

THE HRADCANY ISSUE A Theory On Their Production

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It is the general consensus of opinion among Czech collectors that the Hradcany Issues were printed from zinc plates, and that Plate varieties resulted from the deterioration of these plates. This article is written with the intention of trying to prove that the Hradcany stamps were printed from electrotypes made from the original zinc plates, and that all major plate varieties were present in the original plates and were transferred again and again when new electrotypes were made from the originals. This theory finds verification in the fact that despite the millions of stamps printed, the major plate varieties are constant and plating is possible as illustrated in Mr. John Velek's recent article on plating the Hradcany stamps.

The Graphic Union, Prague's largest printing concern, printed these issues and it is safe to assume that their production methods would parallel any other large printing concern of today. The actual processes of engraving and letterpress printing have not changed save for the modernization of equipment. Being a large printing concern they undoubtedly maintained their own engraving plant. It is generally known that the Graphic Union undertook the assignment of printing the stamps on short notice, and with no previous experience in this field. So, it is safe to assume that they employed the methods most familiar to them in producing their everyday assignments.

The following theory of the production of the plates is based on the assumption that the regular procedure of the photoengraving process was followed. Mucha's original drawing for reproduction (called the working drawing) was undoubtedly many times the size of the printed stamp. Two methods could have been used to produce the complete negative of 100 positions.

The first method would have been for the photo-engravers to reduce the stamp design to its final size and 100 duplicate negatives made and "stripped" into position on a glass pane to form the complete negative. This use of the process is unlikely because of the length of time involved in stripping.

The second method is very likely the method used. The photo-engravers produced a negative from the original drawing, probably twice the stamp's size, and from this negative made 100 photo prints which were mounted up in position to form one large master copy. This master copy was then reduced to the actual plate size, which resulted in one complete negative with 100 positions!

At this point many variations and plate varieties were probably born. It is the custom of the photo-engravers to touch up weak spots on "line copies" such as the master copy so that they do not "drop out" in the photoengraving process. Lacking the deftness of an artist, the photo-engravers may accidentally have produced plate varieties in this way. Any weak lines in the prints were lost, because of the inability of the camera to pick them up. The negative was then used to print the impression on a sensitized sheet of zinc.

Carelessness in scratching the negative and dust on the negative at this point undoubtedly was also responsible for many of the flaws in the finished plate.

All parts of the stamp's design, (which are to later form a printing surface) are protected by an acid resisting chemical allowing only what shows as white areas in the design to be etched away. The zinc etchers upon receiving the plate gave it a slight "bite" by emerging the plate in acid. This was the first of possibly four to six "bites" given plates containing fine detail.

At this point most of the varieties undoubtedly occurred. Any dust on the plate or any spots in the design were now built up into actual printing surfaces by the method used before the second "bite" is given the plate. The etcher brushes a fine red powder called Dragons Blood over the plate in four directions into the areas slightly etched. The plate is then heated and the dust becomes a hard acid resistant wall, which will on the next bite prevent the printing surfaces from being undermined. This brushing process is carried out before each "bite" is given the plate, resulting in a heavier pyramid base than what the top printing surface actually is.

Before the second "bite" is administered, the etcher goes over the plate and "picks off" any specks, which are not part of the design. Either because of the complex nature of the design or lack of time, many of the "specks," dots, etc., were overlooked at this point and in successive "bites" these were built up into definite printing surfaces. The dots so common in the "doves tails" and around the "sun" are the result of the oversight of the etchers in not "picking" them off in the early etching stages.

After etching, the plates were probably proofed to show the results. To say that all proofs were pulled from the original zinc plates would only be a guess, as proofs from new electro-types, cast from the original, would be identical.

We now come to the basis of this whole theory. Any plate to be used for long runs is always electrotyped. The electrotype, after showing wear, can be easily replaced by another taken from the still perfect original. The Graphic Union was known to have printed books and pamphlets, which required long runs. To them, electrotyping was undoubtedly an everyday procedure. Without a doubt a zinc plate of this size would be completely ruined after forty thousand impressions on a flat bed press such as was used for the Hradcany printings. Therefore, it is hardly conceivable that millions of stamps would have been printed from zinc plates. The zinc plate could have been replaced by others from the original negative but this would have resulted in an entirely different plate with etching flaws occurring in different places. This method is debunked by the fact that after millions of stamps were printed the varieties were still constant, proving that a duplication of the original plate in the form of an electrotype must have been used.

An electrotype is nothing more than a lead casting from a wax mold taken from the original zinc plate. The fine copper printing surface is supplied by the process of electrolysis. How often the electro-types were replaced is only a guess. From the generally good impressions of some denominations, it is likely that they were changed frequently. Other denominations, such as the three haleru for example, were probably used for long runs. Extremely worn electrotypes are evident in copies where little detail exists and the overall design appears as hardly more than a blot of color. This was caused by the color running between the rounded edges of a worn electro-type surface. This illustrates the contrast in the nature of the wear of an electro-type and zinc plate. The zinc plate becomes brittle and breaks out, while the electro-type's edges wear round and tend

to form blot impressions. This tendency is very evident where the border lines merge into a single solid blot.

Faint impressions may not always have been the result of the lack of ink, but lack of "squeeze" on a worn plate. "Heavy" impressions result not only from too much ink, but from "padding" worn plates. This is done by sheets of paper slipped under the plates to raise the printing surface.

Because of the speed at which the stamps were printed and the regrettable impressions resulting, it is possible to assume that this same negligence was practiced in the production of the plates. Despite the great obstacles confronting the Graphic Union, it supplied the new nation of Czechoslovakia with its first postal issues, and subsequently the specialized collectors of the world with one of the most interesting studies in philately.