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## *Polish Salt-Mines as a State Enterprise (XIIIth-XVIIIth Centuries)*

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The rock-salt mines Wieliczka and Bochnia near Cracow were the greatest industrial enterprise in pre-Congress Poland.<sup>1</sup> These mines and Red Ruthenia, a smaller centre for salt springs and salt manufacture (Przamysl, Drahobyecz and Stara Sól), were owned by the state. Since 1590, when the royal treasury was separated from the state treasury, these mines formed part of the economic estate. The revenue from this estate covered the expenses of the royal court. After the first partition of Poland (1772) both mines were appropriated by the Austrian monarchy.

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<sup>1</sup> The salt-mines Wieliczka and Bochnia have been examined in a considerable number of monographies and papers. The most important studies are: R. RYBARESKI, *Wielickie żupy solne w latach 1497-1594* (The saltwork Wieliczka in 1497-1594, Warszawa 1932); A. KECKOWA, *Solnictwo* (The salt) in *Zarys górnictwa na ziemiach polskich* (A short history of Polish mining), v. I, Katowice 1960, pp. 66-119; A. KECKOWA, *Żupy krakowskie w XVI-XVIII wieku*, (The Kraków saltworks in XVIth-XVIIIth centuries), Wrocław 1969; J. WYROZUMSKI, *Wazelnie soli krakowskiej na prograniczu łąsko-opolskim w drugiej połowie XVI i pierwszej połowie XVII wieku* (The boiling manufactures of Cracow salt on the line of Silesia and Opole region in the late XVIth and early XVIIth c.) "Zeszyty Naukowe Uniwersytetu Jagiellońskiego, Prace Historyczne" no 26, Kraków 1960, pp. 32-62; J. WYROZUMSKI, *Państwowa gospodarka solna w Polsce do schyłku XIV wieku* (The state-economy of salt up to the end XIVth c.), Kraków 1968; S. FISCHER, *Dzieje bocheńskiej żupy solnej* (A history of Bochnia saltwork), "Pańs-

1. Salt mining near Cracow is an old tradition. Before the discovery of the deposit, in the middle of the XIIIth century, local salt springs were exploited in the vicinity of Bochnia and Wieliczka. Archeological research has found traces of organized production in the Neolithic periods.<sup>2</sup> Written sources show salt production existed from the XIIth and the first half of the XIIIth centuries. This documentation consists — as in the case of other European centres in the Middle Ages — of titles granted by the sovereign on behalf of monastic institutions.<sup>3</sup> These privileges show that the sovereign had the sole control over salt resources, and pointed

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wowa Rada Górnictwa. Materiału z prac Rady, S.E. (3), Warszawa 1962; A. DŁUGOSZ, *Wieliczka. Magnum Sal jako zabytek kultury materialnej Wieliczka*. (Magnum salt as a monument of material culture), Warszawa 1958; K. MAŚLANKIEWICZ, *Z dziejów górnictwa solnego w Polsce* (A history of salt-mining in Poland), Warszawa 1965; S. GAWEDA, *Najstarsze relacje cudzoziemców o kopalni w Wieliczce* (The oldest reports of foreigners on the saltwork Wieliczka) "Studia i materiały z dziejów nauki polskiej", S.D., v. 1: "Z dziejów górnictwa solnego w Polsce", Warszawa 1958, pp. 227-247; M. SKULIMOWSKI, *Opieka lekarska i społeczna w żupach wielickich od XIII-XIX wieku* (The medical and social care in saltwork Wieliczka in XIIth-XIXth c.), "Archiwum Historii Medycyny", v. XXI, Kraków 1958, pp. 1-77; (Studies and Sources for history of Polish saltworks), *Studia i materiały do dziejów żup solnych w Polsce*, v. I-VI, Wieliczka 1965-1978. See also A. KECKOWA, *Przegląd literatury dotyczącej dziejów górnictwa soli w Polsce* (Review of literature for the history of salt mining in Poland), "Studie z dziejów górnictwa i hutnictwa", v. I, Wrocław, pp. 77-89.

<sup>2</sup> Archeological investigations in Wieliczka and Bochnia regions have been carried on after the second war by the Institute of History of Material Culture, Polish Academy of Sciences and have been continued since 1960 by the Kraków Saltworks Museum at Wieliczka. All these investigations provided interesting materials, see: H. BURCHARD, *Eksploracja soli w Polsce do XIII wieku* (Salt Exploitation in Poland up to XIIIth century), "Slavia Antiqua", v. IV, Poznań 1957, pp. 396-412; A. JODŁOWSKI, *Eksploracja soli na terenie Małopolski w pradziejach i we wczesnym średniowieczu* (Salt exploitation in Little Poland in prehistoric times and in the early middle ages), "Studia i materiały do dziejów żup solnych w Polsce", v. IV, Wieliczka 1971; A. JODŁOWSKI, *Technika produkcji soli na terenie Europy w pradziejach i we wczesnym średnio wieczu* (The technique of salt production in Europe in prehistoric and early middle ages), "Studia i materiały do dziejów żup solnych w Polsce", v. V, Wieliczka 1976.

<sup>3</sup> A. KECKOWA, *Saliny ziemi krakowskiej do końca XIII wieku* (Salines of Kraków region up to the XIII c.), "Studia i materiały z historii kultury materialnej", v. XXXIII, p. 69; J. GRZESIOWSKI, J. PIOTROWICZ, *Sól małopolska w nadaniach i przywilejach dla klasztorów (do początku XVI wieku)* (The Salt of Little Poland in the privileges for the cloisters to beginning XVIth c.) "Studia i materiały do dziejów żup solnych w Polsce", v. I, Wieliczka 1965.

to the fact that the ruler did not have control over salt production. This was controlled for the most part by the holders of Royal privileges.

The discovery of a deposit,<sup>4</sup> which led to the beginning of mining operations, offered the prospect of large revenues to the ruler, which he did not want to share with others. Changes in the second half of the XIIIth century occurred not only in production techniques but in socio-legal reforms as well. According to a law of 1278,<sup>5</sup> persons who had received income from salt-springs and salt boiling were deprived of these rights. As a result of this law, the king introduced uniform legal and economic methods in production, which led to the development of the most important state enterprise, the Cracow salt-mines (*zupy krakowskie*). The enterprise was based entirely on capitalistic principles. The social capital which was invested in the mine during the first two centuries of its existence brought the investors only some permanent rents. These rights were transferred in time to various ecclesiastical institutions.

The basic institutional structure, issued in 1368, concerning methods of exploitation, socio-technical organization and management of the Cracow saltworks was determined by the Statute of King Casimir the Great.<sup>6</sup>

The rules and regulations were supplemented and modified in the following centuries, but the basic principles remained until 1772. Unaltered was the monopolistic stand of the Wieliczka-Bochnia enterprise, even when an act of parliament of 1576<sup>7</sup> abolished regal mining privileges in Poland. This stand deprived the royal exchequer of the legal basis for retaining the monopoly

<sup>4</sup> Bochnia 1251, Wieliczka.

<sup>5</sup> *Kodeks dyplomatyczny katedry krakowskiej s. Wacława* Diplomatic Codex of Kraków cathedral), ed. F. Pikosiński, v. I, pp. 106-107.

<sup>6</sup> J. KRZYŻANOWSKI, *Statut Kazimierza Wielkiego dla krakowskich zup solnych z 1368 r.* (The Statute of Casimir the Great for the Kraków Saltworks from 1368), "Rocznik Krakowski", v. XXV Kraków 1934, pp. 96-128.

<sup>7</sup> *Volumina legum*, v. II ed. J. OKRYZKA, Petersburg 1859, p. 152.

of salt production. Even though, when in practice, the enterprise's position had no significance, because at the time, the only known deposit of rock salt in Poland as well as the rich salines on the Red Ruthenien territory belonged to the king.

2. The enterprise included, apart from both salt-mines in Wieliczka and Bochnia, in operation since the beginning of the XVIIIth century, local salt-boiling works. The raw material was, however, not from natural spring waters, but from surface water which penetrated into the mines (by shafts and different clefts)<sup>8</sup> and, on extraction, was fortified with crushed salt.

Brine boiling initially had a great significance in the general Cracow salt enterprise. Before the XVIth century, processed salt amounted to 30% of production. In the second half of the XVIth century it was only 6% and in the XVIIth century only 1-3% of production. The cause of the decline in salt-boiling output was due to fuel difficulties. For a time (XVIIth century) the Cracow mines included salt-works in Dobiegniew, in the vicinity of Torun. The miners worked on an artificial brine produced on the spot from powdered salt brought from the Vistula. The enterprise also owned the royal salt store-houses, existing since the XVIth century on the middle Vistula and the rivers, the Bug and the Narew. The enterprise was administered by a manager (lat. 'zupparius'), who supervised the production, sales and finances of the enterprise. He also acted as arbitrator for the workers. He performed his work either 'ad fideles manus', that is, as an administrator, who had to account for his actions to the royal treasury, or managed the enterprise on the basis of a lease agreement in his own account. Three periods may be distinguished here: the first to 1577, when the system of self-government predominated; the second, which lasted until about 1737, when for brief intervals the Cracow salt-mines were in tenancy; and the third,

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<sup>8</sup> The water endangered the mines and there was a permanent necessity to drain them.

from 1737 on, when the royal treasury returned to the system of its own administration.

During the first three centuries of mining activity, the Cracow 'zupparii' were often foreigners mainly Italians,<sup>9</sup> Germans or wealthy Cracow burghers.<sup>10</sup> From the second half of the XVIth century the administrators and tenants of the royal enterprise were primarily people coming from the Polish gentry circles, and statesmen connected with the royal court. They sometimes made large fortunes, particularly through tenancy. In the first half of the XVIIIth century when the kings of Poland were related to Saxon princes, this office was entrusted to the Saxon financiers, who used to withdraw the sums lent to the royal treasury from the revenues of the enterprise.

Each mine had an expert called 'magister montium' (pol. *bachmistrz*) which was a life-long position. This post entailed the privileges and rights acquired by the first 'magistri montium'. These were mainly builders who participated in the construction price of the shafts.<sup>11</sup> The rights (monetary rents, salt) in time, were transferred to monasteries and churches. The post of 'magistri montium' remained significant and also kept a considerable amount of its independence, mainly safeguarding and research work. They ensured the continuity of mining work and kept the mines in good working conditions. This was important particularly in the periods, when the 'zupparii' (tenants) were administering the mines. In the XVIIIth century 'magistri montium' were reduced to performing merely supervisory work over certain categories of miners, whereas technical operations in the mines were taken over by surveyors and mining engineers.

After the XVIth century the royal control over the whole

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<sup>9</sup> See J. PTAŚNIK, *Z dziejów kultury włoskiego Krakowa* (From history of Kraków Italian culture), "Rocznik Krakowski", v. IX, Kraków 1904.

<sup>10</sup> WYROZUMSKI, *Państwowa gospodarka solna*, op. cit., pp. 83-84, 93-94.

<sup>11</sup> The first illustration of 1564 edited by J. MAŁECKI, *Lustracja województwa krakowskiego 1564* (The illustration of Kraków province), P. II, Warszawa 1964, pp. 94-129.

enterprise had been ensured by inspections carried out every few years. The team of inspectors appointed by the king included representatives of the royal treasury, court officials, and representatives of the parliament. In the periods of administration "ad fideles manus", the finances and accounts were scrupulously controlled. Extensive control acts<sup>12</sup> were drawn up during every inspection accompanied by suggestions concerning not only mining problems (pay, dependence of particular categories), but also social affairs. They provided the treasury with insight into almost all matters concerning the enterprise.<sup>13</sup> Their importance was particularly great in the periods of tenancy. The system of constant control by the treasury and representatives of parliament lessened by a considerable degree the inevitable damage brought on by the wasteful exploitation of the mines by its tenants.

3. The Wieliczka-Bochnia salt-mines belonged to the technically leading branches of industry in Poland. A dry method of extracting the salt was used as an adaptation to the local geological conditions. The dry method was different from the techniques employed at other European salt-mines (the Alpine and Transylvanian mines), whose methods of mining were based on the Polish saltminer's own experiences. The deposits were reached by building vertical shafts into the earth. In Wieliczka these shafts were from 60-80 metres deep and in Bochnia they ranged from 50-100 metres. After the XVIth century deeper deposits were located and exploited. These deposits were approached from the headings and stalls of the first flat (level) through blind,

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<sup>12</sup> See *Instrukcje górnicze dla żup krakowskich z XVI-XVIII wieku*, (The minings instructions for Kraków Saltworks in XVIth-XVIIIth c.) ed. by A. KECKOWA, Wrocław 1963; A. KECKOWA, *Opis Żup Krakowskich z roku 1518* (The description of Kraków saltworks from 1518) ed. by A. KECKOWA, A. WOLFF, Warszawa 1961; A. DŁUGOSZ, *op. cit.*; ST. FISCHER, *op. cit.*

<sup>13</sup> M. ODLANICKI-POCZOBUT, M. MILEWSKI, *Najdawniejsze plany kopalni wielickiej* (The ancient plans of Wieliczka saltwork), "Kwartalnik Historii Nauki i Techniki", v. III, no. 4, pp. 575-583.

or small, shafts which were bored at small distances from the pit-bottom of the day shaft. Still deeper layers of the deposit were uncovered by boring through the levels, (determined by the range of the first series of small shafts). In Wieliczka in the XVIth century we are able to distinguish three levels of the mine, reaching to depths of 100-120 metres and in the XVIIIth century in places the mine reached to depths of 300 m. The deposits were extracted by means of a stall method. Large blocks of salt were cut from the walls by the gash method and subsequently divided into smaller lumps ("balwany") of various dimensions and weights, (initially 3.4-1, and in the XVIIth cent. 10-20 q.) and finally loaded into barrels. The sometimes extremely large spaces left after extraction of the salt were reinforced by salt pillars and props from tree trunks (cases). In both mines the first flats of excavation of all the shafts were connected by means of a network of headings.<sup>14</sup> A lay-out survey of the Wieliczka mine in the XVIIth century was executed in the first half of that century by Martin German, the local foreman and surveyor. His four illustrations are a map of the town of Wieliczka and three flats of the salt mine. German's diagrams are the most prominent of Polish mining cartography. They show a remarkable grasp of surveying technique, with a very high coefficient of accuracy (0.5-1 %).<sup>15</sup> In the first half of the XVIIIth century J.G. Borlach, a Saxon surveyor, produced new surveys of the Wieliczka mine, supplementing German's work which lasted approximately 100 years.

In the Wieliczka-Bochnia enterprise there was a clear-cut division of labour. In the XVIth century seven categories of salt-cutters were employed to reach and extract the salt deposit: miners cutting salt blocks, barrel-loading men, cutters employed in the boring of headings, shafts, etc. As many as 17 different types of work, were taking place in vertical and horizontal salt transport. In Wieliczka, transport miners constituted almost half the number

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<sup>14</sup> RYBARSKI, *Wielickie zupy solne, op. cit.*, p. 162.

of employees. In Bochnia where mining conditions were more difficult, and the possibility of introducing mechanical equipment such as horse whims was limited, transport miners would amount to 75% of the staff. The enterprise employed craftsmen of various types — smiths, carpenters, coopers, cobblers, rope-makers, etc., among which there was clear specialization. There were both shaft carpenters and case and whip carpenters, among many others. By the XVIth century each mine also established 14 categories of personnel clerks. In the XVIIth and XVIIIth cents. about 20 various functions were performed by clerks. About 900 permanent workers were staffed at the beginning of the XVIth cent., which was expanded to about 1600 by the XVIIth cent. In addition, a large group of people worked casually at jobs as wood carting and transporting salt from the mines to loading ports on the Vistula. The mining staff and auxiliary personnel consisted mainly of the inhabitants of Wieliczka and Bochnia and their surrounding villages. The hired miners received mostly piece-work pay, and until the end of the XVIIth cent. a portion of their pay was made in salt.

4. In the second half of the XIVth c. both mines were supplying 4000-5000 tons of salt yearly. More accurate information dating from the late XVth and early XVIth c. shows an output of approximately 12,000-13,000 tons. Towards the end of the XVIth and the first half of the XVIIth cents. the output rose to approximately 30,000 tons, and in the mid-XVIIth cent. to about 37,000 tons. The second half of the XVIIth cent., and the start of the XVIIIth cent. were marked by a considerable decline in output. Wars, internal unrest, and elemental calamities maintained the average yearly output at 30,000 tons from the second 10-year period until the end of the royal management of the mines. The treasury began limiting the output in the latter part of the XVIIth cent. In an agreement with the tenants it was determined precisely how many blocks and barrels of salt they were permitted to extract yearly. The amount specified was directly related to

the amount of the tenancy rent collected, as well as the expected demand for salt. These limitations did not permit the mines to exceed the output achieved in the mid-XVIIth c. The coefficient of production — the relation between the production cost and revenues — constituted 34-35%,<sup>14</sup> in the XVIth cent. and about 42% in the XVIIIth cent.<sup>15</sup>

5. The supply from both royal salt enterprises — the Wieliczka-Bochnia salt-mines and Red Ruthenien salines — was not abundant enough to provide salt for all of the provinces of Poland, which had increased considerably in the XVIth cent. by the annexation of vast Lithuanian-Ruthenien territories. Therefore, the home-produced salt never wholly satisfied the demands of the country, although both enterprises sold, in certain periods of time, large amounts of salt beyond the southern and south-western boundaries. Silesia, Moravia and Slovakia were important markets for Wieliczka and Bochnia.<sup>16</sup> Until the XVIth cent., Cracow salt was mainly supplied to the province called Malopolska. Both the foreign and domestic purchasers bought their salt on the spot. The northern territories' small salt supply from the Cracow and the Red Ruthenien salines did not begin until as late as the XVth c. These provinces were long accustomed to salt coming from abroad. It was mainly marine salt brought from French and Spanish salines to the Baltic ports<sup>17</sup> and distributed by merchants. In Great

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<sup>15</sup> *Staats Archiv*, Dresden, Abt. Poln. Sach., no. 3539, *Haupt-Rechnungen über insgesamt Wercke...* for 1736-1737 - 1761.

<sup>16</sup> A. KECKOWA, *Zupy krakowskie*, *op. cit.*, pp. 369-382.

<sup>17</sup> H. SAMSONOWICZ, *Struktura handlu gdańskiego w pierwszej połowie XV w.* (The structure of the Gdańsk trade in the first half XVth c.) "Przegląd Historyczny", v. LIII, Warszawa 1962, pp. 695-713; H. SAMSONOWICZ, *Handel zagraniczny Gdańska w drugiej połowie XV wieku* (The foreign trade of Gdańsk in the second half of XVth c.), "Przegląd Historyczny", v. LIII, Warszawa 1962, pp. 695-713; H. SAMSONOWICZ, *Handel zagraniczny Gdańska w drugiej połowie XV wieku* (The Foreign Trade of Gdańsk in the second half of XVth c.); "Przegląd Historyczny", vol. XLVII, no. 2, Warszawa 1956, pp. 283-352; M. BOGUĆKA, *Handel gdański z półwyspem iberyjskim w I połowie XVII wieku* (The trade of Gdańsk with the Iberian peninsula), "Przegląd Historyczny",

Poland (*Wielkopolska*), Saxon salt was used (brought from Halle) as well as salt from Luneburg.

The development of salt-mines and the increased production in the XVth cent. initiated the endeavours of the royal treasury to enlarge the internal market and introduce home-produced salt into provinces using imported salt. By the middle of that century the administrators of the Cracow mines and Red Ruthenien salines were making attempts to supply salt to Great Poland and Kujawy. These supplies, however, were casual. At the turn of the century interdictions forbidding the import and use of foreign salt appeared.<sup>18</sup> At that time it was determined which Polish territories would use processed salt from Red Ruthenien salines and which would be solely supplied with Cracow salt. The Wieliczka-Bochnia salt market was intended — apart from already traditional central territories of Poland situated in the middle Vistula river-basin — mainly for the Mazovian territories and the adjoining Podlasie. North-western and western lands, Wielkopolska and Kujawy, were meant to buy Ruthenien salt. This division was, on the whole, scrupulously observed. Its aim was to protect the interests of the Wieliczka-Bochnia mines, safeguarding the sale of rock salt (mostly drossy) from the competition of the boiling, white processed Ruthenien salt which was in greater demand. It also effectively combated the competition in the western territories of Poland, which were accustomed to boiling salt, supplied from German salines. This division determining the range of the internal market for the Cracow rock salt, prevailed until the end of the royal management of salt mines. Attempts made at various periods, mainly after 1737, to introduce other

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v. LX, no. 1, Warszawa 1969, pp. 1-23; M. BOGUĆKA, *Handel zagraniczny Gdańska w pierwszej połowie XVII wieku* (The foreign trade of Gdansk in the first half of XVIIth c.), Wrocław 1970, pp. 45-47; M. BOGUĆKA, *Sól w handlu bałtyckim w pierwszej połowie XVII wieku* (Salt in the Baltic trade in the first half of XVIIth c.), "Zapiski Historyczne", v. XXXVI, no. 1, 1971.

<sup>18</sup> *Volumina legum, op. cit.*, v. I, 265; 368, 395, 540, v. II, 947, 1276, v. IV, 502.

organized supplies of salt to Lithuanian territories and to Great Poland did not bring any significant result.

The great action at the turn of the XVth cent. was accompanied by organizational changes in the management of the Cracow enterprise. The Wieliczka-Bochnia salt-mines were up to the XVIth cent. a great salt producing enterprise, but they were not concerned with the organization of its sales. Salt was sold to anyone, in both wholesale and retail trade. The profit of the enterprise was solely due to production, as opposed to commercial profit. Changes in this respect occurred at the beginning of the XVIth cent.

Also at this time, the royal treasury began opening its own depots since this time and, excluding the times of wars, internal disturbances and natural disasters, which troubled the country in the XVIIth and XVIIIth cents., supply was, on the whole, adequate. In certain years difficulties connected with the sale of salt in the depots occurred mainly in northern territories of Mazovia and Podlasie. Despite repeated interdictions, posting of river and land guards, and penalties, these regions were supplied with foreign salt. This importation occurred in various parts of the country, with variable force, dependent on transport possibilities, commercial connections of merchants, etc.

6. The fact that the Wieliczka-Bochnia mines were royal property had both positive and negative consequences for the economy of the enterprise. Positive was the possibility of its own salt production and ensuring its sale by reducing the import of foreign salt. The protective policy, however, was not fully successful and despite endeavours made, particularly in the XVIIIth cent., the enterprise managed only small gains in territory outside the designated areas for Cracow salt sale. A less favourable consequence of the king owning the mines was frequent appeals to the king's grace for the so-called pensions in salt and money. These appeals put a strain on the enterprise and its economy.

Certain categories of workers received salt as an addition to

their wages. For example, salt was used to pay the various rents for the salt depot sites. This expenditure was closely connected with the mining economy and was included as a part of the production costs. However, an overwhelming majority of the permanent recipients of free salt and pensions in cash, were institutions and persons who had no connections with its production. At the end of the XVIIth c. these permanent salt pensions were changed to money and the permanent pensions in cash were devalued. A great nuisance for the mines was a custom which became prevalent in the XVIIth and particularly XVIIIth cents. The king began inundating the management of the mines with casual orders of payment to cover his, at times, very large obligations. The distribution of these large sums of money was disadvantageous to the economy. They reduced the turnover in capital and also led to serious disturbances in the activity of the mines. But the greatest drain on the enterprise, directly threatening its economy, was the so called gentry-salt.<sup>19</sup> At the end of the XVIth cent. the gentry (the ruling class in old Poland) obtained the privilege of purchasing salt at a reduced price which was determined by the constitution (in amounts determined later in relation to the extent of landed estates). This price, in the first half of the XVIth cent., was only slightly lower than the market prices, and the sale of gentry salt did not yet cause any considerable lessening in the revenues of the enterprise.<sup>20</sup> By the end of the XVIth cent., the difference in income became more and more marked with the rising prices of salt caused by the increased cost of production, and to an even greater extent, the fall of monetary values. The price paid for salt by the gentry in mid-XVIIth cent. in the mines and royal depots, not only did not cover the cost of production

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<sup>19</sup> A. KECKOWA, *Frochtarze żup krakowskich w XVI-XVIII wieku* (The freightmen of Kraków Saltworks in XVIth-XVIIIth c.), "Studia Historyczne. Księga pamiątkowa ku uczczeniu 70-letniej rocznicy urodzin prof. dr. Stanisława Arnolda", Warszawa 1965, pp. 166-177.

<sup>20</sup> RYBARSKI, *op. cit.*, pp. 142-143.

and transport, but became even more uneconomical. For lump salt the gentry recipients paid only slightly more than one fourth of the enterprise's own costs, and for crusted barrel salt not much more than one third of the cost. A slight rise in the price of the gentry salt, reduced the losses somewhat, but further fall of monetary values rendered this action insignificant. Only the annulment of the sale of the gentry salt in lump form partly reduced the losses.<sup>21</sup>

The relationship between the gentry salt sold at a loss and the total output of the Cracow mines was an important factor. The gentry salt sold amounted to 6000 tons a year.<sup>22</sup> The relation, on the other hand, of this amount to the variable output of the mines underwent considerable changes, and the gentry salt formed about 15 to 20% and at times even 25% of total production. An additional negative consequence for the enterprise resulting from distribution of such a large amount of salt at low prices was the fact that the gentry, despite the repeated interdictions, were trading with this salt, selling it at competitive prices and hindering sales of the royal salt.

Despite these numerous encumbrances, the Wieliczka-Bochnia enterprise always constituted the greatest share in the total budget of the royal treasury.<sup>23</sup> In the XVIIIth cent. the average yearly revenue from both salt enterprises (Cracow mines and Ruthenian salines) composed about 41% of the treasury's revenues, and the revenues from only the Wieliczka-Bochnia mines composed nearly 30%.<sup>24</sup>

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<sup>21</sup> A. KECKOWA, *Zupy krakowskie, op. cit.*, pp. 415-419.

<sup>22</sup> The Polish nobility represented a significant percentage of the whole population (about 10%).

<sup>23</sup> E. STANCZAK, *Kamera saska za czasów Augusta III* (The Saxon Camera under King August III), Warszawa 1973.

<sup>24</sup> A. KECKOWA, *Zupy krakowskie, op. cit.*, pp. 423-424.

