

Croatian Geologist Gjuro Pilar - A World-Ranked Scientist (On the occasion of the 100th anniversary of his death)



"The scope of science is still limited but it will be enlarged beyond its end, and one of the main factors of human development toward this ideal lies in that part of the human spirit which passes into unknown spheres. ... Let's honour, therefore, the men who use all their strengths to enlarge human knowledge, they are the proper benefactors of humanity."

(By Gj. Pilar, from the Croatian State Archives)

THE WORK OF ONLY ONE MAN

If we observe the present knowledge and the extent of ordinary human interest, we notice the fact that most of us are engaged in using only one segment of our knowledge or profession. If this refers to a particular domain or to just a routine activity, the man is preoccupied by only that particular problem field, while anything else is external, at the periphery, and far from interest.

But there are - or there were - people whose interests were far-reaching, leaving behind them a wide and deeply cut trace of their activity as a legacy. One of them - amongst other Croatian scientists - was Gjuro Pilar. In his relatively short life (1846-1893) he wrote

thousands of pages, approximately ten published books, a countless number of printed articles and other contributions in the rich spectrum of his real interest - from astronomy to the exploration of karst underground, from chess to the precise location of sites on the earth's surface, and the localizing of earthquake vibrations deep in the earth crust. He was also occupied with politics. This has only been recently discovered and his range of interests is incredible.

If we are concerned more with the details of life of our first educated geologist, Gjuro Pilar, we remain surprised at the number of branches of the natural sciences that his interest spanned during his lifetime, and also by specific details of particular disciplines which had just began to appear (e.g. hydrogeology, seismology, geody-

namics, spelaeology etc.). Preparing for his research, in 1868 he requested financial support from the Regent Council with the following remark: "... and particularly in order to study geology for which, by no means, much has been done here ... For that, I promise and oblige myself to dedicate my knowledge, after the termination of studies, for the benefit of my homeland and accept any public service..." He kept that promise, evidently, with great enjoyment to the end of his life, although he, as a competent scientist, was then being invited to work in well known European scientific centres. This can be confirmed by the fact that his book on basic questions of earth evolution "Grundzüge der Abyssodynamik" was translated in Europe and in the USA. So in 1880's, he was profoundly appreciated, as a Croat and geologist, by other natural scientists of the world. There is no doubt that such acknowledgement was deserved by the man who at the age of 22 received his PhD and became a University Lecturer. Gjuro Pilar was the person who, at 27 years old, firstly became a Corresponding Member and a year later an Ordinary Member of the Academy of Sciences and Arts in Zagreb and, at 29, an Ordinary Professor of the University of Zagreb.

This is the reason why we are not astonished that he was among the founders of the Croatian Mountaineer Society (1875), the Croatian Natural Sciences Society (1885) and the first chess club in Zagreb (1885/86) organizing the first registered chess tournament. He participated, as a Council Member, in the International Geological Congress held in London in 1888, because his extremely valuable work had been noticed in earlier congresses in Bologna and Berlin.

It seems that the time has finally arrived for us to start honouring one our "man" who - descending from a small Slavonian town, Brod na Savi, with only some 3000 inhabitants situated at the very border of the Austrian Monarchy and Ottoman Empire - during his life, as a Croatian geologist became a world-ranked scientist known all over Europe.

FROM BIRTH TO DEATH

Gjuro Pilar was born in Brod na Savi, present name Slavonski Brod, in 1846. He attended primary and secondary schools in the towns of Brod na Savi, Osijek and Zagreb. He studied geology in Brussels where he received his PhD degree in 1868. He continued his study and in 1869 he presented his thesis "Les révolutions de l'écorce du globe" (Movements of the Earth's crust) and became "l'agrégé à l'Université de Bruxelles" (the equivalent of a University Lecturer). In 1869/70 he resided in Paris attending lectures on geology, anthropology, chemistry and mining and worked in a chemical laboratory.

Coming back to Zagreb, he commenced employment with the National Museum of Zagreb in 1870. In 1874 he was elected an Ordinary Member of the Yugoslav Academy of Sciences and Arts in Zagreb. In

1875 he became an Ordinary Professor of the Department of Mathematics and Sciences of the Faculty of Philosophy of the University of Zagreb. Later on he served as the Dean of the Faculty of Philosophy and the Rector of The University of Zagreb. From his work, through which he became known in scientific centres of the world, it is necessary to emphasize particularly "Grundzüge der Abyssodynamik" (Fundamentals of Abyssodynamics) published in Zagreb in 1880, and also "Susedgradska fosilna flora" (Fossil flora of Susedgrad) and "Geografijske koordinate Hrvatske, Slavonije i susjednih zemalja" (Geographic coordinates of Croatia, Slavonia and neighbouring countries).

He married Klementina Crndak from a Zagrebian mercantile-banking family in 1873. Although in poor health, she bore two sons, Ivan and Lucijan, but the latter died young. She, overcome by the then incurable illness, tuberculosis, also died. Pilar did not give up and he found consolation in his work. An eye problem removed him from his ordinary routine for some time. In 1883 he got married again, to Filipina Reisz, a wealthy girl of German origin from the town of Brod. She bore three girls: Slava, Klementina - who died of tuberculosis when she was 19, and Izabela. Before his death in 1893 in Zagreb, Pilar sold his abundant library to the Academy in order to provide funds for his family. His wife, Filipina, also died less than a year later. His great-grandson, also a geologist, Božidar Jančiković, is a present "keeper" of a part of Gjuro Pilar's inheritance.

"THE ABYSSODYNAMICS" - IN PAST TIMES AND NOWADAYS

Gjuro Pilar drew the full attention of the international scientific media when he was 22, with his doctorate thesis "Les révolutions de l'écorce du globe" (Movements of the Earth's crust), printed in Brussels in 1869, translated into English and published in 1887 by the Smithsonian Institution, USA. In his discussion of the Earth's origin, he accepted Laplace's concept. He described the development of organisms and stated that no new organism can appear before all the conditions for its existence had occurred. That fact remains valid today. He observed a mutual dependence between the organic and inorganic world and described the formation of various deposits, including coal and petroleum. Finally, he commented on the man's appearance on the Earth.

It is evident that, during his geological work, he dedicated special interest to the Earth's dynamics. He kept in touch with the development of various concepts that were being presented in the world and formed his own opinion. A great earthquake, affecting Zagreb (or Agram, how the town of Zagreb was formerly named within the Austro-German linguistic sphere) in 1880, induced him to publish in 1881 his reflections in the book "Grundzüge der Abyssodynamik" (Fundamentals of abyssodynamics). This work soon appeared world-

wide in many libraries, including the Congressional Library in Washington.

Here, Pilar discussed subterranean dynamics. He accepted viewpoints that the Sun was the proto-factor of life on the Earth and that the Earth's primordial heat was inherited from the Sun from which it was separated. However, he thought that all the geological changes and phenomena could not be explained only by the Sun's role. He frequently stated that various occurrences in the Earth's crust were effected by the heat of the Earth's interior. The changes in heat balance cause the rise of the sea bottom and lowering of the continents. He mentioned several facts in accord with opinions that the crust is thin and floats on a liquid mass. The crust has unequal thickness. It is thicker under the continents and thinner under the oceans. Between them, there are deformed zones within which the mountains have been elevated - and this is the reason why many mountain chains occur at the continental edges. The forces that elevate the mountains have their sources in the Earth's interior. These movements brought about the faults and they are the main causes of the earthquakes. After a thorough analysis, Pilar concluded that earthquakes are mostly of a tectonic nature and they are the results of brakes in the Earth's granitic crust. He explained in detail the genesis of the Alps and this served to interpret the entire process of mountain building. By considering the earthquake of Zagreb, he gave - for that time - an entire review of the geology of the Medvednica Mt. (Zagrebačka gora) occurring close to the north of Zagreb.

Although, after Pilar's death, new cognitions and interpretations of the composition of the Earth's interior appeared, his analytical and critical spirit, in confrontations with opposing elements, looked for acceptable explanations for those times. He thought that: "...a natural scientist has not only the task to examine all details of nature; his greatest merit is not only to measure and weigh without taking care of scientific interpretations of his data; his task is to think, form judgements and permanently compare, to discover general rules from phenomena, and not to endlessly increase the volume of basic data with the only purpose to be registered and, in its multitude, very easily forgotten." Although we shall not agree, perhaps, with all Pilar's theses, in any case, his explanations of endodynamic processes were exceptionally advanced for his time, as can be proven by the numerous reviews in the world scientific and technical journals, particularly in those from German linguistic areas.

THE EXHIBITION "A SLAVONIAN AND THE EARTH" (SLAVONAC I ZEMLJA)

We may say that the above entitled exhibition, that was initiated in Zagreb in 1993 and transferred to Brod in the same year, was the first systematic, full and proven review of his entire work and interests. Gjuro

Pilar did not only like his Slavonia, but he was interested in the whole planet Earth, through thinking and studying all secret paths of its origin, and of the formation and changes of its surface. To consider him as a real star of the Croatian natural sciences is, by any means, interesting both in figurative and actual meanings when the results of his work are refereed. Pilar indeed glistened in our scientific "sky" and, obviously, threw light upon young Croatian natural scientists and touched with the fire of his enthusiasm many of our own and foreign individuals. Although he hastily disappeared, he has left on the "tail" of his meteor a series of sparkling remnants in the form of scientific works and practical results from many fields of his activity. Numerous tiny "sparks", that appeared mostly during his educational activity in the University of Zagreb, have remained in the form of unpublished manuscripts.

We are surprised and enchanted by his approach to the collecting and processing of an interesting collection of fossils, "Flora fossilis Susedana" (Fossil Flora of Susedgrad) and the discovered whale bones which, then and today, have remained a curiosity for the entire area of Zagreb where they were found.

Gjuro Pilar, from the town of Brod, by this exhibition, has become close to the area of Zagreb, where he worked, and to the town of Brod, where he was born and brought up with interest for science.

PROCEEDINGS PILAR - PROCEEDINGS OF THE SCIENTIFIC MEETING HELD IN SLAVONSKI BROD

In the beginning of October 1993, a scientific meeting dedicated to the work and life of Gjuro Pilar was held under patronage of the Croatian Academy of Sciences and Arts, and organized by The Municipality of Slavonski Brod, Museum of Brodsko Posavlje (Museum of the Sava Area of Brod) and Croatian Museum of Natural Sciences in Zagreb. The meeting added new elements to our earlier thoughts about the person and work of Gjuro Pilar. The meeting revealed that there are still incomplete data in some fields of his activity and that they should be completed in the future. The proceedings of papers presented at that meeting were printed in 1994 (Proceedings of the Scientific meeting on Gjuro Pilar, Slavonski Brod, 1.10.1993.- Special issues of the Croatian Academy of Arts and Sciences, Section of Natural Sciences, vol. 11, 1-250 p., 66 fig., Zagreb, 1994).

In the **Proceedings Pilar**, 20 papers written by 23 authors were printed. They wrote about Gjuro Pilar from various viewpoints.

So, for instance, the paper **Scientific work and life path of Gjuro Pilar** (Znanstveni rad i životni put Gjuro Pilara; authors K. Sakač and M. Herak) explains that Pilar left "deep trace not only in our, but also in the world natural sciences, in the field of geosciences. His contribution was greater than acknowledgements attrib-

uted to him by our researchers in their historical reviews." His chronology, from the day of birth to the day of death, is replenished with all his known bibliography of 66 titles.

Sources of data on Gjuro Pilar's life and work (Izvori podataka o životu i radu Gjura Pilara; author K. Krizmanić) will be of great "assistance to all those who wish to study some particular segments of Pilar's life and work because it will make their search easier, at least to some extent. Therefore, let us not again forget Pilar and everything that he did for geology in Croatia." The paper is followed, in an appendix, by a list of original documents on Gjuro Pilar within the archives where these documents were found.

Contribution of the Pilars to the Croatian science and culture (Doprinos obitelji Pilar hrvatskoj znanosti i kulturi; author B. Jančiković) was written by Pilar's great-grandson. This paper, without regard for partly being subjective and emotional, has a particular significance because the author has at his disposal data and documents that are not publicly available.

Pilar's university lectures in geology (Pilarova sveučilišna predavanja iz geologije; authors I. Gušić and V. Jelaska) confirm that "by his lectures, he immediately elevated the geological education in the University of Zagreb, that means in Croatia, to the then European or world level" and he "wherever it was appropriate ... tried to colour his lectures with direct proofs and analogies aimed at drawing closer the essence of the matter to his audience and/or in order to present it as clearly as possible." From numerous details and cases mentioned in this paper, it is obvious how great "a pity it is that Pilar's notes have not been published in textbook form". From the enclosed appendix (a list of lectures in winter and summer semesters from 1877/78 to 1892/93), the number of topics which he was explaining to his students is obvious, and also the fields of science into which he was entering superbly.

Gjuro Pilar's mineralogical and petrological work (Mineraloški i petrološki rad Gjura Pilara; author M. Crnjaković), although "not abundant", because Pilar was "extraordinarily versatile", indicates that he could not direct his thorough knowledge of mineralogy into his own research but transferred it to his students.

Pilar's conception of geodynamics (Pilarovo poimanje geodinamike; author M. Herak) is based on his approach which he justifies by the words: "When a theory had no other merits than the fact that it would provoke discussions and stimulate many-sided research, its presence in science would have been fully founded. Moreover, it refreshes the spirit and enriches it with many supplementary questions, the solution of which often leads to the main question." Rosenbusch, in his time a famous petrographer, when commenting on his theory, concluded in his review: "as it is expected from such a work, specialists will find some things they do not accept but each one will be able to get manifold

stimuli from that work". M. Herak concludes: "Positive stimuli were most appreciated by Pilar. His message has not lost its actuality till today and we shall best repay him if we follow it."

Gjuro Pilar's contribution and importance in the geological exploration of Bosnia and Herzegovina (Doprinos i važnost Gjura Pilara u geološkom istraživanju Bosne i Hercegovine; author J. Pamić) shows that he also "no doubt, was one of the founders of the geological investigation of Bosnia and Herzegovina" in the time when that country was occupied by Austro-Hungary. His exploration and published results were based on 47 traversed cross sections (or routes) that were very useful for all later detailed exploration of the whole region. Pilar, in addition to that, "by his hydrogeological data and interpretations of southwestern Bosnia and adjacent areas of Croatia, before Grund and Cvijić, set foundations for the hydrogeology of karst terrains of the Dinarides and of all karst".

Fossil flora of Susedgrad (Flora fossilis Susedana; authors T. Đerek and S. Japundžić) although published in 1883, it is "also now, 110 years after the publishing, the inevitable book being used by modern palaeobotanists for interpreting Tertiary floras and, in Croatia, it represents the basic work of palaeobotany." This work is a result of his astounding floral knowledge and also of his drawing skill, because his 150 original drawings of particular plants occur in more than 30 drawn tables.

Pilar and the glacial age (Pilar i ledeno doba; author D. Rukavina) indicates that he entered also into the explanation of the causes of glaciation with the remark: "... the sequence of my meditations is quite simple and natural, everything has a necessary causal connection. I do not establish any hypothesis, I only remind people about well known physical and cosmic laws and phenomena." Although a precise explanation of this phenomenon is still questionable, Pilar's statement expressed in the Academy 120 years ago remains exact: "If asked about the causes of glaciation, we still have no answer which could satisfy in general and, from that side, the saying is valid: The problem is in front of the sun; it has not yet been solved."

The significance of Pilar's contribution to the naturo-scientific explanation of earthquakes (Značenje Pilarovog doprinosa prirodnoznanstvenom tumačenju potresa; authors D. Skoko and E. Prelogović) demonstrates that he belongs to the Pleiad of Croatian scientists of the end of the last century who perceived many truths about our earthquakes. He left invaluable data to us for the study of earthquakes. These are historical data, indispensable for quantitative studies of the seismicity of our country and the orientation towards scientific studies of earthquakes.

A modern aspect of Pilar's work "Geographical Coordinates" (Suvremeni pogled na Pilarovo djelo "Geografske koordinate"; author P. K. Čolić) displays that he was right when he concluded: "Good special

maps are a daily need of the geographer and geologist. The landowners and foresters chose crop types according to the slope steepness and position towards the sun. If a real popularity and general benefit is considered ..the special map is the first priority. It must be wished that everybody has it, because to each one, who knows how to read it, such a map will be a teaching aid and will offer something useful." The **Pilar's List**, given in the Geographical Coordinates, as the first such work in Croatian references, "was so much needed."

Pilar's university lectures in astronomy (Pilarova sveučilišna predavanja iz astronomije; author L. Randić) occur in a manuscript of 338 pages separated into three volumes. It is stored in the archive of the Croatian Academy of Sciences and Arts in Zagreb. "In his lectures, Pilar avoids large formulae, but describes everything very professionally including data and explanations from professional and scientific journals. In that way, Pilar introduced astronomy into the educational programme of the University of Zagreb, thus enriching and complementing the university education of students of that time."

Gjuro Pilar's meteorological, aeronomical and oceanographical activity (Meteorološka, aeronomska i oceanografska djelatnost Gjuro Pilara; authors I. and B. Penzar) showed that he, in his time, "was stimulating the research of an outstanding meteorological phenomenon (tornado)" performing "his own meteorological observations, studies of the causes of glaciation and related analyses of oceanic tides and evaporation, also the description and explanation of polar light phenomena."

Pilar's elements of mining and mining law (Pilarove osnove rudarstva i rudnog prava; author B. Kanajet) are, in fact, a reminder for one of Pilar's manuscripts, kept in the University and National Library in Zagreb, that is a part of his lectures. It is so well composed and written that nothing needs to be either added or taken away, but simply transcribed."

Pilar's spelaeological contributions (Pilarovi speleološki doprinosi; author S. Božičević) are a proof of his "broad spectrum of true interest in the various nature-scientific branches. As a pendant to astronomy, here occurred spelaeology, also a world of numerous unknown phenomena bound by darkness, of unknown sizes and unexplored depths. The interest of the geologist, Gjuro Pilar, in spelaeology, appears as a segment in his study of geological problems, or rather of his general interest in the Croatian karst, including proposals for solving the decrease of 'lack of water' in that area."

Gjuro Pilar's world of chess (Šahovski svijet Gjuro Pilara; author Z. HERNITZ) reveals to us the almost

incredible fact that Pilar tried his hand at all fields of chess: organization of a tournament, play, theory, the play of blind chess and correspondence chess, chess problems. He was a good and successful chess player. His versatility did not damage his quality. Everything, that he undertook, he did extremely well, thus, as he was a top scientist, he dealt with chess systematically and analytically.

Gjuro Pilar's archaeological contributions (Arheološki doprinosi Gjuro Pilara; author T. Težak-Gregl) are based on petrographical analyses of "different prehistoric rock objects and also of analyses of the metal composition of coins from the numismatic collection of the National Museum" in Zagreb.

Neogene rocks of the central part of Dilj-gora within the area of Pilar's explorations (Neogene stijene središnjeg dijela Dilj-gore u području Pilarovih istraživanja; author M. Šparica) were also a part of his interest because to him "the Dilj Mt. (Dilj-gora) was orographically a small unit, but geologically very interesting. For him, the study of that mountain provides the key to understanding most of mountains extending along the Sava river to the mouth of the Kupa river."

Comments on the exhibition "A Slavonian and the Earth, Gjuro Pilar, a versatile naturo-scientist" (Osvrt na izložbu "Slavonac i Zemlja, Gjuro Pilar, svestrani prirodoslovac"; author K. Sakač) gives a summary account of the exhibition that was transferred from Zagreb to Slavonski Brod in order that the inhabitants of that town become acquainted with their predecessor. Moreover, it had to be a stimulus to erect his bust in the native town for the "return" to his beloved Slavonia.

"Proceedings Pilar" is a special issue of the Croatian Academy of Sciences and Arts, Section of Natural Sciences. The Proceedings are printed with the support of the INA-Industrija nafte d.d., NAFTAPLIN, a petroleum company from Zagreb. The Editorial Board of the Proceedings took many pains to produce the volume. The Editors were Ivan Gušić and Krešimir Sakač and the Managing Editor was Dragan Bukovec. Within its 252 pages, there are numerous photos or photocopies of Pilar's manuscripts and drawings - some of them presented in public for the first time.

Finally, it is necessary to say that, for the Scientific Meeting in Slavonski Brod and the Proceedings, many unknown facts about Gjuro Pilar's life and work have been revealed. Moreover, this opened the door to a series of documents which have to be thoroughly studied and which could and should be presented in public. By doing that, the image of Gjuro Pilar and his significance in the beginning of the development of Croatian geological science that occurred some hundred years ago, would be more complete.

Hrvatski geolog Gjuro Pilar - znanstvenik svjetske razine

Gjuro Pilar (Slavonski Brod, 22. travnja 1846. - Zagreb, 19. svibnja 1893.) svakako ima vrlo visoko mjesto u hrvatskoj znanosti. U povodu stote obljetnice smrti toga velikog znanstvenika u prostorijama Hrvatskoga prirodoslovnog muzeja u Zagrebu održana je izložba "Slavonac i Zemlja" (1. srpanj - 20. rujan 1993.). Nakon toga je pod pokroviteljstvom Hrvatske akademije znanosti i umjetnosti, a u organizaciji Gradskoga poglavarstva Slavenskoga Broda, Muzeja Brodskoga Posavlja i Hrvatskoga prirodoslovnog muzeja u Slavonskome Brodu 1. listopada 1993. održan Znanstveni skup o Gjuri Pilaru. Dan prije, u četvrtak 30. rujna navečer u Muzeju Brodskoga Posavlja otvorena je izložba "Slavonac i Zemlja" (trajala je do 10. listopada), koja je prenesena iz Zagreba. U subotu 2. listopada priredena je pod vodstvom g. dr. Marka Šparice stručna ekskurzija na kamenolom Zdenci i pjeskolom Petnja. Sada je, pak, u izdanju HAZU te uz sudjelovanje Gradskoga poglavarstva Slavenskoga Broda, Muzeja Brodskoga Posavlja i Hrvatskoga prirodoslovnog muzeja tiskana knjiga "Zbornik znanstvenog skupa o Gjuri Pilaru (1846.-1893.);" sa svim izlaganjima sa Skupa u Slavonskome Brodu uz tri nova rada (D. Rukavina, I. i B. Penzar, B. Kanajet). Ovdje svakako treba istaknuti i Naftapljin iz Zagreba bez čijega sponzoriranja ne bi bilo knjige.

Gđa akad. Vanda Kochansky-Devidé u Prilogu povijesti geoloških znanosti u Hrvatskoj I (Geološki vjesnik 27/1974) opširno je pisala o Gjuri Pilaru. Prisjetimo se da je on bio prvi školovani hrvatski geolog. Pučku je školu završio u Brodu na Savi (danas Slavonski Brod), pohađao je sedam razreda gimnazije u Osijeku, a maturirao je na Klasičnoj gimnaziji u Zagrebu škol. god. 1865/66. Iste godine, 22. rujna odlazi u Bruxelles (u svim svojim zapisima Pilar piše Bruselj), gdje studira na Faculté des sciences de l'Université libre. Strogi doktorski ispit polaže 29. lipnja 1868., a javnom obranom svoje teze "Les révolutions de l'écorce du globe" 26. rujna 1869. postaje *agrégé à l'Université de Bruxelles*, odnosno docent tamošnjega sveučilišta. Zatim 9 mjeseci boravi u Parizu (1869/70.) slušajući predavanja znamenitih znanstvenika toga doba. Na kraju boravka u Parizu sudjeluje u velikoj geološkoj ekskurziji u sjevernu Francusku, Belgiju i Luksemburg. U Hrvatsku se vraća 1870., te 27. srpnja iste godine postaje pristavom Narodnoga muzeja u Zagrebu (danas Hrvatski prirodoslovni muzej). Dopisnim članom Jugoslavenske akademije znanosti i umjetnosti postaje 1873., redovnim profesorom Sveučilišta u Zagrebu i redovnim članom Akademije 1875. U dva je navrata bio dekan Mudroslovnoga fakulteta 1879/80. i 1890/91., a rektor Sveučilišta u Zagrebu 1884/85. Kroz to vrijeme u više navrata putuje u inozemstvo i aktivno sudjeluje na međunarodnim geološkim kongresima (Pariz 1880., Bologna 1881., Berlin 1885., London 1888.) te na međunarodnom geografskom kongresu u Beču 1891.

Njegov relativno kratki život (47 god.) i znanstveno djelovanje (25 god.) bili su toliko ispunjeni kao da se radi-

lo o dva ili više života. Objavio je veći broj tada vrhunskih geoloških djela koja su decenijama služila kao polazišta za daljnja fundamentalna, ali i praktična istraživanja Hrvatske i zapadne Bosne. Bavio se mnogim geološkim disciplinama: paleontologijom, mineralogijom, petrologijom, rudnim ležištima, geodinamikom, hidrogeologijom krša, a osim toga rudarstvom, rudarskim pravom, geodezijom, astronomijom, meteorologijom, arheologijom. Bez obzira na svestranost, kao vrhunski znanstvenik bio je u radu izuzetno sustavan, što je i danas vidljivo iz njegovih vlastitih bilježaka. Objavio je 66 radova. Djela su mu citirana i cijjenjena u inozemstvu. To se posebno odnosi na "Grundzüge der Abyssodynamik" (Zagreb, 1881.), dok je teza "Les révolutions ..." prevedena na engleski i objavljena u Washingtonu (Smithsonian Institution, 1887.). Uz to bavio se politikom pa je bio zastupnikom Broda na Savi u hrvatskome Saboru (1883.) kao predstavnik Hrvatske nezavisne stranke. Ali ni to nije sve: 1885. sudjeluje u osnivanju Hrvatskoga planinarskog društva, zatim 1885/86. s nekolicinom svojih prijatelja osniva prvi šahovski klub u Zagrebu čiji je prvi predsjednik, a 1885. je suosnivač Hrvatskoga naravoslovnog društva i prvi je potpredsjednik.

Širina Pilarova djelovanja lako se može uočiti preko naslova radova u Zborniku: **K. Sakač i M. Herak:** Znanstveni rad i životni put Gjura Pilara; **K. Krizmanić:** Izvori podataka o životu i radu Gjura Pilara; **B. Jančiković:** Doprinos obitelji Pilar hrvatskoj znanosti i kulturi; **I. Gušić i V. Jelaska:** Pilarova sveučilišna predavanja iz geologije; **M. Crnjaković:** Mineraloški i petrološki rad Gjura Pilara; **M. Herak:** Pilarovo poimanje geodinamike; **J. Pamić:** Doprinos i važnost Gjura Pilara u geološkom istraživanju Bosne i Hercegovine; **T. Đerek i S. Japundžić:** "Flora fossilis Susedana"; **D. Rukavina:** Pilar i ledeno doba; **D. Skoko i E. Prelogović:** Značenje Pilarovog doprinosa prirodnoznanstvenom tumačenju potresa; **P. K. Čolić:** Suvremeni pogled na Pilarovo djelo "Geografske koordinate"; **L. Randić:** Pilarova sveučilišna predavanja iz astronomije; **I. Penzar i B. Penzar:** Meteorološka, aeromonska i oceanografska djelatnost Gjura Pilara; **B. Kanajet:** Pilarove osnove rudarstva i rudarskog prava; **S. Božičević:** Pilarovi speleološki doprinosi; **Z. HERNITZ:** Šahovski svijet Gjura Pilara; **T. Težak-Gregl:** Arheološki doprinosi Gjura Pilara; **Ž. Poljak:** Udio Pilara u osnutku Hrvatskog planinarskog društva.

Nema sumnje da su život i djelo Gjura Pilara vrlo zanimljivi, pa oni koji žele saznati i daljnje detalje mogu porazgovarati s autorima ili s njegovim praunukom g. ing. Božidarom Jančikovićem, koji je također geolog. Osim toga uskoro, 1996. godine slijedi 150. obljetnica Pilarova rođenja, što će biti prigoda da se opet prisjetimo toga velikana hrvatske znanosti.