to Romania from the Sorbonne, he taught natural history, zoology, anatomy, and comparative physiology at the Schools of Medicine and at the Military Academy.

One of his first major works on natural history appeared in 1864. Entitled *The Contemplation of Nature* (*Contemplația Naturii*), the study was actually an adaptation of work

C.A. Rosetti, "Doctorele Iuliu Barasch," *Românulu*, 4 Aprilie, An VII (1863): 294.
Dimitrie Ananescu, "Mortea Doctoreului Iulius Barasch," *Românulu*, 10 Aprilie, An VII (1863): 315.

done by the Swiss botanist Charles Bonnet (1720-1793), a naturalist who, according to Pietro Corsi, also contributed important pre-Darwinian commentaries on evolution.[66] Ananescu, like Darwin, subscribed to the theory that in nature there are no leaps,[67] and that in the "great chain of being" there is, to some extent, a resemblance between primates and humans. However, those who wanted to undertake this kind of research would have to recognise the "Creator in [the act of] creation."[68]

Later in 1862, when he became the co-editor of the journal *Nature*, Ananescu published the article "On the origins of the human races or the human species", in which he grouped, as Isidore Geoffroy St. Hilaire (1805-1861) did, all human beings into four main races: Caucasian, Mongoloid, Ethiopian, and Hottentot. According to palaeontologist Stephen Jay Gould, "preevolutionary justifications for racial ranking" emerged in two ways. He distinguished between the "soft argument" of monogenesis (the single origin of creation) and the "hard" one of polygenesis, or multiple creations, including the descents from different Adams, which did not allow some, such as blacks, to participate in the "equality of men."[69] The main aim of Ananescu's article was to study all human races, following the "method of natural history." He thus highlighted:

> (1) The characteristics that differentiate humans from the higher animals; (2) Humans' place in the System of Nature; (3) how did the human races come into being and how

Pietro Corsi, "Before Darwin: Transformist Concepts in European Natural History," *Journal of the History of Biology*, (2005): 74.

Charles Darwin, *On the Origins of Species by Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life*, 6th edition (London: John Murray, 1872), 166.

Dimitrie Ananescu, *Contemplația Naturei. Uvragiu pentru răspândirea sciințelor naturale, lucrat dupa Charles Bonnet* (Bucureșci: Typographia Th. Vaidescu, 1864), 25-26.

Stephen Jay Gould, *The Mismeasure of Man* (New York: W.W. Norton & Company, 1996), 71.

many are there according to different authors; (4) [the question of] whether all these races originate in the same place of birth or whether they were in fact modifications of a single primitive race; (5) and whether there are any external influences on the physical and moral constitution of the races based on their diet?[70]

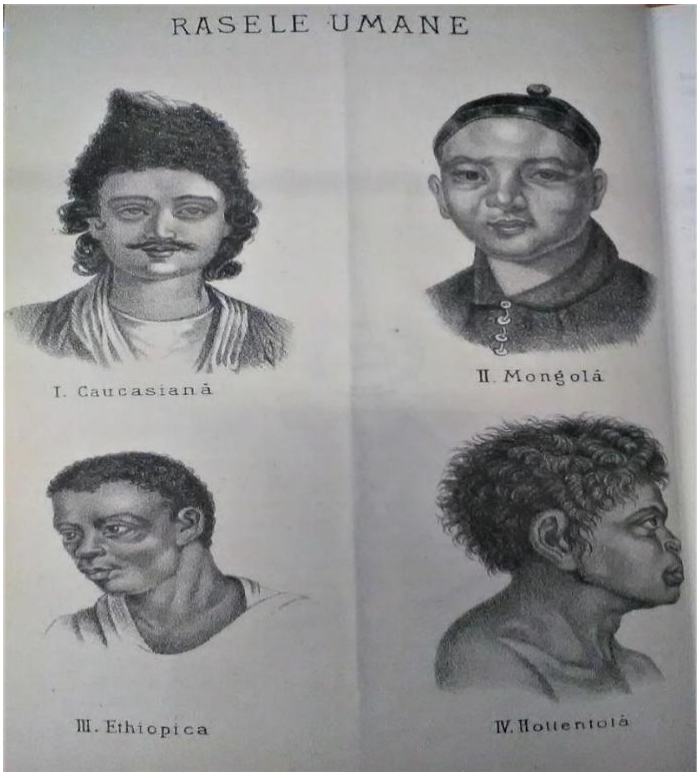

Figure 1.4. Lithographic illustration from the pamphlet *Man and the Human Races* printed in 1868 and sold for 85 bani as a loose sheet of Dimitrie Ananescu's popular lecture held at the Bucharest Athenaeum in 1867. It is important to note that the "Hottentot" is the only one pictured in profile, which gives the impression of common biological characteristics between the "inferior races" and the "higher ape". Courtesy of Lucian Blaga Central University Library, Cluj-Napoca

Dimitrie Ananescu, "Despre originea sau rasele speciei umane," *Natura. Jurnal pentru răspândirea sciințeloru naturale în România*, An V, No. 26 (1862): 202.

In answering these questions, Ananescu suggested, following Carl Linnaeus (1707-1778), that humans were placed in the same systematic classification order as primates, so not surprisingly, there were a handful of species, such as Homo sapiens and Homo troglodytes. Nevertheless, for Ananescu humans had to be created separately and in accordance with what Geoffroy St. Hillaire's view, they should be placed in a separate human kingdom.[71]

It is rather evident that Ananescu was well prepared to accept the dissemination of scientific theories in the public sphere, and, following his mentor Iuliu Barasch, he promoted the same anthropocentric worldview in which humans were placed at the top of the ladder of nature. However, when giving a definition of the concepts he used, Ananescu argued that the term "race" was a "subdivision of a species based on a number of important characteristics which are passed on from generation to generation", while "varieties [are] subdivisions of a race based on a single character, which is also variable."[72] Moreover, after discussing how "Jews and Gypsies" have acclimatised throughout the world, he concluded that climate, food supply and religious traditions contributed to the perfection or the degeneracy of the four principal human races.[73]

On the other hand, when Charles Darwin published his second important work, *The Descent of Man* in 1871, Ananescu was little attracted by the idea of human origins. Hence, in a public lecture given at the Bucharest Athenaeum, he embraced instead "Darwin's metaphor" of a Malthusian struggle for existence and elaborated a social Darwinist worldview.[74] On this

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Ibid., 203.

Ibid., 204.

Dimitrie Ananescu, *Omul și rasele umane* (Bucuresci: Tipografia Lucrătorilor Asociați, 1868) 22-23.

For more details of the influence of Thomas Malthus (1766-1834) on Darwin, see Robert M. Young, *Darwin's Metaphor: Nature's Place in Victorian Culture* (Cambridge and New York: Cambridge University Press, 1985).

occasion, Ananescu identified the same struggle for existence observable in the natural kingdom at work within economic and commercial competition, claiming that "the deforestation of secular forests is carried out by the axe of the triumphant white race."[75] Similar to the view put forward by Darwin in *The Descent of Man*, Ananescu, after describing the struggles between nations and races as a natural law, and presenting the extinction of "savage humans" in contact with civilisation in the same way, concluded that "from an intellectual and moral point of view, the higher races will triumph in the struggle for existence and chase out the inferior races."[76]

1.2. *The Romanian Magazine of Science, Literature and the Arts*

After the administrative union of Moldavia and Wallachia in 1859, Ordinance No. 411 concerning the periodical press highlighted that, a few months after the abolition of censorship that same year, periodical journals exploited this act and instigated the populace against the government and the newly elected Prince Alexandru Ioan Cuza (1820-1873). Hence, the ordinance banned denigrating the ruler and attacks on his premiership; public slander of official religion; and instigation to civil disobedience, the abolition of the constitutive structure of the country and the principle of property. Whoever wanted to publish a journal had to receive State permission, and send their full credentials, along with payment of a certain tax if breaches of the law occurred.[77]

Dimitrie Ananescu, "Lupta pentru existență," in *Revista Contimporană. (Litere-Arte-Şciinţe)* (Bucuresci: Tipografia Curtii, 1873), 426.

Ibid., 427. See Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (London: John Murray, 1871),

See SJAN Dolj, Colection Sudii, Articole, Monografii, Box Nr. 45, Publicațiile periodice apărute în Crariova 1838-1893, File, 30-33.

In April 1862, the first official "Press law" was enacted (Decree No. 263) to finally regulate intellectual property, censorship, and the publication of periodical journals. The first article stipulated that "the author of all writings, […], during their lifetime will enjoy the benefit of their own intellectual property, and of the exclusive right to reproduce and sell their works across the Principality."[78] After the author's death, these rights were passed on for a period of ten years to their inheritors, after which time they would enter into the public domain. According to article 26, "censorship is and remains for ever abolished", while article 28 named the varieties of journals considered under the new law as "political journals, literatury, scientific, commercial, industrial periodicals; books of any sorts, posters and various announcements". Although the number of scientific periodicals was extremely low, the bill officially recognised their existence.

Likewise, a separate section explained in detail that "periodical publications" could be issued by anyone of "legal age and without a criminal record", but only if they send the Interior Minister their full personal and bibliographical details. Two years later, during the social unrest following the 1864 coup against Prince Cuza, another Decree (no.518) returned to the restrictive regulations enacted before 1859.[79] Finally, the 1866 Romanian Constitution proclaimed freedom to express ideas and opinions in speech or print and the right of civil association. Accordingly, it stipulated that only a special jury could judge press offences, and that no kind sort of censorship would be re-imposed.[80]

Ibid., 34-35.

Ibid., 34-36.

See the Romanian 1866 Constitution, http://www.cdep.ro/pls/legis/legis_pck.htp_act_text?idt=37755 (Accessed on 21 May 2017)

During this period, other popular science magazines that appeared were also used as a platform for publishing original scientific research. Among these, was a journal with a lifespan of only three years, was *Romanian Magazine for Science, Literature and Arts* (*Revista Română pentru Sciinte, Littere și Arte*) edited by Alexandru Odobescu (1834-1895).[81] Their programme stated that "the magazine will always be careful to evade the spiritual influence of any [political] party. Its aims will be solely to popularise as much as possible the literary culture and a taste for the arts and to disseminate into the public [domain] serious and correct notions of all sciences."[82] Full-year subscriptions of the monthly magazine were sold for 4 galbeni; during 1862 and 1863 the price was lowered to 3 galbeni. The quarto format was printed by the same typography, belonging to Stephan Rassidescu where *Natura* had its last days. A novel innovation of Rassidescu's typography was the lithograph engravings which provided readers with visual comfort, while at the same time enhancing the credibility of the articles they accompanied. Another technique used in the 1870s by Romanian naturalists to advance their claims was the heliographic illustration developed by the French inventor Joseph Nicéphore Niépce (1765-1833). Heliography allowed naturalists interested in systematics (grouping species and artefacts by type and similarity) to bring marvellous sequences of natural life, and fossil evidence from the long distant past into the homes and hands of subscribers. By doing so, they left no way out for the general reader, who became a mere spectator to the process of the construction of scientific truth.

The journal was revived by the end of the century.
Revista Română pentru Sciinte, Littere si Arte, Vol. I (1861): 1.

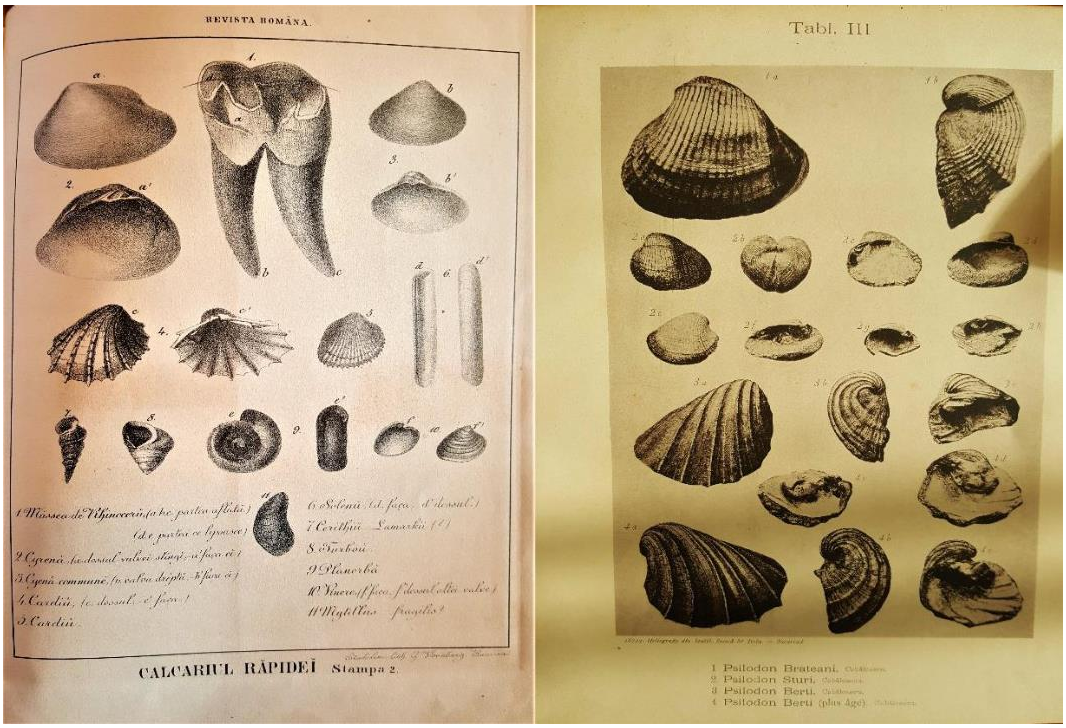

Figure 1.5. Differences between lithographic and heliographic illustrations. The first lithograph illustration portrays fossilised molars and oyster shells systematically arranged by Gregoriu Cobâlcecu (1831-1892) at Repedea and published in *The Romanian Magazine* in 1862. The second heliographic illustration was published in 1883 by Cobâlcescu at Socecu & Teclu Printing House, entitled *Studies of geology and palaeontology*. Courtesy of Lucian Blaga Central University Library, Cluj-Napoca

On the other hand, when leafing throughout the pages of *The Romanian Review*, one could find articles on poetry, history, or jurisprudence side by side with studies on astronomy, the history of miracles, and animal husbandry. One has to add that the magazine published the first genuine empirical geological field-work in Romania, sponsored by state funds, and signed by

Grigore Cobâlcescu (1831-1892).[83] Concerning the theories that dominated Romanian geology in this period, Sava Athanasiu (1861-1946) argued that there were three main directions until 1875. The theory of catastrophism developed by Georges Cuvier (see the previous section); the theory of "Craters of Elevation" of Leopold von Buch (1774-1853), according to which mountains were created by volcanic forces; and the theory of "Mountain Systems" of Élie de Beaumont (1798-1874) who focused on the age of mountains in relation to their direction and geometrical distribution.[84]

Grigore Cobâlcescu's research aims were to decipher the "geological character of the hills, their constitutive material, and the mode of their formation" and to discover the springs that were hidden beneath earth layers, which the surrounding areas of Iași should exploit for drinking water.[85] Following Beaumont and Cuvier's theories, Cobâlcescu insisted that the chalk layer, the sand deposits and the remains of marine fauna that were found in Moldavia formed due to cataclysms that were more intense towards the south and the meridional regions of the country. Moreover, the fossil of a *rhinoceros* molar found in the upper strata indicated that it belonged of the Pliocene (Upper Tertiary). Cobâlcescu concluded that his findings were different to those of Adolphe d'Archiac (1802-1868) who viewed the region as standing only on a seabed, and that "foreign [research] was as wrong about the history of the earth of our country as they were on the [history] of our people."[86]

Grigore Cobâlcescu, "Calcarul de la Rapidea," in *Revista Română pentru Sciinte, Littere si Arte* Vol. II (1862): 686-

Sava Athanasiu*, Grigore Cobalcescu. O pagina din istoria sciintelor in Romania, (Conferinta in sedinta festiva a 100 a Societatii de sciinte din București la 4 februarie 1902)* (București: Imprimeria Statului, 1902) 21-22; For more details see Gabriel Gohau, *A History of Geology* (New Brunswick and London: Rutgers University Press, 1990), 151-158.

Grigore Cobâlcescu, op. cit., 687-688.

Ibid., 694-698

Of particular interest is the work published by the professor of natural science at St. Sava National College, Pană Buescu (1833-1904), who investigated the method of artificial selection for animal breeding, a method that also attracted Charles Darwin in his search for the mechanism of evolution. In his article, "Cattle and their Amelioration" (1861), Buescu begins with the importance of agriculture to the prosperity and progress of various countries. Buescu also saw progress as essential for the future of the Romanian nation-state, and he urged the introduction

of the English method of cattle breeding so as to improve the national herds.[87] Despite the fact that he did not mention Darwin's work, Buescu gave a brief description of the varieties of characteristics between animals and arrived at the conclusion that these had a common descent as follows:

> All these breeds are believed to have developed from a primitive type under two influences: one natural, such as climate, geographical location, the quality and quantity of food; the second artificial, such as the kind of work for which [the animals] were domesticated, across generations, the breeding selection, and [the process] of stockbreeding in order to preserve a particular race for the use of its benefits.[88]

For a discussion of the replacement of vaca ñata in favour of the European breeds, see Adriana Novoa, op.cit., 34, 55-56.

Pană Buescu, "Vitele bovine si imbunatatirea lor," *Revista Romana pentru Sciinte, Littere si Arte* Vol. I (1861): 303.

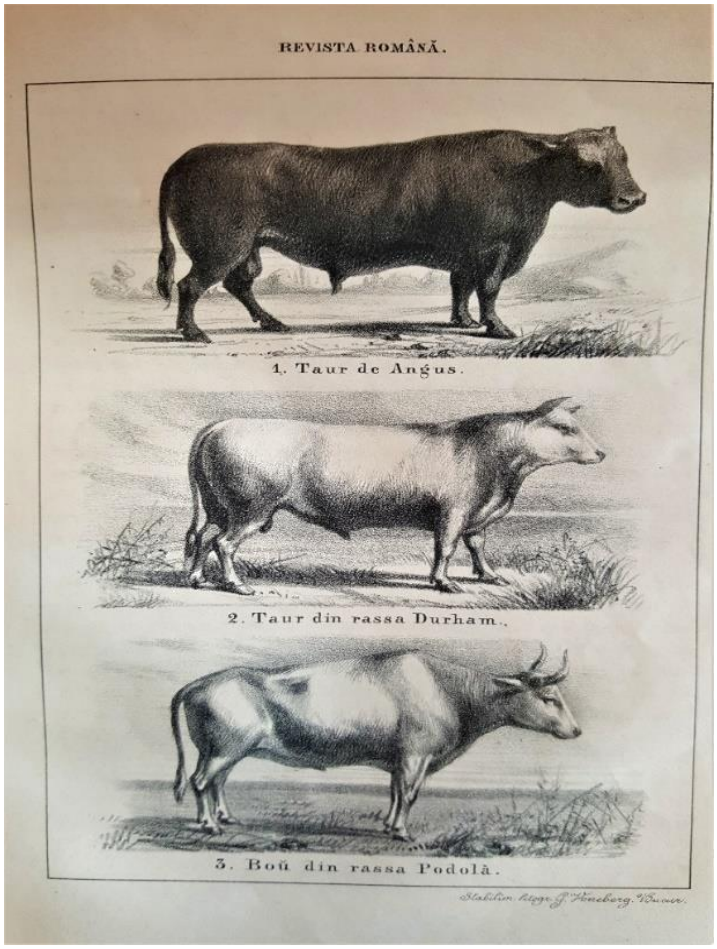

Figure 1.6. Excerpt of the lithography accompanying Pană Buescu's study of cattle breeding portraying three oxen (1861)

1.3. *The Scientific Review: A Journal for the Vulgarisation of the Physical and Natural Sciences*

One of the leading journals of Romanian science popularisation produced by high-standard academicians was *The Scientific Review: A Journal for the Vulgarisation of the Physical and Natural Sciences* (*Revista Sciintifică. Diariu pentru vulgarisarea sciintelor naturale si fizice*)

published between 1870 and 1882, mainly by Petre S. Aurelian (1833-1909) and Gregoriu Ștefănescu (1836-1911).[89] Strikingly similar in its layout to the French *Revue Scientifique* the journal also borrowed the French term "vulgarisation". The term was used by French columnists in the 1850s and 1860s, during the Second Empire, charged with explaining science to lay people.[90] However, despite the usage of the term vulgarisation, the Romanian journal was neither linguistically accessible, nor affordable for Romanian readers. Hence, annual subscriptions cost 20 lei; after realising that the charge was enormous, the editors decided that starting in 1873 the price would be lowered to 15 lei.

However, as Simona Antonescu highlights, the journal was one of the first that included articles exclusively from the natural sciences, rural economy, chemistry, forestry and deforestation, medicine, hygiene, and agriculture. On closer inspection, one could also find racist articles targeting members of the Jewish community who were involved with selling alcohol.[91] Nevertheless, with the appearance of *The Scientific Review*, the arrangement of the Romanian public sphere had to follow the "progressive" laws of science. In their words: "our vital interest is that all our social classes should be familiar with scientific knowledge", even as the journal had to be seen as an "instruction manual for each individual, regardless of age, gender or occupation."[92] In contrast with previous popular journals, the articles published in *The Scientific Review* not only mirrored the liberal views of the prime minister, Petre Aurelian, but illustrated

C.F. Robescu (1839-1920) was also editor during the first three years of the publication.

On the usage of the term *vulgarisation* in France, see Susan Sheets-Pyenson, "Popular Science Periodicals in Paris and London: The Emergence of a Low Scientific Culture, 1820-1875," *Annals of Science*, 42 (1985): 556-559; Bernadette Bensaude-Vincent, "A public for science. The rapid growth of popularization in nineteenth century France," *Réseaux. The French journal of communication*, Vol 3, No. 1, (1995): 89.

Simona M. Antonescu, *Literatura de popularizare a stiintei in a doua jumatate a secolului al XIX-lea si inceputul secolului XX in Romania* (București: Editura Ars Docendi, 2007), 74.

"Prospectu," *Revista Sciintifica. Diariu pentru vulgarisarea sciintelor natural si fizice*, 1, 1 (1870): 1-2.

that the placement of science studies side by side with various branches of the economy, was now forcing the development of the country on to the track of Western modernity and industrialisation.

ANNULU V No. 20. 1 DECEMBRE 1874

REVISTA SCIINTIFICA

DIARŬ PENTRU VULGARISAREA SCIINTELORŬ NATURALE ŞI FISICE

CU UNŬ

SUPLIMENTU

TRACTANDU DESPRE AGRICULTURĂ, COMMERCIU, INDUSTRIE SI ECONOMIA NATIONALA

APARE LA 1 SI 15 ALLE FIE-CARE LUNI

Câte uă côlă în 8° de tecstă, având la fi-care lună câte uă stampă cu figuri litografiate, şi unŭ suplimentŭ de uă jumetate côlă în octavo de tecstu.

SUB REDACTIUNEA D-LOR

P. S. AURELIANU — Inginerŭ agricolŭ. — Directorele scólei de agricultură şi silvicultură, etc. etc.

GR. STEFANESCU — Licenţiatŭ în sciinţele naturale. — Professore de Geologiă şi Mineralogiă la Facultatea de sciinţe, etc. etc.

ABONAMENTELE se facŭ numai pe unŭ annŭ şi cu preţŭ de . . . . . 15 Leĭ.

Pentru streinătate se adaogă costulŭ Poştiĭ.

SUMMARIU:

Cronica. . . . . de *P. S. Aurelianu.*
Astronomiă. — Passagiulŭ Venerĭ. . . . . de *P. Tanco.*
Cursŭ publicŭ de Istoria Naturală. — Lecţiunea de deschidere. . de *Gr. Stefanescu.*
Fisică. — Barometro-graffulŭ d-lui Domenico Surdi. . . . . de *St. Sihleanu.*
Igiénă. — Raportŭ côtre Primăria communei Piatra. . . . . de *Dr. Cantemir.*
Lucrŭ publică. — Discursŭ ţinutŭ la împărţirea premieloră în oraşulŭ Slatina . . . . . de *I. Ionaşcu.*
Stampe. — *Barometro-graffulŭ* d-lui Domenico Surdi. — Planŭ alŭ salineloră Slănicu.

Abonamentele se facŭ în districte la DD. correspondenţi şi la tóte biurourile postale; în Bucuresci la Librăria Socecŭ seŭ d'a dreptulŭ la Redacţiune, Strada Teilorŭ, No. 1.

BUCURESCI
NOUA TYPOGRAPHIA A LABORATORILORŬ ROMANI
19. STRADA ACADEMIEI, 19.
1874.

Abonamentele începŭ de la 15 Februariŭ

ANNULŬ VI No. 1. 15 FEBRUARIE 1875

REVISTA SCIINTIFICA

DIARU PENTRU VULGARISAREA SCIINTELORU NATURALE SI FISICE

Redacţiunea: DD. P. S. AURELIANU, GR. STEFANESCU

CRONICA

Grevele in Engliterra.—Progressulŭ agriculturei in Australia.— Missiunea sciinţifică englesă pentru observarea eclipsului totalŭ allŭ sôrelui. — Maşinele de seceratŭ in Engliterra şi Statele-Unite. — Intemeiarea unui stabilimentŭ de zootecniă esperimentală in Italia.

Cu numĕrulŭ acesta începemŭ annulŭ allŭ şesselea allŭ *Revistei Sciinţifice*. Redacţiunea simte uă multŭmire particulară că a pututŭ conduce pênĕ astă-ţi publicaţiunea acestui ţiarŭ. Cată însĕ să mărturisimŭ că amŭ avutŭ a lupta cu difficultăţi de totŭ felulŭ, dĕrŏ tari în convicţiunea nóstră că, lucrându pentru vulgarisarea sciinţeloră în ţĕrră, îndeplinimŭ uă datorie, n'amŭ cruţatŭ nicĭ unŭ sacrificiŭ pentru a învinge obstacolele ce ni s'aŭ pusŭ înainte. Astŭ-felŭ amŭ ajunsŭ să întreţinemŭ ţiarulŭ nostru unŭ timpŭ mai îndelungatŭ de côtŭ alte publicaţiunĭ analóge din ţĕrră.

Speranţa care ne-a susţinutŭ de la începutŭ pênĕ astă-ţi cumŭ că publiculŭ romănŭ va începe a se interesa mai de aprópe de cestiunile sciinţifice, a fostŭ, uă spunemŭ cu durere, puţinŭ îndeplinită. Cunnóscemŭ că persónele versate în litteratura sciinţifică străină se potŭ adăpa din isvórele sciinţeĭ în alte limbĭ; însĕ nu este mai puţinŭ adevĕratŭ că marea maioritate a românilorŭ nu se află în casulŭ acesta, şi noĭ tocmaĭ pentru acésta maioritate lucrămŭ. Afŏra d'acésta chiarŭ pentru aceĭ adăpaţi în sciinţă din străinătate, credemŭ că *Revista* a avutŭ óre-care interesŭ; de vreme ce acestŭ ţiarŭ nu s'a mărginitŭ numaĭ la sciinţa pură, ci a căutatŭ a localisa pre cătŭ i-a statŭ în putinţă. Orĭ-cumŭ arŭ fi, suntemŭ datorĭ a arĕta profunda nóstră recunnoscinţă attâtŭ acelloră persóne carĭ aŭ buna-voinţa a se interesa de ţiarulŭ nostru, cătŭ şi colaboratoriloră carĭ ne-aŭ venitŭ în ajutorŭ.

Increderinţaţi că prin stăruinţă se póte ajunge orĭ-ce scopŭ practicŭ, noĭ vomŭ continua ca şi în trecutŭ a ne îndeplini datoria.

Facemŭ totŭ de uă dată cunnoscutŭ lectoriloră că de acumŭ înainte căndŭ trebuinţa va cere, pentru maĭ mare înlesnire a înţellegerĭĭ tecstuluĭ, vomŭ înlocui unele stampe prin figurĭ intercalate în tecstŭ.

— Grevele, adică associaţiunile între lucrătorĭ cu scopŭ de a întrebuinţa acţiunea collectivă pentru a li se ameliora posiţiunea, iaŭ proporţiunĭ din ce în ce maĭ îngrijitóre pentru industria britanică. De abia a trecutŭ câte-va sĕptĕmănĭ de pace, şi ŏcŏ că uă imensă grevă de 120,000 lucrătorĭ bătrânĭ şi forgarĭ aŭ declaratŭ că nu se maĭ potŭ întreţine cu salariulŭ ce li se plătesce. Patronĭĭ ca cumŭ arŭ voĭ să învenineze rĕulŭ, nu vorŭ să maĭ dea de lucru nicĭ acelloră lucrătorĭ carĭ nu facŭ parte din grevă.

Acésta luptă teribilă între capitalŭ şi muncă, între patronŭ şi lucrătorĭ, este unŭ faptŭ economicŭ de cea maĭ mare importanţă. Aceste manifestaţiunĭ, tacsate de revoluţionare de côtră aceĭa carĭ nu 'şĭ daŭ ostenélă să studieze faptele, conţinŭ în sine germinile seŭ aluatulŭ uneĭ reforme economice care va fi una din celle maĭ mărețe şi um anitare transformaţiunĭ alle secolului allŭ nouă-spre-ŏecelea.

Maĭ mulţĭ bărbaţĭ considerabilĭ din Engliterra pretindŭ că marele patriotŭ şi oratorŭ D. Bright, arŭ fi potutŭ îmblânzi şi chiarŭ potoli înăsprirea ce essistă între lucrătorĭ şi patronĭ, dŏcŏ cu occasiunea di-

Figure 1.7. *The Scientific Review* printed in double columns. Courtesy of "Lucian Blaga" Central University Library, Cluj-Napoca

One of the editors' aims was to speak out on behalf of the science faculties which were created soon after the two Romanian Universities in Iași and Bucharest were established in 1860 and 1864. Articles urged that these faculties lacked sufficient teaching materials, mineral

collections and botanical gardens.[93] Equally important were the numerous articles on mountain deforestation by private societies, which illustrated its impact on floods, climate, and agriculture and consequently its effect on the country's economy.[94] Another aim of the journal was the nationalisation of Romanian science, for which the editors urged the adoption of the German model proposed by the Prussian biologist Rudolf Virchow (1821-1901).[95] The idea emerged after Rudolf Vichow's debate with the French anthropologist Armand de Quatrafages (1810-1892) in the aftermath of the 1871 Franco-Prussian War about the ethnicity and race characteristics of the Prussian people. To some extent, their debate also gave rise to conflicts over the superiority of the outcomes of one's national science.[96] Following their exchange, Gregoriu Ștefănescu insisted that:

> It is not enough to study the sciences, but science itself should have a national character; in other words, all inhabitants of a given country who study science should learn and think in their own language. They should have what is called, their own scientific literature and so on; [science], beside its utility, will have a substantial influence on their lives and on the national dignity of the country.[97]

P.S. Aurelian, "Cronica Sciintifică," *Revista Sciințifică*, 1, 8, (1870): 113-114.

P.S. Antonescu, "Îngrijirea munților," *Revista Sciințifică* Anul VIII, Nr. 15 (1877): 231-236. For more details on Romanian commons, deforestation and state intervention, see Oana Mateescu, *Serial Anachronism: Re-Assembling Romanian Forrest Commons* (Phd. Diss. University of Michigan, 2017); Monica Vasile, "Formalizing commons, registering rights: the making of the forest and pasture commons in the Romanian Carpathians from the 19th century to post-socialism," *International Journal of the Commons* Vol. 12, No. I (2018): 170-201.

See also Mitchell G. Ash and Jan Surman, *The Nationalization of Scientific Knowledge in the Habsburg Empire, 1848-1918* (Basingstoke: Palgrave Macmillan, 2012).

Robert Fox, op.cit., 232-234.

Gregoriu Ștefănescu, "Considerațiuni asupra discurusului D-lui Virchow," *Revista Șciințifică*, 3, 9 (1872): 134-137.

In the scientific news published in the first year of *The Scientific Review*, one could find information about the rejection of Darwin's candidacy by the French Academy of Science. Admitted only as a corresponding foreign member of the Botanical section in 1878,[98] the Romanian editors eventually sided with Darwin.[99]

One of the journal's editors, Gregoriu Ștefănescu (1836-1911), "the apostle of science" as his fellow scientists frequently called him, was probably the most famous geologist in nineteenth-century Romania.[100] Like most Romanian naturalists around the 1860s, after finishing secondary school at St. Sava College in 1858, Ștefănescu enrolled at the Sorbonne to pursue his undergraduate studies in natural history. According to his biographers, during his stay in Paris he met leading naturalists such as Claude Bernard and Isidore Geoffroy St. Hillaire.[101] After he returned to Bucharest, he got a teaching position at both St. Sava and Matei Basarab Colleges until 1864, when he was appointed Professor of Geology and Mineralogy at the newly opened University of Bucharest.[102]

Throughout his academic life, Ștefănescu occupied every possible academic vacancy with such regularity that, by the end of the century, the geologist Mathei Drăghiceanu (1844-1939) publicly attacked Ștefănescu's practice of dividing his time between his scientific duties and other administrative activities. At the same time, on 16 January 1886, when the Senate was debating a

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Joy Harvey, "Darwin in a French Dress: Translating, Publishing and Supporting Darwin in Nineteenth-Century France," in Eve-Marie Engels and Thomas F. Glick, ed., *The Reception of Charles Darwin in Europe* (London, 2008)

"Cronica Sciintifica," *Revista Sciinţifică*, An 1, Nr. 12 (1870): 177-178.

Present-day Romanian scholars, remember Ștefănescu as the "*Earth Science Patriarch",* see Octavian Buda, "Gregoriu Ștefănescu-Geologul,"*Studii și Comunicări / DIS*, Vol. 4 (2011): 340.

Mircea Ilie, *Figuri de Geologi Romani. Gregoriu Ștefănescu, Grigore Cobalcescu, Matei Draghiceanu*, Vol. II, (București: Editura Stiintifica, 1958) 13.

Dumitru Murariu, "Gregoriu Ștefănescu (1838-1911) - The Third Director of the National Museum of Natural History of Bucharest," *Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»* Vol. XLIX, (2006): 368.

law against the "*cumul*" of positions (the accumulation of jobs by a single person), Ștefănescu was depicted as a "nec-plus-ultra cumulard" naturalist.[103] In brief, in 1867, rejecting Dimitrie Ananescu's request, the Ministry of Instruction offered Ștefănescu the post of Director of the Natural History Museum in Bucharest.[104] Ștefănescu was also one of the founders of the Natural Science Section of the Romanian Academic Society, and later became one of the members charged with the reorganisation of the Romanian Academy. In addition, he became the vice-president of the Permanent Council of Instruction, Secretary of the Science Section of the Academy, General Secretary of the Ministry of Cultural and Public Education (1877), Dean of the Science Faculty (1896-1900), and Chancellor of the University of Bucharest (1900-1901).[105]

In 1894, when the young ichthyologist Grigore Antipa (1866-1944) took up the position of director of the Museum of Zoology, Ștefănescu became the head of the Museum of Geology and Palaeontology and the Mineralogy section was assigned to his colleague Ludovic Mrazec (1867-1944).[106] In addition, as a member of the project devoted to the geological mapping of Europe, Ștefănescu participated in numerous international congresses in Paris, Bologna, Berlin, London, Washington, Zürich, Petrograd, Vienna, Mexico, and Stockholm, where he pleaded for

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In 1881, Ștefănescu was appointed by the International Geological Congress of Bologna to conduct research leading to the inclusion of the Romanian geological map into the wider geological map of Europe. However, Mathei Drăghiceanu criticised the results of his research, the geological survey, and Ștefănescu's *cumul* monopoly on no fewer than nine positions in various political and academic institutions. See Mathei M. Drăghiceanu, *Situatiunea Sciintei oficiale in Romania fata cu cumulul*, (Bucuresci: Tipografia Moderna Gregorie Luis, 1889), 14-17.

Iorgu Petrescu, "Gregoriu Stefanescu (1836-1911) Director al Muzeului de Zoologie si Mineralogie din București," *Studii și Comunicări / DIS*, Vol. IV (2011): 320.

Miltiade Filipescu, *Un mare înaintaș al geologiei Romînești profesorul Gregoriu Ștefanescu* (București: Editura Tehnica, 1956).

Gregoriu Ștefănescu, *Muzeul de Geologia si de Paleontologia la Expozitiunea Nationala din anul Jubiliar 1906* (București: Atelierele Socec, 1906), 7-8.

the standardisation of international geological nomenclature,[107] and presented the discovery of the fossils remains of *Dintherium Gigantissimum Stef.* and *Camelus Alutensis*.[108]

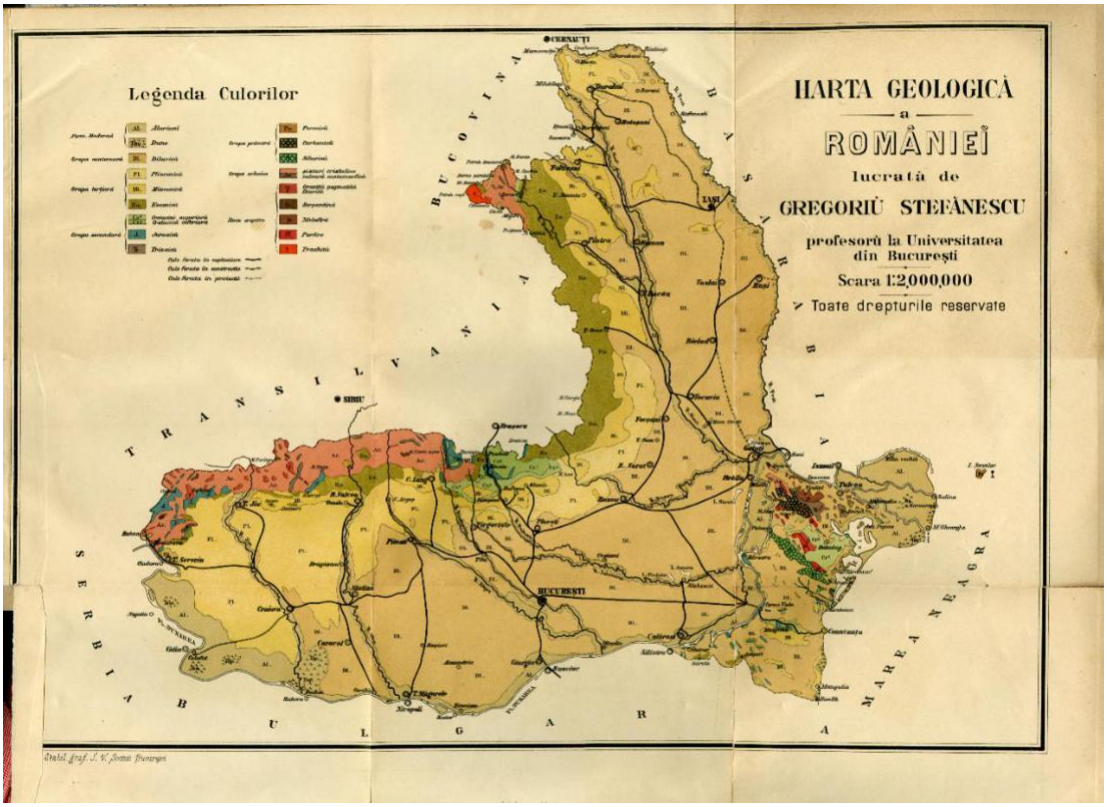

Figure 1.8. The first geological map of Romania designed by Gregoriu Ștefănescu was printed in 1890 and attached to his *Elementary Course of Geology*. A second modified version produced by his team working in the Geological Office appeared in 1898.[109]

Gian Battista Vai, "The Second International Geological Congress, Bologna, 1881," *Episodes* Vol. 27, No.1 (2004). For a glimpse of Ștefănescu's speech in Paris, see Francois Ellenberge, "The First International Geological Congress Paris, 1878," *Episodes* Vol. 1, No. 2 (1978): 22.

Gregoriu Ștefănescu, "Dinotherium Gigantissiumum," *Anuarul Museului de Geologia si de Paleontologia* (Bucuresci: Stabilimentul grafic: I. V. Socecu, 1895), 170.

Gregoriu Ștefănescu, *Cursu elementaru de Geologia* (București: Stabilimentulu Graficu I.V. Socecu, 1890). It is important to note that the second geological map issued by the Geological Office was published with modifications in 1898.

Robert Fox has observed that in nineteenth-century Paris, "*cumul*" similarly thrived, "not only permitting a significant increase in income but also helping a professor to extend his control over a discipline."[110] The same happened in the case of Ștefănescu, whose "*cumul"* or accumulated positions, was depicted by the geologist Matei Drăghiceanu, as an example of evolutionary theory put into practice. In the latter's public attack of 1889, he attached a ten-page chapter with the title "*Cumul* before the laws of evolution". In brief, his publication criticised the lack of transparency of Romanian scientific institutions, nepotism within the Academy, and the results of the research for the geological mapping of the country. Drăghiceanu's frustrations, otherwise understandable, were also directed at lay people. He thus remarked that in Romania it was hard to change "the public's opinion on matters of science, due to the fact that there was no scientific public to judge and control the diverse manifestation of science."[111] He supported his arguments with foreign examples of hard-working naturalists (Humboldt, Agassiz, Hooker, Darwin etc.), and emphasised the differences in other countries:

> Museum directors are not performing gymnastic leaps all day long, from their professorial chair to the senator's armchair, from the green table of the Instruction Council to the red table of the County Council, from the Zoology Museum to the Geological Office, from the Academy chair to the feast of the defunct Patriarchs.[112]

Robert Fox, op.cit., 27.

Mathei M. Drăghiceanu, *Situatiunea Sciintei oficiale in Romania fata cu cumulul*, (Bucuresci: Tipografia Moderna Gregorie Luis, 1889), 3-4.

Ibid., 80.

Finally, he insisted on the issue that science, in general, evolves in the direction of a never-ending specialisation, and that "modern scientists (other than the ones in Romania), unlike those in the past, of course do not know everything." Moreover, the division of labour observed in the animal kingdom should be an example for the process of "conferring of our public jobs", which was "at odds with the laws of evolution, [and] had the effect of paralysing our society on its path towards progress."[113]

As regards of Ștefănecu's public hegemony, the adventures through which he passed are emblematic of the scientific atmosphere of the period. The events after the discovery of fossil remains of *Dinotherium Gigantissimus Stef.* — now preserved at the "Grigore Antipa" Natural History Museum in Bucharest — were reported in the newspaper *Viața Națională* as a "scientific crime". The report revealed that, when the fossils were found on the river-bed, the local school teacher broke the head into pieces and shared them with the locals.[114] As they were believed to be the remains of a biblical giant, most of the fragments were recovered by Gregoriu Ștefănescu with the help of the local police, and restoration took around fifteen years.[115] In this particular case, although the peasants made the initial discovery, the intervention of a geological authority proved that, from that moment onwards, certain discoveries had to be claimed and explained by science. As the geologist Codrea Vlad has shown, Ștefănescu's practice of not giving credit to other geological discoveries of similar fossils was part of his personal strategy to build his own scientific career.[116]

Mathei M. Drăghiceanu, op.cit., 87-90.

See "Academia Română. Dinotherium de la Mînzați judetul Tutova," *Viața Națională*, An VII, No. 1613 (1890): 2.

Dan Grigorescu, "Vertabrate Paleontology in Romania," *Noesis*, 28 (2003): 2.

For more details of the misconceptions that Ștefănecu created within the history of geology see Codrea Vlad, "A priority issue: Deinotherium proavum Eichwald or Deinotherium gigantissimum Stefănescu?," in Nicorici Eugen (ed.) *The Miocene from the Transylvanian Basin Romania* (Cluj-Napoca: Editura Carpatica, 1994), 105-110.

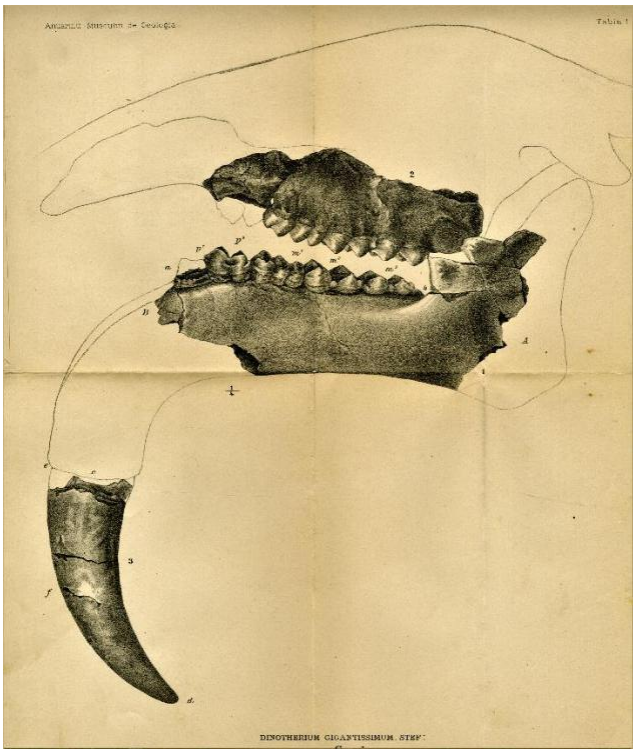

Figure 1.9. A plate reproducing the sketch made by Gregoriu Ștefănescu (1836-1911) after the locals discovered fossils of a Proboscidian Mastodon in Romania. The mammal was eventually renamed by Ștefănescu as *Dinontherium Gigantissimum Stef*. *Anuarul Museului de Geologie și Paleontologie, 1895-1896* (*Yearbook of Geology and Palaeontology Museum*).

Courtesy of "Lucian Blaga" Central University Library, Cluj-Napoca

Although Ștefănescu expressed some contradictory views across his career, he did manage to bring about important changes in Romanian geology. In January 1866, his public conference *Antediluvial Animals* (*Animalele antedilluviane*) was held at the Romanian Athenaeum in Bucharest and later published as a pamphlet in 1867. Here, in terms of his methodology, Ștefănescu's perspective differed from that of previous Romanian geologists by seeing the layers of the earth from a historical and secular point of view. For him, the professional

geologist should comprehend, "[in] every single layer of the earth's crust, a secular page from the record of the globe's history, in which he [should] read everything that happened within that period."[117]

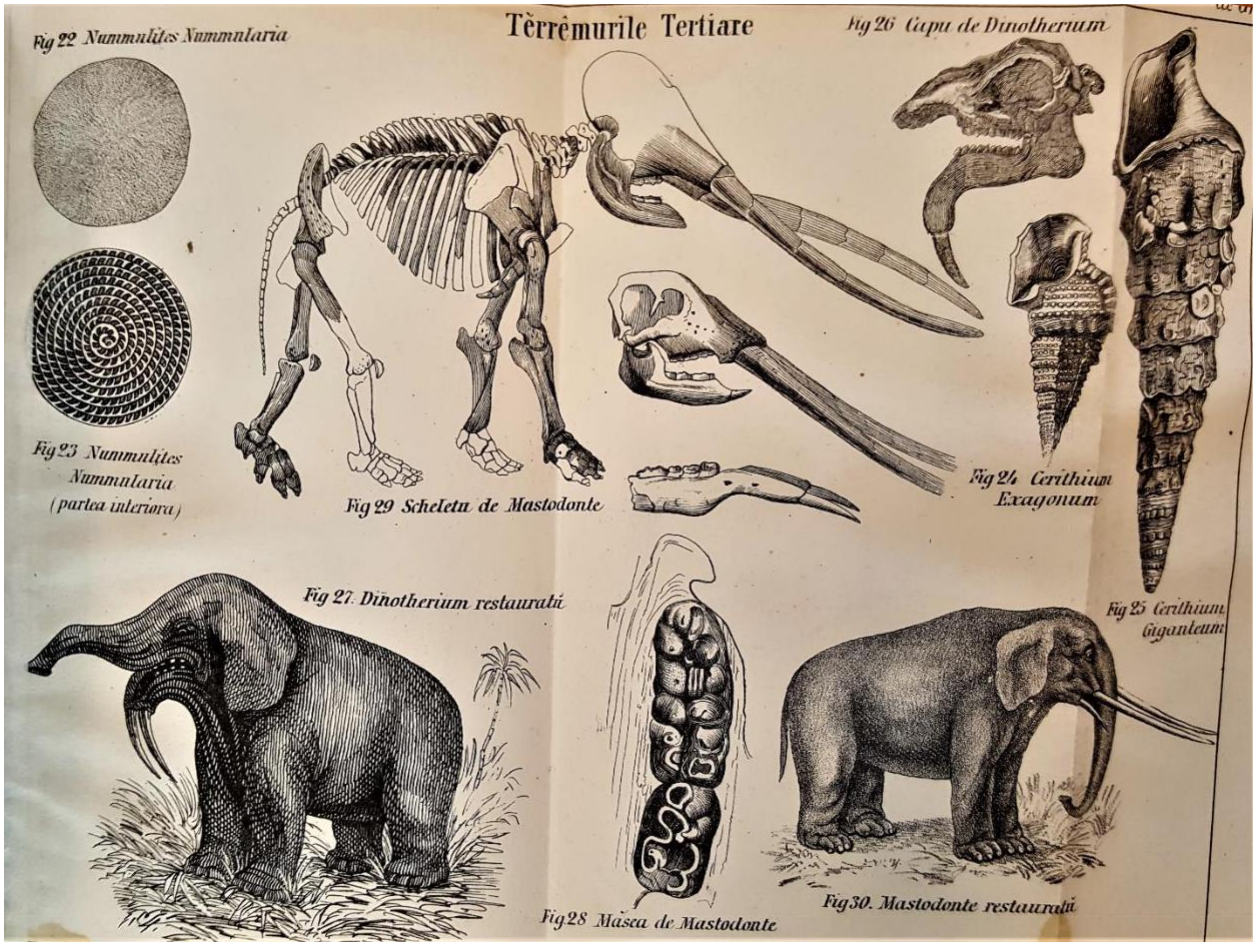

Figure 1.10. Ștefănescu's plates accompanying his pamphlet *Antediluvial Animals* (1867) anticipating his fossil discoveries. Courtesy of "Lucian Blaga" Central University Library, Cluj-Napoca

Gregoriu Stefănescu, *Animalele antedilluviane: Lectura publica tinuta la Ianuariu 1866, in sala Atheneului Românu* (Bucuresci: Tipografia C.A. Rosetti, 1867), 5.

It is important to note that, around the 1870s, when the first issue of *The Scientific Review* appeared, Ștefănescu took another important conceptual step away from his fellow Romanian geologists by adhering to Charles Lyell's (1797-1875) theory, known as Geological Uniformitarianism ("Teoria causeloru actuale"). In his article "Floods or Diluvians", he explicitly describes floods as natural phenomena and claims that, by acknowledging modern geology, one should admit that "the same causes that modify the surface of the earth today, also operated in geological time […] from its origins to the present day."[118] According to Ștefănescu, when it came to addressing the origins of the Earth, one should leave aside religious worldviews:

> The issue of the origins or the antiquity of humans on Earth has preoccupied the learned and the philosophers; however, religious dogmas and traditions were too powerful to allow this matter to develop in accordance with the facts. The profound belief in creation or the appearance of humans, the antiquity of the earth as expressed by Moses in Genesis, were so venerated that no one could depart from them and the fearful despotism of the heads of the Christian Church is shown by the living [examples] of Galileo and Buffon.[119]

Well-acquainted with the Romanian cultural and political climate, Ștefănescu understood well when to address and when to avoid problematic geological issues. His reticence, however, in further explaining dangerous theories to the lay public as well as in the meetings of the Romanian Academy was a common practice. An example of this is the article dealing with the discovery of the transitional reptile-bird *Archaeopteryx* made in 1861 by the German palaeontologist, Hermann von Meyer (1801-1869). By explaining that the fossil remains were

Gregoriu Ștefănescu, "Diluvii sau Potoape," *Revista Sciințifică*, An 1, Nr. 1 (1870): 7.
Gregoriu Ștefănescu, "Nuoi probe despre Omul Tertiar," *Revista Sciintifică*, An 6, Nr. 23 (1876): 355-357.

nothing else than living forms which once existed and were therefore preserved in the earth's layers, Ștefănescu declared that "one of the [main] arguments through which *evolutionary* theory was refuted […] is demolished by the very discovery of this lost animal." Providing a detailed lithographic illustration with the anatomical structure of this fossil, he claimed that "there was no time or space" to "pronounce in favour" of one of the two naturalist schools, the "transformationists" and the "catastrophists", because "readers are not yet sufficiently familiarised to understand them."[120]

While holding the professorship of geology at the University of Bucharest, Ștefănescu advocated for the deductive method in his opening lecture, as well as for practical demonstrations in front of his students. Hence, he emphasised that "to observe the facts, and to experiment in order to check the observation, to use reason so as to discover laws and their necessary consequences, this is true science […]."[121] Throughout his courses, one of the most important things to be learned was that the study of geology is not only about discovering how a certain phenomenon happened, but also why the facts appear in that specific way. According to his vision, "the naturalist should not be content only to know the organic and inorganic, their living and reproduction habits, but also their [geographical] distribution on the surface of the earth." Another should "take a look into the distant past, in order to research its origins, its formation and the different phases through which [the organic beings] passed in order to be as seen today."[122]

Gregoriu Ștefănescu, "Archaeopteryx: Animal reptile-pasăre dispărut și gasit în calcar litografică de la Solenhofen în Bavaria," *Revista Sciințifică*, An 1, Nr. 5 (1870): 76-80.

Gregoriu Stefănescu, "Discursu de deschiderea cursului de geologie la Universitatea din București," *Revista Sciintifică*, An 1, Nr. 10 (1870): 154.

Gregoriu Stefănescu, Ibid., 159-160.

His courses also complied with the wider political and economic reforms of the period, and he deliberately explained the utility of geology to sectors of industry, masonry, public works, agriculture and the construction of public roads. In his view, science had to be consolidated and institutionalised by any means; if not nationalised by the state structure, then at least well disseminated in the public's imagination. Hence, for Ștefănescu, every member of Romanian society should contribute. To achieve this propagandistic plan, from October 1874 onwards, he delivered free public lectures to a full auditorium every Sunday at the University of Bucharest on matters relating to natural history. In addition to this utilitarian aim, his lectures were addressed to women who were under-represented in natural science and for whom special places were designated in Ștefănescu's lecture hall.[123]

In this way, Ștefănescu was looking forward to the emerging idea of a new expert who would play an important role in social and political debates. To this end he partly translated the work *English Men of Science: Their Nature and Nurture* by Francis Galton (1822-1911), who was also known as "the father of eugenics." Based on Galton's work, Ștefănescu showed his readers the qualities of a "true scientist", namely, "energy, health, perseverance, impulsiveness, independence of character and an innate taste for science." Moreover, after quoting some of Galton's statistical examples, such as "physical performance, the size of the head, lack of illness and heredity", he concluded that, "all Romanians who are aware of the importance of science

Gregoriu Ștefănescu, "Curs public de istoria naturală făcut la Universitatea din București de Gr. Ștefănescu. Lecțiunea de deschidere," *Revista Sciințifică*, Anul 5, No. 19 (1874-1875): 291-298.

should become its apostle, and in the same way that [Jesus] Christ spread religion to the people, they should also infuse the Romanian nation with love of and faith in science."[124]

Figure 1.11 Gregoriu Ștefănescu. Courtesy of the Romanian Academy Library, Bucharest

On 8 April 1876, when the school library in the city of Focșani was inaugurated, Ștefănescu donated several of his works and, at the invitation of the Bucharest zoologist professor Ștefan Sihleanu (1857-1923), he gave a speech about Thomas Henry Huxley's book, *Man's Place in Nature* (1863). Here, talking to people in the provinces, he discussed the question whether "animals were created by somebody" or developed through "evolution", that is, by "modification and transformations […] from inferior to superior, with the help of time and environmental

Grigore Stefănescu, "Oamenii de Sciinta. Caracterul și Educatiunea lor," *Revista Sciințifică*, 5, 12 (1874): 179-187; See also, Chapters II, III and IV of Francis Galton *English Men of Science: Their Nature and Nurture* (London: MacMillan& Co., 1874).

circumstances." His conclusions were cautiously shared with the locals. In his words, "we should accept the theory of *evolution*, that is to say, [the theory] of slow transformation according to the causes and circumstances occuring where the [organic] being lives." With his oratorical verve, he supplied with examples and explained that "the theory of evolution, which can be deduced from the study of fossils, […] is today refreshed and suported with many facts by the illustrious English naturalist, Darwin […] in his volume, *On the Origin of Species*, and known in science as *Darwinism.*"[125] Ștefănescu also advanced other implications of Darwin's theory, telling both the Focșani audience and the subscribers of the *Scientific Review* that:

> If somebody were to transport the two bodies of a human and the body of a monkey in a vessel filled with alcohol to Saturn, one of the planets of our solar system, and if, say, humans who existed there were to dissect these two bodies, it would be impossible for them to discover any significant differences.[126]

Educated in France, where evolution through natural selection was partially adopted,[127] Ștefănescu endorsed transmutation as a scientific worldview that left room for only a simplified version of Darwinism. His synthesis was an evolutionary theory that appealed because of its portrayal of human striving towards perfectibility and progress. Even if he invoked the similarities

Gregoriu Stefănescu, "Loculu Omului in Natură," *Revista Șciințifică*, An. 7, No. 7 (1876): 100-103.

Ibid., 104.

Joy Harvey, "Darwin in a French Dress: Translating, Publishing and Supporting Darwin in Nineteenth-Century France" in Eve-Marie Engels and Thomas F. Glick (eds.), *The Reception of Charles Darwin in Europe* (London, 2008), 354-74.

between human and non-human species based on communication, memory, affection, the idea of variation, adaptation — he barely mentioned the mechanism of natural selection. As he put it:

> [Our animal ancestor] should not humiliate us, because even if we admit with Darwin and [*É*mile] Littré that we descend from animals, […] our dignity would not be affected; on the contrary, the *feeling of true preeminence should arise even more* when we recognise the point from where we started and see where we have arrived thanks to our work and intelligence.[128]

His anthropocentric conclusion eventually put forward the idea that "we should allow philosophers and moralists to say what they want of humans, be it as a class, a kingdom, even a God; however, we [naturalists] with the torch of science in our hands will put humans where nature left him, at the apex of the higher animals."[129] Hence, the official science of palaeontology professed by Ștefănescu partly endorsed Darwin's theory of evolution and — like his American friend, the palaeontologist Edward Cope (1840-1897) did in America[130] — he preferred a progressive Lamarckian view of evolution instead. What Ștefănescu could not understand was that Darwinian evolution proceeded in uncontrolled directions and did not had a predictable outcome, and humans occupied a place equal to among non-human species. Moreover, after almost forty years in academia, Ștefănescu reassessed his creationist views and concluded that

Gregoriu Stefănescu, "Loculu Omului in Natură," *Revista Șciințifică*, An 7, Nr. 9 (1876): 138-143.

Gregoriu Stefănescu, Ibid., 143.

Peter J. Bowler, "American Paleontology and the Reception of Darwinism," *Studies in History and Philosophy of Biological Sciences*, XXX (2017): 3-4.

Moses' descriptions in the Book of Genesis were nothing else than six geological "epochs" or "periods", rather of days, of creation.[131]

Moving forward the debate on the popularisation of Darwinism in Romania, *The Scientific Review* eventually began publishing a series of articles translated by Ioan Licherdopol. He borrowed from the French philosopher Léon Dumont (1837-1877), the author of *Haeckel et la théorie de l'évolution en Allemagne*. Licherdopol was a professor of natural science at the Commerce School of Bucharest and, for a short period, Ștefănescu's assistant at the Museum of Natural History, was as well as an advocate for nature excursions with interests in malacology and nature conservation.[132] Under the pseudonym of Cher O. Lupoldy, Licherdopol pubslihed translations of the lectures given by Haeckel between 1867 and 1868 at the University of Jena.

Gregoriu Ștefănescu, *Când a apărut omul pe pământ? Și de când trebuie să înceapă istoria artelor?* (București: Atelierul Grafic I. V. Socecu, 1903).

Throughout his publications advocating for nature excursions with students, Licherdopol campaigned against armchair naturalists advocating for flora and fauna protection as well as highlighting the effects of hunting on ornithological diversity. See Ioan P. Licherdopol, *Excursiuni in Dobrogea* (Bucureşti: Institutul de Arte Grafice Carol Göbl, 1900), 128-130; Ion P. Licherdopol, *Despre Ornitologia Română* (București: Albert Baer, 1903), 7.

Figure 1.12. Ioan Licherdopol pictured with an umbrella exploring the natural landscapes of Dobrudja shortly after pointing a gun at the local guides who refused to continue the trip.[133]

Beginning with the idea of "the struggle for existence", the subscribers of *The Scientific Review* could learn about the importance of heredity, variability and adaption in the process of natural selection. The origin of the Earth is described according to the nebular hypothesis of Pierre-Simon Laplace (1749-1827), and the "starting point of all organic life" was to be found in

Ioan P. Licherdopol, *Excursiuni in Dobrogea* (Bucureşti: Institutul de Arte Grafice Carol Göbl, 1900).

the "protoplasm."[134] At the same time, according to biogeography, the hypothetical region of Lemuria was depicted as "the probable cradle where human race developed from the anthropoid apes."[135]

Other important articles dealing with evolutionary theory published in *The Scientific Review* were authored by the Transylvanian botanist Artemiu Publiu Alexi (1847-1896). He had studied natural science at the University of Vienna and earned a doctorate from the University of Graz. As a secondary school teacher, Alexi brought important changes to the reform of the natural history curricula in Romanian school in Transylvania, while equipping the school with numerous natural history collections, a botanical garden and a meteorological station.[136] As a practical naturalist, he was also an advocate of nature excursions with students and contributed to the emerging biological perspective by acknowledging the importance of botanical education in the discussion of forest conservation. Thus, in one of his lectures from 1881, he emphasised that the study of natural science should "teach students to identify useful plants as well as the proper usage of forests and their true value. […] Finally they would learn to look after themselves better and put great stress on the conservation, cultivation and regeneration of forests."[137] Likewise, in another lecture dealing with Darwinian evolution, Alexi showed, "from a biological point of view", the "influence of vegetation, especially of forests, on climate and meteorological

Cher O. Lupodly, "Haeckel si teoria evolutiunei in Germania, Capitolul V Ontogenesa seu Embriologia," *Revista Sciintifica*, An 7, Nr. 14 (1876): 213-217.

Cher O. Lupodly, "Haeckel si teoria evolutiunei in Germania, Corologia seu distributiunea geografica a fiinteloru vii," *Revista Sciintifica*, An 7, Nr. 15 (1876): 233.

Iuliu Moisil, *Figuri Grănițerești Năsăudene* (Năsăud: Editura Regna, 1937), 237-239.

Alexi Publiu, "Însemnătatea științelor naturale și reformele ce le reclamă studiul lor în scoalele naostre," *Educatorul* Anul I, Nr. 17 (1883): 133.

phenomena" and its relationship to animals, humans and health.[138] His article published in *The Scientific Review*, "Neptunism, Volcanism, Metamorphism" (Neptunismulu, Vulcanismulu, Metamorfismulu) based on his teaching notes, described the debates between natural science and religion, the history and key tenets of each doctrine, and the main theorists. His study also acknowledged that evolutionary science "was developed by and completed with profound logic and sagacity by Charles Darwin."[139]

Another author who deserves to be mentioned here is Ștefănescu's colleague at the Natural History Museum, Ștefan St. Sihleanu (1857-1923). He published an article on the controversial debate between Ernst Haeckel and Rudolf Virchow. After Virchow's disagreement with Armand de Quatrafages in the early 1870s, he directed his attack to Haeckel's intention to popularise Darwin's theory in the German school curriculum. In 1877, at the 15th meeting of the Congress of German Natural Scientists, Haeckel proposed that "evolutionary theory was a historical science; that it gave an account of human origins, particularly of man's mind; and that the theory ought to be part of the biology curriculum in the German lower schools and universities."[140]

Virchow was not in agreement with his former student. Heackel's "radical shift from a monistic world-view, professed at Wurzburg between 1848 and 1856, to a dualistic one voiced

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Alexi Publiu, "Despre importanța studiului botanic. Infleunta vegetațiunilor asupra desvoltarii vieții animalice și asupra desvoltarii civilisațiunei omenesci," *Transilvania* Anul XV, Nr. 1-2 (1884): 1-10. He also recommended to the Romanian Government that, after the Romanian state began administering the province of Drobrudja, wanting to transform it into an agricultural region, they should put a stop to deforestation and plant forests in all barren areas. See A.P. Alexi, *O excursiune botanică în România și Drobrogea* (Sibiu: Tiparul Tipografiei Archidiechesane, 1883), 22-

Artemiu Publiu Alexi, "Neptunismulu, Vulcanismulu, Metamorfismulu," *Revista Sciintifică*, An. VI, No. 7, 9, 10 (1875): 100-107, 141-143, 156-159.

For more details on the debate and Haeckel's biography, see Robert J. Richards, *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago: University of Chicago Press, 2008), 313.

in Berlin" was a big surprise for Sihleanu who was also a devoted monist.[141] For the latter, Virchow stood firmly against the political instrumentalisation of the descent theory by socialist intellectuals. As Virchow advocated for laboratory experimental methods, Sihleanu also urged that the dangerous potential ramifications of Darwin's theory not be introduced alongside the educational reform initiated by the Prussian Parliament.[142]

Sihleanu's article was also published as a pamphlet, with an expanded commentary, in 1879 by the Romanian Academy. It also presented Haeckel's work in embryology and showed that the first organisms like monera represent the "transition from inorganic to organic", a transition that happened "spontaneously from the inorganic compounds of carbons." In brief, Virchow was accused of being "ignorant" not only of Darwin's work, but also of recent developments in morphology, palaeontology and comparative anatomy. In addition to all these controversial ideas, Sihleanu put forward his own political views, noting that "Darwin's theory is in opposition to socialism, because it established the natural principle of selection of the best, and of the elect."[143]

Another reason why Sihleanu sided with Ernst Heackel rather than Rudolf Virchow had to do with the latter's anthropological investigations in Eastern Europe.[144] His remarks identifying the racial origins of Romanians in a mixture of Tatars and Romans were not well received. In the

Stefan St. Sihleanu, "Haeckel şi Virchow. Uă polemică sciinţifică," *Revista Sciinţifică*, Nr. 9 (1879): 140.

Ted Benton, "Social and Socialist Darwinism in Germany: 1860 to 1900," in Paul Blackledge and Graeme Kirkpatrick ed., *Historical Materialism and Social Evolution* (Basingstoke: Palgrave Macmillan, 2002), 57-58.

Ștefan St. Sihleanu, *Haeckel și Virchow uă poliemică sciințifică* (Bucuresci: Tipografia Academiei Române, 1879), 30-31.

See Arthur E. R. Boak, "Rudolf Virchow-Anthropologist and Archaeologist," *The Scientific Monthly*, Vol. 13, No. 1, (1921): 40-45; Alexandra Ion, "Breaking Down the Body and Putting It Back: Structuring Knowledge in the 'Francisc I.Rainer' Anthropological Collection," *Martor* 20 (2015): 25-50; Christian Promitzer, "Physical anthropology and ethnogenesis in Bulgaria, 1878-1944,"*Focaal—Journal of Global and Historical Anthropology* 58 (2010): 47–62.

aftermath of the Russo-Turkish War (1877-1878), and after the country gained independence from the Ottoman Empire in 1878, nationalist feelings were intense. Rather harshly, in a footnote, Sihleanu reminded his readers that Virchow proved his "incompetence" in a lecture he delivered at the University of Bucharest.[145]

See Ștefan St. Sihleanu, op.cit., 16-17, n. 3.

Chapter 2. The "Apostles of Science": Cultural associations, scientific and academic societies

"The essence of Darwin's doctrine can be explained in few words: in nature, there is a perpetual struggle for existence. The most feeble and lazy are exterminated by the fittest and most active, for the benefit of posteriority. This is a savage doctrine!" George Bariț (1812-1893)

Introduction

Voluntary associations became the common dream of numerous naturalists, which led to the formation of scientific communities on the fringes of cultural and academic societies. In these new sites, socialisation and debates were important elements, offering them a better comprehension of their activities. The institutionalisation of science has its roots in the seventeenth century, in Solomon's House, Francis Bacon's (1561-1626) famous fictional institution in the *New Atlantis*, whose vision served as an inspiration for all emerging scientific communities.[1]

In modern Romania, the need for the institutionalisation of science inntensified after the 1860s, when several cultural societies, scientific associations and academic institutions came into being. The universities, of Iași and Bucharest were founded in 1860 and 1864, with the purpose of preparing students for political careers and positions in state administration.[2] Both institutions inaugurated science faculties, which subsequently divided their activities according to different

[1] For more on Francis Bacon's vision in early modern scientific communities, see Dana Jalobeanu, "The Fascination of Solomon's House in Seventeenth Century England: Baconianism Revisited," in Vlad Alexandrescu (ed.), *Branching Off: The Early Moderns in Quest for the Unity of Knowledge* (Bucharest: Zeta Books, 2009), 225-255.

[2] Vasile Pușcaș*, Universitate, societate, modernizare. Organizarea și activitatea științifică a Universității din Cluj (1919-1940)* (Cluj-Napoca: Eikon, 2003), 60.

areas of research, each managing its own laboratories. Yet the same academic networks contributed to the establishment in 1866 of the most exclusive forum, the Romanian Academy. On this platform, not only did naturalists exercise their authority over the public sphere, but they also established the orthodox standards and methodologies of national scientific explorations. Various aspects of Darwin's evolutionary theory were also put forward, marshalling political views of racial, gender and social inequalities. By the turn of century, some of these naturalists divided their efforts between academic duties and inventorying their research results at the annual meetings of the Romanian Association for the Advancement of Science, which overlapped with the wider discourse on national identity and strengthened the idea that science was indispensable.

2.1. Darwinism in the Cultural and Scientific Societies

Another approach to accepting the evolution of organic species came from the naturalist Conrad Grigorovici who expressed his materialist views, this time in Vienna, where the Romanian students managed to lay the foundation of the Society for Literature and Science (1864). This later merged with the Romanian Society of Vienna, bringing România Junǎ into existence in 1871.[3] At the many conferences organised in Vienna, one was able to attend talks on natural history. In this context, Grigorovici's conference on "The Relation between Organic Beings and between Humans and Animals" held on 23 November 1867, marked one of the first public occasions on which the implications of Darwin's theory of evolution from a common ancestor

Ion Grămadă, *România Junǎ din Viena (1871-1911). Monografie Istorică* (Arad: Tipografia Concordia, 1912), 25-33.

were discussed.[4] Significantly, this presentation also found its way into the Romanian public sphere, due to its publication in 1869 in the famous Moldavian review from Iași, founded by Titu Maiorescu (1840-1917) and known as *Literary Talks* (*Convorbiri Literare*).

In his study, Grigorovici strongly rejected the fixity of species. After giving examples of the morphological resemblance between humans and primates, and highlighting the discovery of the so-called "missing link" of the Archaeopteryx, Grigorovici concluded that there is "no gap between organic beings […], and we see that one form passes imperceptibly into another." He then further pointed out:

> The authors and defenders of the theory of descent, never said that humans came from monkeys; instead, they argue that humans, on the one hand, and higher monkeys, on the other, developed from an in-between being (Homo Alalus, non-speaking human) that lived before the flood (but not before the biblical flood).[5]

A closer look at the Romanian societies that discussed issues of natural science during the 1860s reveals several eventually unsuccessful attempts to accomplish their initial goals. The need for the institutionalisation of scientific research brought to the surface not only the discrepancies between the fields of the humanities and natural science within the two Romanian Universities, but also the need to reorganise their research activities and build scientific communities of their own. In a similar vein, to keep pace with their Western counterparts, Romanian naturalists also

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Ibid., 49-51.

Codrat Grigorovici, "Din sciintele naturale. Legătura între ființele organice, și mai alesu între animale și omu. (După sciințele de acuma)," in *Convorbiri Literare*, 2, 16 (1869): 280.

demanded a scientific agora in which discoveries could be communicated and scrutinised. As George Iavorenciuc has argued in his investigation of the process of the Romanian institutionalisation of science, all these attempts contributed to the "articulation of a Romanian public sphere", and in so doing "a vast majority of their actions were orientated towards science popularisation, […] which encouraged public and civic participation from both lay citizens and the [scientific community] members."[6]

As an expression of these transformations, Romanian Science Society (RSS; Societatea Română de Sciințe) was the second society dedicated exclusively to the study of natural history established in Romania since the one in Iași in the early 1830s. It was created with the cooperation of Iuliu Barasch and Emanoill Bacaloglu (1830-1891), on the symbolic date of 24 January 1862.[7] The society's overarching aim, as one of the members put it, "was the development of the sciences, because only in this way can we aspire to happiness and only through [science] can we acquire the desired title of a *civilised nation*."[8] Similar to other scientific societies, the RSS was comprised only of men who paid an annual membership fee and pubslihed and disseminated their research in the journals edited by its members. Hence, the journals commonly used were *The Romanian Magazine of Science, Literature and the Arts*, the journal *Nature*, and the newspaper of *The Romanian* (*Românul*). Unfortunately, after the death of Iuliu Barasch, the RSS, and subsequently a part of its popular science journals (i.e. *The Romanian Magazine for Science, Literature and Arts* and *Nature*), ceased their activity.

Iavorenciuc George*, Înaintarea științei în România: a doua jumătatea a secolului XIX-începutul secolului XX,* PhD Dissertation (Cluj-Napoca: Editura Mega, 2018), 211-212.

Florica Câmpan, *Emanuel Bacaloglu* (București: Editura Tineretului, 1963), 99-103. On 24 January 1862, the Romanian cultural institutions were preparing to celebrate the unification of Moldavia and Wallachia under a single rule.

Ion Fălcoianu, "Societatea Română de Sciințe," in *Revista Romană pentru Sciințe, Littere si Arte*, Vol. II (1862): 406.

Another attempt at the institutionalisation of the Romanian scientific community occured in 1864 with the founding of the Natural Science Society of Bucharest (NSS; Societatea de Ştiinţe Naturale din Bucureşti). Officially inaugurated on 31 October 1865, its members received 44.000 lei from the Romanian government for the creation of a geological map of the country. Its true aim, which was to exploit natural resources such as coal, was expressed from the very beginning as follows: "the purpose of the society is the advancement of natural science in general and more particularly to gather and distribute the products of the Romanian soil, and [show] their relevance to the industrial and agricultural arts."[9] Many of the new society's members had migrated from the Romanian Science Society (e.g. E. Bacaloglu, D. Ananescu), which allowed the recently reborn journal *Nature* to publish a supplement with their discussions.[10] Things did not change much, and, by 1868, the society closed down and the geological mapping of the country had to wait another decade. As enthusiastic as ever, Emanoil Bacaloglu continued his efforts and on 27 January 1868 he established Society for Physics and Natural Sciences (SPNS; Societatea de Sciinţe Fizico-Naturale).[11]

At the other end of the spectrum, during the 1860s, the urban popularisation of science came mainly via Romanian Athenaeum Society (Societatea "Ateneului Român") first organised in Iaşi in 1860 and then reorganised in 1865 as a "scientific, literary and artistic society" in Bucharest. On 28 January 1865, on the initiative of Constantin Essarcu (1836-1898), V.A. Urechia

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The Bucharest Society for Natural Science had three sections: zoology, botany and geology; however, 75% of the awarded sums were spent on the study of geology. See. C.I. Istrati, "Din Istoricul desvoltărei cunoscinţei sciintelor pure si aplicaţiunelor acestora, în Ţările Române," in *Asociaţia Română pentru înaintarea şi respindirea sciinţelor. Congresul de la Iaşi din Anul 1902. Dare de seama, discursurile şi comunicările ce s'au facut* (Bucuresci : Imprimeria Statului, 1903), 484-485.

Constantin Esarcu, "Societatea de sciintele naturale din Bucuresci," *Natura. Jurnal de Sciinţe* 6, 41 (1865): 324-326.

Barbu Angelescu, *Societatea Română de Ştiinţe. 50 de ani de activitatea* (Bucureşti: Imprimeria Naţională, 1942),

(1834-1901), Petre S. Aurelian (1833-1909) and Nicolae Kretzulescu (1812-1900), the famous Romanian Athenaeum of Bucharest (RAB; Ateneul Român din București)[12] was born. It soon became one of the most famous venues for urban gatherings, and, in almost 38 years of activity, the site held as many as 803 public lectures.[13]

Before issuing their own periodical journal in 1866, the RAB and the NSS shared the pages of *Nature* (*Natura*) where all the dates of future talks were printed.[14] Their general aim was stated at the outset, to inspire "love for and faith in the glory of the Romanian nation", and to propagate, among other things, scientific "knowledge through pamphlets, journals, books […] and public courses", hoping that some day "popular lectures will address also the lower classes of society."[15] Not surprisingly, backed by state financial support, the RAB cultural project was soon taken up by numerous followers who opened branches in various cities across the country.[16]

Tellingly, lectures delivered in the various halls around the gardens of Cișmigiu went well beyond the traditional narrative of promoting the idea of national identity through cultural agencies. Various controversial themes, running from racial classifications to gender discrimination broached with great passion along with recent scientific discoveries. Neil

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The first Society of the Romanian Athenaeum was established a few years earlier (1860) in the Moldavian city of Iași on the initiative of V.A. Urechia and was organised in line with the Scientific, Literary and Artistic Athenæum of Madrid (*Ateneo Científico, Literario y Artístico de Madrid*) founded in 1834. For more details, see Virgil Cândea, Ion Zamfirescu and Vasile Moga, *Ateneul Român: Monografie* (București: Editura Științifică și Enciclopedică, 1976), 24-

For a detailed list of the lectures delivered at the Romanian Athenaeum of Bucharest in the nineteenth century, see Trandafir G. Djuvara, *Anuarul Ateneului Român pe anii 1902-1903 și 1903-1904* (Bucuresci: Tipografia Curții Regale, F. Göbl Fii, 1904).For more details on the lectures delivered up until 1949, see Virgil Cândea, op. cit., 138-

See, also, Itu Maria, *Forme institutionalizate de educație populară în Romania, 1859-1918* (București: Editura Științifică și Enciclopedică, 1981), 37.

Constantin Esarcu, "Discursurile de inaugurare ale Atheneului Roman si Societatii de Sciinte Naturale din Bucuresci," *Natura. Jurnal de Sciinte*, 6, 40 (1865): 313-316

Constantin Essarcu, "Atheneul Român. Lecturile Publice," *Natura. Revistă de Științe*, An VI, No. 41 (1865): 1.

Virgil Cândea, op.cit., 215-227.

MacMaster has observed that, during the same period, throughout the European public sphere, "racist ideologues and propagandists knew perfectly well how to translate central ideas of scientific racism, social Darwinism and biological superiority into popular forms and slogans."[17] Several Romanian intellectuals, giving public lectures, were no exception, as their hierarchical classifications of "human races" mirrored the social and political inequalities and the exclusion of Romanian minority groups such as the Roma community.[18] As Shannon Woodcock has shown, thirty years after the abolition of slavery in the 1850s, there were still plenty of popular magazines and calendars that made use of negative stereotypes, through various jokes, portraying the Roma as inferior.[19]

One of the most controversial lectures, however, delivered at the RAB was that of the already mentioned young naturalist, Dimitrie Ananescu (1831-1885). Previously, in 1862, when he became co-editor with Iuliu Barasch (1815-1863) of the journal *Nature*, Ananescu published an article "On Origins or the Races of Human Species".[20] Four years later, he used this article as an address to a full auditorium at the RAB, while the following year, on 28 April 1867, he delivered a second speech emphatically entitled "Human Races: Comparisons between humans and the higher animals".[21] For those who did not manage to get a grip on the lecture *in situ*, the text of the talk was sold for a low cost as a pamphlet.

Neil MacMaster, *Racism in Europe: 1870-2000* (Basingstoke: Palgrave Macmillan, 2001), 8.

Anca Parvulescu and Manuela Boatcă, "The longue durée of enslavement: Extracting labor from Romani music in Liviu Rebreanu's Ion," *Literature Compass*, Vol.17, No.1-2 (2020): 1-21.

Shannon Woodcock, "Romanian Romani Resistance to Genocide in the matrix of the țigani other," *Anthropology of East Europe Review* Vol. 25, Nr. 2 (2007): 28-43.

Dimitrei Ananescu, "Despre originea sau rasele speciei umane," *Natura!* An. 5, No. 26 (1862): 201-205, 209-2012.

Trandafir G. Djuvara, op.cit., 69-71.

In 1866, two of the godfathers of the RAB, V.A Urechia and C. Essarcu, established the Society for the Teaching of Romanian People (STRP; Societatea pentru invețiatura poporului roman), with branches all over the country. Above all, the STRP aimed to create vocational, technical and pedagogical schools,[22] while also doing charity work in order to help students from a poor background.[23] The society also offered free courses and lectures on popular hygiene, agriculture, natural history and popular physics, which targeted to the urban populace. Looking forward to a higher literacy rates, the attendees were to be transformed into "worthy citizens" who could participate in lectures and share scientific opinions.

By 1870, the STRP launched its own periodical journal with a section suggestively entitled "Popular Encyclopaedia", aiming to disseminate "useful knowledge from different branches of the human sciences." Similarly, they emphasised that "in a simple form and as attractively as possible, we will publish articles, studies, dissertations in which issues of mathematics, physics, chemistry, biology, morals and social science, literature and the arts will be treated succinctly" — all this for the formation of a "good citizen."[24] Nevertheless, the polite world of Western science was crammed with colonial and scientific concepts of racial inequality. In this regard, the anonymous study entitled "Modern Barbarians" is significant for promoting the ideas of social Darwinism in the STRP journal:

Petre Garboviceanu, *Societatea pentru invătătura poporului român din București cu scoalele ei, 1866-1906* (București: Institutul de Arte Grafice "Carol Göbl", 1906), IX-XX.

For more details concerning the charity work carried out by the STRP, see Direcția Județeană a Arhivelor Statului Iasi, Societatea pentru invătătura poporului Român, Box 51.

Redacțiunea, "Part. III. Enciclopedia Populară," *Societatea pentru invețieatura poprului Românu. Foaia Mensuale*, Vol. 1, (1870): 49-50.

> The Hottentots are amongst the ugliest of the ugly tribes of central Africa and also the very ugliest of the entire population of the globe […]. The ugliness and the bestiality of these savages, their resemblance to some superior primates, the Orang-utans, Chimpanzees and Gorillas, have caued some intellectuals to maintain the doctrine that humans have descended from monkeys, as if to say, they are developed monkeys, and these [tribes] are the first manifestation of this bizarre transition.[25]

Returning to the RAB conferences, in the early 1880s, another controversial debate arose concerning women emancipation and Darwin's evolutionary theory, when Titu Maiorescu (1840-1917) – the well-known spiritual leader of the conservative literary group *Junimea* – delivered a popular lecture at the RAB in 1882. Here, Maiorescu addressed a wide array of issues including hypnotism and animal magnetism, as well as the origins of language and temperaments. His scandalous lecture, "Darwinism and intellectual progress", commemorated Darwin's death in 1882.[26] Backed by Western scientific data, he promoted the idea that women's intellectual capabilities were not trustworthy, and the advancement of the Romanian nation should dispense with their contribution. Soon, his social Darwinist views, eventually led to the debate with the socialist feminist Sofia Nădedje (1856-1946) who refuted his claims with strong scientific arguments (for more details, see chapter four).

I.M., "Barbarii Moderni," *Societatea pentru invetiatura poporului Românu. Foaia Mensuale* (1871): 274.

Maiorescu's speech was republished by Mihai Braneanu first in the newspapers *Romania Liberă* and *Timpul*, See. Mihai C. Braneanu, *Titu Maiorescu patru conferințe* (Bucuresci: Tipografia Stefan Mihălescu, 1883). Three years later, the Transylvanian newspaper *The Family* (*Familia*) also republished the speech; see. "Darwinismul in progresul intelectual," *Familia* Anul XXII, Nr.19 (1886): 222-223.

2.2. The Scientific Section of the Romanian Academy, Print Politics and Darwinism

As previously demonstrated both Romanian intellectuals and scientists showed a constant interest in building new societies that would define their day-to-day activities. The elitist need to belong to specialised institutions was by no means bringing them many rewards or public recognition; rather it facilitated the creation of new areas of research. However, most of their Western counterparts already established a special institution, which stood above all others for its exclusivity, prestige, and power to coordinate and control explorations of the natural kingdom. These were the Royal Academies, which accomplished Bacon's vision of Solomon's House, first established in England as the Royal Society in 1660 and the Académie Royale des Sciences in France in 1666.

In Romania, however, the roots of Academies can be traced to the Romanian Literary Society, established in 1866. After its first meeting held in 1867, the members, elected by the Ministry of Instruction and Cults, decided to change its name to the Romanian Academic Society, aiming to coordinate the national activities through illustrious membership. At its very inception, the common goal was to study Romanian language and orthography, Romanian national history, and to carry out scientific research in the three sections of literature, history, and natural science.[27] Rather curiously, after 25 years of activity, the elected permanent secretary Dimitrie Sturdza (1833-1914), observed that between 1867 and 1879, the only paper that addressed scientific issues was the reception speech delivered by Anastasie Fătu (1816-1886) on the

Dan Berindei, *Istoria Academiei Române (1866-2006) 140 de ani de existență* (București: Editura Academiei Române, 2006), 78, 84.

development of natural history in Romania.[28] Although there were certainly other members who actually delivered communications in their plenary meetings and sent scientific sketches, especially on Darwinism, Sturdza's reflections beg for further analysis.

The hierarchical organisation of the Romanian Academic Society largely mirrored the existing social divisions created by increased bureaucratisation and the institutional dependency on the liberal government. Greatly influenced in its utilitarian aims by the French Académie Royale, the members of the Romanian Academic Society became what Robert Fox called "servants of the state", reporting their activity to "their ministerial paymasters", while also publishing their reports in the *Official Monitor* issued by the government. The "exclusiveness" offered by its membership, no longer rested on the common annual tax that applied to other

societies, but on the appointment either by ministries or by nomination from within.[29] Moreover, with the 1879 reorganisation of the RAS and its new status as "national institution", it took over

the title of Romanian Academy, additionally stipulating that its members were elected for life.[30] Under the new arrangement, if an "ordinary member" passed away, his vacant chair was

usually occupied by a "corresponding member" who was now chosen by a voting system, officially based on the number of publications and, unofficially, on their relationship with active

members. In order to be elected as a "corresponding member", aspiring scientists hoped to have their work read in the ordinary meetings or to receive a positive report and win one of the multiple annual awards that in many cases promised the same position. If, for instance, foreign

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Dimitrie Sturdza, "Raportu Asupra Acivității Academiei Române cu Ocasiunea Serbării de 25 Ani a Existenței Sale," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XIII (1890-1891): 208.

Robert Fox, op.cit., 18 and 62.

"Academia Română. Sesiunea anului 1879. Proces Verbal No. 3 Sedința din 25 Mai 1879," *Monitorul Official al României* No. 121 (1879): 2932.

scientists based in Romania wanted to join, as was the case with the prolific French autodidact entomologist Arnold Montandon (1852-1922), their work was subsequently introduced in meetings, and they were eventually elected as "foreign corresponding members".[31]

As Maurice Crossland has highlighted in analysing the organization of the French Academy, the official "power" of the institution lay not in the hands of the president who was annually nominated, but on the permanently elected secretaries who provided the main line of communication with the government. The secretaries were also "the ones who provided the link between the scientific input of the Academy and its bureaucratic machinery", going as far as proposing members who "were theoretically elected by the whole assembly".[32] The Romanian Academy was no exception, as the most important decisions were took by the general secretary Dimitrie Sturdza. Moreover, in 1886, the science section also elected its own permanent secretary to supervise scientific and membership decisions, in the person of the geologist Gregoriu Ștefănescu.[33]

The scientific section of the RAS passed through several transformations as well. George Iavorenciuc has highlighted that when Anastasie Fătu, Nicolae Krețulescu and Petre S. Aurelian reorganised the scientific section of the RAS in 1872, their new aim was "the exploration of the Romanian Principalities from a geographical, geognostic and physiographical point of view".[34]

"Ședința de la 11 Aprilie 1905," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II,Tom XXVII (1904-1905): 250-251.

Maurice Crossland, *Science under Control: The French Academy of Sciences 1795-1914* (Cambridge: Cambridge University Press, 1992), 119-122.

Gr. Stefanescu, "Raportul Secretarului Secțiunii Sciintifice despre alegerea candidaților pentru înlocuirea reposatului membru Dr. A. Fetu," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom VIII (1885-1886): 185.

George Iavorenciuc, op. cit., 240-241.

Curiously enough, a second plan was adopted when the new 1879 regulations stressed the coordination of every single Romanian scientific research.[35]

In terms of publication, the minutes of the numerous meetings were published first in the sober periodical series known as *Proceedings of the Romanian Academy* (*Desbaterile Academiei Române*) which in 1877 took the more appropriate title *Annals of the Romanian Academy: Proceedings and Administrative Section* (*Analele Academiei Române Partea Administrativă și Dezbaterile*). A second periodical series, issued between 1878 and 1886, was the famous *Annals of the Romanian Academy Short Notices and Memoires* (*Analele Academiei Române Memorii și Notițe*). When, in 1886, the Academy eventually established that the history and scientific sections would function on their own, the *mémoirs* mutated into two separate series, *Memoris of the Scientific Section* (*Memoriile Secțiuni Științifice*) and the *Memoirs of History Section*

(*Memoriile Secțiuni Istorice*). In 1888, a third series for the literature section was added.[36]

There were endless discussions about how to deal with the so-called "*memorii*" delivered by scientists in the general sessions, whether to publish them in the *Annals* and if the author could republish the same work in other journals as well.[37] After intense debates, these were considered as belonging to public domain, since scientists read their speeches in public meetings, in the presence of a stenographer who took notes and published their discussions.[38] Some of the

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Academia Română, *Legi, statute, regulamente* (București: Bucovina I.E. Toroutiu, 1940) 88-87. Apud. George Iavorenciuc, Ibid., p. 246.

Horia-Nicolae Teodorescu, "120 years with the memoirs of the scientific sections of the Romanian Academy," *Memoirs of the Scientific Sections of the Romanian Academy* Series IV, Tome XXXII (2009): 153-154.

"Ședința Ordinară din 8 Martie 1882," *Analele Academiei Române Partea Administrativă şi Desbaterile Şedinţele Ordinare din 1881-1882* Seria II Tom IV (1882): 116; "Ședința din 22 Martiu 1882," *Analele Academiei Române Partea Administrativă şi Desbaterile Şedinţele Ordinare din 1881-1882* Seria II Tom IV (1882): 152.

"Ședința ordinară din 21 Martie 1883," *Analele Academiei Române Partea Administrativă şi Desbaterile Şedinţele ordinare 1882-1883* Seria II, Tom V (1883): 53.

speeches were also republished as "extracts" in keeping with the *Annals* format. The same was decided for the famous "reception discourses", which were initially meant to be published in the *Official Monitor*, but ended up being printed in a special collection series.[39] Moreover, short summaries of scientific speeches were included also in the "annex" section of the *Administrative and Proceedings*. In this way, a great variety of scientific matters was dispersed all over the Academy's periodicals, thus providing a great number of articles to its members.

Another activty of the Romanian Academy was the organisation of annual awards, sponsored by state and private funds, which commemorating various intellectual figures, such as the Lazăr Award, the Năsturel-Herescu Award, the Eliade-Rădulescu Award, the Anastasie Fătu Award and the Vasile Adamachi Award. Winning one of these awards opened a path for non-members to enter the elitist scientific sphere. On the other hand, from the spring of 1898 onwards, the commission of the Adamachi Award decided to establish a new scientific periodical series *The Publications of Vasile Adamachi Funds* (*Publicațiunile Fondului Vasile Adamachi)*. The new series began to include the manuscripts of the winners of the Adamachi competition, as along with as corresponding members' observations, aiming to popularise their work.[40] In this case, Ion Th. Simionescu (1873-1944), a geologist turned populariser, championed the series with no fewer than sixteen publications issued before the interwar period. Moreover, by 1910, Simionescu, together with the zoologist Ioan Borcea (1879-1936), and other students who benefited from the Adamachi Fellowship, inaugurated one of the most important scientific and

"Ședința din 28 Martie 1894," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XVI (1893-1894): 209-211.

Analele Academiei Române Partea Adminsitrativă și Desbaterile Seria II, Tom XX (1897-1898): 148-149.

popular journals of the twentieth century Romania, the *V. Adamachi Scientific Review* (*Revista Ştiinţifică V. Adamachi*).

Figure 2.1. A copy of one of the numerous studies carried out by Ioan Simionescu on the Triassic fauna of Dobrudja published in the *Publicaţiunile Fondului Vasile Adamachi* in 1911.

The increasing of specialisation of different scientific disciplines and the barriers to writing in Romanian language prompted a new proposal in 1905 by the Academy members for the establishment of a scientific *Bulletin*. This particular publication resembled what Alex Csiszar has emphasised as a growing trend in Europe, such as the British "*proceedings*" and the French

"*comptes rendus*" which appeared thanks to the impetus of the weekly *feuilletons* [feature sections], eventually including a wide range of scientific matters.[41]

In Romania, in the 1870s, there appeared institutions and societies which already issued "*comptes rendus*" with the aim of connecting with Western scientific circles.[42] One of the best examples of this was presented by the participants of the Bucharest Biological Reunion, who published short scientific summaries in French, in the Paris-based, *Comptes rendus des séances de la Société de biologie et de ses filiales* in 1908. Their members eventually issued their own journal, *Annales de Biologie*, in 1911. In a similar vein, the aim of the Romanian Academy's *Bulletin*, as expressed in the report made by Constantin Istrati, was "to promote the trend of scientific research and to present to the foreign scientific community their works […] which due to priority issues cannot suffer much delay."[43] Likewise, the decision to publish the long-awaited *Bulletin* was taken in 1909, when the bibliographer Ion Bianu (1856-1935) insisted that it should contain summaries of no longer than 8 pages of scientific presentations to be published in French, German, Italian, English or Latin.[44]

In 1910, the scientific commission finally decided that the name of the journal should be *Bulletin of the Scientific Section* (*Bulletin de la Section Scientifique*). Meanwhile, its regulations stipulated that it would publish short scientific communications, original and novel work

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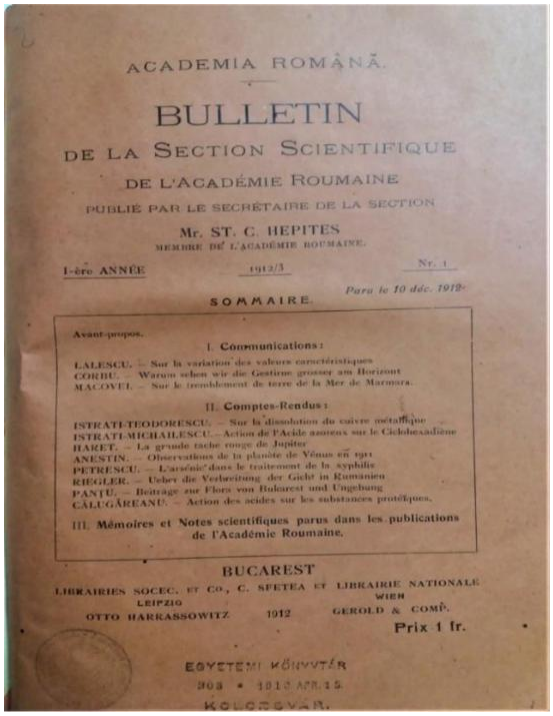
Alex Csiszar, *The Scientific Journal: Autorship and the Politics of Knowledge in the Nineteenth-Century* (Chicago: University of Chicago Press, 2018), 68, 110-117.

The first journal to borrow the French name was *Compte Rendu Pour les Années* published by the Bucharest Hospital for Children between the years 1874/1888 and 1893/1894. Other periodical series was *Comptes-rendus des séances* published by the newly formed Geology Institute from Bucharest between the years of 1910-1915 and continued with short interruptions until 1954.

Analele Academiei Române Partea Adminsitrativă și Desbaterile Seria II, Tom XXVIII (1905-1906): 215

"Ședința de la 15 Mai 1909," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XXXI (1908-1909): 140-141; Important to note that the Academy already started their vast project of documenting the bibliography of Romanian periodical journals by Alexandru Pop in 1887 and between 1895-1913 the head of the project was Ion Bianu.

undertaken by the members of the Romanian Academy or foreign scientists. The same commission decided that it should appear monthly and include résumés previously published in the *Annals* and in the *Adamachi* series. These were distributed free of charge to universities and to important scientific institutions in other countries as well. The summaries would exceed more than eight pages and the authors would receive 50 lei per page, as well as 50 copies of their own work.[45] In this way, the *Bulletin* eventually became the official mirror of Romanian scientific research for the outside world of science which included women scientific contribution and amateurs' observatations, previously left behind by the Academy.



ACADEMIA ROMÂNĂ.

BULLETIN

DE LA SECTION SCIENTIFIQUE

DE L'ACADÉMIE ROUMAINE

PUBLIÉ PAR LE SECRÉTAIRE DE LA SECTION

Mr. ST. C. HEPITES

MEMBRE DE L'ACADÉMIE ROUMAINE.

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Figure 2.2. The front cover of the first issue of 1912 of the *Bulletin de la Section Scientifique de L'Académie Roumaine*. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca[46]

"Ședința de la 16 Mai 1912," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XXXIV (1911-1912): 244-245.

The periodical published a variety of short scientific summaries and included the work of amateur astronomers such as Ioan Corbu and Victor Anestin, as well as scientific contributions made by women like Lupu Elena and Nicodem Elena. However, these works were summarised by the members of the Romanian Academy.

Returning to the practicalities of publishing in the Academy's journals, one of the most important issues that needs further analysation was the so-called "rite of passage" and involving the frequent reports on incoming papers. In this case, the "rapporteur" or the "referee" played a crucial role. As Alex Csiszar has illustrated in his research on British and French printing politics, "for a new generation of scientific practitioners, some of whom were looking to make a career, the referee had become a point of obligatory passage." Therefore, Csiszar insisted that, "by mid-century, referees were widely understood as conferrers of rewards and defenders of the reputation of scientific societies, but it was later still that they began to be viewed as gatekeepers

of the scientific literature as a whole."[47] Similarly, the Romanian Academy's various rapporteurs had a great amount of power in deciding whose work counted as scientific and who needed to improve their research techniques and vocabulary.

In this way, the Academy's system of writing reports ran from ones dealing with the writers' own activity, to reports on papers that were competing for the annual awards leading to intense disputes such as the one between Gregoriu Ștefănescu and Grigore Cobălescu on the formers validity of geological school manual.[48] Another revealing case study of the relationship in the Romanian Academy between the prize system and reports involves the Academy's tendency to control and regulate scientific research. As happened in France, where, according to Maurice Crossland, "candidates were asked not only to work on a specific problem, but they were

Alex Csiszar, op. cit., 156-157.

Gr. Cobâlcescu, "Gregoriu Ștefănescu, Cursu elementaru de Geologia, Bucurescu 1890. Raportu," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XIII (1890-1891): 341-355.

asked to follow specific instructions",[49] the standard for eligibility to receive an award regulated by Ștefănescu, consisted not only of the accuracy of the work, but also that this should not contain heresies or under researched facts. In turn, the submissions should have a clear

methodology and be presented in such a way as to be understood by students.[50] Manuscripts submitted for the Lazăr Award, should contain an original and systematic approach, and the research should be based on scientific deductions and should be written in the national language.[51]

A case regarding the relationship between the evolution of the awards and the strategies of prize election was the 1895 candidacy of Grigore Antipa (1866-1944) for the Lazăr Award. Here again, when Ștefănescu reported on the 80 manuscript pages, he highlighted that Antipa's research was not scientific, but rather dealt with the fishery economy in Romania. In addition, besides other gaps in knowledge, he claimed that the author did not perfrom original research, but recommended subjects for future studies to concentrate on. On the basis of, these

contradictions, the work was rejected.[52] However, the same rapporteur proposed Antipa's research subject for the Anastasie Fătu Award, waiting to be launched in 1901, and which, he advised, should focus on the ichthyology of Romania. By this time, the eligibility requirements conditioned participants to give a detailed description of the various species of fish that inhabit

Maurice Crossland, Ibid., 273.

Gr. Ștefănescu, "Comisiunea Premiului Asociațiunei Craiovene," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XIV (1891-1892): 195.

Gr. Stefanescu, "Ioan P. Licherdopol, Fauna malacologica a Romaniei No. 2. Moluscele de uscat si de apa dulce ale judetului Prahova," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XVII (1894-1895): 378-380.

Gr. Stefanescu, "Dr.Gr. Antipa, Studii asupra pescăriilor din România. București 1895," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XVIII (1895-1896): 355-361.

Romanian waters, their migration and breeding habits, and the state of the fishing industry of Romania.[53]

To avoid possible conflicts of interests, the Academy also adopted the system of "blind reports" according to which submissions were made anonymously using various mottos. Yet, the report made by Constantin Istrati in 1901 rejected two candidates on the grounds that they forgot to include pictures and sketches of fish species and because of their bad command of the scientific nomenclature.[54]

Ironically, when the same subject was presented for the Adamachi award in 1906, three anonymous manuscripts were submitted using the mottoes, *Antipathetic*, *Nothing Without Money*, and *Impavidi Progrediamur*. Ștefănescu's report on the first manuscript stated that the author lacked illustrative figures of fish species, argued that "time is money", and instead of describing the fauna of the Danube, recipes for cooking fish were given.[55] Although the second 790-page manuscript contained more details, the rapporteur expressed amazement that the author advanced the same argument as the first manuscript, declaring that figures will be given only if he is awarded the prize.[56] Reviewing the third "anonymous" author, who signed with the motto *Impavidi Progrediamur*, the report of this 465-page manuscript, including 159 figures, stated that this was the first Romanian scientific research to address the subject-area and to give detailed account of fish classification according to order, suborder, family, genus, species and

"Ședința din 14 Martie 1896," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XVIII (1895-1896): 240-242.

"Ședința de la 19 Martie 1901," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XXIII (1900-1901): 126-128.

"Ședința de la 28 Martie 1906," Analele Academiei Române Partea Adminsitrativă și Desbaterile Seria II, Tom XXVIII (1905-1906): 208-209.

Ibid., 210-212.

variety. This work won the prize because it showed in impressive detail reproduction habits of the fish, gave a clear picture of the fish market economy, including also the development of fishery equipment and popular knowledge of the Romanian fauna. When the commission opened the envelope inscribed with the evolutionist motto borrowed from Ernst Haeckel, "to their surprise" the author was none other than Grigore Antipa.[57] His success was assured from the outset, and the following year Antipa and the geologist Ion Simionescu were proposed as corresponding members of the Romanian Academy, while another prolific botanist, Dimitrie Grecescu, was proposed as an active member.[58]

Also of interest is the Romanian academicians' relationship with amateur naturalists and lay people, who in turn guided botanical and geological explorations. For instance, a certain peasant, Petru Mioc, living in the village of Berliște, expressed his desire for more "scientific books useful to peasant knowledge."[59] The letter was taken seriously, to the extent that Ioan Simionescu, together with Duliu Zamfirescu (1858-1922), recommended that the Academy should devote at least one part of the awards to encouraging works dealing with popularisation.[60]

Meanwhile, botanical and geological explorations undertaken by academic naturalists were facilitated by numerous mountain guides known as "călăuze", who were usually peasants, monks, shepherds, or hunters.[61] The appearance of the first Transylvanian Saxon alpine and

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Ibid., 212-214.

"Ședința de la 16 Aprilie 1907," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XXIX (1906-1907): 207, 452.

Quoted in Dan Berindei, *Istoria Academiei Romane (1866-2006) 140 de ani de existență* (București: Editura Academiei Romane, 2006): 150.

"Ședința de la 16/29 Octombrie 1915," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XXXVIII (1915-1916) 27.

Mountain geological and botanical explorations were often undertaken in the company of local guides such as Nicolae Butmăloi, Nicolae Gelepeanu, Ion Gâtej, Nestor Urechia, Ion Morărescu, Moș Mitru din Moeciu, Prunaru din Jepii Mari, and many others. See Nicolae Baticu and Radu Țițeica, *Pe crestele Carpaților* (București: Editura Sport și Turism, 1984) 70-100, 196-226. For more details on the role of Saxon and Hungarian societies in the

naturalist associations, Siebenbürgischen Alpeinverein (1873) and Siebenbürgischen Karpaten Verein (S.K.V.) (1880), were shortly followed by the Hunagrain, Magyarországi Kárpát Egyesűlet (1873) and Romanian counterparts: Cercul Excursioniștilor (1891), Societatea Carpatină „Sinaia" (1893) and Societatea Turiștilor din România (1903). Their aims included the regulation of mountain guide acreditations, the scientific study of natural landscapes, the publication of popular science periodicals, the establishment of natural parks and the protection of local fauna and flora.[62] For instance, the president of the Brașov S.K.V. section, the conservationist-botanist Julius Römer (1848-1926), a former student of Ernst Haeckel, became famous for his alpine expeditions with local guides and as an advocate for the introduction of Darwinism into the local schools.[63] Other botanists such as Dimitrie Grecescu, together with the chemist Alfred Bernath (1836-1924) and the painter Nicolae Grigorescu (1838-1907), on their numerous alpine excursions in the Bucegi Mountains, were given various plant species, such as *Rhododendron alpinum hoff* and *Vaccinium Myrtillus*, by the local shepherds.[64] Whatever many counterarguments, by the interwar period Alexandru Borza's several attempts to establish nature reserves erroneously accused the shepherds, amongst others, of destroying biodiversity, thus ejecting this class of natural observers from the scientific sphere and regulating mountain

institutionalisation of *Landeskunde* and *honismeret* in Transylvania, see Borbála Zsuzsanna Török, *Exploring Transylvania: Geographies of Knowledge and Entangled Histories in a Multiethnic Province, 1790-1918* (Leiden: Brill Academic Publishers, 2015).

Nicolae Baticu and Radu Țițeica, Ibid., 110, 410-422. See also *Anuarul Societății Turiștilor din România*, Vol. IX (1911): 123.

Julius Römer, "Die Lehre Darwins als Gegenstand wissenschaftlicher Forschung," *Siebenbürgischer Verein für Naturwissenschaften zu Hermannstadt*, Vol. 30 (1879): 11–48. C.f. *Antologia Ateismului din România* (București: Editura Științifică, 1962) 181-182.

Dimitrie Brândză, *Despre vegetațiunea României și exploratorii ei* (Bucuresci: Tipografia Academiei Române, 1880), 73; Valeriu Pușcariu, "Ocrotirea Naturii în Țara Noastră," *Ocrotirea Naturii Buleitnul Comisiei Pentru Ocrotirea Monumentelor Naturii* Nr. 7 (1963): 27-28.

pasturing.[65] Collecting naturalia were also carried by children of various ethnic background, as the famous evolutionist explorer and conservationist Emil Racoviță recognized in a racialized manner:

> I have travelled in many countries searching for insects, plants, and rocks; henceforth I was helped to collect them by people of all races and especially by children. Patagonian, Catalan and French youngsters. Offspring's of Maurs, Arabs, Italians and Spanish; Kids of Moldovians, of Banatians, of Moți, Danci of Gypsies, black as the bottom of a cooking pot, more or less naked similar to the famous dancers, because the only thing they were lacking was an ostrich feather; however, all of them, boys and girls, have shown me their lively interest for natural livings and a extraordinary perception to distinguish and identify them.[66]

In terms of geological studies, Mircea Păucă (1903-1988) highlighted in his memoirs that Romanian geologists always depended heavily on the knowledge of peasants and various guides in undertaking their scientific mountain expeditions.[67] Some geologists, such as Ion Simionescu, Gheorghe Munteanu-Murgoci and Ludovic Mrazec, became advocates of alpine tourism and figured amongst the founding members of alpine associations.[68] As geological excavations were not permitted on private estates, several important palaeontological discoveries, such as Gregoriu Ștefănescu's *Dinotherium Gigantissimus Stef.* and *Camelus Alutensis*, were initially

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Alexandru Borza, *Ocrotirea Naturii în România* (Cluj: Institutul de Arte Grafice, 1924), 8-11.

Alexandru Borza and Emil Pop, *Întâiul Congres Național al Naturaliștilor din România* (Cluj: Editura Societatea de Științe, 1930), 30-31.

Mircea Păucă, *Mi-am retrăit viața* (Cluj-Napoca, 1998), 74; See also, Emil Constantinescu, "Ludovic Mrazec, the model of a patriotic scientist," *Revue Roumaine de Géologie* Tomes 63 (2019): 4-5.

Valenit Borda, *Călători și exploratori români* (București: Editura Sport-Turism, 1985), 301-306, 397-399; Antoneta Seghedi and Titus Brustur, "Ludovic Mrazec, President and Founder of the SRG and of Other Societies and Associations in Romania," *Revue Roumaine de Géologie* Tomes 63 (2019): 61.

made by the local peasants[69] and by railway workers.[70] In Transylvania, the amateur geologist Basiliu Bașiota (1836-1906) also published a Romanian adaptation of Saxon studies with some original remarks on the mineralogy of Apuseni Mountains in 1883.[71]

By the turn of the century, amateur observations were being encouraged for submission for publication in the Romanian Academy series. For instance, the amateur astronomer Victor Anestin (1875-1918) managed to have his observations on comets, eclipses, meteorites, and the planet Venus, published both in the *Annals* and in the *Bulletin*, but only after the positive feedback was provided by the famous meteorologist Ștefan Hepites (1851-1922).[72] The Transylvanian amateur astronomer Ioan Corbu (1873-1954) received the same news after the report presented by the mathematician Spiru Haret (1851-1912) declared that his calculations contained "accepted scientific notions" and, therefore, should be published in the *Annals* and *Bulletin*.[73] Other less fortunate amateurs, such as Gavril Todică (1877-1946), who pubslihed the famous popular journal, *Scientific Conversations* (1918), although applauded for filling the lack of scientific communication in Transylvania, was rejected because of his writing style and scientific errors.[74] However, his popular journal was an important publication platform for emerging naturalists such as Alexandru Borza (1887-1971), who published his Transylvanian botanical

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Gr. Ștefănescu, "Descoperirea unei măsele de Dinotheriu în România," *Analile Societății Academice Române Memorii și Notițe* Tom XI (1878): 101-106.

Gr. Ștefănescu, "Prima Cămilă Fosilă Gasită în România și unica până astăzi în Europa," *Analele Academiei Române Partea Adminsitrativă și Desbaterile* Seria II, Tom XVII (1894-1895): 65-71.

Gabriela Rodica Morărescu and Vlad Codrea, "Basiliu Basiota – Un entuziast al Geologiei secolului XIX," *NOEMA* Vol. VIII (2009): 483-493.

"Ședința Publică de la 27 Aprilie 1912," *Analele Academiei Române Partea Administrativă și Desbaterile* Seria II, Tom XXXIV (1911-1912): 56, 65.

"Raportul lui Sp. Haret despre: Marimea astrilor la orizont de I.Corbu – aprobat de Secțiune la 14 Septembrie 1912," *Analele Academiei Române Partea Administrativă și Dezbaterile* Seria II, Tom XXXV (1912-1913) 65. It is important to note that Ioan Corbu was also a correspondent of Ernest Haeckel.

C. Istrati, "Gavr. Todică, Studii științifice, Fasc I-II (III-IV) Orăștie 1910," *Analele Academiei Române Partea Administrativă și Desbaterile* Seria II, Tom XXXIII (1910-1911) 231-234.

observations there, not long before becoming one of the most important nature conservationist in interwar Romania.

As mentioned at the beginning of this section, communications concerning Charles Darwin's theory of evolution were also delivered by Romanian Academy members. The first to address the topic was the Transylvanian publicist George Bariț (1812-1893) whose explications need to be related to wider political debates, as the region of Transylvania was then under the Austro-Hungarian rule.

Darwinism in the Hungarian region received special attention from various popular science periodicals, official translations and political commentators.[75] By 1884, Hungarian naturalists such as László Dapsy (1843-1890), Aurél Török (1842-1912) and Entz Géza (1842-1919) had already translated Darwin's main works.[76] The growth of translations led to endless debates between political and sociological commentators, both from Vienna and Buda, putting forward ideas of national and racial superiority, even going as far as to claim that the "Hungarian race" was superior to the Romanian, Slovakian and other nationalities."[77] Equally important was the activity of the Transylvanian Saxon naturalists, particularly those from Hermannstadt (Sibiu), who elected Charles Darwin on 21 February 1877 as an honorary member of *The Transylvanian Society for Natural Sciences* (*Der Siebenbürgische Verein für Naturwissenschaften*) during the presidency

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For an overview of the popularization of Darwinism in Hungary up to 1880s, see Katalin Straner, *Science, Translation and the Public: The Hungarian Reception of Darwinism, 1858-1875* (PhD. Diss., Central European University, 2012) 40-79.

Ibid., 432.

Tibor Frank, "Anthropology and Politics: Craniology and Racism in the Austro-Hungarian Monarchy" *Hungarian Studies*, Vol. 3, No.1-2 (1987): 177-180; Katalin Mund, "The Reception of Darwin in Nineteenth-Century Hungarian Society," in Eve-Marie Engels, Thomas F. Glick (eds.), *The Reception of Charles Darwin in Europe*, Vol. II (Continuum: London, 2008), 453; Marius Turda, "Race, Politics and Nationalist Darwinism in Hungary, 1880-1918," *Ab Imperio,* Vol.1, (2007): 1-25; Marius Turda, *Eugenics and Nation in Early 20th-Century Hungary* (Basingstoke, Palgrave Macmillan, 2014). See also Borbála Zsuzsanna Török, *Exploring Transylvania: Geographies of Knowledge and Entangled Histories in a Multiethnic Province, 1790-1918* (Leiden: Brill Academic Publishers, 2015).

of the geologist Eduard Albert Bielz (1827–1898).[78] Without doubt the region of Transylvania was, one of the most fertile ground for Darwinian evolutionism.

Caught up in the Austro-Hungarian political debates, George Bariț's first encounters with Darwinism from 1871 highlighted his worries concerning the cultural and political instrumentalisation of the evolutionary theory, yet simultaneously falling into the same trap by describing the Romanian struggle for emancipation in Darwinian terms:

> The essence of Darwin's doctrine can be explained in few words: in nature, there is a perpetual struggle for existence. The most feeble and lazy are exterminated by the fittest and most active, for the benefit of posteriority. This is a savage doctrine! What if in the moral and organic world of humanity, not only history but also literature aids this [process]? To cultivate our language and make it thrive in all the branches of national life is also a struggle for existence. Where the assimilationist power predominates there is victory. The undeveloped will disappear, leaving nothing behind.[79]

In another presentation given at the Romanian Academy in the autumn of 1872,[80] Bariț again tried to explain the extension of the idea of the "survival of the fittest" as applied to social

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See Charles Darwin, "Diplomas." Appendices III. In Vol. 25, *The Correspondence of Charles Darwin*, edited by Frederick Burkhardt, James A. Secord, and The Editors of the Darwin Correspondence Project (Cambridge: Cambridge University Press, 2017), 605-606. Two other important Transylvanian Darwinists were Julius Römer (1848-1926) from Brașov who also studied in Jena with Ernst Haeckel, and Lajos Felméri (1840-1894) from Kolozsvár, who corresponded with Darwin on the szeklers "race and the emotions"; For details on Transylvanian saxon scientific activity see Heinz Heltmann and Hansgeorg von Killyen, *Der Siebenbürgische Verein für Naturwissenchaften zu Hermanstadt 1849-1949* (Sibiu: hora Verlag Hermanstadt, 2003).

Quoted in Emil Pop, "Începuturile darvinismului la noi până la 1880," *Studii și cercetări de biologie* Vol III Nr.1-2 (1957): 26.

G. Bariț, "Teoriile lui Darwin," *Analele Societății Academice Române*, Sesiunea anului 1872, Seria I, Tom V (1874): 177-192.

and political realities. As a founder of *Association for Romanian Literature and the Culture of the Romanian People* (Asociațiunea Transilvană pentru Literatura Română și Cultura Poporului Român) and editor of its *Transilvania* magazine, he published his notes in a series of articles explaining that he did not want "to criticise, but to analyse Darwin's theory and to show it to a reading public that is keen to embark on these ideas and theories."[81] His argument began by illustrating the work of the Vienna-based zoologist Gustav Jäger (1832 –1917), *Darwinian Theory and its Position on Morality and Religion* (*Die Darwinsche Theorie und ihre Stellung zu Moral und Religion*) (1869), and explained his deepest concerns.

> There is not a single University in Europe, in which propaganda for and against Darwinism is not carried out; in recent years, Darwin's doctrines moved beyond the narrow circles of the erudite to the wider general public, due to popular public lectures in various cities [...]. At present, I do not know the extent to which Darwin's theories have developed within our Dacian Romanian society; however, what we all know is that wherever these doctrines penetrate, they threaten the total transformation not only of opinions, but also the convictions and beliefs in all scientific disciplines. In other words, Darwinism brought into its own research sphere not only the branches of natural science, but also the sum of all life sciences […].[82]

George Bariț, "Theoriile lui Darwin," *Transilvani'a Foi'a Asociațiunei transilvane pentru literaturța romana si culturța poporului romanu* Anul V, Nr. 21 (1872): 243.

George Bariț, "Theoriile lui Darwin," *Transilvani'a Foi'a Asociațiunei transilvane pentru literaturța romana si culturța poporului romanu* Anul V, Nr. 19 (1872): 217.

Moreover, Bariț also showed that, in other countries, Darwinism developed thanks to the work of translations, and maintained that scientific research should be free to develop without "repressive censorship". His notes were also divided into sections, further explaining the political dangers of the evolutionary theory by natural selection as follows:

> The struggle for existence! — Bariț exclaimed — where else should we search for more terrible examples of this fierce struggle, if not in what we see with our own eyes in the millions of proletarians based in European citadels and other millions of inhabitants, cultivators of land, and peasants […]. The theory of the struggle for existence, namely, war and the extermination of the feebleminded by those more vigorous and better fitted, is a necessity imposed by the unchangeable laws of nature, and these absolute and terrible laws apply to humans.[83]

In addition, his section dedicated to "human origins" explained in detail that "Darwin's theory of the successive development of organic being" showed that the perfection of "humans" occurred "after millions of years, from a certain simian variety".[84] In 1878, however, Bariț read another paper at the Academy, based on the notes signed by the Transylvanian physician Pavel Vasici (1806-1881).[85] On this occasion, besides giving Darwin's biographical details and a scientific exposition of the development of evolutionary theory, he showed that "humans are the foremost

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George Bariț, "Theoriile lui Darwin," *Transilvani'a Foi'a Asociațiunei transilvane pentru literaturța romana si culturța poporului romanu* Anul V, Nr. 20 (1872): 229.

Ibid., 230.

"Ședința din 18 August 1878," *Analile Societației Academice Române Partea Administrativă și Desbateri* Secțiunea I, Tom XI (1878): 17.

members of *vertebrates*; second, they are members of a single class, namely the *mammals*; third, they are members of the order of *simians* or *monkeys*."[86]

Another Romanian intellectual, who dealt to a certain extent with Darwinism and scientific theories, was the politician and president of the Romanian Academy, Ion Ghica (1816-1897). As a young natural science graduate, he remained passionate about the works of Georges Cuvier (1769-1832), Elie de Beaumont (1798-1874), and Alexander von Humboldt (1769-1859).[87] In terms of publishing, he began writing popular articles as early as 1844 dealing with the specialisation of various scientific disciplines.[88] Soon afterwards, he put foward his interests in archaeology and humans' place in nature, and mingled with racial classification in several studies written between 1866 and 1884: *Human and intellect*; *The Beginnings of Humans; Stirpe Species or Races*; *Humans and the Earth*.[89]

In the *The Beginnings of Humans*, delivered at the Romanian Academy in 1878, Ghica shifted between various creationist explanations for the origins of the earth and the geographical distribution of humans. His study avoided addressing the question of human evolution, arguing that the "state of science" had not fully reached a consensus on the issue, instead advocating, in accordance with Georges Cuvier, for the theory of catastrophism.[90] In the second part of his lecture, dealing with racial classification, his ambivalence was revealed. First, he promoted the monogenist view of Humboldt's "unity of mankind" by arguing that "the consequence of his

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"Darwinismulu," *Transilvani'a Foi'a Asociațiunei transilvane pentru literaturța romana si culturța poporului romanu* Anulu XIII, Nr.13-14 (1882): 106.

Ion Ghica, *Opere* (București: Editura pentru literatura, 1967) 14.

Ion Ghica, "Ochire Asupra Științelor," in Mariana Costinescu and Petre Costinescu eds., *Propârșirea. Foaie Științifică și Literară* (București: Editura Minerva, 1980) 213.

Constantin Istrati, *Activitatea sciințifică a lui Ion Ghica* (București: Institutul de Arte Grafice Carol Göbl, 1902), 16.

Ion Ghica, "Inceputulu Omului," *Annalile Societății Academice Române Memorii și Notițe* Sesiunea II, Tom XI (1878): 61-63.

theory is that the civilised populations are not distinct from savages or troglodytes." However, his presentation took a radical turn after systematically summarizing that races are best grouped in Caucasian, Mongolic and Ethiopic, and insisting that "white people […], pure or mixed with other races, are without doubt the most intelligent, giving birth to the most civilised nations."[91] Supporting his statement with reference to Friedrich Blumenbach, Paul Broca and Paul Topinard, Ghica went as far as to claim that whiteness remained extremely important even after the abolition of slavery in America:

> Women of colour, whether red or black, have an appeal to white men; the dark colour is considered as evidence of inferiority. Blacks feel humiliated by the colour of their skin; the greatest offence to them is to tell them that they are black; after the abolition of slavery in the South of the United States, black [people], instead of calling themselves free, say that they are white.[92]

Speaking about evolution and the origins of life, although Ghica confused natural and artificial selection, he did acknowledge Darwin's idea of sexual selection. The theory of descent was also sporadically addressed in another study published in 1884, and which resumes his previous works *Human and the Earth*. Here he noted that "observations have made Darwin and his followers admit the idea that humans are nothing else than monkeys".[93] Equally important was Ghica's continuing ambivalence in the communication delivered at the Academy in 1880,

Ibid., 74-75.
Ibid., 84.
Ion Ghica, "Pământul și Omul," in Ion Ghica, *Opere* (București: Editura Minerva, 1973), 60.

suggestively entitled, *Stirpes, Species and Races*. On this occasion, the president of the Romanian Academy considered that racial classification theories might also be applied in Romania, especially to the Roma community, further drawing on colonial practices by stating that:

> Mr. Broca and other anthropologists have observed that, when civilised, the third generation of the Lobi tribes in South America acquired a different appearance to those who remained savage. The same can be said about our urban gypsies, who although they have the same bond with those from Dobreni, the laie [i.e. nomadic Roma] and netoți [i.e. free Roma], differ in their appearance. Hence, the netoți established in Vizurești have totally changed their physiognomy, after their settlement.[94]

Ghica's departure from the Humboldtian view of the unity and harmony of species was irreversible, as his argument continued to oppose, together with Arthur de Gobineau, interracial mixing. For instance, he claimed that there was "a natural instinct which pushes humans, as well as animals, to preserve the purity of their descendants", and that "preserving the purity of a nation ensures its existence." Equally relevant, after giving various archeological details of the discovery and classification of prehistoric humans, Ghica acknowledged that Darwinism might be considered as a scientific theory.[95]

Ion Ghica, "Semintiile, soiurile sau rasele," in Ion Ghica, *Opere* (București: Editura Minerva, 1973), 106.
Ion Ghica, Ibid., 116-117.

2.3. The Parliament of Science: The Romanian Association for the Advancement and Spread of the Sciences

The beginning of the twentieth century was marked by several projects undertaken by the Romanian state focusing on the modernisation of infrastructure, industry, transportation, communication and education. For instance, railway networks connecting the most important cities, such as Iași, Bucharest, Galați, and Craiova facilitated not only correspondence between scientific centres, but also enabled the appearance of new forms of scientific communities.[96] As with other Romanian modernisation endeavours, the institutionalisation of science soon blended with wider political aims of registering, controlling and enforcing national projects throughout the country. By doing so, as Călin Cotoi has emphasised, the development of statistical science paved the way for the Romanian Principalities to create their own cultural and scientific inventory, and to participate in a self-orientalising way in colonial exhibitions in various European cities.[97] Mirroring and sometimes competing with similar Western scientific institutions, some Romanian naturalists eventually united their efforts and established in 1902 The Romanian Association for the Advancement and Spread of Sciences (RAASS; Asociația Română Pentru Înaintarea și Răspândirea Științelor).

The model that this so-called "parliament of science" emulated had a long tradition in urban European culture, dating back to 1822, when Lorenz Oken (1779-1851) first founded in Leipzig the Gesellschaft Deutscher Naturforscher und Ärzte and which was shortly followed by

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For more details on the history of Romanian railway projects see, Teodor Popescu, *Proiectul feroviar românesc (1842-1916)* (București: Simetira, 2014) 55-85.

See Călin Cotoi, *Inventing the Social in Romania, 1848-1914: Networks and Laboratories of Knowledge* (Leiden: Brill Verlag Ferdinand Schöningh, 2020), 205-209.

the British Association for the Advancement of Science in 1831 (BAAS). Later, several countries such as Hungary, America, France, Spain, Russia etc., took similar initiatives. As the historians Jack Morrell and Arnold Thackray remarked, at first glance the BAAS had the allure of a "non-sectarian, inclusive, and non-political image"; however, their meetings proved to be the opposite. Throughout their annual gatherings, held in different cities, the British association in fact facilitated the means through which "the scientific clerisy, interested bystanders in the wider intelligentsia, sympathetic aristocrats and lesser owners of land property could parade their

symbols of appropriate order."[98] Moreover, the sociability of the British scientific gatherings made no place for women's scientific communications. Women were invited accidentally to first gathering in York, but only to accompany their male relatives in the audience and to provide social and emotional support.[99]

The RAASS had its own particular social and political trajectory. As George Iavorenciuc has recognized, the roots of the association can be traced to the 1870s, when the geologist Gregoriu Ștefănescu published his translations of the proceedings of the Massachusetts meeting of the

American Association held in 1871.[100] Later on, during the 58th meeting of the BAAS, which gathered in Bath in 1888, Ștefănescu was invited along with nine other geologists, as vice-president of the geological section, while the following year he was elected as a corresponding

Jack Morrell and Arnold Thackray, *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Clarendon Press, 1981), 26-31.

Rebekah Higgitt and Charles W. J. Withers, "Science and Sociability: Women as Audience at the British Association for the Advancement of Science, 1831–1901," *Isis* Vol.99, No.1 (2008): 8-18.

George Iavorenciuc, op.cit., 325; Gregoriu Ștefănescu, "Associatiunea Americana pentru Inaintarea Sciinteloru. Sesiunea de la Salem (Massachusetts). Rolul oamenilor de sciinta în societate si în special în Statele-Unite, de Benjamin Apthorp Gould," *Revista Sciintifica* An I, Nr.13 (1871): 195-198.

member.[101] After his return to Romania, he published a report in the scientific section of the *Romanian Academy* and soon pleaded without much success for the establishment of a similar association in Romania.[102] Finally, it was due to the prolific chemist Constantin Istrati (1850-1919), who, after participating in the French meetings in 1885, unified four existing Romanian scientific entities into a single association, namely, the RAASS.[103]

The official aim of the RAASS, as expressed by its first president Constantin Istrati, was for each of the four societies to keep its own individual character, even as their annual meetings in different cities dealt with science popularisation and served additionally as an expression of national cultural unity. He insisted that this would eventually "stimulate scientific research in our country of its soil, water, climate, flora, fauna and ethnography". This ambitious plan "will constitute a centre of light in the scientific domain which will attract all Romanians and which should be sympathetic to all neighbouring countries."[104] Soon the scientific meetings of the RAASS were held in various cities where the Romanian railway network and political celebrations connected them.[105] Seen also as a kind of "scientific tourism", their meetings had a great impact on these cities and their surroundings, as the new elected president Gheorghe Țițeica (1873-1939) expressed it in Galați:

Report of the Fifty-Eighth Meeting of the British Association for the Advancement of Science (London: John Murray, 1889) 63, 114.

George Iavorenciuc, Ibid., 326.

These were the Bucharest Society for the Physical Sciencesand three from Iași, the Society of Physicians and Natural History, the Scientific and Literary Society "Archive", and the Society for the Sciences. Elvira Botez, Scurt istoric al Asociațiunii Române pentru Înaintarea și Răspândirea Științelor Noema Vol. IV, Nr.1 (2005): 143; Călin Cotoi, op. cit., 216-217; George Iavorenciuc, op. cit., 328; I. Jianu and G. Vasiliu, *Dr. C.I. Istrati* (București: Editura Științifică, 1964), 83.

C.I. Istrati, "Introducere" in *Asociațiunea Română pentru înaintarea și râspândirea sciintelor* (București: Imprimeria Statului, 1903) XLI.

Elvira Botez, op. cit., 144.

> On the one hand, people interested and practising science gather here to better know each other. In doing so, they will observe the most important regions of the country, their historical monuments, natural landscapes, commercial and industrial installations. On the other hand, in all their communications and conferences, and even their private gossip, the members of the congress will have a strong impact on the social and cultural life of cities of the province.[106]

In terms of organising the meetings, letters of invitation were sent from Bucharest to all scientific societies, while the Minister of Public Instruction specifically addressed educational institutions and universities research laboratories that were obliged to participate.[107] Moreover, during the 1903 exhibition held in Bucharest, besides sections dedicated to the natural sciences, special pavilions were organised for the "national inventory" of all good inclinations and interests such as civil engineering, agriculture, zoology, ethnography, rare books, the beer industry, handcrafts, furniture, prisons and sanatoriums.

The call to participate was sent personally by Constantin Istrati, and contained the registration form, the participation fee and the general schedule of the congress with its separate sections.[108] Those who were able to afford to pay 5 lei had to return the "registration form" with their name, profession, home address, the section in which he/she wished to exhibit, the title of

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G. Țițeica, "Dela noi," *Natura Revista științifică de popularizare* An VIII, Vol 8 (1912): 27-28.

C.I. Istrati, "Istoricul si descrierea congresului al II-lea al Asociaţiunii Române pentru înaintarea şi răspândirea științelor," in *Asociațiunea Română pentru înaintarea și răspândirea științelor. Congresul și Expoziținea din București Anul 1903* (București: Imprimeria Statului, 1908) VIII.

The first congress in 1902 had 5 sections covering the natural sciences, the physical sciences, mathematics, medicine and engineering., By 1910, the number of sections grew to 17 by adding various specialisations such as botany, mineralogy, zoology, astronomy, anatomy, anthropology, economy, pedagogy, etc. Elvira Botez, op cit., 147.

the lecture to be delivered, the objects to be exhibited, the space needed and, finally, the date on which their objects would be sent. Those with an institutional affiliation, soon received another envelope containing two blue railway travel certificates giving them a fifty percent discount for the duration of the congress.[109]

As previously mentioned, one of the social dimensions of the congresses resided in the idea of "scientific tourism" and commemoration. For instance, the choice of the first congress, held in 1902 at Iași, was twofold. This particular city was not only the first in Romania to establish a scientific society, but, after the tragic suicide of the geologist Gregoriu Cobâlcescu (1831-1892), the members of the Bucharest Scientific Society decided to visit Eternitatea cemetery and erect a monument in his honour.[110]

The official programme began in the morning at the local train station by assisting the participants to their hotels. The same morning a religious service was held by the head of the Metropolitan Orthodox Church, followed by visits to monasteries and by the official opening of the comgress in the main hall of the University. After the welcome speech was delivered by the local mayor, the Minister of Public Instruction, the Chancellor of the university and the delegates of the Romanian scientific societies gave brief speeches. The second day was dedicated to lectures and visits to the laboratories of Iași University and closing with a banquet. The third day, after lectures on the various sections, a general assembly was held to discuss the standardisation of scientific terminology. After that, a visit was arranged to the local slaughterhouse. The fourth

Direcția Județeană a Arhivelor Naționale Iași, Fond Societatea de Medici și Naturaliști, 1903, Box Nr.75, File 63.

C.I. Istrati, "Istoricul și deschiderea primului congres sciințific de la Iași ținut în dilele de 2,3,4 și 5 iunie 1902," in *Asociațiunea Română pentru înaintarea și râspândirea sciintelor* (București: Imprimeria Statului, 1903), XXXIV-XXXV, LVIII.

day was dedicated to excursions to the gardens of the Socola Sanatorium, the Rivalet plant garden and to Vasile Lupu School.[111]

At the second congress, held in Bucharest in 1903, scientific presentations were held in the first part of the day and, soon after the lunch break, participants were supposed to visit different institutions, exhibitions, as well as industrial factories in the city. Evenings were reserved for a special gala held at the National Theatre, ending the congress with a banquet of food and drinks. For participants who had extra free time, excursions were organised to Prahova Valley to visit the factories in Predeal, Azuga, Sinaia, Comarnic, and the petroleum extraction plant in Bușternari. The participation fee was 5 lei, and in some sections a dress code was understood.[112]

C.I. Istrati, op. cit., XII-XIII. Other excursion destinations focusing on the inventory of Romanian progress and industry, identified by Elvira Botez, were the Canara stone quarry, the tunnel from the naval port to the main railway network in Constanța (1904), the enormous Cralova Romanescu Park (1905), the Mărășești and Odobești factory of chemical products and sugar (1909), the Valea Rea and Pucioasa-Pietroșița Lignite mine (1910), the new Brateșului Basin , the Fernic shipyard, and the Turcoaiaca stone quarries (1912). Elivira Botez, op. cit., 148-149.

Direcția Județeană a Arhivelor Naționale Iași, Fond Societatea de Medici și Naturaliști, 1903, Box Nr. 75, File 61-

Figure 2.3. Romanian scientists gathered at the 1903 Bucharest welcoming the Royal family

On the other hand, the development of scientific research in different fields provided both an instrument and a new vocabulary for the Romanian state's political aim of strengthening its national identity. In a similar vein, the president of the RAASS, Constantin Istrati said that "if nowadays the same race is divided by artificial borders, despite this, the unity [of Romanians] can be brought about not only with our souls, but also through our common work in the field of culture."[113]

The same stance was promoted by Istrati at the 1906 General Romanian Exhibition, which marked the 40th anniversary of the reign of King Carol I, 25 years since the proclamation of the

C.I. Istrati, op.cit, IV.

Romanian Kingdom, and 1,800 years since the Roman emperor Trajan conquered Dacia. On this occasion, special pavilions for Romanians living "beyond the Carpathian Mountains" (in Serbia, Istria, and Bessarabia) were organised, along with pavilions for to those living in the Austro-Hungarian Empire. As a result, 600 Romanians from Banat and Făgăraș (Transylvania) visited the exhibition, while 712 Romanians received diplomas of participation.[114] At the same time, Călin Cotoi showed that according to Istrati's scientific vision, ethnic Romanians such as "gypsies" were perceived that with a "good will, tolerance, and good hearts", believing even the most "refractory" able to assimilate and become part of "our joys and troubles". The same applied to the Jewish population, which were prone for assimilation.[115]

To pursue the societies' political plan, ethnic minorities had to be studied from a "scientific perspective." Therefore, the famous Swiss anthropologist, Eugène Pittard (1867–1962) at the beginning of his career in 1899, was granted assistance and permission to carry out his first anthropological measurements of the Romanian, Bulgarian, Turkish, Roma, Albanian, Kurdish, Serbian, Skopets, Lazi and Jewish populations inhabiting the Balkans.[116] His findings were eventually published in several issues of *Bulletin of Science Society* (*Buletinul Societății de Științe*) from Bucharest. Meanwhile, Pittard's physical anthropological research carried out in 1901 on the Roma community in Dobrogea, Râmnicu Sărat and the Prahova Valley was communicated at

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Mihaela Manolache, *Împlinirea unui regat 1866-1906, Expoziția Generală Română 1906* (Cabinetul Periodice românești vechi, Colecții speciale, Biblioteca Națională a României), 32-43. http://www.bibnat.ro/dyn-doc/EXPOZITIA%20DE%20LA%201906%20-%201.pdf (accessed on 11 April 2020). Mihaela Manolache also documented various scandals that arose between participants and official lecturers, as well as bombings that injured people and cases of arson that burned installations.

Călin Cotoi, op. cit, 221.

For more details of Pittard's influence on interwar Romanian eugenicists and on his Romanian students see Marius Turda, *Știință și etnicitate: Cercetarea antropologică în România anilor 30* (București: Editura Muzeul Municipiului București, 2018), 40, 110; Dana Popescu-Spineni, "An Outstanding Personality of European Culture in Romania: Eugène Pittard," *Proc. Rom. Acad.*, Series B, Vol 17, No. 2 (2015): 157-164.

the RAASS congress held in 1903. At that time, he registered no more than 1,300 individuals ("Romanian, Turkish and Bulgarian Gypsies"), of which 837 were men and around 500 were women.[117] Finally, his conclusions were in line with the RAASS assimilationist view, winning him a gold medal for his "scientific exposé" and opening him new opportunities for future research in the region. However, all these scientific parades were suspended for a few years, as in 1907 one of the bloodiest peasant uprisings in the country's history put a stop to local fantasies of national progress.[118]

The turn of the century also brought a new shift towards the representation of women in Romanian scientific societies. As happened in the gatherings of the British association where "women were presented as social beings, out of their element in sectional meetings and on outdoor excursions,"[119] a similar trajectory developed in Romania. Thus, in the audience at the first congress held in Iași (1902) there were four women (Victoria Ștefănescu, Elena Constantinescu, Aneta Kostaki, Elena Fontănaru); however, none managed to deliver any communication in the plenary session.[120] The following year, the first medals were given to women who participated in the exhibition pavilions devoted to embroidery, private collections as well as in the retrospective one.

Eugène Pittard, "Anthropologie de la Roumanie. L'indice Céphalique Chez 837 Tsiganes (Hommes). Influence de la Taille sur L'Indice Céphalique," *Asociațiunea Română pentru înaintarea și răspândirea științelor. Congresul și Expoziținea din București Anul 1903* (București: Imprimeria Statului, 1908), 436.

Irina Marin, *Peasant Violence and Antisemitism in Early Twentieth-Century Eastern Europe* (Cham: Palgrave Macmillan, 2018), 155-175.

Rebekah Higgitt and Charles Withers observed that in Britain women were admitted into scientific societies in the following sequence: the Linnean Society (1904), the Royal Geographical Society (1913), the Royal Astronomical Society (1915), the Geological Society (1919), the Royal Society (1945). In contrast, the Zoological, Entomological, Botanical, Statistical, Anthropological, and Royal Scottish Geographical Societies had all admitted women in the nineteenth century. See Rebekah Higgitt and Charles W. J. Withers, op. cit., 9-11.

Asociațiunea Română pentru înaintarea și râspândirea sciintelor (București: Imprimeria Statului, 1903), LVI-LVII.

In the meantime, scientific observations carried out by Romanian women were sporadically mentioned in various popularisation journals. For instance, in 1895, the editors of the journal *Scientific and Literary Romania* (*România Științifică și Literară*) applauded the evolutionary research by the botanist Olga Mălinescu (1858-1932) on the polymorphism of algae,

which she carried out in the botanical laboratory from Geneva.[121] After her return to Romania in 1896, she occupied an assistant position at the botanical department of the Science Faculty in Bucharest where she worked until 1926,[122] and further published mycology studies.[123] Other institutions to include scientific research by women were the Romanian Naturalist Society (Societatea Naturaliștilor din România) which indicated its members' contributions to the determination of insects during their 1903-1904 field research. However, when the head of the Bucharest Physiology department, Ștefan Gh. Zottu published his list of *Orthopterans*, he barely mentioned the collections discovered by Aglae Giormăneanu, Nelly Vasilescu, Dorine Crăciunescu.[124] From the 1900s onwards, the morphology department of the Science Faculty in Iași also published student contributions in *Annales Scientifique de L'Université de Jassy*, by Elena Lupu on cellular biology, in 1906,[125] and on the intestinal respiration of the fish species of *cobitis fossilis*.[126] She was soon followed by Nicodim Elena on molluscs[127] and Alice Grințescu on plant

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B.V. "Polimorfismul alegei scenedesmus acutus de R.Chodat și Olga Mălinescu," *România. Revista Literară și Științifică* Vol 1, Nr.1 (1895): 5. For original study, see R. Chodat and O. Malinesco, "Sur le polymorphisme du scenedesmus acutus mey," *Bulletin de L'Herbier Boissier* Tom I, Serie 2, Fasc. I (1893): 184-190.

D. Mititelu, N. Barabaș and T. Navrotescu, "Botaniste din România I," *Studii și Comunicări* Nr. 13 (1980-1993):

Olga Mălinescu, "Myxomycetes du Jardin Botanique de Bucharest (Cotroceni)," in *Publicațiunile Societății Naturaliștilor din România* Tome XXVI, No.7 (1924): 1-7.

Ștefan Gh. Zottu, "Troisième liste des orthoptères," *Buletinul Societății de Științe* Anul XIII, Nr.5-6 (1904): 486; Apud George Iavorenciuc, op.cit., 293.

Elena Lupu, "Note sur les clasmatocytes," *Annales Scientifique de L'Université de Jassy* Tom IV, (1906): 1-3.

Elena Lupu, "Note sur les Cobitis Fossilis," *Annales Scientifique de L'Université de Jassy* Tom IV, (1907): 165-172.

Nicodim Elena, "La topographie des faisceaux musculaires du pled de l'Anodonte," *Annales Scientifique de L'Université de Jassy* Tom VII (1911): 40-55.

movements.[128] Finally, the Iași *V. Adamachi Scientific Magazine*, freqently published scientific contribution by women, sometimes challenging establsihed men of science. (For more details on women's emancipation, see chapter four.)

Returning to RAASS, none of the women mentioned above delivered any communications in the science sections. Nevertheless, Elvira Botez noted that by the seventh congress, held in 1911, Constantin Istrati made himself clear declaring that "gentlemen, our initiative should acknowledge also the Romanian women, […] we need women side by side by with men to give

the country everything they can."[129] Finally, during the last congress held in Galați in 1912, the floor was given to Elena Bacaloglu (1878-1947) and Eugenia de Reuss-Ianculescu (1866-1938), who addressed the issue of Romanian culture and women's emancipation from a liberal perspective.

Alice Grințescu and Ioan Grințescu, "Les mouvements spontanés et les mouvements provoqués des feuilles des légumineuses," *Annales Scientifique de L'Université de Jassy* Tom IX (1915): 168-214.

Quoted in Elvira Botez, op. cit., 146.

Figure 2.4. Picture taken at the inauguration of the 1903 exhibition held at the second RAASS Bucharest congress where the first medal awarded to a woman was given to Rudeanu Adina.

As regards the scientific part of the meetings, these were opened by the most famous Romanian scientists of the period. Their common goal was manifold. Amongst the most urgent were the standardisation of scientific terminology and the modernisation of laboratories, of which the physician Dragomir Hurmuzescu (1865-1954) made a special point.[130] Another important goal was the application of scientific results of chemistry, mineralogy and geology to

"Discursul D-lui professor Dr. Hurmuzescu" *Asociațiunea Română pentru înaintarea și râspândirea sciintelor* (București: Imprimeria Statului, 1903), XXXI.

various industries and for the exploitation of natural resources.[131] Others proposed the rearrangement of urban botanical gardens and alpine conservation parks. For instance, Alexandru Popovici (1866-1941), after presenting the discovery of numerous new fungi species insisted on the necessity of the establishment of a new botanical garden in Iași based on his detailed nine-section plan.[132] Similarly, the pharmaceutical student and botanist Ioan Grințescu (1874-1963), after presenting his botanical expedition in the Ceahlău Mountains, baldly proposed the organisation of a protected alpine natural park.[133] Physicians like as Adolf Urbeanu (1855-1934) were interested in the amelioration of rural everyday life and diet, revealing his tremendous study of the production and consumption of alcohol.[134]

Important to note that the meetings eventually opened to amateurs interested in natural phenomena. For example, the Transylvanian amateur astronomer, Gavril Todică (1876-1946), managed to communicate his notes on Japanese indigenous knowledge of the process of fermentation using the fungi *aspergillus oryzae* in the fabrication of the drink sake.[135] Similarly, novelists interested in popularising scientific theories were invited as well. For instance, Ioan Alexandru Brătescu-Voinești (1868-1946) addressed Charles Darwin's theory of evolution in 1911. Delivered at the congress held in his home town of Târgoviște, he began by expressing his

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Asociațiunea Română pentru înaintarea și răspândirea științelor. Congresul și Expoziținea din București Anul 1903 (București: Imprimeria Statului, 1908).

Asociațiunea Română pentru înaintarea și râspândirea sciintelor (București: Imprimeria Statului, 1903) XLVIII

Ibid., XLIX.

Dr. A Urbeanu, "Studiu introductiv asupra alcoolismului," in *Asociațiunea Română pentru înaintarea și răspândirea științelor. Congresul și Expoziținea din București Anul 1903* (București: Imprimeria Statului, 1908) 1191-1524.

Gavril Todică, "Tane KO-I," in *Asociațiunea Română pentru înaintarea și râspândirea sciintelor* (București: Imprimeria Statului, 1903), 194. For more on the biography of Gavril Todică, see Adela Herban, "Gavril Todică (1877-1946) Un astronom cu veleități europene," *Anuarul Sargetia* Vol. XXXV-XXXVI (2007-2008): 591-606; Elvira Botez, "Doi artiști astronomi amatori: Gavril Todică și Ioan Corbu," *NOEMA* Vol. XI (2012):365-368.

misgivings that he was not a scientist, but was prompted by his scientific reading to make his humble contribution:

> I told myself that perhaps scientists would find it interesting to know more about the dream of a dilettante after reading certain science books and his thoughts about science itself and the establishment of a society for the advancement of science in this country. For a better understanding of what science is, we should consider […] the theory of evolution, a theory which explains that everything is in continuous development.[136]

Although Brătescu-Voinești avoided making any direct reference to Charles Darwin and Ernst Haeckel, he discussed in detail the process of evolution, beginning with the unicellular organisms of the monera. Contrary to Darwin, he insisted that chance has no significance in the process of evolution, instead reasoning that species' transformations were the result of a certain "inner power".[137] Unfortunately, two years before the outbreak of the First World War, the annual meetings of the RAASS were suspended and did not resume until the interwar period, when, in 1934, the Romanian naturalists gathered for a final time in the same format. However, in 1913, some RAASS members united again in a single association, known as The Friends of Science Society (Societatea Prietenii Științei) and continued to offer popular lectures mainly through its Craiova branch.[138]

Ioan Al. Brătescu-Voinești, *Pe marginea cărților* (București: Editura Librariei Leon Alcalay, 1911) 5-6.

Ibid., 8-12.

For the themes covered in the 713 lectures delivered in Craiova between 1915-1943 see, Direcția Județeană a Arhivelor Statului Dolj, Fond Studii, Articole, Monografii, Dosar Societatea Prietenii Științei din Craiova 1915-1943, Files 19-46.

Chapter 3. "The radical synthesis": Darwinian and non-Darwinian theories of evolution

"Humans descend from certain ancestors which had a moving tail; it is probable that over thousands of centuries, varieties of certain species became new species themselves, different from one another"[1]

Vasile Conta (1845-1882)

Introduction

In the 1870s, the Romanian intellectual and scientific milieu was highly influenced by the French scholarly tradition that not only exported various theories of evolution, but also philosophical and socio-political theories, such as positivism. This brought to the surface a new synthesis of secular doctrines in which Darwin's theory participated. Soon a new ingredient was added in the form of German scientific materialism, forming the so-called "radical synthesis". The term was coined by Robert Fox in his investigation of French nineteenth-century scientific thought, emphasising the importance of the three scientific concepts as a weapon against political conservatism and to legitimise secular worldviews. In his endeavour to identify "the public face of science", he argued that "the conflict that the synthesis provoked in and beyond the realms of academic philosophy is a striking exemplar of the way in which science could become involved in the public sphere of debate."[2]

Vasile Conta, "Originea Speciilor (Teoria Ondulatiunii Universale, Partea II),'' in *Biblioteca pentru toti* (București: Editura Librăriei Leon Alcalay, s.a.), 7-8

Robert Fox, op.cit., 6.

From the 1880s onwards, the popularisation of Darwinism in Romania was approached from several scientific traditions. This period coincided with what Julian Huxley (1887-1975) termed the "eclipse of Darwinism", meaning that the idea evolution was accepted by various scientific circles, but few recognised that natural selection was the main cause of this process. Building on Huxley's observations, Peter Bowler has further suggested that between 1880 and 1920, scientists also opted for "non-Darwinian" explanations. This means that scientific debates remained indebted to numerous conflicting theories such as "Neo-Lamarckism", according to which species evolution was driven by the inheritance of acquired characteristics. For other evolutionists, the theory of "orthogenesis" explained non-adaptive trends of the organism and its predisposition for variation. Other naturalists adhered to the recapitulation theory, put forward most notably by Ernst Haeckel, according to which the course of evolution was modelled by the embryological development of individual organisms. Finally, there was the "mutation

theory", which prefigured Gregor Mendel's discovery of the laws of heredity.[3] The present chapter will explore how these entangled influences were discussed by Romanian popularisers who contributed to the new tensions that focused on positivism, materialism, and evolution and it will show how Romanian physicians promoted "non-Darwinian" theories of evolution.

Peter J. Bowler, *Evolution: The History of an Idea* (London: University of California Press, 2003), 224-227; See also, Peter J. Bowler, "Revisiting the Eclipse of Darwinism," *Journal of The History of Biology*, Vol. 38 No. 1 (2005): 19-32.

Positivism and scientific materialism in France and Germany

Positivism, the first of this hegemonic triumvirate, appeared in France during the 1820s, and was theorised by Auguste Comte (1798-187). With elitist militancy, he pleaded for the total intellectual, social and political reorganisation of society.[4] His main principles were published in "Prospectus des travaux scientifiques néccessaires pour réorganiser la sociéte" [Prospectus of scientific works necessary to reorganize the society] where he laid out his position on the three "states", according to which all branches of human knowledge had necessarily to pass several phases: the "theological" or "fictitious" state (in which natural phenomena were ascribed to the actions of supernatural beings); the "metaphysical" or "abstract" state (where explanations invoked unobservable metaphysical entities); and finally the "positive" or "scientific" state (in which understanding rested exclusively on reason and observation).[5]

Later, in *Cours de philosophie positive*, Comte theorised the epistemological outcomes of his positivist philosophy. Different sciences, such as mathematics, astronomy, physical sciences, and chemistry should be classified in a hierarchical order. Each science was assigned a position in the hierarchy depending on its closeness to the highest point of the positive "state". As shown by Michael Singer, the Comtean hierarchy ended up as a "sociology, a term of his own creation to denote the study of human society through the application of scientific thought."[6] In addition, and placing great emphasis on his premonition, the reorganisation of society should be carried

Michael Singer, *The Legacy of Positivism* (Basingstoke: Palgrave Macmillan, 2005) 3.
Robert Fox, op.cit., 41-42.
Singer, *The Legacy of Positivism*, 16.

out by savants, intellectuals, artists, etc., who were responsible for the control of what Comte referred to as "the empire of public opinion."[7]

As is well known, Comte was not alone in his quest to spread the positivist world-views of establishing a "secular religion of humanity". Hence, the link between science and positivism was later strengthened by the work of French intellectuals and savants, such as Émile Littré (1801– 1881), Charles Philippe Robin (1821-1885), Grégoire Wyrouboff (1843-1913), and to some, extent Claude Bernard (1813-1878). Littré was, in fact, responsible for the dissemination of positivism to a wider audience, while Robin (one of the founding members of the Société de Biologie in 1848) was responsible for extending and modifying the "gospel" of Comtean science classification to the discipline of biology.[8]

When the Darwinian debate came into the picture, some the French positivists expressed their inclination for evolutionary theory. Their partiality also gained a books from Clémence Royers's introduction to the first French translation of the *Origin of Species* (1862). However, the historian Harry Paul has observed that Littré "had always believed that, in spite of the evolution found in embryology and in palaeontology, there was no experimental fact on which to base the transformation of one species into another […]. He therefore rejected evolution as a candidate for incorporation into positive science." Nevertheless, as Paul goes on to insist, for positivists, Darwinism could still "have the status of a biological hypothesis."[9]

Ibid., 38-40.

Harry W. Paul, *From Knowledge to Power. The Rise of the Science Empire in France, 1860-1939* (Cambridge: Cambridge University Press, 1985), 63.

Ibid. 70.

As for Robin, "he was the one who voted against admitting Darwin to the election of the Academy of Sciences on the grounds that Darwin was not a first-rate scientist and was inferior to Bischoff in scientific production. Having reduced Darwinian Theory to Lamarckism, Robin was

unable to appreciate Darwin's originality."[10] Nevertheless, things changed around the time of the second and third French translations of Darwin's work (1873 and 1876), when Émile Ferrière (1830-1900) went as far as to attack superstitions and theological beliefs in the name of scientific method. At the same time, the zoologist Alfred Giard (1846-1908) pleaded for the teaching of the

theory of natural selection in universities, invoking the works of Karl Vogt and Ernst Haeckel.[11] Equally important, according to Bensaude-Vincent Bernadette and Libbrecht Liz, "the diffusion of the sciences amongst the masses was thus a focal question in the positivist movement in

France throughout the nineteenth century."[12]

Scientific materialism, appeared in the same period that the philosophy of dialectical materialism[13] came to the surface in Germany, around the middle of the nineteenth-century. Scientific materialism was put forward mainly by Karl Vogt (1817-1895), Jacob Moleschott (1822-1893) and Ludwig Büchner (1824-1899). Their intellectual roots lay in part in the critical analysis of religion by Ludwig Feuerbach (1804-1872). As the natural sciences were among the most important sources for their arguments, communicating scientific discoveries to the public was crucial. During the 1840s and 1850s, it was with the use of science popularization journals that

Ibid., 70.

Robert Fox, op.cit., 167-174.

Bensaude-Vincent Bernadette and Libbrecht Liz. ''A public for science. The rapid growth of popularization in nineteenth century France," *Réseaux. The French journal of communication*, Vol. 3, Nr. 1, (1995): 84.

For a comparison and contrast between scientific and dialectical materialism, see Frederick Gregory, "Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-Century German Radicalism," *Isis* Vol. 68, No. 2 (1977): 206-223.

Vogt and Moleschott first began to disseminate scientific materialism to a wider audiences.[14] By the 1850s, the three German authors had published their major works: Karl Vogt's *Physiologische Briefe* (1844-1847) and *Köhlerglaube und Wissenschaft* (1855); Jacob Moleschott's *Die Lehre der Nahrungsmittel* (1850) and *Der Kreislauf des Lebens* (1852); and one of the most representative of this tradition, Ludwig Büchner's *Kraft und Stoff* (1855). More importantly, the latter marked an important shift also within science popularisation. As Kurtz Bayertz suggests, "the concept of popular science realized [that] *Kraft und Stoff* became the model for the mainstream of popular scientific literature." In a similar vein, the later "proponents of popular Darwinism" followed the "trend". [15]

As the historian Frederick Gregory observes, all these works "were resplendent with sensationalized materialism. Not only did each author deny the existence of a vital force, but the mechanical determinism each strongly implied seemed to negate the very existence of the soul." Moreover, Gregory also insists that "in the view of these men it was at least certain that the soul was not immortal. Through an appeal to alleged scientific facts, they were attempting to replace the authority of the church with the authority of science."[16] The tenets of scientific materialism, as Gregory further showed:

> Held that the general laws governing matter were eternal and unchanging, that all the diverse forms of organized matter were explicable in terms of one set of basic laws.

Frederick Gregory, *Scientific Materialism in Nineteenth-Century Germany* (Dordrecht: Reidel Publishing, 1977), 7-

Kurt Bayertz, ''Spreading the Spirit of Science. Social Determinants of the Popularization of Science in Nineteenth-Century Germany,'' in Terry Shnin and Richard Whitley (eds.), *Expository Science: Forms and Functions of Polarization* (Dordrecht, Boston, Lancaster: Reidel Publishing, 1985), 220-222.

Frederick Gregory, "Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-Century German Radicalism," *Isis*, 68 (1977): 209.

Nature was "out there," and to comprehend nature one had to discover the pre-existing laws governing matter.[17]

On the other hand, when the geologist Heinrich Georg Bronn (1800-1862) translated Darwin's *Origin of Species* into German in 1860, Karl Vogt had already moved forward from his previous world-view of the fixity of species to the full acceptance of Darwin's theory. The same happened with Büchner, who abandoned his reticence regarding the evolutionary mechanism in order to depart from the transmutation doctrine held by the adherents of *Natürphilosphie*. In his particular case, Büchner's adaptation of natural selection to his own model of progress was done solely to show the importance of heredity in the mental and physical progress of humans. Besides Ernst Haeckel's propagandistic work, scientific materialist engagement with evolutionary theory played a crucial role in the dissemination and acceptance of Darwinism in Germany.[18]

To this end, both positivism and materialism appeared as radical responses against the older scientific and philosophical traditions during a time of political transformation for European society. More importantly, both doctrines became widespread through science popularisation. When the Darwinian theory of natural selection was added to the public debate, the "threat" posed by this synthesis made its way into wider popular opinion.

Ibid., 219

For the relation between Darwinism and scientific materialism in Germany see chapter VIII "Controversies in Biology" in Frederick Gregory, *Scientific Materialism in Nineteenth-Century Germany* (Dordrecht: Reidel Publishing, 1977), 164-188.

3.1. The radical synthesis in nineteenth-century Romania

The positivist influences on Romanian natural science was first developed by the Bucharest professor of physiology and editor of the journal *Nature* Constantin Essarcu (1836-1898), in his introductory course on the natural sciences delivered at the University of Bucharest in 1864. The general aim of his first lecture was to compare the science classification systems of Isididore Geoffrory St. Hilaire and Auguste Comte. From here, he went on to present various methods in natural science and pointed out that social sciences should follow the most "advanced" "positive" ones, such as mathematics, the physical sciences and biology, in their quest for the "amelioration of society."[19]

Of other early Romanian materialists and positivists, one should mention the physician Nicolae Negură (1832-1884) and the psychiatrist Alexandru Sutzu (1837-1919). The former, studied medicine in Germany and returned to Bucharest where he taught forensic medicine and toxicology at the National School of Medicine and Pharmacy. In his metaphysical study *Life, Existence and Death* (*Viața, Existența și Moartea*) (1865), Negură addressed issues concerning the spontaneous generation and the mechanistic world-view in conformity with the organisation of matter.[20] Alexandru Sutzu enrolled for medical studies in Athens and moved to Paris where he was a student of Claude Bernard. Once he returned to Romania, he worked at the Mărcuta Hospice and became a publicist for the most important medical journals of the time. His interests

Constantin Essarcu, *Curs de sciintele naturale la Facultatea de Sciinte din București* (Bucuresci: Imprimeria Th. Vaidescu, 1864), 48.

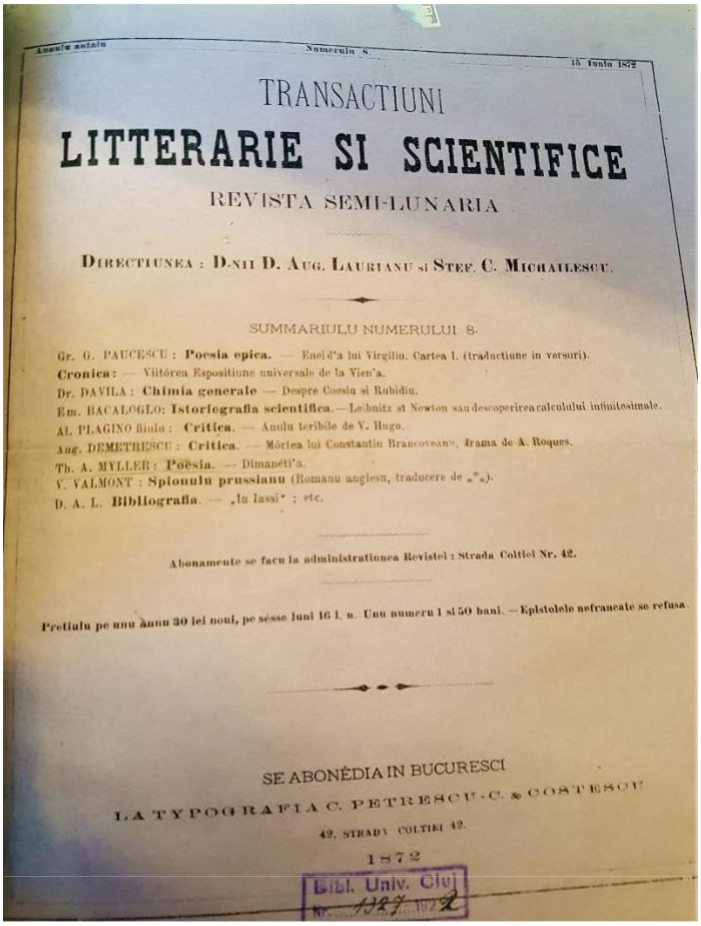
'Nicolae Negura' in C.I. Gulian (ed.), *Antologia Gîndirii Românești Secolele XV-XIX* (București: Editura Politica, 1967), 634-640.

in heredity make him one of the precursors of the Romanian eugenic movement.[21] However, his articles orientated towards the establishment of experimental psychology brought him in direct conflict with the materialist inventor Ștefan C. Michăilescu one of the most important promoters of positivism in Romania in the 1870s.

Ștefan C. Michăilescu was one of many students attending Esarcu's lecture at the University of Bucharest. After he finished his undergraduate studies, he was involved in different projects for the education of the Romanian population. One of them was the magazine *Literary and Scientific Transactions* (*Transacțiuni Literare și Științifice*), which made its way into the public sphere, promising an encyclopaedic view for its subscribers. The prospect of the first issue printed in 1872 announced that their endeavour was intended to meet the need for "action through science", and promised to "analyse and scrutinise everything that falls within the domain of observation and thought."[22]

See Marius Turda, "Controlling the National Body: Ideas of Racial Purification in Romania, 1918-1944," in Christian Promitzer, Sevaste Troumpeta, and Marius Turda (eds.), *Health, Hygiene, and Eugenics in Southeastern Europe to 1945* (Budapest: Central University Press, 2011), 327.

''Prospectu,'' *Transactiuni Literare și științifice*, Nr.1 (1872): 3.



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SE ABONÉDIA IN BUCURESCI

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Figure 3.1.The front cover of the *Literary and Scientific Transactions* (1872). Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

The journal was printed by Michăilescu twice a month in collaboration with a member of the Romanian Academy, August Laurian (1810-1881), and remained in print for no more than one year (1872-1873). Subscriptions were sold for 30 lei per year, and a single issue cost 1.50 lei. Throughout their various articles, savants such as Carol Davila (1828-1884), Alfred Nicolaus Bernath-Lendway (1836-1924) and Paul Tanco (1843-1916), added their own contributions to science popularisation. However, soon after the appearance of the second issue, articles signed by Michăilescu and endorsing Comte's positivism were directed against a study by Alexandru

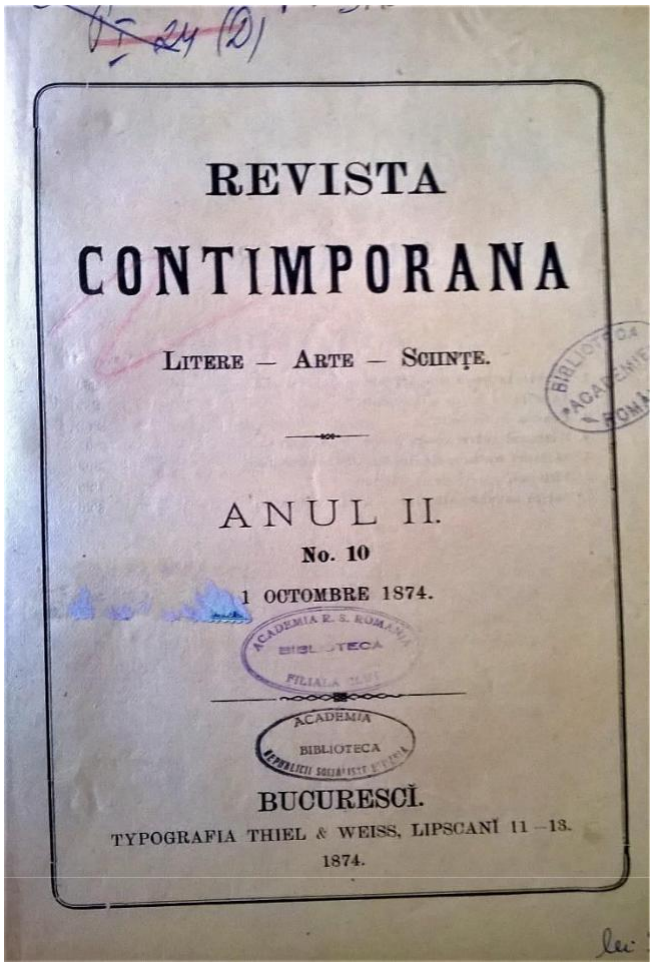
Sutzu's published in the medical periodical, *Medical-Surgery Gazette* (*Gazeta Medico-Chirurgicală*).

The article signed by Sutzu aimed to entrench what he believed were the guiding principles of "scientific psychology", which, according to his view, should be based on the results of "vital forces" and drawn from experiments of "biology and physical chemistry". Michăilescu's attacks were directed against the relationship between spiritual investigation and the scientific enterprise. Thus, by invoking the works of Littré and Grégoire Wyrouboff, he insisted that in science there is no place for terms such as "essence of life", "vital force" or any other searches for "final causes". Finally, he concluded that, "[if] psychology wishes to rise to the status of a scientific [discipline], there can be no other way than the one prescribed by the positivist philosophy."[23]

Besides leading the Society for the Teaching of the Romanian People for three years (1874-1877), Michăilescu also put great effort into science popularisation by giving lectures and publishing manuals of natural history. Meanwhile, his texts were published in the journal *Contemporary Magazine, Literature-Arts-Science* (*Revista Contimporana, Litere-Arte-Stiinte*) (1873-1876). As the editorial board included a great number of figures, representing history, science, literature and the arts, its ambitious plan attracted fierce criticism from Titu Maiorescu.[24] The lifespan of *Contemporary Magazine* lasted three years, when it merged with the *Review of Science and Literature*. Subscriptions were sold for 30 lei and a 10-lei discount was offered for

Ștefan C. Michăilescu, "Filozofia pozitivă," *Transactiuni Literare și științifice*, Nr.2 (1872): 28-38.
Titu Maiorescu, "Beția de cuvinte," *Convorbiri literare*, Anul VII, Nr. 2, (1873): 78-85.

those who showed an interest in the cultural magazine of *Traian's Column* (*Columna lui Traian*) edited by the literary historian Bogdan P. Hașdeu (1838-1907).


REVISTA

CONTIMPORANA

LITERE — ARTE — SCIINȚE.

ANUL II.

No. 10

1 OCTOMBRE 1874.

BUCUREȘCI.

TYPOGRAFIA THIEL & WEISS, LIPSCANI 11—13.

1874.

Figure 3.2. Issue 10 of the *Contemporary Magazine, Literature—Arts—Science*, Courtesy of the Romanian Academy Library, Cluj-Napoca

When positivism started to gain ground in the Romanian public sphere, contradictions started to appear between the spiritualists and the positivist savants, both promoting their own agendas. Further debates arose when Hașdeu republished Michălescu's account on positivist philosophy in two issues of *Traian's Column*, mistakenly accusing him of being "electrified by

Büchner's fashion."[25] As perviously seen, Michăilescu aimed to separate the spiritual investigations of nature from the positivist ones. Quoting Littré, he emphasised that "there is no doubt that today, intellectual and moral [activity] is related to cerebral phenomena; human beings are nothing more than a considerable link in the chain that goes far down to the inferior animals."[26] In reply, Hașdeu set to underline the true values of the Comtean doctrine, asserting that "positivism should be based on history, and at the same time it should be materialist, spiritualist and deist." Therefore, he continued, "a true positivist should not ignore directly or indirectly the constitutive elements of the Universe."[27] Finally, Michăilescu's defence was published in the *Contemporary Magazine*. Using the same sarcasm as his opponent, he claimed that spiritualists' with their tendency to claim truth without "palpable causes" are in fact the most "electrified."[28]

Regarding Darwin's mechanism of natural selection, Hașdeu had plenty to say based on his readings of the *Origin of Species* and *The Descent of Man*, both available to him in French translations. Carrying out research on the history of languages and on the origins of civilisation, he pleaded for the validity of what he understood as a supernatural and goal-directed evolution, namely "providential selection". According to his calculations, "in the terrible struggle for life [portrayed] by Darwin, humans could not develop from the monkey level, if providence had not given them the ability to be naked without body hair and a large cerebellum."[29] Curiously enough,

"Nota Redacțiunii," *Columna lui Traian*, An. IV, Nr.4, (1873): 63.

Ștefan C. Michăilescu, "Viueța după doctrina positivă," Columna lui Traian, An IV, Nr.3; Nr.4, (1873):46-47; 62-63.

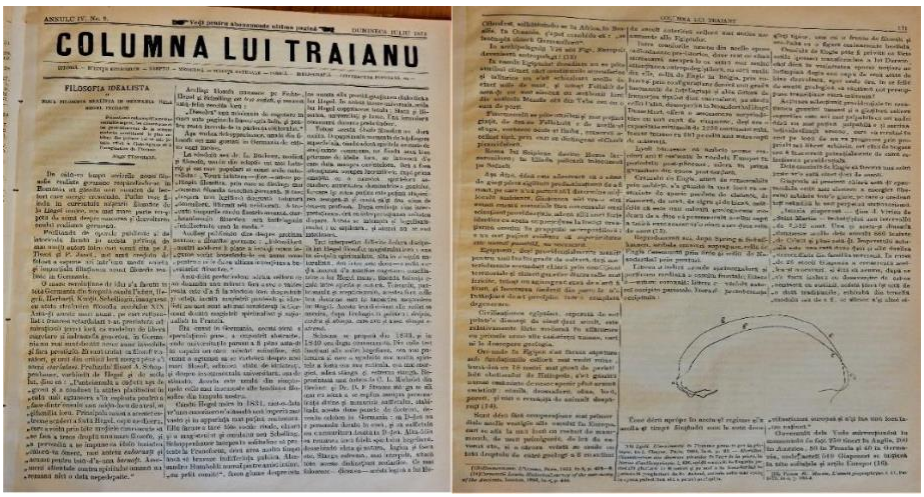
Hașdeu, "Materia, spiritu și divinitatea. Positivismu istoric," *Columna lui Traian*, An IV, Nr.8 (1873):144-145.

Stef. C. Michăilescu, "Schițe filozofice: Spiritualism si materialism, epistola adresata domnului B.P. Hasdeu, redactorul <<Columnei lui Traianu>>," *Revista Contimporana Litere-Arte-Stiinte*, Anul I (Bucuresci, Tipografia Curtii, Lucratorii Asociati, 1873), 258.

Hașdeu, "Originea civilisațiunii," *Columna lui Traian*, An IV, Nr. 9 (1873): 172.

his notes published in *Traian's Column* were given out as loose prints before finally being published in his magnum opus, *Critical History of the Romanian People* (*Istoria Critică a Românilor*), which he dedicated to one of his great idols, the British champion of social Darwinism, Herbert Spencer (1820-1903). For his part, Hașdeu set out to distinguish between the theory of "transformism or the evolution of species" and that of "natural selection or the survival of the fittest." In his words:

> Transformism might be false, while natural selection, the true discovery of Darwin and Wallace, would be true even if not recognizable in the whole of organic life with [claims such as] metamorphosis of monkeys into humans; but only within the [same] species, thus developing a barbarian into a Goethe. In other words, if one is a *selectionist*, one is not necessarily a transformist.[30]


COLUMNA LUI TRAIANU

FILOSOFIA IDEALISTA

Figure 3.3. Bogdan Petriceicu Hasdeu's article dealing with evolution and anthropometry printed in *Traian's Column*

B.P. Hașdeu, *Istoria Critică a Românilor* (Bucuresci: Typographia Antoniu Manescu, 1875) 2.

At the same time, after arguing that he "had always been a Darwinist, even before Darwin himself," Hașdeu sarcastically declared that, based on Darwinism, his dog Cuti, would one day become a human.[31] Soon after the tragic death of his daughter, Hașdeu was convinced of one thing, that the selection theory would give a plausible account of the evolution of the soul after death. His involvement in setting up various spiritualist séances to communicate with the dead through "mediums" finally brought him closer to being a true advocate of Spiritualism, and not surprisingly, closer to the co-discoverer of evolutionary theory, Alfred Russel Wallace (1823-1913). By doing this, Hașdeu, also a member of the Romanian Academy, pushed the boundaries of what scientific expertise could explain to the general reader, proclaiming that, "Spiritism is one of the most convincing validations of Darwinism."[32]

At the university centre of Iași, on the other hand, the positivist doctrine made its way straight into the heart of the most famous Romanian Literary Society, *Junimea*. Here, according to the memoirs of George Panu (1848-1910), when preparing various themes for popular lectures in 1872, "four main authors, [Herbert] Spencer, Darwin, [John William] Draper and [Buckle] were among the members" main readings. Yet none was so admired as Auguste Comte.[33] The following year, when the members of *Junimea* celebrated nine years of so-called popular lectures and gathered people to listen to their elitist circle, the main theme proposed for debate was "man's struggle with nature". On this occasion, the lectures were introduced by one of the founders of *Junimea*, a member of the Conservative Party, Vasile Pogor (1833-1906). In his own aristocratic

B.P. Hașdeu, "Sonata la Kreutzer (Dedicat cainelui meu din curte Cuti)," in *Sarcasm și Ideal 1887-1896. Ultimii noue ani de literature* (Bucuresci: Editura Librărirei Socecu&Comp., 1897), 19-23.

Bogdan Petriceicu Hasdeu, *Sic Cogito, Ce e viata? Ce e moartea? Ce e omul?* (Bucuresci:Editura Librariei Socecu& Comp, 1895), 64.

George Panu, *Amintiri de la "Junimea" din Iași* (București: Editura Societăți Anonime Pe Acțiuni Adevarul, 1908),

style, he explained how the development of scientific knowledge changed the biblical way of thinking. More importantly, "when the famous Charles Darwin came and exhibited his theory of how various living species started to exist on the surface of the earth […] other intellectuals showed how that development [is directed] towards perfection." Nevertheless, for Pogor, history and progress were "the most accurate proof of the backwardness of savage people."[34] Like most of the lectures, his talk also came out in print in the journal *Literary Talks* [*Convorbiri Literare*] which at the turn of the century, would detonate one of biggest debates on spontaneous generation and Darwin's evolutionary theory by natural selection.

3.2. Vasile Conta (1845-1882), one of the most controversial Romanian metaphysical evolutionists

Where the relationship between philosophical materialism and Charles Darwin's theory of evolution was concerned, the most important Romanian contributions were made by the metaphysical philosopher Vasile Conta (1845-1882). Born in the village of Ghindăoani, Conta was raised in a family where most of his siblings, following their father, chose the priesthood as their profession. After finishing his primary studies in Târgu Neamț (1858), he enrolled in the Iași National College, studying in the same class as George Panu.[35] Shortly after graduation, Conta was awarded a scholarship for commercial studies in the Belgian city of Antwerp by the Society

Vasile Pogor, "Lupta Omului cu Natura," *Convorbiri Literare*, An 7, Nr.1 (1873): 31.

Ana Conta Kernbach, *Biografia lui Vasile Conta. Adăugiri și îndreptări* (Iași: Tipogragfia Dacia P&D Iliescu, 1916), 14-15.

for the Educational Encouragement of Young Romanian Scholars. From there, he moved to Brussels where he finished his doctoral dissertation (1872) in law.[36]

Figure 3.4. Vasile Conta (1845-1882)

In 1879, Conta was elected Minister of Public Instruction in the cabinet of the liberal I.C. Brătianu. In this position, he was the first to plead for the secularisation of the educational system, and contributed to the inauguration of the Commercial School of Iași, the establishment of the first secondary school for women, the first school inspectorate, a drama society and two

Nicolae Gogoneata, "Studiu introductiv," in Vasile Conta, *Opere Filozofice* (București: Editura Academiei Republicii Socialiste România, 1967).

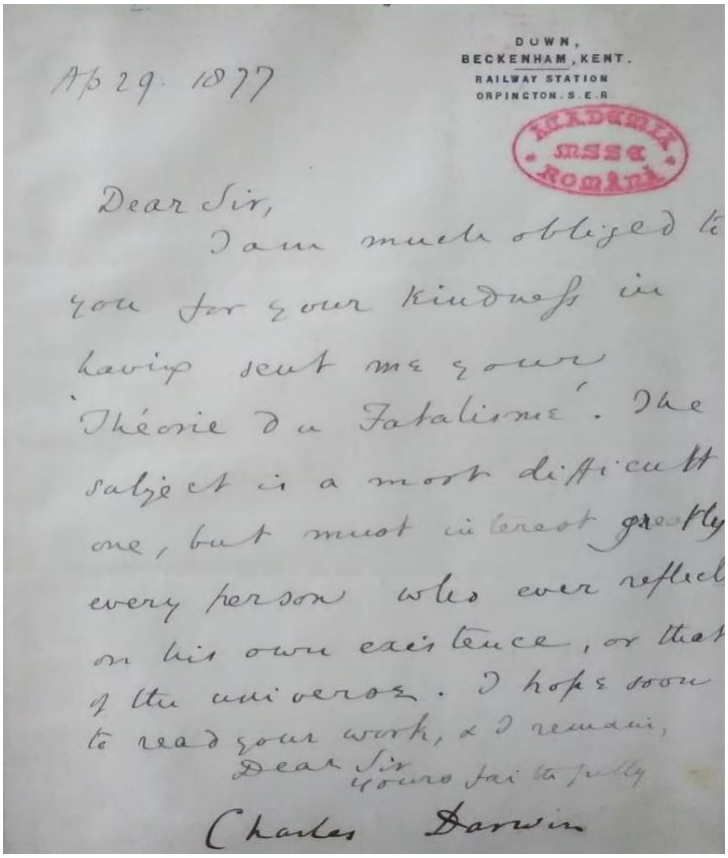
institutions for the training of secondary school teachers. After the Peace Congress of Berlin stipulated political rights for the Romanian Jewish community, Conta shifted his discourse towards biological racism and an aggressive form of anti-semitism. In his view, "based on science, the most important foundations for the existence of the state is that its [citizen] should be of a single people." Moreover, to make himself clear, he continued to insist on ethnic homogenisation, "in other words, the state should be [comprised of] one and the same blood!"[37] Given his racial attitudes and controversial figure, it is still a mystery that he was praised and read by both socialist feminists and members of freethought circles, including New-York-based Jewish Romanian anarchist.

Conta produced his canonical works a few years after returning from his studies abroad. From 1873 onwards, he began to attend the lectures offered by the *Junimea* society, without officially joining their membership. Not surprisingly, his most important works, "The Theory of Fatalism" ("Teoria Fatalismului") (1875), "Universal Undulation Theory" ("Teoria Ondulațiunii Universale") (1877), "Introduction to metaphysics" ("Introduceere in metafizică") (1878) were first published in the journal *Convorbiri Literare*. Conta finally became one of the most read Romanian writers in Western scientific circles.[38]

After the translation of his first essay into French, Conta eventually gained a positive introduction from none other than the leading figure of European materialism, Ludwig Büchner. Conta well understood, both the power of correspondence when it came to overcoming geographical borders and its importance in legitimising and further popularising scientific

Vorbirea Marelui Filosof și Patriot Vasile Conta (Orăștie:Tipografia Libertatea, 1928), 10-12.
Nicolae Leon, *Amintiri* (Iași: Viața Românească, 1922), 122-123, 151.

theories. He began to send his work to important figures such as Otto Liebmann (1840-19120), Eduard Reich (1836-1919), Ernst Haeckel (1834-1919) and, of course, to Charles Darwin, becoming the first Romanian philosopher to receive feedback from the authorities of science. In reply, Emma Darwin assured him, in 1877, that Darwin would "take his time" in order to read his work:



Apr 29. 1877

Dear Sir,
I am much obliged to
you for your kindness in
having sent me your
'Théorie du Fatalisme'. The
subject is a most difficult
one, but must interest greatly
every person who ever reflect
on his own existence, or that
of the universe. I hope soon
to read your work, & I remain,
Dear Sir
Yours faithfully
Charles Darwin

Figure 3.5. Letter from Darwin to Conta

Dear Sir, I am much obliged to you for your kindness in having sent me your "Théorie du Fatalisme." The subject is a most difficult one, but must interest greatly every person who ever reflects on his own existence, or that of the universe. I hope soon to read your work,

I remain, Dear Sir, Yours faithfully, Charles Darwin (Courtesy of the Romanian Academy Library, București, Envelope Vasile Conta, Folder 7, A.2882)

In "The theory of fatalism", Conta began to theorise, in materialist and deterministic terms, the way in which the organisation of the world and the operation of the human brain are highly dependent on both "natural and fatal laws" and on the "organization of matter". In his view, "matter itself" is a continuum of non-directed movement, complying with the "law of universal ondulation" (i.e. his own term expressing evolution), leading to metamorphosis. In other words, his theory, focusing as it did on psychology, aimed to "understand the perfect harmony between the physical, intellectual and moral world." Siding with Büchner's famous dictum that "there is no matter without force and no force without matter," Conta developed his theoretical system in order to explain the false perception characteristics of the spiritualist reasoning of the period, which saw in dualist terms the soul-body question. Attacking with the arguments at his disposal the common perception of the existence of a "free will", he eventually used Darwin's work, *The Expression of Emotion in Man and Animals* (1872), to illustrate how the human brain constructs non-existent images and perceptions.[39]

Conta's second essay, "Universal Undulation Theory", was orientated to the study of several scientific problems by critically reassessing some of the leading works of the time: Ernst Haeckel's, *Natural History of Creation*, Charles Darwin's *Origin of Species* and *The Descent of Man*, Charles Lyell, *Principles of Geology*, and Georges Pouchet's, "La phylogénie celullaire". This ambitious project started while he was still a student with the aim of creating his own holistic

Vasile Conta, "Teoria fatalismului," in *Biblioteca pentru toti* (București: Editura Librăriei Leon Alcalay)

evolutionary theory that could explain the development of the organic world, as well as the growth of nations, and the expansion of the solar system. Borrowing terminology from the natural sciences and physics, Conta's progressive argument proposed that there are different "forms of matter", "evolutionary" and "nonevolutionary", which each obey inflexible laws. In the first instance, "evolutionary forms" can be seen as analogous to an evolutionary semicircle called a "wave" (undă), which grows to a certain extent before falling into extinction. A second "wave" will from at the highest point at which the previous one started to decline in its struggle for life, a movement that obeys what he called the "law of universal undulation."

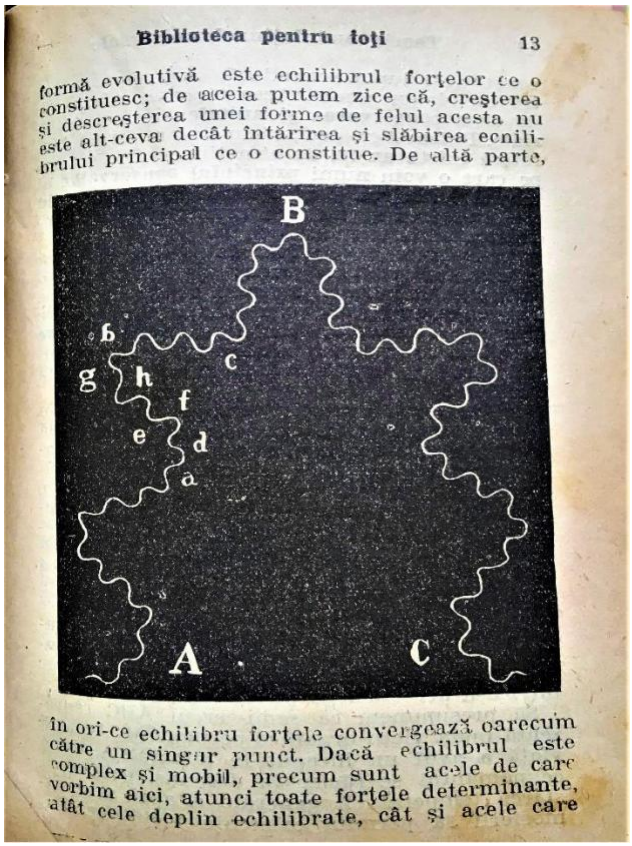


Figure 3.6. Vasiles Conta's sketch explaining his own evolutionary system focusing on "theory of the undulation" published in the most famous editorial popularisation series *Everyone's Library*.

Like any other "skilful" intellectual figure of his time, Conta began by demonstrating his mechanism in action by introducing his predecessors, the German materialists and the Darwinian evolutionists, and then his own contribution to the state of affairs. First, the organic world passes through the same process of "evolutionary undulation", which begins to happen after organic life is created by the action of "spontaneous generation". From that point onwards, the struggle of laws of "adaptation", "heredity", "migration" and "interbreeding" alone will determine the necessary conditions for life to thrive. In other words, the role played by Darwin's "natural selection" was diminished in favour of a Lamarckian view of evolution, but still in opposition to the spiritualist worldview: "if an organic species does not change its habitat, after seizing the corresponding wave of a given habitat, at some point it will perish. However, in order to give birth to a new species, thus continuing the evolution of the organic life on earth, it has to migrate

from time to time."[40]

Following the same line of reasoning, Conta eventually published another essay emphatically entitled "The Origins of Species", continuing from where he left off and dealing at length with Darwin's mechanism of "natural selection". In this account, he organised the material in such a way as to display the differences between evolution seen through "Darwin's system" and his own. In this vein, Conta set in motion the hypothesis whether separate species were created from a specific germ by "God Almighty" or were the result of slow "transformation" from one species to another. In terms of the last of his triumvirate of works, he further explained what he approved of Darwinism:

Vasile Conta, "Teoria ondulațiunii universale," in *Biblioteca pentru toti* (București: Editura Librăriei Leon Alcalay)

> 1. Our whole experience proves that nature does not make jumps, every transformation of matter is the accumulation of a series of slow changes […]; 2. Palaeontology has shown that the first organic beings which appeared on the earth were simple and imperfect, and with the passage of time more complex organisms gradually succeeded […]; 3. Human embryological development resembles the recapitulation of all organic beings which successively appeared during the geological period […]; 4. The existence of rudimentary or atrophied organs is explicable only if we accept […] that these organs have been atrophied due to lack of use […] Thus, humans descend from certain ancestors which had a moving tail; 5. […] It is probable that during thousands of centuries, varieties of certain species become themselves new species different from one another […]; 6. There is no doubt that from one language new divergent languages might be born […].[41]

Up to a certain point Conta's position was in agreement with Darwin's view that in nature there are no leaps and that humans descended from monkeys. However, when it came to countering Darwin's arguments, Conta believed that "the variation of species can be explained without Darwin's natural selection."[42] In the same way, "natural selection is nothing else than the law of the extinction of organic beings, which has almost no power to [explain] future organic modifications," it being the case that "the struggle for existence has no other effect than establishing the number of beings that live in a certain habitat."[43]

Vasile Conta, "Originea Speciilor (Teoria Ondulatiunii Universale, Partea II)," in *Biblioteca pentru toti* (București: Editura Librăriei Leon Alcalay, s.a.), 6-8.

Ibid., 59.

Ibid., 28,50.

In the end, Vasile Conta's radical synthesis tried to give evolutionary theory a universal application, one that went beyond the explanation of the natural world. In his words, "the formation, unification and consolidation of certain species is determined by emigration and the fecundity of interbreeding", a process which can be explained without the mechanism of natural selection. Nevertheless, his legacy in Romanian culture opened a new way of reasoning, one giving rise to evolutionary worldviews that can be discerned in a plethora of emerging intellectuals from the late 1870s onwards. To some extent, Conta's arguments critical of spiritual ways of thinking cleared the way for the coming of biological racism, anti-Semitism and for radical bodies of knowledge, explicitly anticlerical, known as the free-thought movement. Their latter's militant advocacy for the reorganisation of society on scientific principles, and their conflict with established naturalists and Orthodox religious circles will be analysed in a separate section.

3.3. Romanian Physicians and non-Darwinian theories of evolution

Several Romanian physicians such as Iuliu Barasch (1815-1853), Pavel Vasici Ungureanu (1806-1881), Victor Babeș (1854-1926), Gheorghe Marinescu (1863-1938), and Constantin Parhon (1874-1869) contributed to various interpretations of Darwinism during the second part of the nineteenth century and the beginning of the twentieth century.[44] One of the first thorough translations of Charles Darwin into Romanian was made by George Angelescu (1843-?) in 1879.

For more details on Romanian physicians and Darwinism, see Chapter 4, "De la evolutionism la eugenism. Darwin și medicina românească" in Octavian Buda, *Identitate națională și medicină socială: antropologie culturală, psihiatrie și eugenism în România: 1800-1945* (București: Muzeul Național Al Literaturii Române, 2013), 112-165; Octavian Buda, "Darwin și domnii doctori. Evoluționismul și gândirea biomedicală din România – doctrine, concepții, controverse," *Lettre Internationale. Ediția Română*, Nr. 91 (2014): 65-68.

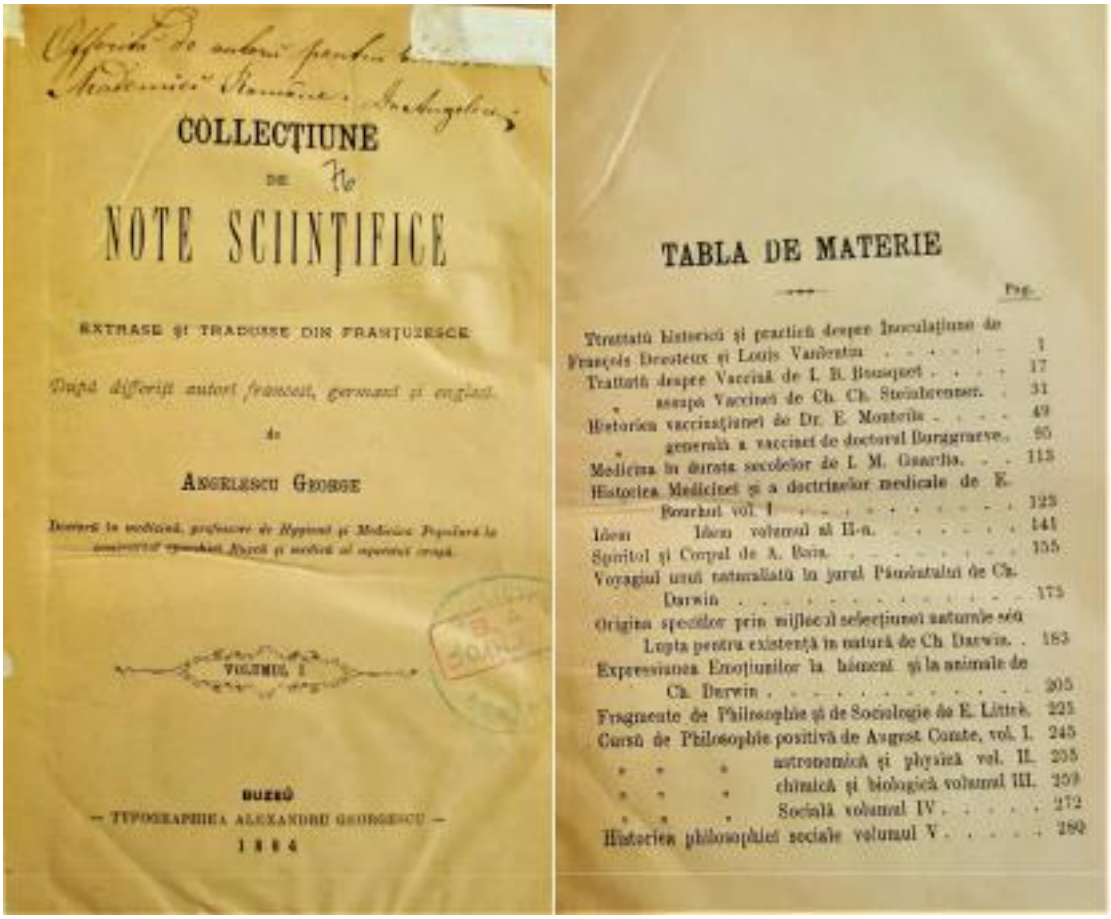
Born in Mărgineni, Neamț County, he graduated from the Medical Faculty in Torino and completed his doctoral dissertation in 1869 in Paris. After his return to Romania, he became the official physician of Buzău, where he also taught hygiene and popular medicine at the local Orthodox Seminar.[45] His notes, published in 1884, included translations from various French and British naturalists including Alfred Russel Wallace, Charles Lyell, Charles Darwin, Isidore Geoffroy St. Hillaire and some of the positivist intellectuals, Auguste Comte and Émile Littré.

Angelescu's volume, *Collection of scientific notes, translated and extracted from French* (*Colecțiune de note sciințifice extrase și tradusse din franțuzesce*) aimed "to communicate ideas" to the general public, with a special focus on evolutionist and positivist authors. His initial plan was not to publish his manuscripts; however, as time passed and the pile of notes grew, the only way to put them in order was by printing them. The volume also included his private correspondence with his friend, the physician Nicolae Garoflid (1845-1900), who remarked at one point that he had never read such a great work. Nevertheless, both Angelescu and Garoflid believed in the educational tenets of science popularisation and its practical use for students, professors and anyone who would like to know more about scientific issues.[46] Within the pages of just one volume, numerous passages were selected from Darwin's *Voyage*, *Origins of Species*, *The Expression of Emotions in Man and Animals*, *The Descent of Man and Selections in Relation to Sex*, vols. 1-2, and *The Variation of Animals and Plants under Domestication*, vols. 1-2. Finally, the significance of Angelescu's effort was that it offered, for the first time in Romania, a selection

Gabriel Cocora, *Seminarul teologic din Buză la împlinirea a o sută cincezi de ani* (Buzău: Editura Episcopiei Buzăului, 1988), 217.

George Angelescu, *Collectiune de note sciintifice extrase si tradusse din franțuzesce*, Vol . 1 (Buzău: Tipografia Alexandru Georgescu, 1884), III-VII.

of Darwin's writings, which partly filled the gap in the translations from the extant works on evolution.



COLLECTIUNE
DE
NOTE SCIINȚIFICE

EXTRASE ȘI TRADUSE DIN FRANȚUZESCE

După diferiți autori francezi, germani și englezi

de

ANGELESCU GEORGE

VOLUMUL I

BUZĂU
— TIPOGRAFIILE ALEXANDRU GEORGESCU —
1884

TABLA DE MATERIE

Figure 3.7. The front cover of George Angelecu's *Collection of scientific notes* (1884), one of the first attempts to translate Charles Darwin's works in Romania

Of the other evolutionary physicians, the microbiologist and bacteriologist, Victor Babeș (1854-1926) put forward a "non-Darwinian" explanation of the evolution of organic species. Born in Vienna, Babeș graduated from the city's famous medical faculty in 1878. As a member of the Romanian student association in Vienna he delivered two popular lectures in 1874 at their

monthly gatherings, focusing on the relation between natural science and spiritualism.[47] During the same period, he moved to Budapest and worked for seven years as an assistant at the Laboratory of Pathological Anatomy. Soon afterwards, he went to Munich, Heidelberg, Strasbourg, Paris and Berlin, working with recognised scientific figures such as Rudolf Virchow (1821-1902), Louis Pasteur (1822-1895) and Robert Koch (1843-1910). Some time around 1887, after a fight with Pasteur and at the invitation of the Romanian Government facilitated by Constantin Istrati, he relocated to Bucharest and was asked to reorganise the Institute of Bacteriology and Pathology in Romania.[48]

Figure 3.8. Victor Babeș (1854-1926) as the physician in charge of the bacteriology laboratory of Bucharest. Courtesy of Romanian Academy Library, Bucharest

Ion Gramada, *Romania Juna din Viena (1871-1911). Monografie Istorică* (Arad: Tipografia Concordia 1912), 142.

Simion Ghiță, "Din istoria biologiei generale in România," in Nicolae Botnariuc, *Din Istoria Biologiei Generale* (București: Editura Științifică, 1961), 525.

Together with the French pathologist André-Victor Cornil (1837-1908), he wrote the first treatise on bacteriology, *Bacteria and their role in the anatomy and pathological histology of contagious diseases* (*Les Bactéries et leur role dans l'étiologie, l'anatomie et l'histologie pathologiques*) (1885), for which they received the Prix Montyon from the Paris Academy (1886). In addition to the discovery of the "intra-erythrocyte parasite" in the blood of cattle and sheep, Babeș discovered more than 50 new germs, one of which, *Babesia*, was named after him. He also identified microbes in the cells of animal brains afflicted with rabies, which were termed "Babeș Negri bodies". As he conducted research in Pasteur's laboratory, he unsuccessfully struggled to convince his mentor to dispense anti-rabies treatment to other major European medical centres. Due to his elaborate scientific research, Babeș became known as "the second rabiologist in the world", after Louis Pasteur.[49] Once in Romania, as Călin Cotoi has shown, he became involved in the anticontagionist and contagionist medical debates, eventually replacing Iacob Felix's medical police with his own bacteriological research in fighting the advancement of cholera.[50]

In terms of Babeș's neo-Lamarckian evolutionary views, he published as a young researcher a study in the Romanian journal, *The Scientific Review*, reasoning that "life emerged from inorganic matter, only when the environment was favorable and according to natural laws,

> organisms gradually evolved, starting from inferior forms and culminating with the appearance of humans."[51] In other articles, and contrary to Louis Pasteur and Robert Koch, Babeș tried to demonstrate that bacteria are constantly transforming and develop due to variation and

Simon Ghiță, Ibid., 525-526; Anand KP, Anand A, and Kashyap AS, "Dr. Victor Babes, Discoverer of Babesia," *Journal of the association of physicians of India* Vol. 63, No.3 (2015): 80-81.

See chapter five "Victor Babeș and the Cultures of Bacteriology" in Călin Cotoi, op. cit., 121-150.

Victor Babes, "Considerațiuni asupra raportului științelor naturale către filozofie," *Revista Sciintifică* (1879): 150.

so-called "vital competition".[52] Paradoxically, when delivering his reception speech at the Romanian Academy in 1895, after several experiments on serotherapy, he declared that the Pasteurian "lutte pour la vie" plays a crucial role in the body functions that fight against the bacteria, further straightening animals' immunity system.[53] Also as a dedicated mutationist, in one of the most acclaimed lectures that he delivered at the Romanian Academy in 1903, he explained that according to research conducted at the congenital level of humans, different anomalies were inherited by their offspring.

Furthermore, Babeș was eager to prove that certain predispositions to anomalies can be harmful, while others are useful only if the parents passed through infectious diseases, creating a higher resistance to various illnesses. More importantly, he stood against the slow motion of Darwinian evolution, while still anxious to demonstrate a progressive evolutionary view towards perfection. He gave examples of various anomalies existing in nature:

> There is an old idea that species develop to a certain degree of perfection, in that the individual, through the struggle for existence, will replace organs poorly developed with other organs grown in the struggle. Indeed, several authors (e.g. Lamarck, Darwin, Haeckel, and Karl Vogt) have explained the development of humans from inferior forms, emphasising the principle of slow transformation through selection. Although the conceptions of some of these authors have not been fully demonstrated, in general, the

Simion Ghiță, op.cit., 527.

Victor Babeș, "Despre transmiterea proprietăților imunizate prin sângele animalelor imunizate," in *Discursuri de recepție* Vol. III (1894-1906) (București: Editura Academiei Române, 2005), 289-311.

development of species in Darwinian terms can be accepted with some reservations, […].[54]

Accordingly, Babeș set out to analyse various peculiarities of foetuses by discussing Darwin's concept of "correlation of growth", the "recapitulation theory" and Hugo De Vries (1848-1935) mutations solely to demonstrate his view of species transformation. De Vries was a "saltationist", that is he argued that distinct species were not formed gradually by natural selection, but were created instantaneously in "leaps". Similarly, De Vries claimed that there "were positive mutations which produced new characters, and assumed that all species underwent occasional bouts of rapid mutation when they threw off numerous new varieties in this way."[55] For Babeș, however, mutations could also develop in the opposite direction:

> Consider this foetus, which has a tail, in other words an anomaly, a monstrosity which prevents the development of its face and brain, and which has produced an extraordinary development of all its extremities, including growing a tail. There is no doubt that, due to the congenital anomaly of its face, the new change has entirely transformed [the body].
>
> In other cases, due to a sclerosis causing a lack of facial development, the hands and legs are extremely developed, resembling the anthropoid monkeys with six supplementary fingers. We only have to compare the hand of a chimpanzee and a gorilla with this hand to appreciate the similarity.[56]

Victor Babeș, *Anomaliile congenitale, predispoșițiunea și caracterele de specie* (Bucuresci: Inst. De Arte Grafice ,,Carol Gobl", 1904), 6.

Peter Bowler, op. cit, 269.

Victor Babes, op.cit, 7.

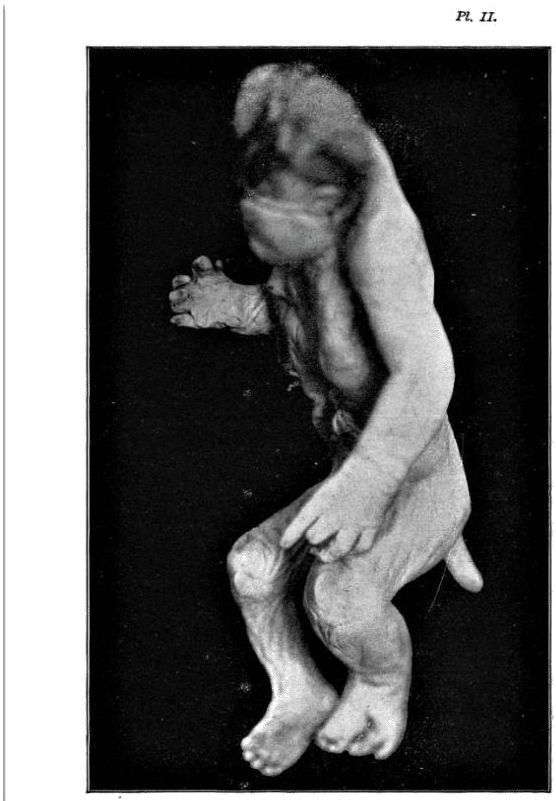


Figure 3.9. Using Roentgen rays Victor Babeș set out to prove the transformation of species through the occurrence of various foetus anomalies.[57]

Finally, after addressing Darwin's own reluctance to further consider the importance of "correlation of growth" and "monstrosities" in the process of gradual organic development, Babeș proposed a non-adaptive view of directed evolution, which echoed the emerging eugenic theories at the time:

> The development of races and species can indeed occur through profound anomalies. At a certain point, the occurrence of anomalies will influence the degree of perfection of

[57] Victor Babeș, Ibid., 20.

brain qualities. As I have shown, anomalies in the extremities can influence brain development, that is, when the parts of the brain are related to these extremities. Following this line of reasoning, we can admit the development of a superior being, which through his intellectual power, can change our conceptions and enlarge our circle of knowledge. We have to admit an individual selection, limited to one or a few individuals. I would declare that the development of perfect races and species could be carried out in an abrupt way, according to an aristocratic principle, and not in the way Darwin thought

[...].[58]

Another Romanian physician who embraced a "non-Darwinian" evolutionary system and was involved in the institutionalisation of Romanian eugenics was Gheorghe Marinescu (1863-1938). Born in a slum of Bucharest, he eventually enrolled at the local Faculty of Medicine in 1882. After working as Babeș's assistant at the Institute of Pathology and Bacteriology, Marinescu was sent to Paris in 1889 to specialise in neuropathology under the supervision of the French neurologist Jean Martin Charcot (1825-1893). Between 1891 and 1896, he travelled to Germany and worked with such prominent pathologists as Karl Weigert (1845-1904), Emil du Bois Raymond (1872-1929) and Émile van Ermengem (1851-1922), and adopted the medical use of microphotography. After obtaining his doctorate in medicine in 1897, Marinescu returned to Bucharest where he subsequently became Director of the Neurological Clinic at "Pantelimon" Hospital, then Professor at the Neurological Clinic of the Faculty of Medicine in 1898 and a corresponding member of the Romanian Academy in 1906 and of the French Academy of

[58] Ibid., 10.

Medicine in 1912.[59] Marinescu was internationally renowned for several scientific accomplishments in the fields of neuropathology. In 1898, he documented the relation between human locomotion and mental illness, in a short film entitled *Walking Difficulties in Organic Hemiplegia* (*Tulburări ale mersului în hemiplegia organică*) considered the first medical documentary on the topic.[60]

As Marius Turda recognises, Marinescu was the first Romanian physician to apply the methods of histology and histopathology to neurology. He applied ultramicroscopy, which was used in the colloidal theory of neuron structure, and made daring medical experiments, such as transplants and cultures of nervous tissue. Using the "backward degeneration method" he also discovered the location of nerve formations, such as the nucleus of the pneumogastric and facial nerves. Finally, he was among the first neurologists in the world to use the "encephalographic method" and the "conditioned reflexes method" in diagnosing hysteria, epilepsy, aphasia and neurosis. Certain neurological lesions, such as "Marinescu's hand" and congenital disorders such as, for instance, "Marinescu's syndrome" were named after him.[61] Turda also notes the fact that Marinescu engaged with eugenics and racial hygiene as early as 1906, as shown in his acceptance speech to the Romanian Academy, published as *Progress and Directions of Modern Medicine* (*Progresele și tendințele medicinei moderne*).[62]

Simion Ghiță, op.cit, 531-532.

Gheorghe Marinescu was certainly not the first physician to use motion pictures for scientific purposes; however, he was a member of the first generation to do so. For more details, see Scott Curtis, *The Shape of Spectatorship: Art, Science and Early Cinema in Germany* (New York: Columbia University Press, 2015), 103.

Marius Turda (ed.), *The History of East-Central European Eugenics, 1900-1945: Sources and Commentaries* (London and New York: Bloomsbury, 2015) 313.

Ibid., 313.

However, one year earlier, in 1905, Marinescu gave another lecture at the Romanian Academy, entitled "Writing, its disorders and graphology" ("Scrierea, turburările ei și grafologia"), which he published in the *Official Monitor* of Romania. In this text, he tried to demonstrate that "various nervous states modify [hand] writing style, while these modifications permit the diagnosis of [mental] illnesses."[63] According to Marinescu's study, writing not only indicated gender, but also social class and nationality, and this he claimed was a "scientific" observation. In the writing of hasty persons, he argued, "the last letter is missing […], as when ideas come so quickly that, graphical signs cannot follow them; this can be observed in Darwin's hand writing, when he wrote the beautiful theory of evolution."[64]

If Victor Babeș spoke of the development of "perfect races" based on a directed evolution process, Gheorghe Marinescu was eager to take the eugenic credo to a more "practical" and institutional level. In his speech, Marinescu emphatically maintained that Darwin's theory of evolution through natural selection might be the solution for the racial betterment of humanity:

> Another tendency of modern medicine is reflected in the important studies regarding the system of improving the human races and the biology of the races. The [scientific] revolution which Darwin's selection theory has produced in our knowledge is well known. Based on the system of natural evolution and heredity, the new schools inaugurated by H. Büchner in 1895 and Ploetz in 1896 insist not on carrying individual hygiene, but racial hygiene. Ploetz, in particular, has proposed a system of human racial amelioration, based

Gheorghe Marinescu, "Scrierea, turburările ei și grafologia," *Monitorul Oficial* No. 259 (1905): 9714.
Ibid., 9715.

on the knowledge of procreation, excluding the weak, and voluntary regulation of the number of children; hence, the weak should receive only nurturing, but not medical nursing.[65]

Marinescu revealed his eugenicist view, which aimed to achieve what he called a "humanitarian goal". Nevertheless, as he further acknowledged, the implementation of such a detailed plan was not only the result of scientific work but relied also on political and intellectual support, claiming that "these beautiful humanitarian studies are at their beginning; [however,] there is no doubt that they will fix the optimal conditions to maintain and develop the different races, and eventually humanity itself".[66]

As for Marinescu's other "non-Darwinian" views, these were put forward in 1910, specifically in an article entitled "Matter, Life and Cell" ("Materie, Viață și Celulă") published in the magazine of *Romanian Life* (*Viața Românească*). In this text, he noted that the enigma of life had been solved mainly thanks to the work of Lamarck, Darwin, and Pasteur, but also to the principle established by Gustave le Bon's idea of "black light" or "atomic disintegration".[67]

Gheorghe Marinescu, "Progresele și tendințele medicinei moderne" in *Academia Română Discursuri de Recepție* Vol. III (1894-1906) (București: Editura Academiei Române, 2005), 592-593

Ibid., 593.

Gheorghe Marinescu, "Materie, Viață și Celulă," *Viața Românească* Anul IX, No.6 (1914): 251-245; Mary Jo Nye, "Gustave LeBon's Black Light: A Study in Physics and Philosophy in France at the Turn of the Century," *Historical Studies in the Physical Sciences*, Vol. 4 (1974): 163-195.

Chapter 4. Darwinism for the People

"Based on science and only on science, we will always be faithful to our creed: *Everything according to science and for the Romanian Peasant*!''[1]

Introduction

Around the 1870s, the landscape of Romanian science popularisation took a radical shift towards the transformation of the orthodox scientific enterprise. The, the local scientific culture witnessed the emergence of an anarchist tradition of communicating science, one which influenced the circulation of knowledge by putting great emphasis on accessibility and original research. Historically speaking, the practice of science popularisation and anarchism were both strongly rooted in Enlightenment philosophy, in which natural science stood as an important pillar. As Álvaro Giron Sierra and Jorge Molero-Mesa have shown, anarchists perceived science as a collective accumulation of facts and observations that a few privileged representatives of the upper class withheld from the populace through the establishment of academic institutions. In their pursuit of cultural propaganda, their anarchist ambition was clear: knowledge was power; therefore, science should be available to all, regardless of social status, gender or intellectual capacities.[2]

The manifesto published by the Romanian anarchist editorial board of the magazine *România Viitoare* in 1880. Redacția, "Către Cetitorii Noștri," *România Viitoare*, No.1 (1880): 3-4.

Álvaro Giron Sierra and Jorge Molero-Mesa, ''The Rose of Fire: Anarchist culture, urban spaces and management of scientific knowledge in a divided city',' in Oliver Hochadel and Agustí Nieto-Galan (eds.), *Barcelona An urban history of science and modernity, 1888–1929*, (Abingdon: Routledge, 2016), 119.

Meanwhile, networks comprising foreign and Romanian libertarian physicians, teachers and editors were convinced that science and education promised the emancipation of the peasants, women and urban workers alike from the misery and inequalities of modern daily life. Alongside their revolutionary aim of a society freed from religious and political authority, their movement appealed equally to the natural sciences to accomplish this quest. Moreover, anarchist readings and diffusion of Darwinism occurred in accordance with contextual debates, either as a materialist weapon against religious dogmatism, or as a reply to the narratives of Romanian conservatives and liberals who justified social and gender inequalities.

While opposing Romanian official academic discourse, the relationship between science and anarchism sought individual emancipation, women's liberation, and at the same time as their popularisation literature managed to yield alternative printing platforms, the construction of a "scientific counter public sphere".[3] When the anarchist commitment to the social cause went beyond the ordinary, their activities were frequently met with state opposition, leading to the imprisonment or expulsion of those considered dangerous to public opinion. Exiled and arrested several times, their residences frequently put under surveillance, they were suspended from their teaching positions for their radical ideas.

From a political point of view, the scientific argumentation of Romanian libertarians mirrored the views of the famous anarchist, Mikhail Bakunin (1814-1876), who emphasised "the

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The term is an extension of what Nancy Fraser coined as "subaltern counterpublics formed under conditions of dominance and subordination". See Nancy Fraser, "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy," *Social Text*, 25/26 (1990): 70. Following the same framework, amongst the first to recognise the discourse and practice of anarchism as "counterpublics" by analysing the political activity of Emma Goldman and Alexander Berkman, is the work of Kathy Ferguson, "Anarchist Counterpublics," *New Political Science*, Vol.32, No.2, (2010): 193-214; David J. Hess, "To tell the truth: on scientific counterpublics," *Public Understanding of Science*, Vol 20, Issue 5 (2011): 627-641

absolute authority of science", but rejected "the infallibility and universality of the savant". In his view there should be a "revolt against the government of science" and against its "popes".[4] Where evolution was concerned, Romanian libertarian scientific texts were either influenced by Charles Darwin's writings (and occasionally by those of Jean-Baptiste Lamarck and Ernst Haeckel) or by texts authored by French and Russian anarchists. By the end of the century, their arguments were in line with the views of the evolutionary anarchist Piotr Kropotkin (1842-1921), who recognised that, contrary to the Malthusian struggle accepted by Darwin, mutual aid and solidarity were important factors in explaining the process of species evolution.[5] As Alexander Vucinich has clearly observed, "Kropotkin did not reject the struggle for existence as an evolutionary mechanism; what he rejected was Darwin's choice of conflict, rather than of cooperation, as the primary mode of the struggle for existence."[6] In his own words, Kropotkin insisted that the philosophy of "anarchy proved to be in accordance with the conclusions arrived at by the philosophy of evolution." Therefore, he stressed:

> The "struggle for existence" must be conceived, not merely in its restricted sense of a struggle between individuals for the means of subsistence, but in its wider sense of adaptation of all individuals […] to the best conditions for the survival of the species, as well as for the greatest possible sum of life and happiness for each and all […].[7]

Michael Bakunin, *God and the State* (New York: Dover Publications Inc., 1970), 34; 56-60.

See, for example, Peter Kropotkin, *Mutual Aid: A factor of evolution* (New York: Dover Publications, 2006).

Alexander Vucinich, *Darwin in Russian Thought* (Berkeley: University of California Press, 1989), 349.

Peter Kropotkin, "The Scientific Basis of Anarchy" in A.R. Parson (ed.), *Anarchism: Its Philosophy and Scientific Basis* (Chicago: A.R. Parsons, 1887), 115-116.

4.1. Romanian Anarchism and its struggles for scientific accessibility

Revolutionary ideas in the Romanian Principalities had their origins long before the second half of the nineteenth century. As early as 1835, Teodor Diamant (1810-1841), following the ideas of Charles Fourier (1772-1837), put into practice the Phalanstery at Scăieni.[8] Before and after the 1848 Revolutions, many intellectuals debating the emancipation of the Romanian peasants, the abolition of slavery and the restructuring of land ownership had at least managed to build a revolutionary vocabulary, filling what Călin Cotoi has called the "empty signifier of communism".[9] However, a radical movement to fully articulate a coherent revolutionary discourse only came into existence in the 1870s, when numerous exiled members of the Russian Narodnik movement and Bulgarian anarchists became established in Romania.[10]

Far from being an isolated movement based in the European semi-periphery, their transnational activity was related to the exiled Russian Narodniks and nihilists, who initially gathered in several self-organised clandestine medical student groups. One of these groups was the Tchaikovsky circle, created in 1869 by Mark Natanson (1850-1919) around medical students in St Petersburg and shortly after reorganised by Nikolai Tchaikovsky (1851-1926). Distancing themselves from the conspiratorial, terrorist group led by Sergei Nechaev (1847-1882), the Tchaikovsky circle also adopted a "far more radical tinge […] as they moved from distributing legal texts to funding an illegal press and propagandising directly among workers and peasant

Adrian Dohotaru, "Falansterul de la Scăieni și proiectul unei lumi mai armonioase," *Anuarul Institutului de Istorie «G. Bariţiu»*, Tom L, (2011): 127-140 ; Idem, *Socialiștii. O moștenire (1835-1921)* (Chișinău: Editura Cartier), 390-416.

Călin Cotoi, *Inventing the Social in Romania, 1848-1914: Networks and Laboratories of Knowledge* (Leiden: Verlag Ferdinand Schöningh, 2020), 37.

Călin Cotoi, "Națiune Societate și Anarhism în România Fin-de-Si ècle," *Revista de Științe Politice și Relații Internaționale*, Vol. XI, Nr. 2, (2014): 25-26.

across European Russia."[11] As John Gamblin illustrates, their tactics and propaganda were similar to those adopted by Western radical revolutionaries, emphasising that, "like the anarchists they looked to the poor and oppressed generally and assigned no special role to the workers. Furthermore, they largely rejected politics and political struggle until late in the 1870s, and some adopted the anarchist programme of insurrectionism, although these were for now a minority." In terms of political organisation, "the circles they organised were of an informal and non-hierarchical nature; in reply to the ideas of Nechaev this became a conscious effort in order to repudiate any attempts at "Jesuitism"."[12]

After the Narodnik movement evidenced its popularity and managed to shake the imperial power of the Tsar, the Russian authorities launched several series of arrests that sent the movement's members to prison. Those who managed to escape moved to Zürich where they encountered Mikhail Bakunin and formed what Jan Meijer identified as a "Russian colony of no more than 300 students".[13] Another contingent of these émigrés ended up in Romania, amongst the first of whom was Nicolae Zubcu Codreanu (1852-1878). Born in Nisporeni (near Chișinău), Codreanu began his education in theology, and shortly after he enrolled in medical studies at St. Petersburg University where he was involved both in the "going to the people movement" and in organising the local student communes. An active member of the Tchaikovsky circle, he

Graham John Gamblin, *Russian Populism and its Relations with Anarchism, 1870-1881* (Ph.D. Diss., University of Birmingham, 1999), 41.

Ibid., 41.

Jan M. Meijer, *The Russian colony in Zurich (1870-1873) A Contribution to the Study of Russian Populism* (Assen: Van Gorcum, 1955).

returned to Bessarabia where he was involved with smuggling banned literature into Russia and with propaganda in the urban and rural areas.[14]

When it came to science popularisation in rural areas, the Narodnik ideology of "going to the people" went hand in hand with scientific dissemination. This practice did not only involve a physical move by some intellectuals from urban places to the villages, but an organic transformation of their own way of living, side by side with the peasant. According to Codreanu's biographical notes, published by the anarchist Zamfir C. Arbore (1848-1933), when he returned after his medical studies to Bessarabia, "[Codreanu moved] in the midst of the working people, and jointly worked in the fields, while sharing with the peasant his ideas and beliefs, […], he enlightened and strengthened the [peasant] with the hope of redemption from their duties, from oppression, tyranny, and vain superstitions […]."[15]

Zamfir Arbure, *O pagină din socialismul român. Viața și activitatea lui Nicolae Zubcu Codreanu* (București, 1880), 5-13.
Ibid., 14.

Figure 4.1. Portrait of the Narodnik physician Nicolae Codreanu[16]

Nicolae Codreanu became the target of the Russian Tsarist secret police, and eventually ended up in Romania. Graduating from the medical faculty at Bucharest, he started to organise the local medical students, establishing with Constantin Dobrogeanu-Gherea (1855-1920) the Society for Culture and Solidarity among Students which lasted one year before the metropolitan police shut it down in 1877. Meanwhile, he obtained a licence to practise medicine and moved again as a rural physician to the county of Tutova in 1876 and Costești in 1877. During the Russo-Turkish War of Independence (1877), Codreanu volunteered in the military medical service, for which he was decorated with the military order of the Romanian Star.[17]

From Stelian Neagoe, *Nicolae Codreanu* (București: Editura Politică 1970)

Tiberiu Avramescu, *Amintiri literare despre vechea mișcare socialistă (1870-1900)* (București: Editura Minerva, 1975), 41.

On his arrival in Romania, Codreanu was astonished that the academic staff of the Medical Faculty were unaware of scientific knowledge, further claiming that "the question of all questions" was "unknown to the honest and wise people", while "the young were not even preoccupied with science".[18] Keeping a close correspondence with other exiled Narodniks such as Nicolae Russel (Nikolai Sudzilovsky, 1850-1930) and Zamfir C. Arbore (1848-1933), Codreanu contributed to important Russian revolutionary journals like *Vperiod* and *Obschina*, and with the French anarchist journal *Le Travailleur*. Throughout his articles and letters dealing with social medicine, he addressed mostly the hygienic conditions and penury of the Romanian rural population.[19]

Codreanu's opinion on the relationship between science and anarchism was also made clear in his correspondence. He asserted that institutions such as "the state, religion and family" had to be abolished by any and all means. As for the scientific enterprise, Codreanu argued that in the "capitalist economy", scientists and discoverers earned more profit than the workers did. Against this state of affairs, he explained that "the scientist is indebted to the society within which he lives; […] the educated should not forget that science was developed on the back of the lay people."[20] When preparing his doctoral dissertation in Bucharest, Nicolae Codreanu found himself again under surveillance by the Russian police. Fleeing for protection to his comrade Nicolae Russel at Curtea de Argeș, Codreanu died of pulmonary congestion. Still, even his dead

Zamfir Arbure, *O pagină din socialismul român. Viața și activitatea lui Nicolae Zubcu Codreanu* (București, 1880),

Anca Mândru, *"Socialism of Sentiment": Culture, Progress and Community in the early Romanian Left 1870-1914* (Ph.D. diss., University of Illinois, 2018) 188-189; Zamfir Arbure, op.cit., 21.

Zamfir Arbure, Ibid., 40-41.

body was seen as threatening to the Romanian public opinion, as his will requested a non-religious burial.[21]

Regardless of the country in which the anarchists were based, one of their most crucial activities was establishing their own printing platforms where science and social issues were continuously addressed. As Kathy Ferguson accurately observes, "the role of the printer was respected, even revered, within anarchist publics. Regardless of their professed atheism, anarchists were people of the book." Similarly, Ferguson observes that "the printers' labours sometimes resembled a guerrilla war on hegemony; outnumbered and on the run, they fired back their volleys of words and evaded capture in order to carry on again tomorrow."[22]

The smuggling of illegal Western literature into Russia in the years 1874-1876 was accomplished through several Romanian border points. One of the routes was the crossing point located in the north of Moldavia near Sculeni, where the local Jewish pub played a strategic role. The second was based in the city of Galați. In his autobiography, the nihilist Zamfir C. Abore remembers crossing both border points with flying colours. Urged by Russian revolutionaries to help with printing materials, he successfully managed to smuggle various boxes of printing fonts, thousands of books, science pamphlets — all while under the surveillance of Russian spies. Also worth mentioning is Arbore's plan to ship a printing press to the city of Reni in the Odessa district. To do this, one of his comrades made arrangements with the landed gentry, to receive two containers of harvesting machinery from Romania. Back in Galați, agricultural and printing

Ibid., 27. See Maria Totu, "Aspecte ale luptei pentru gândirea ateistă din România în anii 1879-1880," *Analele Universității București: Seria Istorie*, Vol. 26 (1962): 102-103.

Kathy Ferguson, "Anarchist Counterpublics," *New Political Science*, Vol.32, No.2, (2010): 205.

machines were disassembled and put together in one package, safely passing through the border patrols.[23]

As previously mentioned, Nicolae Codreanu was not alone in his quest to disseminate science and anarchism within and across Romanian borders. Various clusters of native and exiled revolutionaries based in Romanian urban centres were also involved in smuggling books, establishing periodical journals, or translating banned literature. Hence, well before their arrival in Romania, periodical journals printed by the working-class associations first appeared in 1865. Hence, the journal *The Romanian Typographer* (*Tipograful Român*) was edited by the Professional Association of Print Workers and *The Romanian Worker* (*Lucrătorul Român*) was published by the General Association of Romanian Workers. However, the first self-declared socialist journal was launched in Bucharest on 26 May 1877 by the Narodnik Nicolae Zubcu Codreanu and the poet Nicolae Demestrecu Saphir (1847-1883). Entitled *The Socialist* (*Socialistul*) their newspaper ran for a few months, only to be shut down by order of the liberal prime minster

Ion C. Brătianu (1821-1891).[24]

The first Romanian Narodnik journal to include science popularisation was distinguished by contributions from anarchist Nikolai Konstantinovici Sudzilovski (1850-1930), known as 'Doctor Russel'. Born in the city of Mogilev in the Russian Empire, he pursued his studies first as a law student at St Petersburg University (1868) where he participated in the local student movements in 1868-1869. From there he switched to medicine at the University of Kiev, where

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Zamfir C. Abore, *În exil. Din Amintirile Mele* (Craiova: Institutul de Editură Ralian și Ignat Samitca, 1896), 188-202, 420-423.

Alexandru Hanță, *Comtemporanul 1881-1891: O revistă așa cum a fost* (București: Editura Albatros, 1983), 21-22. Another journal worth mentioning is, *Uvrierul* printed in 1872.

he was involved in the reorganisation of the Tchaikovsky circle and in the Grand Propaganda Society (Bolshoye obshchestvo propagandy) which arose in response to Sergei Necheaev's terrorist organisation. In 1874, Russel was also part of the "going to the people movement" in the regions of Kherson and Nikolayev, carrying on propaganda and working amongst the peasants.[25] In 1873, he travelled to both Zürich and Geneva and met the two opposed revolutionary figures who coordinated the movement from exile — Mikhail Bakunin and Piotr Lavrov — declaring afterwards that was "an anarchist follower of Bakunin".[26]

Figure 4.2. Portrait of the Narodnik physician Nikolai Konstantinovici Sudzilovski (1850-1930), known as 'Doctor Russel'[27]

Călin Cotoi, op.cit, 46.

Frederick F. Travis, "The Kennan-Russel Anti-Tsarist Propaganda Campaign among Russian Prisoners of War in Japan, 1904-1905," *Russian Review*, Vol. 40, No. 3 (1981): 269.

More details in https://prabook.com/web/nikolai_konstantinovich.sudzilovsky/1121541 (last accessed September 2020)

After the Russian authorities began the famous "Trial of the 193", and prohibited revolutionary agitation and propaganda, Russel found himself on the "most wanted list" of the Russian police. Escaping to London in 1874, he worked for a short period at St. George's Hospital and shared various speaking platforms with Karl Marx and Friedrich Engels.[28] He eventually arrived in Romania in 1875, where he received a medical degree and adopted the pseudonym Russel to escape the attention of Russian police.[29] His political activity in the Romanian Principalities would last until 1881, when an attempted celebration marking ten years since the Paris Commune coincided with the assassination of Alexander II by the members of *The People's Freedom* (*Narodnaya Volya*), leading to series of police repressions. On this occasion, Nicolae Russel was offered help by the Minister of Internal Affairs, C.A. Rosetti (1816-1885), to leave the country for Constantinople.[30]

After another sojourn in Paris, Bulgaria and Greece, Russel sailed with his second wife to San Francisco in 1887. Here again, agitating within the local Slavic community, he got involved in disputed with the bishop of the Orthodox Church. Following the intervention of the Russian consul, he was forced to leave for Hawaii in 1892. Here he dedicated his time to both science and politics. His observations on Hawaii's flora, fauna, and geology had an enormous impact on the scholarship of Russian natural history.[31] Earning a living as a coffee grower and as a physician, he

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Ronald Hayashida and David Kittelson, "The Odyssey of Nicholas Russel," *The Hawaiian Journal of History*, Vol. 11 (1977): 110-111.

Valdimir Tikhonov, "A Russian Radical and East Asia in the Early Twentieth Century: Sudzilovsky, China, and Japan," *Cross-Currents: East Asian History and Culture Review*, No. 18, (2016): 57.

Călin Cotoi, op. cit, 73.; Terrence Emmons, *Alleged Sex and Threatened Violence: Doctor Russel, Bishop Vladimir, and the Russians in San Francisco, 1887-1892* (Stanford: Stanford University Press, 1997) 31.

Ronald Hayashida and David Kittelson, "The Odyssey of Nicholas Russel," *The Hawaiian Journal of History*, Vol. 11 (1977): 111-112.

critically addressed the "erosion of culture and power of the indigenous Hawaiians in the face of growing American domination," illustrating the ongoing racism and "fanaticism" of American missionaries.[32] After founding the Home Rule Party in 1892, Russel was elected in 1901 as the first president of Hawaii's Senate. However, in 1905, during the Russo-Japanese war, Russel moved to Japan to conduct revolutionary propaganda among the Russian prisoners.[33] A printing campaign carried out with George Kennan contributed to massive demonstrations by POWs, inspiring as many as 30,000 Russian prisoners by revolutionary songs and speeches.[34] After a short stay in the Philippines, he finally sailed to China in 1927 and died of influenza in 1930.[35]

The journals *Bessarabia* (*Besarabia*) and *Future Romania* (*România Viitoare*)

Russel's printing activity in Romania is related to the first Narodnik periodical released in Iași on 28 September 1879, with the collaboration of Ioan Nădejde (1854-1928) and Gheorghe Nădejde (1857-1939), known as *Bessarabia* (*Besarabia*). Sold at the cheap price of 15 bani per issue, subscriptions for the journal were bought by both urban and rural readers. Curiously enough, some of the Narodnik revolutionaries also leaned towards anti-Semitism, highlighting that "two of the biggest threats" to Romania were "replacement of Romanian by foreigners and Jews" and the imperialist dangers posed by "Russia and Austro-Hungarian Empire". [36]

Ibid., 112.
Valdimir Tikhonov, op.cit., 57.
Frederick F. Travis, op.cit, 273.
Ronald Hayashida and David Kittelson, op.cit, 120-122.
"*Iasii 17 Septemvrie*," *Besarabia*, Anul 1, No.1. (1879):1-2.

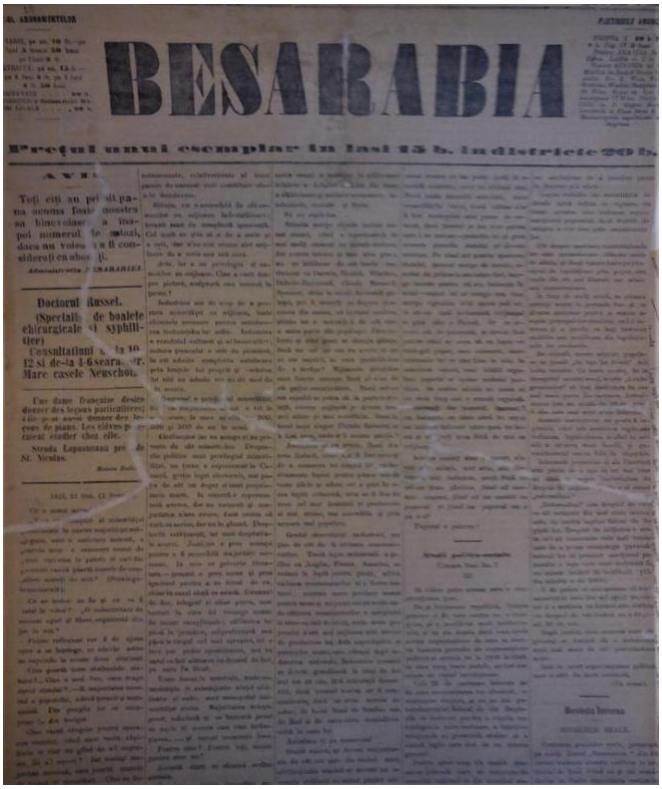

BESARABIA

Figure 4.3. The front page of *Bessarabia*. Courtesy of the "Mihai Eminescu" Central University Library, Iași.

It was in the pages of the irredentist *Bessarabia* that people could find information about the working hours of the anarchist Doctor Russel, who offered free consultations twice a day, and alternative medicines for coughs. Besides articles focusing on social hygiene and women's liberation, other articles were "complaining against the nationalization of science", arguing in protest that university positions were allocated to ethnic Romanians alone, and that there was no such thing as a "national science".[37]

Science popularisation, on the other hand, was addressed in the "Feuilleton" rubric, mirroring the French journal *Le Temps*, which first inaugurated the science section known as "rez-

Anca Mândru, *"Socialism of Sentiment": Culture, Progress and Community in the early Romanian Left 1870-1914* (Ph.D. diss., University of Illinois. 2018), 191, 225.

de-chaussee".[38] Short essays explained in plain language a variety of subjects: the discovery of the "missing link" of the Archaeopteryx, how everything in the universe is related to moving matter, translations of the research conducted by John Lubbock on the habits of ants, and so on. Their struggle to make scientific information accessible also pointed out "the class character of Romanian scientific practice", explicitly expressing that:

> [Nowadays] science is accessible only for those who can afford it; peasants are kept in complete ignorance. […] Science advances only when it is represented by a great number of people with distinct talents, and talents and genius are rarely to be found. People like Darwin, Haeckel, Virchow, Dubois-Reymond, Claude Bernard, Spencer, can be counted on a few fingers due to the fact that, in the modern state, science is accessible only to a small minority. How many talents and geniuses could science count if not only people with great wealth, but everyone had the opportunity to study it?[39]

Soon the Minister of Cults and Public Instruction decided to "end subversive doctrines". After a meeting between its editors and the Iași prefect Leon Negruzzi (1840-1890), the journal was shut down on 14 December 1879.[40] The following year, Nicolae Russel published his pamphlet, orientated towards the recent attacks made by the editor of the liberal newspaper of *National Movement* (*Mișcarea Națională*),[41] who accused the Narodnik journal of stirring up the students of the Law Faculty. Russel's text, *A psychiatric study followed by several comments on*

Alex Csiszar, *The Scientific Journal. Authorship and the Politics of Knowledge in the Nineteenth Century* (Chicago: University of Chicago Press, 2018), 90.

"Ce e statul actual?," *Besarabia*, An 1, Nr. 8 (1879): 1.

Savin Bratu and Zoe Dumitrescu Bușulenga, *Contemporanul și vremea lui* (București: Editura de Stat Pentru Literatură și Artă, 1959), 20-24.

Ibid., 23.

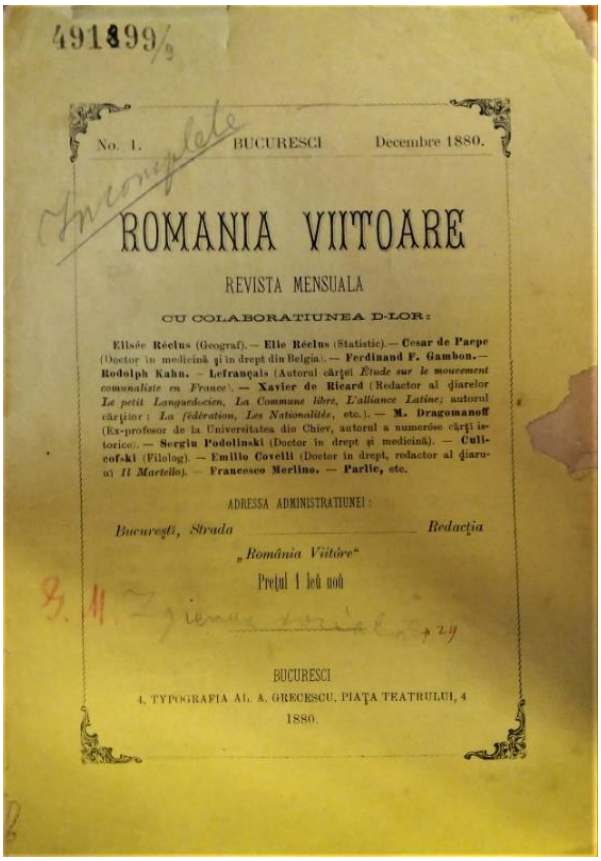
healthy ideas (*Un studiu psychiatric urmat de câteva comentarii asupra ideilor sănătoase*), became also the first manifesto published by the Romanian Narodnik revolutionaries. Their programme urged for the adoption of anarchism based on collectivist principles while demanding "the seizure of private property, removal of hostility and competition between nations, women's emancipation, social and political equality."[42]

Before escaping to Constantinople in 1881, Russel was for a time part of the editorial board of another Romanian periodical, *Future Romania* (*România Viitoare*) that appealed to scientific knowledge.[43] The first issue of *Future Romania* was published in December 1880 as a collaboration between Russel and Constantin Dobrogeanu-Gherea. The front cover listed among the contributors various communards and international radical intellectuals. According to the correspondence of Dobrogeanu-Gherea, the magazine had to be launched in 1880 and printed in 500 copies, and the printing costs were split with Moldavian revolutionaries. Sold for 1 leu per issue, they decided to use the typography of Alexandru A. Grecescu, instead of Paul Scorțeanu's, which was deemed too small. However, Dobrogeanu-Gherea was eager to point out that, together with Russel they decided that the "journal should be a platform for the discussions of theoretical ideas, instead one for agitation".[44]

Nicolae Russel, *Un studiu psychiatric urmat de câteva comentarii asupra ideilor sănătoase* (Iassy: Tipo-Litografia Buciumul Român, 1880), 32-33.

Savin Bratu and Zoe Dumitrescu, *Contemporanul și vremea lui* (București: Editura de stat pentru literartură și artă, 1959), 30-31.

Documente Privind Istoria României: Razboiul Pentru Independență Vol. I, Part I., (București: Editura Academiei Republicii Populare Române, 1952), 669.



491899/9

No. 1. BUCURESCI Decembre 1880.

Incomplete

ROMANIA VIITOARE

REVISTA MENSUALA

CU COLABORATIUNEA D-LOR:

Elisée Réclus (Geograf). — Elie Réclus (Statistic). — Cesar de Paepe (Doctor în medicină şi în drept din Belgia). — Ferdinand F. Gambon. — Rodolph Kahn. — Lefrançais (Autorul cărţei *Étude sur le mouvement communaliste en France*). — Xavier de Ricard (Redactor al ziarelor *Le petit Languedocien, La Commune libre, L'alliance Latine*; autorul cărţilor: *La fédération, Les Nationalités*, etc.). — M. Dragomanoff (Ex-profesor de la Universitatea din Chiev, autorul a numeróse cărţi istorice). — Sergiu Podolinski (Doctor în drept şi medicină). — Culicof-ski (Filolog). — Emilio Covelli (Doctor în drept, redactor al ziarului *Il Martello*). — Francesco Merlino. — Parlie, etc.

ADRESSA ADMINISTRATIUNEI:

Bucureşti, Strada _____ *Redacţia „România Viitóre“*

Pretul 1 leŭ noŭ

BUCURESCI

4, TYPOGRAFIA AL. A. GRECESCU, PIAŢA TEATRULUI, 4

1880.

Figure 4.4. Front cover of *Future Romania* listing the contribution of various international anarchists. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

Throughout its programmatic statement, the editorial board expressed its position against "conservative scepticism", which dominated not only the scientific culture but also the social organisation of Romania. After expressing sympathy with Darwin's and Galileo's discoveries, they insisted that "based on science and only on science, we will always be faithful to our creed: Everything according to science and for the Romanian Peasant!"[45] In terms of content, *Future Romania* continued the tradition of *Bessarabia* but focused on the wider

Redacția, "Către Cetitorii Noștri," *România Viitoare*, No.1 (1880): 4.

international revolutionary context. Articles dealt with "social hygiene", demanded the betterment of working conditions for both the peasants and the urban workers, advocated for a six-hour working day, and discussed land ownership in Italy and in the British Isles. The magazine ceased publication after one year.

As Kathy Ferguson has observed, "the anarchists certainly understood themselves as largely excluded from hegemonic public spaces, and they developed vigorous discursive arenas to create their own counterpublic spheres."[46] In Romania, for instance, Adrian Dohotaru has pointed out that "the coffee houses were not deemed an aseptic area of bohemian socialisation, nor were they deemed a place of vulgar entertainment, but as places with the potential of subversive ideas."[47]

Accordingly, when periodical journals were not available, public spaces such as cafés, teaching rooms and reading clubs were transformed into counterpublics where scientific ideas were disseminated, and would pave the way towards social revolution. Ioan Nădejde (1854-1928) and his younger brother Gheorghe Nădejde (1857-1939) transformed numerous spaces such the Messiner Café, the secondary teaching rooms in Iași and their own private houses into counterpublic spheres. This dragged them into several public scandals. One of the most famous occurred in 1881, when the Iași University jury, comprised of several professors,[48] charged the Nădejde brothers with agitating in local cafés and teaching socialism and Darwinism to students under 21 of age. In their defence, the two anarchists published a pamphlet, explicitly

Kathy Ferguson, "Anarchist Counterpublics," *New Political Science*, Vol.32, No.2, (2010): 195.

Adi Dohotaru, ''Portraits of Young Socialists: Moral Standing and Socializing Places,'' *Anuarul Institutului de Istorie «George Barițiu»,* Tom LIV (2015): 256.

The jury was composed of Miltiade Tzony, N. Culianu, Ion G. Stravolca, Nicolae Chiriac Quintescu and G.A. Urechia.

deconstructing the accusations of lack of patriotism, atheism, civil disobedience, anti-Semitism and the charges of being enemies of science.

> We are accused that we want to destroy religion. [...] Is it our fault that modern science has destroyed the fallacies of religious dogmas! Not all socialists are atheist, as not all atheists are socialists. Moreover, we share the view of Bakunin that religion will not vanish from popular knowledge while the [people] are still kept in ignorance and oppression.[49]

Numerous students were urged by the jury to testify as witnesses. Those who complied portrayed the two teachers as "collectivist revolutionaries", aiming for "violent anarchist actions against the establishment of the country."[50] Other testimonies said that the Nădejedes' lectures taught that there was no God, and that people descended from monkeys according to Darwin's theory.[51] Several students were expelled for distributing subscriptions to the journal *Bessarabia*. Others, who refused to testify, such as the future biologist, the first Romanian student of Ernst Haeckel, Nicolae Leon (1862-1931), were also expelled.[52] However, the nihilists continued to defend themselves:

> We are anarchists, as the University jury has declared; however, we do not claim to impose our ideas and reforms [on others]. We know that all reforms that are imposed are

Socialismul Înnaintea Justiției. Procesul Fratilor Nâdejde Înnaintea Juriului Universitar (Jassy: Tipo-Litografia Buciumului Român, 1881) 11.

Sentința Comisiunei Judiciare a Universitației de Iassy în procesul fraților Nădejde (Jassy: Tipografia Dimitrie Gheorghiu, 1881) 12-13.

Ibid., 18-19.

Nicolae Leon, *Note și Amintiri* (București: Editura Cartea Românească, 1933) 56.

merely words in vain; we want to enlighten the masses, to make them understand the causes of their misery; thereafter, the majority will find a way to enact their own will.[53]

In addition, the two teachers highlighted that they were no "enemies of the Romanian Nation" instead, their efforts "were orientated towards the happiness of all people", sacrificing their own social position. As regarded anti-Semitism, the two expressed that they stood solely against those who exploited the working class, and in their schools Romanian students did not bully each other; instead, they joined forces with the Jewish students.[54] They invoked examples of official evolutionists and atheist academics who acted in the same way, such as Alexandru D. Xenopol or Vasile Conta. However, other accusations portrayed them as standing against scientific reason:

> Curiously enough, it is alleged that we are the enemies of science. However, we ourselves think that in a society where everyone can enlighten himself, where science is accessible to everyone, progress will emerge soonest. Nowadays the majority is [kept] in a harsh position regarding access to education, while other people pursue for studies that can bring them money, and it is well known that science does not possess this characteristic.[55]

Finally, the University jury saw anarchism as an "imported utopian doctrine", which, in their view, was an attack against the security of the state, society, religion, human rights, property, family, paternal authority, nationality – aiming to replace all these institutions with

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Socialismul Înnaintea Justiției. Procesul Fratilor Nâdejde Înnaintea Juriului Universitar (Jassy: Tipo-Litografia Buciumului Român, 1881), 11-12.

Ibid., 12-13.

Ibid., 15.

chaos, violence and anarchy.[56] The jury eventually decided on 5 June 1881 to dismiss Ioan Nădejde from his teaching position at the National College, while his brother was to be suspended for a few months from the Ștefan cel Mare Gymnasium. Their decision was strengthened by a new set of accusations invoking the brothers' participation in the celebration of the Paris Commune, organised by Nicolae Russel.[57] As the events overlapped with the assassination of the Tsar – and under the pressure from the Russian Consul in Iași — the Romanian authorities raided the houses of Russel and Ioan Nădejde, searching without success for bombs and weapons. After a series of arrests, Russel and Andrei Dumitriescu and Pavel Axelrod (1850-1928) were exiled to Constantinople as dangerous citizens,[58] while Ioan Nădejde devoted his time to publishing science popularisation.

The journal *The Contemporary: A Scientific and Literary Magazine*

The public scandal in Iași involving the Nădejde brothers did not put an end to their activity. Instead, it led to the appearance of one of the most enduring Romanian socialist journals, which radically changed not only the popularisation of science and the diffusion of Darwinism, but, to some extent, the practice of publishing scientific texts. As one of their contributors, Constantin Mille (1861-1927), recalled "left without a daily income" and driven by "necessity to make their voices heard", the Nădejde brothers were eager to continue their struggle and, in

Sentința Comisiunei Judiciare a Universitatei de Iassy în procesul fraților Nădejde (Jassy: Tipografia Dimitrie Gheorghiu, 1881), 16.

Ibid., 28-29; 34-35.

Tiberiu Avramescu, (ed.), *Amintiri literare despre vechea mișcare socialistă (1870-1900)* (București: Editura Minerva, 1975), 84-85.

June 1881, established the scientific encyclopaedic magazine *The Contemporary: Scientific and Literary Magazine* (*Contemporanul. Revistă Ştiinţifică şi literară*).[59] More importantly, the journal's materialist and naturalist orientation had an enormous influence on the new scientific tradition of Romanian Darwinist scientists such as Nicolae Leon (1862-1931), Paul Bujor (1862-1952), Dimitrie Voinov (1867-1951), Ioan Borcea (1879-1936), Emil Racoviță (1868-1947), and to a certain extent, Grigore Antipa (1866-1944).

Haiving only a small starting budget, the only printing house willing to sign a contract was Buciumul Român, which operated in the private residence of Theodor Codrescu (1819-1894).[60] At the head of the editorial board were Ioan Nădejde and Sofia Nădejde (1856-1946), while Vasile Mortun (1860-1919) headed the literary section. Initially published twice a month, *The Contemporary* was sold for 70 bani per issue, with annual subscriptions costing 12 lei. The first two issues in 1881 were printed in a run of no more than 700 copies; the run of issues 3 to 6 increased to 1,000, and reached 2,000 copies by issue 7. After six months, the journal had 1,600 subscribers,[61] going up to 3,000 subscribers and a circulation of 4,500 copies in 1883.[62] Their success was assured from the outset; not surprisingly, the literary historian Zigu Ornea (1930-2001) declared that *The Contemporary* was "one of the most read publications" of its day.[63]

Constantin Mille chose the name of the journal in homage to the Russian periodical *Sovremennik* established by Alexander Pushkin in 1836 in St Petersburg. See Constantin Mille, "Letopisiți (Contemporanul)," in Tiberiu Avramescu (ed.), *Amintiri literare despre vechea mișcare socialistă (1870-1900)* (București: Editura Minerva, 1975), 133-134

Ibid., 134. In its fourth year, the printing of the *Contemporary* moved to the H. Goldner printing house. Financial aid was offered by Constantin Dobrogeanu-Gherea, whose influence would lead to the reorientation of the magazine in the mid-1880s towards Marxism.

Alexandru Hanță, *Contemporanul 1881-1891: O revistă așa cum a fost* (București: Editura Albatros, 1983), 34, 36.

Redacțiea, "Către cetitorii noștri," *Contemporanul. Revistă Ştiinţifică şi literară*, An. II, Nr. 13 (1883): 520.

Zigu Ornea, *Curentul cultural de la "Contemporanul"* (București: Editura Minerva, 1977), 42.

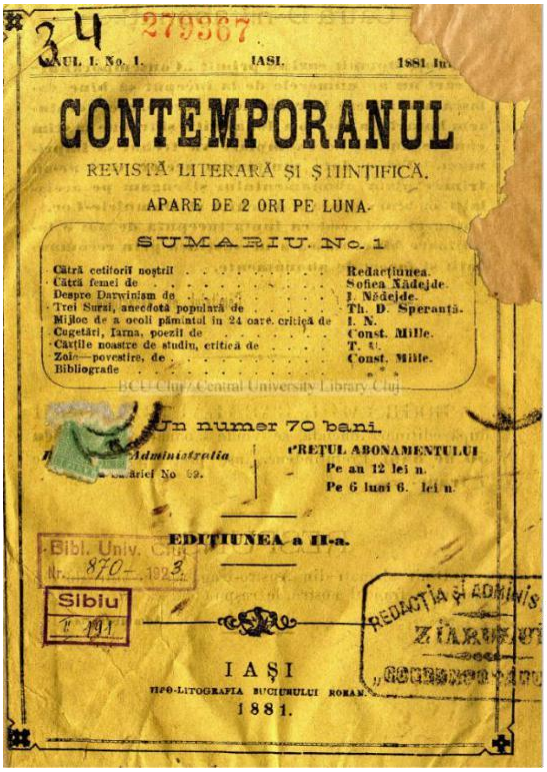

Figure 4.5. The front cover of the first issue of *The Contemporary*. Courtesy of the "Lucian Balaga" Central University Library, Cluj-Napoca[64]

In Sărărie, a slum in Iași, the editorial office of the journal was established in Ioan Nădejde's private residence, which became famous for its weekly soirées that brought together college students, workers, peasants and future Romanian scientists.[65] Those who participated in the gatherings remembered "books, children, animals, furniture" – and, when the house was full, "visitors formed in circles in the backyard."[66] The writer Jean Bart (1874-1933) remembered that

http://dspace.bcucluj.ro/jspui/handle/123456789/53682 (last accessed 21 June 2018)

The feminist Sofia Nădejde recalled that when the circle turned towards legal methods of adopting universal suffrage and land redistribution, the peasants who visited the Sărărie house were frequently taken by the police to be interrogated. They hid signatures in their caps, bread, and boots. See Sofia Nădejde, "Amintiri. Schimbare de program," in Tiberiu Avramescu (ed.), *Amintiri literare despre vechea mișcare socialistă* (1870-1900) (București: Editura Minerva, 1975), 175-176.

C.D. Anghel, "Cum am devenit socialist," in Tiberiu Avramescu, (ed.), op.cit. 238.

in the days when he was still a student the "mystical place" was always under the "surveillance of a policemen who took notes of everyone who entered", while in front of the gates "huge trucks were unpacking boxes of books, magazines and gazettes."[67]

Lying behind the extraordinary success of *The Contemporary* was its popular language and interrogatory articles, situated in opposition to the heavy elitist discourse of academic texts, and consistently exposing scientific fallacies and plagiarism. Moreover, as Anca Mândru has observed, the fame of the journal actually depended on the work of official scientists via their plagiarism of textbooks.[68] Tellingly, its editor Ioan Nădedje also saw *The Contemporary* as continuing the work begun by Iuliu Barasch and his journal *Isis or Nature* but with the addition of discussions on Darwin's discoveries and socialism.[69] From the very first issue, the programmatic statement explicitly announced a stance in favour of popularising science as widely as possible and openly declared its opposition to scientific fallacies and plagiarism:

> Our aim is to introduce the Romanian public to the way in which contemporary science views the world. We want to bring to our country the new scientific theories that are currently being discussed in the civilised Western nations. We believe it would be useful for our country if we disseminated knowledge gained about the world as widely as possible. Our aim is also to fight a fierce battle against the fallacies of scientific results,

Jean Bart, "Misterul casei din Sărărie (Cu prilejul morții lui Ioan Nădejde)," in Tiberiu Avramescu, (ed.), op.cit., 217.

Anca Mândru, op.cit., 128.

Ioan Nădedje recalled the huge influence of the journal *Isis or Nature* upon his youth: "I know very well the effects of Barasch's writings from the high school of Botoșani […] Without a doubt, it had the same [influence] in other cultural centres. *The Contemporary*, which we issued for about 8 years in Iași was to some extent the continuation of Barasch's magazine." See. Moses Schwarzfeld, *Dr. Iuliu Barasch, iunie 1815- 30 aprilie 1863: omul, opera, bucăți alese din operele sale* (București: Editura Cercului ''Libertatea", 1919), 68.

and above all against school manuals […] Up until now, crabgrass has been suffocating the healthy growth. It is time to rip it out; otherwise healthy plants will perish.[70]

A great variety of scientific discoveries spanning chemistry, physics, geology and biology (including Darwinism) were published in materialist and interrogatory atheist articles.[71] The person in charge of the popularisation section was none other than the main editor Ioan Nădejde, whose writings were based either on original scientific works (Charles Darwin, Louis Pasteur, Ernst Haeckel or Théodule-Armand Ribot) or translations from French popular science journals (*Revue Scientifique, Cosmos*, *etc.*).[72]

The "monster of science",[73] as he was frequently nicknamed, Nădejde had before in 1879, been urged to write pamphlets and articles on evolution. For instance, a letter from Zamfir C. Arbore expressed the intention to launch a popular library collection (Biblioteca Populară), for which Nădejde would write pamphlets about Ernst Haeckel and a small book about the origin of species and human evolution. These works were all planned to be addressed to both urban "intellectuals" and "peasants", allowing the latter, based on these readings, to liberate themselves from the ideas of the past.[74] Similarly, before the launching of *Future Romania* (1880), Constantin Drobrogeanu-Gherea also wanted Nădejde to write articles on Darwinism: "Tell Nădejde that we ask him to write popular articles about Darwin's theory. He can declare himself

Redacțiunea, "Cătră cetitorii noștri.," *Contemporanul. Revistă Ştiinţifică şi literară* An.1, Nr.1 (1881): 1.

For a detailed list of the contributors and subjects, see Savin Bratu and Zoe Dumitrescu, *Contemporanul si vremea lui* (București: Editura de stat pentru literatură și artă, 1959), 55; 295-326.

Zigu Ornea, op.cit., 247.

Constantin Mille, "Ioan Cara [Ioan Nădejde]," in Tiberiu Avramescu, (ed.), op.cit., 87.

Ion Poppescu-Puțuri (ed.), *Documente din istoria mișcării muncitorești din România (1879-1892)* (București: Editura Politică, 1973), 41-42.

an atheist. If he has the time, write something about social hygiene. Nevertheless, these must be written as popularly as possible."[75]

When *The Contemporary* was launched in the summer of 1881, the results of Nădejde's research into Darwinism were already ready for publication. Thus, his first article jumped straight to the core of Darwin's evolutionary theory, explaining that humans were no longer "fallen angels", instead their descent from monkeys is a fact that all people should know. "It is not permitted for people who claim to be cultivated to be unaware of Darwin's ideas; therefore, we think it will be useful to summarise these ideas in a few comprehensible pages."[76] Nădejde's analysis began by indicating that Jean-Baptiste Lamarck was the first to develop the theory of "transformism", while Charles Darwin was the one who explained its mechanism. He supported his argument about organic evolution with examples drawn from comparative anatomy, embryology and palaeontology. After illustrating his view with several examples, Nădejde set to explain Darwin's mechanism of evolution, in which the "variation of species" and "the struggle for existence" had crucial importance in the process of evolution by "natural selection". Presenting all these scientific details, Nădejde concluded his exposé in a second issue:

> As you see, the selection theory developed by Darwin does not hang on unknown facts [and] does not make any hypotheses; instead it groups well-known laws to form an explanatory theory. Darwin and his followers gathered so much evidence that nowadays the theory is considered victorious. Its influence on all life sciences is unquestionable.[77]

Documente Privind Istoria României: Razboiul Pentru Independență Vol. I, Part I., (București: Editura Academiei Republicii Populare Române, 1952), 665-666.

Ioan Nădejde, "Despre Darwinism," *Contemporanul. Revistă Ştiinţifică şi literară* An I, Nr.1, (1881): 7.

Ibid., 12-13; See also, Ioan Nădejde, "Despre Darwinism," *Contemporanul. Revistă Ştiinţifică şi literară* An.I, Nr.2, (1881): 36-41.

In the aftermath of Charles Darwin's death in 1882, the editors of *The Contemporary* wanted to commemorate his legacy. On this occasion, Nădejde gave proof of his up to date readings of the British naturalist, pointing not only to the work on *Insectivorous Plants* (1875), but also to Darwin's last book *The formation of vegetable mould, through the action of worms* (1881). Briefly describing the role played by worms in the formation of the earth and their contribution to ecology and the sustainability of the vegetable kingdom, his article also insisted on the potential for instrumentalisation by social Darwinists. In his view, even if "the selection theory revolutionised all the sciences", there were still "reactionaries who rushed to use the Darwinian theory in order to prop up their own ideas", thus seeking to "subjugate the people claiming that they are better than others."[78]

A second series of articles by Nădejde deliberately leaned towards atheism and materialism, leading to a conflict with the editors of *Theological Review* (*Revista Teologică*) (1883). On the basis of works by Ernst Haeckel, these articles questioned: "What do we know about the world?", "The origins of living beings" and "Is there a God?". In a second series of articles, he dealt with the "spontaneous generation" debate, siding with Louis Pasteur and explaining the matter with illustrations of unicellular organisms derived from Ernst Haeckel's theory on protoplasm evolution.[79] Nădejde also sought to demonstrate the contradictions of religious dogmas and the non-existence of supernatural divine forces. In terms of his atheist intellectual roots, as previously mentioned, he connected these to his time as a young student at

Ioan Nădejde, "Charles Darwin," *Contemporanul. Revistă Ştiinţifică şi literară* An. I, Nr. 21 (1882): 805-808.
Ioan Nădejde, "Origina fiinţelor vieţuitoare," *Contemporanul. Revistă Ştiinţifică şi literară* (1881): 547-551.

the Gymnasium at Botoșani. Among his readings there were the journal *Isis or Nature* which he received as a graduation prize from the local school.[80]

As outlined in the programmatic statement, the second aim of *The Contemporary* was to reveal the fallacies in Romanian scientific texts. Accordingly, several cases of plagiarism were identified and reprinted under pseudonyms in two columns, showing the original source and the version for which original authorship was claimed. *The Contemporary* revealed the academic profile of the plagiarist authors, the well-established French Universities from which they graduated, as well as their teaching positions and academic affiliations in Romania. Examples sprang from numerous disciplines, spanning literature, geography, medicine, geology and botany.

Finally, the research of established authorities on geology, such as that of Gregoriu Ștefănescu, was scrutinised in front of the readership. One year after he was included in the project for the geological mapping of Europe at the initiative of the second Geological Congress of Bologna (1881), Ștefănescu established the Geological Office in Bucharest (1882), receiving public funds for the creation of the first Romanian geological map. Soon afterward, Ștefănescu and his team were accused of monopolising the geological survey, while the scientific results of his six years of research contradicted the findings of local and foreign geologists. The geologist Mathei Drăghiceanu also lambasted Ștefănecu, stating that his science of "colouring" maps was not the same thing as carrying out geological field research.[81]

See Moses Schwarzfeld, *Dr. Iuliu Barasch, iunie 1815- 30 aprilie 1863: omul, opera, bucăți alese din operele sale* (București: Editura Cercului ''Libertatea", 1919) 68. Apud. *Lumea Nouă literară și științifică* An II, (1896): 1.

Mathei M. Drăghiceanu, *Situatiunea Sciintei oficiale in Romania fata cu cumulul* (Bucuresci: Tipografia Moderna Gregorie Luis, 1889)

In his defence, Ștefănescu published the pamphlet *The Geological Office and Public Opinion*, which tried to prove that public funds were in fact spent on field research, and that geologists all over the world were pleased with his work.[82] In addition, after the Romanian Senate voted to stop the Geological Office's activity, Ioan Nădejde also joined the debate,[83] insisting not on the closure of the Office, but on the organisation of a new institution under the directorship of the Iași geologist Grigore Cobălcescu. His article highlighted that Ștefănescu, "with all his blessings", was in fact a "dangerous geologist" who received honours and huge public funds while misleading international scientific research. Reproducing Mathei Drăghiceanu's arguments, Nădejde showed that the research conducted by the Austro-Hungarian geologists Franz von Hauer (1822-1899) and Herbich Ferencztől (1821-1887)[84] contradicted Ștefănescu's geological classification:

> We presented the figure of Romania on the map of Europe in a misleading way. Even sadder is the fact that the country has to pay out of its own pocket for this national embarrassment. […] Every time [Ștefănescu] attended geological congresses, he telegraphed all the journals to announce his election as a vice-president of these

Gregoriu Ștefănescu, *Biuroulu Geologicu în Fața Opiniei Publice* (Bucureșci: Stabilimentulu Graficu Socecu & Teclu, 1889) 9-14.

The editors of *The Contemporary* began their criticism in 1881, identifying contradictory articles on meteorology forecasts, based on astrology and religious calendars, published in P.S. Aurelian and Ștefănescu's *Scientific Review*: T.U., "Prevederea timpului și Dl. P.S. Aurelian. Redactorul „Revistei sciințifice"," *Contemporanul. Revistă Ştiinţifică şi literară* An. I, 15 Oct., (1881): 371-373. For the inadequacies of Ștefănescu's geological survey of the tertiary stratification of the Bahna region, see Verax, "O întrebare d-lui Gregoriu Ștefănescu, professore la facultatea de științi," *Contemporanul. Revistă Ştiinţifică şi literară* An. I, 15 Mai, (1882): 918-919

The works cited by Nădejde were Franz von Hauer's *Die Geologie und ihre Anwendung auf die Kenntnis der Bodenbeschaffenheit der Österr-Ungar Monarchie* (1875) and Herbich Ferencztől's *A Székelyföld földtani és oslénytani leírása* (1878). For more details on the Austro-Hungarian geological mapping, see Tivadar Gaudenyi and Mladjen Jovanovic, "Franz Ritter von Hauer's work and one of the first loess maps of Central Europe," *Quaternary International* 234 (2011): 4-9; Csilla Galambos and Zoltan Unger, "Geological maps showing Transylvania from around 1900," *Geographia Technica* Nr.1 (2009): 31-39.

congresses, wishing to make the government and the country believe that this is a tribute to his own scientific importance. […] However, all the directors of the geological offices which participated in the geological mapping of Europe were elected as vice-presidents.[85]

From 1885 onwards, with the public ascent of one of the most famous Romanian Marxists, Constantin Dobrogeanu-Gherea (founder in 1893 of the Romanian Workers Social-Democratic Party),[86] the pages of *The Contemporary* itself, along with the views of its editors, increasingly shifted towards Marxism and science popularisation as well.[87] At the same time, Dobrogeanu-Gherea's fame increased thanks to his battles with the authority of Romanian literary criticism, Titu Maiorescu. Their disagreement turned on aesthetics and poetry, mainly the idea of "art for art's sake" and the socialist claim of "art with a purpose".[88]

The journal *Future Dacia* (*Dacia Viitoare*) and the first debates on Social Darwinism

After his expulsion from the University of Bucharest, Constantin Mille (1861-1927), a frequent contributor to *The Contemporary*, became further involved in editing another anarchist journal. Moving between Brussels and Paris, together with the self-declared "Romanian

Ioan Nădejde, "Desfiinţarea biuroului geologic," *Contemporanul. Revistă Ştiinţifică şi literară* An VII, Nr. 1 (1889): 91-92; Ibid., An. VII, Nr. 2 (1889):136-160

For more on Dobrogeanu-Gherea's biography, see Michael Kitch, "Constantin Dobrogeanu-Gherea and Rumanian Marxism," *The Slavonic and East European Review*, Vol. 55, No.1 (1977): 65-89; Michael Shafir, "'Romania's Marx' and the national Question: Constantin Dobrogeanu-Gherea," *History of Political Thought*, Vol 5, No.2 (1984): 295-314; Idem, "Constantin Dobrogeanu-Gherea: Wrong Time, Wrong Face, Wrong Place," *Studia Universitatis Babes-Bolyai - Studia Europaea*, Vol. 52, No. 2 (2007): 5-48; Zigu Ornea, *Opera lui C. Dobrogeanu-Gherea* (Bucureşti: Cartea Românească, 1983).

Zigu Ornea, *Curentul cultural de la "Contemporanul"* (Bucureşti: Editura Minerva, 1977).

Anca Mândru, op.cit, 114-122.

revolutionary group" based in France,[89] he eventually launched the bimonthly irredentist periodical journal entitled *Future Dacia* (*Dacia Viitoare*) (1883).[90] From their initial headquarters at the Café de Cluny in Paris, their magazine offered a platform giving free access for contributors who wanted to publish ideas related to liberation issues, stating: "Our newspaper will be a tribune for all the dispossessed, […] freedom will be offered to any contribution. The editorial board will be responsible only for articles signed by its members; all editors are accountable for their own pieces of writing."[91]

According to Mille, their communard irredentist vision of a future Dacia envisaged a federation of commons not ruled by the boyars or King Carol, but by the peasants together with manual and intellectual workers.[92] Furthermore, if the "Romanian bourgeoisie pleaded for the replacement of a foreign master with a *national* or *patriotic* one", Mille powerfully urged that "the peasant should not change his master, but get rid of all his masters".[93] In Romania itself, the appearance of *Future Dacia* was met with severe criticism published in the pages of the conservative newspaper *The Time*, reigniting older debates between Mille and the *Theological Review*.

Banned in the Austro-Hungarian region of Transylvania for its radical militancy amongst Romanians, the journal published succinct articles dealing with news about the international socialist and anarchist movements. When it came to science popularisation, contributions to

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The group was comprise by Alexandru Bădărău, Mihai Săulescu, Grigore Maniu, Vintilă Rosetti, V.G. Morțun.

For more on Mille's biography and his contribution to *Dacia Viitoare* see Tiberiu Avramescu, *Constantin Mille. tinerețea unui socialist* (București: Editura Politică, 1873), 125-171.

"Avis,"*Dacia Viitoare*, Anul 1, No.1 (1883): 1.

Dinu, "Patriotism și socialism," *Dacia Viitoare*, Anul 1, No.3 (1883): 33-34.

Dinu, "Puterea noastră," *Dacia Viitoare*, Anul 1, No.7 (1883): 111-112.

Future Dacia frequently touched on issues arguing against the instrumentalisation of Charles Darwin's theory by liberal and conservative intellectuals. In this vein, one of the first articles published by Grigore Maniu (1860-1911) was submitted under a pseudonym that he frequently used when addressing the peasants.[94] Throughout his short article on Darwinism, Maniu pointed out that there are no theories that could explain the origins of life other than those put forward by Jean-Baptiste Lamarck and Charles Darwin. In his argumentation, Maniu referenced the work of the French anarchist and populariser Émile Gautier (1853-1937), who first coined the term "social Darwinism" in his 1880 pahmphlet disputing Haeckel's interpretations of Darwinian theory. According to Mike Hawkins, Gautier believed that "the struggle for existence diminished in importance when human faculties and social institutions reached a certain level of development." In this line of reasoning, "mutual assistance and social solidarity" became significant factors in explaining human progress.[95] In a manner similar to Gautier, who at that time was facing in court trial with Kropotkin, Grigore Maniu highlighted that:

> [Aside from] those inequalities established by nature, civilisation plays also its role as it accentuates new inequalities. [Civilization's] duty should be based on a solidarity that assures to each according to their needs. Nowadays inequalities are not natural but artificial, and selection is also not natural but artificial. The great are not the fittest, but those who monopolised everyone's good for their own purposes. Privileges gave them the right to lead a parasitic life […].[96]

Gr. Munteanu, *Opt scrisori către țărani* (Tipo-Litografia Buciumului Român: Iași, 1882), 14.

Mike Hawkins, *Social Darwinism in European and American Thought, 1860-1945* (Cambridge: Cambridge University Press, 1997), 177. See also Linda L. Clark, "Social Darwinism in France," *The Journal of Modern History*, Vol. 53, No. 1 (1981): D1025-D1044.

Grigore Munteanu, "Darwinismul," *Dacia Viitoare*, Anul 1, No. 4 (1883): 61.

A second article dealing with Darwinism was a Romanian translation from the anarchist-communist newspaper, initiated by Piotr Kropotkin and financially aided by Elisée Reclus, namely *The Revolt* (*La Révolte*) (1879-1894). The original article, published in the latteranonymously in the second issue of 1883, was a study sent by the future editor of the journal Jean Grave (1854-1939),[97] and it is best read as turning Darwin's theory against liberal socio-political interpretations. Similarly, the Romanian translation argued that, "the bourgeoisie is trying by any means to legitimise through science the exploitation of the working class by adhering to the theory of the struggle for existence as the cause of human progress. […] We the workers will claim victory, because we are the strongest […] the best adapted […]."[98]

Before *Future Dacia* ceased publication in the autumn of 1883, issue No.14 brought to an end their editorial activities with a last study on Darwinism. On this occasion, the article, most probably written by Constantin Mille, set out to explain the mechanism of evolution through natural selection. Mille's article concluded by highlighting that Darwin's theory demonstrated the gradual transformation of species from one or several primitive forms.[99]

Ten years later, in 1893, the anarchist Zamfir C. Arbore (1848-1933) also published one of his previous public lectures, "Darwin and Darwinism". Born in the region of Bukovina, in the city of Czernowitz (Cernăuți), he finished high school in Bessarabia (Kishinev) and shortly after enrolled at the Medical School in Moscow. In 1867, he moved to the turbulent city of St

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"La révolution et le Darwinisme," *La Révolte*, No.2 (1883):1-2; For the authorship of the article, see also Jean Grave, *Le Mouvement libertaire sous la IIIe République* (Paris: Les Oeuvres Représentatives, 1930), 18. https://fr.wikisource.org/wiki/Page:Grave_-_Le_Mouvement_libertaire_sous_la_IIIe_R%C3%A9publique.djvu/28 (last accessed 23 May 2020)

"Răzvrătirea și Darwinizmul," *Dacia Viitoare*, Anul 1, No. 11 (1883): 172-175.

Emil, "Darwinizmul," *Dacia Viitoare*, Anul 1, No. 14 (1883): 209-213.

Petersburg to continue his degree in medicine.[100] At the intervention of Russian authorities, he was sent to the prison of Litovsk Castle, and with the help of some aristocrats, he was exiled back to Basarabia. From here, he escaped with a counterfeit passport and headed to Zürich.[101]

After splitting from the violent Nechaev group, Arbore became a member of the International Workingmen's Association and one of the closest collaborators of Mickhail Bakunin. As John Gamblin has observed, he was the main "soul" and "link" connecting the Russian Narodniks with the young Bakuninist anarchists in Switzerland.[102] As previously mentioned, together with other revolutionaries (the Tchaikovsky circle), at Arbore's initiative, a printing house was set up and engaged in shipping banned literature into Russia from various locations in Romania. Amongst this literature were several pamphlets on natural history, which raised religious questions, and illegal popular books.[103]

Upon the formation of the Slav Section of the International in 1872 — which had an anarchist programme — Arbore, together with several Serbians, became the secretary of the Jura Federation. Unsatisfied by the exhaustingly long working hours required to complete the printing of Bakunin's work *Statism and Anarchy* (1873), he soon split with the Bakunists and moved to Geneva where he formed the Revolutionary Commune (*obschchina*) of Russian Anarchists. Arbore also founded the journal *The Worker* (*Rabotnik*) (1875), published the work *Full and Hungry* (*Sytye i golodnye*) (1875), contributed to the journals *Obschina* (1879) and *Le Travailleur*

G. Bezviconi, "Zamfir Ralli-Arbure," *Analele Moldovei. Revistă de cercetări istorice și stiințifice* Vol. II Fasc. 1-2 (1942): 112-114.

Gheorghe Bezveconnai, "Ralli-Arbure," *Din Trecutul Nostru* Anul III, No.17-20 (1935): 75-94.

John Gamblin, op.cit, 129-30.

Franco Venturi, op.cit, 483; Gamblin, op.cit, 109.

(1878), and maintained a close relationship with the anarchist geographer Elisée Reclus (1830-1905).[104]

At the end of the 1870s, establishing new connections with the local freemason and historian Bogdan Petriceicu Hașdeu, while organising spiritualist gatherings, he moved from working in the printing industry, to a new position at the National Archives of Romania, finally becoming chief of the statistical office at Bucharest. Other books and pamphlets by Arbore dealt with Darwin's evolutionary theory (1893), the geography of Bessarabia in the 19th century (1897), and his famous autobiographies, *Exile and Prison* (*Temniță și Exil*) (1894), *The Nihilists. My Memoires* (*Nihiliștii. Din Amintirile Mele*) (1895-96).[105]

In his work *Darwin and Darwinism*, Arbore's aim was not to explain Darwin's evolutionary theory, because as he acknowledged the theory had already "become part of the public domain"; instead, he was interested in how different Romanian naturalists and popularisers of science understood and reshaped evolutionary theory. Investigating the existing literature, he acknowledged that the application of Charles Darwin's theory to social relations was partially due to Darwin's poor replies to theories of race, and to particular authors, such as Clémence Royer (the French translator of *Origin of Species*, 1862) or Ernest Renan (1823-1892), who insisted that, in the struggle for life, the fittest would crush the poor. After naming these kinds of authors "Darwin's terrible children", Arbore stressed that certain Romanian politicians basing themselves on the same theory, wanted to invent a new social elite, while others, such as the editors of the newspaper *Epoca* (the official weekly publiation of the Romanian Conservative Party) were

Franco Venturi, op.cit., 441-442.

Maria Lidia and Martin Veith, "Memoirs of an Anarchist in Romania [Zamfir C. Arbore (Ralli)], *Bulletin of the Kate Sharpley Library*, 57 (2009); G. Bezviconi, op.cit, 119-122.

willing to popularise the idea that the Romanian boyars, through natural selection, were the social class with the fittest people.[106]

Furthermore, other socialists, such as the physician Ștefan Stîncă (1865-1897) and the literary critic Garabet Ibrăileanu (1871-1936), also dealt with the political instrumentalisation of Darwinism. The latter however, in an attempt to distinguish between "reactionary" and "progressive" Darwinism, in 1892 published his influential article suggestively entitled "Social Darwinism". Adopting a stance similar to the editors of *Future Dacia*, he also argued that "bourgeois ideologues had taken the Darwinian theory as they found it and introduced it into social science without taking in account that the theory was designed to explain the origins and variation of animal and plant species."[107]

4.2. The journals *Carmen Sylva, Mișcarea Socială, Revista Ideei*

Before the political debates between Romanian anarchists and Marxists broke out around the 1890s — which led to the exclusion of the libertarian revolutionaries from leftist networks — newly emerging local anarchists published several journals dealing with science and Darwinism. In so doing, some of them were also turning away from the prior Narodnik ideology towards the adoption of the new strategy known as "propaganda of the deed" and finally anarcho-syndicalism. This shift is represented by the editorial activity of Panait Mușoiu (1864-1944) and

Zamfir C. Arbure, *Darwin și Darwinismul* (Bucuresci: Tipografia și Fonderia de litere "Thoma Basilecu", 1893), 19-

Vraja Constantin, "Social Darwinism," *Critica Socială* An I, Nr. 6-8 (1892): 258-278, 289-297.

Panait Zosîn (1873-1942) and was eventually strengthened by the syndicalist Iuliu Neagu-Negulescu (1878-1940) and Ștefan Gheorghiu (1879-1914).

Panait Mușoiu is credited as one of the most famous Romanian anarchists, one carried out astonishing printing activity and was the foremost advocate of the so-called "propaganda of the deed". Born in the city of Roman in 1864, he began his undergraduate studies at the local school and shortly afterwards took a clerical position in the city in Roman. Here, in 1855, he organised the Socialist Propaganda Circle, which held regular meetings to learn from the "example of distinguished people, […] the clear springs of science".[108] During the Moldavian peasant uprising in 1888, Mușoiu moved to the region of Botoșani-Dorohoi from where he corresponded with the leading figures of the socialist movement – distributing leaflets and urging both workers and peasants not to obey to any boyar party, but to organise their own.[109]

After a short trip to France — at the time the Second International (1889) – Mușoiu returned to the Romanian city of Brăila. According to his memoirs, while helping the local dockworkers to organise their working clubs, he discovered that Marin Brăneanu, the gatekeeper of the shipyard, had in his cabin an impressive book collection with works by Ernst Haeckel and Charles Darwin.[110]

In the early 1890s, Panait Mușoiu moved to Bucharest where he became involved in the famous workers' club gathered at Sotir Hall. This was a social space where, besides political issues, lectures dealing with science popularisation were frequently given by the evolutionist speleologist and explorer Emil Racoviță (1868-1947). It was here that Mușoiu met his friend, the

A.Gălățeanu and N. Gogoneață, *Panait Mușoiu. Studiu, note și antologie* (București: Editura Politică, 1970) 8-12.
Ibid., 16-23.
Tiberiu Avramescu, op.cit., 257.

physician Panait Zosîn, and where their exclusion from the workers' and Marxists' clubs was about to take place. The contradictions besetting legal methods — political tactics through elections — were redoubled by the arguments of the former revolutionary anarchist Ioan Nădejde, who pleaded for blocking anarchist activity in order to avoid further confusion between

social democracy and libertarian ideas.[111] Similarly, the former Narodnik Dobrogeanu-Gherea, insisted on the division between the so-called "scientific basis of socialism [Marxism] and utopian socialism [anarchism]".[112]

Panait Zosîn was born in the Moldavian village of Gorbănești in 1873. According to his autobiography, he pursued high school studies in Botoșani, from where he was expelled for socialist propaganda, after which he stayed a short time in Brussels. Once returned to Romania, Zosîn enrolled for a medical degree at the University of Bucharest, becoming an external assistant at both public and private hospitals. During this period, he began to deliver popular science lectures at various student unions across Romania. In 1900, after a short trip to Eastern and Southern Europe, he earned his doctoral degree from the Medical Faculty of Bucharest with a thesis on social psychiatry. He went on and continued to specialise in neuropsychiatry in Berlin, Heidelberg and Paris (1901-1902), and became docent in the same field at the University of Iași in 1904. He subsequently worked as a psychiatrist at the Socola Hospice, St Spiridon House, Galata Hospice, Balș Asylum, the CFR Policlinic of Iași and was also in charge of the Iași thermal hydrotherapy service.[113]

Ioan Nădejde, "Un manifest anarchist," *Munca* An III, Nr. 11 (1892): 1-2.

Constantin Dorbogeanu-Gherea, "Anarhia cugetării," *Critica Socială* (1892); Constantin Drobogeanu-Gherea, *Anarhism și socialism* (Iași: Editura Revistei "Viitorul Social", 1908); Apud. Adrian Tătăran, "Anarhismul în România: istoriile uitate ale unei istorii uitate," *Anuarul Muzeului Național al Literaturii Române*, Anul XI (2018): 18.

Panaite Zosîn, *Calea Unei Vieți* (Iași: Tipografia Consionară Alexandru Țerek, 1935), V-VI.

Zosîn published numerous studies on psychiatry in Romanian journals. Other medical treatises dealt with the relationship between psychosis and neurosis (1910), on senility (1913), and a treatise on hydrotherapy (1925) for which he was awarded a prize by the Romanian Academy.[114] After devoting more than 30 years to anarchism, he shifted towards freethought,[115] while blending socialism with Comtean positivism.[116] Aside from working as a physician during the Balkan Wars and during the First World War, he unsuccessfully ran as a candidate for the chamber of deputies but became interim mayor of Iași in 1920.

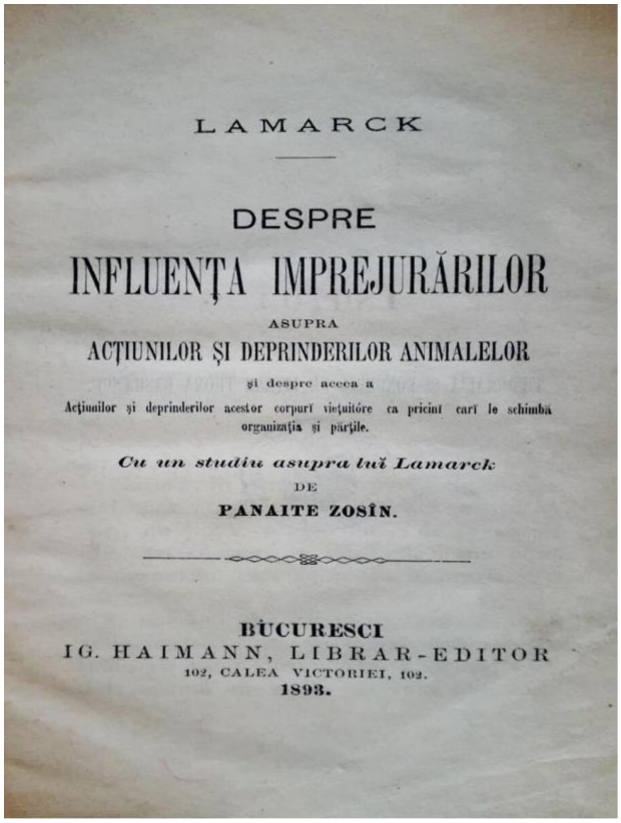
Always looking to understand the relationship between the environment and organisms, Zosîn devoted much of his studies to following the principles of "mesology" initiated by Louis-Adolphe Bertillon (1821-1883) and critically adopted by Élisée Reclus in his environmentalist studies.[117] During his student years, in 1893, Zosîn published a translation of the French evolutionist Jean-Baptiste Lamarck's *Philosophie Zoologique* [*Zoological Philosophy*] (1809), one of the first into the Romanian language. The 78-page edition was eventually included in the collection series of *Positivist Library* (*Biblioteca Pozitivista*) among 30 other pamphlets on popular chemistry, anatomy, natural history, mechanics, etc.

Ibid., VI-VII.

Panait Zosîn, *Libertatea de cugetare* (București: Biblioteca de Propagandă, 1910).

Panait Zosîn, *Pozitivismul în România* (Iași: Societatea de Cultură Pozitivă, 1913); Panait Zosin, *Socialism și pozitvism* (Iasi: Tipografia Lumina Moldovei, 1920).

The anarchists' use of the term "mesology" critically shifted away from Ernst Heackel's social Darwinist and hierarchical interpretation of ecology, putting great emphasis on the human–nature relationship as developed by Élisée Reclus in one of his most famous works, *L'Homme et la Terre* (1905–1908). See Francisco Toro, "The thought of Élisée Reclus as a source of inspiration for degrowth ethos," in Federico Ferretti et.al. (eds.), *Historical Geographies of Anarchism: Early Critical Geographers and Present-Day Scientific Challenges* (Abingdon: Routledge, 2018), 92-93.



LAMARCK

DESPRE

INFLUENȚA IMPREJURĂRILOR

ASUPRA

ACȚIUNILOR ȘI DEPRINDERILOR ANIMALELOR

și despre acea a

Acțiunilor și deprinderilor acestor corpuri viețuitóre ca pricini cari le schimbă organizația și părțile.

Cu un studiu asupra lui Lamarck

DE

PANAITE ZOSÎN.

BUCURESCI

IG. HAIMANN, LIBRAR-EDITOR

102, CALEA VICTORIEI, 102.

1893.

Figure 4.6. The first Romanian translation of Jean-Baptiste Lamarck's (1744-1829) theory of the inheritance of acquired characteristics, by Panait Zosîn in 1893. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

One of the first editorial collaborations by Mușoiu and Zosîn, which also dealt with science popularization, was *Carmen Sylva Scientific and Literary Magazine* (*Carmen Sylva Revistă Literară și Științifică*) (1895). Issued in Bucharest and sold cheaply for 20 bani per issue, the editors set out, as always, to fight for scientific accessibility. Insisting on the idea of social progress, the magazine's articles revealed the discrepancies between intellectuals and the populace. One of the articles by Zosîn, namely "The Sense of Science" ("Noima Științei") is emblematic of their argumentative approach:

> Science and its facilities are being monopolised like every other social apparatus. The majority of humankind is looking longingly at the alienated products of its intellectual and manual labour. Science, once the enlightenment of the mind and the lifting up of the heart, is now the privilege of few, while the majority of the masses continue to march through the deep dark of the unknown.[118]

Other studies published in the *Carmen Sylva* rejected the theories of the Polish racial sociologist Ludwig Gumplowicz (1838-1909) whose observations on the "struggle between the races" was identified with that occurring between "republicans, liberals, socialists, anarchists".[119] After citing Élisée Reclus, Zosîn argued that the struggle so much esteemed by the Polish racial scientist will end with the unification of all races, which will eventually lead to a period of class struggle.[120]

Panel, "Noima Științei," *Carmen Sylva*, Anul I, No.1 (1895): **1-2.**

For more on Gumplowicz's influence on Romanian racial thinking see, Marius Turda, *The Idea of National Superiority in Central Europe, 1880-1918* (Lewiston, NY: Edwin Mellen Press, 2004).

Panel, "Vederile lui Gumplovicz," *Carmen Sylva*, Anul I, No.2 (1895): 16.

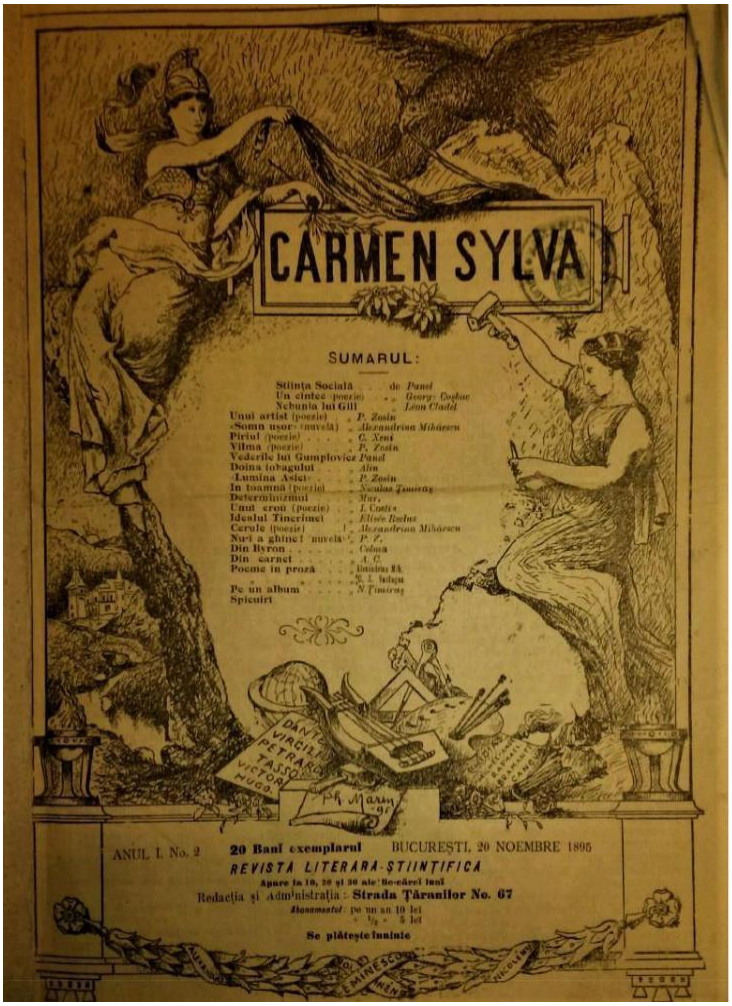


Figure 4.7. The front page of *Carmen Sylva Revistă Literară și Științifică* (1895) illustrated at the bottom with symbols of the various disciplines to be found in the issues. Courtesy of the "Carol I" Central University Library, Bucharest

After the short-lived *Carmen Sylva*, Mușoiu and Zosîn launched, in 1897, a second journal, namely *The Social Movement* (*Mișcarea Socială*). On this occasion, contributions were received from a variety of Romanian libertarians such as Cornelia Ștefănescu, Iuliu Neagu-Negulescu, and Solomon Abram. *The Social Movement* was issued weekly and sold for 10 bani. The balance sheet

published at the end of their activities in 1898 showed that they printed 69,000 copies, of which 39,007 were sent to various people and institutions, eventually reaching 1,366 people.[121]

In their programmatic statement, the two editors explicitly stated their anarchist and secularist stance. They insisted that their aim was to empower readers to disobey all idols.[122] Instead, they wished to awaken their readers' innate revolutionary feelings by the "universalisation of science" because, they argued, "only distrust in our own power and disbelief in our own purpose has made us fall into the possession of the few."[123] Panait Zosîn was in charge of the science popularisation section, and in the second issue he clarified the relationship between the practice of science and doctrinaire politics.[124]

Also relevant is the essay by a young Jewish school teacher, Solomon Abram, who in the following year was arrested in relation to international anarchist activity. Under the pseudonym Teacher Sava, he set out to reveal the state of affairs regarding the Romanian scientific, addressing its patrons directly:

> [Scientists] have exploited the development of science and the narrowness of our minds. For [them] science and religious faith are the same thing. You use both for your own purposes. Expeditions which involved several killings were carried out for your interests. Missionaries have dragged God for their interests among savages who were living freely
>
> You have put your hands on everything, monopolised science, you have stolen the

"Situația Financiară," *Mișcarea Socială*, Anul I, No. 35 (1897): 1-2.
Panait Mușoiu, "Ce urmărim," *Mișcarea Socială*, Anul I, No. 1 (1897): 1.
Panait Zosîn, "Revoluția socială," *Mișcarea Socială*, Anul I, No. 1 (1897): 1.
Panait Zosîn, "Ce sint Eu?," *Mișcarea Socială* No.2 (1897): 1.

working tools made by us, and the land is also owned by you. […] Until now we have been patient, but our patience has a limit.[125]

When the University of Iași was preparing to celebrate the 47th anniversary of its founding, Zosîn's solution to the growing gap between academic scientific practitioners and amateurs was the adoption of free Popular Universities (*Universitățile Poporului*) based on the British model of the Society for the Extension of University Teaching established in 1876. The British University extensions, Zosîn argued, had been developed all over Europe, delivering popular courses on natural history, medicine, surgery, agronomy, the arts.[126]

As Maria Itu's study has shown, popular scientific lectures were delivered across Romania by various cultural societies. The popular education reform promoted by Spiru Haret in 1898, also led to the appearance of popular libraries and the incorporation of rural athenaeums.[127] In the 1890s, various socialist and anarchist revolutionaries offered alternative methods of cultural organisation to the Romanian working class and peasants. This meant organising spaces where people could attend free public lectures, borrow books or learn new skills. Not surprisingly, modelled on the structures and organisation of trade unions, various workers' and peasants' reading clubs emerged all across the country, reaching as many as 200 rural regions by the turn of the century.[128] Nevertheless, the Romanian authorities were not comfortable with the

Dascălul Sava, "În ce timp trăim," *Mișcarea Socială* No.4 (1897): 1.

Panait Zosîn, "Universitățile Poporului," *Mișcarea Socială* No. 28 (1897): 1.

Itu Maria, *Forme Institutionalizate de Educație Populară în România 1859-1918* (București: Editura Științifică și Enciclopedică, 1981), 151-167, 186-221.

For more details on peasant reading clubs see Gheorghe Matei, *Cluburile socialiste la sate* (Bucharest: Editura Științifică, 1968); Gheorghe Matei and Damaschin Mioc, "Cluburile socialiste de la sate (1898-1899) Repertoriu Micromonografic" *Revista de Istorie*, No.2, Tom 28 (1975): 239-266; Anca Mandru, op.cit., 35-36.

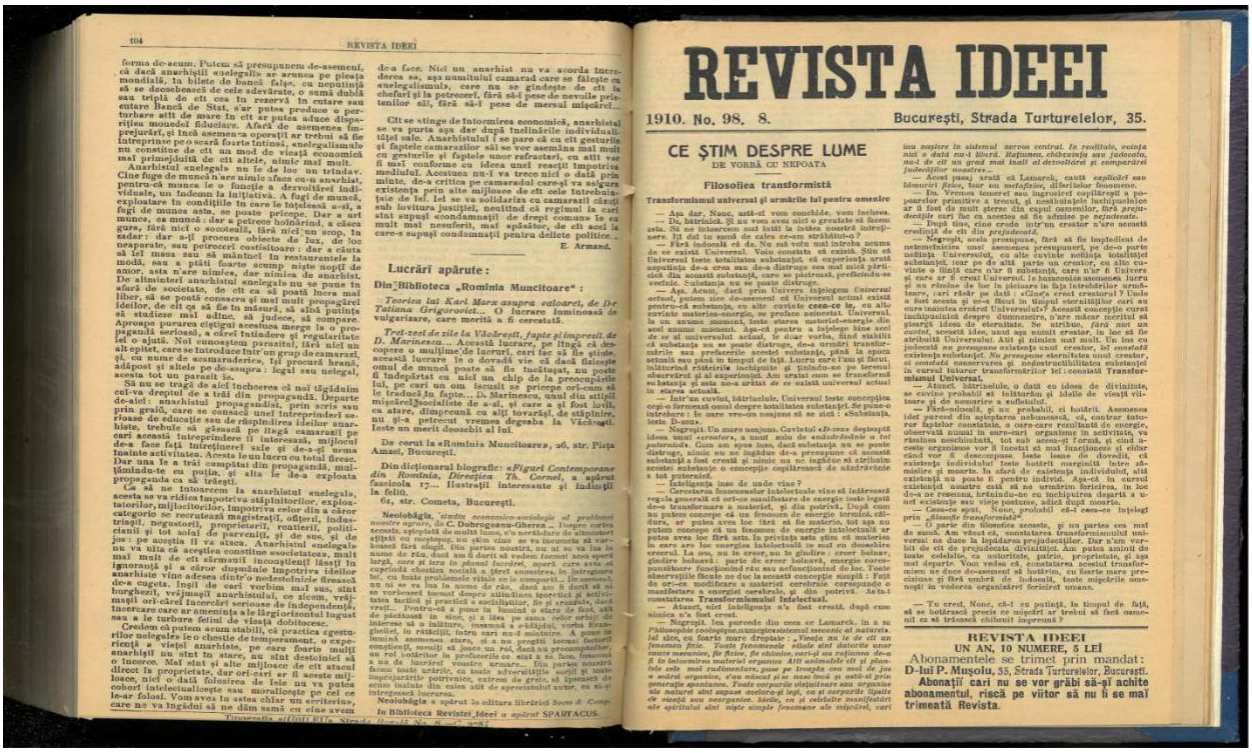
flourishing of popular associations, which developed freely without state control. Before and after the Romanian peasant uprising of 1907, several reading clubs and libraries, such as the one in Constanta, were shut down by acts of vandalism backed by the local police. The authorities confiscated the workers' library archives in Pașcani, Bucharest, Iași, Turnu Severin, Câmpina, Galați, Tulcea and Brăila.[129]

It is relevant to note that during the early years of the twentieth century, Panait Mușoiu issued (with a few interruptions) one of the most enduring Romanian anarchist periodicals, known as *Idea Magazine* (*Revista Ideei*) (1900-1916). Taking its title from a suggestion by the poet Alexandru Macedonski, the journal frequently published translations and adaptations of Jean Grave's French periodical *New Times* (*Les Temps Nouveaux*). The editor also received valuable information from across the Atlantic, publishing his correspondence with the Jewish anarchists formed in New York and known as the Romanian Revolutionary Group.[130] Printed in two columns and cheaply sold for 5 lei per 10 issues, within three years the journal reached 680 subscribers of whom 90 were in Bucharest, 40 outside Romania (Berlin, Paris, Los Angeles, New York, London, Montreal, Zurich, etc.), 150 in other cities across the country (Iași, Brăila, Focșani, Neamț, Constanța, Dolj etc.), and 400 in rural areas.[131]

Vasile Petrișor and Lucian Matei, "Cartea și biblioteca în viața mișcării muncitorești din România (1870-1921) II," *Călăuza Bibliotecarului* Anul XVIII, No. 7 (1965): 420-425.

Adrian Tătăran, *Panait Mușoiu* (Editura Pagini Libere, 2019) 15. For more details on the Romanian Revolutionary Group from New York see, I. Most, "Din New York," *Revista Ideei*, No. XXX, (1903): 151.

"Notiță," Revista Ideei, No. XXX (1903): 152.



REVISTA IDEEI

1910. No. 98. 8. București, Strada Turturelelor, 35.

CE ȘTIM DESPRE LUME

DE VORBĂ CU NEPOATA

Filosofiea transformistă

Transformismul universal și urmările lui pentru omenire

Figure 4.8. The front cover of *Revista Ideei* in 1910, translating Paraf-Javal's evolutionary work of science popularisation. Courtesy of the "Mihai Eminescu" Central University Library, Iași

Behind the success of *Idea Magazine* lay the careful tailoring of Panait Mușoiu, who established direct contact with his subscribers. He kept lists of people with cultural interests – both intellectuals and workers – in various regions across Romania. To all of them he sent the contents of future issues, asking for studies and translations. In the meantime, he gathered the addresses of communal teachers who were distributing the lists in the first place.[132] However, according to the testimony of Mușoiu and his subscribers, the head of the Postal Office frequently

A.Gălățeanu and N. Gogoneață, Ibid., 53-54.

blocked the circulation of the journal on the grounds that it was spreading "subversive ideas".[133] These kinds of abuses were also highlighted by the *Adevărul* newspaper, saying that the "censorship" was carried out without the consent of the Ministry of Justice, or the Government, and thus violated the Romanian constitution.[134] Yet teachers in the rural areas were sent warning letters from the Minister of Culture and Public Instruction. The letters urged them to cancel their subscriptions, arguing that the peasants were not ready to fully acknowledge such ideas because their "souls" belonged to the Church.[135]

Those who received *Idea Magazine* read in its 16 pages translations of a variety of authors such as William Morris, John Stuart Mill, Bertrand Russell, Frederich Engels. Other articles were introductory texts explaining different philosophical interpretations of anarchism by William Godwin, Mickhail Bakunin, Piotr Kropotkin, Joseph Proudhon, Max Stirner, Henry David Thoreau, Benjamin Tucker, and Errico Malatesta. At the same time, the most celebrated authors dealing with science popularisation were Elisée Reclus, Carl Vogt, Thomas Henry Huxley, Ernst Haeckel, Camille Flammarion, Paul Lafargue and two members of the French anarcho-individualist group, Scientific Student Group (Groupe d'études scientifiques), Georges Auger and Paraf-Javal (1858-1941).

Panait Mușoiu, "Confiscarea revistei noastre," *Revista Ideei*, No. XVII (1902): 1; Lucreția Balanescu, "În jurul râspîndirei și confiscărei revistei," *Revista Ideei*, No. XVII (1902): 107.

I. Teodorescu, "Cenzura," *Revista Ideei*, No. XVIII (1902): 114.

Un învățător, "Libertatea de Conștiință și Practica Constituțională," *Revista Ideei* No. 8 (1907): 116.

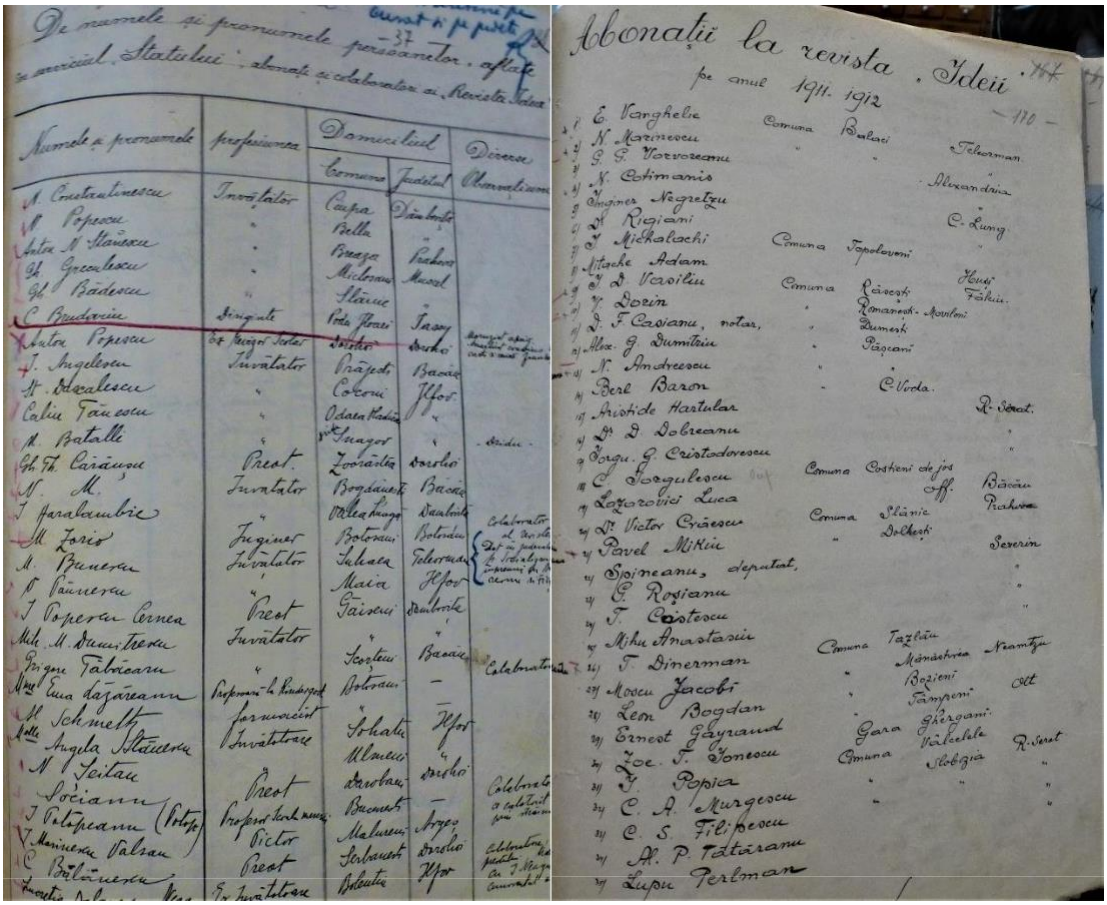


Figure 4.9. Subscription lists for the journal *Idea Magazine* made by the editor Panait Mușoiu detailing the professions of those working within the state apparatus spanning deputies, teachers, pharmcists, physicians, lawyers, industrial workers, and numerous rural priests.The lists were tracked by the secret police and used to pressure readers to cancel their subscriptions.[136]

In the first issue, dated 1900, Panait Mușoiu argued that "we look forward not to discovering new truths, but to popularising what is already known. Of course, we will not censor

Arhivele Naționale Centrale, Dorecția Poliției și Siguranței Genereale, Dosar Nr. 8/1905, File 37-170.

knowledge; instead, [science] will have complete freedom to circulate. […].”[137] His adaptations of Georges Auger succinctly insisted on the usefulness of cosmographic knowledge in determining the occurrence of the equinoxes and solstices across the different seasons.[138] Besides articles explaining in plain words the usefulness of chemistry and optics, Mușoiu's translations also described advances in astronomy, and gave definitions of celestial mechanics.[139]

When it came to Darwinism, however, one of the first articles dealing with the issue was the translation by Iuliu Neagu-Negulescu (1878-1940) of Carl Vogt's introduction to the French *The Descent of Man* (*La Descendance de l'homme*) (1871). This text by Vogt — who was also an anarchist sympathizer — cheered the advances in the biological sciences, which were made possible by "the emancipation of cogitation from the old reasoning of vital forces", and expanded by the "wider struggle against authority". This new shift, in the domains of physiology, zoology, and botany, he argued, was strongly influenced by Darwin, who had also fought against the authority of older ideas such as the Linnaean view of the immutability of species.[140]

Other evolutionary studies in the journal, which discussed organic and social evolution, included a translation from Paul Lafargue (1842-1911), "The Social Evironment: Darwin's Theory", which argued that Darwinism was used by various naturalists to advance their "eulogy of the capitalist society".[141] Other articles rejected the general tendency of evolutionary researchers, whose cultural progressive views proclaimed a "primordial hierarchy of races". In this regard, Reclus's study indicated that "classification based on colour, language, cranial

Panait Mușoiu, "Ca să ne facem înțeleși" *Revista Ideei* Anul 1, No. 1 (1900): 1.
Georeges Auger, "Utilitatea cunoșterii cosmografiei," *Revista Ideei*, No. 115 (1912): 54.
Maurice Sauger, "Marile principii ale astronomiei și aplicările lor," *Revista Ideei*, No. 147 (1915): 73-79.
Carl Vogt, "Emanciparea Cugetării," *Revista Ideei*, No.5 (1902): 69.
Paul Lafargue, "Mediul Social: Teoria Darwiniana," *Revista Ideei*, No. 3-4 (1907): 35-39.

capacity, reveal only the privileges of those ethnicities who carry out them [in the first place]."[142] Likewise, their arguments refuted racial research, claiming that it was the "conventional fallacy" of cephalic index studies that had established the term "nations of the Latin race". The translation of the French journalist Jean Finot (1858-1922) showed that inquiries seeking to demonstrate the "purity of the races" would soon perish.[143]

Finally, one of the most acclaimed evolutionary texts included by Panait Mușoiu was his translation of the French anarchist, freemason, professor of the natural sciences and founder of the Anti-Militarist League, Georges Mathias Paraf-Javal (1858-1941). The uniqueness of the pamphlet *Humanity- Interview of my niece with her uncle* (*L'Humanité, interview de son oncle par ma niece*) (1909) prompted its circulation in the anarchist textbook *Escuala Moderne,* produced by Francisco Ferrer in Barcelona. Its accessible format, constructed around the discussions between a young girl and her elderly uncle, is based on a series of questions and answers for those wanting to learn more about the evolution of species and the universe as a whole.

The first part of the pamphlet ventured to explain the transformation of the universe by referencing Simon Laplace's nebular hypothesis. The second part dealt with the evolution of the earth and the appearence of life on its surface. The third part briefly highlighted how the evolution of humans from primitive cells was to be explained by acknowledging the theories of palaeontology as well as by observations drawn from comparative anatomy and embryology. For a better understanding of the mechanism, in the fourth part, Paraf-Javal explained that "adaptation is the capacity of organic beings to adapt to their environment", while "heredity

Elisee Reclus, "Mediul și rasa," *Revista Ideei*, No. 3 (1902): 44-47.

Jean Finot, "Romanul raselor," *Revista Ideei*, No. 109-110, (1911): 121-122. See, also Jean Finot, *Race Prejudice* (New York: E.P. Dutton, 1907).

explains how specific characteristics are passed down to the offspring." The most important part of this process, he insisted, is "Darwin's theory of selection which explains the phenomenon of how individual have survived by adaptation to the environment."[144]

To give a better visual understanding, the fifth part of the study also reproduced an account of Heackel's tree of life, briefly explaining different terms: "Niece: - How can we find the animal and vegetal ancestors? Uncle: - If we look at the series of vegetal and animal beings on the genealogical tree which branches in all directions." The anarchist uncle proceeded to stress that:

> The evolution of organic beings emerged in accordance with the evolution of the earth. The first spark of life probably appeared when the globe was entirely under water. Hence, for a long time there were only aquatic animals. Once the formation of the continents occurred, some of the aquatic animals, after passing through an amphibian stage, became terrestrial. Our ancestors were, one after the other, cells, morula, blastula, worms, fish without a head, fish, amphibians, lizards, some species of kangaroos, monkeys, humans
>
> […].[145]

The series of articles concluded by establishing the moral and political consequences of scientific discoveries. According to Paraf-Javal, if people recognized the theories of universal transformation (evolution), this would naturally "lead to the abolition of our prejudices. Beyond the superstition of divinity, we should recall others, such as authority, homeland, property and

Paraf-Javal, "Ce știm despre lume, de vrobă cu nepoata," *Revista Ideei*, No. 96 (1910): 83.
Paraf-Javal, Ibid., 99.

so on. If we consider transformism, all human actions will lead towards human happiness."[146] Similarly, in Paraf-Javal's view a perfect society, which would be cognisant of the results of evolution, would rid itself of fear and hatred, which in his view always led to the construction of borders and increased militarisation.[147]

4.3. Women's emancipation, Darwinism and science popularisation

1981 was a seminal year for the institutionalisation of scholarship dealing with the history of women's participation in science. That year, during the *16th International Congress for the History of Science* held in Bucharest, the US delegation comprised of Thomas Hughes, Sally Gregory Kohlstedt and Margaret Rossiter decided to establish the International Commission on Women in Science, Technology, and Medicine. After its founding, the commission engendered a substantial body of research, dealing with a variety of issues that urged the revision of the classical canon of scientific history.[148] In this regard, ground-breaking research by women scholars such as Carolyn Merchant and Londa Schiebinger has demonstrated that ever since the scientific revolution of the seventeenth century, the investigation of nature obsessively reinforced masculine discourses of authority and domination.[149]

Paraf-Javal, Idem., No. 98 (1910): 105.

Paraf-Javal, "Ziduri, hotare, bariere și granițe," *Revista Ideei*, No. 141 (1915): 15-16.

For a comprehensive review of the beginnings the scholarship of 'women in science' up to the mid-1990s, see Sally Gregory Kohlstedt, "Women in the History of Science: An Ambiguous Place," *Osiris* 10 (1995): 39-58, 54-55.

Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper& Row, 1990); Londa Schiebinger, *Nature's Body: Gender in the Making of Modern Science* (Boston: Beacon Press, 1993).

In terms of science popularisation, Margaret Rossiter has also shown that from the mid-eighteenth century onwards, women worked as scientific communicators, botanical illustrators, astronomers, and on indexing bibliographical references for herbariums.[150] Surprisingly enough, British botany has been portrayed as one of the most interesting cases of the scientific sphere being shaped by gender, even as it adopted an exclusionary tendency when the professionalisation of the discipline was under way. As a result, Ann Shteir has observed that "whereas the gendered shape of botanical culture gave women access to botany during the earlier period, the same gendering was inverted after 1830 so as to restrict access to an increasingly 'scientific' botanical practice."[151]

On the other hand, Bernard Lightman has also argued that "the second half of the nineteenth century was the golden age for those female popularisers of science" who wrote on a variety of scientific disciplines.[152] In addition, Lightman insists that women authors adopted various narrative forms (anecdotes, guidebooks, travel literature, almanacs) as well as used visual effects (illustrations and colours), as part of their strategy to reach wider audiences.[153] However, given their middle-class background, there were very few who managed to emancipate themselves from the "maternal tradition" of writing for other women and children. Lightman also observed that the prints reproduced male values such as "the importance of industriousness, the

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Margaret W. Rossiter, "Women and the History of Scientific Communication," *The Journal of Library History (1974-1987)*, Vol 21, No.1 (1986): 39-59.

Ann B. Shteir, "Gender and 'Modern' Botany in Victorian England," *Osiris*, Vol. 12, "Women, Gender, and Science: New Directions" (1997): 36. For the gendered scientific spheres of botany in America, see Chapter 5, "Gender and Botany", in Elizabeth Keeney, *The Botanizers: Amateur Scientists in Nineteenth-Century America* (Chapel Hill, NC: University of North Carolina Press, 1992), 69-82.

Bernard Lightman, *Victorian Popularizers of Science. Designing Nature for New Audiences* (Chicago: University of Chicago Press, 2007), 95-96.

Ibid., 129-138.

need for obedience to authority, the dangers of alcohol, the propriety of slavery, and the benefits of imperialism."[154] Thus, Lightman emphasises that "although some female popularisers may have questioned the gender status quo, even the most radical among them did not challenge eminent scientific naturalists directly on this issue."[155]

On top of this, the masculine narratives of European scientific culture introduced exclusionary analogies between race and gender in the works of Carl Vogt (1817-1895), Paul Topinard (1830-1911) and Paul Broca (1824-1880). As Nancy Leys Stepan argues, "once women had been shown to be indeed analogous to lower races by the new science of anthropometry and had become, in essence, a racialized category, the traits and qualities special to women could in turn be used in an analogical understanding of lower races."[156] Evelleen Richards also recognises that throughout Charles Darwin's famous evolutionary work of *The Descent of Man* (1871), the British naturalist further reproduced "Vogt's morphological arguments on racial and sexual differences and inequalities". Darwin agreed with other scientists that "the mature female, in the formation of the skull, is 'intermediate between the child and the man' and that woman's anatomy generally, was more child like or 'primitive' than man's."[157]

In mid-nineteenth century Romania, on the other hand, women's judicial and socio-political status was worsening, as the 1886 Romanian Civil Code stipulated their incapacity to sign any public certificates without their husband's consent or to end marriages and claim child

Ibid., 142.

Ibid., 159.

Nancy Leys Stepan, "Race and Gender: The Role of Analogy in Science," *Isis* Vol. 22, No.7 (1986): 267.

Evelleen Richards, "Darwin and the Descent of Woman" in David Oldroyd and K. Langham(eds.), *The Wider Domain of Evolutionary Thought*. Australasian Studies in History and Philosophy of Science, vol 2. (Dordrecht: Springer, 1983), 74.

maternity.[158] Even worse, by the end of the century, women who obtained a university degree did not have access to all the professions, while those working as teachers were paid less than their male counterparts.[159] If liberal and socialist feminists militated for universal suffrage, the right to vote and to be elected was obtained only in the interwar period, in 1929.[160] However, the right to vote again selected only those women with an education. A survey of Romanian women's access to education and the sciences in the second half of the nineteenth century was conducted by the feminist physician, Maria Cuţarida-Crătunescu (1857-1919) and communicated in Paris in 1901; her statistics showed that:

> The total number of academic titles awarded to 825 girls in the past 26 years has proved our intellectual activity. Since the graduation of the first girl with a high school diploma in 1875, the number has risen to 432, 40 bachelors in literature, 21 in the sciences, 12 in medicine […], one in law at the Faculty of Paris, 319 secondary school teachers, and two bachelors in pharmacy. If we add the number of artists and women of letters without an official title, it would be very elegantly proved that Romanian women have a huge enthusiasm for intellectual work.[161]

Despite the above statistics, during the first decade of the twentieth century, women were still working, together with children, around 12 to 16 hours in the mines, without any medical assistance, while exposed to numerous ills.[162] In contrast to Crățunescu's statistics were

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For more details and a good guide to sources on Romanian feminism, see Ștefania Mihăilescu, "Introducere," in *Din istoria feminismului românesc: Antologie de texte (1838-1929)* (Iași: Polirom, 2002), 18.

Ibid., 17.

Ibid., 45.

Marcu George, *Dicţionarul personalităţilor feminine din România* (București: Editura Meronia, 2009), 89-90.

Adi Dohotaru, *Socialiștii. O moștenire (1835-1921)* (Chișinău: Editura Cartier, 2019), 176-177.

those 1,574,919 who, besides their household duties, worked in agriculture.[163] Meanwhile, with few exceptions, most Romanian liberal feminists were part of the upper-class society, something reflected in their philanthropic activities. As Ionela Băluță has argued, their involvement was either in philanthropy activities or in educational projects. These reporduced the dominant masculine narrative through associations driven by men, men who used these initiatives for their own purposes of popular education,[164] and for projects of national liberation.[165]

In terms of publishing, the 1870s saw the appearance of the first feminist periodical, *The Romanian Women* (*Femeia Română*) (1878-1881) pubslihed by Maria Flechtenmacher (1838-1888). In 1867, at the initiative of Cornelia Emilian (1840-1910) the feminist society *Romanian Women Reunion* (*Reuniunea Femeilor Române*) was established in Iași. In 1894, Emilian also established *The Romanian Women's League* (*Liga Femeilor Române*), which issued the journal *Women's League Bulletin* (*Buletinul Ligii Femeilor*) the following year.

Given this context, women wishing to pursue a scientific career had to break into a scientific sphere dominated by men, one which portrayed them as mere popularisers of science, educational vehicles for children and promoters of the national sentiment. As Simona Antonescu has recognised, science popularisation texts also "portrayed women in a position of inferiority, somewhere between 'man and children', resembling in this way black people."[166] When, in the late1850s, racial taxonomies were published in the pages of the science popularization journal

Ștefania Mihăilescu, op.cit., 14.

Ionela Băluță, "Apariția femeii ca actor social – a doua jumătate a secolului al XIX-lea," in *Direcții și teme de cercetare în studiile de gen din România. Atelier Colegiul Noua Europă, București, 5 iulie 2002*, Ionela Băluță and Ioana Cîrstocea (eds.) (École Doctorale en Sciences Sociales. Colegiul Noua Europă, 2003), 71-74.

Ștefania Mihăilescu, op.cit, 25, 28.

Simona Antonescu, op.cit, 333.

Isis or Nature, scientific theories of racial inequalities already mingled with gendered views of reproduction.[167] Similarly, throughout the series of articles on "Instruction and Education" published by Constantin Essarcu (1836-1938) in the same journal (1865), women were portrayed not only as vehicles for the "moral regeneration" of the Romanian Principalities,[168] but also as an object of study from the "perspective of natural history", seeking to find their educational "role within a given state."[169] Even the geologist Gregoriu Ștefănescu, a promoter of women's access to education, used his free public lectures on natural history in Bucharest to urge women to study the sciences, while depicting them as "natural born teachers", always guiding children to their first knowledge of natural phenomena.[170]

The popularisation periodical *The Scientific Review*, edited by Ștefănescu and Petre S. Aurelian, republished various articles by Maria Tufelcică, which reflected the editors' masculine view of women and education.[171] Other contributions to the same journal came from Maria Gr. Ștefănescu, who published articles on scientific expeditions "The Challenger Expedition", "The [Verney Lovett] Cameron expedition in Africa".[172] Maria Gr. Ștefănescu inaugurated the collection series *Children's Library* (*Biblioteca Copiiloru*) by issuing a pamphlet in 1887, which was followed by illustrations of the life of ants that were guided by their animal faith in God.[173] The same quest was pursued in the works on science popularization for children published by a

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Cosmin Koszor-Codrea, "Mismeasuring diversity: popularizing scientific racism in the Romanian Principalities around the mid-nineteenth century" (Forthcoming, 2021).

"Instrucția și Educația," *Natura*, Anul VI, No.2 (1865): 12.

E, "Instrucția și Educația: Arta în raport cu Ameliorația socială," *Natura*, Anul VI, No.5 (1865): 38-39.

Gregoriu Ștefănescu, "Curs public de istoria naturală făcut la Universitatea din București de Gr. Ștefănescu. Lecțiunea de deschidere," *Revista Sciințifică*, Anul 5, No. 19, (1874): 296.

Maria Tufelcică, "Instrucțiunea Femeei in România," *Revista Sciințifică,* Anul VII, No. 3 (1876): 36-38.

Maria Gr. Ștefănescu, "Esplorarea Maritimă a lui Challenger" and "Africa și espedițiunea lui Cameron," *Revista Sciințifică*, Anul VII (1876-1877): 342, 355: 131, 147.

Maria Gr. Ștefănescu, *Viața Furniciloru cu Ilustrațiuni* (Bucureșci: Stabilimentul grafic Socecu & Teclu, 1887).

former student of Artemiu Publiu Alexi, then a secondary school teacher, Iuliu Mosil (1859-1947), who pubslihed the *Youth's Friend* (*Amicul Tinerimei*) (1893) and *Jiul Magazine of Literature and Science* (*Jiul Revistă Pentru Literatură și Știință*) (1894). Among other objetcs, he also promoted outdoor trips with students and the introduction of the biological perspective in schools, while avid about strengthening the idea of national identity from a young age.[174]

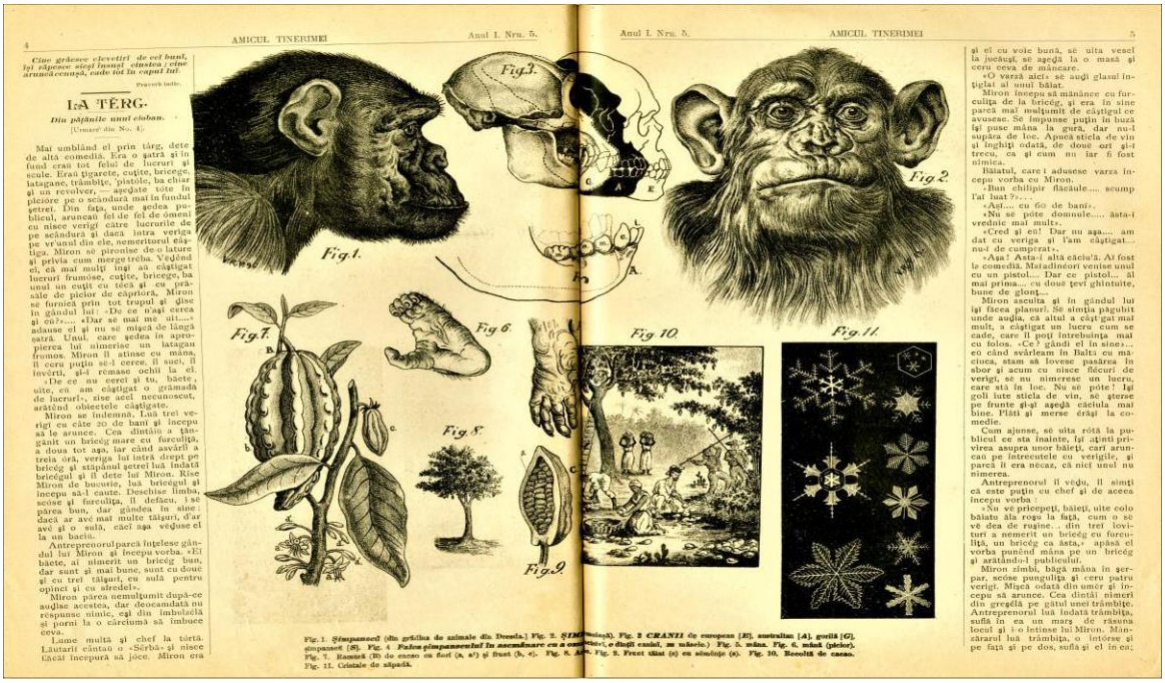

Figure 4.10. Excerpt from the science popularisation journal (Issue No.5) *Youth's Friend* depicting illustrations of evolutionary racial anthropometric measurements dedicated to children's education. Courtesy of Lucian Blaga Central University Library, Cluj-Napoca

Iuliu Moisil, *Scopul predarii sciintelor natural. Mijloacele si metoda predarilor lor în scolele secundare* (Targu-Jiu: Tipo-Liografia nationala Nicu D. Milosescu, 1897), 9.

Female socialist contributions were also made to the discourse on women's emancipation and science in the second half of the nineteenth century. Anca Mândru has shown that women "constituted a tiny minority" of the socialist movement, identifying five women"out of one hundred and sixteen socialist intellectuals": Sofia Nădedje (1856-1946), Ecaterina (1873-1937)

and Nina Arbore (1889-1942), Elena Farago (1878-1954), and Izabela Sadoveanu (1870-1941).[175] However, anarchist revolutionaries also published articles dedicated to children and inaugurated the comic book format in Romania. In this vein, the Narodnik Zamfir C. Arbore, together with Bogdan P. Hașdeu, published the periodical journal *Children's Friend* (*Amicul Copiilor*) in 1891. Throughout the beautifully illustrated issues, Ecaterina Arbore (1873-1937) presented marvellous short stories to children, focusing on the animal kingdom, marine fauna, the moon, and oral hygiene.[176]

Anca Mândru, op.cit., 77.

Ecaterina Arbore, "Ce se petrece într-un furnicar," *Amicul Copiilor. Revista pentru copii* Anul I, Nr.2 (1891); "Marea și locuitorii ei," *Ibid.*, An I., Nr.8-10 (1891): 214-116; "Luna," *Ibid.*, Anul 1, No.18 (1891): 467-470;

Figure 4.11. Two issues of the journal *Children's Friend*, illustrating travel expeditions and various animals and plants which children might find attractive. Courtesy of the "Mihai

Eminescu" Central University Library, Iași

One of the most emblematic debates of the period concerning women's intellectual capacities and Darwin's evolutionary theory began after Titu Maiorescu (1840-1917) — the main voice of the Iași conservative literary group *Junimea* — delivered his lectures at the Bucharest Athenaeum in 1882. In this series of presentations, Maiorescu addressed hypnotism, animal magnetism, the origins of language, and temperaments, among other issues.[177]

Maiorescu's speech was republished by Mihai Brăneanu in *Romania Liberă* and *Timpul*. See Mihai C. Brăneanu, *Titu Maiorescu patru conferințe* (Bucuresci: Tipografia Stefan Mihălescu, 1883). The Transylvania newspaper*The*

Maiorescu's aggressive exposé began by explaining the impact of Charles Darwin's work on various disciplines, highlighting that his "monumental book" *On the Origin of Species* (1859) caused a "true revolution in science". After presenting the theory of human descent by the mechanism of natural selection, Maiorescu expended his arguments with Paul Broca's craniometrics research, conducted on the skulls of dead upper-class Parisians. After sketching a directionally progressive view of human evolution, he asserted that "as long as a nation is uneducated, its average cranial capacity is smaller; to the extent that a nation has risen on the cultural ladder, its [cranial] capacity is more pronounced."[178] In addition, after pointing towards the socialist feminist, Sofia Nădejde (1856-1946), Maiorescu deliberately jumped to class and gender divisions, comparing the abilities of the manual and intellectual worker, with those of women's, concluding as follows:

> If we move on to women, we notice that there is not a single case of a cranial volume of that reached 1,900 cubic centimetres; their average cranial capacity is 10 percent less than that of man […]. Therefore, how can we truly entrust the fate of nations to the hands of beings whose cranial capacity is 10 percent lower?[179]

A reply to Maiorescu's exclusionary calculations was published by the feminist Sofia Nădejde (1856-1946), who was no stranger to anarchism, scientific theories and, especially, to

Family also republished the speech; see "Darwinismul in progresul intelectual," *Familia* Anul XXII, Nr.19 (1886):222-223.

Mihai C. Brăneanu, *Titu Maiorescu patru conferințe* (Bucuresci: Tipografia Stefan Mihălescu, 1883) 70-71.

Ibid., 72-74.

Darwinism. In several numbers of *The Contemporary*, she published a number of articles that gave updates on the development of Darwin's theory[180] and, after her shift to Marxism, its relevance to socialism.[181] From the very first, she clearly stressed that in other countries there were "dedicated men who knew how to make science attractive to the public".[182] As Maria Cernat and Adina Mocanu have recognised, even if Sofia Nădejde's writings reproduced racial colonial narratives, her militant feminism made no concessions to the official discourse, always publishing articles against militarism, clericalism and pleading for social justice and women's emancipation.[183] Moreover, she was amongst the first women to publicly turn the tables on the dominant masculine discourse with strong scientific arguments.

An assiduous reader of the French *Revue Scientifique*, Sofia Nădjede countered Maiorescu's scientific mismeasurements with examples drawn from Jean-Louis de Lanessan (1843-1919), Charles Darwin (1809-1882), Vasile Conta (1845-1882) and Léonce Manouvrier (1850-1927). With characteristic confidence, she maintained in several articles that the difference in male and female skull volume and brain weight would appear irrelevant if naturalists were to consider their respective body mass.[184] Accordingly, she emphasised: "One factor that all those who talk about women's brain weight do not take in account is that no one

Sofia Nădejde, "Ruinarea teoriei lui Darwin asupra insulelor de coral," *Contemporanul. Revistă Ştiinţifică şi literară*, An IV, Nr. 17 (1885): 652-657.

Sofia Nădedje, "Un școlariu al lui Darwin ca apărătoriu al socialismului," *Contemporanul. Revistă Ştiinţifică şi literară* An VII, Nr. 12 (1891): 570-576.

Sofia Nădejde, "Cătră Femei," *Contemporanul. Revistă Ştiinţifică şi literară* An I, Nr.1, (1881): 6.

Maria Cernat and Adina Mocanu, "Sofia Nădejde – O figură aparte a feminismului românescu" in Sofia Nădejde, *Despre Creierul Femeii și alți demoni: antologia textelor publicistice* (Pitești: Paralela 45, 2019), 42-45.

For a collection of Sofia Nădejde's articles on anthropometry and gender, see "Chapter III. Egalitatea de gen în perspectiva Sofiei Nădejde – problema greutății creierului" in Sofia Nădejde, *Despre Creierul Femeii și alți demoni: antologia textelor publicistice* (Pitești: Paralela 45, 2019) ,233-271.

wants to relate it to body weight. Nothing could be more righteous and logical [...]. Thus, an elephant's brain weighs 3,000 grams while for that of Cuvier's only 1,861!"[185]

Figure 4.12. Portrait of the socialist feminist Sofia Nădejde. Courtesy of the Romanian Academy Library, Bucharest

Finally, after referencing Darwin's work in *The Descent of Man,* she explained that even the great naturalist had doubts about the brain issue and concluded in Narodnik fashion that this kind of discussion should take all women into account regardless of class differences. Therefore, peasant women had the same intellectual capacity as women of culture. Nadejde's incisive voice on gender and scientific issues also made history after she republished her arguments in the periodical journal *The Social Democrat* (*Sozialdemokrat*) (1890). When the German socialist August Bebel (1840-1913) printed his famous book on women's struggle for emancipation, he gave her credit "Sofia [Nădejde] furthermore emphasized the point that it depends a deal less on

Sofia Nădejde, "Raspuns D-lui Maiorescu în chestiea creerului la femei," *Contemporanul. Revistă Ştiinţifică şi literară*, An. I, Nr. 24 (1882): 876.

the brain-mass than on the proportion in the two sexes of the brain-weight to the weight of the body. Proceeding from these premises, it appeared that *the female brain was heavier than the male*."[186]

Other anarchist revolutionaries joined the debate, in favour of women's emancipation: Cornelia Ștefănescu (1888-1962), Panait Zosîn (1873-1942) and Panait Mușoiu (1864-1944). Although some of the classical theoreticians of anarchism (e.g. Joseph Proudhon) at first refused to recognise the equality of the sexes, Adrian Tătăran has argued that a radical dimension emerged when the French anarchist Joseph Déjacque (1821-1865) challenged Proudhon's views.[187]


BULETINUL
LIGEI FEMEILOR
SECȚIUNEA IAȘI
Apare o dată pe lună.
20 bani numărul
Darea de Samă asupra Ligei

Figure 4.13. The first issue of *Women's League Bulletin* launched in 1895 by Cornelia Emilian (1840-1910). Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

August Bebel, *Women under socialism*, trans. Daniel de Leon (New York: Labor News Company, 1917) 197-198. (last accessed online 3 May 2020 at https://www.gutenberg.org/files/30646/30646-h/30646-h.htm#Footnote_135_135)

Adrian Tătăran, "Anarhia și emanciparea femeilor," in Mihaela Ursa (ed.), *Zoe, fii bărbată!* (Pitești: Paralela 45, 2019), 130.

To begin with, the *Women's League Bulletin* first issued in 1895, dedicated a fair amount of space to the difficulties of women's participation in the scientific enterprise. It is no surprise that one article briefly described the personal experience of the feminist Clémence Royer (1830-1902) before and after her French translation of Charles Darwin's *Origin of Species* in 1862.[188] The editors did not mention her 60-page Lamarckian preface that justified the application of natural selection to human society. Still, the article showed that Royer was a victim of male scientists' prejudice, even as her inquiries into atomic theory, physics, and evolution anticipated the theories put forward by Edison, Darwin and Haeckel, without her receiving any credit.[189]

When it came to women's access to science, the anarchist physician Panait Zosîn (1873-1942) published in the *Bulletin* the argument that it was the dissemination and development of science that led to the awakenings of the oppressed and to women's emancipation. In his view, the "proletarian and feminist movements" should join forces in order to "change social organisation", which was the "main cause of the injustices endured" by both men and women.[190] The same position was also taken by Panait Mușoiu (1864-1944), who militated against those who rejected women's scientific inquiries, explaining that "the development of science and technical [knowledge] allows women to venture into any domain".[191] Similarly, Mușoiu highlighted that "the word of science has successfully shattered those arguments which sought to demonstrate that woman is inferior to man". After appealing to the arguments of the French anarchist Jean Grave (1854-1939), Mușoiu went on to stress that:

For more on the biography of Clémence Royer see Joy Dorothy Harvey, *Almost a Man of Genius: Clémence Royer, Feminism and Nineteenth-Century Science* (London: Rutgers University Press, 1997).

"Carnetul Ligei. Clemenne Royer," *Buletinul Ligei Femeilor*, Anul I, No. 10. (1896): 3-6.

Z, "Mișcarea femeească," *Buletinul Ligei Femeilor*, Anul I, No. 5. (1895): 1-2.

P. Mușoiu, "Acțiune," *Buletinul Ligei Femeilor*, Anul I, No. 9. (1896): 2.

Even if there are still Romanians who maintain the belief in [women's] inferiority, women have realised that they are well suited to engage in any studies in order to shatter their chains. [Thus], the prejudice regarding their inferiority is no excuse for inactivity.[192]

Crivăț, "In Chestia Inferioritatei" *Buletinul Ligei Femeilor*, Anul I, No. 5. (1895): 3-4.

Chapter 5. Darwinism and the Secularisation of the Public Sphere

"We want to provide the people with a complete intellectual arsenal, so that they may successfully resist the triple assault of superstition, vice and every form of exploitation."[1]

(DIK)

Introduction

The secularisation of the modern Romanian state reached an important turning point in 1863, when the monastic estates were taken into state ownership. However, three years later, the 1866 Constitution recognised the Orthodox faith as the "dominant state religion," declaring that civil marriages could be enacted solely under its patronage. This change was mirrored in Romanian public education. Religious courses became mandatory.

The controversial philosopher Vasile Conta was among the first to plead, without much success, for the secularisation of the Romanian educational system. However, his atheistic view was soon followed by a more radical seccular tradition consisting of figures who had their intellectual roots in the anarchist and socialist thinking. Taking a great interest in Auguste Comte's philosophy, positivism gave the Romanian freethinkers a scientific basis for developing a rationalist programme worthy of emulation. Institutionally estbalihed at the beginning of the twentieth century, the Romanian freethought movement switched to monism to its open anticlericalism, one that permitted the adoption of a religion of their own. The freethinkers'

[1] Wilhelm Bölsche, *Obîrșia Omului* (București: Biuroul „Cultura", 1911).

public activity in Romania was of crucial importance, as most of their publications devoted much ink to the popularisation of Darwinism. Setting popularisation platforms such as societies, periodicals and public lectures, the Romanian freethinkers made translations of Charles Darwin, Wilhelm Bölsche and Ernst Haeckel. Their aggressive attacks against the influence of religion in the public sphere inevitably inflamed and gave new life to the well-known conflict between science and religion. The following sections will highlight the secular movement's contribution to the popularisation of science and the various theories of evolution in Romania, while also considering the religious replies to Darwinism.

The freethought movement

Throughout the second half of the nineteenth century, manifestations of the freethought movement occurred in most Western European countries, continuously striving for organised ways of espousing their worldviews. Bringing together a wide spectrum of individuals from scientific figures to socialists, anarchists, feminists, freemasons, and liberals, the freethought movement addressed international problems, which they felt afflicted modern society. The most obvious of these was the increased hegemony of religious practice in the public sphere. Thus, the separation of church and state was their common demand. Civil marriages and cremation of the dead were also dedmanded against religious practices. Another issue was expelling clerical influence from public education, a cause that garnered international solidarity in the aftermath of the execution of the radical educator and anarchist Francisco Ferrer (1859-1909). When the

turmoil of international politics drove countries to war, the discourse of the freethought movement embraced pacifism as a worthy doctrine.

In terms of organised platforms, the British working class brought to the surface a long tradition of secular encounters, most of them made in several journals and newspapers in which people expressed their own reasons for disbelief.[2] During the 1840s, George Jacob Holyoake (1817–1906) initiated the British "secularist" movement, which mainly developed "the artisans' will towards self-improvement [and] diffusion of knowledge".[3] By the middle of the century, freethinkers from across the country had had several gatherings, but it required the initiative of Charles Bradlaugh (1833-1891), an editor of the journal *National Reformer*, to finally establish the first National Secular Society in 1866.[4]

One of the first Romanian manifestations of the freethought movement in an international context occurred in 1869, as the Catholic Church was preparing to organise the first Vatican Council. The event followed Pope Pius IX enacting in 1864 the famous *Quanta Cura* encyclical that contained the annex, "Syllabus of Errors", condemning among other matters, naturalism, materialism, rationalism and socialism. Given the magnitude of the gathering, the European freethinkers saw the event as a "declaration of war against science."[5] The same year, the Italian journalist and democratic deputy Giuseppe Ricciardi (1808–1882) published an appeal

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Susan Budd gives a great number of examples derived from obituaries written in secular journals arguing that the freethought movement had its origins in the British working class. See Susan Budd, "The Loss of Faith: Reasons for Unbelief among Members of the Secular Movement in England, 1850-1950," *Past & Present*, 36 (1967): 106-125.

Michael Rectenwald, *Nineteenth-Century British Secularism: Science, Religion and Literature* (New York: Palgrave Macmillan, 2016), 73.

Eward Royle (ed.), *The Infidel Tradition: From Paine to Bradlaugh* (London&Basingstoke: Macmillan Press, 1976), 71-89.

Simona Nicoară, *O istorie a secularizării. Avatarurile crestinismului si triumful mesianismelor noilor ere (sec.XIX-XX)* Vol II (Cluj-Napoca: Editura Accent, 2006), 281.

in French that called for all European freethinkers to gather in Naples as a sign of protest, and eventually to discuss the foundation of a Freethinking International Association.[6]

Romania was represented at the so-called "anticoncilio" by the zoologist Ștefan St. Sihleanu (1857-1923), as delegate of the Humanitarian Society from the city of Ploiești. According to the programme guest book, Sihleanu was delegated by the Romanian freethinkers to praise Italy's noble act of organising such a demonstration.[7] Another freethinker who attended the gathering was the Transylvanian physician Friedrich Krasser (1818-1893), who became widely famous for publishing the *Antisylabus* poem in 1869. Soon after the Naples gathering, he recognised that, despite to all the rumours that the "anticoncilio" failed to establish "a central committee" and its "own journal", at least the gathering "will be seen in a better light in history than all the congresses held by popes and rulers."[8] However, in spite of the efforts that went into organising, the "anticoncilio" did fail to accomplish its main aim of establishing an international platform. As Lisa Dittrich has shown, "the failure of the anti-Council can be attributed in part to national contexts […] Ricciardi's initiative depended largely on the national culture of freethought in the different countries and […] a lack of agreement within the movement's leadership as regards its positive goals and objectives."[9]

Soon afterwards, the centre of freethinking moved to the Belgian city of Brussels. At the freethought conference held there in 1880, the participants eventually established the first

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Lisa Dittrich, "European Connections, Obstacles, and the Search for a New Concept of Religion: The Freethought Movement as an Example of Transnational Anti-Catholicism in the Second Half of the Nineteenth Century," *Journal of Religious History* Vol. 39 (2015): 7-8.

See Giuseppe Riciardi, *L'anticoncilio di Napoli del 1869* (Napoli: Stabilimento Tipografico, 1870), 86, 270.

Friedrich Krasser, "Congresul de la Neapole al Liber-Cugetătorilor," in *Antologia Ateismului din România* (București: Editura Științifică, 1962), 149-151.

Lisa Dittirch, op.cit. 10.

International Federation of Freethinkers, which aimed to coordinate all future meetings up until the twentieth century. In this way, new networks were built upon ties with the most vocal figures from Central and Eastern Europe to those based in New Zealand, South Africa and Japan.[10]

Meanwhile, in the 1880s, debates over the organisation of the freethought movement in Romania were closely associated to socialist and anarchist figures who identified the Orthodox Church, among other institutions, as the oppressors of the peasantry and the working class. As the historian of cremation practices Marius Rotar observes, Romanian attempts to organise a freethought movement appeared in 1885 in reaction to the views expressed by Orthodox clerics in the city of Iași, who were concerned by the development of radical ideas such as Darwinism. Rotar illustrates that the socialist Alexandru G. Radovici explicitly urged, in the newspaper of *Human Rights* (*Drepturile Omului*), the establishment of a Romanian Association of Freethought, similar to those already formed in most European countries.[11] However, Radovici's dream became a reality only at the beginning of the twentieth century. In 1909, in Iași, the physicians Constantin Thiron and I. Lebell founded the *National Association of the Heckelian-Monism Free Thinking* (*Asociația Națională de Liber Cugetare Monisto-Haeckeliană)*, which was shortly followed in 1911 by the Bucharest *Scientific Association for Positivist Education* (*Asociația Științifică de Educație Pozitivă*).

Jeffrey Tyssens and Petri Mirala, "Transnational Seculars: Belgium as an International Forum for Freethinkers and Freemasons in the Belle Époque," *Revue belge de philologie et d'histoire*, Tome 90, 4 (2012): 1356-1357.

Marius Rotar,"The Freethought Movement in Romania until the Outbreak of the First World War: Developments, Criticisms and European Influences," *History of European Ideas*, Vol.42 (2016): 4.

5.1. Romanian freethinkers and popular science periodicals

The relationship between the Romanian freethought movement and popularised scientific knowledge was obvious from the outset, as most freethinkers had a scientific background, their studies ranging from medicine to biology. Their belief in a future society freed from religious dogma was also shared by the early nihilist circles of the 1880s, who used various publications to openly oppose Romanian clerical practices. Active within these circles was the positivist physician and anarchist Panait Zosîn (1873-1942). As he acknowledged, in the 1880s, nihilism manifested itself in two ways. The first was "socio-political, in the form of anarchism and socialism"; the second was the "scientific philosophy of materialism". These were the two stages through which he passed before his shift towards to positivism in 1906.[12]

Panait Zosîn published the monthly *Guidance, Politics, Literature, and Science* (*Îndrumarea, Politică, Literatură, Știință*) with Sebastian Moruzzi in 1908, which sold for 50 bani per issue. Besides portraying the difficulties that the Romanian peasant endured after the 1907 Revolt, the journal frequently discussed science and freethought matters. For instance, in 1908 Zosîn translated the work *La partage du monde* [*Sharing the World*] (1906) by the French geographer Onésime Reclus (1837-1916), showing how scientists "should move beyond the idea

of race and nationality and direct [their] efforts towards the idea of peace and humanity."[13] His next article republished the notes he had written as a student in 1896. On this occasion, Zosîn

Panait Zosîn, *Pozitivismul în România* (Iași: Societatea de cultură pozitivă, 1913), 7-8.

Panait Zosîn, "Împărteala pământului: Saxonii, Slavii, Latinii: rolul romînilor," *Îndrumarea. Politică, Literatură, Știință*, Anul I, Nr.3 (1908): 139; For more details on the question of race and racism in atheist circles, see Nathan G. Alexander, *Race in a Godless World: Atheism, Race and Civilisation, 1850-1914* (Manchester: Manchester University Press, 2019).

synthesised Vasile Conta's undulation theory, aiming to show that organic species engaged in a struggle for solidarity.[14]

Zosîn addressed the issue of secularism in 1909 by observing that there were many people, such as the freethinkers, who could live their lives without religious institutions. Therefore, if the "church was not able to conceive itself according to the freethought ideas", it should at least acknowledge its social purpose.[15] His next pamphlet, published in 1910, was printed in the small collection series of *Biblioteca de Propagandă*. In this text, he set out in detail the position of the freethought movement regarding the misconceived conflation in the public sphere of Orthodox religious faith and Romanian national identity.[16]

In 1909, the Iași, *National Association of the Heckelian-Monism Free Thinking* gathered other outspoken radical voices. Its activity immediately manifested in a petition signed by various academic scholars in protest against the religious services held at the inauguration of the academic year at the Moldavian University. Behind this initiative was one of the most vociferous representatives of the Romanian freethinkers, Constantin Thiron (1853-1924). As Rotar has shown, Thiron was also a "social militant" who had had medical training in Paris (1880) and specialised in pathology and therapeutics. Teaching both disciplines at the local university between 1889 and 1923, he was the first to open a laboratory of experimental medicine and

Panait Zosîn, "Superioritatea minorităților în biologie și sociologie," *Îndrumarea. Politică, Literatură, Știință*, Anul I, Nr.4-5 (1908): 180-196.

Panait Zosîn, "Biserica & Școala," *Îndrumarea. Politică, Literatură, Știință*, Anul I, Nr.11 (1909): 476-477.

Panait Zosîn, *Libera-Cugetare. Cîteva considerații asupra raporturilor religiii față de naționalitate, știință, morală și filozofie* (București: Rațiunea, 1912), 15.

radiology in Iași. Besides his participation in the most important freethought international conferences, he devoted much time to campaigning against alcohol.[17]

Concerning the above-mentioned petition, Thiron published the text in a pamphlet entitled *The conflict between science and religion* (1909), which became one of the first public manifestos of Romanian freethought. Eager to explain that the Orthodox service held at the university did not take into account either the university's own regulations or other religious confessions, Thrion used scientific articles to show that religious ceremonies contributed to the spread of tuberculosis and diphtheria amongst the population.[18] Addressing the question of the economy, his manifesto expressed that the "Church is nothing else than a social parasite, suckling up money from the state and worshippers both, an institution that lacks moral purity and altruism." Therefore, the Romanian freethinkers' demands were "the separation between church and state based on the French model, the suppression of funds for religious cults and their ceremonies, a shift from the Orthodox calendar (Julian) to the scientific one (Gregorian), and the introduction of cremation practices."[19]

Unsurprisingly, Thrion's pamphlet outraged public opinion, moving members of the clergy and academics alike to attack his views. Among the numerous replies, Iuliu Scriban (1878-1949), the Metropolitan of Moldavia, Pimen Georgescu (1853-1934), and A.C. Cuza (1857-1947) accused

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Marius Rotar, "Libera cugetare în România pâna la izbucnirea Primului Razboi Mondial: cazul doctorului Constantin Thiron," *Archiva Moldaviae* Vol. VII. (2015): 145-147.

Constatin Thiron, "Conflictul dintre Știință și Religie. Sfeștania de la Universitatea din Iași," in Marius Rotar (ed.), *Conflictul dintre Știință și Religie Asupra liberei cugetări* (Iași: Editura Universității ,,Alexandru Ioan Cuza'', 2016), 43-

Ibid., 50-53.

the freethinkers of anarchism, and of trying to dominate the Romanian people by adhering to a "Jewish conspiracy",[20] and suppressing the people's true freedom of thought.[21]

The freethinkers, however, proposed belief in a new religion in line with the worldviews of scientific naturalism and of monism as theorised by Ernst Haeckel. The historian of monism Todd Weir has argued that "monism was not just a scientific intrusion into philosophy and religion. It was also a philosophical and religious intrusion into science."[22]

Romanian freethinkers made use of all the printing platforms that were willing to show their solidarity with the monist cause. One was the collection series established by the Jewish poet and editor, Avram Axelrad (1879-1963). Born in Bârlad, Axelrad earned his living as a teacher in Bucharest, while becoming the editor of several popular science journals.[23] His translations were done under the pseudonym A. Luca and were published in his most successful collection series, the yellow-cloth pamphlet known as *Lumen Library* (*Biblioteca Lumen*). Responsibility for the scientific section was shared with the famous populariser, Victor Anestin (1875-1918), and offered abridged versions from authors such as Giordano Bruno, Galileo Galilei, Camille Flammarion, Ernst Haeckel,[24] as well as Marxist thinkers like Paul Lafargue and C. Dobrogeanu-Gherea.

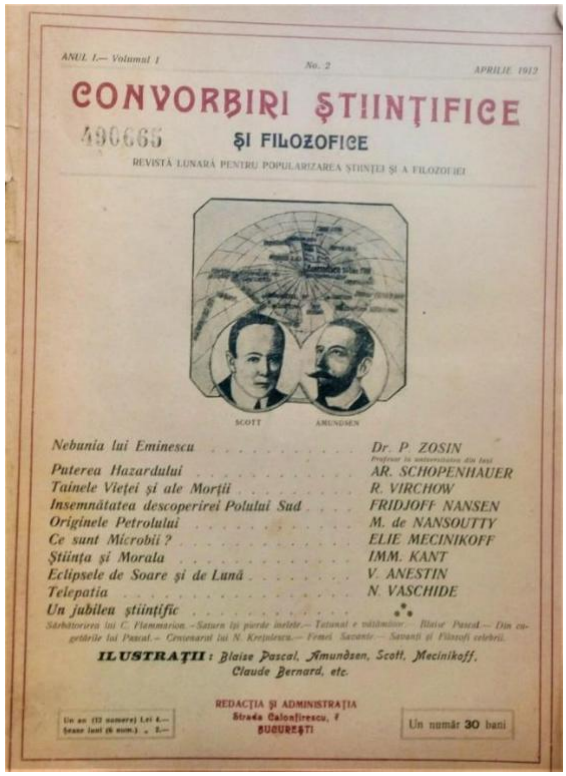
A.C. Cuza, "Conspirația Jidovească Internațională. Anexe la „Jidanii în Presă"," in Marius Rotar (ed.), *Conflictul dintre Știință și Religie Asupra liberei cugetări* (Iași: Editura Universității ,,Alexandru Ioan Cuza'', 2016) 59-61, 75.

Iuliu Scriban, "Libera Cugetare sau cugetarea liberă, răspuns d-lui dr. Constantin Thiron," in Ibid., 89, 102.

Todd H. Weir, "The Riddle of Monism: An introductory essay," in Todd H. Weir (ed.), *Monism: Science, Philosophy, Religion and the History of a Worldview* (Basingstoke: Palgrave Macmillan, 2012), 14.

S. Podoleanu, *60 de scriitori români de origină evreească: antologie* (București: Slova, 1935).

Ernst Haeckel, *Despre Minuni* (București: Editura Lumen).


ANUL I.— Volumul I No. 2 APRILIE 1912

CONVORBIRI ȘTIINȚIFICE

490665

ȘI FILOZOFICE

REVISTĂ LUNARĂ PENTRU POPULARIZAREA ȘTIINȚEI ȘI A FILOZOFIEI

SCOTT AMUNDSEN

Nebunia lui Eminescu	Dr. P. ZOSIN
Puterea Hazardului	AR. SCHOPENHAUER
Tainele Vieței și ale Morții	R. VIRCHOW
Insemnătatea descoperirei Polului Sud	FRIDJOFF NANSEN
Originele Petrolului	M. de NANSOUTTY
Ce sunt Microbii ?	ELIE MECINIKOFF
Știința și Morala	IMM. KANT
Eclipsele de Soare și de Lună	V. ANESTIN
Telepatia	N. VASCHIDE
Un jubileu științific	∴

ILUSTRAȚII : Blaise Pascal, Amundsen, Scott, Mecinikoff, Claude Bernard, etc.

REDACȚIA ȘI ADMINISTRAȚIA
Strada Calonfirescu, 7
BUCUREȘTI

Un număr 30 bani

Figure 5.1.The science popularization journal *Convorbiri Științifice și Filozofice* launched in 1912 by Avram Axelrad, publishing the works of Panait Zosîn, Victor Anestin and Rudolf Virchow. Courtesy of "Lucian Blaga" Central University Library, Cluj-Napoca

The scandal caused by Thrion at Iași University in 1909 coincided with the evolutionists' celebration of the centenary of Charles Darwin's birth and the 100 years since the publication of Jean-Baptiste Lamarck's *Philosophie Zoologique* (1809). *The Lumen Library* the collection series dedicated several pamphlets to Darwinism and monism. The first was abridged translation of Charles Darwin, *The Struggle for Existence* (*Lupta pentru existență*) by Axelrad. Cheaply sold for

15 bani, the pamphlet dealt with the essentials of Darwin's evolutionary theory by natural selection, adapting phrases from the original text of the *Origin of Species*.[25]

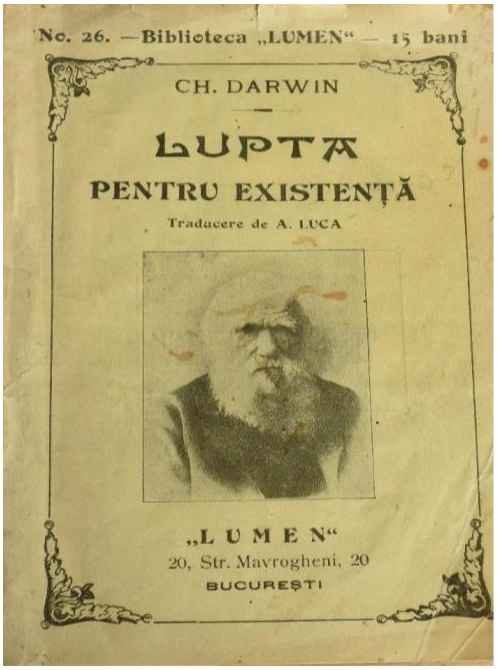


Figure 5.2. The yellow-cloth collection series of the *Lumen Library* featuring a picture of Charles Darwin. Personal archive

Two other pamphlets published in the same collection invited one of the most active Romanian defenders of Darwinism, Nicolae Leon (1862-1931), to express his views on the matters of science and monism. Thus, his first text, *Moniste*, published in 1909 was composed in such a way as not only to explain the worldviews of the freethinkers, but as a reply to the recent anti-Semitic accusations by A.C. Cuza.[26] Leon's arguments were borrowed from the work of the French anarchist and editor Jean Grave (1854-1939), published in *La Société Future* in 1895. Like

Charles Darwin, *Lupta pentru existența* (București: Biblioteca Lumen, 1909)
Nicolae Leon, *Moniste. Dușmanul liberei gândiri* (București: Editura Lumen, 1909), 3-5.

Grave, he maintained that "official science" and established naturalists act against scientific truth, which is spurred by non-academic scientific practitioners.[27] Similarly, Leon declared that:

> The disproportion of advanced ideas is determined by the reactionary trend represented by official science. This is why big ideas that break from previous tradition do not come from the representatives of official science, but from free savants. The selection theory based on data provided by palaeontology, anatomy and embryology, which explains the origin of species through the "struggle for existence" was put forward and demonstrated by Darwin, who was not a [university] professor.[28]

For Leon, figures such as A.C. Cuza (1857-1947) sided with whichever ideas were currently in vogue, passing from atheism to nationalism only to become "the most fanatic and intolerant Christian." Moreover, he insisted on the consistency of his own ideas, and proclaimed an oath to the monist idea by publishing Darwinist articles. Accused of being antinationalist, and not deserving of his salary, Leon replied:

> I am not paid either as a priest or as a theology professor to teach faith, but as a professor of natural history to spread the truth. Mr. Cuza would like me to say that the supreme goal of terrestrial creation are humans; that nature is created to be at his disposal; that

A.C. Cuza, "Anexa la Jidanii din presă," in Marius Rotar (ed.), *Conflictul dintre Știință și Religie Asupra liberei cugetări*, (Iași: Editura Universității ,,Alexandru Ioan Cuza'', 2016), 75.

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Nicolae Leon, op.cit., 34.

the earth is the centre of the [Universe], with the Sun, the Moon and the Stars spinning around it. No scientist can support such heresies.[29]

The second pamphlet *Monism. The Religion of the Few* (*Monismul. Religia Celor Puțini*), published by Leon in 1910, aimed to integrate international monist figures like Charles Darwin and Ernst Haeckel with Romanian ones like Vasile Conta and Grigore Cobâlcescu.

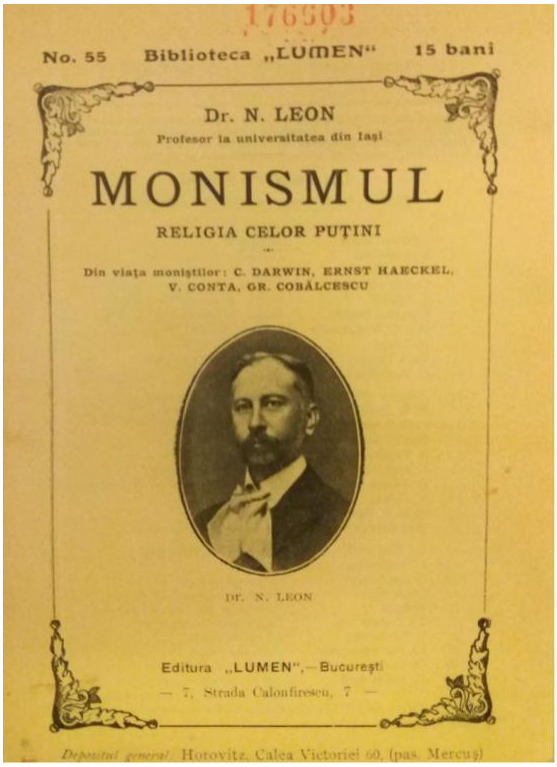

Figure 5.3. Issue 55 of the *Lumen Library* inviting practitioners of science like Nicolae Leon to popularise monism, Darwinism and freethought. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

[29] Ibid., 43.

On this occasion, Leon was less interested in the scandal with A.C. Cuza who accused him of anarchism and of protesting against "official science" from within the academic establishment.[30] His focus was to explain scientific worldviews according to monism, a "religion based on Darwin's theory".[31] Therefore, this new religion recognised the forces of nature not as "revelations", but by "science and pure reason". Accordingly, he defined monism as follows:

> Monism teaches us that the Universe is eternal and infinite, that it was never created, but evolves according to perpetual natural laws; natural phenomena are the product of physical and chemical forces inherent in matter; that humans were not created 6,000 years ago, as the Bible says, but are the result of successive natural transformations, from a series of mammal ancestors.[32]

In 1911, monists, from all over the world gathered at the first Monist Conference held in Hamburg. A delegate from Romania, Constatin Thiron explained in his presentation that the "dogmas and doctrines followed by the Romanian freethinkers are the ones comprised in the 30 theses developed by Ernst Haeckel", thus insisting that their movement was also an "evolutionist movement".[33] After giving a brief overview of the recent conflicts between the Romanian freethinkers and the clergy, Thiron voiced several secular demands for a revision of the national constitution. In his view, as a consequence of the separation between church and state, "the

A.C. Cuza, "Anexa la Jidanii din presă," in Constantin Thiron, *Conflictul dintre Știință și Religie Asupra Liberei Cugetări*, Marius Rotar (ed.), (Iasi: Editura Universității ,,Alexandru Ioan Cuza'', 2016), 75.

Nicolae Leon, *Monismul. Religia Celor Puțini* (București: Editura Lumen, 1910), 11.

Ibid., 5.

Constantin Thiron, "Libera-cugetare și Biserica în România," in Marius Rotar (ed.), *Conflictul dintre Știință și Religie Asupra liberei cugetări* (Iași: Editura Universității ,,Alexandru Ioan Cuza'', 2016), 195.

religious vow should be replaced by a judicial one based on honour and conscience; […] there should be the suppression of religious courses in all public schools […] and the abolion of the Theology Faculties."[34] The means of propaganda should concentrate on the "instruction and education of the people through the promotion of rural schools; articles in newspapers and magazines; free courses that critically reassess the history and philosophy of religion; pamphlets of scientific propaganda; and translations". Nevertheless, he concluded that all these reforms should be "absolutely evolutionary".[35]

The Romanian freethinkers took action and pursued their propagandistic goals by publishing magazines or pamphlets of their own,[36] translating evolutionary scientists and giving free lectures that challenged religious dogma. Thus, in 1911, the Bucharest-based *Scientific Association for Positivist Education* (*Asociația Științifică de Educație Pozitivă*) launched its own periodical journal *Reason: Bimonthly Review of Freethinking* (*Rațiunea Revistă Bilunară de Liberă-Cugetare*), which became the official platform for the movement's coordination. Printed in octavo format, subscriptions for *Rațiunea* were sold for 4 lei, reaching 500 people in two years of activity, of which only 20% paid their fees.[37]

Ibid., 196.
Ibid., 196.
Ernst Haeckel, *Monismul. Profesiunea de credință a unui naturalist* (București: Libăria Nouă, 1913).
"Informațiuni," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, Nr.3-4 (1912): 64.

Figure 5.4. The front cover of the journal *Reason* declaring "Long live Science" and representing a freethinker indicating the direction to "excelsior". Courtesy of the "Carol I" Central University Library, Bucharest

The journal was printed into two columns, with sections addressing translations, poetry, definitions of monism and freethought, lectures given by Thiron at international freethought conferences, correspondents' letters, information regarding freethought clubs across Romania, socialism, feminism, and a bibliographic section suggesting books and journals worth reading. Engaging in anticlerical agitation in all the issued, the journal on several occasion included a section entitled "Our Priests" in which the editors depicted the Romanian clergy as "alcoholics,

thieves, troublemakers," and highlighted misconduct such as sexual harassment.[38] Other sections advertised the anarchist journal *Revista Ideei* (1900-1916) and the appearance of the first Romanian eugenic periodical known as *Germinal* in 1913, which pubslihed Neo-Malthusian ideas

of free love and sexual education.[39] Because the first issue of *Reason* was dedicated to the memory of Francisco Ferrer (1859-1909) on the second anniversary of his execution, their programmatic statement was deferrred to the second issue, but in the form of a declaration that there was no programme:

> First of all, who are we? Freethinkers! Oh! But not those who are handcuffed by their own dogmas, who are at war with abstract theories, leaving untouched the rest of the secular edifice of conventional lies on which our imperfect social organisation is based. Unlike them, we will dissect everything, the social organisation in all its complex manifestations,
>
> to the smallest detail, expressing only our own word, which we claim is the right one.[40]

Until 1912, the head of the *Reason* editorial board was C.I. Dicescu, when the position was taken over by Constantin Thiron. Receiving letters of congratulations from the British freethinker William Heaford and Ernst Haeckel, the journal undertook the publication of their correspondence, legitimising its involvement in the wider international movement. Several

"Popii noștrii," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul III, No.7 (1913):85-86.

For more on Neo-Malthusianism, eugenics and the anarchist movements, see Richard Sonn, "'Your Body Is Yours': Anarchism, Birth Control, and Eugenics in Interwar France," *Journal of the History of Sexuality*, Vol. 14, No. 4 (2005): 415-432; Richard Cleminson, "Eugenics without the state: anarchism in Catalonia, 1900–1937," Stud *Hist Philos Biol Biomed Sci* Vol. 39, Issue 2 (2008):232-239; Jorge Molero-Mesa, Isabel Jiménez-Lucena, Carlos Tabernero-Holgado, "Neo-Malthusianism and eugenics in the struggle over meaning in the Spanish anarchist press, 1900-1936," *História Ciências*, Vol. 25, (2018): 1-20.

"Ca program," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul I, No. 3-4 (1911): 1.

manifestos soon declared their openly anticlerical stand, aiming "with the brightness of the scientific flame and with the scalpel of truth, [to] burn and dissect without mercy all the conventional lies of religion, and [to] remove this moral gangrene from society."[41] The journal also launched calls for collaboration to replace the "unworthiness of Christianity," which, in their view, no longer corresponded to modern life:

> In order to keep up with our times, we need an evolutionist religion, which should be the last resource […] in other words, a religion and morality based not on metaphysical abstractions, but on exact knowledge, which can rise to our intellectual satisfactions, and give a spur to humanity's soul to fly towards excelsior. This religion exists and it is known as modern rationalism. […] Gather and establish cultural circles, arm the world against superstitions and prejudice with the triumphant armoury of science.[42]

The call was not in vain, as other reading circles were immediately formed. These were the Society for Positivist General Culture (Societatea Pentru Cultura Generală Pozitivă) (Iași), the Giordano Bruno Philosophy Circle (Cercul Filozofic Giordano Bruno) (Turnu Severin), the Francisco Ferrer Circle of Positivist Education (Cercul de Educație Pozitivă Francisco Ferrer) (Brăila) and the Galileo Circle for Positivist Education (Cercul de Educație Pozitivă Galileu) (Ploiești).[43] The appearance of these circles was often seen as a danger to public opinion. The

"Manifestul ,,Asociației Științifice"," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, 1-2 (1911): 12.

"Chemare. Cetățeni și Prieteni de Idei!," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, No. 1-2 (1911): 28-

"Activitatea Noastră," *Rațiunea Revistă Bilunară de Liberă-Cugetare* Anul III, No. 1-2 (1912): 33. In the Transylvanian city of Oradea, a secular circle was named after Darwin.

local police followed their meetings,[44] and accused them of anarchist activity, even of plotting to assassinate King Carol I with the use of bombs during his visits.[45]

The peak of the public scandal involving freethinkers came in September 1912 at the eighth congress organised by the Romanian Association for the Advancement and Spread of Science, held in the city of Galați. As the Association's conference dealt with scientific matters but was inaugurated with religious ceremonies, Constantin Thiron had also registered to deliver a lecture on the relationship between the Romanian Orthodox religion and rationalist education. The organising committee at first moved his presentation from one panel to another, from education and philosophy to the cults panel, full of priests, before it finally ended up in the plenary session. Meanwhile, during the first day of activities, Thiron published in the local newspapers articles protesting the adjournments he had endured, and questioned how was it possible that such a conference could be opened with a religious service.[46]

It was on the third day that the audience in the "Apollo" lecture hall were waiting for the freethinker's speech. To their surprise, the floor was given by the mathematician Gheorghe Țițeica (1873-1939) to Ms. Bacaloglu, who addressed the topic of feminism from an anti-socialist perspective, resulting in the crowd chanting Thiron's name. After Thiron finally managed to take the stage and express his gratitude for the support, some students and priests in the audience began shouting anti-Semitic slogans.[47] Not surprisingly, in the aftermath of these events, Thiron

I. Tudor, "Cercul ,,Galileu" Ploiești," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, No. 3-4 (1912): 63.
C.I. D., ",,Complotul" din Brăila," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, No.7-10 (1912) 5-6.
D. Arman, "Triumful Liberei-Cugetări," *Rațiunea Revistă Bilunară de Liberă-Cugetare*, Anul III, No.3-4 (1912): 49-

Ibid., 51-53.

returned his medal from the host conference association and continued to publish letters of protest.[48]

The editors of *Reason* eventually announced the opening of their own headquarters where regular gatherings would be held, including a popular library *Reason Reading House* (*Casa de Citire Raţiunea*) and a publishing house known as Culture Office ("Biuroul Cultura"). They also launched numerous pamphlet series.[49] In the first serial collection, translations or adaptations of nonfiction texts were used to popularise evolutionary theories. The aim was expressed in the foreword of the first issue of *Biblioteca Raţionalistă*:

> To make up for the lack of publications that are truly guided by idealism, these texts must take up the fight for the awakening of the people and fight to help them [escape] the social plague of the 90 percent who are illiterate and ignorant […]. We are eager to affirm from the start, that the creation of our library was not driven by a commercial spirit, like many recent publications. […] Clinging to this [progressive] mentality, rather than offer weak literature, it provides the popularisation science, which in some minds is still extremely weak![50]

Their evolutionary translations were done after the German novelist and science writer Wilhelm Bölsche (1861-1939). As the historian Alfred Kelly has observed, Bölsche played a significant role in adapting and popularising Darwinism into Germany. If "Haeckel set the original

"Presa şi Scandalul," *Raţiunea Revistă Bilunară de Liberă-Cugetare*, Anul III, No.3-4 (1912): 54-56.

"Asociaţia ştiinţfică de educaţie pozitivă," *Raţiunea Revistă Bilunară de Liberă-Cugetare*, Anul II, No.7-10 (1912): 28-32.

Editorii, "Catre cititori," in Wilhelm Bölsche, *Obîrşia Omului* (Bucureşti: Biuroul „Cultura", 1911).

tone of German popular Darwinism," by the interwar period it was Bölsche who became one of the best-selling nonfiction authors in the German language, promoting a sort of erotic monism through a fusion of Darwinism and *Naturphilosophie*.[51] Published in 1911, the 16-page Romanian brochure *Human Origins* (*Obârșia Omului*) described in plain language the unity and equality of humanity in the natural system, including the theory of descent from monkeys based on the Neanderthal discoveries in 1856.[52]

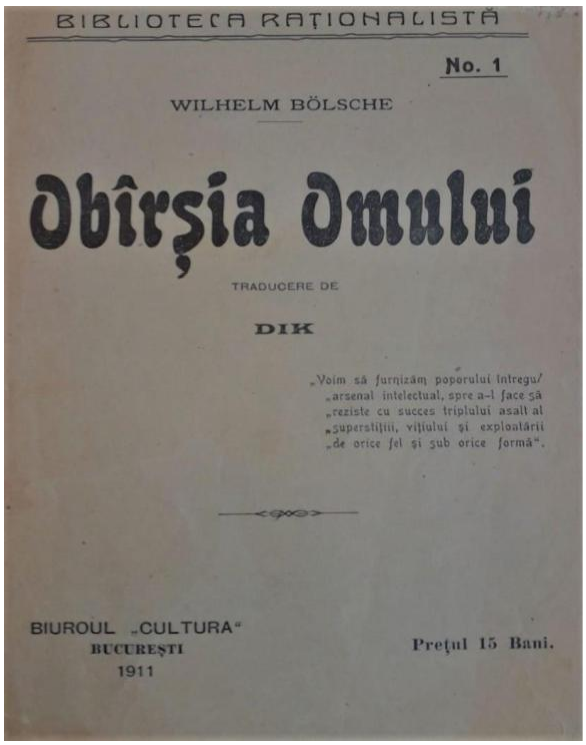

Figure 5.5. The first issue of the *Biblioteca Rațională* pamphlet, translating Wilhelm Bölsche's work on human origins. The editor's message on the front cover expressed that: "We want to provide the people with a complete intellectual arsenal, so that they may successfully resist the

Alfred Kelly, *The Descent of Darwin: The Popularization of Darwinism in Germany, 1860-1914* (Chapel Hill, N.C.: University of North California Press, 1981) 36-43.

Wilhelm Bölsche, *Obîrșia Omului* (București: Biuroul „Cultura", 1911) 15-16.

triple assault of superstition, vice and every form of exploitation." Courtesy of 'Lucian Blaga' Central University Library, Cluj-Napoca

In 1912, one year after the Bölsche translation, the editorial board of *Reason* announced their intention to commemorate the 30th anniversary of the death of Charles Darwin by dedicating the front cover to his legacy. Instead, they decided that a better idea was to include his theory of evolution by natural selection in their pamphlet collection series, "due to the fact that Romanian literature still lacks a proper work to explain in popular terms Darwinian ideas and their cultural and social importance."[53]

On this occasion, the freethinkers translated a work by the Italian anarchist Luigi Molinari (1866-1918), who was at that time a teacher at the Popular University of Milan. The 80-page pamphlet, *Popularisation of Darwin's Theory* (*Teoria Darwiniană Popularizată*), was finally printed in 1920, accompanied by pictures of the Phyletic Museum established in Jena by Haeckel. At the very outset, the author expressed the importance of popularising the results of Darwin's theory not only among the wider general public, but for the working classes. In his view, because workers were mostly occupied in earning their daily bread, they did not have time to spend on their intellectual development, and thus they fell into the clutches of religious dogma. The translation of Molinari therefore declared: "let's show the people that the teachings of our [scientific] predecessors work to liberate them from the tyranny of the perpetually united

autocrats […] and from the autocracy of Church and state."[54]

Rațiunea Revistă Bilunară de Liberă-Cugetare, Anul II, No.7-10 (1912): 10.

Luigi Molinari, *Teoria Darwiniană Popularizată* (București: Biblioteca Revistei ,,Rațiunea'', 1920) 14.

Divided into six chapters, the pamphlet first gave a detailed picture of the history of evolutionary theories from the Italian freethinker Lucilio Vanini (1585-1619) to Jean-Baptiste Lamarck (1744-1829), finally arriving at the papers presented to the Linnean Society in London by Charles Darwin and Alfred Russel Wallace in 1858. This was followed by the illustration of the impact of these emerging ideas on biblical discourse in tandem with the development of printing technologies. These advancements enabled a shift from the creationist view of the fixity of the species to an evolutionary one. In subsequent chapters, the core of Darwin's theory was addressed, subsequently explaining the role played by "natural selection" in the process of the transformation of organic species, illustrated by examples from geology, palaeontology and embryology. Counterarguments, such as the differences between human and animal intelligence, were discussed in a separate chapter. Advocating vegetarianism and animal protection, the translation confidently interrogated the reader:

> No one can scientifically prove that animals are not capable of judgement, intelligence and emotions. Like humans, animals judge and compare, choose and thrive, have memory, love, hate, think, suffer apprehension, show curiosity and attention. Are we allowed to think that the human is superior only because he is the assassin of other animals?[55]

Finally, the last chapter showed that Darwin, together with Huxley, had put humans into the same class order as monkeys, and thus from a "genealogical point of view, humans descend

Ibid., 60.

from the Catarrhines monkeys of the old continent".[56] Molinari concluded that the struggle for existence is "one of the most important factors of animal evolution," while insisting that some scientists exaggerated the power of this factor, forgetting in so doing the importance of human solidarity and Kropotkin's "mutual aid".[57]

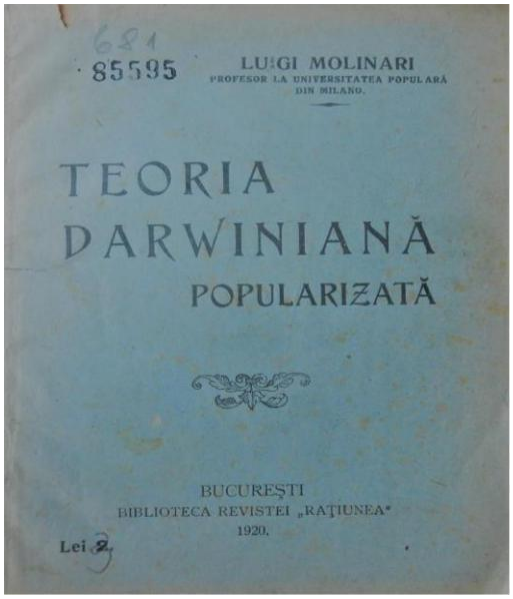

Figure 5.6. The front cover of the translation of Luigi Molinari's pamphlet *The Popularisation of the Darwin's Theory* published in the collection series of *Biblioteca Revistei Rațiunea* (1920). Courtesy of Romanian Academy Library, Cluj-Napoca

5.2. Romanian Orthodox and Greek-Catholic replies to Darwinism

The scholarship dealing with the discussions of Darwinism within various religious communities has borne fruit in an enormous corpus of studies. Analysis of the "Post-Darwinian Controversies", to use James R. Moore's term, has scrutinised the impact of Darwinism not only

Ibid., 71-73.
Ibid., 78-80.

on the British and American Protestant worldviews,[58] but also its entanglement with Jewish traditions on both sides of the Atlantic.[59] Other works have also highlighted its encounters with several Asian and Oriental religions such as Confucianism, Hinduism, Buddhism, and Islam.[60] Nevertheless, with a few exceptions, the Romanian Orthodox and Greek-Catholic collision with Darwinism has been mostly overlooked.[61]

One of the most powerful institutions wielding a great influence on the nineteenth-century Romanian public sphere, and which had a crucial role in the perpetuation of Roma enslavement, was none other than the Romanian Orthodox Church. After the unification of the Romanian Principalities of Moldavia and Wallachia in 1859, the newly formed Romanian state recognised that the official religion of the country should be Orthodox, and, from 1864, its autocephalous Church was subordinated to the national political establishment. Shortly after the secularisation of monastic estates by Prince Alexandru Ioan Cuza (1820-1873) in 1863, the Romanian Orthodox Church was given the rank of Metropolitan in 1873 and recognised as such

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James R. Moore, *The Post-Darwinian Controversies: A study of the Protestant struggle to come to terms with Darwin in Great Britain and America, 1870-1900* (Cambridge: Cambridge University Press, 1979).

Marc Swetlitz, "American Jewish responses to Darwin and evolutionary theory, 1860-1890," in Ronald L. Numbers and John Stenhouse (eds.), *Disseminating Darwinism: The Role of Place, Race, Religion and Gender* (Cambridge: Cambridge University Press, 1999) 208-245; Geoffrey Cantor and Marc Swetlitz (eds.), *Jewish Tradition and the Challenge of Darwinism* (Chicago: University of Chicago Press, 2006).

James Pusey, *China and Charles Darwin* (Cambridge: Harvard University Press, 1983); David Gosling, "Darwin and the Hindu Tradition: 'Does What Goes Around Come Around?," *Zygon*, Vol. 46, No.2 (2011): 345-369; Clinton Godart, *Darwin, Dharma and the Divine: Evolutionary Theory and Religion in Modern Japan* (Honolulu: University of Hawai'i Press, 2017); Marwa Elshakry, *Reading Darwin in Arabic, 1860-1950* (Chicago and London: The University of Chicago Press, 2013).

For more details on Russian, Greek and Romanian Orthodox encounters with Darwinism see, George L. Kline, "Darwinism and the Russian Orthodox Church," in Ernest J. Simmons (ed.), *Continuity and Change in Russian and Soviet Thought* (New York: Russell & Russell, 1967), 307-328; Alexander Vucinich, *Darwin in Russian Thought* (Berkeley: University of California Press, 1989), 93-151; *Maria Zarimis, Darwin's Footprint: Cultural Perspectives on Evolution in Greece (1880-1930s)* (Budapest and New York: Central European University Press, 2015) 136-152; Simona Antonescu, *Literatura de popularizare a științei în a doua jumătate a secolului al XIX-lea și începutul secolului XX în România* (București: Editura Ars Docendi, 2007), 148-161; George Iavorenciuc, *Cunoaștere și ocidentalizare. O istorie a științei românești de la jumătatea secolului XIX până la începutul secolului XX* (Cluj-Napoca: Editura Mega, 2018), 408-415.

by the Ecumenical Patriarch of Constantinople in 1885. According to the official statistics given by the historian Lucian Leuștean, during the 1860s the Orthodox Church had 9,702 priests for its 6,858 churches, and 4,672 monks and 4,078 nuns living in 173 monasteries; the other confessions had 63 Catholic churches, 12 Protestant churches, 11 Armenian Gregorian churches, 7 Lipovan churches, 176 synagogues and 3 temples of other religions.[62]

The Orthodox Holy Synod, which was comprised of a Metropolitan Primate and various Archbishops from across the country, controlled the teaching of Orthodox dogma in the numerous theological seminars in Socola, Roman, Huși, Buzău, Bucharest, Argeș, Sibiu etc.,[63] as well as through the two Theological Faculties, that in Iași (1860-1864) and Bucharest (1881).[64] The establishment of theological education led to the flourishing of numerous religious journals and teaching manuals.[65] In 1873, the Synod held a gathering of the highest echelons of Romanian Orthodoxy and, among other issues, decided on the publication of one of the most enduring journals, *The Romanian Orthodox Church* (*Biserica Ortodoxă Română*).[66]

Lucian N. Leuștean, *Orthodoxy and the Cold War: Religion and Political Power in Romania, 1947-65* (London: Palgrave Macmillan, 2009), 24-25.

Mircea Păcurariu, "Învățământul teologic seminarial în Biserica Ortodoxă Română" in *Două secole de învățământ teologic seminarial (1803-2003)* (Iași, 2003), 86-109.

Although Theological Seminars and Religious schools were state funded and subordinated under the Ministry of Cults, the teaching staff nominations came from within religious circles.

Mircea Păcurariu, *Istoria Bisericii Ortodoxe Române Vol. 3* (București: Editura Institutului Biblic și de Misiune al Bisericii Ortodoxe Române, 1981), 277-300.

The magazine runs up to present days as the official platform of Romanian Patriarchy.

Darwinism and the Romanian Orthodox Church

When it came to Darwinism, Romanian Orthodox replies varied and depended on the place, period and social circumstances in which the arguments were put forward.[67] As the most vociferously critical articles were published from the 1880s onwards, these debates can be divided into different points of view. First, Romanian Orthodox clerics addressed the so-called manipulative use of Darwin's theory by scientific and secular philosophies, particularly materialism, as portrayed by Büchner, Vogt and Moleschott. Secondly, their main contention was that scientific materialism led to atheism and, from the turn of the century to the free-thought movement, which gave rise to the so-called conflict between science and religion. Thirdly, religious commentators were disturbed by the internal revelations of Darwin's own theory. For them, evolutionary theory had not only repudiated the idea that nature had been designed and divinely created, but also deposed humanity from its traditional, privileged position as a special creation at the apex of nature (anthropocentrism), giving it a strictly natural and ultimately random role in the course of evolution. Fourthly, if natural phenomena were red "in tooth and claw", Darwin and the Social Darwinists he inspired (e.g. Herbert Spencer) were perceived as the main threat to religious morality. Finally, because of the lack of a scientific explanation concerning the origin of life (e.g. the "protoplasmic theory" and "spontaneous generation"), Darwinism was seen as unscientific. At the opposite extreme were religious commentators who

For more details on how the Protestant religious circles replied to Darwinism in different geographical contexts see, David N. Livingstone, "Science, region and religion: the reception of Darwinism in Princeton, Belfast, and Edinburgh," in Ronald L. Numbers and John Stenhouse (eds.) *Disseminating Darwinism: The Role of Place, Race, Religion and Gender* (Cambridge: Cambridge University Press, 1999) 7-38.

had come to terms with the theory of evolution, mainly on the basis that science and religion were two separate fields of inquiry, or that the two might be reconciled from different standpoints. This led to the recognition by some Romanian Orthodox and Greek-Catholics of Darwin's mechanism of evolution as a great theory in the progress of biology. In addition, numerous theological teachers of natural history, especially from Transylvania, also promoted a biological perspective of nature, contributing in this way to the emergence of ecology studies.

Some of the first Orthodox replies to Darwinism were published in the Moldavian weekly journal issued by the theologians of the Seminar "Veniamin Costachi" in Socola, known as *The Theological Magazine, Weekly Ecclesiastical Newspaper* (*Revista Teologică, Ziaru eclesiasticu septemânalu*).[68] At the head of the editorial board of *The Theological Magazine* were two theological professors who had completed their doctoral studies in Athens, Constantin Erbiceanu (1838-1913) and Dragomir Demetrescu (1852-1926). From the first issue, the editors expressed a "non-conflictual and apolitical direction for the magazine", arguing that they "will not make use of personal attacks, but reject and scientifically demonstrate the absurdity of various antichristian ideologies, […] that of rationalism, materialism, nihilism, socialism, realism."

Vasile-Lucian Goldan, "The Ecclesial Periodic ,,Revista Teologică" (1883-1887)," *European Proceedings of Social and Behavioral Sciences*, Volume XV (2016): 398-399.

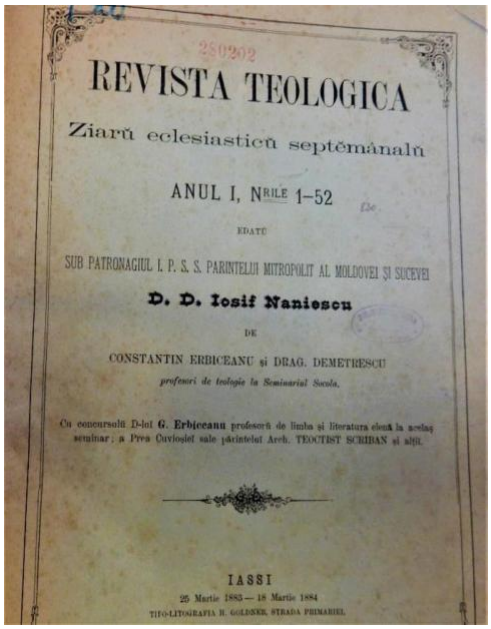

Figure 5.7. The front cover of the first issue of *The Theological Magazine* (1883) published in Iași. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

After the socialist magazine *The Contemporary* gained a very large number of subscriptions and gained student followers even in the Socola seminary, one of their teachers, Gheorghe Erbiceanu (1836-1899), began a series of articles refuting materialism and Darwinism. Published also in pamphlet, in these texts the author asserted that the argument was not directed against "sincere science", but only against atheism.[69] Curiously, he went so far as to urge for the need to reinvent the Archangel Michael and "to combat the new apocalyptic beast". The latter, he claimed, hid not only in "the sensualist philosophy of realism, positivism, materialism and atheism," but also in "systems of Darwinist science, of communist social institutions, and [behind] anarchists and nihilists." Alarmed by this "infernal demon", he further claimed that it "attacks

G.E., "Combaterea materialismului," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul II, Nr. 20 (1883): 153-

Christian society deep in its fundamental [institutions]: the family, property, the Church, the Government." Therefore his call was to fight against this threat.[70]

Erbiceanu's next target was none other than the so-called "Patriarch of Moldavian atheism", Vasile Conta (1845-1882), who was accused of paving the way for socialist followers to commit antisocial acts after maintaining the theory of monkey descent.[71] Erbiceanu insisted that Romanian socialists and anarchists "imagine the reformation of society with the help of petroleum and dynamite, and, in the same way, the creation of a new Universe with Haeckel's monera and the protoplasm."[72]

Another article dealing with Darwinism was published in 1883 by a natural science graduate, Al. N. Negescu, but on this occasion with greater scientific awareness. Negescu enthusiastically began by defining Darwinism "as the doctrine which establishes that all organic species, […] originate from one or a small number of ancestral and exceedingly simple forms." These forms, he continued, "have undergone gradual evolutions and metamorphoses, through the aid of natural selection, the struggle for existence, and due to the laws of heredity and adaptation."[73] Moreover, he accurately identified that "the idea of natural selection, operates by the forces of nature, and constitutes the basis of the Darwinian theory. This idea came to Darwin, after his readings of Malthus's work on the principle of population."[74]

G.E., "Noua fasă a materialismului în dilele nostre și refutarea învățăturei lui Darwin în privirea religiunei," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul I, Nr. 3 (1883): 20-21.

G.E., "V. Conta și ateismul în Moldova," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul I, Nr. 4 (1883): 31-

G.E. "Critica antimaterialistă a Cărței lui V. Conta: Încercări de metafizică materialistă," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul I, Nr. 9 (1883): 68.

Al. N. Negescu, "Cestiunea Darwinismului," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul I, Nr.20 (1883):

Ibid., 167.

After debating the *Future Dacia* anarchists regarding the atheistic background of Darwin's own worldviews, Negescu shifted the argumentat on to theological grounds by arguing that "the theory of Darwinism can be considered as the mechanism through which the Divine Intelligence has accomplished the end of creation." Therefore, it is only the "unity school (i.e. monism)" led by Haeckel that is prone to eject the Creator from nature. Nevertheless, as Darwinism was not a philosophical doctrine, he confidently urged that it be rejected in its own domain of the natural sciences.[75]

The last set of articles rejecting Darwinism in the Romanian Orthodox *Theological Magazine* was a translation by Dragomir Demetrescu (1852-1926) of the Greek lawyer Ioannis Skaltsounis (1824-1905). His essay *Religion and Science* appeared in 1884, the same year as its Romanian translation. The original article, as Sevasti Trubeta recognises, was part of the Greek "anti-evolutionist front" of religious and secular scholars, who aimed to disprove materialism from a religious standpoint.[76] Demetrescu, for his part, modified the text in order to address Romanian political and social realities, arguing that "it is not a simple translation but accommodated with the aim of producing an original work."[77]

Demetrescu began by pointing out that religion is the fundamental basis of any moral society. In contrast, to devout Christians, atheistic and materialist ideas were not only "subversive" of the Church, but at the same time also "dangerous for society and our Romanian nation."[78]

Ibid., 173-176.

Sevasti Trubeta, *Physical Anthropology, Race and Eugenics in Greece (1880s-1970s)* (Leiden: Brill, 2013), 27-29.

Dragomir Demestrescu, "Religiune și știință," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul II, Nr. 21 (1884): 161.

Ibid., *Revista Teologică, Ziaru eclesiasticu septemânalu*, Anul II, Nr. 24 (1884): 185.

The second part of Demestrecu's text dealt extensively with the mechanism of evolution, showing how materialists "abused" evolutionary theory, despite Darwin's own protests. Moreover, he also explained that "it is not possible to break the physiological chain of individuals of the same genus," and that "if the first protoplasm had the characteristics of a fish, all its descendants have to maintain that physiological relation, no matter how much their form has changed."[79] Demetrescu did not disagree with the idea of the struggle for existence, but rather with "the derivation of humans from monkeys", which he saw as an invention of the British naturalists to fit his theory. Speaking of artificial and natural selection, he notes that, in the former, "nature permits humans to change, and modify the form, the character and the habits of living beings, but it keeps unchanged and unaltered the physiological bond for the conservation of the same animal genus and class." In this logic, "the struggle for existence is an unquestionable fact, but it has no influence on development of the genus. Their primitive type is conserved unaltered."[80] Finally, the author found numerous arguments for his own disbelief in the theory of ape descent, insisting that:

> The disproof of the affinity and relationship between humans and monkeys […] is the lack of a tail, the straight and upright human posture, brain size, the disposition of the limbs, the articulateness of voice and the ability to speak, which are just some of the facts that

D. "Religiunea și sciința. Meditațiunea VII. Teoria lui Darwin despre nașcerea omului," *Revista Teologică, Ziaru eclesiasticu septemânalu*, Anul II, No. 45 (1885): 356-357.

Ibid., 365.

cannot be refuted. […] The moral feeling, however, opens a great and gigantic gap between humans and animals.[81]

As previously mentioned, on 17 November 1873 the Holy Synod of the Romanian Orthodox Church decided to publish its own monthly periodical journal. Subsidised by the state budget to the amount of 6000 lei, King Carol I enacted the following year the decree nr.1125/1874 that officially recognised the existence of the periodical. According to this decree, all Romanian Orthodox parishes, clergy, monasteries and theological schools across the country were obliged to subscribe. The board committee used the monthly fee, to acquire books and journals to supply their Bucharest-based library. Within ten years, the editorial board announced that their journal had subscriptions as far as Macedonia, St Petersburg, Kiev, Vienna and Japan,

reaching in 1902 a circulation of 5,500 copies.[82] The aim of the journal was to "defend the church and its institutions against attacks coming from anywhere, be they the product of malicious intentions or ignorance."[83] The content covered several domains:, historical theology, dogma, morals, liturgical issues, official declarations of the Orthodox Church and, in spite of everything, science popularisation.

D., "Religiunea și știința Meditațiunea VII. Teoria lui Darwin despre nascerea omului 4. Omul și maimuța," *Revista Teologică, Ziaru eclesiasticu septemânalu* Anul II, No. 47 (1885): 371-362.

Alexandru Stănciulescu and Cristian Stănciulescu, *Bibliografia Revistei Biserica Ortodoxă Romană (1874-2014)* (Bârda: Editura Cuget Românescu, 2016), 12-15.

Ibid., 12.

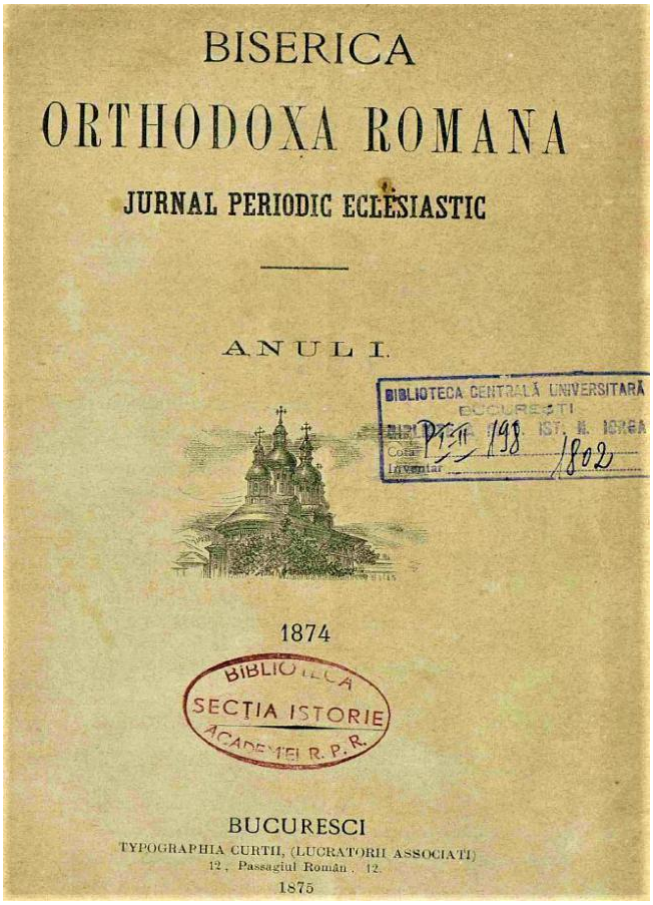

Figure 5.8. The front cover of the *Romanian Orthodox Church* periodical journal.

Courtesy of the "Carol I" Central University Library, Bucharest

One of the journal's first studies dealing with the relationship between Darwinism and Orthodox ethics was published in 1893. The article series, "Evolutionary ethics and Christian ethics" ("Etica evoluționistă și etica creștină"), was authored by Alexandru Mironescu (1856-1931), professor at the Bucharest Theological Faculty and future Metropolitan of the Orthodox Church (1909-1911). His piece was straightforwardly "an introduction to Christian morals" and aimed to be a "guide for young theological students". Printed also as a pamphlet, the work was divided into three parts, each seeking to demonstrate that "Christian ethics had an effect only on

those people" who were "willing to embrace the grace of God and were ready to work together" with him. Mironescu insisted that many "social struggles would not exist if everyone loved their neighbour as much as they loved themselves. [These] will diminish only if landlords and workers, patrons and labourers, masters and slaves were deeply touched by Christian morality."[84] After clarifying that only the Orthodox Church practised true Christian ethics in a "pure way", he further gave a detailed account of how Darwin and his followers repudiated the idea of morality derived from religious faith.

> The evolutionary system, also known as Darwinism or Monism, has in our days numerous partisans. Evolution, or adaptation based on physics, is the magical formula which this system claims to explain all the mysteries of living and inanimate life, including humans, without a wise Creator to ordain things. […] Society cannot exist without morals and justice, neither can a durable community, even less a state. Hence, monism, by eliminating God and his morality from creation, wants to replace it with a secular morality or a civil one, a morality, independent from God.[85]

In the second part of the study, Mironescu identified the British evolutionary philosopher Herbert Spencer (1820-1903) as the "prophet of materialist monism in the domain of morals". He also took the debate to the roots of the problem, namely to Darwin's mechanism of evolution and succinctly rejected the evolutionary theory on the basis of the insufficiency of scientific data,

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Alexandru Mironescu, *Etica evolutionistă și etica creștină. Studiu critic asupra eticei lui Herb. Spencer* (București: Tipografia "Cărților Bisericești", 1893), 9.

Ibid., 17-18.

such as the missing intermediate links, the absurdity of spontaneous generation and the moral consequences of evolution for social affairs.

As already seen, by the turn of the century, the Orthodox Church had witnessed an increase of freethinkers amongst the Romanian scientific establishment and amongst Christian believers, for which it blamed materialists, anarchists, atheists and Darwinists philosophers. From the clerical point of view, the new state of affairs was nothing other than a "Jewish conspiracy", as their religious institutions became the target of numerous attacks from the freethought movement, with freethinkers urging the separation of church and state, the suppression of public church funding, and the removal of religious services from educational institutions.

One of the most outspoken Orthodox theologians, the archimandrite Iuliu Scriban (1878-1949), head of the Bucharest Theological Seminar, engaged in the so-called conflict between science and religion on several occasions. In his reply to the leading figure of the freethought movement, Constantin Thiron (1853-1924), he argued that "the weakening of religious faith had the effect of weakening the morality of society. This weakening was carried out in favour of materialism and scientific inquiries."[86] Debating race scientists, Scriban divided between good scientific practice and Luciferian scientists, by comparing "the ethical [research] of Bacon, Lord Verulam, the godfather of empirical science, with the enslavement of blacks, which is described in *Uncle Tom's Cabin*."[87]

Avoiding any reference to the past involvement of the Romanian Orthodox Church in the enslavement of the Roma community, Scriban took another step by arguing that the Orthodox

Iuliu Scriban, "Libera cugetare si cugetarea liberă," *Biserica Ortodoxă Română* Anul XXXIII, Nr. 12 (1910): 1371.
Iuliu Scriban, "Libera cugetare și cugetarea liberă," Biserica Ortodoxă Română, Anul XXXIV, Nr.2 (1910): 160.

Church was more tolerant than the Catholic one.[88] However, he ignorantly reckoned that across the Atlantic "everyone guided by the Christian faith has struggled in America for the abolition of the slave trade of the black race."[89] In the same vein, he pointed to the involvement of Victor Augagneur (1855-1931), the French socialist, in the scandal during his mandate as governor of Madagascar, when six indigenous Christian converts were forbidden to conduct religious ceremonies. Finally, he concluded with Darwin's own words, which were eventually revised, that even "Darwin the man on whom the enemies of faith build their research declared that 'in my most extreme fluctuations, I have never been an atheist in the sense of denying the existence of God.'"[90]

Curiously, the causes of Romanian lay people's loss of faith were also analysed in the pages of the *Romanian Orthodox Church*. On this occasion, Irineu Mihălcescu (1874-1948) presented a detailed historical sketch of how various heresies were introduced into the public domain. The first two causes were attributed to sceptical philosophy, which was greatly augmented by the popularisation of Darwinism in the public and private sphere:

> The theory of evolution, as formulated by Darwin, all of its research and chemical synthesis, was brought to press to stand against faith and was further used as a weapon in the hands of our enemies. […] Materialist ideas were disseminated and professed in the name of science in schools, in the press, in public gatherings, and in private

For more details on the relationship between the enslavement of the Roma and the Orthodox Church, see Viorel Achim, *The Roma in Romanian History* (Budapest: Central European University Press, 2004), 31-34. For additional details on the racialisation of the Roma in the interwar period by Orthodox theologians, see Ionuț Biliuță, "Fascism, Race, and Religion in Interwar Transylvania: The Case of Father Liviu Stan (1910–1973)" *Church History* Vol. 89, Issue (2020): 101-124

Iuliu Scriban, Idem., 165.

Ibid., 162-163.

conversations, […] these have worked like a dangerous virus, infecting the souls of our contemporaries, destroying or stunting faith.[91]

The growth of secular movements such as freethought and the adoption by various scientists of German monism ignited the so-called "conflict between science and religion". In reply, numerous theologians, scientists and priests published individual accounts in the form of small pamphlets, either to develop or to conciliate the two domains. Nicodem Munteanu (1864-1948) authored one of the most important works to open the path to the conflict, *The Creation of the World According to the Bible and Natural Sciences* (*Creațiunea lumei după științele naturale și biblie*) in 1898. Munteanu, later renowned for becoming the Patriarch of Romanian Orthodox Church during the troubled period of right-wing dictatorship regimes (1939-1948),[92] was then still a vicar of the Metropolitan Church of Moldavia. Curiously enough, at a time that most of the Romanian Orthodox apologists were translating Greek Orthodox religious works, Munteanu's treatise was instead an adaptation of the German Lutheran apologist and dean of the Leipzig Theological Faculty, Christoph Ernst Luthardt (1823–1902). Divided into three parts, his translation mainly argued that science and religion were two separate fields of inquiry.

Turning to the main cause of this conflict, he put the blame on materialism, which, "as a consequence of pantheism", is the doctrine that denied the divine a role in the act of creation. As all theological apologists asserted, he maintained that the controversial idea of "spontaneous

I. Mihălcescu, "Causele necredinței contimporane și mijloacele de a o combate," *Biserica Ortodoxă Româna*, Anul XXXIX, No.1 (1915): 67-68.

Ionuț Biliuță, "Fascism, Race, and Religion in Interwar Transylvania: The Case of Father Liviu Stan (1910–1973)" *Church History* Vol. 89, Issue 1 (2020): 116, 120.

generation" was in contradiction with the facts, "that only life can give birth to life, omne vivum ex vivo." Darwinism fell under the same scrutiny: "Darwin's doctrine is just an arbitrary hypothesis, and unscientific, for which evidence is lacking".[93] For Munteanu, on the other hand, "the work of God" can be observed everywhere in nature, and this same work can serve as "a model of omnipotence, wisdom and divine kindness." In the end, he asserted that the "natural sciences see in [nature] a workshop of forces and natural laws, which is completely just; but the world is not only this. In the making of these forces and laws, there have manifested at the same time divine properties and the accomplishment of divine ideas."[94]

The rejection of Darwinism was also undertaken by some of the Greek-Catholic (United Church) theologians in Transylvania, who established confessional seminaries in Blaj, Gherla, Lugoj and Brașov. For instance, between 1883 and 1886 the Blaj (Balazsfalva) seminary, the epicentre of the Romanian United Church, issued the journal *The Church's paper: an organ for the religious, clerical and people's culture* (*Foia basericesca: organu pentru cultura religiosă a clerului şi a poporului*). This bimonthly journal was launched by Alexandru Grama (1850-1896), a teacher of church history who obtained his doctoral degree in Vienna in 1877. Amongst several articles dealing with the social and political debates surrounding the status of Romanians within the Austro-Hungarian Empire, there were also essays dealing with science popularisation. Grama became famous for his strong command of the scientific literature and as a leading figure of Greek-Catholic natural theology.

Nicodem Munteanu, *Creațiunea lumei după științele naturale și biblie* (Iași: Tipografia H. Goldner, 1898), 46-47.
Ibid., 56.

Following the logic of empirical and experimental trials, he set out refute Darwin's theory on the grounds that "Darwin's hypothesis cannot explain in mechanical terms the origin of life on earth, and has also other greater defects, which make it once and for all unfit to explain the origin of animal and plant species." Arguing that the process of evolution "was in contradiction with the laws of nature", he insisted that without an external impulse, Darwin's mechanism would perish. "It is true that plant and animal breeders can produce new varieties of certain species. However, it is also true that the same varieties once abandoned by their cultivator, […]

in two or three generations are bound to revert to the same primitive form."[95]

For Alexandru Grama, there was no evidence of evolution to be found, either by looking at how life occurred on earth, nor by observing the emergence of modern species. His creed was strengthened in many ways by what he called "a plethora of naturalists who have refuted Darwin's theory". Moreover, scientific disciplines such as palaeontology did not provide any confirmation of Darwin's theory; "on the contrary, they show that animal species have appeared on the earth in the same way as narrated in Holy Scripture. Hence, Moses was the greatest

naturalist of his time, and was inspired by God."[96] However, after a series of Austro-Hungarian educational reforms, the Blaj (Balazsfalva) Theological Seminary soon became an important centre for the study of natural history, and amongst the first Romanian schools to have a natural

history museum (1850) and a botanical garden (1881).[97] Its custodians and teachers not only adopted the "biological perspective" in their natural history courses, but, by 1913, during the

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Alexandru Grama, "Darwinismulu inaintea tribunalului mintei sănetoase și a naturei," *Foia basericeasca. Organu pentru cultura religioasa a clerului si a poporului* Anul II, Nr.11 (1884): 170-171.

Alexandru Grama, "Darwinismulu inaintea tribunalului mintei sănetoase și a naturei," *Foi'a basericeasca. Organu pentru cultura religioasa a clerului si a poporului* Anul II, Nr.14 (1884): 218-19

Ambrosie Chețianu, *Istoria Naturală și Museul de la școlelle din Blaș* (Blaș: Tipografia Seminariului Archidiecessan, 1902), X-XXXIV.

tenure of the conservationist Alexandru Borza, the forest section of the school's botanical garden was "arranged in a natural ecological way".[98]

Historically, the acceptance, with some reservations, of Darwin's theory was made by another secondary school teacher of natural history, one based at the Sibiu Theological Institute, the botanist Daniile P. Barcianu (1847-1903). Born in Răşinari, in Transylvania, in 1847, he finished his secondary studies at the Sibiu German Evangelical College in 1866 and pursued his religious education at the Theological Seminary in the same city between 1866 and 1870. He then attended courses on natural science in Vienna University, and Bonn and, finally, in Leipzig where he finished his doctoral dissertation, *Investigations into the Flower Development of the Onagraceen* (*Untersuchungen ueber die Blüthenentwicklung der Onagraceen*) in 1874 under the supervision of the botanist August Schenk (1815-1891). His dissertation dealt with the evolution of 12 flora species of Onagraceae. On his return to Transylvania in 1875, Barcianu became successively secretary of ASTRA, a teacher at the Sibiu "Andreian" Seminary and archdiocese inspector of primary schools. Inspired by the Iaşi "Junimea" literary group, he created a supplement of the *Romanian Telegraph* journal called *The Paper of Romanian Telegraph* (*Foişoara Telegrafului Român*) which ran from 1876 to 1877. Besides participating with the Romanian intellectuals in the 1892 Transylvanian memorandum, for one year he was editor of the *Illustrated Paper for Leisure and the Popularisation of Scientific and Literature Knowledge* (*Foaia ilustrată pentru petrecere şi pentru popularisarea de cunoştinţe literare şi scienţifice*)

Alexandru Borza, "Musele Gimnasiali," in *Anuarul Institutelor Gr.-Cat. De Învăţământ din Balazsfalva (Blaj)* (1914):

(1891) and *Pedagogical Paper* (*Foaia Pedagogica*) (1897-1900) where he popularised his teaching methods.[99]

Barcianu and Artemiu Pubiu Alexi (1845-1896) were the first Romanians in Transylvania to contribute to both the popularisation of Darwinism and the "biological perspective" in their natural history school manuals. In several articles, Barcianu explained that, from a religious standpoint, inquiries into zoology and botany have shown "the close bond of all organisms and their development from small, simple and insignificant beings – a discovery [made possible] by the theory of the origin of species in the struggle for existence."[100] He also explained in detail that thanks to natural selection useful characteristics are transmitted to new generations, producing distinct varieties and eventually new species.[101] Finally, and most importantly, in his manual of natural history printed in 1881, he shifted the discussion from systematics and taxonomy to discussing the relationship between certain animal species (in this case, the mole) and the environment in which they live.[102] Moreover, in 1891, Barcianu gave a detailed account of learning about nature outdoors, in its living manifestations, and introduced into Romanian school manuals practical methods of teaching natural history and, most importantly, methods for understanding the concept of "living community" or "biocoenosis" (*comunități de viață*) coined by Karl Möbius.[103]

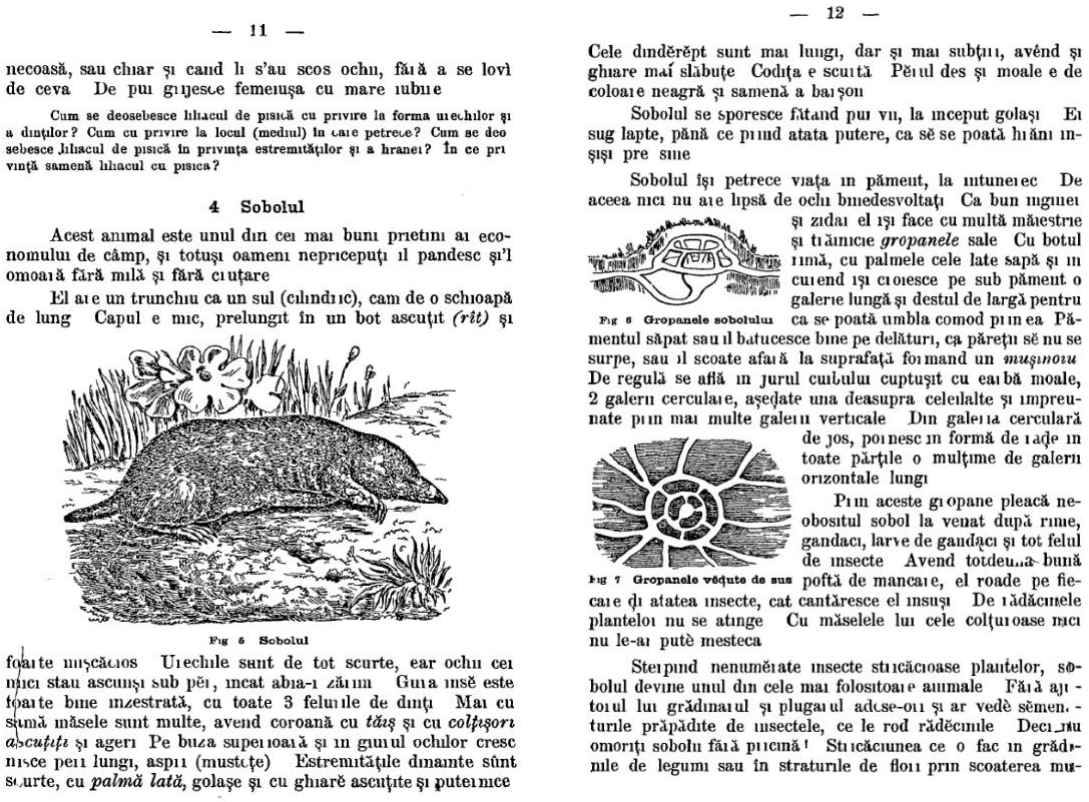
Personalități Românești ale Științelor Naturii și Tehnicii (București: Editura Științifică și Enciclopedică, 1982), 51-52

D.P. Barcianu, "Despre insemnatatea si folosul studiului stiintelor naturale," *Foisoara Telegrafului Roman* Anul I, Nr. 12 (1876): 91

D.P. Barcianu, "Insemnatatea mirosurilor si gusturilor pentru biologie," *Foisoara Telegrafului Roman* Anul II, Nr. (1877): 9-11.

Daniil P. Barcianu, *Elemente de istorie naturală pentru școalele poporale* (Sibiu: Tipariul Tipografiei Archidiecesane, 1881), 11-13; For the coinage of the concept of biocoenosis (Lebensgemeinschaft) and its introduction in German schools by Friedrich Junge (1832-1905), see Lynn Nyhart, op.cit., 151, 170-174.

Daniil P. Barcianu, *Istoria Naturală în Școlele Poporale* (Sibiu: Tiparul Tipografiei Arcidiecesane, 1891) 12-15.



— 11 —

necoasă, sau chiar şi când li s'au scos ochii, fără a se lovì de ceva De pui grijesce femeiuşa cu mare iubire

Cum se deosebesce liliacul de pisică cu privire la forma mechilor şi a dinţilor? Cum cu privire la locul (mediul) în care petrece? Cum se deosebesce Jiliacul de pisică în privinţa estremităţilor şi a hranei? În ce privinţă samenă liliacul cu pisica?

4 Sobolul

Acest animal este unul din cei mai buni prietini ai economului de câmp, şi totuşi oamenii nepriceputi îl pandesc şi'l omoară fără milă şi fără ciuţare

El are un trunchiu ca un sul (cilindric), cam de o schioapă de lung Capul e mic, prelungit în un bot ascuţit *(rît)* şi

Fig 6 Sobolul

foarte mişcăcios Urechile sunt de tot scurte, ear ochii cei mici stau ascunşi sub peri, încat abia-i zăresti Gura însă este foarte bine înzestrată, cu toate 3 felurile de dinţi Mai cu samă măsele sunt multe, având coroană cu *tăiş* şi cu *colţişori ascuţiţi* şi ageri Pe buza superioară şi în giurul ochilor cresc nisce peri lungi, aspri (mustăţe) Estremităţile dinainte sûnt scurte, cu *palmă lată*, golaşe şi cu ghiare ascuţite şi puternice

— 12 —

Cele dinderept sunt mai lungi, dar şi mai subţiri, având şi ghiare mai slăbuţe Codiţa e scurtă Părul des şi moale e de coloare neagră şi samănă a barşon

Sobolul se sporesce fătând pui vii, la inceput golaşi Ei sug lapte, până ce prind atata putere, ca să se poată hrăni inşişi pre sine

Sobolul îşi petrece viaţa în pământ, la întunerec De aceea nici nu are lipsă de ochi bine desvoltaţi Ca bun inginer şi zidar el îşi face cu multă măiestrie şi tăinicie *gropanele* sale Cu botul rimă, cu palmele cele late sapă şi în curmezi îşi croieşte pe sub pământ o galerie lungă şi destul de largă pentru ca se poată umbla comod prin ea Pământul săpat sau îl bătucesce bine pe delături, ca pereţii să nu se surpe, sau îl scoate afară la suprafaţă formând un *muşinoiu* De regulă se află în jurul cuibului cuptuşit cu earbă moale, 2 galerii circulare, aşedate una deasupra celeilalte şi împreunate prin mai multe galerii verticale Din galeria circulară de jos, pornesc în formă de rade în toate părţile o mulţime de galerii orizontale lungi

Fig 7 Gropanele vĕdute de sus

Prin aceste gropane pleacă neobositul sobol la venat după rime, gandaci, larve de gandaci şi tot felul de insecte Având totdeuna bună poftă de mancare, el roade pe fiecare di atatea insecte, cat cantăresce el însuşi De rădăcinele plantelor nu se atinge Cu măselele lui cele colţuroase nici nu le-ar putè mesteca

Sterpind nenumărate insecte stricăcioase plantelor, sobolul devine unul din cele mai folositoare animale Fără ajutorul lui grădinarul şi plugarul adese-ori şi ar vedè sămenaturile prăpădite de insectele, ce le rod rădăcinile Deci nu omoriţi sobolu fără pricină! Stricăciunea ce o fac în grădinile de legumi sau în straturile de flori prin scoaterea mu-

Figure 5.9. Barcianu's natural history school manual published in 1881 explaining the relationship between the mole and its underground environment.

By the turn of the twentieth century Darwinism was discussed also in the Transylvanian Orthodox journal, published between 1907-1916, the *Theological Magazine, Organ of Science and Church Life* (*Revista Teologica, organ pentru știință și viață bisericească*). The periodical was established on the initiative of the young teacher at the Sibiu Theological Institute and future Metropolitan of Transylvania, Nicolae Bălan (1882-1955). The objective, as expressed in the foreword of the first issue, was to "raise the cultural level of parochial clerics, which in turn will strengthen the church and its cultural institutions, as well as the great mass of religious

followers."[104] The editorial board also promised that their articles would deal with all aspects of church history, exegesis, systematics, practice, the liturgy, homiletics, while also urging the necessity to "look through the lenses of clear science the practical problems of Church life."

Along the contributors to the *Theological Review* were priests, bishops, metropolitans, as well as Transylvanian intellectuals who were secular authors. However, Nicolae Bălan was the first to publish an essay related to science and religion. As the one in charge of the replies to atheists' and freethinkers' attacks in the Romanian Kingdom, he began by expressing that "religion is both a fact and a factor in the life of humans and humanity." However, there were still some "adherents of *evolutionist materialism*, who maintain the theory of the descent of man

from […] anthropoid monkeys."[105] This was not caused by science, he reasoned, as modern ethnography was in disagreement, but by atheistic materialism, a philosophy that "is nothing more than decadence from the nature of humanity, a degradation of the human being."[106] In a second reply, Bălan set out to show that there was no "conflict between science and religion." In addition, the atheist background of Western scientists invoked by the freethinker Constantin Thiron aimed to facilitate the spread of monism, and Bălan pointed out that "to be an apologist for the illustrious Haeckel, and his vulgar monism" is actually to be in disagreement with recent scientific research.[107]

Redacțiunea, "Către cititori!," *Revista Teologică, organ pentru știință și viață bisericească* Anul I, Nr. 1 (1907): 3.

Nicolae Balan, "Universalitatea religiunii," *Revista Teologică, organ pentru știință și viață bisericească* Anul I, Nr. (1907): 5-7.

Ibid., 10-11.

Nicolae Bălan, "Aromnia dintre religiune și știință, ateiști inventați de Dr. C. Thiron," *Revista Teologică, organ pentru știință și viață bisericească*, Anul V, Nr.6 (1911): 163.

Another important contributor to the *Theological Review* who dealt with natural teleology and Darwinism was Ioan Broșu (1886-1943). The son of the Orthodox Dârste (Brașov) vicar, the young Broșu finished his doctoral studies in theology at the University of Cernăuți and returned to Sibiu where he taught Romanian students registered at local Lutheran and Catholic schools. Aside from publishing various political articles, he was soon elected to the Sibiu Romanian National Council, and was delegated to the Assembly of Alba Iulia in 1918.[108] Over a series of several articles, Broșu was to some extent attempting the conciliation of various aspects of evolution with natural theology. For example, in one essay published in 1911, he began by answering the question, "what does natural science maintain about the evolution of the Universe, and what it can not tell us, that we still want to know?" To present a better view of how various savants approached the question of evolution, he gave a full account as follows:

> Darwin tried to answer the question [of evolution] by the intervention of natural power. Hence, changes occurred in various plants and animals, and due to differences in the climate and environment in which they lived. […] Therefore, everywhere in nature we find selection, that is, the survival of the fittest rather than the weak. Because of struggle, new organs appeared [and] from the simplest living beings, developed the most differentiated and complicated species and races. […] Through these natural factors, Haeckel, Weismann, Plate and Bolsche want to explain the beginning of evolution, from the inferior to the most superior and complex beings![109]

Mircea-Gheorghe Abrudan, "Părintele Ioan Broșu din Dârstele Brașovului în vâltoarea Marelui Război: un capitol al suferinței clerului ardelean pentru idealul întregirii neamului," *Misiunea. Revista centrului de cercetare a conlucrării Bisericii Ortodoxe cu Armata României*, Anul V (2018): 18.

Ioan Broșu, "Evoluționismul și credința," *Revista Teologica, organ pentru știință și viață bisericească* Anul V, Nr. 14-19 (1911): 440-441.

Broșu's main concern was not with evolution per se, but the idea that it could not explain how and when the process began. A second problem was "the random direction of evolution" which Darwin ascribed to it. His conclusion was that all the searches for an explanation were unaware that "what we are searching for is God!" To make his point clear, in the second article, he developed the idea of the regularity, order and harmony of the universe as described by natural theology. He insisted that "in nature there are not only blind laws and frozen orders;

these laws serve a well-established plan, and a final end; in nature teleology definitely exists."[110] Surprisingly enough, before discussing the watchmaker argument for design in nature, he claimed that "through the struggle for existence, selection, variation, and the inheritance of acquired characteristics, Darwinism tried to explain nature's teleology, but abandoned the creator who is wise and intelligent."[111]

Broșu's teleological evolutionism gave a detailed account of what he called "anthropological Darwinism". His analysis claimed that "the law of evolution governs the whole Universe, including the vegetable, animal and human kingdoms. The laws of nature do not make

exceptions and do not offer privileges, not even to the homo sapiens!"[112] Next, Broșu declared that "all developments are made according to a plan and following the so-called teleological laws. Evolution cannot dispense with God, the thinker and organiser, who gives life and scope to everything; on the contrary, it implies him, feeling his necessity." He continued his argument and

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Ioan Broșu, "Există în natură teleologie?," *Revista Teologica, organ pentru știință și viață bisericească* Anul V. Nr. 12-12 (1911): 338.

Ibid., 341.

Ioan Broșu, "Darwinismul antropologic," *Revista Teologica, organ pentru știință și viață bisericească* Anul V, Nr. 19-20 (1911): 553.

highlighted that, “even if some day the natural sciences prove the animal descent of humans, what will happen then to the crown of creation, the evolution of humans? It will remain, as Augustine said, the work of God, because without him, there is no evolution.”[113] Finally, before concluding, Broșu summarised that “evolution is not an argumentative principle, it explains neither the beginning nor the regularity of Universal development, but it yet claims its creator, who is active within it. [...] The acceptance of the theory of descent cannot shake one’s faith in God.[114]

Finally yet importantly, the Greek-Catholic Gymnasium in Kronstadt (Brașov) and other Transylvanian schools were a fertile terrain for Darwinism and the rise of the “biological perspective” animated by figures such as Artemiu Publiu Alexi, Daniil Barcianu, Ambrosiu Chețianu, Alexandru Borza or Victor Stanciu. In Kronstadt, registered students were taught evolutionary theory by two professors of natural science, Aurel Ciortea (1872-1929) and Gheorghe Chelariu (1855-?). In 1910 *Transylvanian Gazette* (*Gazeta Transilvaniei*) printed Chelariu’s lecture, entitled “Darwin and his school”, which he had delivered on 17 October 1910. Although the author still had doubts about various inconsistencies related to the idea of species evolution, he claimed that “modern theologians should come to terms with the naturalist hypothesis, because there is no difference if we claim that humans were created out of brute matter, or that God made them develop from other beings, which through the passage of time, increased their perfection.”[115] On the other hand, Chelariu highlighted that materialism had

Ibid., 554.
Ibid., 619.
G. Chelariu, “Darwin și școala sa,” *Gazeta Transilvaniei* Anul LXXIII, Nr. 231 (1910):3

become popular only through the agency of "the hyper zealous Ernst Haeckel". Nevertheless, he concluded that everyone should be thankful for Darwin's research:

> Darwin built the strong pillars of the evolutionary ideas regarding life, and so biology flourished as it never did before in the history of science, following the chain of organic life back millions of years, where in the darkness of the past it is lost. [Darwin's] influence is beneficial for science; the world should always be thankful, because his work and books are great for the progress of cultural history.[116]

An anxious reformist of the Transylvanian schools, Chelariu's teaching method showed little interest in the science of systematics, adopting instead a "biological" approach to botany and zoology. This ground-breaking perspective towards nature became prevalent in secondary school text books after two Greek-Catholic teachers from Beiuș, Vasile Dumbravă (1859-1911) and Victor Borlan (1862-1931), translated, in 1900, Szterényi Hugó's (1857-1909) natural history manual and highlighted that the descriptive method of systematics was obsolete and stifling students' interest in nature.[117] The same format was later adopted in 1913 by George Chelariu, militating in the same way for the adoption of the "biological method", while insisting on the relationship between humans, flora, fauna and the environment, as well as on the Darwinian struggle for the perpetuation of species.[118]

Ibid.,3.

Vasile Dumbravă and Victor Borlan, *Istoria naturală în usul claselor inferioare ale școlelor medii* (Beius: Tipografia lui Robert Lampel, 1900).

George Chelariu, *Curs elementar de botanică și zoologie pentru clasele inferioare ale școlilor medii* (Brasso: Editura Librariei Ioan I. Ciurcu, 1913), 103.

Chapter 6. Darwinism Understood and Misunderstood

> "The way in which [animals] breed, feed, and defend each other against enemies, the relationship between them and the environment, etc., all these extremely important issues also led Darwin to put lay basis of modern phylogeny. Up until then, these issues had little importance for the researchers in phylogenetics, because for them an animal had scientific interest only after it was preserved in alcohol and only held appeal after its dissection with the microtome."[1]
>
> Grigore Antipa (1866-1944)

Introduction

At the beginning of the twentieth century, the scientific debates around Darwinism reached one of their most important turning points. As illustrated in the previous chapters, various organisations drew heavily on scientific materialism, positivism and evolution, whilst merging the three concepts in a so-called "radical synthesis". One of the most important figures in terms of this synthesis was the controversial philosopher Vasile Conta, who paved the way for the recognition of Darwin's works in Romania. At the opposite extreme of official scientific discourse was the popularisation of Darwinism carried out by anarchists, freethinkers and theologians. Out of these complex networks of ideas, a new tradition of evolutionary scientists emerged, some of whom advocated for the adoption of the "biological perspective" in the school

[1] Grigore Antipa, "Cercetări hidrobiologice în România și importanța lor științifică și economică," in *Discursuri de Recepție la Academia Română* Vol IV (1907-1919) (București: Editura Academiei Române, 2005) 314-315.

curriculum and, eventually, in scientific ecology studies and in the Natural History Museum displays.

One of the most important representatives of the Romanian evolutionary scientific tradition was the zoologist and parasitologist Nicolae Leon (1862-1931). Born in the Moldavian village of Băiceni, Leon pursued his undergraduate studies at Mărgineanu School in Botoșani and then at the Institutele Unite in Iași. As previously noted, in 1881 there was a public scandal, involving the Nădejde Brothers. Leon was expelled, together with other students, for his involvement in disseminating "subversive, socialist and atheistic ideas in high schools". That same year, after enrolling in medical studies at the University of Iași, Leon was asked to testify against

the anarchists, which he firmly refused to do.[2] In his memoirs, he averred that, although his political views of "socialism and antimilitarism [...] were too advanced for Romanian" public opinion, he nevertheless remained faithful to the "social cause".

> For discussing and defending these ideas, when I was still a student in the seventh grade, I was eventually expelled from school. [...] However, I always felt broken when I saw the massive contrast between the wealth of the upper class and the misery of the working class, […] when I saw how difficult it was for the intelligent and hardworking children of the masses to obtain a position compared to the mediocre children born to wealthy families with social connections.[3]

Nicolae Leon, *Note și Amintiri* (București: Editura Cartea Românească, 1933), 56-57.
Nicolae Leon, *Amintiri* (Iași: Viața Românească, 1922), 236-237.

In 1884, Leon enrolled at Jena University, anxious to study natural science with none other than Ernst Haeckel. For Leon, Jena was not only "the Mecca of zoologists", but its beauty reminded him of Iași; it was also a place where "enthusiasm for work and inspiration" existed alongside "science, poetry and philosophy."[4] He was impressed by the University's Zoology Institute, which had made some important scientific achievements, thus putting at his disposal a museum, an enormous amount of scientific data related to various species, laboratories, assistants, lecturers, photographers, mechanics, librarians. Most importantly, this research "machine" was kept running by Ernst Haeckel, Willy Kükenthal (1861-1922) and Franz Pohle (1837-1916).[5]

Figure 6.1. Nicolae Leon after his return from Jena. Courtesy of the "Mihai Eminescu" Central University Library, Iași[6]

Nicolae Leon, *Amintiri* (Iași: Viața Românească, 1922), 29.
Ibid., 33.
Biblioteca Centrală Universitară Mihai Eminescu din Iași, Arhiva N.A. Bogdan, X. 329, F 329.

During the summer vacation of 1885, at the recommendation of Ernst Haeckel, the young Romanian student was sent together with Kükenthal and B. Weißenborn to Norway to study marine fauna.[7] After his return to Jena, he published one of his first articles in the Romanian socialist journal, *The Contemporary*, a study of the methods of preserving echinoderms, worms and molluscs.[8] As Leon later remembered, back in the 1880s, this periodical was "one of the most critical and incisive journals in [Romania]", because, he argued, it was not "limited to just popularising ideas" but "targeted without mercy everything dubious coming from science, philosophy and literature."[9]

During his later student years, between 1885 and 1886, Leon began his small series of translations of Darwin's works, which were eventually published anonymously in the journal *A New Country. Science Review of Politics, Economy and Literature* (*Țara Nouă. Revistă Sciințifică, Politică, Economică și Literară*). In its four-year lifespan (1884-1888), this journal, edited by Ioan Nenițescu (1854-1901), published articles on science, political economy, and anti-corruption, but also poems and literature. Of particular interest is the article "A chapter by Darwin" ("Un capitol din Darwin") signed by N. and published over several issues from 1885 and 1886.[10] This was the second translation of Darwin's *Descent of Man*, most probably done by Leon, deliberately focusing on the comparison between the mental faculties of humans and animals. Leon's full signature appeared on another short translation of Ernst Haeckel dealing with the issue of the

Ibid., 122-123.

Nicu Leon, "Cîte-va cuvinte despre tehnica modernă în zoologie," *Contemporanul* An. IV, No. 22 (1886): 861-868.

Nicolae Leon, *Amintiri*, 29-30.

N. "Un capitol din Darwin (Descendenta omului si selectiunea secsuala)," *Țara Nouă. Revistă Sciințifică, Politică, Economică și Literară*, Anul II, No. 18 (1885): 545-556.

division of labour in nature and society.[11] However, when he published again in the same journal, this time on the origins of life and spontaneous generation, he signed his name in reverse, N. Noel.[12]

Of decisive importance for his academic evolutionary background, he met and attended the lectures and practical demonstrations delivered by some of the most important Darwinists of the period. In addition to attending the zoology laboratory held for beginners every Sunday morning by Haeckel, Leon was also deeply impressed by Arnold Lang's (1855-1914) lectures on histology and the dissection of crabs, which helped students to understand better issues relating to morphology.[13] From Willy Kükenthal, Leon learned microscopy and extensively used his

teacher's zoological treatise for the lectures he gave in Iași.[14] Leon was particularly impressed, by the "German tendency to decentralisation and specialisation in several institutes", recalling the Institute of Physiology led by William Preyer (1841-1897), Oscar Hertwig's (1849-1922) Institute of Anatomy, the Botanical Institute directed by Ernst Stahl (1848-1919) and the Geology Institute run by Ernst Kalkowsky (1851-1938).[15]

In 1887, Leon defended his doctoral dissertation, *Contributions to the knowledge of the mouthparts of the hemipteran* (*Beiträge zur Kenntnis der Mundteile der Hemipteren*) before a commission comprised of Haeckel, Stahl and Kalkowsky. He was awarded "magna cum laude". In the same year, he returned to Iași. Later he recalled that, during that period, "the only scientific

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Nicu Leon, "Diviziunea muncei in natura si in viata omeneasca (Dupa Heackel)," *Țara Nouă. Revistă Sciințifică, Politică, Economică și Literară*, Anul III, No. 5 (1886): 256-267.

N. Noel, "Despre Originea Vieței," *Țara Nouă*, Anul III, (1886): 654-658.

Nicolae Leon, *Amintiri*, 73-90.

Ibid., 90.

Ibid., 90-109.

activity [in Iași] was confined to the activities of a few members of the Society of Physicians and Naturalists and to the work carried out by Grigore Cobâlcescu's Scientific and Literary Society."[16]

Figure 6.2. Nicolae Leon with his famous chrysanthemum on his coat, mourning the loss of his wife. Courtesy of the "Mihai Eminescu" Central University Library, Iași[17]

Once settled in Iași, Leon held various posts, including professor at the Medical Faculty, teacher at the Military School, substitute teacher at the National College, and assistant in the Faculty of Science's Department of Botany. Struggling to earn a decent living and desperately

Ibid., 156-162.
http://dspace.bcu-iasi.ro/handle/123456789/58 (last accessed 5 January 2021).

searching for work in a laboratory, he sold his vineyard and embarked on a scientific journey to Anton Dhorn's Stazione Zoologica in Naples, at the time funded by the German government, and where several Romanian naturalists were soon to follow him.[18] After he received financial help from his siblings, he moved with his family to Bucharest and became an assistant to Ștefan Sihleanu (1857-1923), professor of zoology in the Medical Faculty, and gave lectures on Lamarckism and Darwinism. In 1899, the Ministry of Public Instruction decided that there was a need to reform the secondary education programme.[19] Minister Spiru Haret (1851-1912), a well-known mathematician, delegated Leon to revise the natural science teaching manuals. Not surprisingly, the same year saw the official introduction of Darwinism and the "biological perspective" into Romanian secondary schools; hence, as Leon was to remember, "this was the most important work that I carried out in the Romanian state service, and, at the same time, for the popularisation of the Theory of Descent [in Romania]."[20]

In April 1899, after several efforts to have his German degrees recognised by the Romanian academic establishment, he was finally appointed permanent professor at the Iași Medical Faculty. In order to gain this academic position, he had to prove to the Medical Faculty the usefulness of zoology, parasitology and embryology for the training of medical students. He argued that these disciplines needed to be taught together with practical demonstrations by a zoologist-trained professor. To this end, Leon carried on a rich correspondence with Maximilian Braun (1850-1930), Arnold Lang, and Oscar Hertwig, often using their recommendations to

Nicolae Leon, *Amintiri*, 173-182; Ioan Borcea, "Anton Dohrn și stațiunea zoologică de la Neapoli," *Revista Științifică V. Adamachi* Vol. I, Nr. 3 (1910): 203-205.

For more details of the education reform carried by Spiru Haret see, Constantin Schifirneț, "Spiru Haret, Education and School Legislation Reform," *Revista Română de Sociologie*, Anul XXV, Nr. 3-4 (2014): 311-326.

Nicolae Leon, op.cit, 184-192.

support his arguments. For instance, Oscar Hertwig, renowned for his interest in Darwinism,[21] suggested the following:

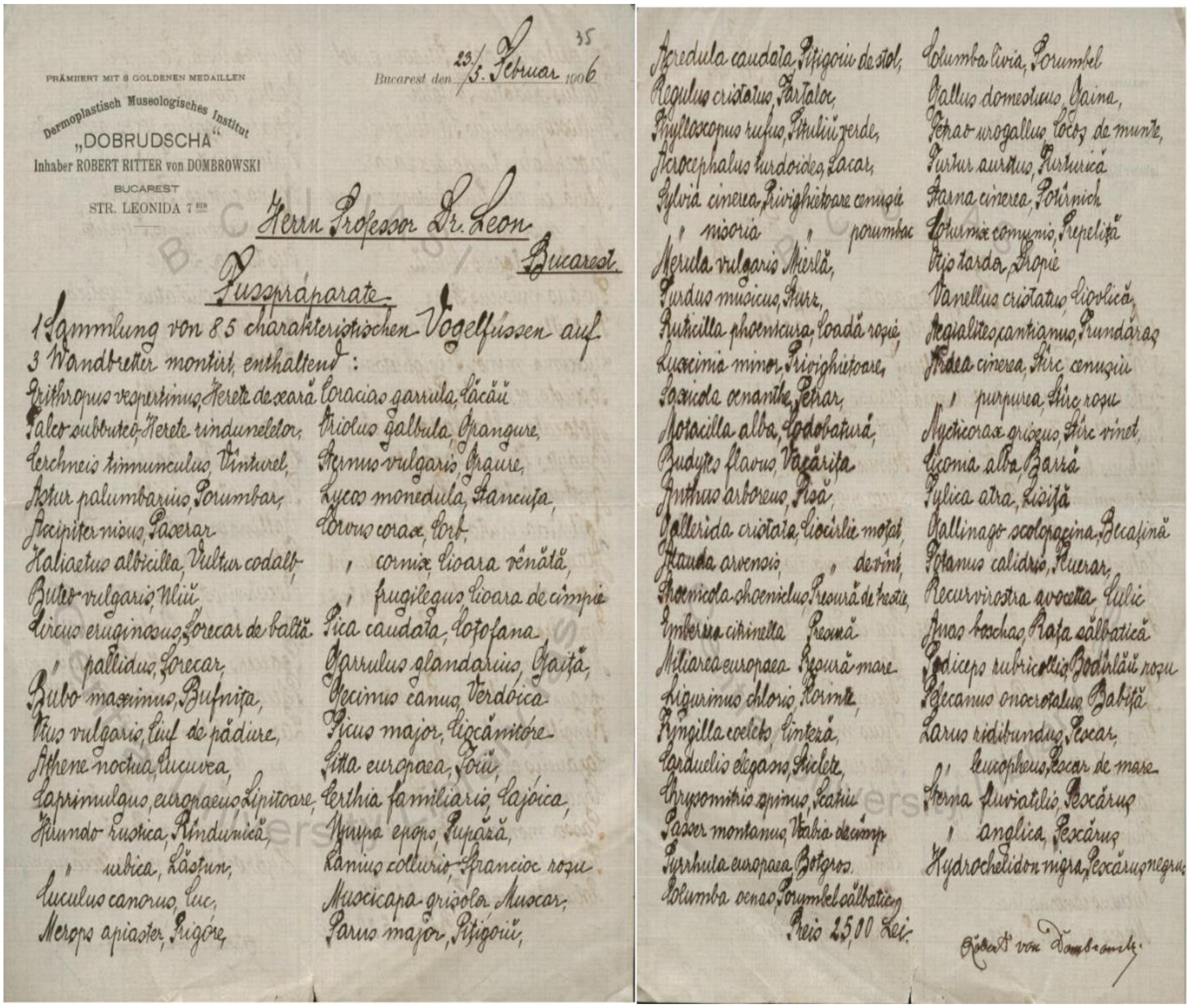
> Dear colleague, to answer your kind letter […], I can inform you that in Germany, at least since the last reorganisation of the medical exams, medical students are requested to know the fundamental principles of general zoology and animal systematization for the first exam. In my opinion, this science is indispensable for the understanding of comparative anatomy as well as embryology. Moreover, various biological disciplines are closely related, missing one link can lead to overlooking other links.[22]

As the one in charge of the course on natural history at the Medical Faculty, Leon connected the course on parasitology with Darwinism, asserting that parasitology brought "forward convincing arguments in favour of heredity and for the theory of acquired characteristics. Therefore, a course on Darwinism and the theory of descent is most suitable to accompany the one on parasitology".[23] He devoted many efforts to equip the first Romanian Laboratory of Parasitology, with microscopic instruments and with various animals' species for practical demonstration and preservation.

Paul Weindling, *Darwinism and Social Darwinism in Imperial Germany: The Contribution of the Cell Biologist Oscar Hertwig (1849-1922)* (Suttgart: Akademie der Wissenschaften und der Literatur, 1991).

Nicolae Leon, op.cit., 210-211.

Nicolae Leon, Ibid., 224-225.



PRÄMIIERT MIT 8 GOLDENEN MEDAILLEN

Dermoplastisch Museologisches Institut
„DOBRUDSCHA"
Inhaber ROBERT RITTER von DOMBROWSKI
BUCAREST
STR. LEONIDA 7 bis

Bucarest den 23/5. Februar 1906

35

Herrn Professor Dr. Leon
Bucarest.

Fusspräparate.

1 Sammlung von 85 charakteristischen Vogelfüssen auf 3 Wandbretter montirt, enthaltend:

Erithropus vespertinus, Herete de seară
Falco subbuteo, Herete rindunelelor,
Cerchneis tinnunculus, Vinturel,
Astur palumbarius, Porumbar,
Accipiter nisus, Păserar
Haliaetus albicilla, Vultur codalb
Buteo vulgaris, Uliu
Circus eruginosus, Erecar de baltă
" pallidus, Erecar,
Bubo maximus, Bufniţa,
Otus vulgaris, Ciuf de pădure,
Athene noctua, Cucuvea,
Caprimulgus europaeus, Lipitoare,
Hirundo rustica, Rîndunică,
" urbica, Lăstun,
Cuculus canorus, Cuc,
Merops apiaster, Prigóre,
Coracias garrula, Dăcău
Oriolus galbula, Grangure,
Sturnus vulgaris, Graure,
Lycos monedula, Stancuţa,
Corvus corax, Corb,
" cornix, Cioara vânătă,
" frugilegus, Cioara de cîmpie
Pica caudata, Coţofana
Garrulus glandarius, Gaiţă,
Gecinus canus, Verdóica
Picus major, Ciocănitóre
Sitta europaea, Scoiu,
Certhia familiaris, Cojóica,
Upupa epops, Pupăză,
Lanius collurio, Sfrancioc roşu
Muscicapa grisola, Muscar,
Parus major, Piţigoiu,

Acredula caudata, Piţigoiu de stol,
Regulus cristatus, Pârţalor,
Phylloscopus rufus, Pitulici verde,
Acrocephalus turdoides, Lacar,
Sylvia cinerea, Privighietoare cenuşie
" nisoria " porumbac
Merula vulgaris, Mierlă,
Turdus musicus, Sturz,
Ruticilla phoenicura, Coadă roşie,
Luscinia minor, Privighietoare,
Saxicola oenanthe, Pietrar,
Motacilla alba, Codobatură,
Budytes flavus, Văcăriţa
Anthus arboreus, Fîsă,
Galerida cristata, Ciocîrlie moţat,
Alauda arvensis, " de vînt,
Schoenicola schoeniclus, Presură de trestie,
Emberiza citrinella, Presură
Miliarea europaea, Presură mare
Ligurinus chloris, Florinte,
Fringilla coelebs, Cinteză,
Carduelis elegans, Sticlete,
Chrysomitris spinus, Scatiu
Passer montanus, Vrabia de cîmp
Pyrrhula europaea, Botgros.
Columba oenas, Porumbel sălbatic,
Columba livia, Porumbel
Gallus domesticus, Gaina,
Tetrao urogallus, Cocoş de munte,
Turtur auritus, Turturică
Starna cinerea, Potîrnich
Coturnix communis, Prepeliţă
Otis tarda, Dropie
Vanellus cristatus, Ciovlică,
Aegialites cantianus, Prundăraş
Ardea cinerea, Stîrc cenuşiu
" purpurea, Stîrc roşu
Nycticorax griseus, Stîrc vînet,
Ciconia alba, Barză
Fulica atra, Lişiţă
Gallinago scolopacina, Becaţină
Totanus calidris, Fluerar,
Recurvirostra avocetta, Ciulic
Anas boschas, Raţa sălbatică
Podiceps rubricollis, Bodîrlău roşu
Pelecanus onocrotalus, Babiţă
Larus ridibundus, Pescar,
" leucopheus, Pescar de mare
Sterna fluviatilis, Pescăruş
" anglica, Pescăruş
Hydrochelidon nigra, Pescăruş negru.

Preis 2500 Lei.

Robert von Dombrowski

Figure 6.3. Shipping invoice for various bird species ordered by Nicolae Leon in 1906 from the Dermoplastich Museologische Institut “Dobrudscha”, which was run by the Bucharest-based museum custodian and ornithologist Ritter von Dombrowski through which whom he sold taxidermy samples of extinct bird fauna throughout Europe. Courtesy of the “Mihai Eminescu” Central University Library, Iași[24]

[24] Biblioteca Centrală Universitară Mihai Eminescu din Iași, Arhiva 4 Nicolae Leon, Fila 35.

In terms of scientific research, apart from his studies of the mouths of flies and mosquitos, Leon contributed to the description of *simulides*, *colicoides* and *anopheles*, and his studies were used in the fight against malaria. Other important investigations focused on helminthology, describing several new species, such as *Braunia Jassyensis*, *Diplogonoprus Brauni*, *Dibotrocephalus Taeniodies*, *Taenia Cilindric*, etc.[25] In 1903, Leon discovered a new species of *coelenterata*, which he named *Prophysema Haeckelii* in honour of his mentor.[26] He also conducted systematic research on the classification of crepuscular butterflies, the identification of pestilential insects, and dead organism decomposition.

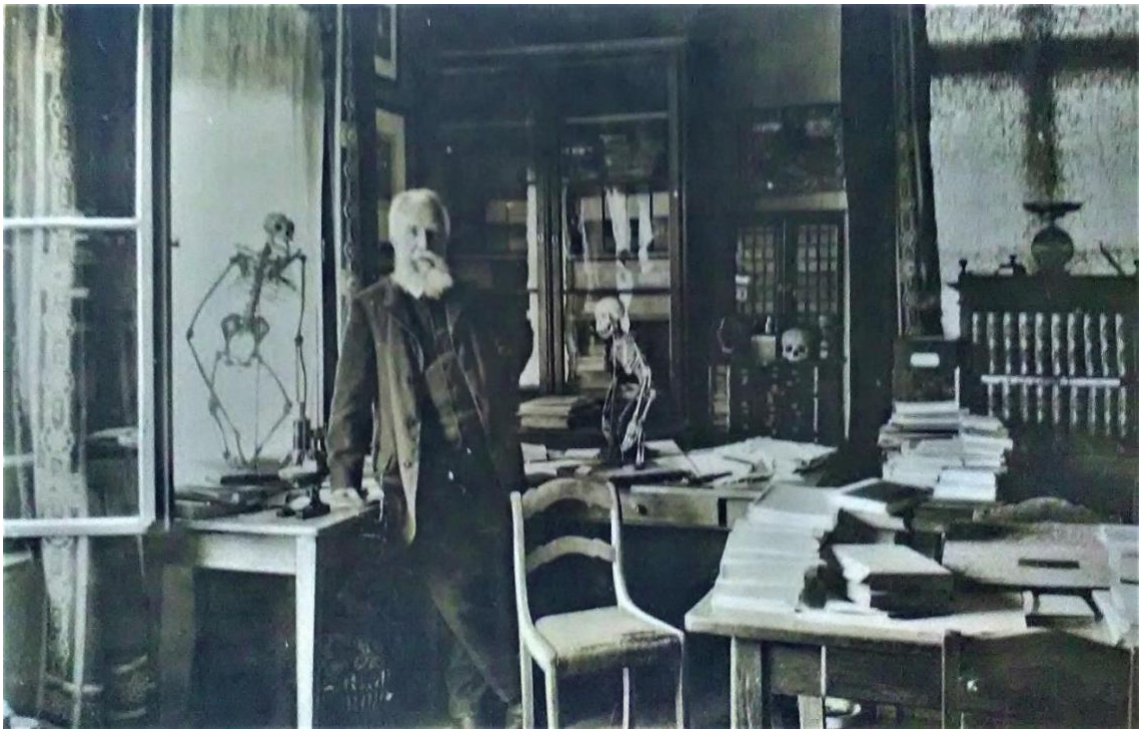


Figure 6.4. Postcard received by Nicolae Leon from Ernst Haeckel containing research information and personal news. Courtesy of the Romanian Academy Library, Bucharest

Simion Ghiță, op.cit, 542.

Nicolae Leon, "Prophysema Haeckelii," *Zoologischer Anzeiger* Vol. 26 (1903): 418-419.

In terms of the popularisation of Darwinism in Romania, after many efforts, the Moldavian parasitologist successfully introduced the evolutionary theory and the biological approach to natural history in secondary schools. He also devoted a significant amount of his time to communicating his findings to lay people:

> However occupied I was with my lectures, practical work and individual laboratory research, I never stopped even for a moment to publish popular articles. In my opinion, no other science is so open to popularisation as natural science. The results of scientific research have to be popularised, so that the common people can also use them. […] The populariser should do his best to reproduce in accessible form the great results of [science] in conferences, magazine articles, and in books written for everyone's understanding, if possible without distorting the scientific truth.[27]

As previously shown, Leon's engagement with the popularisation of science began during his student years in Jena (1885). In 1891, however, he published the pamphlet *The Zoologist's Guide* (*Călăuza Zoologului*) which was issued in a second edition in 1905 and received an award from the Romanian Academy. The aim was to help amateur naturalists and high school students to observe the local flora and fauna in their natural surroundings. Divided into five parts, it encouraged them to explore nature by undertaking excursions and to observe the natural habitats of lakes, plains, forests, as well as nocturnal life. The threefold aim of the material collected served the study of biology, functional morphology and, to a lesser extent, systematics.

Nicolae Leon, *Amintiri*, 244-245.

Leon's shift appears clearly in his emphasis: "to study animals from a biological point of view, that is, [to study] their relationship to each other and to their environment, their alimentation habits and the way that they reproduce."[28] He further gave technical details to assist observers in reproducing the species' "natural conditions of existence" in their schools, showing how to set up aquariums, terrariums and insectariums. In the 1905 edition, Leon visually illustrated his argument by adding dioramas and made it clear that "a lake is a microcosm, an association of plants and animals, which live together according to the law of conservation, constrained by physics and chemical influences, dependent on one and another, the soil they live on, and on the [biological] group as whole."[29] Moreover, Corneliu Diaconovich (1859-1923) at the initiative of ASTRA beginning his work on the *Romanian Encyclopaedia* in 1895, asked Leon to contribute several scientific entries, including one on biology. In the latter, after explaining various biological fields, Leon defined the term ecology coined by Haeckel as follows:

> Ecology studies the relationship between animals and plants, as well as the environment in which they live. By the term "environment" we understand the totality of factors with which the organism comes into contact, such as atmosphere, solar light, temperature, meteorological phenomena, the nature of the water, the soil, alimentation; as well as other actions upon the animal and plant organisms such as parasitism, symbiosis, etc.[30]

Nicolae Leon, *Călăuza zoologului* (Iași: Editura I.S. Cuperman, 1891) 35.
Nicolae Leon, *Excursiuni zoologice* (București: „Minerva" Institut de arte grafice și editură, 1905), 19.
Corneliu Diaconovich, *Enciclopedia Română* Vol. I, (Sibiu: Editura și Tiparul lui W. Kraft, 1898), 490.

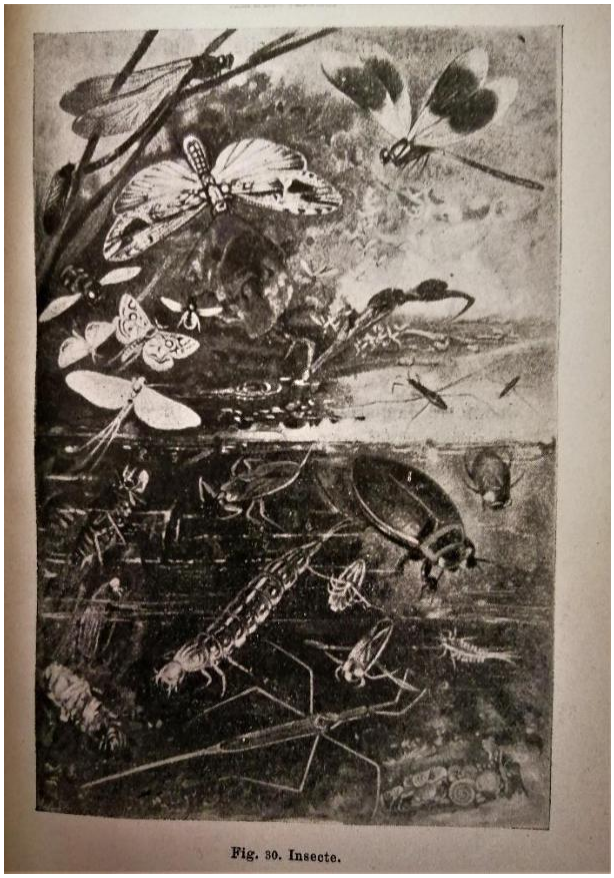


Figure 6.5. Illustrated diorama representing a pond habitat with various insects reproduced in Nicolae Leon's popularisation guide published in 1905.

By the turn of twentieth century, the "biological method" first discussed in Transylvania and popularised by Nicolae Leon and by Ioan Simionescu[31] was eventually adopted by most Romanian secondary school teachers and academics, such as T.A. Bădărău (1872-1958), Iuliu Moisil (1859-1846), Culea D. Apostol (1882-1949), Ioan Popa-Burcă (1875-1937), Andrei Popovici-Bânzoșanu (1876-1969) etc. Most of their published manuals militated against the "terrorism of systematics", echoing Constantin Kirițescu's (1876-1965) argument that "natural sciences will

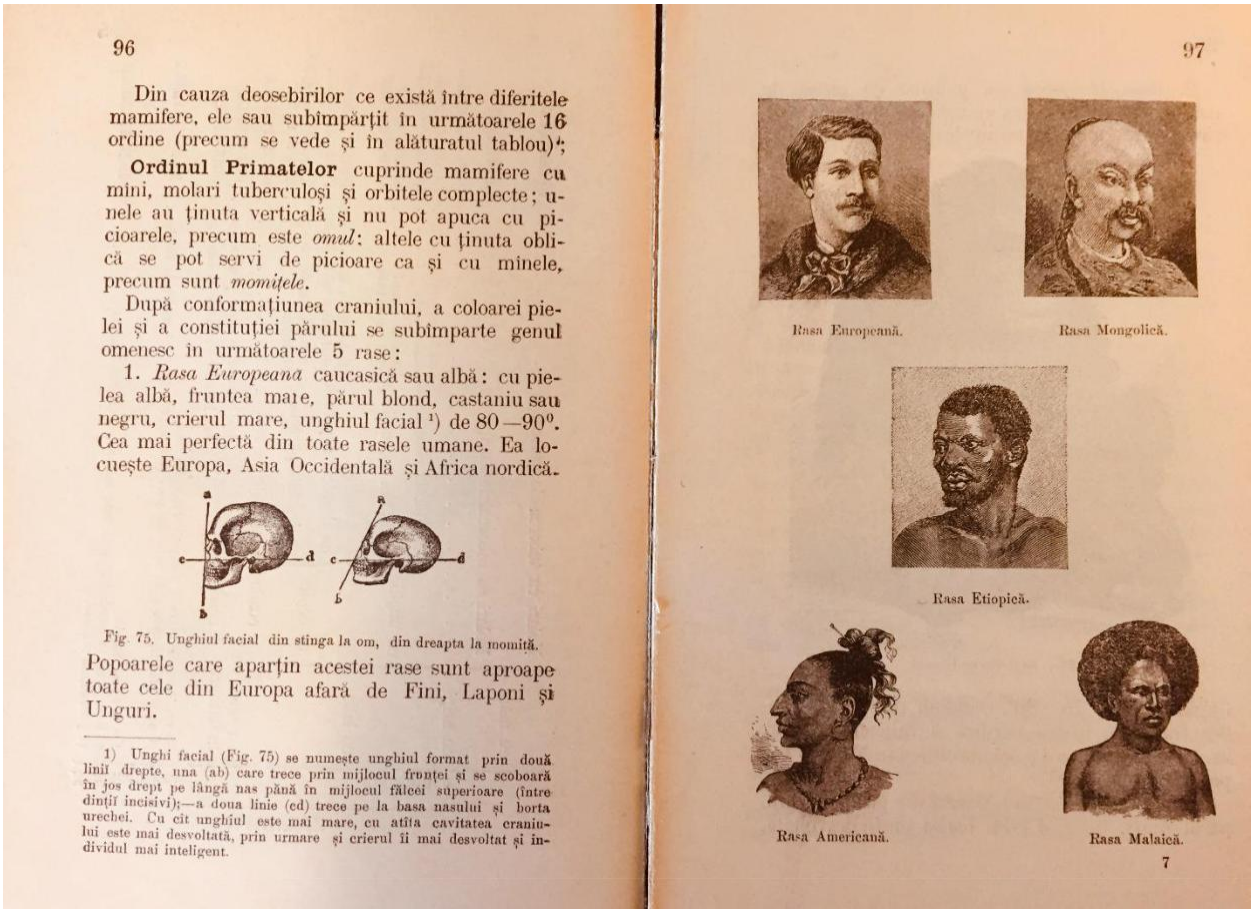
Ion Simionescu, "Cum se predau Științele Naturale în școalele secundare," *Noua Revistă Română* Vol. 2 No. 23 (1900): 415-418.

end the monotonous enumeration of names and traits, as in a museum catalogue where the animal's name is followed by cold and boring particulars."[32] The adoption of the biological perspective induced in young students an anthropocentric protectionist view of nature and animal species, even as other school manuals — coupled with the religious morals that were still being preached, along with faith in God — strengthened the feeling of national and racial identity.[33] However, even if the creationist approach to biology was critically challenged by secondary teachers and various academic zoologists, who stipulated the integration of the Darwinian theory alongside the biological perspective,[34] the racial classification of human diversity still persisted in all these publications.

Constantin Kirițescu, *Învățământul Elementar Al Științelor Naturale În Școalele Noastre Secundare* (București: Tipografia Curții Regale, F. Gobl Fii, 1904), 8.

Iuliu Moisil, *Scopul predarii sciințelor naturale. Mijloacele și metoda predărilor lor în scolele secundare* (Targu-Jiu: Tipo-Liografia nationala Nicu D. Milosescu, 1897), 9, 22-28; Apostol D. Culea, *Învățământul despre natură în școala primară* (Vălenii de Munte: Tipografia Neamului Românescu, 1910), 78-79; Victor Stanciu, *Serbarea arborilor și a păserilor* (Arad: Tiparul Tipografiei Diecezane ort. Române, 1913), 20-22. Ion Simionescu, "Cum stăm cu studiul științelor naturale în România," *Noua Revistă Română* Nr. 10, Vol. 1 (1900): 452-453.

Constantin Kirițescu and Andrei Popovici-Bâznosanu, *O lecțiune de corectitudine științifică și colegială* (București: Cartea Românească, 1923); Idem, *Zoologie pentru clasa I-a secundară* (București: Institutul de Arte Grafice Carol Gobl S-or Ion St. St Rasidescu, 1912), 60-64.



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Din cauza deosebirilor ce există între diferitele mamifere, ele sau subîmpărţit în următoarele 16 ordine (precum se vede şi în alăturatul tablou)[1];

Ordinul Primatelor cuprinde mamifere cu mîni, molari tuberculoşi şi orbitele complecte; unele au ţinuta verticală şi nu pot apuca cu picioarele, precum este *omul*: altele cu ţinuta oblică se pot servi de picioare ca şi cu mînele, precum sunt *momiţele*.

După conformaţiunea craniului, a coloarei pielei şi a constituţiei părului se subîmparte genul omenesc în următoarele 5 rase:

1. *Rasa Europeană* caucasică sau albă: cu pielea albă, fruntea mare, părul blond, castaniu sau negru, crierul mare, unghiul facial [1]) de 80—90°. Cea mai perfectă din toate rasele umane. Ea locueşte Europa, Asia Occidentală şi Africa nordică.

Fig. 75. Unghiul facial din stînga la om, din dreapta la momită.

Popoarele care aparţin acestei rase sunt aproape toate cele din Europa afară de Fini, Laponi şi Unguri.

1) Unghi facial (Fig. 75) se numeşte unghiul format prin două linii drepte, una (ab) care trece prin mijlocul frunţei şi se scoboară în jos drept pe lîngă nas pînă în mijlocul fălcei superioare (între dinţii incisivi);—a doua linie (cd) trece pe la basa nasului şi borta urechei. Cu cît unghiul este mai mare, cu atîta cavitatea craniului este mai desvoltată, prin urmare şi crierul îi mai desvoltat şi individul mai inteligent.

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Rasa Europeană.

Rasa Mongolică.

Rasa Etiopică.

Rasa Americană.

Rasa Malaică.

7

Figure 6.6. An excerpt from Nicolae Leon's zoological textbook, issued in 1893, depicting the "European Race as the most perfect" and supported by anthropometric argumentation. Courtesy of the Mihai Eminescu Central University Library.[35]

Returning to Leon's printing activity, in 1893, he launched a short-lived popular periodical *Practical Life* (*Viaţa Practică*), in which he published letters from urban and rural subscribers. Dedicated to finding more research material, he travelled all around Romania, documenting popular lore about the relationship between zoology, botany and traditional cures. His travels

Nicolae Leon, *Curs Elementar de Zoologie pentru clasa a II-a Gimnasială* (Iaşi: Editura Librăriei ISR Kuppermann, 1893).

led to the publication, in 1897, of "Romanian Peasant's Medical Zoology" ("Zoologia medicală a ţăranului roman") and in 1899 of "Romanian People's Medical Botany" ("Botanica medicală a poporului roman"). These studies were first published in the Iași journal *Arhiva Societăţii Ştiinţifice şi Literare*. In the journal *Convorbiri literare*, Leon printed, "Brief observations on Romanian People's Medicine" ("Câteva observații asupra medicinei poporului românesc"). These were also re-printed together in 1903 under the title of *The Medical Natural History of Romanian People* (*Istoria naturală medicală a poporului român*).

Debates on Darwinism and on "spontaneous generation"

As a devoted monist, Nicolae Leon was involved in the Romanian freethought movement, for which he published several pamphlets on Darwinism in the *Lumen Library* collection, drawing the criticism of an anti-Semitic professor in Iași, A.C. Cuza (1857-1947). Later in his career, Leon's repudiated both agnosticism and extreme atheism, reasoning that "atheism is intolerant and aggressive". Atheists, Leon stressed, "even if they say that they are fighting for freedom of thought, are its enemies."[36] Instead, he put his faith in the scientific natural religion of monism. Moreover, he insisted that he had taken an oath to publish popular articles and to defend Darwinism. In his words, "everything I have written up to now was the expression of my monist convictions, both before ("Origins of Life", *Arhiva* 1889) and after my oath ("Darwinism and spontaneous generation", *Convorbiri Literare*; "The Origin of humans", *Viata Românească*)."[37]

Nicolae Leon, Ibid., 218.

Nicolae Leon, *Moniste. Dușmanul liberei gândiri* (București: Editura Lumen, 1909) 45.

Without a doubt, Nicolae Leon was one of the most important Romanian popularisers of Darwinism, a public position that he defended against creationist scientists such as Nicolae Paulescu. In January 1903, he received a letter from the leading figure of the *Junimea* literary group, Titu Maiorescu, with the following reuqest:

> Dear Colleague, I have not had the privilege of meeting you personally; however, because I know you from your works as a distinguish student of Haeckel, I am taking the initiative of sending you the lecture by our new aggregate, Dr Paulescu, against Darwinism. I humbly ask you to publish a critical review (maybe in *Literary Conversation*) to support Darwinism, as should be done, and defend it against the lightness of Mr Paulescu. In our country you are the most authorised representative of Haeckel, and therefore of Darwinism.[38]

Nicolae Paulescu (1869-1931), on the other hand, after finishing high school in Bucharest, went to Paris to study medicine (1888-1897), biological chemistry (1897) and general physiology (1898) at the Sorbonne. Soon afterwards, he worked as a secondary physician at Notre Dame Hospital (1897-1900). Upon his return to Romania in 1900, he became professor of physiology at the Medical Faculty in Bucharest, a position he kept his entire life. His research interests in physiology included the mechanism of fever occurrence, coagulation of hepatic blood, the physiology of the thyroid and the pituitary gland.[39] He is also remembered by the medical

Biblioteca Academiei Române București, Colecția Manuscrie, Fond Nicolae Leon, S4 (1)/CXXVIII

Octavian Buda, Ibid., 133-134.

establishment for his research into the endocrine function of the pancreas and on glycogen metabolism, which led to the treatment of diabetes with what he termed "pancreină". At the same time, a Canadian team consisting of physicians Frederick Banting, Charles H. Cest, James B. Collip and J.J.R. Macleod, after conducting research similar to Paulescu's, successfully purified pancreatic extracts and published their work on the discovery of insulin. Despite Paulescu's protest regarding the precedence of his research, in 1923, the Nobel Prize for Physiology and Medicine was awarded to Banting and Macleod for the discovery of insulin.[40]

Paulescu was also known for his anti-Semitism and his support of Romanian far-right fascist groups. In 1923, together with A.C. Cuza he was one of the founding members of the Romanian fascist party, the National Christian Defence League (LANC). In addition, in several articles and books, he put forward his aggressively racist views, which also served as preconditions for the recurring Jewish pogroms and the execution of the Holocaust in Romania.[41] In his words,

> We Romanians are faced with a capital question: What shall we do with these uninvited guests who have suddenly installed themselves in this country or, rather, with these evil parasites who are both thieves and murderes? Can we exterminate them as, for instance, insects are killed? This would be the simplest and easiest way of getting rid of them; if we were to act according to the laws of the Talmud, it would even be legitimate.[42]

See. Alberto de Leivaa, Eulàlia Bruguésa and Alejandra de Leiva-Pérez "The discovery of insulin: Continued controversies after ninety years," *Endocrinolgia y Nutriticion*, Vol. 58, No.9 (2011): 449-456.

See Marius Turda, "Fantasies of Degeneration: Some Remarks on Racial Anti-Semitism in Interwar Romania," *Studia Hebraica* 3 (2003): 336-348.

Nicolae Paulescu, *Spitalul, Coranul, Talmudul, Cahalul, Francmasoneria* (București, 1913), 17.

Of significant relevance was Paulescu's introductory lecture on physiology given at the Medical Faculty in 1903, in which he challenged Darwinism and the idea of "spontaneous generation". What followed, in the form of exchanges of critical articles, was mainly a debate at the intersection of politics and polemic, and of two scientific traditions, one French and the other German. It was also a confrontation between vitalism and monism in Romania. In relation to "spontaneous generation", each had its own political and social history. According to John Farley:

> Spontaneous generation embraces two concepts, which during some histroical periods were regarded as quite distinct. In the first place, it can refer to the doctrine of abiogenesis, or the production of living organisms from inorganic matter; in the second place to heterogenesis, or the generation of living organisms from organic matter. […] Supporters of heterogenesis argued that infusorians, algae and fungi were generated from dead organic matter, and that parasitic worms were produced in living organic matter. […] This dilemma became acute with the appearance of *Origin of Species*, as any evolutionary theory, resting on natural causes logically demanded an abiogenetic origin of life.[43]

When Nicolae Paulescu published his lecture Spontaneous generation and Darwinism against the experimental method ("Generațiunea spontanee și Darwinismul față cu methoda experimentală") in 1902, he addressed three distinct, but partially related issues. First, he argued that, based on the experimental method, endorsed by French scientists such as Louis Pasteur,

John Farley, "The Spontaneous Generation Controversy (1859-1880): British and German Reactions to the Problem of Abiogenesis," *Journal of the History of Biology*, Vol. 5, No. 2 (1972): 285-286.

the idea that life arose from inorganic matter was a bogus theory. Secondly, as most of the proponents of the Darwinian theory did not care to explain how life had actually appeared on earth, the theory had to be rejected. Hence, Paulescu inferred that, as there were no examples of organic beings spontaneously appearing in the present day, Darwin's "hypothesis" was "erroneous and should therefore be removed from the scientific literature". Thirdly, given his religious and political background, the explanation of the emergence of life rested on the idea of creation, hence he advocated for the introduction of the dualist notions of "soul" and "God" into

the study of physiology.[44]

Well aware of his polemical abilities, Paulescu further scrutinised both Darwin's and Haeckel's inconsistencies, especially those that did not conform to experimental explanations, while at the same time adapting existing scientific data to his own creationist views. For instance, he explained that "life has always existed on earth", given the fact that palaeontology has shown

that "fossils exist from the Laurentian and Cambrian periods."[45] Turning to microbiology, Paulescu accepted Louis Pasteur's experiments, which "demonstrated that inferior beings such as infusoria and microbes do not reproduce in a spontaneous way", specifically stressing that:

> The conclusion of these well-established facts is that, nowadays there are no organic beings born from matter in a spontaneous way, in other words without the intervention of energy possessed by that matter. [...] The hypothesis of spontaneous generation has to be repudiated as unscientific. […] The power of this energy is the soul and God.[46]

See also, N.C. Paulescu, *Noțiunile de Suflet și Dumnezeu în Physiologie* (Bucuresci: Institutul de Arte Grafice Eminescu, 1905)

N. C Paulescu, "Generațiunea spontanee și Darwinismul față cu methoda experimentală," *Spitalul. Revistă Medicală*, Anul XXIII, No.21 (1902): 729.

Ibid., 741-742.

Nicolae Leon's reply followed immediately. Based on the existing resources of evolutionary science, Leon could provide few explanations for the emergence of organic life. He could either use "the protoplasmic theory", which focused on microscopic investigation of the "monera", as the primordial organism proposed by Haeckel, or the dualist "panspermist theory", which assumed that life arrived on Earth from the cosmos, carried by meteorites and other

celestial bodies.[47] As a dedicated student of the monist school, Leon chose the first explanation. Throughout his critical review, Leon noted that Paulescu confused "arhigonie" (abiogenesis) with spontaneous generation, stressing that, "although abiogenesis could not be proven in an experimental way, because nowadays life could not be created in a laboratory out of sheer matter, this is the only hypothesis, that explains the origins of life".[48] Leon went on to ask Paulescu to provide the experimental explanation of his own theory. He then, expanded the explanation of the "protoplasmic theory"[49], summarising the emergence of life on earth in five stages:

> Synthesis and reduction give birth to a simple combinations of carbon nitrates; 2. The molecules of these carbon nitrates give the constitution of albuminoidal bodies and their characteristics; 3. The albuminoidal bodies, covered by a water surface, then form crystalline molecules: pleone and micelle; 4. Albuminoidal micelle associate next, forming internal aggregations and displaying regulative plasmatic homogeneous granules:

Iris Fry, *The Emergence of Life On Earth: A Historical and Scientific Overview* (New Brunswick: Rutgers University Press, 2000), 54-65.

Nicolae Leon, *Generațiunea Spontanee și Darwinismul* (București: Atelierul grafic I.V. Socecu, 1903), 6.

See also Gerald L. Geison, "The Protoplasmatic Theory of Life and the Vitalist-Mechanist Debate," *Isis* Vol 60, No. (1969): 272-292.

> Plassonelle and Plassogranelle; 5. As Plasonelle grow and multiply, […] plasmatic individual bodies of homogeneous constitutions, monera, come into existence.[50]

Next, Leon devoted several pages to the theoretical relation between Lamarckism, Darwinism and Haeckelism (the biogenetic law), arguing that "the reply from the partisans of creation is well known, namely that no one has witnessed the transformation of species, yet neither has anyone witnessed the creation of species!"[51] Not surprisingly, Paulescu was not in the least intimidated by Leon's review, and reacted forcefully win his reply. On this occasion, the discussion took a more aggressive tone as he described Leon as someone animated by "sectarian violence and the zeal of a fanatic", who brought forward "theories imagined by Haeckel", since "no one has seen a monera."[52] He then continued to repeat the same axiom that "science cannot admit unproved hypotheses which are in contradiction with well-established facts."[53] Then he mockingly stated that:

> Dr. Leon entitles this part of his discussion "Haeckelism" (the fundamental biogenetic law, *biogenetische Grundgesetz*). When someone comes across such a snoring title, the fundamental biogenetic law, he then hopes to find an important law, based on multiple well-established facts, a law which can shed some light on the obscure question of the origin of life. However, beneath these snoring words lurks an absurdity that originates from the same brain that gave birth to the monera.[54]

Nicolae Leon, op.cit., 7-8.
Ibid., 22.
N.C. Paulescu, *Generațiunea spontanea și Darwinismul (Respuns D-lui Dr. N. Leon)* (București: Atelierele I.V. Socecu, 1904), 4-7.
Ibid., 12.
Ibid., 28.

In his second reply, Leon tried to provide more evidence in favour of the Darwinian theory by illustrating both the discovery of complex eukaryote organisms of the *Vampyrella* and that of the controversial "pithecanthropus erectus".[55]

The debate reached its peak when Leon's colleague and friend Dimitrie Voinov (1867-1951) joined the discussion, struggling to produce further proofs in favour of evolution. Like many other Romanian evolutionary naturalists, Voinov was also a former student of the geologist Grigore Cobâlcescu. In 1889, after graduating from the Iași Institutele Unite, Voinov enrolled to study natural science in Paris where he also became active in the French Workers' Party together with the scientists Paul Bujor, Emil Racoviță and Ioan Cantacuzino. In the same year, as a representative of Romanian workers in the publishing industry, he participated in the socialist

Second International.[56] Upon his return to Bucharest in 1892, Voinov managed to obtain a teaching position at the department of animal morphology in the Science Faculty. Thanks to his position, and with the aid of the leading Romanian Marxist Dobrogeanu-Gherea, scientific careers were opened to several young socialist students. As Anca Mândru has noted, successful naturalists like Voinov "were able to create a socialist scientific network that helped younger socialist researchers to climb the academic ladder," aiding, for example, Paul Bujor to obtain the chair of animal morphology at the University of Iași.[57]

N. Leon, "Generațiunea spontanee și darwinismul. Răspuns la răspunsul D-lui N. C. Paulescu," *Convorbiri Literare*, An XXXVIII (1904): 1133-1134, 1139.

Simion Ghiță, "Din istoria biologiei generale in România," in Nicolae Botnariuc, *Din Istoria Biologiei Generale* (București: Editura Științifică, 1961), 544.

Anca Mândru, op.cit, 178.

Figure 6.6. Portrait of Dimitrie Voinov[58]

In terms of scientific research, Dimitrie Voinov dedicated his early years to the study of anatomy and physiology, focusing on the structure of the excretory apparatus of annelid worms, their digestive functions and to the tissue of larva and dragonfly nymph. In 1900, he also published the first treatise of microscopy in Romania. From 1902 onwards, Voinov shifted his research to the structure of various insects such as the coleoptera, lepidoptera and orthopteran, eventually discovering a new species of *Gryllotalpa* with 17 chromosomes. He also documented its mitochondrial cellular division. His other research dealt with cytology, the structure of the cytoplasm and the cellular secretion mechanism.[59]

[58] http://galeriaportretelor.ro/item/dimitrie-voinov-3/ (last accessed 18 December 2020)

[59] Simion Ghiță, op.cit., 545-546.

When it came to the popularisation of science, as early as 1893, Voinov was publishing critical reviews against vitalism in the socialist journal *Science and Literature* (*Literatură și Știință*).[60] Ten years later, he joined the debate between Leon and Nicolae Paulescu with the purpose of refuting the latter's creationist worldview by illustrating the inconsistency of so-called "final causes". He started with a short definition of the Darwinian mechanism as follows:

> For Darwin, any quality and characteristic of living beings is variable, hence it is variable in any direction and undetermined; at the same time, certain variations are hereditary, transmitted from the individual who possesses them to their descendant. These variations, no matter how small, if they are useful for the animal's life, will be used to gain an advantage in the struggle for life, which he carries on against his own species. Thanks to these advantages, he will thrive, managing to reproduce and to multiply, over others who lack these abilities. The result of the struggle for existence in nature […] is the transformation of species.[61]

Voinov pointed out that "spontaneous generation" is in fact an unfounded theory: "it is well known that, all beings are born from an egg or from other similar beings. Experimental science, the work of Redi, Spallazani, Pasteur, has shown that no living beings are spontaneously born." At the same time, not only did he accuse Paulescu of scholasticism, but also of falsifying Pasteur's experiments.[62] The next two parts of his article dealt with the authoritarian nature of

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Dimitrie Voinov, "Noile cuceriri transformiste. Teoria creațiunii versus 'Transformismul sau teoria evolutiva'," *Literatură și știință* (1893): 99-109.

Dimitrie Voinov, "Transformizm ori Paulizm," *Convorbiri Literare*, An XL (1906): 47-48.

Ibid., 49-50.

nineteenth-century science. Not surprisingly, another set of articles appeared, with Paulescu attacking Voinov's notion of species and his "confusion" of fecundation with fecundity. He explained that "when Voinov claims that species do not exist, he asserts scientific nonsense, while putting himself in contradiction with the transformists […] How can something which does not exist be transformed?"[63]

Here again, Voinov made public another set of accusations and compared Paulescu to those "Priests who invoked the sufferings of God in order to strip the people of their tiniest moral and rational resistance."[64] He identified the intellectual roots of vitalism in the work of the French philosopher Paul Janet (1823-1899), who nourished the theory of final causes. Voinov's demonstrations indeed were soon directed against Janet's own paradoxes, exulting that "rudimentary organs are the strongest proofs to be cited against final [causes] and in support of transformism."[65] Paulecu's final answer in the debate on "spontaneous generation" relied, in fact, on the argumentation of his opponent, and accepted the importance of inner vitality and final causes.[66]

After seven years of heated discussions, Nicolae Leon temporarily ended the dispute in 1909. On that occasion, he sided with Voinov by claiming that if one wished to find proofs of rudimentary organs, they should investigate the thyroid, adrenal gland or the rudimentary eyes of small organisms such as *chrysochtoris*, *ctenomys*, *typoline*, etc.[67] Moreover, his conclusions

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N.C. Paulescu, "Transformism ori Paulism si Fisiologie Sentimentală (raspuns d-lui Voinov)," *Convorbiri Literare*, An XLI (1907): 703-706

Dimitrie Voinov, "Dovezile," *Convorbiri Literare*, An XLI (1907): 783.

Ibid., 789-790.

N.C. Paulescu, *<<Dovezi>> nevalabile (Răspuns la răspunsul d-lui D. Voinov)* (Bucuresci: Inst. De arte Grafice Carol Gobl, 1908), 5.

N. Leon, "Organele' rudimentare și D-l Prof. Paulescu," *Convorbiri Literare*, An XLIII (1909): 442-443.

suggested that there was no way out of this debate, pointing to the methodological differences in scientific inquiries: "if chemistry had waited for the experimental demonstration of the existence of atoms, or physics had waited for the vibrations of the ether, or biology to discover the molecular structure of plasmatic life, none of these sciences would have existed."[68]

The debate on spontaneous generation and Darwinism between Leon, Voinov and Paulescu could have lasted well into the second half of the twentieth-century, without the three of them ever agreeing. It would take J.B.S. Haldane (1892-1964) and Alexandr Oparin (1894-1980), and then Harold C. Urey (1893-1981) and Stanley Miller (1930-2007), to produce organic molecules from inorganic components, thought to have been the origin of "prebiotic Earth". However, modern scientific opinions on the evolution of life have shown that this could also originate deep in the ocean, out of what are known as "hydrothermal vents". Another answer awaited its researchers up in the sky, as various authors continued to claim the extraterrestrial

origin of life.[69]

6.2. From socialist evolutionists to the biological perspective of evolutionary ecology

Before concluding the overview of Romanian socialist scientists and evolutionists, the work of Paul Bujor (1862-1952), Ioan Borcea (1879-1936) and Grigore Antipa (1867-1944) need to be discussed, as all published articles touching upon Darwinism before 1918. Paul Bujor graduated from high school in Bârlad and in 1887 went to Paris to study the natural sciences. In

Ibid., 446.

For more details, see Iris Fry, *The Emergence of Life on Earth: A Historical and Scientific Overview* (New Brunswick: Rutgers University Press, 2000).

the same year, he joined three other Romanian evolutionist science students — Dimitrie Voinov, Emil Racoviță and Ioan Cantacuzino — in the French Workers' Party. By 1888, he had moved to Geneva where he specialised in animal morphology under the supervision of the socialist scientist Karl Vogt. Before finishing his doctoral dissertation in 1891, he met several Russian Marxist revolutionaries, among them Georgi Plekhanov (1856-1918), and participated in socialist International Congresses.[70]

Bujor returned to Romania in 1891 and spent several days with Constantin Dobrogeanu-Gherea in Ploiești. Soon afterwards, he made use of the "Marxist networks" in Romania and worked for a period of five years at the Bucharest Science Faculty, as an assistant to the zoologist Alexandru Vitzu (1853-1902). Later he was the head of the morphology research department led by Dimitrie Voinov,[71] eventually moving to Iași, where he was appointed the chair of animal morphology.

Olga Necrasov, *Profesorul Paul Bujor: Biolog progresist si luptator pentru dreptate sociala (1862-1952)* (Bucharest: Editura medicala, 1955); Simion Ghiță, op.cit., 549; Anca Mândru, op.cit., 177.

Anca Mândru, Ibid., 178.

Figure 6.7. Portrait of the socialist evolutionist Paul Bujor[72]

Paul Bujor dedicated numerous studies to both animal morphology and marine biology, contributing to the description of the colonial polyp *Veretillum* and salt lake fauna such as *Artemia salina*. Beyond his duties as dean of the Iași Science Faculty, he was also a frequent populariser of science, freethought, and Darwinism. In 1906, during the inauguration of the academic year at the University of Iași, Bujor protested against the religious ceremony performed on the occasion in a letter to the Moldavian Orthodox metropolitan.[73]

[72] http://galeriaportretelor.ro/item/paul-bujor/ (last accessed 18 December 2020)

[73] Quoted in Marius Rotar (ed.), *Conflictul dintre Știință și Religie Asupra liberei cugetări* (Iași: Editura Universității "Alexandru Ioan Cuza", 2016), 69-71.

In 1906, Bujor joined Garabet Ibrăileanu and Constantin Stere on the editorial board of the journal *The Romanian Life* (*Viața Românească*), which was considered *The Contemporary*'s successor.[74] It was during this period that he published an article praising the "usefulness of the study of biology". He began by noting that the "activity of humanity as whole can be divided into two categories". One was "brutal activity, manifested in the slaughter that took place between tribes, nations and would soon occur between races, which would continue into the future if the economic and class struggle does not change direction." The second was "intellectual activity, which appeared in the form of artistic, literary, and scientific creations".[75] He proceeded to explain the embryological, anatomical and psychological similarities between humans and animals, while rejecting the creationist ideas of the origins of life:

> We have the right to maintain that the human is not a special creation on Earth, but one of the most perfect beings on the zoological ladder. This perfection was not acquired through the will of a powerful creator, but through the struggle for existence, which occurred between our animal ancestors, and through adaptation to the environment. […] From a theoretical point of view, this is the true lesson which humanity learns from the study of biological science; in other words, it learns how to know itself better.[76]

Anca Mândru, op.cit, 257.
Paul Bujor, "Foloasele studiului biologiei," *Viața Românească. Revistă literară și științifică* An I, Vol I (1906): 22.
Paul Bujor, Ibid., 33.

Other articles published by Bujor in *Romanian Life* dealt with oceanographic biology, particularly with marine flora and socio-biology.[77] His article, provocatively titled "Social and Organic Parasitism" ("Parazitism organic și social") is illustrative. In it, he set out to demonstrate that the same injustices observed in the rural areas of Romania could be found in the study of micro-organisms.[78] Turning to the analysis of society, Bujor stated that "social parasitism" manifested itself in several forms: "political parasites", "predator parasites", "mimetic parasitism", etc. Well aware of other socialist evolutionists, he mingled Darwin's theory with Peter Kropotkin's observations on mutual aid, claiming that, "the idea of sociability among humans and animals emerged out of the struggle for existence. If two or more individuals unite to fight against the environment and against other animals," they form a bond. This bond between individuals, Bujor pointed out, "constitutes a society".[79]

His essay "Hunger and Love in the Struggle for Existence" ("Foamea și iubirea în lupta pentru existență"),[80] was also marked by a social approach. Here, he tried to demonstrate that "for the satisfaction of hunger and love, organic beings have always conducted a fierce battle both against the natural environment and against others." Following this line of reasoning, he credited, "the great naturalist Charles Darwin, who in his thought-provoking work, *On the Origin of Species* […] described in a magnificent way the entire saga of the struggle for existence."[81] After briefly describing how the evolutionary process could be perceived in the world of microscopic

Paul Bujor, "Flora Marină," *Viața Românească. Revistă literară și științifică* An I, Vol. 3 (1906): 439-451.

Paul Bujor, "Cronica Științifică (Parazitism organic și social)," *Viața Românească. Revistă literară și științifică* Anul I, No. 10 (1906): 600-601.

Paul Bujor, Ibid., 607-610.

Paul Bujor, "Foamea și iubirea în lupta pentru existență," *Viața Românească. Revistă literară și științifică* Anul I, No. 7 (1906): 112-123.

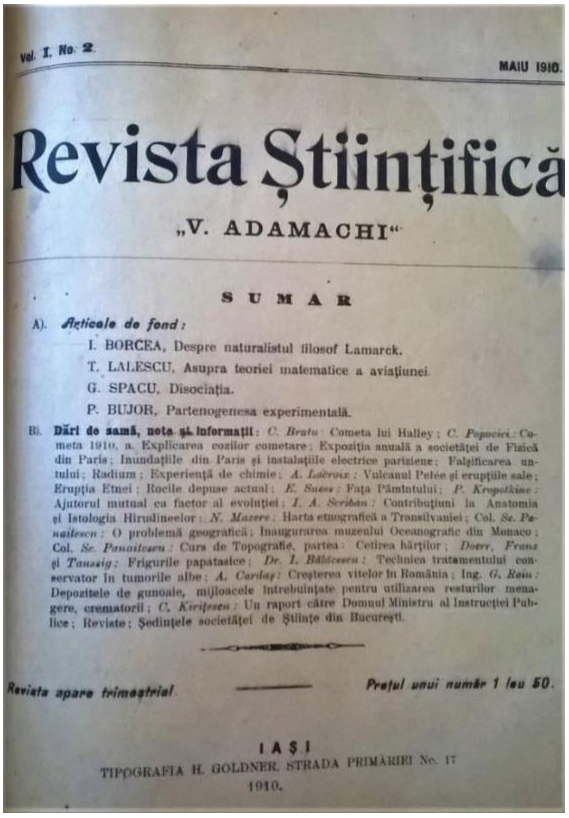
Paul Bujor, *Foamea și iubirea în lupta pentru existență* (București: Lumen, 1911) 1.

organisms and the animal kingdom, he finally arrived at question of the human impact on the natural world. He calculated that "750 million people are daily destroying, two and a half million animals for the satisfaction of their hunger! A true slaughter."[82]

It is important to note that, in 1910, Bujor, together with several other naturalists from the Science Faculty in Iași (Petru Poni, Ion Simionescu, Ioan Borcea, etc.), launched the famous periodical *The V. Adamachi Scientific Review* (*Revista Științifică V. Adamachi*). The journal was sold for 1.50 lei per issue and had a lifespan of six years. It received submissions from across the country, including from women scientists such as Elena Lupu, Maxim Maria, and Elena Negri. According to the journal's programmatic statement, signed by the geologist Ion Simionescu, the magazine was "not intended for popularisation"; instead, it was dedicated to those who would benefit from rudimentary "scientific training". In terms of format, he also pointed that the journal was divided into two sections: one dealing with general essays and the other with bibliographical reviews containing scientific information.[83]

Paul Bujor, Ibid., 9-10.

Ion Simionescu, "Precuvîntare," *Revista Științifică V. Adamachi* Vol I, No. I (1910): 1-2.



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„V. ADAMACHI"

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IAŞI

TIPOGRAFIA H. GOLDNER, STRADA PRIMĂRIEI No. 17

1910.

Figure 6.8. The second issue of *The V. Adamchi Scientific Magazine* (1910) with a biographical essay on Lamarck and a number of short scientific reviews. Courtesy of the "Mihai Eminescu" Central University Library, Iași

Among the articles dedicated to the biography of evolutionary naturalists, there appeared Bujor's account of "experimental parthenogenesis" as well as several articles signed by the founder of the first marine zoological station in Romania, and son in law of Nicolae Leon, Ioan Borcea.[84] Bujor meant to show that due to Lamarck's and Darwin's systematic research, "the theory of evolution or, in general terms, transformism, today dominates the whole field of modern biological research." Referencing the experimental work carried out by J. Loeb and Yves

[84] Ioan Borcea, "Despre naturalistul filosof Lamarck," *Revista Ştiinţifică V. Adamachi* Vol I, Nr. 2 (1910): 65-87.

Delage, he explained the mechanism of parthenogenesis, that is, of egg fecundation, through chemical and natural influences. Yet he still concluded, in a Lamarckian fashion, that laboratory experiments confirmed the influence of the environment on the evolution of living matter.[85] Other contributions focused on "cooperation" as a factor in the evolution of the species, by reviewing, for instance, Peter Kropotkin's work on mutual aid.[86]

In terms of public communications, the encyclopaedic periodical *The Bee* (*Albina*), announced in 1907 a new series of popular lectures to be held at the University of Iași, with Bujor amongst the speakers.[87] The Romanian archives hold the manuscripts of a number of communications given up until the 1950s, not only about Charles Darwin and his *Beagle* voyage, but also on the relationship between Darwinism and Marxism. In Bujor's words, "from a political and social point of view, Darwin's evolutionary theory provides a fundamental basis in support of the historical materialism established by Marx and Engels, in that humans have their origin in the animal world [...]."[88] According to other notes, he sketched the evolutionary genealogy of horses and elephants with paleontological discovery of proboscidean fossils.

Paul Bujor, "Partogeneza experimentală," *Revista Științifică V. Adamachi* Vol I, No. 2 (1910): 123.

Paul Bujor, "Pierre Kropotkine. L'entr'aide (Un facteur de l'Evolution)," *Revista Științifică V. Adamachi* Vol I, No. 2 (1910): 133-136.

"Informațiuni," *Albina Revistă Populară* Anul X, No. 15-16 (1907): 419.

Directia Judeteana a Arhivelor Nationale Iași, Fond Personal Paul Gh. Bujor, Page 1.

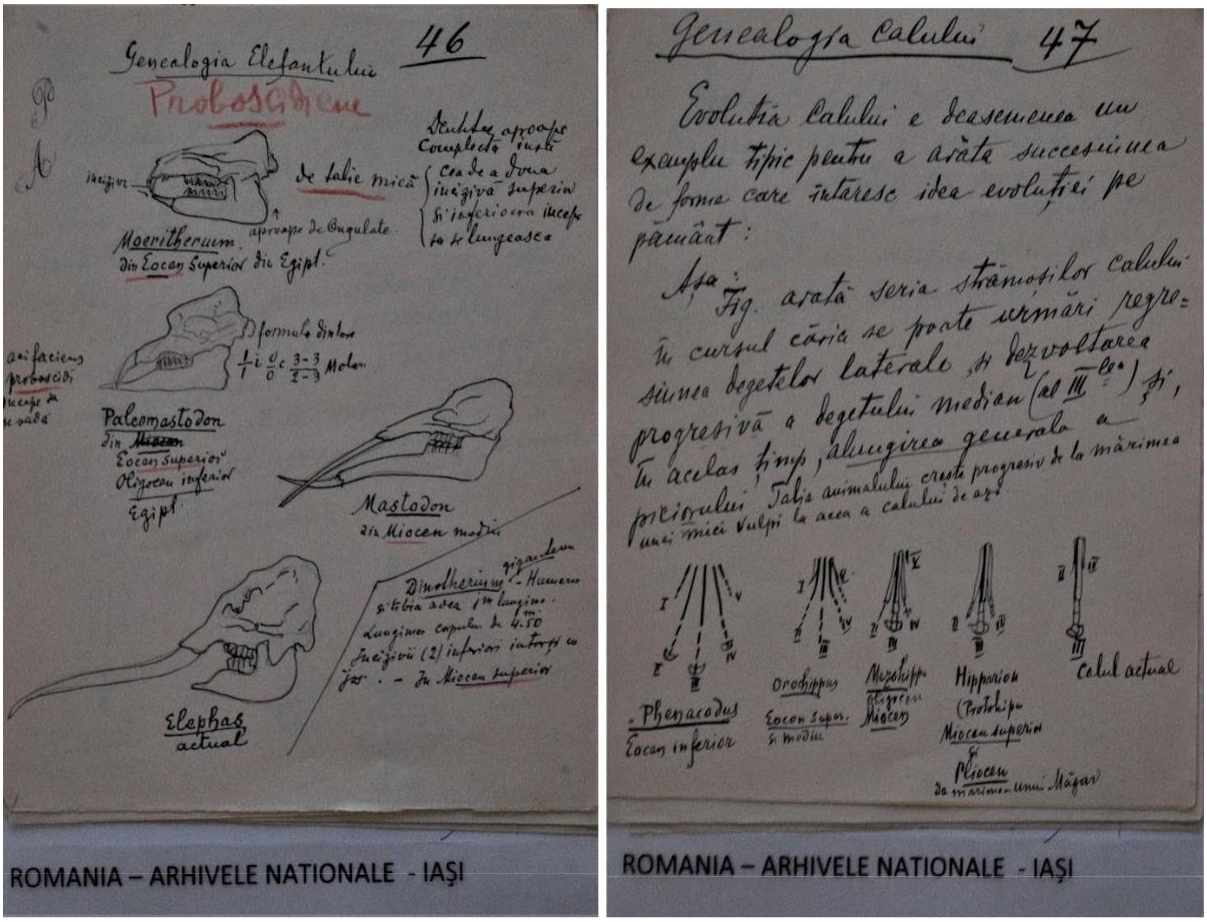

Figure 6.9. Paul Bujor's unpublished sketches illustrating Charles Darwin's evolutionary theory, with a demonstration of the genealogical tree of modern elephants and horses. Courtesy of the National Archives, Iași

By the end of his career, Bujor has endorsed Michurinism as a principle for biological research; however, he always pointed out in his lectures the importance of Charles Darwin's work and his mechanism of evolution.

Closely tied to the same socialist networks was another emerging zoologist, Ioan Borcea (1879-1936). After finishing his studies in natural science at the University of Iași, he became an assistant to Bujor at the animal morphology department. In 1901, he received the Adamachi

Fellowship given by the Romanian Academy,[89] and specialised at the Sorbonne under the supervision of Yves Delage (1854-1920) and Émile Hérouard (1858-1923). Following research in the Observatoire océanologique de Banyuls-sur-Mer and at Aton Dohrn Station in Naples, where zoologists were trained to observe marine fauna in their natural habitat, Borcea defended his doctoral dissertation on the urogenital system of *Elasmobranchii* cartilaginous fish in 1905.[90] After his return to in Romania, he was appointed to the Department of Zoology, director of the Natural History Museum, dean of the Science Faculty in Iași and Minister of Cults and Instruction. He continued to work on the marine fauna of the Black Sea and in 1926 laid the foundation for the first Marine Biological Station in Agigea, inviting other naturalists to conduct their studies here.[91] In addition to becoming a corresponding member of the Romanian Academy and of the Natural Science Museums of Paris and New York, Borcea was — together with Andrei-Popovici Bânzoșanu, Dionisie Linția, Alexandru Borza, and Emil Racoviță — part of the first generation of Romanian conservationists, seeking the conservation of dune vegetation.

In terms of publishing, Borcea was the editor of the most important scientific periodical journals, *The V. Adamachi Scientific Review* and *Annales scientifiques de l'Université de Iassy*. He contributed several articles to the popularisation of Neo-Lamarckian evolutionism. In one of his studies devoted to the biological perspective, he showed how entomophagic insects could be

For more details on the Adamachi Fellows, see "Raportul Comisiunei despre mersul Funațiunii Adamachi în anii 1894-1914," *Revista Științifică V. Adamachi* Vol. V, No. 4 (1914): 1-25.

Gheorghe Mustață, "Profesorul Ioan Borcea (1879-1936)," in Ioan Borcea, *Opere: Ihtiofauana Marii Negre* Vol. 1 (Bacău: Rovimed Publishers, 2006)

The first Zoological Station in Romania was established in Sinaia by Andrei-Popovici Bânzoșanu in 1922, for the exploration of mountain flora and fauna and to promote the creation of nature reserves. When the American pacifist and social activist Homer A. Jack (1916-1993) conducted his research on zoological stations around the world, he noted that the Zoological Station in Agigea "appears to be an exceedingly successful zoological station and certainly is fulfilling its function as the leading station in the Balkans." See S. Cărăușu, *Profesorul Ioan Borcea și Stațiunea zoologică marină de la Agigea* (București: Tipografia Bucovina, 1947), 8.

used as a natural method to fight other insects destroying crops and trees, instead of using chemicals, which were harmful to the environment.[92] Discussing the evolution of species, he tried to balance the Neo-Darwinian and Neo-Lamarckian traditions, promoting the idea of the development of species based on the selection of small variations, while insisting on the importance of Hugo de Vries's mutation theory.[93] Finally, in the several book reviews that he contributed, Borcea agreed with Darwin regarding species variation, showing that some were hereditarily acquired and that selection brings about the disappearance of useless variations, something which also leads to the differentiation of characters and the diversification of animal and vegetable species. However, in Borcea's view, natural selection played a secondary role in the development of species.[94]

6.3. Darwinism and the biological perspective promoted by Grigore Antipa

Another Romanian naturalist dealing with Charles Darwin's mechanism of evolution before the interwar period was the ichthyologist and evolutionary ecologist Grigore Antipa (1867-1944). Born in Botoșani, the second son of Zoița Nicolau, the young naturalist was none other than the stepbrother of Nicolae Leon. Losing both his parents at an early age, he soon followed in Leon's footsteps, attending the Mărgineanu School and the Institutele Unite in Iași.

Ioan Borcea, "Rolul insectelor parasite și predătoare in agricultură," *Revista Științifică V. Adamachi* Vol. I Nr. 1 (1910): 29-46.

Ion Borcea, "Ideile noi cu privire la fixitatea si variabilitatea speciilor; teoria mutațiilor," *Revista Științifică V. Adamachi* Vol. II, Nr. 2 (1911): 136-151; Ion Borcea, "Ch. F. Cox, - Charles Darwin and the mutation Theory," *Revista Științifică V. Adamachi* Vol II, Nr. 2 (1911): 154.

Ion Borcea, "Yves Delage et M. Goldmsith, Les Theories de l'evolution," Revista Științifică V. Adamachi Vol I, No. 4 (1910): 296-298

Like most Moldavian naturalists, he was also the student of the geologist Grigore Cobâlcescu. In the mid-1880s, on his return from Jena, Leon remembered finding Antipa, during Christmas holidays, with a few materials available for research, namely, "the journal *The Contemporary*, some books on Letourneau, Karl Marx, and some other socialist pamphlets."[95] Of significant importance for both his intellectual development and his career, as Antipa himself recalled, was an experience when he was still in high school. Back then, he read a series of articles by the anarchist Ioan Nadejde in *The Contemporary*, under the title "what do we know about the world?", which was based on Ernst Haeckel's work.[96]

At the initiative of Nicolae Leon, he enrolled at Jena University in 1885 to pursue the study of the natural sciences under the supervision of Ernst Haeckel. Like most of Haeckel's students, who were encouraged to study marine organisms, Antipa was sent to research marine fauna in the zoological station, Villefranche-sur-Mer between 1888 and 1889. According to his correspondence from 1888, when the president of the Romanian Academy, Dimitrie Sturdza (1833-1914), visited him in Germany, he offered him a research stipend of 2,400 lei to continue his studies.[97] Antipa additionally spent several years at the zoological marine station in Naples where he met Anton Dohrn (1840-1909), who advised him about the importance of collaboration with both the fishermen and state officials who could help him carry out his scientific research of marine life and ecology.[98] He then moved his research to the North Sea, to the zoological station

Nicolae Leon, *Amintiri* (Iași: Viata Romaneasca 1922) 134.

Grigore Antipa, *Ernst Haeckel. Nemurirea Sufletului* (București: Imprimeria Fundației Culturale Principele Carol, 1924); Ștefan Negrea, *Pe urmele lui Grigore Antipa* (București: Editura Sport și Turism, 1990) 72-73.

Manuscript at the Romanian Academy Library Bucharest, Envelop Grigore Antipa, S71 (1)/DCCCLII

Here, he discovered a new species of jelly fish which he named in honour of his benefactor, Dimitrie Sturdza, *Capria sturdzi*. See Ștefan Negrea, op. cit., 107.

on Germany's newly occupied Helgoland, where he met the ecologists Friedrich Heincke (1852-1929) and Karl August Möbius (1825-1908).[99] Based on his systematic research of the Spitzbergen archipelago, Antipa successfully defended his doctoral dissertation on the morphology of the jelly fish in 1891.[100]

Figure 6.10. Grigore Antipa as young student in Jena.

Courtesy of the National Archives, Iași[101]

In October 1892, with the support of the now liberal Prime Minister Dimitre Sturdza, a meeting was arranged between Antipa and King Carol I (1839-1914) in Sinaia, shortly followed by his first scientific trip in Romania to the Broșteni Royal natural domain. The outcome of the

Ștefan Negrea, Ibid., 101-102.
Simion Ghiță, op.cit, 556-557.
Direcția Județeana a Arhivelor Naționale Iași, Colecția Stampe și Fotografii, Nr. 1209.

meeting was so favourable that Antipa received not only permission to research the royal fishing lakes and the Danube commons, but also a vessel for a four-month voyage on the Black Sea, thus allowing him to begin his hydro-biological and ecological studies.[102] In Romania, Antipa continued to draw on the work carried out by Möbius and other German naturalists on issues of overfishing, ecology and economy.[103] Based on his research on the social, juridical and economic relations between the private entrepreneurs who monopolised fish commerce, Antipa reported to Sturdza that several intermediaries (mayors and lawyers) controlled the local fish market, in fact disturbing the biodiversity of the Danube Delta. As Ștefan Dorondel and Veronica Mitroi have highlighted, it was thanks to Antipa that the Romanian state adopted in 1896 a law to regulate fishing tools and ban intermediary activities in the Danube Delta. This was perceived as "a framework for long-term sustainable exploitation", mirroring Antipa's own views that "the state introduces order into a disorderly place."[104]

When Antipa took over as director of the zoological section of the Bucharest Natural History Museum in 1893, he put in practice "the dual arrangement" of displays.[105] First adopted in Britain and then developed by Karl Möbius in Berlin, historian Lynn Nyhart explains this dual arrangement: "a selection of the collection's highlights would be formed into a special exhibition collection for the public, while the vast majority of the specimens would be warehoused behind the scenes, available by invitation only to students and serious researchers."[106] It was at this time

Ștefan Negrea, op.cit., 112-162

Lynn K. Nyhart, *Modern Nature*, 153-154.

Ștefan Dorondel and Veronica Mitroi, "Nature, state and conservation in the Danube Delta: Turning fishermen into outlaws" in Wilko Graf von Hardenberg (ed.) *The Nature State: Rethinking the History of Conservation* (London: Routledge, 2017), 197.

Grigore Antipa, *Muzeul de istorie naturală din București* (București: Inst. De Arte Grafice Carol Gobl, 1918), 5-6.

Lynn K. Nyhart, Modern Nature, 223.

that Antipa realised the horrible state of the conservation of the various collections received by Ștefănescu, which, according to his expertise, "did not rise to the state of a fairground museum" with "labels missing" and donation boxes from the explorer Hilarie Mitrea (1842-1904) left unpacked.[107] After ten years of directorship, his "ideal of a modern Natural History Museum" materialised with the financial support of 300.000 lei from Sturdza. As documented in his correspondence with the minister dated 21 October 1903:

> I kindly ask you to make a relatively small sacrifice for science because it will be returned tenfold. As I said on other occasions, in a country unknown from a natural perspective and with people who are not very learned, a Museum of Natural History is not a luxury, or a monument for the enrichment (beautification) of the city, but an institution of the very highest necessity. Inside its laboratory the scientific study of the country needs to be carried out, on the basis of which a whole series of national developments [will then occur]. Along its exhibition halls, we can move our people in a healthy direction, nourishing their taste for nature and their love for the natural beauty of the country.[108]

A new building for the museum was eventually inaugurated in Victoria Square in Bucharest on 24 May 1908, with numerous engravings on the façade bearing the names of distinguished naturalists, amongst which appeared Jean-Baptiste Lamarck, Charles Darwin and Ernst Haeckel. Under Antipa's vision, following the example of Stockholm's Biologiska Museet,

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Alexandru Marinescu, "Gregoriu Ștefănescu – Calatoriile unui savant Român," *Studii și Comunicări/ DIS*, Vol (2011): 323; 333-335.

Manuscript at the Romanian Academy Library from Bucharest, Envelop Grigore Antipa, S 71(5)/DCCLII

the museum in Bucharest was amongst the first to implement the so-called "dioramas".[109] Antipa was clear in blending both the biological perspective and Darwinian evolutionism. Accoridng to his explanation:

> Certain people would like to know more details about these animals, their habitat, their way of life, their place in nature, their lived community, the benefits and dangers they represent for people, their relationships with other animals, etc. Others would like to know more information about the evolution of the animal kingdom, about the relationships of animals with each other, their capacity for adaptation, their migrations, their individual development, and their internal organisation. […] The Natural History Museum in London (South Kensington) was the first that, besides systematics, gave biology a privileged place in both the so-called "Darwin's Hall", which exhibited proofs of the theory of descent, and in the beautiful halls housing biological groups of birds. These are models worthy of emulation.[110]

Karen Wonders, "Habitat dioramas as ecological theatre," *European Review* Vol. 1, No. 3 (1993): 285-300.
Grigore Antipa, *Muzeul de istorie naturală din București*, 7.

Muzeul de Istorie naturală din București. Tab. II.

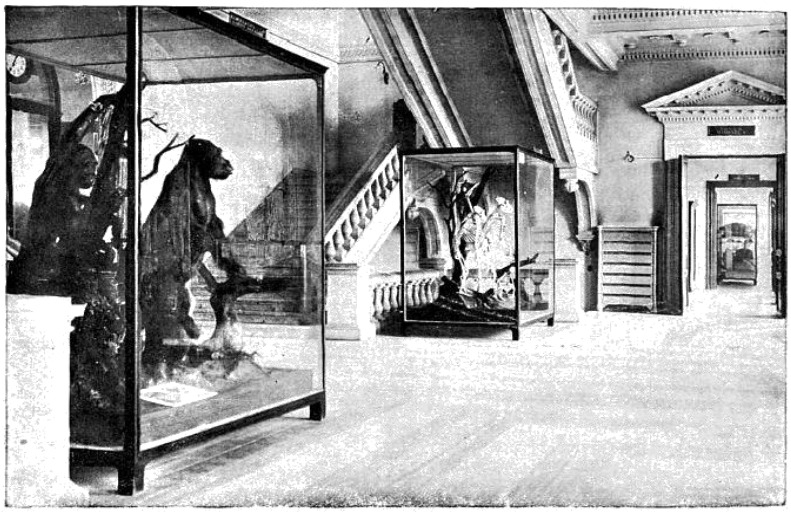

Fig. 2. Vestibulul cu grupele de Gorila.

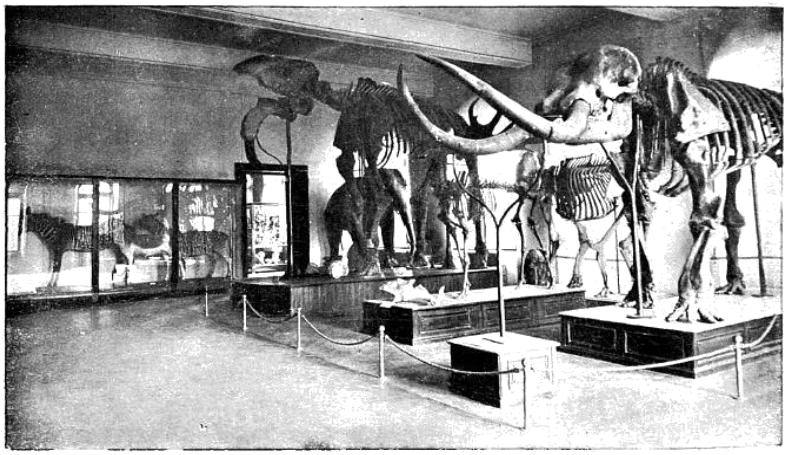

Fig. 3. Sala Dinotheriului și grupele de Maimuțe antropomorfe.

Figure 6.11. The main entrance of the Natural History Museum exhibiting gorilla groups and the Dinotherium hall.[111]

[111] Grigore Antipa, *Muzeul de istorie naturală din București*, Table II.

Antipa was helped in putting together the several collections and dioramas, between 1896 and 1907, by the ornithologist Robert Ritter von Dombrovski (1869-1932), the local professor of natural science Ioan Popa Burcă (1875-1937) and the painter Richard Canissus (1870-1934).[112] Another important asset was the self-taught French collector of heteroptera, Arnold Lucien Montandon (1852-1922). After moving from Broșteni (Bucovina) to Bucharest, Montandon donated thousands of species of insects and molluscs to the Museum, and contributed to the description of more than 544 insects and the registration of all the species that went into the museum's inventory.[113] Importantly enough, Constantin Daianu, employed as a janitor by the former director Gregoiu Ștefănescu in 1888, was appointed custodian in 1905 and made an important contribution by helping Dombrovski develop some of the dioramas. Besides reproductions of how life appeared in different Romanian habitats and of the geographical distribution of fauna and flora, Antipa also ordered from the famous Hamburg-based artefact merchandisers, J.K.G. Umlauff, two wax representations of Eskimo and Australian Aboriginal families.[114] For visitors, these racialised artefacts combined with the hierarchies of human classifications promoted in school manuals, functioned as a reflexive measurement of the advancement of Romanian society towards modernity.

Ștefan Negrea, op.cit., 174-182.

Iorgu Petrescu, "Activitatea științifică a lui Arnold – Lucien Montandon," *Studii și Comunicări* Vol V (2012): 391-404; Gabriela Andrei and Angela Petrescu, "Collections donated by Arnold L. Montandon to the Museum of Zoology of Bucharest within the period 1900-1901," *Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»* Vol LII, (2009): 523-558.

For a complete list of contributors to the setting up of the dioramas see Aurel Papadopol, Rodicam Serafim and Mihai Stanescu, "Dioramas and biogroups from the Grigore Antipa Museum of Natural History – Values of the National Cultural Patrimony," *Trav. Mus. His. Nat Grigore Antipa*, Vol. XXXIV (1994): 535-553

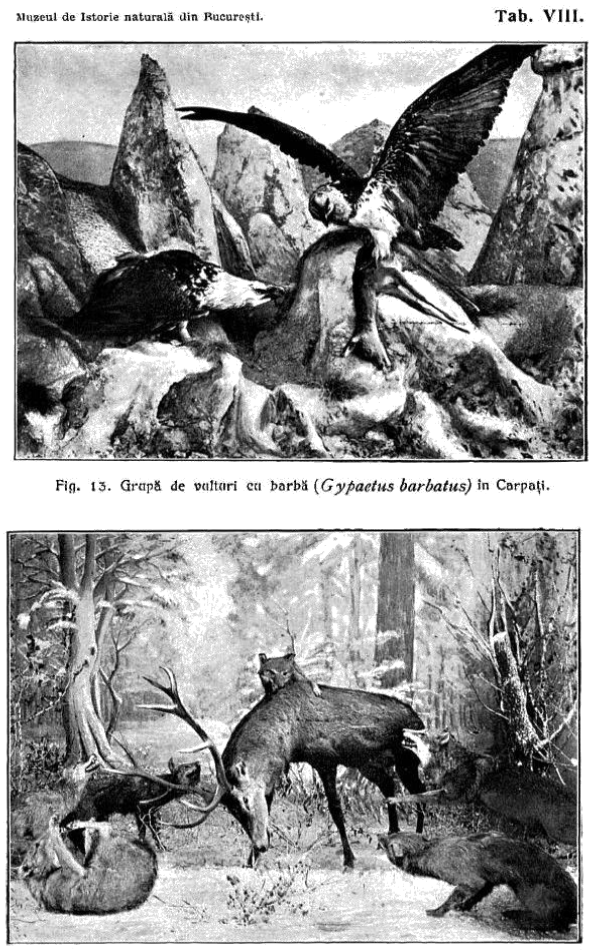

Figure 6.12. Two dioramas in the Bucharest Natural History Museum reproducing "life on the Carpathian Mountains" and a "stag attacked by wolves" in a Darwinian fashion

In the meantime, Antipa gave various lectures across the country promoting the idea of a network of rural museums (Centrala Muzeelor Sătești), which, according to his own detailed plan, would regulate the peasant's daily life.[115] He recognised that "science should not be the privilege

Grigore Antipa, *Despre Muzeele Sătești* (Fundația Culturală Regală Principele Carol, 1935), 20-21.

of a small number of insiders; it needs to be disseminated to all social strata, and the education of the popular masses must be a priority for all nations and the most important imperative of state politics."[116] Like many other naturalists before him, Antipa collaborated with non-scientific practitioners when publishing his scientific works. For instance, *The Ichtyologycal Fauna of Romania* (*Fauna ichtiologică a României*) (1909), eventually winning an award from the Romanian Academy, included not only 149 figures drawn by his collaborator Pamfil Polonic, but also the vernacular fish nomenclature documented in the Lipovean, Greek and Turkish languages. The undertaking as a whole was possible thanks to the cooperation of local fishermen, which

> resulted in detailed information about the Delta's ecology and other systematic descriptions.[117]

Antipa's *The Danube Region Flood: Its present state and how to exploit it* (*Regiunea inundabilă a Dunării. Starea ei actuală și mijloacele de a o pune în valoare*) (1910) and *Fishery and fishing in Romania* (*Pescăria și pescuitul în România*) (1916) led to an increase not only in the local fishery production, but also in the reorganisation of the Razim (Razelm) shore by connecting it with the Danube Delta. However, other than the criticism of the Iași-based oceanographer Ioan Borcea (1879-1936) in the interwar period,[118] there is still no literature about the real impact that these measures had on the local population. On the other hand, the adoption of the German biological perspective in investigating the relationship between fish locations and food supplies, also identified with the floating plants called "plankton", attracted other ecologists to study the Danube. As a result, Antipa's work was soon discovered by the Greek-British ecologist Marietta

Quoted in Siminion Ghiță, op.cit., 557.

For more on the botany, see Cosmin Ivașcu, *Cunoștințe ecologice tradiționale și adaptări bio-culturale în comuna Ieud, o străveche așezare din Țara Maramureșului* (Ph.D. diss., Babeș-Bolyai University, 2018), 35-36.

Mircea Păucă, *Mi-am retrăit viața* (Cluj-Napoca, 1998), 174-175.

Pallis (1882–1963) who benefited from his support in her study of Europe's "most primitive aquatic vegetation". Antipa also appointed her two local anglers as guides (Konstantin Andrei and Mathiouska Mikitoou) whose "intelligent help" both guided her research of the Danube reed-swamp and plav vegetation and became "her Romanian subjects" when she took notes about the local ethnic-groups.[119] Antipa became director of the Bucharest-based Animal Protection Society in 1904 and was soon elected a member of numerous scientific bodies such as the Romanian Academy, the Danube European Commission, and the International Commission for the Scientific Exploitation of the Mediterranean, the Oceanographic Institute of Paris, and the World Committee for the Protection of Nature.[120]

In terms of Darwinism, Antipa was one of the first Romanian naturalists to break-away from the morphological and phylogenetic research tradition, pleading for the adoption of studies that concentrate on ecology instead of isolated organisms. This shift is of crucial importance, as it turned the old and sober science of systematics, which studied morphological similarities into what Lynn Nyart calls "the biological perspective". In the latter, research focused equally on "function" and the "relationship among organisms, their physical environment, and their geographic and ecological place in the world." [121] Nyhart also stresses that the "biological perspective" became most visible "in the form of museum displays, [and] its intellectual content was also developing in what would soon be called ecology and ecological animal geography."[122]

Marietta Pallis, "The Structure and History of Plav: The Floating Fen of the Delta of the Danube," *Journal of the Linnean Society of London, Botany* Vol. 43, Issue 291 (1916): 236; Laura Camron and David Matless, "Benign ecology: Marietta Pallis and the floating fen of the delta of the Danube, 1912-1916," *Cultural Geographies* Vol. 10, No. 2 (2003): 253-277.

Simion Ghiță, op.cit., 560-561.

Lynn K. Nyhart, *Modern Nature*, 22-23.

Ibid., 33.

As previously seen, the same shift appeared in Antipa's adoption of the "dioramas" and the function of science popularization attributed to the Bucharest museum. In his reception speech at the Romanian Academy in 1912, Antipa straightforwardly argued that the biological perspective previously adopted in secondary school manuals was integrated with scientific research:

> Previous studies and observations of the life of living organisms, that is, of their biology, are very few in number. How [animals] breed, feed, defend each other against enemies, the relationship between them and the environment, etc., all these extremely important issues led Darwin to lay the basis of modern phylogeny. Up until then, these issues held little importance for researchers in phylogenetics, because, for them, an animal had scientific interest only after it was preserved in alcohol and only held appeal after its dissection with the microtome.[123]

Two years later, in 1914, at the request of the secretary of the Monist League, Antipa, together with the Transylvanian Darwinist Julius Römer and other former students and followers of Ernst Haeckel, contributed to the volume *What we owe to Ernst Haeckel: A book of worship and gratitude* (*Was wir Ernst Haeckel Verdanken. Ein buch der Verehrung und Dankbarkeit*). His article, translated into Romanian in 1924, recognised that his successful research was due to his "great master", who "taught him the methods of induction, deduction, observation, comparative

Grigore Antipa, "Cercetări hidrobiologice în România și importanța lor științifică și economică," in *Discursuri de Recepție la Academia Română* Vol IV (1907-1919) (București: Editura Academiei Române, 2005), 314-315.

studies and genetics."[124] In his later investigations, he brought together Charles Darwin's evolutionary theory and Karl Möbius's (1825-1908) biocoenosis (interaction between organisms living together in a habitat), and showcased his complex evolutionary worldview:

> Populations are engaged in an active struggle for existence, which constitutes their way of being. The study of their structure and appearance shows that this activity proceeds in three direction: 1. To ensure the conservation, the aggregation of life and the species represented in the biosphere. 2. To ensure the progressive conquest of the physical domain […] and to capture and expand the domain in the atmosphere, hydrosphere and lithosphere 3. Continuously to adapt and accommodate the evolution of life to the evolution of the environment.[125]

Finally, Antipa's evolutionary ecology was transposed into an analysis of Romania's social, cultural and political transformations. Hence, one year after the end of the First World War, he printed the lecture notes which he used for his courses at the newly formed University in Cluj. In his 407-page work entitled *Issues surrounding the Evolution of the Romanian People* (*Problemele Evoluției Poporului Român*) (1919), he wanted to "clarify" how the newly enlarged Romanian state could deal with the reorganisation of its natural, demographic and cultural dynamics. As he suggested in the introduction, "the Romanian people are about to become a unitary state on their ethnic territory and so have to face their most important problem ever." In his view, "men

"Gregor Antipa, Direktor des Naturhistorischen Museums Bukarest," in Heinrich Schimdt (ed.), *Was wir Ernst Haeckel Verdanken. Ein buch der Verehrung und Dankbarkeit* (Leipzig, 1914), 408-415.

Quoted in Simion Ghiță, op.cit., 562.

of science, being uniquely occupied with research and the expression of objective truth […] have the duty to accomplish an important role." That is, naturalists had to guide politicians about "the laws which govern the life and evolution of a nation" and to "show them the practical results of scientific research for the organisation of the Romanian state."[126]

Figure 6.13. A sketch of Grigore Antipa made in 1913. Courtesy of the Romanian Academy Library, Bucharest

It was no surprise that soon after he extended the evolutionary struggle into what he called "the natural predispositions and characteristics of the Romanian people", hving not only a

Grigore Antipa, *Problemele evoluției poporului Român* (București: Cartea Românească, 1919), V-X.

specific physical constitution, and strength of reproduction and adaptation, but also a great power of assimilation. To clarify his point, he insisted that nations should be seen as organic bodies. Hence, "in the mixture of blood, between the different characteristics of the organism, between two given nations, there will be a constant struggle for existence, in which those representing a superior stage will replace the inferior ones."[127] After pleading for so-called "telluric racial selection", he explained that "native populations which are weak – if constrained by a necessary consanguineous acquaintance – assimilate into others through blood mixture."[128] Moreover, as the Romanian state incorporated a great number of ethnic minorities after the dissolution of the Eastern European empires, Antipa's anti-Semitic and assimilationist ideas became explicit:

> The same thing that Romanians have done in the past – in a natural way – with all the overlapping national fragments in this country, is happening today – without any constraint – with all the immigrants who exist among us, such as the Greeks, Bulgarians, Serbs, Albanians, Russians, Germans, Hungarians, Armenians, etc. Our people have proved that they possess a great capacity for assimilation. On the one hand, this provides a good proof of the health and vitality of our organism and racial superiority; on the other hand, it is also a guarantee of our future. If, nowadays, there still live among us unassimilated fragments of people, such as the Jews, this is not a proof of our organism's weakness; on the contrary, it is the exception that proves the rule. A healthy organism does not assimilate that which is not to be assimilated; it only assimilates what fits its

Ibid., 110.
Ibid., 164-165.

nature; the Jewish people […] are a foreign unassimilated body, which, if introduced into our organism, without real [integration] might lead to dangerous physiological disorders.[129]

Ibid., 111-112.

Chapter 7. Darwin Commercialised: Popularising Darwin's evolutionary theory in editorial collection series

"In the specific case of Romania, the public was almost totally deprived of Darwinian literature. One can find in bookshops several books by and about Darwin; however, all of them are in a foreign language and mostly too advanced to be accessible to everyone"
Iosif Hussar (1867-1933)

Introduction

During the 1890s, the Romanian book trade passed through a series of significant transformations. The most evident was the involvement of private publishers who invested a considerable amount of capital, seeking to profit out of an intellectual enterprise. On this occasion, the publishers were no longer acting as agents of "religious, political or cultural propaganda," as happened in the mid nineteenth-century; instead, they were merchants in the capitalist system.[1] If around 1859 there were no more than seven typesetters across the two Principalities, by the end of the 1890s their number had increased to more than forty.[2] The growth in incomes permitted publishers to make investments in their printing equipment, eventually leading to the appearance of new formats for science popularisation such as the pocket pamphlet collections, thus shaping their publics as consumers.

Simona Antonescu has observed that, in the period between 1895 and 1916, "the policy of publishing houses involved in printing popular collections was to produce books of general interest, accessible to a wide public. Foreign and Romanian authors were offered in translated

Nicolae Th. Ionnițiu, *Istoria editurii românești* (București: Cartea Românească, 1943), 123.
Alex-Drace Francis, Ibid., 161.

adaptations and abridged versions." In this way, as Atonescu highlights, publishers lowered the cost, which reflected the standard of the "end product", which could be seen in the design of the "front covers, the poor textual quality, while, to save space, the cramped text was at the edge of legibility with few pictures, which were poorly reproduced. […] The publishing houses were not targeting a pretentious public, but those who looking for 'culture', no matter the form in which it was being offered."[3]

Whether funded by the state, or with the help of local banks, former book sellers such as Ion V. Socec, Carol Müller, and Ralian & Ignat Samitca, established their own printing businesses, competing with and finally taking over the production of state-owned publishers.[4] According to the catalogue circulated by V. Socec in 1868, they dominated the market in scientific manuals focusing on astronomy, botany, cosmography, chemistry, and the natural sciences. After tenty years, Socec and the banker Stefan Ioanide started manufacturing their own paper at their "Campulungul" outpost (1888).[5] It is worth noting that, after the ascent of the socialist revolutionaries and the unionisation of industrial workers, the employees of printing houses organised one of the most important general strikes in 1918, leading to the 13 December Bucharest massacre carried out by the local authorities.[6]

During the same period, a new popularisation format appeared on the Romanian book market, one that resembled the print experience of editorial collections introduced in Western Europe. For example, the precursor of the "pocket" format appeared in France when millions of

Simona Antonescu, op.cit., 196-197.

Nicolae Th. Ionnițiu, op.cit., 152, 139.

Ibid., 156-159.

For more details, see Mihai Burcea, "Un eveniment tragic din istoria acțiunilor revendicative muncitorești: memorializarea masacrului din 13 decembrie 1918", in Natalia Lazăr and Alexandru Cristian-Voicu (eds.), *România în secolul XX. De la Marea Unire la totalitarism* (Târgoviște: Editura Cetatea de Scaun, 2018).

copies were sold in the blue cloth series of the Hachette Bibliothèque des merveilles. Initiated in 1865 by Édouard Charton (1807-1890), the first publication included, in addition to matters relating to architecture, two titles on astronomy, further reflecting the editorial board's vision of popular education. Two years later, the first publication of the German edition of the Universal Reklam Bibliothek was launched in Leipzig with Goethe's popular classic, *Faust*. The trend was followed by Bibliothèque scientifique internationale, founded in 1873 by the publishers Germer Baillière, who managed to draw together both professional scientists and amateurs with proven scientific knowledge.[7] To a certain extent, all these series provided the Darwinian reading lists of the Romanian aristocracy and intellectuals, while, for local publishers, they became a model worthy of emulation in their quest to make a profit.

On the other side of the channel, the British publisher Henry S. King and, later, Kegan Paul joined the French ambition of reaching an international readership promoting the authority of the new scientific practitioners, thus launching in six countries the famous red-cloth "International Scientific Series" (1871-1911). In the United States, Germany, Italy, France and Russia, popular science series took many shapes, depending on the specifics of each scientific culture. However, as Leslie Howsam has observed in her study of the International Scientific Series, "whatever the politics of science within and between their respective countries, readers of several nationalities were being exposed to the same illustrations and to similar texts, because a group of publishers had agreed on a joint venture."[8] At the beginning, figures such as John

Robert Fox, op.cit., 214-224.

Leslie Howsam, "An experiment with science for the nineteenth-century book trade: the International Scientific Series," *BJHS*, 33 (2000): 199.

Tyndall, Herbert Spencer and T.H. Huxley found themselves hegemonic icons regarding decisions about the future titles to be included in these collections.[9]

7.1. Science and Darwinism in Romanian collection series

In Romania, the trend passed through different stages. To a certain extent, before 1859, the religious publications known as "Mineie" used by the Byzantine rite for its daily services formed the pattern of what would soon develop into a more profane collection. Another early Romanian experiment was Biblioteca Românescă of Zaharia Carcalechi printed at Buda between 1821 and 1834. In the same period, Eliade Rădulescu (1802-1872) proposed the idea of a Universal Library.[10] However, the origins of the popular collections are often credited to George Ioanid (1817-1907), who made the first attempt in the 1850s by publishing Biblioteca Literraria, which undertook to translate the authors of "world literature".

A second attempt occurred when the Romanian geologist Gregoriu Ștefănescu, in an effort to join the international network of the British International Scientific Series, published in his journal *The Scientific Review* (1873) a list of scientific authors and their texts, eulogising the establishment of an international scientific library collection.[11] The following year, two members of the Society for the Teaching of Romanian People aimed to reach both the illiterate and the artisans through a programme of free lectures and vocational schools. After the cessation of their official journal, which also included a "Popular Encyclopaedic" section, in 1874 Ștefan C.

Bernard Lightman, *Victorian Popularizers of Science*, 369.

Constantin Mălinaș, *Biblioteca pentru toti la centenar: 1895-1995* (Oradea: Editura Mihai Eminescu, 1995), 8-9.

Gregoriu Ștefănescu, "Biblioteca sciințifică internațională," *Revista Sciintifică* An. IV, Nr.5., (1873):72-74.

Michăilescu and Anghel Demetrescu initiated in its place *The Beginner's Library: Conversations on Natural History* (*Biblioteca Începătorilor. Convorbiri asupra Istoriei Naturale*), which contained an introduction on zoology. Published by the Society in 2,000 copies at the request of the authors, the printing was designed with 60 pictures as a backup guide for teachers who taught natural history in primary schools.[12] Other notable precursors appeared in the city of Galati, where the Nebuneli publishing house issued the *Universal Library* (*Biblioteca Universală*) in 1884, including the text of the Romanian Constitution and foreign authors amongst its other titles.

The payoff to the trend became a reality with the success of the popular classics collection introduced in 1885 by the Craiova Samitca publishing house, which initiated the series *Small Library of Interesting Tales* (*Mica bibliotecă a istorioarelor interesante*). In 1895, Ralian and Ignat Samitca launched another collection known as *Popular Library: Literature, Science and the Arts* (*Biblioteca de popularizare. Literatură, știință, artă*). Soon, the same publishing spectrum was followed in the 1890s by the Jewish publishers, the Șaraga Brothers (i.e. the same family that established the Popular University of Bucharest), who sold titles in their popular series, *Șaraga Collection*, for 1 leu. The pocket format was imitated in 1895 by the Bucharest publishing house of Carol Müller, which published thousands of copies in the famous *Everyone's Library* (EL, *Biblioteca Pentru Toți*), which, according to Alex Drace-Francis, finally "pioneered popular publishing".[13]

Their EL series mainly coordinated by Dumitru Stăncescu (1866-1899) was eventually bought at the turn of century by the printing house of Leon Alcalay & Co. Initially sold for 30 bani,

Petre Garboviceanu, *Societatea pentru invatatura poporului roman din Bucuresti cu scoalele ei 1866-1906*, (București: Institutul de Arte Grafice ''Carol Gobl'', 1906), XCVIII.

Alex Drace-Francis, op.cit., 166.

the circulation rapidly grew from an initial run of 3,500 copies to 10,000 copies in only one year.[14] According to their catalogue (c. 1918), EL issued 1,500 titles, of which more than 50 dealt with scientific issues. The editorial board soon promoted their "encyclopaedic" collection as "recommended for students, the military, teachers, cultural circles, popular libraries, as well as for parents who want to give their children easy-to-understand books and culture."[15] However, as James Secord has emphasised, "[t]he ethics of commercial bookmaking and reviewing would inevitably govern any attempt to create a '"people's science'; in a market-based society, democratic epistemology would turn knowledge into a commodity."[16] In addition, some of these series also served the Romanian state's cultural politics in strengthening the national consciousness, receiving positive reviews from Romanian authors in Transylvania, where the bookshops in the cities of Sibiu and Brașov were selling the same copies.[17] Similarly, in the preface to the translation of Thomas Henry Huxley, *The First Scientific Notions*, the editor of the pamphlet, Dumitru Stăncescu, paternalistically addressed readers:

> National education has to be based on reading the great geniuses who illuminated the world […]. The aim of [EL] is to teach the reader, to form his reading taste, to lift him from his cultural beginnings and to raise him morally, [thus] all that we shall publish will aim not just to please, but to instruct, to fire the heart with enthusiasm for might and beauty.[18]

Constantin Mălinaș, op.cit., 15.

"Catalogul Bibliotecii Pentru Toți," in *Biblioteca Pentru Toți* (București: Editura Librăriei Universală Alcalay & Co., s.a.) 1.

James A. Secord, *Victorian Sensation*, 504.

See Dr. E. Daianu, "Sciință, Literatură și Artă. Biblioteca pentru toti (Recensiune)," in *Transilvania Organ al Asociațiuni Transilvane*, An. XXVII, Nr. VI. (1896): 182-187.

Thomas Henry Huxley, *Cele dintâi noțiuni asupra științelor* (Biblioteca Pentru Toți, No. 41).

On the other hand, at the turn of the century the format of serial collections increased, as along with state initiatives to include scientific knowledge among the popular titles. The publishing house of the Ministry of Cults and Instruction published the *Popular Science Library* (*Biblioteca de Popularizare a Științei*) as part of the School House aim to provide materials for popular libraries. In the same period, in 1899, the editors of the Minerva Publishing House published the *Minerva Calendar* (*Calendarul Minervei*), declaring that "calendars are the publications most read by the wider audience", thus expressing their willingness to assist in "consolidating the national consciousness."[19] Including 100 illustrations, a map, and 6 artistic back issues, the annual calendar touched also on matters of science, and promoted racial stereotypes by reprinting popular jokes.

In 1900, editors at Minerva launched the collection series, the *Minerva Library* (*Biblioteca Minervei*) and the *Minerva Popular Library* (*Biblioteca Populară a Minervei*). The latter included translations of Camille Flammarion, made by Victor Anestin, one of the most famous Romanian popularisers of astronomy. Similarly, popular almanacs orientated to science, such as the *Hygea Almanach* also commissioned academic evolutionists like Nicolae Leon (1862-19131), who had published a biography of Charles Darwin.[20]

Most of the above were famous during the first decade of the twentieth century, continuously reissuing copies, or adding new titles. Simona Antonescu has observed that between the years of "1899 and 1918, there were around 1,304 book titles and 250 periodicals

"Prefață," in *Calendarul Minervei pe anul 1899. Mică enciclopedie populară a vieții practice* (București: Institutul de arte grafice și editură, ,,Minerva'', 1899) III-IV.

Dr. N.Leon, "Personalitatea lui Charles Darwin," in Aurel Scurtu, *Almanach Hygea* (București: "Minerva" Institutul de Arte Grafice și Editură, 1910), 3-8.

dealing with or to some extent including science popularisation". However, she further observes that "compared to the book market as a whole, science popularisation went through a considerable decrease."[21] In this climax of commercialised culture, the twentieth century brought into the picture new collection series such as the *National Library* (*Biblioteca Națională*) (1909-1914) written by the Bîrlad school teacher, Dimitrie Vasiliu-Bacău, and the *Cosânzeana Library* (*Biblioteca Consânzeana*) (1912) focusing on science and evolution.

In most of these collections, astronomy was the most successful domain, closely followed by evolutionary theory. First, popular astronomy reached its peak in Romania with Victor Anestin (1875-1918), who became an established authority in the popularisation genre.[22] His visionary involvement in communicating science touched the highest points with the establishment of the Romanian Camille Flammarion Astronomical Society (1907), the Bucharest Popular University (1912) and the Society of the Friends of Science (1913). Of equal importance was his own publishing activity, which flourished after his employment as a proofreader, editor and reporter for various Bucharest newspapers while writing their science sections. He then became involved with the founder of the *Universul* newspaper, Luigi Cazzavillan (1852-1904) in publishing the *Travels Newspaper* (*Ziarul călătoriilor*) periodical (1897) (in 1912 it was renamed *The Newspaper of Popular Science and Travels*), and took the lead in publishing his own journals, *Orion: A Monthly Review of Popular Astronomy* (*Orion. Revistă mensuală de astronomie popular*) (1907) and *Everyone's Science* (*Știința tuturor*) (1918).

Simona Antonescu, op.cit., 377.

For Romanian amateur astronomers from Transyilvania see the activity of Ion Corbu and Gavril Todica in Elvira Botez, "Doi artiști astronomi amatori: Gavril Todică și Ioan Corbu," *NOEMA* Vol. XI (2012):365-368.

At the other end of the popularisation spectrum stood the various presentations of evolutionary theory. In the first place, A. Aronovici published his study *Human and Sociology* in 1895 in the *Biblioteca Universală* collection 'issued by G.D. Nebuneli's Galați press. Starting with Jean-Baptiste Lamarck's *Philosophie Zoologique*, and then proceeding through Ernst Haeckel's recapitulation theory, Aronovici finally arrived at Charles Darwin's theory of descent. In 54 pages, his readers could gain a grasp of how "humans descend from inferior vertebrates, more specifically from monkeys", emphasising that "the most evident difference between humans and animals is religion, instinctively [developed] by humans."[23] Aronovici consternation reached worrying heights at the thought that society as whole was working in contradiction to nature's laws of selection, and Aronovici promoted a social Darwinist vision.

> It is true that we are trying our best to preserve the life of the weakest human, that is to say, of the most miserable, the ones most unfit for development. We build hospitals for idiots, the crippled and the sick […]. From a scientific and humanitarian point of view all these remedies are extremely useful; but in terms of the natural sciences and natural selection, the feeble-minded of our modern society will reproduce indefinitely.[24]

Another commercial account of the theory of natural selection was published in a translation in the collection *Biblioteca de popularizare. Literatură, știință, artă* by the Jewish literary director of the series, Iosif Hussar (1867-1933). Observing that Darwin himself, in an 1865 letter to T.H. Huxley, recognised that "popular and general descriptions have the same

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A. Aronovici, "Omul și sociologia dupe Darvin, Lamark, Herbert Spencer, Léturneau, Büchner, etc.," *Biblioteca Universală* (Galați: Libraria G.D. Nebuneli & Fii, 1895) 20-34.

Ibid., 48.

importance for the progress of science as original works do," Hussar elevated the popularisation genre to the status of scientific importance. The pamphlet issued in 1897 was part of the *World Literature* translation series issued by Samtica, which included biographical introductions as well as prizes for readers in the form of vouchers for other supplements. Subscribers were told that they could buy the collection by postal order straight from the editors in booklets of 12 issues for 3.60 lei or of 24 issues for 7 lei. The publication of Hussar's pocket pamphlet, entitled *Darwin: His Life, His Doctrine and Its Importance*, emphasised that:

> Most present-day naturalists have admitted Darwin's theory; [however,] the wider public has barely heard more than a few words like *the struggle for existence* and *the descent of man from monkeys*. […] In the specific case of Romania, the public was almost totally deprived of Darwinian literature. One can find in bookshops several books by and about Darwin; however, all of them are in a foreign language and mostly too advanced to be accessible to everyone.[25]

Alphonse de Candolle and Albert Südekum, "*Darwin: viața, doctrina și importanța lui*," in I. Hussar Translation (Craiova: Institutul de Editura Ralian și Ignat Samitica, 1897), 7.

Figure 7.1. The red hard cover of Iosif Hussar's translation of Alphonse de Candolle and Albert Südekum on Darwin published in the collection series of *Popular Library: Literature Science and the Arts*. Courtesy of the "Lucian Blaga" Central University Library, Cluj-Napoca

Following the biographical matter with a portrait of the author being translated, Iosif Hussar's publication was made up of his own contribution and a selection of texts by the Swiss botanist Alphonse de Candolle (1806-1893), who initially published his article in the Geneva-based journal, *Archives des Sciences Physiques et Naturelles* (1882), (reprinted in 1893 by the

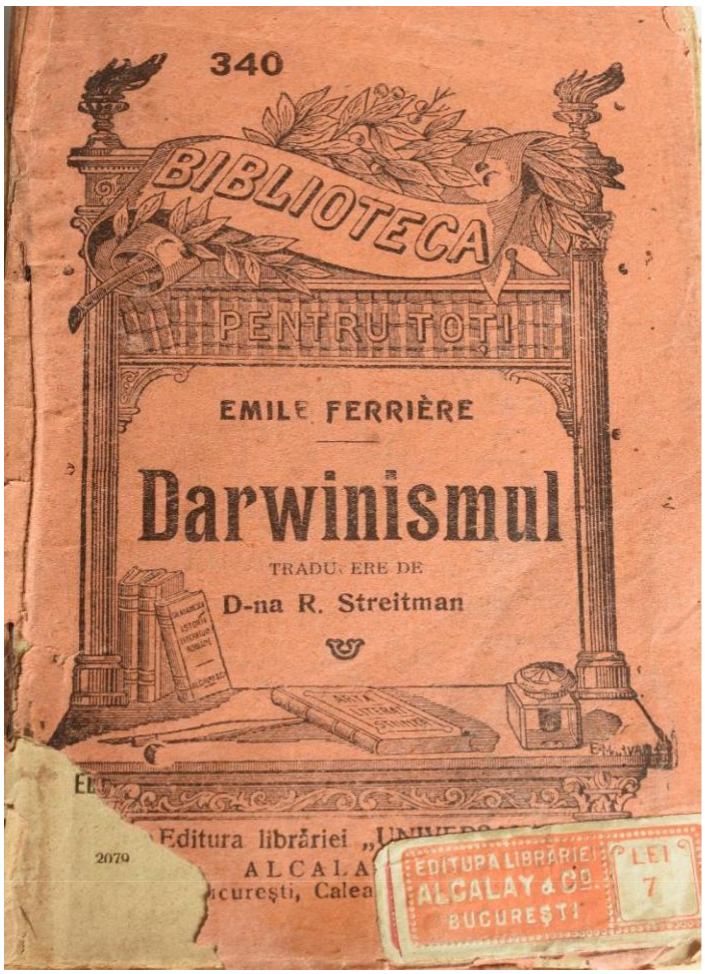
German journalist Albert Südekum [1871-1944]). Hussar's first chapter dealt with Darwin's biography adopting a combative atheistic tone, stressing that "in Darwin's works there has been a greater and stronger assault on the shaky edifice of faith, […] if Mosaic theories of creation are demolished […], the fundamental dogma of Christianity will also fall."[26]

Hussar moved on to the fraught terrain of the scientific terminology of inheritance and speciation, and undertook to explain how "different forms gradually developed through small changes, which are then passed through inheritance to offspring." He further explained that in nature "sexual selection" works randomly; however, the "effects will appear in certain organisms that are capable of variation."[27] Another principle introduced by Darwin the "differences of characters", which, according to the laws of variation and inheritance, transmits and strengthens favourable traits. Finally, Hussar arrived at the question of human descent from primates, arguing that between the two species there are only a few differences, and insisting in a Eurocentric fashion that "there is no need, as frequently happens, to compare a smart and beautifully developed Western European with an orang-utan or chimpanzee. For this purpose we can use a less developed human."[28]

The last chapter of the pamphlet reassessed de Candolles's article, noting that, Darwin's success was credited to a biologically deterministic inclination for science, an inclination observed on most of his family members. In addition, Darwin's wealth permitted him to travel

Ibid., 22.
Ibid., 29, 40-43.
Ibid., 46-47, 53.

around the world, without taking up any academic positions, enabling him to write his ambitious work, supplemented by further observation of the natural world at his private estate in Down.[29] Another commercial translation published in the same pocket-pamphlet format was made by the Jewish translator Rachel Vermont Streitman in 1908, and was included in the numerous titles of the famous EL series. The original volume was written by the teacher and freethought advocate Émile Ferrière (1830-1900), who first published his text in France in 1872. *Le darwinisme* was reprinted six years later in the progressive collection series *Bibliothèque Utile*.



Ibid., 60-82.

Figure 7.2. The orange edition of *Everyone's Library* (*Biblioteca pentru toți*), eventually printed by the publishing house Leon Alcalay & Co., was sold for 7 lei and reprinted daily issues of the titles that had sold out.

(Author's personal collection)

Rachel Streitman was initially involved in translating socialist literature as part of a joint venture with her husband, the highly controversial Jewish socialist Henric Streitman (1873-1879), who, after switching academic degrees from philosophy to physics and chemistry, was at that time involved in journalism.[30] The text was mainly an abridged version, leaving out the introduction and a few of the original chapters. Thus, the Romanian version jumped straight to the core of Darwin's theory. Its chapters dealt with Darwin's fundamental categories, more specifically with explaining the core concepts of "the struggle for life" and "natural selection." Thus, in addition to species' struggle with climate and for supplies, the author recognised that "fecundity is one of the most efficient traits that the species can possess to thrive in the struggle for survival."[31]

Other chapters engaged with the "causes of natural selection", its relation to geological theories, such as Lyell's uniformitarianism, and the critics of species classification. The pamphlet included an equal amount on the difficulties of Darwin's mechanism, concerning the insufficient data: the geographical distribution of the same species in different parts of the globe, the subject of hybrid sterility, as well as the failure of the mechanism of natural selection to explain the lack

Henric Streitman initially joined the socialist movement in 1899, making his contribution with translations of socialist periodicals. In 1942, he collaborated with the Nazi regime in implementing the final solution in Romania. Finally, he ended up an ardent Zionist after the Second World War. See Anca Mândru, op. cit., 65-66.

Emile Ferrière, "Darwinismul" in D-na R. Streitman (trad.) *Biblioteca pentru toți* (București: Editura Librăriei "Universala" Alcalay & Co., s.a.), 16-20.

of intermediate species in the geological layers. Finally, Rachel Streitman's translation concluded by giving a general picture of the main arguments that followed from Darwin's exposition.

Conclusions

This study of the Romanian popularisation of Darwinism in the second half of the nineteenth century and the first two decades of the twentieth century has revealed the multi-directionality of the transmission of scientific knowledge, and the multiple historical agent involved in this process. It has uncovered the relations between scientists' hegemonic strategies of public legitimisation, the publishing politics of serialised journals, the scientific dynamics of power relations and authority, the endless debates about gender and the racial classification of human diversity, as well as popular forms of counter-manifestation and resistance.

This dissertation, above all, has demonstrated that Darwinism meant different things to different individuals. Therefore, various outcomes of the theory of evolution by natural selection were discussed in accordance with the religious, political, and scientific background of these individuals. I showed that the first generation of Romanian naturalists, heavily influenced by the German Romantic movement of *Naturphilosophie*, were able to translate and incorporate evolutionary worldviews into their explanations of the development of organic species. The first to do so was the Jewish physician Iuliu Barasch (1815-1863), who mastered the local narrative of science popularisation with the publication of the journal *Isis or Nature*. While acknowledging Charles Darwin's theory, he promoted an anthropocentric evolutionary system, adopting racialised hierarchies and placing the white European at the apex of nature. One of his students, Dimitrie Ananescu (1831-1885), was most impressed by Darwin's metaphor of the "struggle for existence", going so far as to apply it to social manifestations, and advancing social Darwinist arguments for racial struggle. In contrast to these views, another popular journal *The Romanian*

Magazine of Science, Literature and the Arts published the agronomist Pană Buescu's (1833-1904) articles, and, although it did not mention Darwin's works, eventually explained the idea of a common descent by analysing the artificial selection observed in cattle breeding. Central to the public and social circulation of scientific ideas were the publishing politics of editors, who adopted so-called "subscription lists", promising issues from the lifespan of their journals, which facilitated the communication of their activities.

A notable shift in the format and content of popular journals can be perceived in the pages of *The Scientific Review: Journal for the Vulgarization of Physical and Natural Sciences* (1870-1882). This study has demonstrated that the public and academic ascent of the most famous nineteenth-century Romanian geologist, Gregoriu Ștefănescu (1836-1911), is a notable example of how the practice of science popularisation mingled with the monopolisation of the geological mapping of the country and the fabrication of scientific authority. However, while editor of *The Scientific Review*, Ștefănecu was the first Romanian geologist to shift from Cuvier's "theory of catastrophism" to Charles Lyell's "theory of uniformitarianism". Through articles and public lectures, he extensively discussed Darwinian evolutionism and the "missing link" of the archaeopteryx, while portraying, in Lamarckian fashion, humanity's capacity for perfection. Within the same journal, other naturalists, such as Ioan Licherdopol, also contributed to the popularisation of Darwinism, highlighting in detail the state of evolutionary discussions in both France and Germany. Others, such as the Transylvania-based botanist, Aretemiu Publiu Alexi, while popularising Darwinism in the same journal, discussed for the first time the importance of the biological perspective (the relation between fauna, flora and the environment) for teaching natural history in secondary schools. Similarly, the zoologist Ștefan Sihleanu (1857-1923)

addressed other evolutionary debates, describing in particular the conflict between Rudolf Virchow and Ernst Haeckel.

Another cohort of Romanian naturalists concentrated on the establishment of different cultural, scientific and academic societies. Members of the academic community in the 1870s, particularly geologists, botanists and zoologists, relied on the popular knowledge of peasants, shepherds, monks and the mountain guides who escorted their scientific excursions and provided them with botanical and fossil specimens. I have argued that in all these platforms, not only did naturalists exercise hegemony in the public sphere, but they established the "orthodox standards" and methodologies of national scientific explorations. Hence, the establishment of the Romanian Academy and its periodical journals — such as the *Annals* and *Memoirs*, *Extracts*, *Bulletin de la Section Scientifique* — brought to the surface the "gatekeeping" of scientific literature performed by the introduction of the "rapporteur" who decided what counted as "scientific" and authorised which "men" could do this job. Meanwhile, in terms of Darwinism, in a lecture delivered at the Vienna Romanian Society in 1867, Codrat Grigorovici was the first to acknowledge the evolution of species through gradual transformations, without making any reference to divine intervention. Back in Romania, however, the heteronormative mantra of popularisation, put forward by Titu Maiorescu (1840-1917) at the Bucharest Athenaeum, reflected the wider tendency of the European scientific community as well as Darwin's own views, further introducing exclusionary analogies between race and gender into the public domain.

When discussions moved to the country's highest scientific forum, the Romanian Academy, the Transylvanian intellectual George Bariț (1812-1893) expressed his wider worries

regarding the political and atheist instrumentalisation of Darwin's theory. However, after reading the notes by the Transylvanian physician Pavel Vasici (1806-1881), he did recognise the close morphological bond between humans and other animals, such as monkeys. More troubling were the interventions of the president of Romanian Academy. Ion Ghica's (1816-1897) scientific sketches took the discussion of human origins and race classification to a different level. After initially adopting Humboldt's pacifist view of the "unity of species", his misconception extended so far as to build hierarchical classifications based on skin pigmentation, while also advocating for the assimilation and sedentarisation of Roma communities on the model of Western colonial practices. I also showed how the interplay between national progress and a gendered scientific sphere was manifested in the annual meetings of the Romanian Association for the Advancement and Spread of the Sciences, excluding scientific contributions by Olga Mălinescu, Elena Lupu, Nicodim Elena.

Another group of Darwinian popularisers was comprised of Romanian intellectuals who extensively discussed the so-called "radical synthesis" of German scientific materialism, French positivism and Darwinian evolution. Beginning with Ștefan C. Michăilescu (1846-1899), they openly questioned creationist investigations of natural phenomena, insisting instead on the idea that there is nothing in the universe other than "moving matter". Others who joined the debate, particularly Bogdan P. Hașdeu (1838-1907), pushed the limits of Darwinian interpretation, demonstrating his belief that the practice of Spiritism could be considered a validation of spiritual and organic evolution. The most controversial representative of the "radical synthesis" was Darwin's Romanian correspondent, the metaphysical philosopher Vasile Conta (1845-1882). Curiously enough, despite promoting aggressive forms of anti-Semitism and biological racism, his

writings were praised by local socialists, secularists, and future evolutionary scientists. His own evolutionary system — "the universal ondulation theory" — was in agreement with Charles Darwin's gradual transformation of species, with the adaptation and variation of species, and human and monkey descent from a common ancestor. However, he put minimal emphasis on Darwin's main mechanism, which set all the above in motion, namely "natural selection".

This dissertation has shown how some Romanian physicians dealt with non-Darwinian explanations of biological evolution such neo-Lamarckism, orthogenesis, the recapitulation theory and vitalism. Indeed, the bacteriologist Victor Babeș (1854-1926) marshalled a variety of conflicting evolutionary theories, finally relating his progressive vision of directed evolution to eugenics. The same stance was taken by Gheorghe Marinescu (1863-1938), who went as far as to incorporate Darwin's theory of evolution and advocate for racial hygiene. Likewise, in his popular science articles, which dealt extensively with microevolution and macroevolution, Marinescu made use of the recapitulation theory to explain the evolution of the planetary system, which he reckoned was made possible by the "power of vital forces". One physician, however, Gheorghe Angelescu, published in 1884 the first extensive Romanian translations of several of Darwin's works: *The Voyage of the Beagle*; *On the Origin of Species*; *The Expression of Emotions in Man and Animals*; *The Descent of Man, and Selection in Relation to Sex*, Vols. 1-2; *The Variation of Animals and Plants under Domestication*, Vols. 1-2.

This dissertation has revealed that science popularisation and Darwinism were also discussed in non-academic circles. Anarchist revolutionaries were convinced that accessible science and education, amongst other factors, were the answer to the emancipation of both the peasant and the urban workers from the misery and inequalities of the political and economic

system, as well as from religious influence. In their visionary plans to empower those situated on the fringes of society, the "going to the people" movement as well as those advocating the "propaganda of the deed", put the natural sciences and the popularisation of Darwinism at the core of their movement. In their opposition to official Romanian academic discourse, pointing to practices of plagiarism and the monopolisation of scientific research, the anarchist publishing platforms and socialisation places gave rise to a critical "scientific counter public sphere". The materialist reading of Darwinian evolutionism, Kropotkin's mutualism, and Haeckel's works were discussed in numerous articles in the journals *Bessarabia*, *Future Romania*, *The Contemporary*, *Future Dacia*, *Carmen Sylva*, *Social Movement* and the *Idea Magazine*. Of considerable importance were the brothers Ioan and Gheorghe Nădejde, who were the first to teach Darwinism in public schools. After their public trial, the massive circulation of *The Contemporary* greatly influenced the academic trajectory of future Romanian evolutionary scientists.

The critical appraisals written by Grigore Maniu (1860-1911), Zamfir Arbure (1848-1933), Garabet Ibrăileanu (1871-1936) of the ascent of social Darwinist ideas highlighted how local scientific misconceptions of biological evolution promoted social inequalities.Critical articles by Panait Mușoiu and Panait Zosîn unmasked the scientific racism inherent in the biological explanation of human diversity. Besides publishing the first translation of Jean-Baptiste Lamarck in 1893, and of one of the most colloquial evolutionary studies by Paraf-Javal in 1910, the two anarchists also joined discussions on the relationship between science and women's emancipation. The situation was such that when the popularisation narrative interwined with criticism of the country's social politics of modernisation, "subscriptionlists" were used by the authorities to control the circulation of ideas in the public sphere.

Additionally, I have shown that the social construction of the Romanian scientific sphere prohibited women from accessing scientific careers, while also ascribing to them a "maternal role" as science popularisers for children. If there were few voices directly criticising scientific authorities on their own ground, the female activist Sofia Nădejde (1856-1946) stood out for her scientific arguments against Titu Maiorescu's abuse of Darwinism as justifying gender inequalities. Likewise, in the pages of Cornelia Emilian's (1840-1910) journal, *Women's League Bulletin*, published in 1895, numerous articles highlighted the exclusion of women from the scientific enterprise.

Another channel through which evolutionary thinking was promoted in Romania was the freethought movement, which followed the evolutionary path of Ernst Haeckel's monism. Constantin Thiron (1853-1924) promoted a secular lifestyle, suppression of religious ceremonies in academic institutions, the separation of church and state, all of which spurred the conflict between science and religion in the country. The freethought movement's printing practices also appealed for science popularisation pamphlets and journals, publishing short translations of evolutionary studies. Besides publishing the first journal dedicated to eugenics and Neo-Malthusianism, the majority of these pamphlets addressed the working class and spoke extensively about the history of Romanian and Western evolutionary figures, the role played by "natural selection" in the evolution of species, the common descent of human and monkey, and the importance of "mutual aid" and solidarity in the process of evolution.

The increased public recognition of Darwinism led Romanian Religious Orthodox spokespersons to openly campaign against evolution from the 1880s onwards. Theologians were eager to point out that evolution together with scientific materialism led to anarchism, atheism

and, from the turn of the century, to the freethought movement. Other religious replies were disturbed by the internal revelations of Darwin's theory, which ascribed to humans a random place in nature. Further, some theologians identified social Darwinism as a threat to the religious morality and order preached by Holy Scripture. Yet, importantly, there were also religious commentators who accepted evolution, mainly on the basis that science and religion were two separate fields of inquiry. This led Romanian Greek-Catholic theologians and teachers to claim that Darwin's mechanism of evolution by natural selection was indeed a great achievement in the study of biology, and also to contributing to the rise of the biological perspective by introducing key concepts (e.g. the biological community) into secondary school manuals.

Last but by no means least, I have contended that the first Romanian scientists to incorporate Darwinism in their scientific studies emerged around the turn of the twentieth century, following the radical transformations of the public sphere and the numerous appearances of Darwin's evolutionary theory in popular journals, secular prints and abridged translations. In their youth, scientists such as Nicolae Leon, Dimitrie Voinov, Paul Bujor, Ioan Borcea and Grigore Antipa were heavily influenced by the cultural propaganda carried out by exiled revolutionaries established in Romania. After finishing his studies in Jena, the Moldavian parasitologist Nicolae Leon, in particular, became one of the most important popularisers of evolutionary theory, and the first to officially introduce Darwinism and the biological method into public schools in 1899. Due to his scientific correspondence with Titu Maiorescu, Leon engaged in a heated debate with the anti-Semitic physician Nicolae Paulescu on the issues of spontaneous generation and Darwinism. Their endless disputes about the origins of life, joined also by Dimitrie Voinov, led nowhere as laboratory science and daily observations could not reproduce how life

occurred on earth. Another evolutionist of the twentieth century, the zoologist Paul Bujor, also engaged in the rejection of creationist ideas of the origin of life. In numerous popular science articles and public lectures, he addressed the evolution of species by insisting that the true lesson of biological science was that humans were not a special creation. He highlighted that the mechanism that triggered the process of evolution was natural selection, while adaptation to the environment as well as species variation constituted the key explanations of evolutionary theory.

The triumph of so-called "biological perspective" was best seen in the works of the ichthyologist and ecologist Grigore Antipa. After extensive training in Jena with Ernst Haeckel and field research in oceanographic zoological stations with Anton Dohrn and Karl Möbius, Antipa was one of the first Romanian naturalists to break away from the morphological and phylogenetic research tradition, pleading for the adoption of studies that concentrate on ecology instead of isolated organisms. His works are of crucial importance, as he shifted from the science of systematics (grouping organisms by type and similarity) to the study of organisms' function in and relationship with the physical environment, thus studying their geographic and ecological place in nature. Crucially, Antipa clearly argued that evolutionary Darwinism played an important role in conducting his scientific research, finally adopting this vision in the layout of the displays in the Bucharest Natural History Museum. However, I also showed that his evolutionary ecological studies, when transposed to social and political realities, promoted racial assimilationist and anti-Semitic views, aiming at the homogenisation of the newly formed Romanian state.

Finally, I have argued that the evolution of the book trade in Romania is important for the analysis of the relationship between science popularisation and the appearance of new printing

formats. The prior cultural project of translating world literature in series collections changed its ideological ends with the involvement of private publishing houses. Private investment in the technological means of printing and the reorientation of publishing to profit-making transformed cultural and scientific knowledge into a commodity. These practices were manifested also in the appearance of the new pocket pamphlet series format, which, together with popular calendars and almanacs, inevitably included scientific titles. Not surprisingly, numerous abridged translations, biographies and introductions dedicated to Darwinism were commercialised in cheap editorial collections. Hence, the national "Darwin industry" was fruitfully flourishing around the turn of the twentieth century, when Romanian translations of Alphonse de Candolle and — Ferrière were published, even as another part was selling social Darwinist ideas at a cheap price.

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