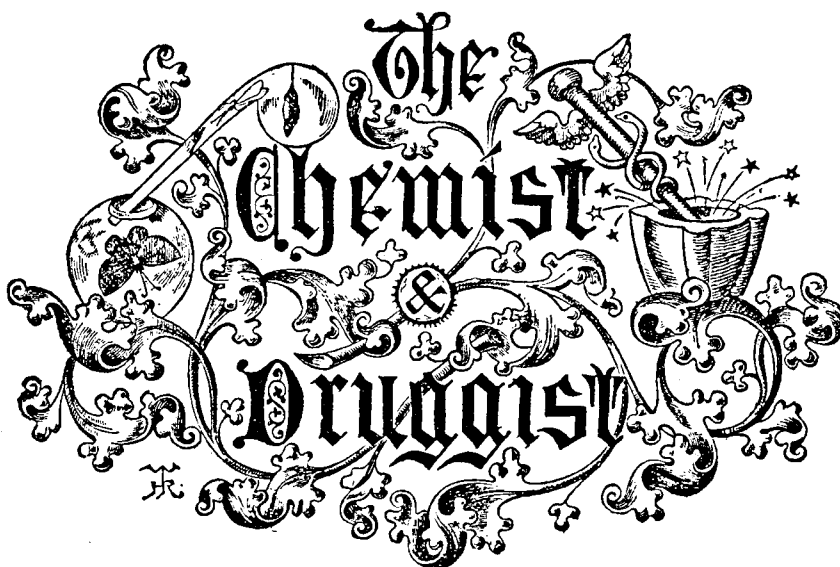


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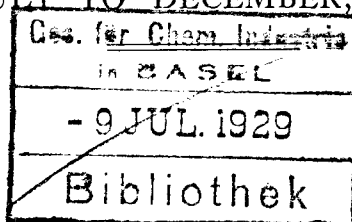
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## Pharmacy in Siberia

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ALTHOUGH Russia before the war, as an agricultural country, had only imperfectly developed manufacturing industries, the Russians, in spite of the fact that their industries stood on the bottom rung, were convinced that they possessed the richest country in the whole world. World famed, of course, are the gold veins in the Urals and Altai mountains and in the proximity of the rivers Ob, Irtysh, Lena, Jenisej and Amur, and it cannot be denied that in gold production Siberia occupies fourth place, and in platinum production the first. In the regions of the northern ice seas there are large graphite veins, yielding graphite of the same quality as that of Ceylon, and copper and iron ore deposits have been discovered also. In the Baikal mountains are untouched deposits of valuable elements such as bismuth, mercury, silver, gold. Kusnetzkoš, probably the largest coal-field in the world, is practically untouched, while smaller deposits at Anjarka, Sudjenka, Njertschinsk are used only for the railways. The utilisation of natural energy, "white coal" of the network of Siberian rivers, has not yet been attempted; in pre-war days in the whole of Siberia there was only one ironworks, and a complete lack of plant.

### DRUGS AND CHEMICALS

On the South Siberian Steppes there are thousands of small and large lakes containing sodium chloride, sodium and magnesium sulphate and iodine; but these natural sources of supply are never tapped. Russia, during the war, was compelled to import the whole of her iodine supply from Japan. This was of poor quality, and it is stated that tincture of iodine made with Japanese iodine when applied to wounds caused inflammation. All this went on while extraction could have been carried out from these inland seas or from marine algæ. Many drugs are to be found in Siberia: *Aganvis albus*, colophony, turpentine, liquorice root; and galbanum, asafetida and cinna seeds in Southern Siberia, as well as *Acorus calamus* and ergot. Although there are many dear drugs—e.g., musk, castor, rhubarb, nothing is done to further collection. The establishment of twenty experimental stations for agricultural research has failed to develop the cotton industry. Statistics for drug and chemical export and production would not show the real situation, as figures are compiled haphazardly.

### GALENICALS

With galenicals the position was the same, although in Tomsk about ten years before the war a central institute for manufacture was established with the aim of providing all Siberian pharmacies with these preparations. A spirit distillery and glass-blowing establishment were set up in conjunction with the institute, and up to the outbreak of war, although large stocks of crude drugs had been collected, and spirit and glassware were ready for delivery, the institute had failed to produce a single galenical, and the colossal stocks of alcohol and glassware were a nuisance.

On account of the prohibition on alcohol, absolute spirit was only doled out in small quantities, so that the preparation of medicines requiring the use of alcohol was only possible on the smallest scale. The ministry during Admiral Koltshak's régime asked me to take charge of this institute and set it in operation, on the condition that I became a Russian citizen. As I could not come to terms with them on this basis, in the beginning of 1919, it was then proposed that I should be appointed provisional director. This proposal remained at Omsk until the fall of Koltshak in January 1920, and so for over a year the institute did not function at all, and pharmacies were without provision of medicaments, an example of indolence and "do nothing" on the part of the Russian authorities. The Siberian pharmacies suffered a shortage not only of drugs and chemicals, but also of cosmetics, powders, tooth-powders, mouth washes, perfumes, pomades, etc. What articles of this class were on the market were not made by the Siberian druggists

themselves, but by the prisoners of war. In Tomsk prisoners-of-war camp tooth-powder was made as follows: Large masses of chalk were scraped to powder with a knife, the powder sprinkled with oil of mint, damped, mixed and sold in artistic boxes with directions in French. Starch was not to be had in all Siberia—in a land rich in cereal crops—and under my direction a few of my fellow unfortunates solved the problem by setting up a little starch factory. The most important question was packing these preparations. At Tomsk internment camp beautiful labels were turned out bearing the names of mythical foreign firms. The inscription on the labels was the most important factor with the Siberian public, and it mattered little as to the contents as long as the wares bore the phrase of "Zapad" (Western) origin, this to all Russians being a magical quarter of the globe.

### TOWN AND COUNTRY PHARMACIES

While town pharmacies are more or less similar to those in Central Europe, in the lesser towns and villages, as well as on the Manchuria-Siberian frontier, the only thing in common that establishments for the sale of remedial agents have is the title "pharmacy." Here they are akin to the "ruwa obat" or Chinese houses where medicines are sold. At these places, besides drugs, the following articles are usually on sale:—Meal, potatoes, salt, books, vegetables, tobacco and haberdashery. Larger pharmacies further east, e.g., in Charbin, Hajlar, and Vladivostok, are splendidly fitted, yet the pharmacist lives in the lap of luxury and in abject misery alternatively. After the fall of the Tsarist régime conditions in Siberian pharmacies went from bad to worse. The pharmacies were immediately nationalised, former proprietors deported, and, instead of private initiative, bureaucracy reigned. In a pharmacy in Njischni Udinsk, where before the revolution only two pharmacists were needed, it was suddenly found there was need for eighteen. It is not hard to imagine how these highly organised pharmacies have functioned. The whole position of the Siberian chemical and pharmaceutical situation is explained by the crass indolence and apathy displayed on the part of the Government and total absence of any spirit of development and specialised knowledge in the several fields of operations.

### GOVERNMENT APATHY

Another example of ignorance and apathy is that in 1916-17 a Swedish chemical firm advertised daily in the Tsarist paper "Novoe Vremja" that they were prepared to buy on favourable terms large quantities of pyrolusite ( $MnO_2$ ), and gave an undertaking to the effect that the exportation of the mineral out of Sweden would not take place. It is quite true that the manganese dioxide was not re-exported, but chlorine certainly was! The Germans understood thoroughly how to make use of the Russian semi-official paper also, and circulated the information that chlorine for the gas warfare was all being manufactured in Germany. It is surprising that the Government was not made alive to this method of procuring chlorine. At the time of Admiral Koltshak's régime the "patres patriæ Siberiæ," on account of the dearth of several important medicaments, determined to end this evil by a decree, and accordingly several of the larger Siberian towns were commanded to make certain quantities of chemicals. At Tomsk Technical Institute, collodion had to be prepared, and at the University urotropine, xeroform, ether, salicylic acid and chloroform. In order to do this, not Russian chemists but prisoners of war from Tomsk internment camp were called upon. A chemist-engineer of Vienna received the commission to prepare collodion for Koltshak's army, while the professor of chemistry at Tomsk University and his assistants took an active part in various political conferences. Collodion was the only article manufactured although there was much raw material at hand for the preparation of chloroform and ether. In Siberia, although there are huge quantities of the requisite raw materials to establish the chemical industry, as well as appreciable quantities of drugs and unlimited natural energy, no industry will ever be established, as there are no skilled technicians owing to the complete annihilation of private enterprise.