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PREFACE

You will not earn money if you do not allow others to make money.
Confucius

The One Belt One Road Initiative is the new azimuth of the growth of the Chinese economy.

Issue number 15 of the *Review of Applied Science* (which has been published in cooperation with the Opole Confucius Institute) is entirely devoted to the economic, political and social aspects of the trans-continental railway known as the One Belt One Road, which not only created high hopes and expectations but is often a source of concern. The authors refer to the traditional shipping route of Chinese goods as the Silk Road, during the time when the most desirable and expansive goods such as silk and porcelain came to the European continent as the goods made in China at that time were synonymous with high quality and sophisticated tastes. The contemporary re-branding of the Silk Road as the One Belt One Road is both a powerful economic project as well as a challenge for China and its trade partners. The project officially announced by Xi Jinping in September 2013 at the Nazarbayeva University in Astana, supported by a \$ 40 billion fundraising campaign, is an important instrument for China's economic expansion as part of its Go Global strategy. One Belt One Road is a crowning factor in the success of the Chinese economy and China's search for new, efficient growth engines. The Silk Road Renaissance – One Belt One Road is a groundbreaking event in modern history which is thought to be at a level of importance equal to that of the industrial revolution. The project fits perfectly into the current stage of China's development, which as the world's second largest economy has the production and economic capacity to keep the One Belt One Road idea filled with content. This project opens the door for Westerners to participate in China's success. It is also an eloquent marketing element of the Middle Kingdom's strategy, referring to that period of great Chinese power. One Belt One Road has also been included in Xi Jinping's renaissance programme for the Chinese nation. The One Belt One Road Initiative, like the sage Confucius of 2500 years ago, has become a token of Chinese cultural expansion of soft power which is an element of conscious and effective participation in the process of globalization with unprecedented strength and reach.

The article written by P. Misiurski and R. Śmietański, which opens the issue number 15 of *Review of Applied Science*, presents the Silk Road throughout the eighteen centuries since its inception through the prism of a series of groundbreaking events based on the Silk Road's changing nature and function:

- Until the 3rd century the Silk Road was dominated by four empires: the Roman Empire (Mediterranean territory), the Parthian Empire (Middle East), the Kushan Empire (India, Afghanistan, and Central Asia) and the Han Empire (China).
- The period from the turn of the 7th through the end of the 8th century when the Silk Road was controlled by the Khanate of Turkey.
- After 751, as a result of the battle between the Caliphate army that defeated the Chinese army, the Chinese began to lose control over Central Asia. Consequently, the dominance over the Silk Road, until the end of its existence, was taken over by Muslim and Jewish merchants.
- The 16th century when the landline Silk Road collapsed due to the development of the merchant navy.

Authors emphasize that the ancient Silk Route was developed based on the pre-existing trade routes in Asia: “Lazurite Route” and “Jade Trail”. The Silk Road accelerated the development of the areas through which it ran. Along the entire length of the route new cities, banks and companies were established. The organization of long-distance trade forced the development of logistic infrastructure: transshipment points, specialized marketplaces and a system of stable monetary exchange agreements as well as protection of the property rights of foreign merchants. The Silk Road became a channel for the exchange of new goods and information and helped in spreading innovation between the civilizations of Eurasia as well as the penetration of religion and multiculturalism because intense and regular economic relations led also to a cultural convergence. In the second part of the article, the authors analyze the role of the contemporary concept of reactivation of the One Belt One Road Silk Road. The programme of international cooperation in the field of transportation of freight between the European Union and partner countries – Georgia, Armenia, Azerbaijan, Moldova, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Bulgaria, Romania and Turkey named TRACECA, is funded from the budget of the European Union. The authors analyze the determinants of China's spectacular economic growth at the turn of the 20th and 21st centuries. They focus on the high rates of internal savings, the supply of foreign capital and the positive trade balance to a large extent generated by the production of foreign corporations. The contemporary international One Belt One Road Initiative, which perfectly integrates into the era of globalization, has the chance to support the spectacular economic growth that has made China the second largest world economy. The authors point out the very location of the One Belt One Road startup station in Chendu and not on the rich Chinese coast, which is undoubtedly an element of Chinese policy that promotes not only the pace of growth, but also its sustainability. As the authors indicate, railway connections will not only shorten the time needed to transport goods from China to Europe, but is a cost-effective and equally ecologically viable alternative to maritime and air transport. Poland has a chance to play a significant role as a buffer state for Western Europe. It is favored by the geographical location and

the positive relationship with China. The authors also point out the economies of Germany, the Netherlands and Switzerland have a positive trade balance with China. This seems to prove that absorbent Chinese market can improve asymmetry in the trade balances with other European countries.

The Chinese economy has grown while becoming the EU's leading trade partner, unfortunately in the process also generating a growing imbalance in trade relationships with UE countries. M. Bernat and A. Drozd-Tereszkiwcz analyzed the causes of this phenomenon and also indicated the problem of the difference in perception of the very essence of the strategic partnership to which both EU and China aspire. The article attempts to answer the questions about the source of the growing predominance of the Middle Kingdom in trade relationships with the EU and the reasons for the growing dependence on China. At the same time, the authors examine the origins of the Chinese growth phenomenon, which they perceive as a part of a specific model of transformation known as the Beijing Consensus, which incorporates the synergy of the market mechanisms and central control, coupled with the broad openness of the economy, which is also however, at the same time deeply rooted in the country's culture. The origins of the imbalance date back to 1997. In 2010 the imbalance reached € 168.8 billion. According to the authors the sources of the imbalance include the barriers to access to the Chinese market, the lack of equality of European enterprises as investors in China, limited access to public procurement in China, and the limited protection in China of intellectual property rights. The authors also point out the difficulties in mutual commercial relationships, which is the so-called underestimation of the value of yuan as well as the essence of the different perceptions of strategic partnership for both China and EU. For the EU this is a still ongoing process, the so-called “maturing strategic partnership”, which requires content corresponding to both parties. China, however, takes the partnership for granted and accuses the European side of failing to meet all the requirements of this kind of relationship.

Y. Yavorska analyzes the source of the economic growth marathon (nearly four decades) of the Chinese tiger as being unprecedented in modern history. The author focuses primarily on the analysis of key factors conditioned by the culturally high propensity to save which along with foreign capital, is a fuel for growth, the enormous supply of cheap labor, which today is also a powerful group of affluent middle class consumers and finally the opening for economic globalization. Among the key cultural attributes, Yavorska highlights the concepts of “miànzi” (面子) – face, guānxi (關係) – interpersonal relationships, jiéjiǎn 節儉 (节俭) – savings, and rénjì héxié (人際和協) – harmonious development and the economic interaction between these concepts. Confucianism is the philosophy that binds the specific management approach which is characteristic of Asian tigers. The author indicates September 17, 2001 as a breaking point for the development of China in the age of globalization, signifying China's accession into the World Trade Organization when, after two

decades of intense absorption of foreign capital, it has become an active investor competing with western economies.

The article by M. Bernat and A. Michowska entitled “The Luxurious Dragon” examines the phenomenon of a country which in the 1970s struggled with the specter of hunger, but due to a successful economic transformation was promoted to a world leader in consumption of luxury goods. The main part of the Chinese consumption mechanism is a segment of 300 million middle-class people, which is systematically growing. The authors show the profile of Chinese consumption in its most sophisticated segment in the context of the changes taking place in the Chinese economy and society, and at the same time they identify opportunities for Polish manufacturers of luxury goods. The cultural aspect of the Chinese economy is also quite significant because of the clash of Confucian thrift and pragmatism with the prestige of the goods of the famous European brands like Louis Vuitton and Gucci. The period of over two decades of dynamic development of luxury consumption in the Middle Kingdom is also accompanied by the evident evolution of luxury consumers who now choose refined goods, yet avoid the ostentatious display of well-known brands that are perceived as a manifestation of bad taste.

M. Izdebski analyzes the political and infrastructural conditions of The One Belt One Road Initiative, whose implementation at this stage must be assessed in a theoretical and political way rather than in terms of its real economic effects, as evidenced by a series of discovered obstacles. This project was largely based on an obsolete infrastructure created in the Soviet Union, which prolongs the delivery time and raises the risk of lack of timeliness. In this respect, One Belt One Road is no longer competitive to the alternative sea route. Improving the quality of railway infrastructure is inevitable but requires capital expenditures undertaken autonomously by the participating countries or financed by Chinese funds. The second form of financing the modernization of the railway infrastructure is dependent. As a result, it allows the Chinese to use it as a bargaining chip in its relations with the countries participating in the project. Based on an analysis of the project, the political dependencies treated as a sphere of influence can exacerbate relations with the United States. This is of special significance after President Trump's take over. China's political approach to the project partners may trigger adverse reactions within the United States. The author assesses the corridor running through Kazakhstan, Russia, Belarus to Poland as the most politically stable, however not unchallenged compared to the south and central corridors which are passing through the more unstable regions of Turkey and Iraq. The author points to a number of potential unfavorable factors, such as the quality of border management, delays in supplies, corruption and embezzlement of funds, which could ultimately offset the economic benefits of a project approved at the interstate level.

The article by K. Mazur-Kajta is based on two areas of analysis: traditional and historical connections with the Silk Road and contemporary research results related to an evaluation of the One Belt One Road Initiative by the managers of

the Opole region. The author attempts to explain the process of opening China to the outside world in the context of trade. She also discusses the relative isolation of China resulting from the Chinese belief that there is no need for such outside trade relationships.

This culturally based sense of economic self-sufficiency is also reflected in the alternative name of China – “Middle Kingdom” (中国) pointing to the central location of this country on the map of the world and a strong sense of the Chinese about their superiority. Despite the barriers to internationalization which existed since ancient times, foreign trade relationships were established. Their essential element was the Silk Road. Silk as a luxury good became such a very desirable and dominant Chinese commodity in trade that the most famous commercial route includes the word “silk” in its name (丝绸之路). The modern opening of China to the world has occurred only since 1979 under the rule of Deng Xiaoping (邓小平). By initiating social and economic reforms Deng Xiaoping encouraged Chinese people to prosper and to that end he opened up China to foreign investment. In the 20th century, the international transport programme (Transport Corridor Europe-Caucasus-Asia – TRACECA) was launched. TRACECA includes 14 countries of the European Union, the Caucasus and Central Asia which were willing to cooperate in order to revive the ancient Silk Road. The One Belt One Road Initiative aims to expand the Chinese market to more consumers and to also strengthen the PRC's global position, especially towards the United States and Russia. Kajta points out that although The One Belt One Road Initiative is still at a stage in which its general assumptions and development plans need to be clarified, her research indirectly serves this purpose. The research which was conducted from December 2, 2015 to February 29, 2016 was based on a representative sample of enterprises in the Opole region. The aim of the research was to identify the expectations and plans of entrepreneurs in the Opole Silesia region in terms of establishing cooperation and an exchange of goods with the People's Republic of China and to assess their knowledge about The One Belt One Road Initiative. The study, which is described in the article, identifies a very clear need for more detailed information on The One Belt One Road and the opportunities for cooperation with Chinese partners.

W. Musialik in her article analyzes the effects of the Silk Road of the past based on the botanical changes in the European flora as a result of the introduction of plants originated from the areas of the Silk Road. The author points to specific examples of plants which, consciously or unconsciously, were transferred to Europe: peaches, Chinese sugar plant, black mulberry as a silk moth's fodder, Chinese radish, Chinese cucumbers. All of these plants which acclimatized in Europe over time originated in China.

Maria Bernat

Wanda MUSIALIK

INTRODUCTION OF FLORA FROM THE SILK ROAD AREA IN EUROPE

欧洲从丝绸之路地区引进的植物群介绍

Abstract: The descriptions of efforts to acclimatize Asian plants in Europe date back to the expeditions of Alexander the Great. Similar attempts were also made when the Middle Kingdom opened for foreigners. The following analysis presents chronologically the examples of plants from the Middle East and the Far East introduced into European crops. The author's attention was drawn to the state of knowledge presented in Polish publications published from the end of the 18th century to the first decades of the 20th century.

尝试将亚洲植物落户欧洲的描述可追溯到亚历山大大帝的探险。当中央帝国对外国人开放时，也做过类似的尝试。以下分析按时间顺序列出了从中东和远东引进欧洲的植物实例。作者注意到18世纪末至20世纪前十年波兰出版物所展现的知识水平。

Keywords: flora, introduction, Europe, plants.

INTRODUKCJA FLORY Z JEDWABNEGO SZLAKU DO EUROPY

Streszczenie: Opisy wysiłków na rzecz aklimatyzacji roślin azjatyckich w Europie sięgają czasów ekspedycji Aleksandra Wielkiego. Podobne próby podjęto również, gdy Państwo Środka otworzyło się na obcokrajowców. Poniższa analiza przedstawia chronologicznie przykłady roślin z Bliskiego Wschodu i Dalekiego Wschodu wprowadzonych do upraw europejskich. Autorka zwróciła uwagę na stan wiedzy przedstawiony w polskich publikacjach opublikowanych od końca XVIII w. do pierwszych dekad XX wieku.

Słowa kluczowe: flora, introdukcja, Europa, rośliny.

1. INTRODUCTION

Currently, the introduction of species of foreign origin into flora is called “introduction” and the plant itself is called an “exotic”. [Kolasiński, Borycka 2013: 1-2]. Such process can take place without informed human participation. Such were the first displacements of plants from their primary habitat. The displacements were favored by the migrating birds that transported the seeds of their food into their stomachs and spread the seeds with the faeces over the area of the flight. Animal

hair also transported seeds. The fruiting bodies of the plants covering the seeds were caught in furs, moles and tails and transmitted during the migration of wild animals. [Knoblauch 1900: 89, 387; Roo-Zielińska 2004: 53]. Also domestic animals transported the seeds in their hair when moving along with humans. The process accelerated when humans consciously started to acclimatize the plants from other climatic areas to European conditions. Plants that expanded their habitat due to human intervention are called synanthropic plants. In order to scientifically classify these plants, different criteria were used, including the origin of the species, the time of arrival in a given area or the level of domestication. [Tokarska-Guzik, Dajdok 2012: 18].

The plants from the areas of the Silk Road “arrived” to the Old Continent at the end of the 15th century (archeofites), and after the discovery of the North America (kenophytes) [Tokarska-Guzik, Dajdok 2012: 18]. The great geographic discoveries are claimed to be a milestone for this division of the introduction process due to which new plants expanded their habitat. The above classification has been used in this study. The suitability of plants in satisfying utilitarian human needs has also been considered in this study. Therefore, the Author has been primarily interested in crops. The term “Silk Road” has been adopted symbolically for the network of trade routes connecting the continental area of Western, Southern and Eastern Asia

2. EXAMPLES OF ACCLIMATIZATION TESTIMONIES UNTIL THE 16TH CENTURY (ARCHEOFITES)

The first reference to informed acclimatization of Asian plants in Europe concerns the orders of Alexander the Great. In 334 B.C, during his great expedition to Persia and India, Macedonian ruler asked special observers to search for unknown plants that could be useful in Hellenic medicine or agriculture.

Stone plants

Among others, Greek warriors noticed oranges. At that time citrus plants were cultivated on the southern and western slopes of the Himalayas. The Chinese started growing citrus plants around the year 200 B.C. Plants found by Greek observers were sent by Teofrast from Eresos, who is considered the “father of botany”. In his work “Research on Plants” Teofrast described citrus trials in Europe [Zielinski 1835: 45; Bill 1875: 339].

The Romans were associated with the European history of walnut (*Juglans regia*). The findings from the 19th century indicated that the walnut tree originated from ancient Persia, where it was reserved for the royal family. For this reason walnut was also called Persian nut. Merchants who traveled along the Silk Road between Asia and the Middle East used these nuts for trade. The brew of walnut leaves and tree shells was used for dyeing wool and silk for brown color. Unripe walnut fruits were used for jams and liqueurs. Ripe walnut fruits were used to make almond oil and dish oil, which was also used for lighting and in the chalcography. Walnut wood was sought by carpenters and turners [Zielinski 1835; Bill 1875: 282].

Peach, which originates from Persia, was also discovered and brought to Europe by Greeks and Romans. Apricots, Hungarian plums and cherries also originate from the East. In the 19th century some of these species grew wildly outside gardens and orchards [Dzieje 1857: 213; Müller 1867: 94; Bill 1875: 304, 305; Księga 1899: 98].

Cereals

In the times of the Crusades buckwheat (*Polygonum fagopyrum*) was brought from Asia to Europe [Wyżycki 1845: 256; Brzezniccki 1858: 11]. The plant, also known as the hump, grew on sandy soils and sometimes replaced traditional cereals. Buckwheat flour was used to make pancakes and noodles. The grain was also used as “black buckwheat porridge” to feed poultry [Księga 1899: 287]. Common millet (*Panicum miliaceum*) originates from East India [Brzezniccki 1856: 33]. It is said that Arabs introduced rice in Europe however ancient Greeks knew it [Bucka 1873: 39]. Millet groats (*Panicum miliaceum*) are also brought to Europe from East India. However, the time of introduction is unknown [Wyżycki 1845: 250].

Sugar plants

In 800, Arabs from the South Asia brought Chinese sugar plant (*Saccharum officinarum*) to the Mediterranean Basin. In the 12th century plantations were established in Cyprus, from where the sugarcane was brought to Sicily, Malta, Rhodes and Madeira, as well as the Caribbean Islands [Jundziłł 1799: 30; Bill 1875: 133].

Silkworm fodder

In 1845 Józef Gerald Wiżyński, a Vilnius botanist, claimed that the Romans brought black mulberry from Persia. Mulberry's leaves were not very useful for silkworms, therefore, they were rather cultivated for the taste of the fruits. In the 12th century when the Italians developed silkworm cultivation white mulberry was brought to Europe from Asia [Wyżycki 1845: 87, 90]. However, in 1856, it was reported that the mulberry cultivated by Europeans came from Persia and India [O hodowaniu 1856: 2]. Until the 16th century, silkworm maggots were fed with white mulberry leaves, which came from Indian gardens. In the 17th century the black mulberry was brought to the Old Continent [Dzieje 1857: 213].

3. EXAMPLES OF ACCLIMATIZATION FROM THE 16TH CENTURY

New fodder for silkworms

In 1865, a new type of silkworm from China (*Ailantus*) had been introduced in Europe and had been reported as “recent” [Śliwa, 1865: 119]. However, it was unknown when exactly it happened and thanks to whom. Two hundred years later, the tree was planted more often because of its ornamental value. In 1751 under similar circumstances a tree of heaven (*Ailanthus altissima*) was planted in Europe. The leaves of this tree served as food to the maggots of one of the silkworm species [Księga 1899: 57; Bożodrzew 2017]. According to the encyclopedia of Warsaw

“[o]ne type of silkworm lived on *Ailanthus altissima* but the results were not satisfying enough”. Wood from this tree was used for furniture polishing because of its “satin shine” [Księga 1899: 57].

In Poland, the cultivation of mulberry started in the second half of the 19th century. It was estimated that 30,000 mulberry trees grew in Galicia at that time [Brzeznicki 1856: 30]. The bankruptcy of some Polish economic societies as a result of repression after the January Uprising (1863) hindered the functioning of one of the first silk companies. The company supported the idea of setting up a mulberry orchard in Czyste near Warsaw⁹. Eight years after planting, trees were wasted as deprived of proper care. Similarly, because of the death of Adolf Bogucki who was the founder of mulberry nursery in Kogucin near Warsaw, mulberry trees did not survive [Historia 1928: 10]. Cultivation of mulberry was also promoted in Silesian Cieszyn by The Silesian Silk Society in Opava. The Society's board of directors won cash prizes “for excellent efforts in cultivating mulberry and silkworm”. In 1865 Jan Drozd won this prize [Z Cieszyna 1865: 80].

Fodder crops

In the 1850s planting of chestnuts was popular. In 1835 it was claimed that the chestnut tree originated from the basin of the Black Sea [Zielinski 1835: 53]. Ten years later, the area of origin was simply described as the “Northern Asia” [Wyżycki 1845: 54]. According to Julien Joseph Virey (1775-1813), who was a Parisian professor in natural history chestnut originated from India and was known in Europe thanks to Carolus Clusius [Virey 1844: 9]. Fifty years earlier, Fr. Bonifacy Stanisław Jundziłł noted that around 1550 chestnut tree was brought by Carolus Clusius from Asia to the capital of the Austrian Empire [Jundziłł 1799: 167]. A hundred years later it was claimed that the chestnut came from Tibet [Księga 1899: 369]. The first specimen of the chestnut grew in Vienna in 1576 thanks to the Dutch botanist Carolus Clusius. The tree was sprouting from seeds donated by Baron Ungnad, Austrian representative at the Turkish court in Istanbul. [Bill 1875: 271]. The popularity of the new plant could be measured by the hand-planting of chestnut seeds by Tsar Peter the Great in his imperial garden in Riga [Wyżycki 1845: 54]. Other publications included only general characteristics of chestnut's origin. It was reported that the chestnut arrived to Europe at the end of the 16th century from the mountainous parts of Eastern India. The descriptions referred to it as to “bitter chestnut” [Dyakowski 1900: 197].

This name indirectly indicated a disappointment to previous information suggesting the possibility of using chestnut as a fodder. It was claimed that after some preparation, the chestnut fruit would have been useful for feeding bovine animals, horses, sheep, goats, pigs, poultry, birds and deer. It was also believed that the leaves of the chestnut tree were used as fodder. During the European acclimatization, a rumor was spread that the chestnut flour was used to bake bread

⁹ Czyste – The estate founded by Charles Schultz which dates back to the 18th century. It was built on the battlefield of the Northern War (1705). www.warszawa.wikia.com/wiki/Czyste 11.03.2017.

over the Black Sea [Zielinski 1835: 53]. The information was checked, for example, in Saxony, where the pulverized pulp was used to replace 1/3 the proportion of rye flour necessary for this baking [Brzeznicki 1858: 15]. However, this solution was not widely accepted. At the end of the 18th century in Germany and England the attempts to refine the chestnut tree failed. [Jundził 1799: 167]. A hundred years later, apart from the aesthetic qualities of chestnut trees [Virey, 1844: 9] it was also noted that its “wood is good for production: bark contains tannin; fruit contains starch” [Księga 1899: 369]. However, the attempts of using chestnut bark and fruits in non-agricultural branches were also unsuccessful. Previously this tree was promoted based on the information that in Turkey chestnut shells served as brown and black dyes, seeds were used to feed “broken-winded” horses, and pressed oil was used for lighting and production of vodka [Bill 1875: 271-272].

On contrary, the Chinese alfalfa appeared to be quite successful. Alfalfa was brought to Italy by the Romans, but after the fall of the Empire it disappeared from Italian fields [Kohn 1858: 99]. In 1867, alfalfa was planted in plots of the Acclimatization Society, located under Moabit in Berlin. Berlin's nursery experience has been rated positively. It was announced that the plant would be quickly introduced for wider cultivation. It could be used as animal feed and “rich harvest” [Brzeznicki 1858: VIII; Chińska lucerna 1867: 275].

The introduction of wheat spelt (*Triticum spelta*) was also positively assessed. Wheat spelt came to Europe from Persia. However, the time of acclimatization is unknown. In the 1850s wheat spelt was cultivated “in many European countries”. According to Lviv experience, wheat spelt was useful “as a hay for cattle”, similarly to wheat [Brzeznicki 1858: 37].

Industrial plants

In Cieszyn Silesia efforts were made to check the suitability of Chinese potato. [*Chińskie* 1859: 52]. At the same time “Chinese potato” was promoted as fodder in Lviv. Also in Poland attempts were made to introduce this plant not long after it was brought to Europe. In 1850 its first specimens were brought from China to Paris [Brzeznicki 1858: 14].

In the Greater Poland, similar efforts were made in case of Chinese sugar plant (*Saccharum officinarum*) [Nowa chińska 1854: 109]. This plant reached the Greater Poland in in the 1850s [Nowa chińska 1854: 109]. According to school textbooks, this “sugar cane” was brought to Europe during the Crusades [Bill 1875: 133]. In the 19th century, this plant became more interesting than sugar beet because of the amount of sugar obtained from a comparable land area [Nowa chińska 1854: 109]. In 1858 in Hungary the sugar bush (*Sorghum saccharatum*) was cultivated because of its sugar content. At that time sugar bush which came from “East India and Arabia” was also cultivated experimentally in Germany [Brzeznicki 1858: 10].

In the next decade farmers from the Greater Poland found out about Chinese oil radish (*Chinesischer oelrettig*). According to the “Universal Encyclopedia” of Samuel Orgelbrand ship doctor Carl Gustav Ekeberg (1716-1784) was the first to brought Chinese oil radish from China to Sweden and then to Italy and Germany [Rośliny 1866: 295]. In the Greater Poland this kind of radish was introduced by

Włodzimierz Adolf Wolniewicz (1779-1852), the pioneer of agricultural progress. Wolniewicz's observations were published in "Ziemiańin". According to Wolniewicz's report, leaves, flowers and pods of Chinese oil radish were very similar to garden radish. In addition, Chinese oil radish was characterized by a short growing period. Sown in early or mid-May, maturing in the second half of August. The harvest did not cause any major problems and during the mowing the ripe pods did not open. The harvested grain might produce 41 pounds (20.5 kg) of white cooking oil from 100 pounds of radish¹⁰ (about 50 kg). According to Wolniewicz, this was the only benefit of this plant. He did not confirm the suitability of straw and pods in feeding domestic cattle [Wolniewicz 1875: 69].

Cereals

In the 1890s it was reported in the Greater Poland grains called *gaolon* were cultivated in Russia. *Gaolon* came to Europe from the southern China. If ground grain of *gaolon* would be mixed in 1/3 with wholemeal flour it would provide "good bread", and could also replace barley groats. The grain was resistant to drought, and yielded plentiful yields. In addition, its grain did not spill out of the ears, therefore, it could stand in the field until late autumn. When mown in the green state *gaolon* became an excellent feed for cattle [W Europie 1892: 193]. In spite of many advantages of this grain, no further information was found.

Vegetables

Long Chinese cucumbers were recommended for amateur cultivation. Caring for their growth was considered "too expensive for trade" [E. J. 1880: 36]. The image of cucumber was invoked to describe the "pear of love" that is the eggplant from Asia which was grown in "warmer European countries" at the end of the 19th century [Księga 1899: 52]. Pumpkins which came from the East India were found in Moldavia, Besarabia and Bukowina. Several species were cultivated there [Bill 1875: 256-257]. Asparagus (*Asparagus officinalis*) also came from East India [Księga 1899: 154]. Rhubarb (*Rheum palmatum L.*) and sorrel (*Rumex L.*) also came from China and "Tartary" [Bill 1875: 186, 313]. However, publications about these vegetables did not indicate when they were introduced in Europe.

4. CONCLUSIONS

Problems in introducing Chinese plants in Polish publications from the 19th century.

In the 19th century, the method used in the natural sciences to describe plants was provided by Swedish botanist Charles Linneus (1707-1778). According to his classification, plants may be divided either by a specific area they grow in or by their specific functional properties. In the general descriptions of plants, the place of their origin was rarely determined. Representatives of the flora, originating from the Silk Road area were not specifically identified.

¹⁰ After 1858 in Prussia one pound equated 0.5 kg.

Based on a review of school textbooks, agricultural guides, agricultural newspapers, and encyclopaedic publications, the reference to the Silk Road area was found in case of 6 stone trees, 4 cereals, 1 sugar plant, 4 "silkworm feeders", 3 fodder plants and 6 vegetables. Most of these plants were introduced in Europe in the 19th century.

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