In short, it all started with the Thirty Years' War. Europe was divided into two opposing camps, in the Czech lands people were fleeing from their homes into the forests in order to hide from the mercenaries of the two warring parties, towns and villages were being depopulated in fear of reprisals from the counter-Reformation rePRESSION, there were not enough people to carry out the work, and there was not enough food to go around. It was not until 1635, after seventeen years of war, that there was some sort of relief: Ferdinand II, Holy Roman Emperor and King of Bohemia, came to an agreement with Saxony, a former ally of Sweden with whom they were at war. This event is known as the Peace of Prague, to which other German princes and also some of the Hanseatic cities were co-signatories. In the Ore Mountains (Krušné hory/Erzgebirge) there were deposits of precious metals and following the previous downturn in business, after which many miners emigrated from the region in order to avoid catholicisation, there was a great revival in mining activities and especially trading. Bohemian tin was one of the region's main foreign commodities of trade with the whole of Europe, and it was often preferred to the less refined Devonian and Cornish tin and of course the inferior, although cheap, tin of Saxony. Due to its purity (it had an impurity level of less than three parts per thousand), Ore Mountain tin was bought up by German merchants both from Augsburg and Nuremberg for the Rhine region, and from Leipzig and Zwickau, who would use the Elbe as a means of transport. The Thirty Years' War in no way prevented stockpiling of tin. Due to the war conditions, tin prices rose sharply and so it paid off to wait for optimum conditions for sale, which came about with the aforementioned Peace of Prague. Tin therefore once again began to be exported from Bohemia to Europe as it had been before (via the northern route, as throughout the war the mouth of the Rhine had been completely blocked), although it was much more expensive now than previously. At the commencement of mining activities (1535-1549), the purchase price of tin was around 11 gold florins for 1 'Zentner' (=1 hundredweight or just over 51 kg), between 1550-1579 the price jumped to 18 florins, and by 1607 it had reached 30 to 40 florins. During the first years of the Thirty Years' War (1618-1621) it was 84 florins and by its end, in 1648, it had risen ten-fold. This was not surprising, for at the end of this epoch, which was terrible in all its aspects, a loaf of bread cost six golden pieces - as we witnessed in the inscription on the wall of the inn 'U zeleného domu' (The Green House) in Boží Dar (Gottesgab).

Many ships laden with goods in Hamburg, mostly merchant ships anchored here from Spain, which was allied with the Habsburgs and wielding the imperial sceptre, failed to reach their destination. Several of their journeys ended off the Dutch coast, sunk by the navy of Holland, an eternal opponent of Spain, and since 1635 a war adversary.

Previous historical facts are a necessary introduction to a report on the production marks of tin smelters in the upper Ore Mountains. Between 1986 and 1989 one of these vessels, resting on the seabed near the West Frisian island of Texel was, after three hundred and fifty years, gradually brought to the surface and studied by staff at the archaeological department of the Dutch Ministry.
of Culture; naturally it was preserved against all the influences of today's atmosphere. In addition to a number of lead ingots, leather and various objects for daily use, other interesting finds included the several rolled tin plates, each marked with three production marks. Tin rolls of various sizes were stored in wooden barrels (now disintegrated), with between ten and fifteen rolls in each, according to weight. So far one hundred and twenty eight of these rolls with a total weight of 546,500 kg have been brought to the surface.

The vast majority of these production marks have distinct broken majuscule words in the German language, composed of the names of tin deposits, or factories and smelters. One of these words - which occurred 34 times in total - contained the word 'Seiffen', prompting the Dutch researchers to inquire in the village of Seiffen (former GDR) as to whether there had been tin in the local mines (they were unable to identify the names of the village "Plat" or "Platen"). Therefore, inspired by the German historians who passed the Dutch on query to us here in the Bohemian Ore Mountains - after all, here too there is a village called Seifen, known in Czech as Rýžovna - we were able to undertake a thorough investigation into the production marks used in the Czech lands, in the area where tin was definitely once mined and processed. Let us hope that our report, although brief, will help to fill some gaps in the history of Czech metallurgy.

The marking of tin intended for export abroad was carried out by royal agents who were present during the smelting process using metal dies. The first official Czech tin marks were defined by a mandate issued by Emperor Ferdinand I. This mandate was issued on 12 April 1551 in Innsbruck; the original document is stored in the Tyrol Landesmuseum Ferdinandeum in Innsbruck under inventory number FB 6196. This mandate was issued twenty years after the discovery of tin seams in the Ore Mountains. Subsequent periods however, especially in the late 16th and early 17th centuries, saw an extraordinary growth in tin production and so each tinworks had to create a new mark, or at least modify the existing old marks using new, or at least different, symbols.

Tin of the highest quality was always given three assay marks, creating a combination in which one of these marks included the Bohemian lion emblem. In this way the supreme authorities of the Bohemian crown faced up to competition from Saxon tin, which was not of good quality, but this did not prevent the local entrepreneurs from smuggling their goods to the Bohemian side of the border in order to gain the coveted mark with the aforementioned lion and thus all the associated commercial benefits. Tin of an inferior quality, containing 1 to 10% impurities, was given one, at the most two, assay marks, most of which were district or mining marks. This tin could not be sold abroad, but could only be bought and used on the domestic market.

The 128 rolls of tin from the marine discovery at Aanloop Molengat (the site where the Spanish ship sunk, near the island of Texel) show a total of twenty-one three-symbol combinations, consisting of a total of nineteen types of production marks. According to the final analysis, seventy-four of these had been smelted in Blatná, forty-four in Hřebečná, and ten in Boží Dar.

**Description of each mark**

1) Majuscule wording ZIN VON DER PLATEN SEIFFEN. This mark is a variation on the original Blatná imperial mandate marks: the name of Seiffen (a mining settlement near Blatná), where tin was obtained by panning (in Czech 'ryžování'), hence its Czech name
Rýžovna (today the village no longer exists). There are no other differences, besides the extended inscription, to the original imperial mandate mark. The operation at Rýžovna did not have its own tinworks; everything that was mined there was smelted either in Blatná or Hřebečná. The mark appears in the Aanloop Molengat discovery a total of thirty-four times.

![Mark 1 (diam. c. 4.3 cm)](image)

2) Majuscule wording ZIN VON DER PLAT. This mark is also a variation on the imperial mandate: the Czech lion is not rampant and facing left, but instead is passant in that direction. It is not clear as to when this mark appeared. The town's emblem on it corresponds to the description of the privileges dating from 1555 issued by Ferdinand I to the town of Horní Blatná, which confirmed the validity of the mark previously used before that year. Everything else corresponds to the regulation laid down by the imperial mandate, only the shield is much more decorative. This mark appears in the Aanloop Molengat discovery forty-three times.

![Mark 2 (diam. c. 4.4 cm)](image)

3) Majuscule wording ZIN VON DER PLAT. This mark is a complete transcript of the imperial mandate: across the entire shield there is a Bohemian lion rampant with crossed tail and protruding tongue, facing to the right. This mark - as a symbol of the Bohemian crown - was almost certainly the assay mark of the royal representative present during smelting. The circular wording is broken up in four places by marks which show either the Habsburg emblem (horizontal beam) or miniature symbols of Bohemia, Austria and Styria. In the discovery this particular mark is the most commonly-featured: seventy-three rolls bear it.
4) Mark with majuscule wording HENGSTER ZINN - the word 'Zinn' here is spelled correctly, as opposed to other marks, and is probably a much later version of all the Hřebečná marks. The image on the mark otherwise corresponds to the rules laid down by the imperial mandate - a lion rampant, under which there is a saddled stallion. In the corners of the mark above the lion are the initials G G, which may either be a mark of a mining operation unknown to us or the initials of the panning or crushing plants in Boží Dar (in German 'Gottesgab'). The second possible interpretation is supported by the fact that this mark appeared in the discovery on only four occasions, in combination with marks no. 8 (once) and no. 9 (three times) in each case only with mark no. 18 as used by the Boží Dar works.

5) A tin mark from Rýžovna with the wording 1630 SEIFE N ZIEN appears on the assay-marked rolls on thirty-one occasions, each in combination with Blatná marks (the first of this trio is no. 1 occurring twenty-nine times and no. 2 occurring twice, the third of this trio is no. 3 occurring thirty-one times). The date is used as a starting-point to determine the date of the transport of the tin by sea, which is supported by the declaration of the freeing-up of the Elbe route thanks to the Peace of Prague in 1635. The inscription differs from other assay marks in the differently engraved word 'ZIEN': the engraver, although probably German, apparently attempted to capture the long 'İ' as he would have heard the Czech miners from the interior regions pronounce the word (in German the word for 'tin' - 'Zinn' - is written and pronounced with a short vowel). The raised hand at the centre of the mark (unlike the hands from Boží Dar), is the mark of a mine owner unknown to us, as are the initials C.L. The mark has no inscription, but the entire area is dominated only by a calligraphic character in the form of a skilful monogram, the form of which is very

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a) Trans.note: The word 'Hengst' means 'stallion', and Hengstererben is the original German name of today's Czech settlement of Hřebečná, which also means 'stallion'.

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similar to the marks of Saxon metalworkers who produced tin containers in the 17th century.

Mark 5 (diam. c. 3.9 cm)

6) This mark is closely associated with mark no. 16 - which in the list of rolls found is always recorded with this mark, which belonged to the well-known Hřebečná mine owner Sigismund Schlaginhaufen and also (see below) contains the initials 'I' and 'S' in the inscription, two letters that also make up the initials in mark no. 6. These are undoubtedly the initials of Schlaginhaufen's grandson Joachim, however after thorough research of historical documents, these initials may also be attributed also to the Blatná-Pernin miner Johann Siegl.

Mark 6 (diam. c. 3.7 cm)

Mark 7 (diam. c. 3.7 cm)
7) In the Aanloop Molengat discovery, the mark appears eighteen times in total and is always accompanied by the marks of Hřebečná, once in combination 8/6/8 and on seventeen occasions in combination 16/6/16. This mark also has no inscription, having only a large ornamental letter 'R' above which there is a stylised crown; on either side of the 'R' there is the year 1607. This only occurs seven times, and always in combination 8/7/8. According to mark no. 8, it is from Hřebečná, where the royal agent of Rudolf II stamped smelted tin with this mark.

8) The mark has the majuscule wording ZYN VON HENGST on both sides of a divided shield with a Czech lion rampant in the top half and a saddled stallion in the bottom half, as established by the imperial mandate of 1551. This is not only a mark of the company where the tin was processed, but also where it was smelted, i.e. in Hřebečná, as in the discovery the mark appears seven times in a combination of 8/7/8 and once in a 8/6/8 combination. It only appears on one occasion in the trio with marks no. 4 and 18, i.e. those which are attributed to the Boží Dar tinworks, and it is also stamped separately only once, whilst the other two marks are illegible. On either side of the shield are the initials 'I' and 'P' - either the initials of a mine owner or of a mining association.

9) This mark appears only three times in combination 4/18/9 and twice in combination 9/18/9 - i.e. on each occasion with the mark of the Boží Dar works (no. 4 has the initials GG - Geyer Gots Gab, no. 18 has the inscription Gottes Gaber Hitten). These are also two versions of the same brand: one probably has older origins. The shield is divided by a horizontal line, whilst in the other version this line is missing. In both cases there is a lion rampant facing to the right, as we know from the imperial mandate. In the bottom half however, instead of a saddled stallion there is a pair of panning tools - a rake and a pick - as proof that this was a surface operation. The majuscule wording is somewhat hard to read, but one can identify the letters ZIN IR/G/SI - which can be accepted as tin from Bludná (Irgang), a settlement near Rýžovna. The initials SI may be the initials of one of the shafts or tunnels, of which little is known. In the bottom half is the majuscule wording EICH (a Bohemian assay mark) DER HINGST ERBEN N. The identification of this inscription initially brings us to a different version of the origin of this tin: instead of the usual VON is the word EICH, which then appears more than once in the discovery, in other words, this is a very unusual example of Hřebečná markings. Mark no. 18 in combination with mark no. 9 shows that the tin rolls were smelted at the Boží Dar tinworks. The initials to the left and right of the shield (GG = Gottes Gab) reveal the same as is shown in mark no. 4 - i.e. that in all probability this is from the Boží Dar mining operation, even though it was done in the Hřebečná district (here too, mark no. 4 appears in combination with nos. 9 and 18 and also has the initials GG).
10) This mark with the majuscule wording ZYN VON HENGST on either side of the shield which is (apart from a wording) an accurate transcription from the mandate (the wording is apparently corrected to 'proper' German). In the discovery the mark appears on ten rolls of tin in the combination 10/11/10, which proves that tin was crushed and floated in the same place, whereas mark no. 11 (see below) documents both the type, and the name of the mining operation.

11) A mark with the majuscule wording PAULUS PEER 1588 surrounding a richly decorated shield - inside the shield there is a pair of crossed mining tools (hammer and pick in the upper half) and a clump of raspberries or blackberries (in the bottom half). The two halves are separated by a horizontal line. Paulus Peer\(^\text{12}\) was known to have been a wealthy mineowner in Hřebečná and at some period probably owned a series of smaller shafts in addition to the two most profitable mines in Hřebečná, Moritius and Rote Grube. The date on the mark shows the apparent commencement of mining activities.\(^\text{13}\) As previously mentioned in mark no. 10, this opulent and almost attractive mark dramatically demonstrates the owner's wealth. In the discovery, it appears on ten occasions and in each case only together with no. 10.
12) A mark with completely illegible wording which can only be identified by a character - probably a miner, who is holding a stick in his right hand, and a miner's hammer in his left hand. After thorough research we have been able to identify this mark as the stamp of the Blatná mining guild, which had on its seal the majuscule wording KNAPSCHAFT DER PLATEN - Bohemian Blatná mining association - around the same figure as in mark no. 12. This mark appears eight times in total: once in combination 1/12/3 and seven times in the combination 2/12/3, therefore generally together with Blatná marks.

13) This mark is totally different from all known types used in the stamping of Czech tin: the clearly legible majuscule wording is in two circles - on the outer circle we can make out the words ZIN EUBEN STOCKER (doubtlessly referring to the mining village of Eibenstock in Saxony, about 12 km north-west of Johanngeorgenstadt, on the Bohemian border); in the inner circle we can then identify the letters V.D.M.I.E.T. separated from each other by stars (probably the initials of words of Latin origin - cf. the diphthong Æ - or some type of acronym used in Saxony at that time) and the intelligible word AMEN. At the centre of the mark is the symbol of the town of Eibenstock (a horizontal cross) and the year 1596. The tin comes from the shaft called 'Amen' according to its combination with other marks (appears twice with the marks of Blatná - nos. 2 and 3) and should be tin that was processed and smelted on this side of the border (German historians confirm that at the time there was great synergy between Horní Blatná and Eibenstock).

b) Trans. note: The original German name of today's town of Blatná was Platten.
The same could be attributed to the three rolls which are stamped with marks no. 13 and 14, where the third mark is unclear (it is missing the emblem with the Bohemian lion as a guarantee of quality). This presumption, however, is refuted by the only roll with a combination of marks 13/14/15 (not one of these figures as a sign of the highest quality). The roll of tin was therefore never meant to have been sold abroad, but it was sold all the same. It could be said that this was as a result of illicit schemes whereby the purchaser did not notice (or did not wish to notice) that the roll was missing a stamp attesting to the quality of Czech tin. In this case, however, doubts are also raised as to the stamped rolls no. 13 and 14, which were also exported. These illicit dealings commenced with the smuggling of tin from Saxony to Bohemia in order to obtain the required quality mark. After consultations with German experts, especially with Johann Schönfelder from the village of Seiffen in the GDR, this assumption about the smuggling of tin to the Czech lands is confirmed by documents from the history of tin mining in Saxony. This also applies to another two marks, nos. 14 and 15.

Mark 13 (diam. c. 4.3 cm)

14) In the discovery, this mark appears only four times, always in combination with mark no. 13 (on three occasions the third mark is missing, and once in combination with marks 14 and 15). The shield, above which is the year 1613, has images throughout its area of a panning rake, pickaxe and a stylised plant with three flowers. In the upper part of the shield there is an inscription on either side of the rake: GUT ZIN (good tin). Even this inscription proves that it is tin of foreign origin, because Czech tin never needed such an inscription as an accompaniment. This is purely tin of Saxon origin, as is also evidenced by the majuscule wording (ZIN) EUBEN STOECKER.

Mark 14 (diam. c. 3.8 cm)
15) This mark appears only once in the discovery, in combination 13/14/15 and is also completely different from all other brands from Blatná, Hřebečná and Boží Dar. The fragmented majuscule wording reveals only part of the name NSTOC-/Z/INU UNGE/L/. This is probably a mark from the aforementioned village of Eibenstock in Saxony. At the centre there is the figure of a miner, wielding in his right hand a panning rake; the rest is indistinct. In comparison with the other marks in the Aanloop Molengat discovery, this mark is unusually large (54 mm). Its character reveals its foreign origin and additionally confirms that the tin roll was, together with the Bohemian tin, exported in secret – who knows, maybe this roll should have been stamped with another mark, from Blatná, as was the case also in some other rolls from this community. The discovery of the rolls abroad shows that tin was smuggled into Bohemia.

![Mark 15 (diam. c. 5.4 cm)](image)

16) The mark has a double majuscule description: The outer ring contains the name SIGISMUNDUS SCHLAGINHAUFFEN I.S. - a well-known miner from Blatná who had operations in Hřebečná. The inner circle contains majuscule wording on either side of the shield ZYN VON HENGST. The exterior wording is more legible from a photograph of this mark. The Dutch draftsman made several errors in the transcript, because naturally he did not know of the existence of this mineowner. These initials in connection with the aforementioned names of the mineowner lead us to the notion that the initials are either the initials of the mine, or of the mineowner's son, Joachimus Schlaginhaufen. At the centre of the mark is the usual shield, with which we are familiar with from the imperial mandate: a Bohemian lion on top and a saddled stallion in the bottom half. The shield decoration is simple and austere.

![Mark 16 (diam. c. 4.4 cm)](image)
17) This mark with less legible majuscule wording /ZIN/ VON DER PLAT SEIFEN is, using the name of the village of Seifen, another variation on the otherwise unchanged original imperial mandate mark. The shield is very richly decorated, the Czech lion rampant faces left, and underneath are the panning tools: hammer and pick. This variation probably originated even before the Blatná town privileges were conferred by Emperor Ferdinand I in 1554, where the lion is passant, and not rampant. This mark appears twenty-five times in the discovery in the combination 2/17/3 and once in combination 1/17/3; in general therefore it is a mark from Blatná.

![Mark 17 (diam. c. 4.1 cm)](image)

18) The mark differs in size and shape from the others – it is only 30 mm in diameter – and features majuscule wording GOTTES GABER HITTEN (Boží Dar tinworks). At the centre is the emblem of a raised 'hand of God', blessing the town with two fingers (as we know it from the imperial mandate dating from 1551) and the year 1556. This stamp appears in the discovery a total of eight times: twice in combination 9/18/9, three times in 4/18/9, once in 4/18/8 and twice in 19/18/19. All the aforementioned brands have either the initials G G, or the actual name of the Boží Dar works, which fundamentally determines the origin of the processing and smelting of the tin.

![Mark 18 (diam. c. 2.9 cm)](image)

19) This mark appears only twice in the discovery. It also has the majuscule wording GOTTESGABER BERCK ZYN. At the centre there is a simple shield with a lion rampant
facing right (top) and a crossed mining hammer and pick (bottom), under the tools there is a smelting crucible. On both sides of the shield are the now familiar initials G G. In addition to the inscription BERCK ZYN –when transcribing, the Dutch draughtsman wrote CH instead of CK, because he was unaware of the method of writing the letter G that was used then21– the mark features an image of a typical miner's emblem showing the origin of the tin from particular mines (Funtgrube), and not from Rýžovná (Seiffen).

In conclusion we can use the same ideas with which we began our report on production marks of tinworks from the upper Ore Mountains in the 16th and 17th centuries: namely, the fact that after three hundred and fifty years we are able to deal with small details that have remained intact from (because of or thanks to) the Thirty Years' War. Had it not been for the sinking of a ship with a cargo of tin off the Dutch coast, it would be difficult to examine the shapes of these marks with all their symbols and labels today. Our research is of course only the first step towards further explorations in this field, which undoubtedly reflects a significant period in Czech mining and metallurgy.

(Note M. Augustin: the raising of the entire load and its scientific analysis required several years of hard work by the team of experts. For details on the work carried out on the seabed and photography of the wreck, see note 22).22

Notes:

1 The price of tin in each year (1535-1621) is given in the quarterly accounts of the main Ore Mountain mines – see Central Archive, Supreme Mining Office in Jáchymov, H. Blatná accounts, carton no. 2621-2670.
2 The mandate was established for Bohemian tinworks; 1 and 2 belonged to Slavkov (German Schlaggenwald – his initials were S W – while the neighbouring Krásno – in German Schönfeld – had the initials S F), 3 and 4 are designated for Blatná, 5 and 6 for Boží Dar, 7 was used in Krupec, 8 in Loket, 9 in Hřebečná and 10 in Perninek.
3 Also according to Friedrich Tischer (Böhmisches Zinn und seine Marken, publ. Leipzig 1928), along the Saxon border a system of three marks was introduced to determine the quality of tin, both in terms of production and its final processing. At least one of these marks had to contain the Bohemian lion, either on its own or as a part of the town coat-of-arms.
When identifying the initials we are inclined to believe that they are the initials of one of the mining associations, The district included a number of scattered villages: Čížová (Chaze), its old part (Alt Chaze), Přední and Dr. J. Majer mentions Johann Siegl in his work Les nícínové doly na českosaském pomezí [Forest tin mines in See Stehlikova, D. 5 Mjartan, J., “Nálezy kovolitecké dílny v kostele sv. Vavřince pod Petřínem v Praze” The impression of this mark is stored in the archive of the National Museum in the Eichler collection, carton G 46 Loketsko - Blatno, which here figures together with other impressions as an assay mark (as confirmed by J. Pelant in the aforementioned work on page 57). In this case it is more a matter of using tin stamps for stamping letters, which was not uncommon, however this could not carry on and the assay seal reads ZIN VON DER PLAT, not IN-SIEGEL, etc
Dr. J. Majer mentions Johann Siegl in his work Les nícínové doly na českosaském pomezí [Forest tin mines in the Bohemian-Saxon borderland in the 16th and 17th Centuries], pps. 136 et seq. (In: Šhorník NTM IV, Prague 1965). The aforementioned Siegl figures as a mine owner, and others also mentioned include Meyer, Lotter, Voigtländer, Preun, Franz and Schlaginhauffen. One member of the Siegl family was known as the Royal smelter from the Pernin tinworks, the text of his 17th century tinsmelter's oath has been preserved (In: Kronik perninská - Book 1, p. 168).
The district included a number of scattered villages: Hřebečná (Hengst), its old part (Alt Hengst), Přední and Zadní Hřebečná (Fordin and Hindern Hengst), Háje (Jungen Hengst) and the villages of Rozhraní (Halbmeile) and Komáří vrch (Mückenberg) see also B. Ježek, Čínovcové doly in Hengstererben [Tin mines in Hengstererben] In: Hornický věstník [Mining Journal], Vol. XV. Prague 1933, pps. 61 et seq.
When identifying the initials we are inclined to believe that they are the initials of one of the mining associations, which were formed as soon as each mineowner lacked capital to invest in the operation. 'I' therefore in this case refers to the initial letter of the German word Innung (community or guild), 'P' is then the initial letter of the seat of the association, which can be either Blatná (Platten) or Pernink (Peringer), regardless of where the actual mine was situated. To consider the initials as the initials of the names of the mine would be less logical – according to Mathesi's work 'Sarepta', not one mine began with the letters I P, except for possibly Jung Pemmerlein in Niclesberg.

The drawing of the mark shows a shield with a horizontal line in the middle. A variation without this line is visible only on the photograph of the original of mark no. 9. The mark AM 3:9 has this line in the shield, the mark AM 4:17 is without this line (we have taken the numbering of the photographs - photographs of the marks are deposited in the archives of the National Technical Museum, Prague).

According to Mathesi's 'Sarepta', this could have been the mine known as Sankt Joachim, Sankt Johannes - both of which are in the Abertam district, Sankt Jorgen, Sankt Jobst, Sankt Jeronymus, Sankt Joseph, Sankt Jakob - various places, therefore maybe one of the names belonged to one of the aforementioned mines.

According to some sources, Paulus Peer was the son of Jorg Peer (original name Eggener, Czech Vlačil: his ancestors had worked in the Schwarzenberg mines as ore carriers, dragging ore in the summer and by sledge in winter). Jorg Peer was the first reeve of the mining village Peringer (Pernink), which was elevated to town status in 1532 by Count Šlik. The origin of their names can also be derived as a nickname from the word "Beer" (written phonetically, as was the custom), which in Middle High German means raspberry or blackberry. The appearance of Paul Peer is known to us: Karlovy Vary Museum has in its collections an epitaph with a portrait of this important businessman dating from 1604, when he died and was buried at the cemetery in Rýžovná. The interpretation of the name Peer as a phonetic transcription of the word Bär - then Behr - as his father nicknamed Jorg Peer (for bringing down a bear), follows from the legend of the founding of the village Peringer (see Kronika perninská , Book 1).

The date 1588 from the production mark was pre-dated by another, very important date: 1559, when there were two huge fires in the Moritius and Rote Grube mines, followed by prolonged mine closures. The year 1588 was probably the date of restoration of mining work in the mines at the instigation of Paul Peer.

As proof of our claim we should mention the letter to the chief commissioner in Jáchymov, Christian Gradt von Grünenberg, written on April 15, 1631 and signed as Knappschaft der Platten (Blatná Mining Association) with the seal of the same wording. The figure holds a stick in this right hand and a miner's hammer in the left hand. The letter is stored at the SOKA Karlovy Vary - Blatná town archive (AMB).
15 Dr. J. Majer mentions this important mineowner in his work Lesní cínové doly na českosaském pomezí v 16. a 17. století [Forest tin mines in the Bohemian-Saxon borderland in the 16th and 17th Centuries] (Sborník NTM IV).

16 This photograph of the original mark, as well as photographs of the other findings from the Aanloop Molengat discovery is stored in the archives of the National Technical Museum in Prague. The photographs were taken by staff of the Dutch Ministry of Welfare, Public Health and Culture.

17 According to Mathesi's 'Sarepta' this may be the Jesus Syrach mine in Niclesberg, Junger Stommen in Aber tam or Junger Sachsenkerl in Niclesberg.

18 The proof of our claim is also archived at SOKA Karlovy Vary - a seal with a double majuscule wording: the outer ring states the name JOACHIMUS SCHLA/G/INHAU/F/F., which definitely belongs to a member of this mining family. These initials can thus have substantially the same function as the initials of his heir. The inner ring reads: ZIN VON HENGST. According to the text it is clear that this is a die stamp, not a seal, although it may have also been used as a seal for correspondence (which we have encountered previously). The date 1559 is significant - being the year of the two mining disasters in the Moritius and Rote Grube mines, and although it is probable that this date is given on purpose, we do not – yet – know why this is the case. This will be the subject of further research.

19 The town symbol from seal no. 2 (see Pelant, J., Znaky a pečete zpč měst a městeček H. Blatná [Marks and stamps of Western Bohemian towns and villages in Horní Blatná], p. 57) is also depicted on the shield of this mark no. 17, and is identical. However the author does not mention the reason for the alteration, only stating the fact that the impression of this seal is also kept in the Eichler Collection at the National Museum archive.

20 See Mathesi's 'Sarepta', which lists the mines Geyer und Gotsgab (Funtgrub am Türckner).

21 Proof of our claim is provided by the drawings of the seal from the book by J. Pelant (see above), such as the seals of Blatná, Hora Matky Boží, Pernink, etc.).

22 The site of the Aanloop Molengat findings was discovered in the summer of 1984 by the crew of the ship Phileas Fogg, who were engaged in the exploration of the seabed and protection of the findings. The location is, in terms of Dutch underwater archaeology, an untypical discovery of part of the ship's construction which stood out from an eroding slope that formed a part of the otherwise relatively flat bottom. At this site the lower part of the ship with its cargo had settled and created a solid mound, which is more typical of shipwrecks in the Mediterranean. The cargo of ferrous and non-ferrous metals was loosely strewn around the top of the hill. After difficult negotiations that lasted until June 1985, the place was declared a protected area, so they were able to make an overall survey of the wreck. The crew of the Phileas Fogg received an exceptionally good salary, on condition that they waived any claims to individual findings. Divers went down to the wreck for the first time on 13 July 1985. Conditions for diving here are, in Dutch terms, very unusual - underwater visibility is very good, in July it was 8 to 10 m (at other locations along the coast it is only up to 1-2 m; by comparison we should mention that, for example, in the eastern Mediterranean, visibility of 20-30 m is quite common, in the Caribbean, Red Sea, Great Barrier Reef in Australia and other tropical seas visibility is routinely 40 to 50 m or more. It depends on course on many factors such as season, time of the dive, the intensity of solar radiation, etc.). The entire north-western part of the slope was covered with cast iron sills, towards the south-east it was topped with boxes filled with cannon balls, aligned in rows across the ship. The wet layer of wood had rotted, the cannon balls, however, had stuck together and created the cubic shape of the original packaging. Another row contained wrapped leather, and further to the south-east there were stacked crates and barrels, the top layer of which revealed the rolls of tin. A cannon lay across the top of these boxes. This situation obviously first had to be mapped in detail, only then could the crew proceed to slowly uncover the wreck, which of course they also continuously documented. The real work was not as easy as the scheduled procedure. Work on the wreck was only possible in good weather, but the summer of 1985 was not a good one for the divers and they were only able to dive together for eight days. In addition, the site was completely exposed, so despite the fact that the wreck lay in up to 16 metres of water, there were still powerful tidal undercurrents which caused the water mass to move from side to side. For these reasons, the rescue team agreed to carry out another form of documentation a year later, the essence of which was maximum adaptability to climatic conditions. They no longer used the permanent equipment in place above the wreck (research vessel with diving and photographic equipment, compressors, etc.) and instead they employed a small speedboat from a small base on the mainland. Even so, the organisation of such an event was not a simple task. In particular the aforementioned tides and strong undercurrents represented a serious problem because they did not allow cameras to remain in a quiet location, which is of course essential.
Therefore, the divers had to first fit a huge frame around the mound measuring 31 x 11 metres and weighing around 20 tonnes, made of welded steel tubes, into which was built a 12 metre long steel bar with a device for fastening cameras. This bar could be easily controlled with a set of pulleys and winches from one end of the frame to the other, so the mounted camera could capture any part of the wreck without being moved by the tides or the undercurrent (but despite this, the frame was significantly diverted from its original position during a storm in August 1986). To enable divers to communicate during technically demanding imaging sessions, a small booth was attached to hang upside down from the frame, into which air was pumped during the dive (using the diving bell principle). The researchers were able to communicate inside these booths. Due to the 16-metre depth, each dive was limited to one hour and the simplest method without the need for post-dive decompression was selected.

The entire research project proceeded according to the seasons and a fixed procedure - first maps were produced and plans of the individual layers, followed by photographs of the findings, which were in the end removed to the bottom of the nearby wreck from these processed layers. It was only at the end of the seasonal work that the items were lifted to the surface and taken away for further research. In total it took six to eight divers five years to lift the items from the wreck.

Maarleveld, T. J. - Vos, A. D., A 17th century metal-trader in the North Sea. A test case for Dutch ancient monuments legislation; its background, its handling and its potential, pp. 6-12. (The typescript was without bibliographic data and was probably a report for the Ministry of Culture, Health and Welfare of the Netherlands. A copy was kindly provided to the main editor and staff at the archive of the National Technical Museum in Prague, Dr. Jan Hozák and Zdeněk Rasl). For more details on the actual imaging and photographic technology see Maarleveld, T.J. - Vos, A.D.: Archaeological mapping, a Sub-North Sea experiment. In: Geodetical Info Magazine, October 1989, pp. 30-32.

(Note no. 22 was compiled by M. Augustin using these resources).