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Portable medicine chests in Serbia during the 19th and the first half of the 20th century

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Portable medicine chests could be considered as the oldest type of pharmacy in the 19th century Serbia. Historically their emergence could be associated with the appearance of the first physicians who kept post in Serbia. They were foreigners engaged on a contract to work during the reign of Prince Milos Obrenovic. According to the data preserved at the State Archive of Serbia (Chancellery of the principality, State Council, Home Office – Medical Department), medicine chests existed as late as the middle of the last century. They were an important source for health protection of the Serbian people as well as for distribution of drugs during the course of the 19th century. This article aims to analyse the content of these chests, based on the archive data records referring to the regular supervision of the medicine chests conducted every fourth year by the district physician. The legal aspect of keeping the portable medicine chest will be discussed as well.

1. Introduction

Long before the emergence of first pharmacies in 19th century Serbia, physicians and surgeons kept small medicine chests as a special kind of pharmacy equipment used when visiting the patients. Those medicine chests can be considered the oldest kind of pharmacies in Serbia. The first physician to come from Russia to help Karadjordje's rebels in 1809 was Dr Marcevski who brought surgical and apothecary supplies in his portable chests (Stupar 1977a). There are also records of one Greek physician – Constantin Alecsandridi, and two Italian doctors and their medicine chests – one of Dr Vito Romito (in service from 1823 to 1827), the other of Dr Barthelemy Cunibert, the personal physician of Prince Milos Obrenovic and the first district physician in Belgrade who held that position until 1839 (Djordjevic 1989, Dragic 1973, Stojancevic 1973, SAS 1824).

During the period of the Turkish occupation there were no apothecaries, consequently, drugs and medicines were supplied from abroad. The Serbs had been officially permitted to establish their own health facilities by a special decree from the Ottoman Empire called "Hattisherif", in 1830 (Djordjevic 1926). The first pharmacies established in Belgrade by Mateja Ivanovic, BS Pharm, in 1830, followed by the State run pharmacy in 1836, were for a long time the only facilities with qualified apothecaries. That was insufficient, of course, and physicians' portable medicine chests played an important role covering the gap between the resources and the real needs of the Serbian people. Those portable chests were rather large and not possible to carry around without a horse cart, the usual way of transportation in those days. There is a record of a medical chest of Dr George Brüchig which

was equipped well enough to serve as the hospital pharmacy foundation, opened in Svilajnac in 1832 (Stupar 1972).

2. Investigations, results and discussion

2.1. District and municipality physicians of Serbia

2.1.1. Historical sources and archive records

All the pharmacies in Serbia were under the supervision of the local health authorities and were inspected every fourth year. Various documents dated back to 1809 show how medicine chests played an important part in drug distribution and health prevention, especially during the period with no community pharmacies in the country. They were an important source for health protection of the Serbian people and drug distribution during the course of the 19th century. We found very few preserved documents, which will be presented in this article, regarding their content. Annual supervision lists for examining physicians, introduced in 1840 (physicians' conduit list), provide an important proof of existence of such kind of pharmacies in Serbia (Fig. 1). Prescription bills, as well as pharmacists' and physicians' prescription books present an excellent source of information regarding materia medica of that time (Divljanovic 1966, SAS 1832, SAS 1840).

It should be pointed out that Prince Milos Obrenovic's Serbia was divided into districts, called "okrug", which were subdivided into smaller units called "srez", and further divided into municipalities. The number of districts changed, and by the end of 1878 there were 18 districts. In 1890, due to the political situation, the number of districts was 17 (Marjanovic 1975). Accordingly, there should have been an equal number of district physicians,

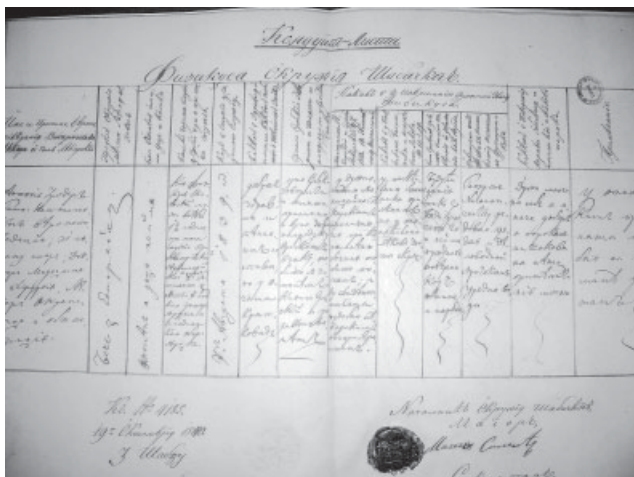


Fig. 1: The conduit list of the Dr Antonio Groder, promulgated for the city physician of Sabac, in August 7, 1839. As stated in this document (dated October 19, 1840) he had a small portable medicine chest. (State Archive of Serbia – Home Office, Medical department – SN-4185-1840)

one assigned to each district but sometimes the lack of medical staff made that impossible. According to the preserved data, in 1836 there were one pharmacist (Pavle Ilic, working at the state run pharmacy) and 15 districts physicians working as state employees (Parojcic and Stupar 2001, SAS 1836). The next year the number of physicians was cut down to 9, which was insufficient for the all 18 districts of that time (Mihajlovic 1951). It was not before the end of the 1860's that there was one physician assigned to every district of Serbia. Besides, all municipalities and cities had physicians, which were elected by an open state competition announced in national and foreign newspapers (Popovic 1966). In the capital of the country, Belgrade, and a few other bigger towns, many doctors were employed as municipal or private practitioners who had their medicine chests as well. There were, however, many self-proclaimed doctors and unqualified pharmacists who kept small household pharmacies and were rather popular with the country folk. The authorities and the law forbade them. The situation was by far worse with the number of pharmacies that had been growing slowly. By the middle of 1876 there had been 19 apothecaries, operating in Serbia in 22 districts. The list of licensed apothecaries numbered 23, along with 7 dispensing assistants and 14 apprentices (Marjanovic 1971a, Nikolic 1904). In this paper we will not be discussing the special kind of medicine chests that were kept in the Army by military doctors, and used for the treatment of soldiers. Investigations done by Stupar have shown that they were usually very large, well organised and well equipped (Stupar 1977b).

Before the licences were granted, all physicians as well as pharmacists of that time had to take the professional oath. Some of those ethical standards are very well preserved as the prime source not just of the existence but more significantly of the importance of the medicine chests (SAS 1841). It was an ethical obligation for doctors working in the community without pharmacy to keep portable medical chests. Over the years, those medicine chests would meet the continuing need of medicines in rural areas.

2.1.2. Ordinances for district and municipal physicians

Historically, portable medicine chests firstly appeared in the pharmacy legislation of Serbia when the *Ordinance*

for District and Municipal Physicians (*Nastavlenia za okruzne lekare i fizikuse*) was introduced August 21, 1839. This instruction was delivered through government officials to every practising pharmacy in Serbia. Its 12th article concerning the medicine chests reads: "Each licensed doctor, who is practising in a municipality without an apothecary, is obliged to have his own portable medicine chest and to refill it regularly" (SAS 1839). Because doctors travelled a lot those days, medicine chests were also referred as travelling apothecaries. On the other hand, when not on duty, doctors kept them at home, usually in a locked room, so people called them "home apothecaries" as well. When obtaining the license for practising the profession of medicine, doctors obtained a permission for medicine chests, too. The physician had to keep a record of buying and selling drugs and in some cases he had to notify the authorities of his purchases. In the State Archive of Serbia we found many documents regarding the matter, such as the one dated June 30, 1854, when Dr Macaj was appointed to the physician in the city of Sabac (SAS 1854). As the portable apothecaries were also supplied with the medicines for the veterinary use, doctors were obliged by law to dispense them as well. Because of the small number of veterinary doctors in the first half of the 19th century, this was rather important for the agricultural Serbia (SAS 1839).

According to the data records, portable medicine chests during the second half of the 19th century differed in content and size. The chest was usually a wooden apothecary's case with small compartments and drawers, carried on horseback or a horse cart. The unification of this matter was governed by the provisions of the 1865 Law (Parojcic and Stupar 2001). The *Law for Pharmacies and Pharmacists (Zakon za apoteke i apotekare)*, promulgated by Milos Obrenovic III, was followed by several regulations. One of them was the special *Ordinance for physicians who are obliged to keep portable medicine chests (Nastavlenie za lekare koji po zakonu moraju drzati svoju privatnu apoteku)* adopted on January 13th, 1866 (SAS 1866). This presented all the requirements regarding the conditions of keeping, maintaining and refilling portable medicine chests, together with the necessary list of medicines (Fig. 2). According to this 108-drugs list it is clear that mostly simple remedies of vegetable origin and che-

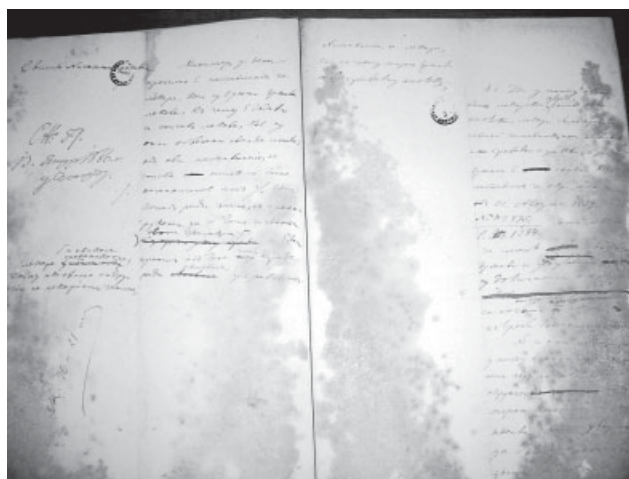


Fig. 2: The frontpage of the 1866 Ordinance for physicians who were obliged to keep portable medicine chests – "Nastavlenija za lekare koji po zakonu moraju drzati svoju privatnu apoteku" (State Archive of Serbia – Home Office, Medical department – SN-59-1866)

Table 1: The list of medicines that each portable medicine chest should have contained according to the 1866 Ordinance for physicians who were obliged to keep portable medicine chests – “Nastavlenia za lekare koji po zakonu moraju drzati svoju privatnu apoteku”

1. Acetas morphii	37. Emplastrum Euphorbii	73. Oleum Menthae piperitae
2. Acetas plumbi depuratus	38. Extractum Belladonnae	74. Oleum Olivarum
3. Acidum aceticum crudum	39. Extractum Gentianae	75. Oleum Ricini
4. Acidum arsenicosum	40. Extractum Hyosciami foliorum	76. Pilulae drasticae
5. Acidum citricum crystallisatum	41. Extractum nucis vomicae	77. Radix Jalappae in pulvere
6. Acidum muriaticum concentratum purum	42. Extractum Opii aquosum	78. Radix Ipecacuanhae in pulvere
7. Acidum nitricum concentratum purum	43. Extractum Ratanhiaae	79. Radix Rhei in pulvere
8. Acidum phosphoricum concentratum purum	44. Farina Lini	80. Radix Salep in pulvere
9. Acidum sulfuricum concentratum purum	45. Farina Sinapis	81. Radix Valerianae
10. Acidum tartaricum	46. Ferrum limatum alcoholisatum	82. Saccharum album
11. Aether sulfuricus	47. Ferrum oxydatum dyhidricum in aqua	83. Sal Amoniacum depuratum
12. Agaricus chirurgorum	48. Ferrum sesquichloratum crystallisatum	84. Scilla marina in pulvere
13. Aloe soccotrina	49. Flores Chamomillae	85. Secale cornutum
14. Alumen crudum	50. Flores Sambuci	86. Semen Lini
15. Ammonia pura liquida	51. Flores sulfuris loti	87. Semen Santonici
16. Aqua Laurocerasa	52. Flores Tiliae	88. Semen Sinapis
17. Balsamum Copaivae	53. Folia Digitalis	89. Species Althaeae
18. Bicarbonas sodae	54. Folia Digitalis in pulvere	90. Species Amaricantes
19. Bismuthum subnitricum	55. Folia Sennae	91. Spiritus Vini rectificatus
20. Borax depurata	56. Gummi arabicum in pulvere	92. Spongia pressa
21. Camphora	57. Herba Menthae piperitae	93. Sulfas chininae
22. Cantharides in pulvere	58. Hirudines	94. Sulfas cupri crystallisatus
23. Carbonas Ammoniae	59. Hydrargyrum bichloratum corrosivum	95. Sulfas ferri
24. Carbonas Magnesiae	60. Hydrargyrum chloratum mite	96. Sulfas Magnesiae
25. Cera flava	61. Hydrargyrum oxydatum rubrum	97. Sulfas Zinci
26. Chartae exproprativia	62. Jodum	98. Sulfur auratum antimonii
27. Chloras calcis	63. Kali nitricum depuratum	99. Syrupus Cichorei cum rheo
28. Chloroformium	64. Kalium jodatum	100. Syrupus Diacodii
29. Colloidium	65. Kreosolatum	101. Tanninum
30. Cortex Chinae fuscus	66. Lapis causticus	102. Tartarus emeticus
31. Cortex Garnatorum radices	67. Lapis infernalis	103. Tinctura Opii simplex
32. Cremor tartari	68. Lichen islandicus	104. Unguentum Althaeae
33. Cubebae in pulvere	69. Manna	105. Unguentum Digestivum
34. Emlastrum anglicanum	70. Mel depuratum	106. Unguentum Hydrargyri fotius
35. Emplastrum Cantharidum	71. Oleum crotonis Tiglii	107. Unguentum Sulfuratum
36. Emplastrum Diachylon compositum	72. Oleum Jecoris aselii	108. Zincum oxydatum

All these medicines that physicians had at their disposal can give us a better picture of their skills and knowledge to dispense rather than to compound. The simples were derived from plants, though many substances of animal or mineral origin were also used

mical drugs were used (Table 1). As the doctors did not know how to make remedies, they bought ready-made compounds and medicines and then sold them to patients. In addition, all apothecaries were required to give physicians 20% discount of the medicinal tariff prices, which was an extra profit over the state salary. Nevertheless, it was a guarantee that only substances of good quality will be in use, as explained in the 4th article. The most important change introduced by the 1866 Ordinance was the standard definition for the liability to keep portable medicine chests. District physicians were obliged to maintain and keep their pharmacies during the whole period of their post regardless of the existence or opening of an apothecary shop in the district. That was on account of their responsibility for providing health care and supervision over the whole district. As for the city, municipal or private doctors, they lost their independent status to keep the medicine chests if the new apothecary was opened within the region of their practice (SAS 1866).

When deciding whether to open a new apothecary shop in a district or not, the district physicians played a very important role. It was the physician's judgement of the municipality health care needs that home office valued the most, when giving a licence to a pharmacist. Usually that was more personal than professional judgement and sometimes caused problems for the pharmacists who felt left to the doctor's mercy. The “dispensing physicians” as we could

call them, earned quite a lot in those days, and naturally wanted to keep it that way. Pharmacists in turn were not too happy with the competition and wanted to gain the status of recognition in the public eyes. New pharmacies were opening up at such a slow rate that sometimes passed years after a successful applicant was finally given a license to open a pharmacy after several attempts. We found an interesting data record that could illustrate this kind of situation that took place in the district of Sabac in 1851. A district physician, by the name of Groder, attempted to prevent the opening of an apothecary shop in the city twice because of his own interests to sell drugs and medicines. Greedy as he was, in his third report to the Home Office Medical Department when explaining why “it should be inappropriate if apothecaries would spread all over the country”, he wrote by mistake the annual drug selling rate from his own medicine chests which was enormous. Needless to say, the Ministry promptly decided to grant a license to a pharmacist for opening a business in the town that proved to be a very successful one in its long working history (SAS 1856).

In order to prevent epidemic diseases some of the drugs were granted for free. The government also paid attention to suppress the widespread diseases, such as syphilis and cholera. There is also a record that potassium iodine was provided for the treatment of syphilis in the municipality of Sokobanja where patients got free hospital treatment (Marjanovic 1971b).

2.2. The supervision of contents and refill of medicine chests

Since 1830 pharmacy had been practised as an independent profession and as such it was a subject to state supervision. Given the widespread existence of fake drugs and other forms of business malpractice, pharmacies as well as portable medicine chests had to be supervised by government health officials. Although, it should be pointed out that apothecaries and physicians were men of standing reputation in the Serbian community in the past as they are nowadays. The district physician, usually with the local officials and chief pharmacist performed annual inspection of all the apothecaries' shops in the district. The chief pharmacist was a state function and the responsibility of the Home Office. Pavle Ilic, the chief pharmacist who was in charge of the state run pharmacy in the 19th century (1836–1859) was appointed to supervise and inspect the physicians' medicinal chests every four years. (Parojcic and Stupar 2001). Pavle Ilic, be it further noted, was the first appointed state chemist of the State Chemical Laboratory who performed his duties of supervision and examination of apothecaries at the new post until his death. Various documents dating from 1839 to 1863 mention different inspections of medicine chests made by Pavle Ilic. He had the authority to instruct physicians to destroy any medicines of doubtful quality and other toxic substances. Being a pharmacist himself, that only increased the ever-existing huge rivalry between the two professions. In 1863, the Home Office instructed him to inspect all registered physicians who kept portable medicine chests in Serbia. Primitive travelling and communication conditions made his task a heavy burden, along with performing inspection and supervision. During 1863 he managed to call upon ten practising doctors and one surgeon, as it is shown in Table 2. He was required to write a report to the Health Officials on every supervision he performed in order to protect the public and to ensure that all citizens had the access to safe and proper medication (Marjanovic 1966). The physicians themselves were expected to demonstrate a certain level of knowledge of drugs, ability to distinguish between genuine and fake medicines, and to be familiar with the weights, measures and drug prices. Many of the saved reports offer a great deal of insight into the medical and pharmaceutical services of "dispensing physicians" (SAS 1863a; SAS 1863b). One presented here refers to the supervision of Dr Antonio Groder who was the district physician in the city of Sabac for almost 17 years. He kept a small but well organised medicine

chest that was in a leather box locked in a separate room at his family house. He was carrying it around when attending the patients outside the town, and exceptionally for the emergence at night. The copy of the original archive document is presented to give a definitive view of what pharmaco-therapy was like in those days (Fig. 3). An inventory of drugs of Dr. Groder included commonly used medicines, from plant drugs, inorganic compounds, tinctures and oils to galenics such as emplastra, spirits, ointments and pills (SAS 1863a). Dr Groder, like many others, refilled his apothecary assortment from the nearest municipal pharmacy, because the Court pharmacy, which was the biggest supplier, was no longer operating. There is a record of many apothecary bills for district physicians who were buying medicines and equipment from the Court pharmacy (1836–1859) during the whole period of its existence (SAS 1859; SAS 1845). Which articles were purchased, we would never know, but judging by the dates and the sum of money spent, it could be concluded that those bought from the Court Pharmacy where on regular basis. In addition, the 25% discount was granted by government, as stated by the 1845 Regulations for the Court Pharmacy (SAS 1845). Dr Josif Pancic, the distinguished Serbian scientist and botanist, while working as a physician in the city of Jagodina, made an order worth 115 francs and 15 krajcars for the year 1846 alone. It was a large sum of money at that time (SAS 1847).

The legislative aspect of the medicine chests supply was defined by the 1865 Pharmacy Law, and its 15th act that reads: "Apothecary owners are obliged to supply physicians with all the simples and compounds they need for their portable medicine chests". The same year the first Serbian Pharmacopoeia and medical tariff were published which put to an end the Austrian *materia medica* and drug prices on the Serbian territory (ZAADPLO 1866). When attending the poor and very sick people, doctors sold the medicines calculated at the smallest scale sometimes even gave them free (i.e. drugs for sexual transmitted diseases). The vaccination was done on a regular basis for free. Drug prescriptions were sent to the Home Office Medical department for refunding. That was nothing new because the state run pharmacy used to operate in the same way (Parojcic and Stupar 2001; SAS 1859). It is interesting to add that some apothecary shops, such as the one of Djordje Krstic in Jagodina, used to supply many doctors in the districts nearby, which makes the picture of the pharmacy business at the turn of the century as a prosperous and developing one (Marjanovic 1972).

Table 2: All the municipal pharmacies (privately owned) and portable medicine chests supervised and inspected in Serbia during the year of 1863

	The municipality of Serbia with a pharmacy in 1863	Owners of the municipal pharmacies inspected in 1863	Physicians who owned medicine chests that were inspected in 1863
1	Pozarevac	Jovan Pokorni, BS Pharm	Dr Jeftimijades
2	Valjevo	there were no pharmacies	Dr Tesar
3	Uzice		Dr Simon
4	Karanovac (Kraljevo)		Dr Siber
5	Cacak		Dr Karalic
			Dr Trencin, surgeon
6	G. Milanovac		Dr Stevic
7	Kragujevac	Radosav Silic, BS Pharm	Dr Jankovic
8	Svilajnac		Dr Subotic
9	Smederevo	Jovan Dilber, BS Pharm	Dr Valenta
10	Sabac	Franja Ludvig, BS Pharm	Dr Groder

The State chemist Pavle Ilic, the former Chief pharmacist, made the inspection

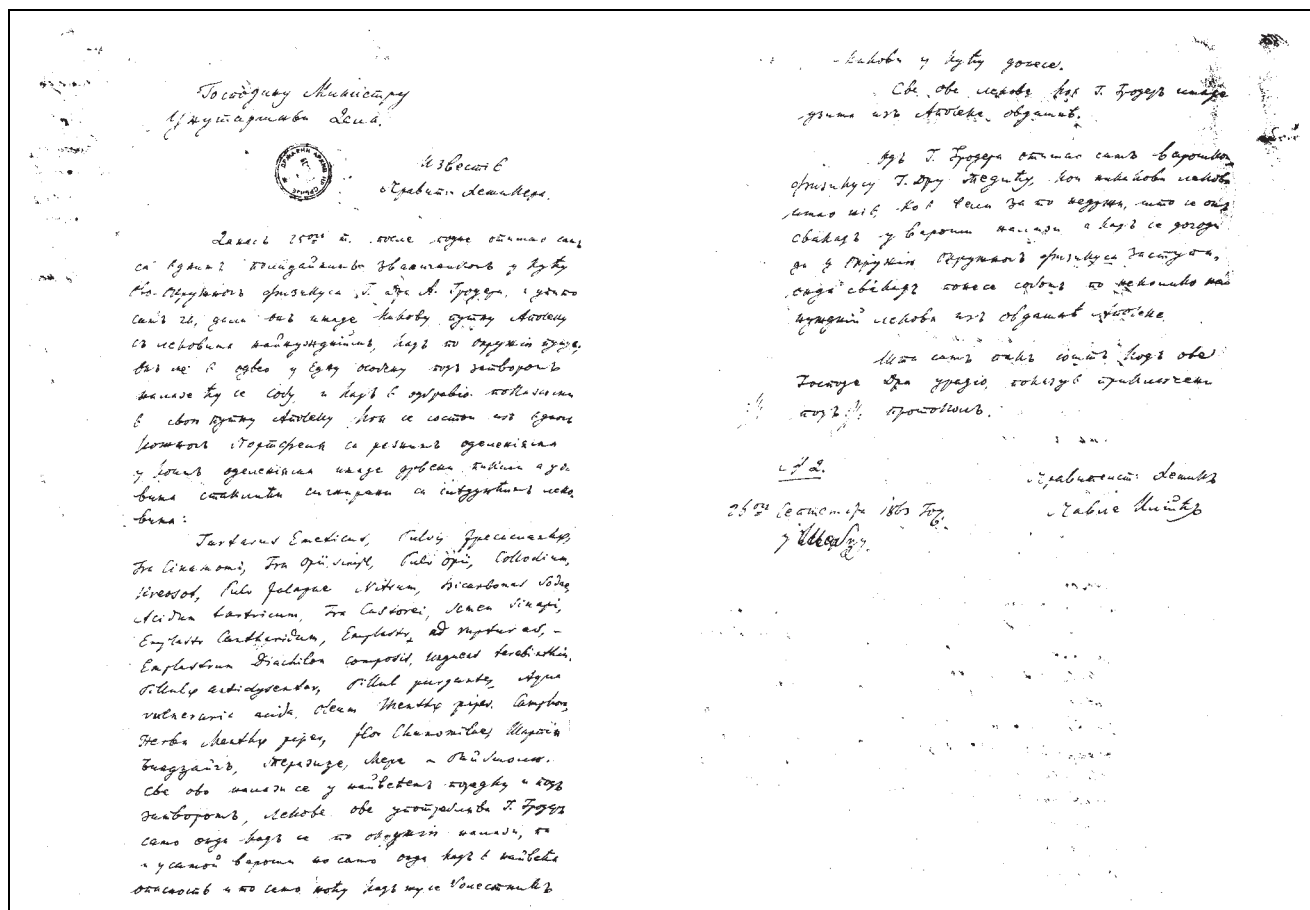


Fig. 3: The supervision report of Dr Groder's portable medicine chest made by State chemist Pavle Ilic on 25th September 1863 (State Archive of Serbia – Home Office, Medical department – SN-2191-1863)

2.3. Portable medicine chests in the first half of the 20th century

After the foundation of the Royal Yugoslavia in 1918, important structural changes took place – there were neither district nor municipal physicians in the Serbian pharmacy. The Ministry of Health was to subordinate the apothecary business, instead of the Ministry of Internal Affairs (Parojcic and Stupar 2001; Parojcic and Stupar 2002) Nevertheless, the growing number of physicians' medicine chests that were refilled from rather a small number of running pharmacies, made an urgent need to enforce some kind of regulations concerning the permission for keeping medicine chests. The provisions of the Pharmacy Law of 1930, which adopted the special *Regulations for keeping portable medicine chests* (Pravilnik o prirucnim apotekama lekara i veterinaru), governed the matter (ZUSSCNZ 1920). On December 18, 1931 a new regulation was passed which amended the 1930 Act and stayed in force until the 2nd World War. That set a standard that excluded any portable medicine chests in a place where there was a municipal or public apothecary shop. The most important change introduced by this new Act was obligatory one-month training in a hospital or community pharmacy. It was in order to teach them to compound the prescription remedies officially permitted to be kept in the medicine chests. The physicians had the power, due to this Act, to fill the prescriptions of other doctors who were practising in a place with no pharmacy. The veterinary doctors were allowed to keep a special kind of portable medicine chests with veterinary medicines only (PPALV 1932).

Some preserved archive documents which we have reviewed indicate that during the 20th century doctors usually kept their medicine chests in a separate room, locked at their homes. Doctors still called them portable medicine kits but they in fact were household medicine cabinets. What they had at their disposal beside drugs and medical preparations, were serums, vaccines and patent medicines as well as compounding equipment for decoct and infuse preparations. In addition, pill tiles, hand balances with weights, mortars and pestles of different sizes, vials, spoons, spatulas, hand lancets and cups were also listed. Of the dispensing articles, powder and pillboxes, capsules, as well as dispensing cups and bottles, were absolutely necessary. The list of 118 drugs and simples was changed when compared to the 1866 medicine list for portable chests. The new ones, *Morphinum hydrochloricum* and *Spiritus vini concentratum*, substituted some obsolete medicines such as *Acetas morphii* and *Spiritus vini rectificatus*. Many drugs introduced into the contemporary pharmaco-therapy were listed: *Antipyrin*, *Acidum-acetylo-salicylicum*, *Acidum carbolicum*, *Chloralum hydratum*, *Glycerinum*, *Liquor Ammoniae anisati*, *Teobrominum-natrii salicylicum*, *Cofeinum-natrii benzoas*. Following the regulations of 1931, each portable medicine chest should also have a copy of national Pharmacopoeia, medical tariff and price book for approved patent medicines. The requirement for the maintenance of a drug and poison register as well as compounding only upon receipt of the prescription, indicate that some physicians still had activities that included both medical and pharmaceutical services. Very few preserved documents of the mid-thirties indicate

that practising physicians mostly relayed on patent medicines and proprietary remedies that were ready to apply. The necessity for the vaccinations and disease control made doctors obliged to have enough vaccines and serums in stock. Those products were home manufactured and of a good quality. The medicine price was unique in the whole country. According to the 9th article, the following reduction was realised of the proscribed prices: for the healing specialities and dressing material – 20%; for drugs, chemicals and simple galenic compounds – 20%; for complex medicinal preparations made upon physicians request – 30%; and for serums, vaccines and mineral water – 10% (PPALV 1932).

At the beginning of the 20th century the specific kinds of portable medicine chests, such as Workers' Health Insurance Office Pharmacy and the Health Cooperative Societies Pharmacy emerged. Legally they were in the same position as doctor's portable medicine chests and will not be discussed separately in this paper (PAUOR 1932, ZZZ 1932).

In conclusion, portable medicine chests existed during the 19th and first half of the 20th century on the entire territory of Serbia. They played an important role in dispensing medicines to the patients in the locality with no pharmacy in various remote municipalities of Serbia. Our study shows that portable medicine chests were a special kind of pharmacies, kept and ran by the practising physicians (district, municipal, community, private) but supplied from the licensed apothecaries. It could be concluded that apothecary shops remained the health facilities for the licensed pharmacists to perform their art of chemical testing, compounding and preparing *secundem artem*. They were generally concerned with the dispensing medicines. Physicians on the other hand, performed their practice of medicine, and also were doing their own pharmaceutical work. It is evident, however, that they often provided medicines made by the pharmacists, rather than compounded them *ex tempore* from the equipment of their portable medicine chests. Finally, it must be pointed out that professional development of pharmacy practice in Serbia throughout the 19th century made significant changes of the content and the legal aspect of portable medicine chests.

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