Lung, Pulmonary & Respiratory Research Journal

SCIENTIFIC LITERATURE

Special Issue Article "Primary Ciliary Dyskinesia" Review Article

A Man behind a Syndrome: Who was Doctor Zivert?

Churilov LP*

Faculty of Medicine, Saint Petersburg State University, Russia

ARTICLE INFO

Received Date: May 14, 2019
Accepted Date: January 15, 2020
Published Date: January 18, 2020

KEYWORDS

Alfons-Ferdinand-Julius Karlovich Siewert
Zivert–Kartagener triad
Primary ciliary dyskinesia
Active diastole
History of medicine
Silver age
Russian civilization

Citation for this article: Churilov LP. A Man behind a Syndrome: Who was Doctor Zivert?. Lung, Pulmonary & Respiratory Research Journal. 2020; 3(1):120

Corresponding author:
Churilov LP,
Faculty of Medicine, Saint Petersburg State University, 7/9 Universitetskaya Embankment, 199034 St. Petersburg, Russia,
Email: elpach@mail.ru

ABSTRACT

The article is devoted to biography of A.-F.-J. K. Zivert (1872-1922), a Russian physician of German ethnic origin, who lived in the Silver Age (a period in the History of Russian culture between 1890 and early 1920ies). Dr. Zivert made early, significant and internationally recognized contribution into medical science and became eponymous. A-F.-J. K. Siewert (aka: Zivert, Ziwert, von Siewert) is known for first description of the hereditary dyskinesia of cilia (as a triad of: situsinversus of the viscera, abnormal frontal sinuses producing sinusitis and bronchiectasis). The social disasters of the twentieth century caused deep impact on his subsequent life and career, so his role was shadowed from global medical community. The article analyzes his biography and academic achievements. The contribution of this scientist into medicine is reviewed in context of historical epoch, on background of his individual social choice and the fate of his family. Besides his eponymous description, other medical priorities of this scholar are analyzed. The factors facilitating rapid development of theoretical and practical medicine in imperial Russia of late XIX–early XX centuries are discussed. The conclusion of the author is that in any epoch, even the cruelest and unfavorable one, the creative activity is a way to social immortality.

INTRODUCTION

The triad of situsinversus of the viscera, early chronic sinusitis and bronchiectasis is known all over the medical world as Zivert (Siewert) – Kartagener syndrome (a variant of primary dyskinesia of cilia), and its pathogenesis related to genetically determined systemic cytoskeleton abnormality and immobility of the cilia is well understood. 117 years after description of Kartagener–Zivert syndrome medical community still knows much more about Swiss physician, expatriate from Austrian Galicia, Manes Kartagener (7 January 1897– 5 August 1975) [1,2], than about Dr. Zivert, who described the syndrome 31 years prior to him [3-5] (Figure 1). And for Chris McManus, an author of "Lancet" this Russian physician still looks "anonymous" [6]. Even in very trustworthy Enersen's explanatory dictionary of medical eponyms, used online by global medical community, Zivert was until very recent time just mentioned by last name as a "Ukrainian" physician, but without any biographical data [2]. Now, I think, the question put by Dr. Chris McManus in "Lancet" (2004) finallyhas got a complete answer. This paper is last one in a series of my publications devoted to the life and medical contribution of Dr. Zivert, which, compared to earlier published works gives some additional details and more profound analysis of the Kiev period of his life and attributes him to outstanding Kiev school of internists.

Alfons-Ferdinand–Julius Siewert (9 August 1872–1922) (aka: *Alfons (Aleksandr) Karlovich Zivert* in his everyday life) was a Russian internist, physiologist, toxicologist and military physician, born and died in Kiev, Russian Empire, a descendant of German family sworn to Russian Tsar.

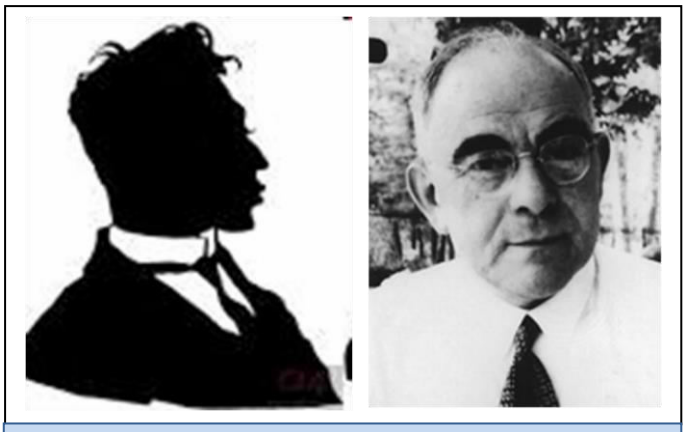


Figure 1: Unknown A.-F.-J. K. Siewertand well-known M. Kartagener (right).

All his life he spent living in the city of Kiev, in Fundukléevskaja street, bld. 27, which particular place readers can see in (Figure 2), taken when Dr. Zivert was young man.

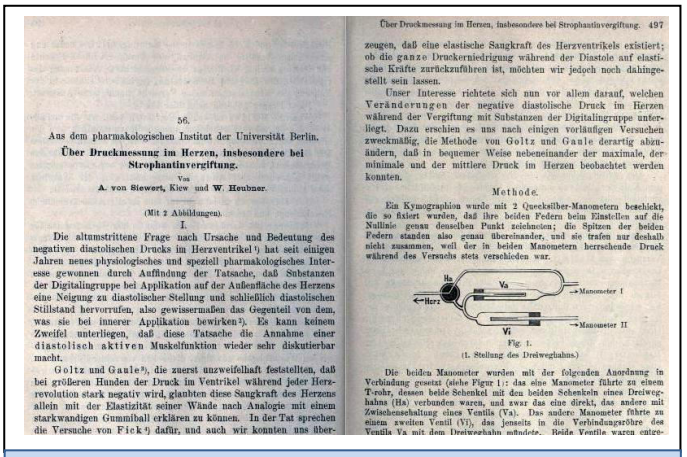
Figure 2: The view of Fundukléevskaja (now– Bogdana Khmel'nitskogo) street in old Kiev, where A.K. Zivert lived, just as it looked in the end of XIXcentury (photo by D.Markov, URLhttp://oldkiev.ho.ua/hmel/hmel.html).

Not only Dr. Zivert used to be an enigmatic figure in the history of medicine for many years. His father also was a person of top secret service. The privy councilor (since 28 March, 1904) Karl- Ferdinand Zivert (6 May 1843 –after 22 August 1917) was a remarkable figure in the history of intelligence service and Russian censorship. He was born in Byałystok, Polish Kingdom of Russian Empire, left gymnasium just after 4 years of studies and started his labor career at Wilno as a junior telegrapher. Later he worked as an interpreter for local administration and as a post official at Wilno, Kowno, Grodno; and on the top of his career became a chief of the "Black Cabinet" (censorship and intelligence service division) at Kiev Communication District. His main job was to organize a secret perusal of letters. A skillful conspirator, he invented the unique device to read letters clandestinely without staying a trace, introduced a special system of secret letter exchange with doubled and even tripled envelopes and was related with perusal of the mail of diplomats and even state officials, for example before and after assassination of Prime Minister P.N. Stolypin in Kiev (1 September 1911). For his merits in 1898 he was awarded the Order of St. Vladimir (4th degree) and has got hereditary nobility status for himself and his family by Tsar's edict of 12 February 1901 [7]. After fall of Empire, in the end of such a long and successful career of scout and censor (March, 1917) he was accused by local commissars of Provisional Government of the new established Russian Republic as double (Russian-German) agent, although justified. The case was dismissed, but in spite of that, in August, 1917 new authorities of Russian Republic rejected his application for pension equal to his salary (2400 rubles per year), which he based on privileges guaranteed by old law [7,8]. K.F. Zivert married Johanna–Ludwiga–Emilia Dreyer. They had 4 sons and 2 daughters. Alfons Zivert was the senior to his 3 brothers (Pavel, Erich and Richard) and 2 sisters (Elena and Gertruda). One of his brothers – Erich Karlovich Zivert – inherited father's occupation. After graduation of gymnasium he also became post official, censor and was involved in secret post perusal. As an officer of Russian Army, during World War I E.K. Zivert was mobilized and fought in Galicia. In June, 1915 he was captured by Austrians. His later fate is unknown [7,8]. Senior son of Ziverts, Alfons-Ferdinand Julius Zivert choose medical career. He studied Medicine in the Emperor's St. Vladimir University at Kiev, successfully graduated from this prestigiousschool (20 September 1899) and was admitted to the Clinic of Propedeutics as an "supernumerary intern" (22 February 1903), also being a practitioner in local private K.E. Wagner's Clinic. The therapeutic school in Kiev was at that time one of the strongest in the Europe. Its leading figures were: The

first descriptors of the various clinical forms of myocardial infarction: Vasiliy Parmenovich Obraztsov (1849–1920) and Nicholay Dimitrievich Strazhesko (1876–1952); an outstanding internist Theophil Gavrilovich Yanovskiy (1860–1928), an inventor of quantitative urine analysis, renown internist and homoeopathist Anton Fomich Kakovskiy (1871–1953), and many others. All these brilliant clinicians were contemporaries, teachers and/or colleagues of A.K. Zivert, who had the pleasure of working closely with them [9]. In that period there were many ethnically German Russian scholars among faculty members [10]. On 1st of June 1903 Zivert was officially stayed in University clinic for 2 years (for preparation of his doctoral thesis with perspective of professorship). After defending of the thesis and staging abroad (see below) in 1909 Zivert became Privatdozent (Adjunct Associate Professor) of the Internal Medicine Department at St. Vladimir University. Since 18 January 1909 till 1912 he served as a military doctor of Kubanskiy and later – of Mirgorodskiy infantry regiments, in the end of his military service he was Chief Physician of the 12th Clinic of Internal Medicine at Kiev Clinical Military Hospital [11,12]. Finally, during 1920–1921 he achieved a position of the Chairman of Internal Medicine Department at his alma mater and full professorship.

A paper which immortalized his name was published quite early, in 1902, when doctor was 30 years old and had not yet any academic appointments. A.K. Zivert published it in national weekly medical paper ("Russkiy Vrach" – "The Russian Physician") at Saint Petersburg. It was a description of a case of young man with sinusitis, congenital bronchiectasis and situs inversus viscerum[3], later this Russian original paper was republished in Germany [4]. This later German version of his article is referred to by Western specialists as the first description of Siewert-Kartagener triad [2,6], although in fact it was originally published by Zivert in Russian 2 years prior to that. Both papers with original description of primary ciliary dyskinesia by A.K.J. Zivert are highlighted with bold letters in References below (positions 15 and 30).

Pioneering description of ciliary dyskinesia syndrome was not Zivert's sole scientific merit. He defended his doctoral thesis (17 May 1906) and on its basis published a monograph in Toxicology [13]. As a toxicologist, Zivert studied experimentally the effects of various alcohols (ethanol, methanol, fuel oil components), especially on isolated heart function [14]. We can conclude that, like other leading physicians of that era, he was not merely a medical practitioner, but also was engaged in natural science, or as we would say today: "Biomedicine".



56.

Aus dem pharmakologischen Institut der Universität Berlin.

Über Druckmessung im Herzen, insbesondere bei Strophantinvergiftung.

Von

A. von Siewert, Kiew und W. Heubner.

(Mit 2 Abbildungen).

I.

Über Druckmessung im Herzen, insbesondere bei Strophantinvergiftung. 497

Figure 3: A facsimile of an article by A. von Siewert &W. Huebner from the jubilee selection book dedicated to O. Schmiedeberg, 1908 [see: N 18 in References].

1 von Recklinghausen jr.; 2 Reeb ; 3 **Cloetta**; 4 **Wallace**; 5 Siegert; 6 **Heubner**; 7 Fetzer; 8 **Herlant**; 9 **Lindemann**; 10 **Faust**; 11 **Kobert**; 12 **Meyer**; 13 **Führer**; 14 **Cervello**; 15 **Straub**; 16 **Jacobj**; 17 **Schmiedeberg**; 18 Spiro; 19 Hofmeister; 20 **Harnack**; 21 Muffat; 22 **Heffter**; 23 **Cushny**; 24 Huldschinsky; 25 His; 26 Minkowski; 27 **Gottlieb**; 28 Bethe; 29 Zinck

Figure 4:The leading biomedical scientists (including Zivert'sco-author Huebner–N6),authors of jubilee book, celebrating O.Schmiedeberg's jubilee in1908 (HolmstedtB & LiljestrandG,1963).

Moreover, it was a kind of "Translational Medicine" of that period, if one will use the modern term: After publication of experimental data Dr. Zivert published on the subject one more clinical article correlated to laboratory findings under the noteworthy title: "The therapeutic value of alcohol" [15]. As it

was common among young Russian medical doctors and researchers of the time, he received a governmental scholarship for overseas internships and during 1906-08 studied in Germany for improvement. While being in Germany, he published together with well-known pharmacologist Wolfgang Huebner (1877–1957) a paper in experimental Strophanthinumintoxication of isolated heart [16]. This article (Figure 3) was published in special issue of "Archivfürexperimentelle Pathologie und Pharmakologie" among selected papers of most outstanding biomedical scientists of Europe, dedicated to 70th anniversary of Oswald Schmiedeberg (1838–1921), patriarch of Pharmacology and leading researcher of cardiac glycosides, whose life and career were closely related to Russian Empire (he was born in Talsy, Kurlandia, Russian Empire, graduated from Yurievskiy University, Liflandia, Russian Enpire and taught at this school for some time, having in Russia many pupils). (Figure 2) represents a group of contributors into this remarkable selection book, among them: O. Schmiedeberg himself (N 17) and also creator of first animal model of diabetes mellitus – Oskar Minkovski (N 26), pioneer of ultraviolet rickets prevention – K. Huldschinsky (N24), prominent Russian pathophysiologist, creator of first immunopathological animal model of glomerulonephritis – V.K. Lindemann (N9). We can see among them Zivert's co-author from Berlin – W. Huebner (N6) [17]. Such a bright company may witness for considerable scientific weight of Zivert's studies, indeed he had renowned teachers and eminent co-author. Zivert also studied Physiology of blood pressure, which was a frontier of medical science in the time of his research [18] and uric acid excretion in relation to various diets. The data of his research polyglot Zivert published in Russian, German and Polish literature [19-21]. That's why Zivert's name was a subject of some confusion in modern medical citations: It is spelled differently in English and in original Russian, Polish or German texts. To appreciate the academic influence and level of his studies, one needs to know that it was A.K. Zivert, whom 4th National Congress of Russian Internists invited as a speaker in Cardiology (1912). His presentation about active mechanisms of cardiac diastole was quite remarkable, because it contained an idea that energy is used by myocardium not only for contraction, but also for relaxation, which statement sounds pretty modern even nowadays, when the necessity of ATPase for withdrawal of excessive free calcium from diastolic cardiomyocyte sarcoplasm has been demonstrated. He republished its revisited version much later in Germany, signed it "Professor A. Siewert" [22], and this late paper (1 December, 1922) was probably his last or even posthumous one.

Alfons Karlovich Zivert was also skillful clinician and gifted clinical teacher. On return from abroad to Kiev, since 13 January 1909 he lectured in Introduction into Internal Medicine, which always was (and still is) a fundamental course for physician's skills and medical professionalism. In Russian higher medical schools this introductive course traditionally is named "Propedeutics". Hence, he published a lot of methodological articles in this field, mostly related to physical examination or functional diagnosis in Gastroenterology, for example he described rare vascular murmur over the liver and was one of the forerunners in gastrotonometry, now quite important clinical method [23-25].

Dr. A.K. Zivert married Yulia Vladimirovna Puhal'skaya, the daughter of a known Russian musician and art scientist Prof. Vladimir Vatslavovich Puhal'sky (1848–1933), Director of Kiev Emperor's Conservatory, teacher of several world famous pianists, like Vladimir Horowitz (1903– 1989). Alfons and Vera had 2 sons (Vladimir and Georgiy) and daughter Maria (born 31 March 1904). All family belonged to Orthodox confession. Their senior son, Vladimir Alfonsovich Zivert (4 July 1902 – 7 May 1938) lived with dramatic life, stressful for his parents. Vladimir graduated from gymnasium at Kiev in 1919. He entered St. Vladimir's University as a student of Law faculty. Since 1917 he was deeply involved in revolutionary events, and became a member (1917), later – a secretary (May, 1918) and one of the leaders of monarchist Union of South-Russian Youth, strictly opposed both to Bol'sheviks and to Ukrainian nationalists (1917–1919). He was in military organization of this Union named "Our Motherland" (since November, 1918), although did not take part in the battles of Civil War1 directly. A gifted speaker and organizer, he was anti-Soviet activist. Vladimir Zivert joined in public performances, concerts and took part in collecting of donations for the "Union". In May, 1919 bolshevist Cheka arrested him. But soon, through the intercession of his father, skillful physician who possessed with some influence in post- revolutionary Kiev

(which suffered from flu and typhus epidemics),Zivert-junior was liberated, although his case was not dismissed. Later Vladimir graduated from Kiev Institute of Foreign Relations and worked as a lawyer.

Of course, all the dramatic events of World War I and Civil War did not improve Dr. Zivert's health, because historical shocks severely hit his father, junior brother and finally his son. In 1922 Professor A.K. Zivert died on the 50th year of his life. Without any doubts, this bright and fruitful representative of Kiev therapeutic school, "standing on the shoulders" of domestic and 1 Civil War in Russia (1917–1922) was between the Red Army (revolutionaries who fought for the power of "Soviets" which means directly elected parliaments of all levels) and White Army (supporters of Monarchy and old regime). White Army was supported by several allied countries of Entente. Irregular armed groups of the anarchists (the Greens) and nationalistic armed forces of the separated parts of Russian Empire also took part in this war as the "third force". The war ended with the victory of the Reds, as a result the Union of the Soviet Socialist Republics was formed in 1922 on the major part of former territories of Empire; Finland (peacefully), Baltic States and Poland have got independence, Bessarabia was occupied by Romania.

Foreign medical giants, had huge potential for subsequent deep impact into Medicine, but the calamities of the time shortened his life. Since 1922 his son Vladimir had to work as a locksmith, not able to be employed in accordance with his qualifications. Even his junior sister Maria had to work as a driver in order to support family after father's death. In the beginning of 1929 Vladimir again was imprisoned for the same episode of belonging to tsarist organization. In October, 1929 he was exiled to Siberian town of Minusinsk, where Zivert-junior had to stay until 1932. In 1932 he returned and until 1937 again worked in Kiev as an auditor of regional financial supervision. But in 1937, with new wave of repressions in the USSR he was once more removed from Kiev to the town of Nezhin. On 13 February 1938 Vladimir Zivert was arrested and accused as a member of anti-Soviet clerical pro-fascist organization. Later he was imprisoned to GULAG at northern Autonomous Komi Republic. 28 April 1938 he was sentenced to death and 9 days later shot [26,27].

The figure of A.K. Zivert and analysis of his creative activity and biography may point towards some very important factors promoted rapid and fruitful development of theoretical and practical Medicine in Russian Empire. Russian physicians were not separated from European medical community. Broad contacts between Russian physicians of that period and their Western colleagues were free from any linguistic, economic, political, or bureaucratic restrictions. According the data of National population census of 1897, 14% of people in Russian State (which had the borders spread far to the West compared to their current positions) were of Catholic or Lutheran confessions. In Russian cities many teachers, physicians and university professors were ethnic Germans, Austrians, French, Swedes, Finns, and Poles, few of them – were English, Italians, Dutch – all having roots abroad. They tightly and fruitfully interacted with other Russian physicians and medical teachers [28]. Almost every graduate of medical school in Russia of that period spoke fluently at least one foreign language, learnt in childhood with the help of multiple foreign governesses and teachers – native speakers living in Russia, but typically medical doctors were polyglots. Social and economical status of Russian physician or university teacher was prestigious, stable and high enough to travel abroad [29,30]. Moreover, all best graduates of Emperor's Universities could rely upon state support of their long academic visits to best medical labs and schools of Europe. And they were welcomed there: no visas required, Russian school and university diplomas in Germany 9and reciprocally – German ones in Russia) were validated automatically, many foreign medical graduates worked in Russia – so, the way of Dr. Zivert to the top stratum of European Medicine was quite typical for that epoch. This system joined to principles of Zemstvo Medicine established for Russia most rapid decrease of mortality rates in its history [31] and brought 2 Nobel Prizes in Medicine for the first 9 years of its assignment. And it couldbring much more, but everything was gone with the wind of wars and revolutions. It was reflectedin the fate of Zivert's family, like in a small piece of a broken mirror.

ACKNOWLEDGEMENTS

Author is cordially grateful:

Ukrainian colleagues, Professor Nikolay Vasil'evichKryshal' (Kiev) and recently deceased Associate ProfessorYury

FedorovichPedanov(Odessa) for their valuable help insearch for the materials about A.K. Zivert in Ukrainian archives;

– to Prof. Ole-Daniel Enersen (Oslo, Norway) for his constant attention to the role of Russian physicians in the History of Medicine and for inclusion of the materials from this paper as well as from other author's texts about domestic scientists – into world known "Who named it? Explanatory Dictionary of Medical Eponyms", edited by him;

The first version of this paper was published by author as a fragment of his larger article on the history of Russian medicine of the Silver Century period in

PsychiatriaDanubina, 2016; 28 (1): S191-S208.

REFERENCES

1. Churilov LP, Kolobov AV, Stroyev Yu I, Konstantinova AM, Utekhin VI, et al. (2010). Explanatory Dictionary of Selected Medical Terms (Eponyms and Figurative Expressions). Saint Petersburg: ELBI-SPb Publihers. p234.
2. Enersen OD. Who named it? Explanatory dictionary of medical eponyms.
3. Zivert AK. (1902). A case of congenital bronchiectasis in a patient with reverse position of viscera. RusskiyVrach. 38: 13.
4. Siewert AK. (1904b). A Case of Bronchiectasis in a Patient With Inverse Viscerum. Berl. Clin. Weekly. 41: 139-41.
5. Kartagener M. (1933). On the pathogenesis of bronchiectasis: Contributions to the Clinic of Tuberculosis and Specific Tuberculosis Research. 83: 489-501.
6. McManus C. (2004). Eponymous but anonymous: who was Dr Siewert? Lancet. 363: 662.
7. Izmozik VS. (2015). "Black Cabinets" - History of Russian letter perusal since XVIII to XX century? oscow: New Literature Review Publishers. 1562.
8. Rowan RW. (1938). The Story of Secret Service. Literary Guild of America Publishers.
9. Makarenko M, Polyakova M. (2001). Biographical directory of the Chairpersons of Departments and Professors the A.A. Bogomolets National Medical University (1841-2001) Kyiv: Stolittya Publisher. pp.61-63.
10. Vinnichenko I, Vinnichenko R, Nimtsi v istori. (2009). Ky?vs'kohouniversitetu (??? - polovyna?? st. [Germans in the history of Kiev University (XIX-half of XX century)]. Kyiv: Heoprint Publisher. 420.
11. Vasil'ev KK, Zivert Alfons-Ferdinand-Julus Karlovich. (2010). In: Encyclopedia of Modern Ukraine. Kyiv. 10: 583.
12. Gos. Arch. Kieva: F.16, op.456, d.4785 [State Archive of Kiev, Fund 16, directory 456, file 4785] (in Russian).
13. Zivert AK, Uchenie. (1906b). The Doctrine of Dynamic Antagonism between Poisons: An Experimental Study. Kiev: University Publishers.
14. Zivert AK. (1908). On the influence of ethylic, methylic, isobutylic and heptylic alcohols on isolated feline heart. An experimental study from the St. Vladimir University. Kiev.
15. Zivert AK. (1909). Therapeutic significance of alcohol. Russian Doctor. 8: 1451-1456.
16. Siewert VA, Heubner W. (1908). About pressure measurement in the heart, especially with strophantin poisoning. Archive for experimental pathology and pharmacology. Suppl. "Commemoration of Prof. Dr. O. Schmiedeberg ". Leipzig: F.C.W. Vogel. 496-503.
17. Holmstedt B, Liljestrand G. (1963). Readings in Pharmacology. London: Pergamon Press. p394.
18. Siewert A. (1904a). Method of Manometric Registration of the Contractions of the Isolated Mammalian Heart. Archive For the entire physiology of humans and animals. 102: 364-372.
19. Zhebrowskiy EA, Zivert AK. (1911). On the comparative influence of white vs black meat on the excretion of uric acid and other nitrogenous substances of urine. Russian Doctor, 1911; 10: 1494-1500.
20. Siewert A, Zebrowski E. (1912). About the comparative influence of white and dark meat on the excretion of uric acid and other nitrogenous substances in the urine. Journal of Clinical Medicine, 1912; 75: 331-358.
21. Zebrowski E, Ziwert A. On the effects of white and black excretion of uric acid and other urinary nitrates. Overview. Bow. 1912; 51 (25-30): 427-428, 439-441, 451-453, 463-465, 474-476, 482-484.
22. Siewert AK. (1922). Overactive diastole. Magazines Picks. ges. exper. Med. 28: 324.

23. Zivert AK. (1903a). On the question of gastric borders determination by means of inflating. Russian Doctor. 3: 82-88.
24. Zivert AK. (1903b). A rare case of vascular murmur over hepatic area. Russian Doctor. 2: 1617-1619.
25. Zivert AK. (1906b). On the matter of significance of right gastric border determination in case of its weakened ability for passage. Russian Doctor. 5: 163-167.
26. Kal'chenko TV, Soyuz Yuzhno-Russkoi Molodyozhi. (2004). Union of South-Russian Youth - the last monarchist organization of Kiev.
27. Grazhdabskayavoina v Rossii. (2010). The Civil War in Russia: Encyclopedia of Catastrophe / Ed. SV Volkov, Moscow. 400.
28. Statistical Yearbook of Russia - 1913. (1914). Saint Petersburg: CSK MVD Publisher.
29. Shipilov AV. (2003). A salary of Russian professor in its Past, Present and Future. Alma Mater - Newspaper. 4: 33-42.
30. Kudinov OA. (2005). Labor remuneration in science and education of Russian Empire in the onset of XX century. Legal Education and Science. 1: 40-41.
31. ZaichikASh, Churilov LP, Churilov RL. (2013). To be healthy or to have the health? Proceeding II. Public Medicine and its economical foundations. 2: 21-30.