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# Studies in Bibliography

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## Watermarks Are Twins by ALLAN H. STEVENSON

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In the first place, *there is no such thing as a duplicate*. Of course not. Can you print two copies on the same paper? Then, so far as the paper itself and the watermarks are subjects of enquiry, "duplicates" may be astoundingly different. -- *Falconer Madan before the Bibliographical Society (1911)*.<sup>1</sup>

MOST EARLY BOOKS ARE PRINTED ON A VARIETY of papers. They contain a number of different watermarks. Though now and then a small volume has "one mark throughout," and a tall folio shows a single stock of fine paper, the majority of books are not so consistent. Often a well-printed folio, starting out with a run of grape paper (say), shifts to crown or fleur-de-lis paper by the time it reaches its second alphabet. In other folios, no less proud ones, the preliminaries alone disclose several marks, and the text a dozen or sixteen more, with alternation of marks through successive sheets. And, as for quartos, the next play one leafs through may offer an assortment of seven watermarks within eleven sheets. Those who have examined the papermarks in early books know these things are so.<sup>2</sup>

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Indeed, mixed watermarks began with the Gutenberg Bible; <sup>3</sup> and they persisted through the Renaissance into the eighteenth century, as a normal feature of books printed on handmade paper. A volume printed by Wynkyn de Worde, the *Vitas Patrum* of 1495, is said to contain nearly fifty different marks.<sup>4</sup>

There have been explanations. Sometimes (it has been said) printers bought cheap job lots of paper. <sup>5</sup> Such an explanation neatly fits the bibliographically famous

Shakespearian quartos of 1619. Sir Walter Greg showed, in 1908, that these nine quartos contain at least twenty-seven watermarks, so distributed as to prove all were printed in one year, though their imprints read variously "1600," "1608," and "1619."<sup>6</sup> All printed by Jaggard for Pavier. In examining four sets of these quartos, Greg found, to be sure, just one pot watermark throughout the two *Contention* plays (dated 1619), yet no less than fifteen marks -- pots, croziers, fleurs-de-lis -- in the four copies of *King Lear* (falsely dated 1608); and in a single copy -- the Garrick-British Museum copy -- of *The Merchant of Venice* (misdated 1600) eight or nine different marks within its ten sheets.<sup>7</sup> Dr. Greg then doubted that similar wild mixtures were likely to occur elsewhere; and they are indeed rare; but I have

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found them in a group of plays by Fletcher and Shirley emanating from the same printing-house in the Barbican, with the imprint of Thomas Cotes, a score of years later.<sup>8</sup> As for the job-lot hypothesis, it remains plausible, but it has not been proved, and may not be necessary to account for the multiplicity of marks.

The moderate mixture of papers generally found in books allows a *sui generis* explanation. It lies in the manner in which paper was manufactured, packed in quires and reams, gathered by factors into bales, transported by waggon or boat, and shelved in warehouses. As a generalized procedure is hard to visualize, let us think in terms of books printed in England in the seventeenth century -- though the implications extend beyond these limits of time and place. For in the seventeenth century the ordinary papers used in English books came mainly from just across the Channel, from Normandy and Brittany.<sup>9</sup>

The rushing streams near such towns as Vire, Sourdeval, Fougères, Morlaix turned the wheels of a host of papermills, small family *usines*, mostly, with just one vat to dip paper-moulds in, and a small output daily.<sup>10</sup> Though little is known of his operations, a *marchand papetier* or factor seems to have bought up (weekly, say) the paper from various mills in a district.<sup>11</sup> As sometimes many mills were clustered along one stream<sup>12</sup> and may have been

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served by the same maker of moulds, we find here a reasonable explanation of the diversity of marks in books and also of the similarity of design often seen in a sequence of such marks. Paper watermarked with the arms of France and Navarre may

appear in a series of sheets, all of one pattern but with the labels of various papermakers attached.<sup>13</sup> When reams and bales of paper stood on the wharves at Caen or Morlaix or Rochelle,<sup>14</sup> we may suppose they had been sorted rather according to size and quality than according to make and mark. And no doubt the piling into cargo boats, the unloading at London, the stacking in the warehouse of the London paper merchant and later on the shelves of the printer he sold paper to -- all this handling contributed to the mixture of papers we find in books. And much might happen in laying out tokens of paper for the presses. All in all, it is hardly surprising there were few books consistent in their paper, hardly surprising that sometimes reams of differently marked papers were used in the printing of individual edition-sheets.<sup>15</sup>

Yet this is not all. Within the reams themselves the paper was in a sense consistent. But a subtle variation occurred, due to the number of moulds, and occasionally the number of vats, used in its making.

Students of the history of paper know that *pairs* of moulds were used in its manufacture. Regularly, if not inevitably, two similar moulds were employed together, in all mills, in the making of all sizes and qualities of paper. It is so today for homemade paper.<sup>16</sup> The vatman, after placing the deckle,<sup>17</sup> plunges a mould

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into his tub of paper pulp, expertly takes up just enough of the paste or allows the excess to run over the farther edge, removes the deckle, and passes the mould along the stay <sup>18</sup> to his helper. The coucher, after allowing the sheet to dry a moment, turns it out on the felt or woolen on top of the post<sup>19</sup> he is building, puts the mould on the bridge, <sup>20</sup> and presently lays another felt for the following sheet. Meanwhile, the vatman has taken up a second mould, added the deckle, and is forming the next sheet as he formed the first. The process goes on all day, the vatman passing the mould with the newly made sheet to the coucher, and the coucher returning the companion mould empty to the vatman. A good team at the vat and felts work rhythmically and efficiently at their equal jobs, and produce up to eight reams of paper a day. <sup>21</sup> From time to time the layboy removes the posts of felts and paper to the paper press. <sup>22</sup>

Documentary and material evidence shows that moulds were made and used in pairs from at least the early seventeenth century. Louis Le Clerc, citing records of the region of Troyes in Champagne, tells us that "Dans l'inventaire après décès de dame Jeanne Delalne, . . . dressé en juin 1614, il est fait mention de 'deux paires de formes servant á faire papier. . .'"<sup>23</sup> Alexandre Nicolaï, in discussing the inspectors who visited *papeteries* to secure conformance with the Tariff of 1739, publishes several reports that mention pairs of moulds. For instance, at Creysse (near Bergerac) in

Périgord, Inspector Marouze found "dans un moulin exploité par le Sieur *Jardel* . . . trois paires de formes avec leurs couvertes

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dont il y en a une paire marqué aux *Armes d'Amsterdam*, une autre marquée aux *OOO*, et une autre paire marquée à la *fleur de lys*, qui ont été poin&c.edil;onnées comme conformes."<sup>24</sup> Dard Hunter quotes a bill for moulds bought of Peter Wynne in London in August 1783 for Mark Willcox, the papermaker of Ivy Mills, Chester, Pennsylvania. It lists "1 Pair Double Fools Cap Paper Moulds" at £5 5s and "1 Pair Double Post *Do*" at £5.<sup>25</sup> And Alfred Schulte, in summing up certain results of German research, notes that "Im Jahre 1600 hatte die Oberfichtenmühle 2 Paar Formen, 1602 Doos 37 Paar, 1753 Röthenbach bei St. Wolfgang 11 Paar, 1839 Fischlaken bei Werden 14 Paar (darunter 2 Paar Doppelformen)."<sup>26</sup> Dard Hunter informs me that the Paper Museum at Cambridge, Massachusetts contains "a good many *pairs* of European moulds" with their attendant deckles; and I understand there are similar pairs in the Gutenberg Museum at Mainz.

The double moulds (*Doppelformen*) or divided moulds mentioned above were a development of the eighteenth century, in which two moulds usually of small format (such as foolscap) were placed side by side, so that a skilled vatman might dip two sheets at a time. Schulte has discussed their use in Germany,<sup>27</sup> Povey and Foster their probable use in England from 1709 or earlier,<sup>28</sup> and Labarre, with excellent illustrations, a well-preserved double mould of Honig & Zoon, famous Dutch papermakers.<sup>29</sup> Naturally, the companion sheets of such a mould exhibit similar watermarks, as Schulte's and Labarre's illustrations show. But double moulds themselves were made and used in pairs, as we can see from the Willcox purchase of 1783.

Although some early accounts of papermaking make no mention of pairs of moulds, the standard accounts, of course, do. Thus,

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La Lande in his *Art de faire le papier* (Paris, 1761), the authoritative voice of the eighteenth century, remarks:

Une seule couverture suffit pour les deux formes qu'on emploie dans le travail du papier; car . . . l'une des deux formes est toujours découverte

au moment où l'autre se plonge dans la cuve avec sa *couverture*.

And later in describing the process:

Le Plongeur, en ôtant la couverture de dessus cette première forme, la place tout de suite sur la seconde forme, qu'on lui donne pour la plonger à son tour.

. . . le Coucheur relève sa forme, en commencement par la bonne rive; il la rend au Plongeur aussi nette qu'avant qu'elle eût été plongée, & il trouve sur le trapan de cuve une seconde feuille à coucher qui a été formée pendant qu'il couchoit la première, & qu'il relève en passant, avant que d'étendre le feutre. Ainsi l'on voit, qu'au moyen de deux formes qui sont toujours en mouvement, il n'y a point de temps perdu: pendant qu'une forme se plonge, l'autre se couche; quand le Plongeur passe une forme au Coucheur, il en re&c.edil;oit une autre qui est vuide, sur laquelle il pose la couverture qu'il retire de dessus la première, & il plonge de nouveau. [30](#)

La Lande offers a series of valuable plates, among which no. XI pictures a vatman dipping one *forme* while his coucher is releasing a sheet from the other; and another pair of moulds is seen in the foreground. This plate has been reproduced by Renker. [31](#) Hunter has brought together several instructive pictures of papermaking in which the two moulds in use can plainly be seen. [32](#)

Though historians of paper have thus stressed the fact of companion moulds, not much attention has been paid to the companion watermarks produced by such moulds. (Are they identical? Are they different?) Relatively few collectors have taken note of them; and bibliographers, at least in the English-speaking world, have seemed oblivious of them. A reason perhaps is that McKerrow, in the bibliographer's bible, makes no mention of pairs of moulds, though he gives a short description of papermaking. [33](#) Inasmuch as bibliographers in their innocence commonly assume that the papermarks

in a quire or ream are invariant and indistinguishable, what follows has a *raison d'être* - and illustrations.

Watermarks result from designs made of wire and attached to the moulds. Le Clert points out that "La confection des formes était une industrie spéciale exercée par les

*formiers ou formaires*."<sup>34</sup> That is, skilled artisans set up as makers of moulds and supplied the needs of a papermaking region. Less often they were papermakers themselves.<sup>35</sup> An examination of old moulds, such as those at the Dard Hunter Paper Museum, leaves little doubt that European mould-makers came to be exceedingly clever workmen, seasoning the wood and securing the laid wires and buttressing the chain wires as they did.<sup>36</sup> They fashioned the watermark patterns out of brass wire and sewed them to the moulds with finer wire.<sup>37</sup> Though the ordinary wireform was not a work of art, particularly after a period of use, it was sufficient and not unattractive; and it was often so neatly duplicated as to deceive students into supposing that companion marks are the same marks. Thus cataloguers of incunabula or Renaissance books who state categorically "This copy has the same watermark throughout" are usually, if not invariably, wrong.

The maker of moulds can hardly have intended to deceive anyone. It was enough if a pair of moulds resembled each other so closely that the vatman would always know them for mates. What was important was that the *formier* should cut the mould frames precisely alike, so that the single deckle would fit them both neatly. But the twin watermarks might vary somewhat in height or position or details of design without affecting the certitude of their belonging together. Indeed, as we shall see, the mould-maker must sometimes have intended a distinction, as when he put the handle of a pot once on the left, once on the right. Some more patent

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differences may have resulted from two mould-makers working together, or from a papermaker improvising a filigree in imitation of one that was lost. Even when a skilled artisan took special pains with moulds for fine paper (as sometimes he did), the complexity of the design, differences in chains and lettering, and wear of the wireforms in use prevented one watermark from being or continuing to be a replica of the other. Standardization was not yet. With good sight, undiffused light, and a millimeter scale, the bibliographer today can train himself to distinguish the watermarks from companion moulds, except where heavy print or close binding serve to defeat him.

Though some have not pondered his words, Briquet spoke clearly on these matters, out of years of experience:

. . . chacun sait que dans l'ancienne manière de faire le papier on se servait de deux moules ou formes que l'ouvrier plongeait alternativement dans la pâte. Le papier produit, portait donc par parts égales l'empreinte de chacune des formes employées et ce mélange se

voit dans chaque rame et dans chaque main de ce papier. Ces deux variétés du filigrane sont parfois *identiques* au point qu'on ne les distingue que par la place un peu différente que chacune d'elles occupe sur la feuille de papier. Parfois les deux variétés sont *divergentes*, voy. *coupe* (n<sup>os</sup> 4542 et 4543), *couronne* (n<sup>os</sup> 4791 et 4792), *croix grecque* (n<sup>os</sup> 5525 et 5526); le plus souvent elles sont *similaires* n'offrant entre elles que des différences légères de forme ou de dimension, voy. *pot* (n<sup>os</sup> 12.893 et 12.894), *serpent* (n<sup>os</sup> 13.801 et 13.802), *tête de boeuf* (n<sup>os</sup> 14.388 et 14.389). [38](#)

If perchance the term *filigrane identique* is slightly misleading, this is the lesson of the master, and the reader would do well to examine the indicated pairs of marks before entering the forest.

It is convenient to refer to Briquet's several categories of degree as *twin* watermarks, a term suggesting either identical or ordinary pairs of twins. The term *companion* watermarks also has useful connotations. But for purposes of efficient analysis and description, I have found it necessary to observe certain *points of difference* which recur in twin watermarks. Among useful points of difference are these:

- 1) Difference of mould-end. Often the pairs of marks appear in different halves of their respective moulds and the sheets of paper made on them: variant *a* centered in the left halfsheet,

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*b* in the right halfsheet. Actually, this is mainly an inference from the fact that some marks read *in* and some read *out*. Frequently the inference may be checked by the indentations made by the watermark or chain wires. Where these are clear, it appears that commonly, if not normally, the lettering on the mould itself was reversed, as in typography; that is, a watermark in a left halfsheet with left-to-right lettering usually was impressed by a wireform with right-to-left lettering in the right half of the mould; for the indented side or "smooth" side is obviously the mould side of the paper. Of course, there are exceptions, as when a label was turned and re-sewn non-reversed. In ambiguous or uncertain cases the Difference may be called one of in and out.

- 2) Difference of chain-position. Sometimes a mark fits neatly between the chains while its twin does not. Or a small mark is centered in one instance but touches a chain in the other. Some pairs are centered *on* a chain, with the line cutting through at slightly different points. A few are sewn to a chain or between chains that do not correspond to those of the companion mould, the count being different from the end-chain or deckle, so that they appear higher

or lower in a quarto fold. We may call a chain that splits a watermark its *center chain*, and those that it falls between or that cut its edges its *attendant chains* or *outer and inner chains*.

3) Difference of chain-space or chain-pattern. When the attendant chains vary as much as 2 mm. in their distance from each other, this often is the easiest means of telling the twins apart. A smaller variation, though usable, may prove elusive, because of paper shrinkage or vagaries in the parallelism of the line. Differences of as much as 4 mm. occur. Actually, the chain-structure of two handmade moulds will never be precisely alike; thus remote chains are sometimes as useful as near ones, if they differ markedly in relative position or form. Occasionally an end-chain or other margin-chain has a wobble or a break that may be seen at a glance.

4) Difference of slant. At least one of the marks has not been sewn to the mould in an upright position and leans to right or left. Or an important part has been bent. In doubtful cases it is wise to measure upper and lower distances from the nearest chains;

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particularly in quartos, where one sees but part of the watermark at a time and may be uncertain which side of the paper one is looking at.

5) Difference of reversed pattern. The mould-maker has made one mark the reverse or mirror-image of the other, except for names and initials. In the Arms of France and Navarre, for instance, Navarre may be first on the left, then on the right, with respect to the lettering below. This makes a pretty distinction, which seems to have been intentional on the part of some mould-makers.

6) Difference of label. One mark carries a "full name", the other mere initials or a name-abbreviation: as DVAVLEGARD and DVG. Or one may have initials, the other none. Or a name may appear in two spellings. The labels themselves may have different shapes. And occasionally one of the labels gets inverted or attached to the wrong end of a grape or shield watermark.

7) Difference of countermark. Countermarks are of course the smaller marks that appear opposite the main marks in the other half of the mould or sheet; they are common after 1650 or so. When they contain lettering, they vary much as labels do. Sometimes one of the countermarks has fallen out of its mould. Frequently, though the mould-maker has made the main marks "identical," he has taken less trouble with the countermark letters and has spaced them differently. And one set of countermark letters may be reversed or even inverted in respect to the main mark. Those countermarks that are letterless differ in detail or position as other marks do.

8) Difference of distinctive detail. One mark has an element of design not found in the other. A pot may have a fleur-de-lis within its base, its companion none. One bunch of grapes may have a curved stem, the other a comparatively



straight one. Such differences may have been original or consequent to use. It was easy for separately attached bits of the design to break off or drop out during the process of papermaking or the brushing or cleaning of moulds after use.

9) Difference of sewing. Particularly in early watermarks, where heavy sewing-wire was used, the sewing marks can be seen.

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These are what Sotheby calls *dots*.<sup>39</sup> Their differences of position may serve to distinguish nearly identical marks. When the wire-forms came loose, then arose Differences of resewing. In such cases the dots often are plainer, especially if linen thread has been used in temporary replacement; and the sewings may appear in new places. At this same time the watermark itself may have been moved, so that it reappears between wider chains (say) or even in the other half of the mould.

10) Difference of distortion. Parts of the design have been bent out of position. This ugliness is less often due to malformation than to deterioration. The wireforms commonly went to pieces before the moulds to which they were attached.<sup>40</sup> They came partly unsewn, at one or more points. The result was sprung wires, bent wires, shifts in position -- and increased differentiation from the twin mark. The wires might be further bent in resewing. Certain of these distortions in the life-history of watermarks will be illustrated. The awkward thing is that the shape of a mark may change in some difficult-to-describe particular while the detective pursues it from gathering to gathering of a pompous folio. Naturally, such changes limit the certainty of recognition when he meets the mark in another book.

These ten points of difference, closely observed, serve to train the bibliographical eye. Those points having to do with chains are perhaps the most helpful (despite the vagaries of resewing), and the student soon learns the advantage of measuring the chainspaces as part of the routine of examination. Distances of key points from the attendant chains often repay measurement, though much measuring wastes time. Slight differences in the overall size of a watermark prove less useful than differences of two or five millimeters in a part, for these the eye can judge. The filigranist will learn not to assume while looking at one twin what the main point of difference is likely to be: both twins may be disfigured by a harelip and yet differ markedly in some unexpected detail. In note-taking it is important to follow a neat, consistent practice, to avoid

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ambiguity and differences that are not differences. Assuming that papermarks appear "normally" in the left halfsheet, we may agree to record measurements *away* from the deckle and *in* to the center of the sheet, that is towards the folio fold or the quarto headlines, or else in the direction of the lettering or the normal arrangement of a coat of arms, though then we have to note the direction as *out*. I have adopted a system of using square brackets to enclose the breadth of a significant detail or of a whole design, and vertical lines (or typewriter colons) at need to show the relevant position of chains; and I find this system avoids later misinterpretation of notes. Thus the crescent or fleuron in the superstructure of a pot may measure :3[13]5: or, more simply, 3[13]5 -- which means that the part is 13 mm. wide, centered between chains 21 mm. apart, 3 mm. from its outer chain and 5 from its inner chain (unless we are reading *out* with the lettering). It may be useful to insert the name of the part: 3[Crescent 13]5. Similarly, [4:3] or 4:3 indicates a detail split by a chain; and [2:20:22:2]-out measures a shield extending over chain-spaces of 20 and 22 mm., and 2 mm. on either side of them, reading towards the deckle. When the edges of the mark coincide with chains, the measures can be set down as [:20:22:] or o[20:22]o or even [20:22] -- if the missing detail is understood. [Fl 17:23:] or 5[Fl 17:23]o describes a royal fleur-de-lis 40 mm. across its petals, cut left of center by one chain, and just touching its inner chain. Luckily, most papermarks appear upright on or between chains and so may readily be measured consistently in one direction, *across* the chains, in both folios and quartos. [41](#)

The student may observe examples or possible examples of twin watermarks in various published collections, though the collector himself may not have recognized their nature. Briquet, as we have seen, points out examples of *filigranes similaires* and *filigranes divergentes*.[42](#) Curiously, one of the earliest writers on the subject of watermarks understood their basic nature better than some later men. Though Samuel Leigh Sotheby may not have

inspected papermoulds, his observant eye had noted that watermarks in incunabula turn up in twos and multiples of two:

The Sieves appear to have been procured either in pairs, fours, sixes, eights, or twelves, and about the centre of each, prior to its being used, the watermark was fastened, by the workman of the paper-maker, on the inside of the form, between the upright or cross-wires . . .; an operation which, it is almost needless to observe, can never be so accurately executed as not to present some shades of difference every time, even when it has to be repeated with the *same identical* instrument; not to

speak of the difference that must exist when the duplicates are employed. Accordingly, it is only by comparing them together, with reference to this disposition of their component parts, that their actual differences can be satisfactorily determined. Thus, when the tracing of one is placed over the fac-simile of another of the same device, no difference is frequently discernible, except in its position with regard to the upright or cross-wires, being in some more oblique, or at a greater distance, than in others; a difference sufficient, however, to show that the sheets of paper were not made from the same sieve.<sup>43</sup>

Except for the assumption that all the moulds were used in one mill, one or two misconceptions concerning the affixing of watermarks, and an overstatement of their similarity, this is all very good; and it is surprising that such remarks, published in 1858, have so little influenced collectors and bibliographers. Briquet, Weiss, Schulte, and Dard Hunter have added something to the subject; but Ataide e Melo, Churchill, Nicolai, and Heawood (among collectors) have shown little awareness of this thing which is part of the essential nature of watermarks. Heawood, to be sure, frequently reproduces a number of marks from one volume, and sometimes adds a variant detail or countermark "from another sheet," without noting their implications, yet thus furnishes the clue to companion marks, particularly of the seventeenth century.<sup>44</sup> However, it is only Sotheby who sets a considerable number of pairs of marks (of the fifteenth century) side by side.<sup>45</sup> Schulte shows how such twins became quadruplets in the double moulds of the eighteenth and nineteenth centuries.<sup>46</sup> And Dard Hunter

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notices not merely a variant bull's head in the Gutenberg Bible, but several pairs among American watermarks.<sup>47</sup> Recently in the *Gutenberg Jahrbuch 1950*,<sup>48</sup> through photographic illustration of the "initial watermark of the Craig and Parkers mill, the earliest paper mill in Kentucky," he has shown that this mark is twins.<sup>49</sup> And now in his magnificent work on *Papermaking by Hand in America* (Chillicothe, 1950) he publishes *facsimiles within handmade paper* of the same pair of Kentucky moulds (in laid paper) and of two pairs of early Ohio moulds (in wove paper).<sup>50</sup>

The plates accompanying the present article offer simple examples of twin watermarks, with a few that lead to complications. Among those photographed, one pair are taken from a mid-sixteenth-century manuscript, three from endpapers removed from seventeenth-century bindings, two from a mid-seventeenth-century folio with plates, and two from a royal writing-book resplendent with the watermarked arms of King William and Queen Anne.<sup>51</sup> The marks as reproduced may vary slightly from their natural size.

During the discussion the reader needs to keep in mind pictures of the old moulds, such as those illustrated by Clapperton, Hunter, and Degaast.<sup>52</sup> The chains ran the short way of the mould, so as not to impede surplus pulp from falling over the edge away from the

vatman, and commonly produced chainlines in the paper from 17 to 25 mm. (or  $\frac{3}{4}$  to 1 inch) apart.<sup>53</sup> Though extant moulds show the main watermark centered in either half, with the countermark similarly placed in the opposite half, my notes suggest that in the period before countermarks the watermark was oftener on the right side of the mould, and thus in the left halfsheet of the paper, reading in; except that certain seventeenth-century mould-makers put one mark of a pair on the left and one on the right. The point is worth further study. It is not easy to be certain in an individual case, if the indentations are not clear, for some marks no doubt had their lettering left to right on the mould.<sup>54</sup>

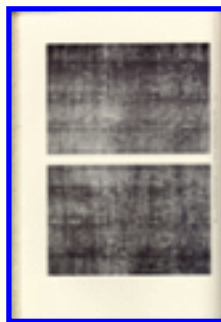
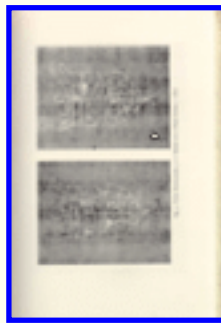
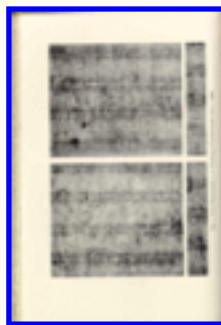
SHIELD: STARS DIVIDED PER BEND. MS Volume of Property Records, Langenzerdorf, Austria, 1556-1738. 4°. Jirgal. Fig. 1.

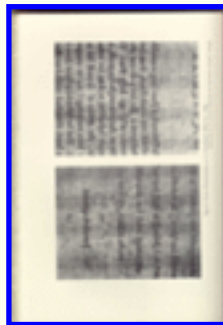
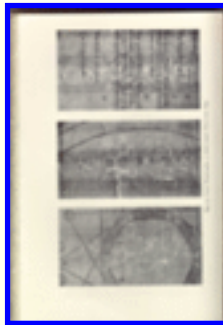
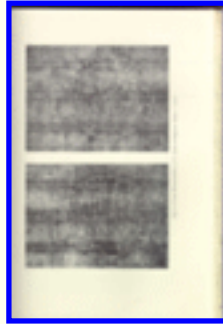
The manuscript, written in various German hands, deals with property-holdings at a village near Vienna. The first entries are dated 1556. Sixty-nine leaves of script (some crossed out) are followed by eighty or so blank leaves, and a few apparently have been lost. The paper is coarse, rough, slightly sized, with leaves measuring  $7\frac{3}{4}$  x 6 inches (198 x 154 mm.). The watermark, as the illustration shows, is a small shield of about 18 x 16 mm. centered between chainlines 26-27 mm. apart. There are two varieties, and they may be distinguished at a glance. Variant *a* slants to the right, and variant *b* to the left, at angles of about 80°; and further particularization is unnecessary. As there are no other marks in the volume, it is instructive to note how many instances of each variant there are. Expectations are neatly satisfied: *a* occurs 17 times and *b* 16 times. The arms, two six-pointed stars separated per bend, appear to be those of Kaufbeuren (see Heawood, 490, 509), a city fifty or so miles southwest of Munich. Luckily the mark occurs just above the middle of the sheet (higher in variant *a*) and is not caught in the quarto fold. Judging by the position of the end-wires or *tranchefiles*,<sup>55</sup> along with the indentations, the two variants were situated in the *opposite* halves of their respective moulds, non-reversed.

POT P LEGRAND. Endpapers, c. ?1660. 4°. AHS (my copy). Fig. 2.

The pot watermark, so common in the sixteenth and seventeenth centuries, underwent a thousand permutations. Here is a style not illustrated in Heawood, nor

elsewhere, apparently. Many a Norman pot is topped by a





crescent and fleuron, has five lobes with alternate trefoils and single balls, has bars across its bowl and a bell-shaped base; but the name-label below is certainly rare, though it occurs often enough in grape, shield, and fleur-de-lis marks. The handle is more commonly on the left; and it is the handle here that readily distinguishes the twin variants. In variant *a* the lower part of the handle curls neatly 2 mm. within the attendant chain, whereas in *b* it is broken or sprung and extends 3 mm. across the line. A short examination reveals other differences. Though both pots measure 81 x 46 and are nicely centered on a chain, *a*'s chain-spaces are 20.5:20.5 and *b*'s 19.5:19.5. The crescent in *a* is relatively open and marred by a loose sewing-wire, and measures 5:4. That in *b* is more circular and measures 4:5. The foliage on *a* measures 7[13:14]6 and the more luxuriant flowering on *b* 4[15:16]3. Several differences show up in the lettering: *b* being distinguished by a label that touches the left chain and is cut by the right chain along the right of the N. In checking pot watermarks in quartos, it is important to note points of difference in both halves of the mark. I am uncertain on which side the deckle was in this instance. The label P. LEGRAND gives us the name of a papermaker, presumably Norman, not mentioned by Heawood or Bourde de la Rogerie. [56](#)

FOOLSCAP & COUNTERMARK MPX. Endpapers, c. 1688. 2°. AHS. Fig. 3.

This pair of foolscap watermarks is such as to delight a small boy, if not a bibliographer. For watermarks are not lacking in humor. In variant *a* the Fool has thrust his long nose up to a chainline; in *b* he has pushed it quite 4 mm. over. Though this may be difference enough for all parties concerned, the pair illustrate several other points of difference. Fool *a* (92 x 58) has the five (Norman) points of his coat well separated, though the back one is squeezed and others are bent; while Fool *b* (94 x 58) has two of his points hanging together so that a bell touches the reversed 4 below. Where Fool *a* is a roundhead, *b* is a flathead with a larger cephalic index. The main chain-spaces of *a* measure 22:25 *in*, those of *b* 24:23.5; and the mid-chain of *a* splits one of the three balls, while that of *b* merely touches it. Each of these Fools is accompanied by a countermark, a label reading MPX, and these labels are also readily distinguishable. Countermark *a* (11 x 33) is cut by a chain 16:17 out, along the back of the P; and *b* (10 x 34) is cut 16:18 between the M and P. In both endpaper sheets the watermark appears in the left leaf and the countermark in the right, and the leaves measure 117/8 x 81/8" (301 x 208 mm.), with some deckle remaining at the fore-edges. According to Heawood, the initials MPX stand for M. Pallix, apparently a Norman papermaker of the latter part of the century. [57](#) Though

the endpapers are undated, I note a similar fool with countermark MPX in a Sanderson pamphlet of 1688, [58](#) and Heawood points out another in the *Paradise Lost* of 1695.[59](#) But recently I have come upon the identical Flathead Fool of Fig. 3*b* in *The Historical and Chronological Theatre of Christopher Helvicus* (M. Flesher, 1687), ICU copy, sheet S. He is at all points the same, except that the second point of his coat has not yet fallen against the front of the figure 4. The ICN copy has a quite different Pudding-faced Fool (with countermark MPX) in the same sheet.

SHIELD FM & THREE LIONS. Endpapers, *c.* 1610. 2°. AHS. Fig. 4.

The crowned shield with quarterly a fess and three lions is one of the more intriguing of French marks. Though the design may have come out of the Rhine country,[60](#) the style here is certainly French. The date 1610 sometimes found in the base of the shield may denote the first regnal year of Louis XIII. Other shields of the time have Norman name-abbreviations within the fess, but the initials FM have not been identified. The oddest thing about the present pair is -- what the reader will have seen at once -- the reversed date of variant *b*. Though the initials appear in a customary position in the first quarter, and the lions ramp regularly to the left, the year has got in backwards, except for the numeral 6. [61](#) The marks are not among the prettiest examples of the mould-maker's art, for they have suffered some deterioration, but they well illustrate common features of *écu* watermarks, such as the crown with fleur-de-lis, "horns," and band of annulets, the spear-rests on either side, and the conventionalized *toison d'or* below. Such complex designs invite differences. Shield *a* (83 x 48) is elongated and well centered on a line between spaces 19:20. Shield *b* (81 x 54) has its fleur-de-lis spread between chains 20 mm. apart. Shield *a* has a deeper fess and taller letters, and has lost the outer wire from its second quarter. Shield *b* has extended horns, a tailless lion in its second quarter, and a smaller sheepskin below. And so on. The differences provide practice in observation. As these endpapers have been cut down, it is uncertain whether the shields are from left or right halves of their moulds.[62](#) We shall have more lions anon.

ARMS OF KING WILLIAM III. Blank Writing-book, *c.* 1715. 2°. ICU. Fig. 5. Style of Heawood 442.

A recent acquisition of the University of Chicago Libraries is a thin folio volume neatly bound in morocco, stamped with pots and the initials



IP, and containing 3 unnumbered and 83 hand-numbered leaves of blank paper. The pages measure  $10\frac{3}{4} \times 6\frac{3}{4}$ " (272 x 169 mm.) and are of a good, creamy-white paper. The unnumbered leaves and leaves 1-44 are watermarked with the handsome arms of William III, with simple countermark Crown GR; and leaves 45-83 similarly with the arms of Queen Anne after the Union with Scotland (1707), with countermark GR in a wreath and oval. That is, 55% are of the one and 45% of the other. In each instance the papermaker, whether Dutch or English,<sup>63</sup> has made an extraordinary attempt to produce identical watermarks; and a bibliophile examining the volume might never note the difference.

King William's arms consist of a crowned oval and shield quartered with the arms of England, Scotland, Ireland, England, with an inescutcheon of the Lion of Nassau, the motto "Honi Soit Qui Mal Y Pense" in the surround and "Semper Eadem" below. The whole measures 5 inches tall, or 126 x 81 mm. Both shields of the pair are carefully centered on a chain that splits crown and shield; and the shields fit precisely between attendant chains spaced 24-25 mm. (nearly an inch) apart. Differences are not readily distinguishable within the shields; but in *a* there is a space below the harp, and the Scotch lion is higher within its tressure flory. The lettering betrays a discongruity. In *a* the O of HONI is opposite the S of SEMPER; in *b* nearly opposite the E. In *b* the I of SOIT slants. In *a* the Q of QVI is low. In *a* the R of SEMPER almost touches the center chain; in *b* it lacks 2 mm. or so. This last is perhaps the point most easy to note in turning the pages; for some variations transpire only when the photographs are placed side by side. The countermarks (not illustrated) are even more difficult to distinguish; but one has a longish foreleg on its R, the other a slightly curved foot. So much for King William.

ARMS OF QUEEN ANNE. Same blank volume. Fig 6. Style of Heawood 441.

This is the feminine counterpart, on slightly thicker paper. The designs measure nearly  $3\frac{3}{4}$  inches tall, or 94 x 64 mm., on chain-spaces as before. Again the crowns and shields are carefully centered, with the inner oval this time fitting within the attendant chains. The quartered arms consist of the three leopards of England impaled with the lion of Scotland (with tressure on three sides) in the first and fourth, the lilies of France in the second, and the harp of Ireland in the third, with merely the HONI SOIT motto in the band. Again differences within the shield are hard to see; but in variant *a* the right side of the shield is noticeably wider, and the harp is

perhaps larger and closer to the lower edge. The buckle below shield *a* is certainly broader. Easy points of difference reside in the word MAL. Not merely does the line

cut at a different place, but the A is broad in one and narrow in the other, and in *b* the L seems to be broken. The countermarks (not shown) are similar to that in Heawood 448 and may be distinguished by a break at the top of one oval. It is interesting to note that the main marks of William are distributed 11 and 12, and those of Anne 10 and 10. But just why the two papers were thus combined in one writing-book is not very clear.<sup>64</sup> The use of the countermark GR with the arms of William and Anne suggests a date not long after the accession of George I.

POT C/AB. Inigo Jones, *The Most Notable Antiquity of Great Britain, Vulgarly Called Stone-heng* (J. Flesher, 1655). 2°. AHS, ICU. Fig. 7.

The prevailing watermark in Jones's *Stonehenge* is a tall, baroque pot, surmounted by a circular crescent and a large fleuron (or quatrefoil), with five lobes and sets of trefoils emerging from an embroidered pot-cover, with a fleur-de-lis on its throat, a crescent C on its bowl, and another fleuron within its derby-shaped base. It, of course, is twins. But that is not all. Each twin lives and grows old. Fig. 7a1 shows one of these glorious pots (109 x 47) as it emerged proudly from the *atelier* of the *formaire*, perfect in every detail, except for the leftist position of its base fleuron. Its top crescent is centered, its handle is a symmetrical S, its bowl and its base are polished and unscratched. But pots lead a hard life, whether in the tavern or the papermill, and pictured next (*a2*) is the same pot after its handle has been banged, its bowl dented, and its derby base woefully crushed; and then (*a3*) this pot in a further state of degradation. Actually, I have distinguished as many as six states! Where at first its crescent is placed neatly between chains reading 4[15]4 *in*, in later states deformed it appears with the crescent sewn beside a chain, or cut by it, or recentered, sometimes reading *out*, sometimes *in*. In one the handle is distorted, but the base looks still good. In others the base is wrenched first one way, then the other. Strangest is the state (*a3*) in which the top crescent is once again centered, reading *in*, and the crescent C on the bowl has been resewn so it looks reversed! Still reasonably sound of body though infirm of limb, this pot might yet live through further accidents into age and ugliness.

All the while this pot has a twin that also experiences some of life's hard knocks. Of almost identical size (111 x 47), it is distinguished by a thickish crescent above, a flattened left petal, a thinner crescent C on an eggshaped bowl, a higher bar on the A and a fleuron nicely centered within the base. Its letters consistently read *out*. The plate shows four states: *b1* with the handle prettily curled and tacked to the chain; *b2* in the same position

but with the points of the top crescent separated and the lower line of the handle

broken and sprung; *b3* with the top crescent and fleuron sewn to a chain at their right and with the handle repaired and sagging; and *b4* with the pot bent and impaled on a line and the handle sagging farther. There is even a variety, between *b1* and *b2*, with the crescent points parted and the handle still intact.

***a Top crescent thin. Top fleuron regular. Base fleuron left.***

	Form	Crescent Letters	Detail	AHS	ICU	
1	Handle S-shaped	4[15]4	IN	S sewn to chain	M4 *	M4
	" "	3:12	OUT	Chain along B	N2	N3
	" deformed	7[15]0	IN	Pot tipped left	N4	
2	" & base deformed	6[15]1	OUT	Chain along B	pl 1 *	F4
	" " " "	7:8	OUT	Trefoils o[23:22]1	I3	pl 5
3	" " " "	4[15]4	IN	Crescent C	pl 5 *	pl 7
				reversed		

***b Top crescent thick. Top fleuron petal flat. Base fleuron centered.***

	Form	Crescent Letters	Detail	AHS	ICU	
1	Handle curled	13:3	OUT	Crescent joined		M2 *
	" "	13:3	OUT	" parted		K4
2	" wire sprung	13:3	OUT	" "		I3 *
3	" sagging	6[16]0	OUT	Handle mended	pl 3 *	C4
4	" " low	7:9	OUT	Pot bent left	pl 4 *	E4

All this is extraordinary. The volume is a thin folio of 60 leaves (A-P4), with portrait and 5 folding plates (two on larger paper with shield watermarks). My copy

measures 11 1/8 x 7 1/2" (282 x 190 mm.); ICU is slightly cut down and lacks the portrait and some plates. A smaller Pot C/AB appears sporadically (AHS M3, clear), Pillars CG (?) turn up once (AHS O3), and in gatherings P and A a fine Cardinal's Hat IVL, as twins. Yet much of the life-story of the big C/AB pots is enacted before our eyes, with late states the commoner for both. In other folios I have encountered variations in sewing, a second or even a third state -- but nothing like this. Yet reasons are not far to seek. The paper is clearly "fine pot." As paper improved with age, the papermaker may have stacked his reams for some months before selling; so that reams made weeks or months apart came into James Flesher's printing-house together. Flesher printed plates and early sheets on deformed pots, and later sheets mainly on the earlier states. Then finally he ran out of pots and began using hats; or else he wanted his finest paper at beginning and end. (The illustrated pots are asterisked.)

The identification of the papermaker CAB is hardly possible now; but there are clues. His fondness for the crescent may have something to do with his name. The smaller C/AB pot in the *Stonehenge* volume has *three* crescents: one aloft, one in the neck, one in the initial C. Heawood illustrates an undated C/AB pot with an open, two-lined C (3601); and I have noted a

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pair of pots with a like C in Dudley North's *Forest of Varieties* (R. Cotes, 1645) (CSmH). As for the letters AB, possibly they stand for ABADIE, a family which within our century has continued to run a papermill at Theil-sur-Huisne (Orne), near the eastern confines of Old Normandy. [65](#)

CARDINAL'S HAT IVL. Jones, *Stone-heng* (1655), as above. Fig. 8.

This watermark well illustrates the normal use of printed folios in the study of twin watermarks. Though the mark occurs only in the final and preliminary gatherings (P and A, in fours) -- thus neatly showing the preliminaries were printed last -- and the letterpress of the dedications mars the photographs, the variants can be compared in detail. The Cardinal's Hat is from ecclesiastical heraldry, and thus often appears as a crest above shields in watermarks -- as in Heawood 681-683, 691, 792-800. As a separate watermark the Hat was used for two decades or so: Heawood lists or illustrates a dozen varieties from 1649 on; [66](#) but it is not the "Cardinalls Armes" of the Oxford Pricelist, 1674. [67](#) Both Nicolai and Heawood picture examples of Cardinal's Hats over handsome floriated pots; [68](#) and this combination of ideas, along with the appearance of hats in the *Stonehenge*, suggests that the Cardinal paper was for a time regarded as a fine pot paper.

In the illustrations the hats can be distinguished both by their shapes and by their positions relevant to the chains. Hat *a* (59 x 65), is spread over several chain-spaces and measures 1[54]14 *in* along its brim, with its crown cut by the center chain. Hat *b* (57 x 61) measures 8[53]7 *out* along its brim and has its crown jammed between lines 24 mm. apart. The tassels differ too. The letters IVL probably stand for I. Vaulegeard, [69](#) of a papermaking family with a mill or mills near Sourdeval in *Basse-Normandie*. [70](#) As the letters on Hat *a* read in and those on Hat *b* read out, reversed on the indented side, the matching moulds had their marks in contrary halves. (The illustrations are from the AHS copy, A2, A3.)

We now turn to a few examples of twin watermarks in Shakespearian quartos and other important books, and begin to note bibliographical uses and applications.

POT P. Shakespeare, *King Lear* ([N. Okes], 1608). 4°. CSmH, NN.

In recent years the Pide Bull quarto has received much attention

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from bibliographers and students of printing. Greg, Bowers, and others have revealed much of its printing history. [71](#) Yet little notice has been taken of the paper on which this famous quarto is printed. [72](#) Quite possibly (I once said to myself) the watermarks will throw further light on the way in which *Lear* went through the press. After an examination of two copies the answer seems to be No: this is a book with "one watermark throughout." It is in fact a model of consistency, and its watermarks verily deserve Briquet's rank of *filigranes identiques*. They are neat small pots, with bars and the letter P etched upon their bowls. If there are further letters I have not made them out, because of tight binding in the Lenox-New York copy and inlaying in the Kemble-Devonshire-Huntington copy. They are typical Norman pots of the time, with slender necks, handles at left, and round bowls. A chainline cuts these pots from top to toe, and provides a subtle means of distinguishing the variants, there being scarcely more than a millimeter's difference in its relative positions. These are the chain-positions, reading up:

	Trefoil	Pot Top	Neck	Bowl	Base
<i>a</i>	5:3	4:2	3:2.5	9:10	11:13
<i>b</i>	4:4	6:6	2.5:3.5	9:10	12:12

In *a* the chain-spaces are 22 mm., in *b* nearly 23 mm. Pot *a* has a rather flat top and a

slightly concave base; *b* a curved top and relatively straight base. Both bowls are 19 mm. So minute are the differences that an unpractised eye might well accept these identical twins as the same mark. [73](#)

Where only one pair of marks appear it is obvious they offer little bibliographical help, though they do suggest a continuous printing operation. If the same pair of pots turn up in other Okes books of 1608, they might serve to identify the printing-month.[74](#) And it is yet possible to find mixed marks or an intrusive mark in the ten other extant copies of *King Lear*.

POT PA. Shakespeare, *The Whole Contention betweene . . . Lancaster and Yorke* (W. Jaggard, 1619). 4°. CSmH. Greg 23.

It is pleasant to reëxamine the watermarks that Sir Walter Greg discovered in the Shakespearian quartos of 1619, some of them falsely dated.[75](#) Among twenty-seven watermarks he found just one which persisted through a play; and this one did through both parts of the *Contention*, which have continuous signatures. The other marks were riotously distributed through eight quartos. The *Contention* watermark is a pot, no doubt a Norman pot, though it is topped by a heart within a circle. Its handle is on the right, with the initials PA reading toward it. Greg gives a freehand portrait of this pot, [76](#) pointing out that "in the 'Contention' the paper is all of one make" and has "one mark (23) throughout."[77](#) On the plate he notes: "The bends [in the wires] are considerable in some cases." In the light of new experience this remark now suggests the presence of *filigranes similaires* -- two varieties differing only in minor points -- and such proves to be the case. Actually, when one knows the trick, the two are quite easy to distinguish, for in Pot *a* the letters consistently read *up*, and in *b* as consistently *down*. Unlike the Pide Bull *Lear*, which had both pots in the same end of their moulds, the *Contention* probably had its pots in contrary ends. These further points also serve to distinguish the *Contention* pots (reading with the letters):

	Chains	Circle	Left ball	Middle lobe	Bowl	P	Base
<i>a</i>	21	7[8]5	Bent left	Slanted rt.	0[18]2	Open	2[15]3
<i>b</i>	20	6[8]4	On point	Straight	[1:19].5	Closed	4[15]1

In the Huntington copy the distribution is odd: Pot *a* occurs in sheets A B C D E G H I

M N and *b* in F K L O P Q; but we must not always expect a regular alternation in twin watermarks. Variant *b* turns up once in the Church-Huntington copy of *Pericles* (1619), reading, as it should, down. Heawood has no PA pots, and the meaning of the initials is uncertain.

In a similar manner most of the other Shakespearian watermarks of 1619 turn out to be pairs. Pot R/LM (Greg 2) and Pot BP (Greg 5) are particularly worthy of study. The RG Shields (Greg 15 & 16) are themselves twins; but the RG/D Shield (Greg 18) may be quadruplets. These matters are somewhat complicated and deserve separate treatment.<sup>78</sup>

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SHIELD R<sup>G</sup>D & THREE LIONS. William Camden, *Britannia*, tr. Holland (G. Bishop & J. Norton, 1610). 2°. ICU. Style of Heawood 576.

Lions again. Camden's great book is a crown folio (ICU 12¾ x 8½" or 321 x 214 mm.) regularly watermarked with small crowns, but with crowned shields in its maps. Most of these are emblazoned with initialed fess and three lions. The designs (87 x 55 mm.) are neat, symmetrical, fresh -- unlike the abused FM shields of Fig. 4. But the pattern is the same, the date 1610 again occupies the base with an annulet below, and the *toison d'or* now looks more like a sore tooth than a sheep. The third lion resembles a lion passant. The initials are G over R D; but the lower letters are so spaced, with the G above the space, that they suggest the reading RGD and the Norman papermaker Richard Guesdon.<sup>79</sup> Heawood nowhere lists quite so early a specimen of the lions of 1610, though he found one in John Smith's *Map of Virginia*, an Oxford book of 1612.<sup>80</sup>

The Camden twins are much alike. We find them first neatly centered on chainlines, Shield *a* on two 20 mm. spaces, Shield *b* on two 21.5 mm. spaces. In *a* the G is above the front of the R (as in Heawood 576); in *b* it is spaced between the R and D. In *a* the line above the date is straight; in *b* it is curved up below the feet of the left lion. In *a* the numerals are normal, with the center chain slightly right of the 6; but in *b* the 6 is broad or sprung and almost touches the chain. And, notably, *a* reads *in*, while *b* reads *out*. In ICU Shield *a* turns up in the maps of Middlesex, Leicester, Nottingham, Devon, and Scotland; and *b* in those of Oxford, Essex, Worcester, and Ireland.

So far, good. Now we examine further maps -- and make twin discoveries. Both shields have a second state. Finding *a* in Huntington and Stafford (ICU), we note that

this shield, though again centered on a chain, has different attendant chains and looks as if shifted 2 mm. to the right. The letters and date still read *in*. Meanwhile *b* turns up in Buckingham and Cheshire, no longer centered, but 2 mm. to the left with respect to the fleur-de-lis bud at top and the vent in the sheepskin below. And *now* this shield reads *in*, like its mate. As with the C/AB pots there has been a piece of resewing, though it is hard to say which state came first. Perhaps the centering was done by the mouldmaker and the resewing by a workman in the mill. Photographic comparison might reveal some slight deterioration, but to the roving eye all the lions look as fresh as a May morning.

Certain other maps in the volume contain three-lion shields with the initials IG (for I. Ganne?) in the base point, but these are distorted beyond

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pity and horror. The reader who wishes to hunt lions will find lusty ones in Raleigh's *History of the World* (1614, 1621)<sup>81</sup> and elsewhere.

CORONET (?) / GRAPES. Ovid, *Metamorphosis*, tr. Sandys (J. Lichfield [and W. Stansby], 1632.) 2°. CSmH (2), ICN, ICU, TxU.

The common mark in this crown-size folio <sup>82</sup> is a paltry thing, yet it nicely illustrates an important point of difference. It presumably is intended for a small crown with fleur-de-lis over fifteen grapes in a triangle, being a degenerate form of Heawood 2343 ff. If the double stems, though, are meant for a W, it makes no sense in a French mark. Turn the thing around and it looks like grapes inverted over the letter M and a pendant. What it is hardly matters, but a small crown over SM and grapes (ICN 3M4, 2X1) and another over NG and grapes (ICU 3S1, TxU 3M4) perhaps show its archetype. The prevailing marks measure about 34 x 18 mm. Though each varies slightly in position (from resewing), the pair are distinguishable throughout the volume by the fact that one bestrides a line and the other wobbles about in a space. In mark *a* the tip of the grapes is on the line between 20 mm. spaces, and the lily bud (or pendant) shifts slightly within the line. Mark *b* commonly measures 1.5[17]1.5 across the grapes, but sometimes it measures 3[17]0 in. The W or M varies in its bends. These vagaries are instructive to study but tedious to describe. They do persuade the bibliographer to expect small variations in watermark position within a long run of one paper.

The other watermarks in this Ovid deserve careful study. In some copies at least (ICN, ICU), Shields with Bends and Shields with Lions turn up in Book X. Usually the plates contain the ordinary crown/grape watermark (one CSmH, ICN, TxU), but



the Chicago copy offers a procession of lions in its plates. [83](#) Yet this hardly answers the question raised by Bowers and Davis as to what has happened to the fifty copies known to have been printed on fine paper. [84](#)

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LABEL G HVET. Milton, *Paradise Lost* (S. Simmons, 1667). 4°. CSmH (2), ICN. Fletcher 1.

The commonest watermark in the first edition of *Paradise Lost*, as Professor Fletcher has shown, is a small label or cartouche containing the name G HVET. [85](#) It appears at right angles to the quarto fold, with the name divided between conjugate leaves. Variant *a*, the one Fletcher notices and illustrates photographically, is distinguished by a T shaped like a 7 with a long top, and a label with a relatively broad right end. The G is straight and upright. The label is so placed between chains that it measures 6[10]7.5 *up* through the H (though it may vary slightly with resewing or shrinkage). Variant *b* has a T with no apparent top, and tapered label-end. The G is broader, and there are other differences in the lettering. This label measures 6.5[11]6 *up* through the H. The difference of the label ends is easy to see, but sometimes obscured by type.

The greatest poem in English is printed on "Morlaix paper," the cheapest sort imported from France. [86](#) Such paper contains watermarks mainly simple and dull, often mere initials, dilapidated ones, with occasional pillars and shields (Fletcher 4 and 6); here are no ornate pots or arms from Normandy, no fine foolscap from Angoumois. The papermakers themselves were Norman, coming to the Morlaix region of Brittany, where labor was cheap, in 1629 and after. [87](#) The Huets came among them, and flourished. Jean Huet, Pierre Huet, other Huets were *maîtres papetiers* at Ploudiry, Plourin, Briec. [88](#) Apparently G. Huet also made paper in this region south of Morlaix. The GH of other marks (Fletcher 2) are probably his initials, and the PH (Fletcher 12) probably those of a Pierre Huet, who also worked at this time. For I have noted labels with P. HVET in books of 1657 and after; [89](#) and Bourde de la Rogerie mentions "Pierre Huet, papetier à Morlaix en 1678" and again in 1701, [90](#) perhaps a different Pierre. Just possibly the Huets made more out of *Paradise Lost* than did Milton. This astute family of papermakers outlasted virtually all their seventeenth-century

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competitors and -- continue to make paper today at Pontrieux (Côtes du Nord), east of Morlaix. [91](#)

The photographic illustrations in Harris Fletcher's facsimile edition provide excellent aid toward the study of watermarks in Milton and in Milton's time. A pair of pots are reproduced as No. A [II,134].

POT R/GD and POT G/PR. John Scheffer, *The History of Lapland*, tr. Cremer (Oxford: At the Theater, 1674). 2°. AHS, ICU. Style of Heawood 3693.

Scheffer's *Lapland* is a pot folio -- a *true folio* in twos<sup>92</sup> -- from the last decade of pots in English printing. Except for its engraved title and its map, the book is (according to one way of looking at it) a gallery of tall and fancy pots, of which one catches glimpses beside delightful engravings of Lapps.

There are three pairs of pots and one unmated pot (in the copies examined). The thing they all have in common is a handle on the deckle or outer side, though some inscriptions read in and some out. The commonest is a POT P/DB, which always reads in. Its variants may be distinguished by (a) a top crescent violently wrenched to the right, and (b) letters slanting down. This last is Heawood 3637, except that the upper D should be P: the point can be checked in the companion mark. The letters suggest the Debon family, with a mill (later) at St. Bathélemy, between Sourdeval and Mortain (Manche). [93](#)

More attractive are the POTS R/GD, G/PR, and G/CH, all ornamented with fleurs-de-lis top and base, in a late Norman style. R/GD and G/PR prettily illustrate the fashion of making the matching moulds so that one mark is on the left side, one on the right; one reads in and one out; one handle on the left side of its pot, one on the other. I can hardly imagine a *formaire* planning all this and then affixing one of the wireforms to its mould with letters reading the wrong way -- though that might happen later in the mill. Pot G/CH occurs once in each copy, reading in (AHS A2, ICU P2). As, judging by its good looks and supple curves, it may have been shaped by the same artisan, its companion when found may be expected to read out -- towards its handle and the deckle.

Reversal of pot handles occurs as early as 1640. A modest Pot G/RO (for G. Rouxel?) appears among the mixed watermarks in plays of Fletcher, Shirley, Habington (a pot folio) printed by Thomas Cotes in that year. In this case one mark reads up *away* from the handle, and the other also up *towards* the handle; so that both appear in the *left* halfsheet. I have noted examples in *The Humorous Courtier* (sheets B F H I K), *The Opportunitie*

(B C), *The Night-Walker* (C H K), and *The Queene of Arragon* (C1.4).<sup>94</sup>

The name-abbreviation R/GD in Scheffer may be attributed to the Guesdons, who had a mill or mills at Brouains, just west of Sourdeval in Normandy, though some of the family had migrated to Brittany by 1629.<sup>95</sup> Heawood 3591 may be a Guesdon pot. The meaning of G/PR is uncertain; but G/CH suggests the Chastel family, which figures in a pillar mark, H 3516. The G/CH pot is perhaps H 3685.

ARMS OF FRANCE & NAVARRE. Jonson, *The Works* (T. Hodgkin, 1692). 2°. ICN, ICU. Style of Heawood 663 or 670.

This is not the best edition of Jonson: only the one with the best watermarks. It offers a pretty example of the reversal of a coat of arms. The commonest marks in it show the three fleurs-de-lis of France with the long label of D. VAVLEGARD (style of H 635-636, 654), a maker of Sourdeval or thereabouts.<sup>96</sup> But some sheets show the combined escutcheons of France and Navarre in a conventionalized form -- the first with the three fleurs-de-lis reduced to two fishlike bearings, the other with the chains of Navarre in wheel-form. These appear in the preliminaries and in the fourth alphabet carrying the label of I. CONARD, whose mill may have been near Vaulegard's. The striking difference among these marks is that some have France on the left and Navarre on the right (ICN & ICU A3) while others have the contrary arrangement (ICN A6, ICU A3). All the labels read out, but they differ in size and chain-position. The common pair measure 8[58]12 and 12[65]1; but mixed with them seems to be another pair measuring 22[62]13 and 12[65]23; which I take to be evidence that *two pairs of moulds* were in use on the same day at a *pair of vats*.

The book is a demy folio. The ICN copy is 141/8 x 9" (359 x 230 mm.), and the ICU (the poet Thomas Campbell's copy) slightly smaller. The Oxford Pricelist of 1674 lists "Durand Demy" with "on one side. 2 Scutcheons crowned & bordered vnder it A DVRAND"; and the size given *for the folded quire* is 15 x 9¾".<sup>97</sup> Study of the watermarks in such volumes should improve our understanding of paper sizes in the seventeenth century.

WHEEL or FLOWER WITHIN CIRCLES. Bartholomæus Anglicus, *De Proprietatibus Rerum*, tr. Trevisa (Westminster: Wynkyn de Worde, [1496]). 2°. ICN. Briquet 6608, Heawood S36.

This article has found its argument mainly in seventeenth-century

books printed in England on Norman paper. It turns now to a famous book printed in England on English-made paper: the Bartholomæus of 1495 or 1496.

Ames, Jenkins, Briquet, Plomer have told the tale of John Tate and his mill at Hertford.<sup>98</sup> How Henry VII visited the mill; how Wynkyn de Worde referred to the mill in verses at the end of *De Proprietatibus Rerum*; how the miller became Mayor of London or at least was the son of a Mayor. Enter y<sup>e</sup> unromantick bibliographer & taketh a looke at y<sup>e</sup> paper.

Briquet did not look at it: he lifts his illustration from Jenkins, and calls it "Fleur à 8 pétales," which may be right. Ames and Jenkins offer engine-turned sophistications, Heawood a reduced tracing, all without benefit of chains.<sup>99</sup> The mark *is* hard to see, behind two columns of textura. Though two spokes of the Wheel of Tate show between, centered neatly on a chain, the breadth of the mark is hard to measure, and the attendant chains are ambiguous. After much peering and turning of leaves, the bibliographer decides he can distinguish two variants: one with a bump on (the lower side of) its rim; the other with circles unevenly spaced. Yet in most of the pages these points are obscured, uncertain.

All the while he has missed a difference that can be seen at a glance. *Regardez les pontuseaux!* In one particular the two chain-patterns are remarkably different. The normal chain-space, as in the unwatermarked leaves (or halvesheets), is about 35 mm. but the spaces on which the wheel is centered are 24-27 mm. (about an inch) each. (No doubt these closer chains gave better support to the watermark.) Now, the notable difference between the moulds lies in the chain-space on the deckle side of the attendant chains. In the sheets with the bumped rim this outer space is the usual 35-36 mm. wide; but in the sheets with the spread rim it is only 28-29 mm. wide. Thus, whereas Wheel *a* measures 36:10[17:16]8:35 in, Wheel *b* measures 28:8[16:17]8:36 in. These measurements are merely approximate, of course, for the chains are not strictly parallel. But the indicated difference of 7-8 mm. is something anyone can see.

As I examined the handsome Britwell-Newberry copy, <sup>100</sup> my wonder grew. Here is a folio in sixes and fours running through nearly three alphabets of signatures -- 478 leaves, as Duff notes <sup>101</sup> -- the paper of which was manufactured on just one pair of moulds and imprinted by Wynkyn de Worde

within a year of his *Vitas Patrum* with its alleged fifty marks. Than the Bartholomæus there are few finer English-printed books, and few thicker folios with just one paper all the way.

The Newberry Library also has a fragment of the *Legenda Aurea* of Jacobus de Varagine, which book Wynkyn de Worde dated 8 January 1497. It is the only other book known to have been printed on paper with the wheel (or star or flower) watermark of John Tate. It is amusing to note that this fragment, consisting of nine random leaves has five without marks and four with wheels; and these four are divided two and two between the two chain variants. There seems to be no deterioration in the marks. Now looking back at the Bartholomæus I count 51 instances of variant *a* and 48 of *b* (with one remargined and uncertain) within the first alphabet and the first eleven books. This is known as normal distribution.

This study has now been carried far enough to place in the hands of bibliographers who work among books of particular times and places. Some of its observations may thus grow into generalizations; while others may suggest useful analogies.

The student of early printed books may take heart from the Bartholomæus: a case of *filigranes identiques* which proves simple to analyze. He may wish to begin with that incunabulum incunabulorum the 42-line Bible, whose three watermarks, as can be inferred from the plates of Sotheby and Dziatzko,<sup>102</sup> are each from a pair of moulds. The Bull's Heads differ in the spacing of the eyes, the Grapes in size and stem (one looped and one cut), and the Bullocks in the form of eye and tail. Though only three or four copies seem to have been studied, it is at once evident that pairs of moulds were in use at the inception of printing by movable type.

Whether pairs of moulds were used from the beginning of European papermaking is a question for those who live with manuscripts. The oriental papermaker has always used a single unwatermarked mould. Nor does twelfth-century Spanish paper have watermarks; yet recurrent impressions of wire defects may show whether two moulds were used together at Xátiva. One of the earliest paper books I have examined, a quarto manuscript of the Four Gospels in Greek, "The Isaac Gospels," of the first half of the fourteenth century, and owned by the University of Chicago [BS 3552 1350], has thick, yellowish paper with two very crude

watermarks: a pear or top-like figure and a circle with a bar extending from it. But their order in the volume does not make me certain that they derive from companion

moulds. A mid-fourteenth-century manuscript at the Pierpont Morgan Library, *Petri Alle-gherii super Dantis ipsius genitoris Comoediam Commentarium* [M 529] contains at least four varieties of a common early Italian mark: Two Circles surmounted by a St. Andrew's Cross. These seem to fall into two pairs, and may represent paper produced at companion vats. Two Morgan manuscripts of the fifteenth century naturally offer clearer evidence. Gerbert de Montreuil's *Roman de la Violette* [M 36] is an excellent example of a manuscript written on a single paper -- with of course twin watermarks: an ordinary Circle and Cross, one mark slanted, one level, within chain-spaces of 40 and 42 mm. More attractive and varied marks turn up in *L'Ystoyre du Saint Graal abregée* ("Escripte 1479") [M 38]: a pair of Dogs with flowers and looped tails (one with the flower 9 mm. from the head, the other with a larger flower just 3 mm. from the head); a pair of Crowned Shields quartered with the arms of the Dolphin; and others. Such pairs of marks can usually be studied more readily in manuscripts than in printed books; and Briquet is an ever-present help. Thus from manuscripts on paper we may learn something more concerning its manufacture in late medieval times.

For the student of sixteenth and eighteenth-century books the illustrations and analyses in these pages will suggest parallel lines of study, though the primitive pots of 1525 have little in common with the ornate and spreading eagles of 1775 -- except that the moulds were made in pairs. Possibly the ten points of difference will dissolve some mysteries of both centuries, or lead to techniques that will. Such study should throw further light on the original positions of wireforms, the nature and speed of their deterioration, the manner of their resewing, the use of two or more vats, and all consequent variations in a stock of paper. In the long run we may know a good deal about the life-story of watermarks.

It will be asked -- it should and will! -- what use it is to know that watermarks like wrens go in pairs. This is no time and place for a chapter on the bibliographical significance of twin watermarks: that may come hereafter. Yet it is evident at once that even the

negative implications of twin watermarks are important. Though certain investigations may come to no harm through treating *filigranes identiques* as the same mark, [103](#) a bibliographer may bring perplexity or disaster upon himself by supposing that *filigranes divergentes* imply different reams or papermakers. He must take into consideration even the possibility that twin watermarks may differ in the names on their labels, bearing the names of partners or of a husband and wife, or of a papermaker and his factor. [104](#) Certainly in the long run it simplifies matters to pair off

the papermarks that belong together and that denote one consistent stock of paper. The basic equation is: Two watermarks equal one paper. It brings assurance and control into any study of mixed watermarks which seeks to answer questions of edition size, methods of press work, and time of printing. My purpose has been to rid watermarks of one besetting ambiguity.

On the positive side several uses or advantages have been mentioned in these pages, and others can be found. It is worth knowing that the Bartholomæus and the Pide Bull *Lear* were machined (apparently) in continuous printing operations -- though each has two watermarks. The historian of paper will relish the inference that John Tate's vatman and coucher applied themselves diligently at a single vat for six weeks or so to provide sufficient paper for a volume of nearly 500 leaves in an edition of perhaps 500 copies. But admittedly the homogeneity of the watermarks throws no light on the size of that edition, except to suggest it was not large. The Shakespearian quartos of 1619 have been touched on sufficiently to suggest that a realization of the binary nature of their watermarks in 1908 would have improved Greg's demonstration that plays dated 1600 and 1619 were printed in the same year. For no one would have argued that a *pair* of moulds might remain the same (without distortion or resewing) over a score of years, or that a mould-maker might have imitated the subtle differences of

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a *pair* of watermarks in every particular. [105](#) The notes on the G HVET label in *Paradise Lost* and the P/DB pot in *The History of Lapland* imply the importance of checking the lettering on the companion marks if we wish to learn the exact sources of paper. And from the investigation of geminate case-histories begin to emerge facts which should prove helpful in the analysis of books. In which halfsheet does the watermark appear? Evidently the mould-artisan sometimes affixed the wire-designs to the contrary halves of a pair of *formes*; and on occasion someone at the mill inverted one or resewed them both to the same end. Was paper piled consistently in quires and reams? Resolution of a run of paper into its component variants -- noting the reversal of pot-handles and of the bearings on escutcheons, the differences of In and Out -- reveals not infrequently a marked consistency in the arrangement of sheets.

Such facts, such realizations serve also to sharpen conventional uses of watermarks. If papermarks can be used in dating (and their possibilities have been overestimated), it may be important to watch for the reappearance not of a watermark but of a pair of watermarks. In cases of cancels or standing type, if the authenticity of a leaf or sheet has been questioned because of a mark "different" from marks in contiguous sheets or other copies, the questioned mark may prove to be the

unappreciated mate of one of these. In the analysis of quartos, where questions of conjunction arise, it is hardly sufficient to point out that two related leaves "show a watermark": they must show corresponding halves of the same member of a pair. One suspects that T. J. Wise and other purveyors of madeup play-quartos, while complacently matching pot tops with pot bottoms, have seldom distinguished between the marks that result from a pair of moulds. [106](#)

Recognition of the true state of its watermarks brings the dignity of individuality to each book printed on handmade paper.

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Forty years ago Falconer Madan uttered his belief and warning: "*There is no such thing as a duplicate.*" (Librarians have scarcely heeded him.) We see new truth in his words. In terms of mixed watermarks, twin watermarks, press variants, cancels, and the gathering of sheets, every copy of every book (above the rank of mere pamphlet) may be expected to differ from all others. Even a thin play-quarto "with one watermark throughout" yields startling arithmetical combinations. The variant-patterns soar into the millions and beyond. *Every original copy of the Pide Bull Lear was in all probability unique.* [107](#)

"The Duplicity of Duplicates," *Transactions of the Bibliographical Society*, XII (1911-13), 16.

Various writers have noted the mixture of watermarks in books. Dard Hunter says: "In examining old books a great profusion of watermarks may be noted in the paper of an individual volume, some fifteenth-century works containing a dozen or more different papermarks in a single book." [*Papermaking: the History and Technique of an Ancient Craft*, 2d ed. (1947), p. 261.] Thus William Blades speaks of "the astonishing variety of water-marks frequently found in one volume" of Caxton; and adds: ". . . there was a great intermixture of qualities [of paper], including the make of several mills. We have never yet seen one of Caxton's books in which the same watermark runs through the whole volume, and in many cases the variety is astonishing. Thus, in a copy of the first edition of the 'Canterbury Tales,' now in the library of Mr. Huth, there appear no less than fifteen distinct water-marks." [*The Biography and Typography of William Caxton*, 2d ed. (1882), pp. 97-98.] Recently the collector Edward Heawood has cited as examples of the "large number of different marks, often seen in a *single book*," Camden's *Britannia* (1637), Ogilby's *Atlas Chinensis* (1671), Fryer's



*New Account of East India and Persia* (1698), and certain volumes printed in Italy, Holland, and Germany. [*Watermarks Mainly of the Seventeenth and Eighteenth Centuries* (Hilversum, 1950), p. 33.]

The 42-line Bible (c. 1456) contains three quite different watermarks: Bull's Head, Grapes, and Bullock, each with two variants. See Samuel Leigh Sotheby, *The Typography of the Fifteenth Century, Being Specimens together with Their Watermarks* (1845), pl. Z, no. 92; and Karl Dziatzko, *Gutenbergs Früheste Druckerpraxis, Sammlung Bibliothekswissenschaftlichen Arbeiten*, Heft IV (1890), pp. 41-50 and pl. III.

Samuel Leigh Sotheby, *Principia Typographica to Which Is Added an Attempt to Elucidate the Character of the Paper Marks of the Period* (1858), III, 102. Sotheby treats Caxton's watermarks at pp. 83-88 and pls. Qa-Qc.

On a suggestion of A. W. Pollard, Greg offered this hypothesis: "The middleman bought large stocks of paper from the manufacturer and sold comparatively small parcels of various sizes to printers. The inevitable result was that he was left with a number of oddments, remainders of various sizes, on his hands. These he simply stacked together and sold off cheap." [W. W. Greg, "On Certain False Dates in Shakespearian Quartos," *Library*, 2d ser., IX (1908), 395-396.] McKerrow concluded: ". . . it seems quite clear that many printers bought their paper in job-lots, and it is common to find a number of different watermarks in a book about the printing of which there appears to have been nothing abnormal." [Ronald B. McKerrow, *An Introduction to Bibliography* (1927), p. 101 n.] And in examining paper prices Marjorie Plant remarked: "It seems . . . as if the dealer was willing to sell off odd quires cheaply, and it may be for this reason that so many sixteenth-century books contain a number of different watermarks." [*The English Book Trade* (1939), p. 204.] But there was no reason to suppose that the varying prices applied to the same paper.

Greg, pp. 386-397.

*Ibid.*, tables before p. 381.

"New Uses of Watermarks as Bibliographical Evidence," [*Studies in Bibliography*], I (1948), esp. 152-163.

That a considerable part of the paper is Norman was shown by Edward

Heawood in "Papers Used in England after 1600," *Library*, 4th ser., XI (1930-31), 263-299, 466-498, and "Further Notes on Paper Used in England after 1600," *ibid.*, 5th ser., II (1947-48), 119-149. That the *greater* part of it was Norman and Norman-Breton I shall attempt to show in some "Notes on Norman Papermakers" now in preparation.

10. H. Bourde de la Rogerie cites evidence from official surveys that in the eighteenth century practically all mills in Brittany had just one vat each. See *Les papeteries de la région de Morlaix, Contribution à l'histoire de la papeterie en France*, VIII (Grenoble, 1941), esp. 57-61.

Published archives of the eighteenth century mention Julien Sagory "marchand-papetier à Morlaix," Yves Plassard "marchand papetier" apparently of the same place, and "Biard, marchand de papier et d'images à Brest." See *Inventaire-sommaire des archives départementales . . . finistere*, B 4549, 4551, 4581. Nothing is known of such merchants in Normandy. In the seventeenth century there must have been English factors at Caen, Morlaix, and elsewhere. Nicolai names some paper dealers and Dutch factors of the Angoumois. See Alexandre Nicolai, *Moulins à papier du sudouest de la France* (Bordeaux, 1935), I, 49-50, 164, 170, 183.

Bourde de la Rogerie gives an account of many mills near Pleyber-Christ and Plourin, along the Jarlot and Queffleut just south of Morlaix [pp. 23 ff]. As late as the nineteenth century a writer in describing the valley of the Haute-Sée near Brouains and Sourdeval in Normandy speaks of "l'industrie qui a jeté mille usines à papier sur ses bords." [*La Normandie illustrée* (Nantes, 1852), II, pt. 6, 39.] Nicolai lists clusters of mills along the Charreau, Boème, and other streams below Angoulême [I, 154], and points out that the clusters had been larger before the Revocation of the Edict of Nantes, 1685.

As in Raleigh's *History of the World* (1677) and Blome's *Cosmography and Geography* (1680-93). See Heawood, "Papers Used in England after 1600," p. 267; *Watermarks*, nos. 662, 663, 665a, 672, 678; and further examples can be cited.

The Oxford Pricelist of 1674 (among other evidence) shows that paper was imported from these three ports, of Normandy, Brittany, and the Angoumois respectively. See R. W. Chapman, "An Inventory of Paper, 1674," *Library*, 4th ser., VII (1926-27), 405-408.

See my "New Uses of Watermarks," esp. the tables, pp. 167, 172.

Hunter, pp. 435-440. This is part of a very informative chapter on "Present-day Papermaking by Hand in Europe."

The deckle is the frame that fits the two moulds of a pair and limits the edges of the sheet. See Hunter, figs. 297, 301. By metonymy the word also means the rough edges of the sheet itself. For definitions of terms see E. J. Labarre, *Dictionary and Encyclop&c.nt;dia of Paper and Paper-making*, 2d ed. (Amsterdam, 1951).

The stay is the board to the left of the vatman on which he places the moulds for the coucher. Hunter, figs. 294, 305.

The post is the pile of felts and wet sheets. *Ibid.*, fig. 303.

20. The bridge is the platform at the back of the vat along which the coucher returns the moulds to the vatman. *Ibid.*, figs. 294, 298, 299, 305.

La Lande wrote: "Les operations . . . sont si promptes, qu'il se forme sept à huit feuilles par minute dans les grandeurs moyennes de papier, telle que *la Couronne*; en sorte qu'un Ouvrier peut faire huit rames dans la journée . . ." [Joseph Jérôme Le Fran&c.edil;ais de La Lande, *Art de faire le papier*, Institut de France, Académie des Sciences, *Descriptions des arts et métiers*. IV (Paris, 1761), 55.] Cf. Le Clert: "On estimait qu'un ouvrier, dans sa journée, pouvait faire de 7 à 8 rames de papier de 500 feuilles chacune, soit de 3500 à 4000 feuilles." [Louis Le Clert, *Le Papier* (Paris, 1926), I, 13.] Yet vatmen sometimes made even more. Schulte reckons that "Etwa 2500-3000 mal wird der Vorgang mit jeder Form täglich wiederholt . . ." [Alfred Schulte, "Papiermühlen- und Wasserzeichenforschung," *Gutenberg Jahrbuch* 1934 (Mainz, 1934), p. 22.]

Hunter, p. 185.

Le Clert, I, 17.

Nicolai, I, 118.

Hunter, p. 125.

Schulte, p. 24.

*Ibid*, pp. 20-21. Hunter prefers the term divided mould, thus avoiding a confusion with double-size moulds but not distinguishing those furnished with tearingwires. [Hunter, pp. 229-231, figs. 199-200.]

K. Povey and I. J. C. Foster, "Turned Chain-lines," *Library*, 5th ser., V (1950-51), 184-200.

E. J. Labarre, "De eerste schepzeef," *Télé*, III (1948), 233-236; translated as "An Interesting Find: An Historic Paper Maker's Mould," *World's Paper Trade Review*, CXXX (1948), 215-216, 218, 220, 256. I am grateful to Mr. Labarre for Dutch and English copies of this article.

30. La Lande, pp. 48, 53.

Armin Renker, *Das Buch vom Papier* (Leipzig, c. 1936), pl. 20. Note also pls. 36 and 41.

Hunter, figs. 147, 148, 150, 179, 294, 304. The woodcut of 1568 by Jost Amman, fig. 146, shows but one mould, but also only part of the post.

McKerrow, p. 100.

Le Clert, I, 16. La Lande says [p. 49]: "Les formes & les couvertes se font dans toutes les Provinces où il y a des papeteries; en Auvergne c'est le métier propre d'un grand nombre de gens qu'on appelle *Formaires*; il y en a sur-tout beaucoup à Ambert. . . ." For an instructive modern photograph see Georges Degaast, "Les vieux moulins à papier d'Auvergne," *Gutenberg Jahrbuch 1936* (Mainz, 1936), p. 11, fig. 3, "Le dernier 'formaire' d'Auvergne au travail."

Nicolaï mentions two such of the eighteenth century, both of La Couronne, below Angoulême: Pierre Laroche, "*Marchand papetier et faiseur de formes à papier*," at Moulin de l'Abbaye 1734, and Michel Gaillard, "*fabricant de papier et de formes à papier*," at Moulin de Beauvais 1747-49. [I, 166, 176, 183-184.]

Hunter, pp. 119-123.

*Ibid.*, p. 264.

Charles M. Briquet, *Les Filigranes* (Paris, 1907), I, xix.

Sotheby, *Principia Typographica*, III, 15. "These *dots* are found frequently multiplied to a considerable extent in marks otherwise, to all appearance, of the same mould."

40. Briquet, I, xix; Schulte, pp. 22-25; Hunter, p. 266.

In measuring large watermarks, internal chains may be ignored, for chain-spaces (after 1500) tend to average 20 mm. Thus 7[73]4 measures a design spread over nearly four chain-spaces, and o[79]o one that just fits within four.

Briquet, I, xix.

Sotheby, *Principia Typographica*, III, 15.

See *e.g.* Heawood 297-298, 633, 655 & 662, 943-944, 1494-95, 1518-19, 1541 & 1705, 1645, 1648-48a, 1868 & 1869a, 1878-79, 1972-73, 2079-79a, 2081-82, 2086-86a, 2234-35, 2236-36a, 2284-85, 2289-90, 2301, 2649, 3297 (bis), 3387, 3389, 3681-82. Most of these may represent pairs of moulds.

Particularly in *The Typography of the Fifteenth Century* (1845).

Schulte, pp. 20-23.

Hunter, p. 266.

"Papermaking by Hand in America," *Gutenberg Jahrbuch 1950* (Mainz, 1950), pp. 31-40.

In this mark the letters C & P are spread over three chain-spaces of 65-66 mm. In variant *a* the back of the C and the front of the P touch or nearly touch the bounding lines; whereas in variant *b* the letters are fallen together so that they measure but 48 mm. across. In *b* the C is thinner and the P has a thicker stem. This mark Briquet would call a *filigrane divergente*.

50. Pp. 134, 164-166, 169. The book is printed on handmade paper made by Dard Hunter and in type cut and cast by Dard Hunter Jr. The prospectus states: "The many specimens of old line watermarks appearing as illustrations in each book have been made in the actual paper with the exact number of laid-and chain-lines, duplicating

faithfully the original American watermarks in private and public collections."

For the German manuscript leaves I thank my student-friend Rudolph Jirgal of Chicago; for the endpapers Mr. D. F. Bogardus of the Huntington Library, who kindly gave me duplicates from his small collection of watermarked paper; for the watermarks of royal arms Mrs. Merle Boub of the University of Chicago Libraries, who called my attention to the blank volume on its arrival from England. The photographs are the work of Mr. Cabot T. Stein of the University of Chicago Department of Photographic Reproduction; and the halftones that of the Pontiac Engraving and Electrotype Co. of Chicago. There is an art in photographing and photoengraving fools and pots.

Robert H. Clapperton & William Henderson, *Modern Paper Making* (1929), figs. 122, 123; Hunter, *Papermaking*, figs. 94-97, 199-200, 220; Degaast, figs. 3, 4, 6.

That is, in the sixteenth to eighteenth centuries: in incunabula the distance is often 30-40 mm. See Labarre, *Dictionary*, "Chain lines."

Fig. 4b shows a shield watermark with the *date* reversed. Among reversed shields note Heawood 583, 585, 587, 591, 596, &c.

Tranchefiles are extra wires at the ends of the moulds between the last rib and the frame. The term is from La Lande. For a bibliographical use of tranchefiles see Povey and Foster, "Turned Chain-lines," where they help to identify sheets with longitudinal chainlines made on double moulds.

Perhaps the initials PLG in Heawood 2929 are his; and several triplets in LG may denote the Legrand family.

Heawood, "Papers Used in England after 1600," pp. 266, 267, 279; "Further Notes," p. 125; *Watermarks*, no. 440[?]. The name Pallix occurs at Beauchêne, a town between Tinchebray and Domfront (Orne), where the papermill of Michel Le Jeune appears to have been situated. See Bourde de la Rogerie, p. 22; and *Inventaire-sommaire des archives départementales . . . manche*, A 1930.

Robert Sanderson, *A Discourse concerning the Church* (T. B. for R. Taylor, 1688), 4°. In my copy the fool appears three times -- in sheets B C D -- without his twin turning up.

"Papers Used in England after 1600," p. 279. A Tonson folio.

60. *Ibid.*, p. 270; "Further Notes," p. 119.

Enlargements clearly show that the 6 is reversed.

That they are mates, however, is made apparent by their being from one of two sets of endpapers removed by the binder from similar volumes. Mr. Bogardus kindly parted with the duplicates.

Perhaps this paper was the manufacture of the White Paper Company, formed in England in 1686 by Nicholas Dupin with French and English associates for the making of "all sorts of writeing and printing paper, and to imprint our arms upon such paper." The Company benefited from the art of Huguenot workmen exiled to England by the Revocation of the Edict of Nantes in 1685; and its charter ran to 1704 or after. See Rhys Jenkins, "Paper-making in England, 1682-1714," *Library Association Journal*, III (1901), 240-246.

It may have been prepared for someone at Court. The initials IP stamped on the binding may stand for John Palmer of Torrington, Devonshire, if, as Seymour de Ricci suggests, he formed the Bibliotheca Palmeriana. [*English Collectors of Books & Manuscripts (1530-1930)* (1930), pp. 48-49.]

*The Paper Makers' Directory of All Nations*, 47th ed., 1938 (London, 1938), p. 281.

"Paper Used in England after 1600," p. 283; *Watermarks*, nos. 2582-92.

Chapman, pp. 406-407.

Nicolai, pl. XXXIV; Heawood, *Watermarks*, no. 3695.

Heawood, "Papers Used in England after 1600," p. 270; "Further Notes," p. 125; *Watermarks*, nos. 592, 2254 (full name), 3596, 2616.

70. Published archives mention "Échantillons des papiers de la généralité de Caen . . . le 3 septembre 1765: . . . grand royal à la grappe, fabriqué par . . . Michel Vaulegeard, à Sourdeval". [*Inventaire-sommaire des archives départementales . . . calvados, C 2903.*]

W. W. Greg, *The Variants in the First Quarto of 'King Lear'* (1940); Fredson Bowers, "An Examination of the Method of Proof Correction in *Lear*," *Library*, 5th ser., II (1947-48), 20-44; Philip Williams, "The Compositor of the 'Pied Bull' *Lear*," [*Studies in Bibliography*], I (1948), 61-68; and several reviews and discussions of these.

In 1908 Greg noted that the Pied Bull *Lear* does not "contain any of the same marks as the Pavier volume" of 1619. ["On Certain False Dates," p. 123 n.]

Incidence of the variants in the Huntington and New York copies: *a*: CSmH: C2.3 D2.3 F1.4 H3.2; NN: C4.1 F1.4 G1.4 K1.4. *b*: CSmH: B4.1 E2.3, G2.3, I1.4, K4.1, L4.1, A-.2 (tp); NN: B2.3 D1.4 E2.3 H4.1 I1.4 L2.3. In each instance the leaf with the pot top is given first. The handle is consistently *out* (on the deckle side).

As *Lear* was entered on 26 November 1607, presumably it was printed within the first half of 1608. The only other play printed by Nicholas Okes in 1607-8 is Markham and Machin's *Dumbe Knight* (1608), which was not entered until 6 October 1608 and has no pots in common with *Lear* (CSmH copies).

"On Certain False Dates," pp. 120-127, 131, 386-396, with plate.

*Ibid.*, plate, no. 23.

*Ibid.*, pp. 127, 393.

The R/LM pots are those whose slight variations were discussed by Greg and Huth. [Alfred H. Huth, "Shakespeare's Quartos," *Academy*, LXXIV (1908), 864-865; W. W. Greg, *ibid.*, pp. 889-890; "On Certain False Dates," pp. 386-390; Huth, "The Shakespeare Quartos," *Athenoem*, No. 4239 (1909), 101; Greg, *ibid.*, No. 4240 (1909), 132.] Actually, the most apparent distinction between the R/LM twins is not a minute difference in the size of their bases but *a difference of four millimeters (19, 23) in the width of their chain-spaces*. This is an excellent illustration of the third point of difference. The pot with wide chains also has a plainly bent center lobe. Besides the six 1619 quartos named by Greg ["On Certain False Dates," Table I], this Pot R/LM occurs in *Henry V* (ICN).

The Guesdons had a mill at Brouains, near Sourdeval (Manche). See



Bourde de la Rogerie, p. 21; cited (with errors) by Edward Heawood, "Paper Used in England after 1600," *Library*, 5th ser., III (1948-49), 142. The Richard Guesdon mentioned by Bourde de la Rogerie went to Morlaix around 1630; but a Julien Guesdon still had a mill at Brouains in 1765. [*Inventaire-sommaire des archives départementales . . . calvados*, C 2903.] But another possibility is the Rondel family; cf. Heawood 1973.

80. Printed by J. Barnes. The Huntington copy has a different three-lion shield in its map, with P [tower] D in place of the date.

Some of these are dated 1610 and have interesting variants. See my "Shakespearian Dated Watermarks," later in this volume.

The largest page measurements recorded by Bowers and Davis are 341 and 222 mm. -- or 13.4 and 8.7" -- which agrees with the Oxford Pricelist mean of 13¾ x 9¼" for a folded quire of crown paper. See Fredson Bowers and Richard Beale Davis, *George Sandys: A Bibliographical Catalogue of Printed Editions in England to 1700* (1950), pp. 31-32; and Chapman, pp. 405-407.

ICU has three lions on large shields in thick paper for the plates to Books 3, 4, 15; three lions on smaller shields in thin paper for the plates to Books 5, 6, 7, 14; with the remaining plates unwatermarked (that for Book 9 wanting). It also has three-lion shields in the text at 2T1, 2V3, 2V4, 2X2, 3V2. Cf. certain Virginia, Clark, and Huntington copies described in Richard Beale Davis, "George Sandys v. William Stansby: The 1632 Edition of Ovid's *Metamorphosis*," *Library*, 5th ser., III (1948-49), 208-209.

Bowers and Davis, p. 31. One or more of the fine-paper copies listed by Stansby [Davis, pp. 198-199] may yet come to light. They will not necessarily be taller copies, for the crowned shield with fess and three lions clearly was a way of marking fine crown paper. Cf. the discussion of the plates in Camden's *Britannia* (1910), above.

Harris F. Fletcher, ed., *John Milton's Complete Poetical Works Reproduced in Photographic Facsimile*, II (1945), 120.

Where the mills of Normandy used pots, fools, and crowns rather systematically to mark pot, foolscap, and crown paper, the mills of Brittany appear to have used a variety of marks in these sizes. This my experience is borne out by the Oxford Pricelist of 1674 [Chapman, pp.

407-408], which gives marks and sizes and prices for both Caen and Morlaix papers of these sorts. The Morlaix prices are regularly lower, though for reams of 24-sheet quires.

Bourde de la Rogerie, pp. 21, 25.

*Ibid.*, pp. 20, 28, *et passim* for other Huets.

Francis Bacon, *Resuscitatio* (S. Griffin, 1657), 2C1 (ICU); John Ogilby, *The Relation of His Majestie's Entertainment* (T. Roycroft, 1661), D2 (variant *a*), G1 (variant *b*) (CSmH). This thin Ogilby folio, like the *Paradise Lost*, also has the initials PH, in a pair.

90. J. Lemoine & H. Bourde de la Rogerie, eds., *Inventaire-sommaire des archives départementales . . . finistere*, Série B, III (Quimper, 1902), cxciv; Bourde de la Rogerie, *Les papeteries de la région de Morlaix*, p. 28.

*The Paper Makers' Directory . . . 1938*, p. 308.

For a bibliographical description see Falconer Madan, *Oxford Books*, III (1931), 300.

*Inventaire-sommaire . . . calvados*, C 2898, 2907.

Cf. "New Uses of Watermarks as Bibliographical Evidence," pp. 155-158, 161-163. So diverse are the watermarks in the Cotes plays of 1640 that it was (luckily) not necessary to distinguish pairs of watermarks for the purposes of that article. See n. 15, p. 156: the Jesus and bird watermarks have now resolved themselves into pairs, and their association would seem to be that of companion vats.

*Inventaire-sommaire . . . calvados*, C 2903; Bourde de la Rogerie, pp. 21, 25.

See n. 70.

Chapman, p. 405. Durand papers are sometimes associated with Conard and Vaulegard papers.

Joseph Ames, *Typographical Antiquities*, augmented by William Herbert, I (1785), 200-201, or ed. Thomas Frognall Dibden, II (1812),

320-321; Rhys Jenkins, "Early Attempts at Paper-making in England, 1495-1586," *Library Association Record*, II (1900), 481-484; Briquet, II, 373; Henry R. Plomer, *Wynkyn de Worde & His Contemporaries* (1925), pp. 55-56.

Ames, ed. Herbert, I, 200; ed. Dibden, II, 321; Jenkins, II, 481; Heawood, "Sources of Early English Paper-supply," *Library*, 4th ser., X (1929-30), no. 36. The latter notes the mark in a Paston letter of 1495 [p. 292].

100. It measures 117/8 x 8" or 303 x 205 mm. It is in excellent condition, except that certain preliminary leaves are in facsimile or carefully remargined.

101. E. Gordon Duff, *Fifteenth Century English Books* (1917), no. 40, p. 11.

102. Sotheby, *Typography of the Fifteenth Century*, III, pl. Z, no. 92; Dziatzko, *Guten-bergs Früheste Druckerpraxis*, pl. III. Briquet distinguishes the two grape watermarks as 13,040 and 13,009.

103. See n. 94.

104. Le Clert notes [I, 16]: "Les formes étaient fabriquées non seulement pour les fabricants de papier, mais aussi pour des marchands qui y faisaient apposer leurs marques ou filigranes et les remettaient ensuite aux papetiers chargés d'exécuter leur commandes." James Wardrap notes an instance of "sheets watermarked alternately W BALSTON and J WHATMAN," in 1810. See "Mr. Whatman, Papermaker," *Signature*, No. 9 (July 1938), 18 n.

105. Sir Walter Greg examined an early nineteenth-century mould and neatly disposed of Huth's contention that the watermarks themselves may have been moulded, rather than formed separately of wires. See W. W. Greg, "The Shakespeare Quartos," *Athenoem*, No. 4239 (1909), 100-101. As we have seen, various writers testify to the impossibility of making two wireforms exactly alike.

106. For Wise's industry in making books "perfect" see *Letters of Thomas J. Wise to John Henry Wrenn*, ed. Fannie E. Ratchford (1944), pp. 77, 301, 396, 454, 458.

107. Collation: A<sup>2</sup> B-K<sup>4</sup>. Sir Walter Greg found in twelve copies seven formes variant, each in a different sheet. [*the Variants in the First Quarto of 'King Lear'*, ch. II.] Not counting second corrections in inner C or an altered catchword in inner K, and assuming equal numbers of uncorrected and corrected sheets (the totals being 42 and 46 among extant copies), that means 2<sup>7</sup> or 128 possible combinations within an edition of perhaps 1000 copies. But consider the watermarks. One paper with twin watermarks in 9 1/2 sheets means 2<sup>10</sup> or 1024 possible combinations, enough to allow a different watermark sequence for each copy. And now it may be pointed out that a pot can have its top or base in any one of the four leaves of a quarto gathering -- and the pots so vary in position in examined copies of *Lear*. And even in an unwatermarked halfsheet the chain-pattern varies. Thus, in this simplest of cases, with only a third of the formes known to be variant and with only one pair of "identical" watermarks so far found, the possible combinations work out roughly as  $2^7 \times 2^{10} \times 4^{10} = 2^{37} = 137,438,954,000$ . What chance is there for a duplicate Pide Bull among so many? What chance? If such is the case with single-paper books, then what of books printed on a variety of papers, books with mixed watermarks! Clearly the possible combinations are astronomical, even if we assume only one or two pairs of marks within each edition-sheet. Let the reader perpend (if it does not terrify him) the case of the St. Jerome *Vitas Patrum* of Wynkyn de Worde with its fifty watermarks -- whether this number includes pairs or not. He will need a ream of white paper for his problem, and a jar of paste.

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Fig. 1. Twin Watermarks, *a, b*: Arms of Kaufbeuren, c. 1555

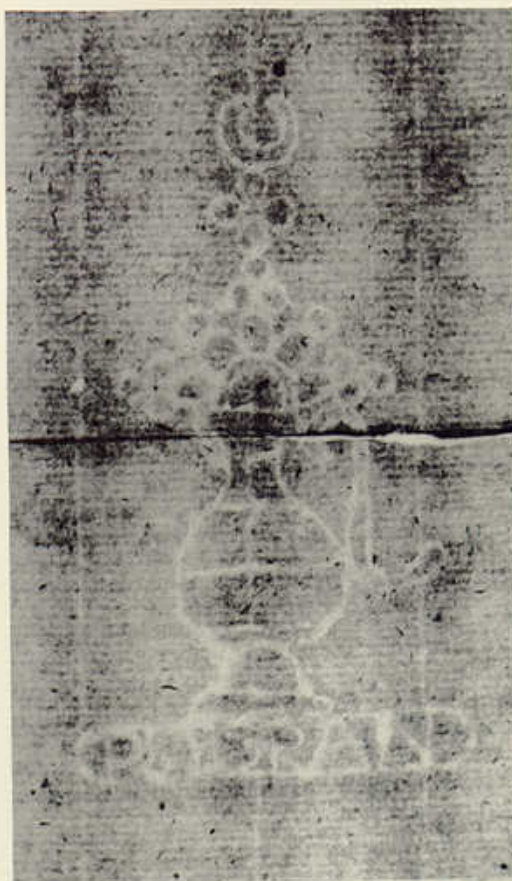
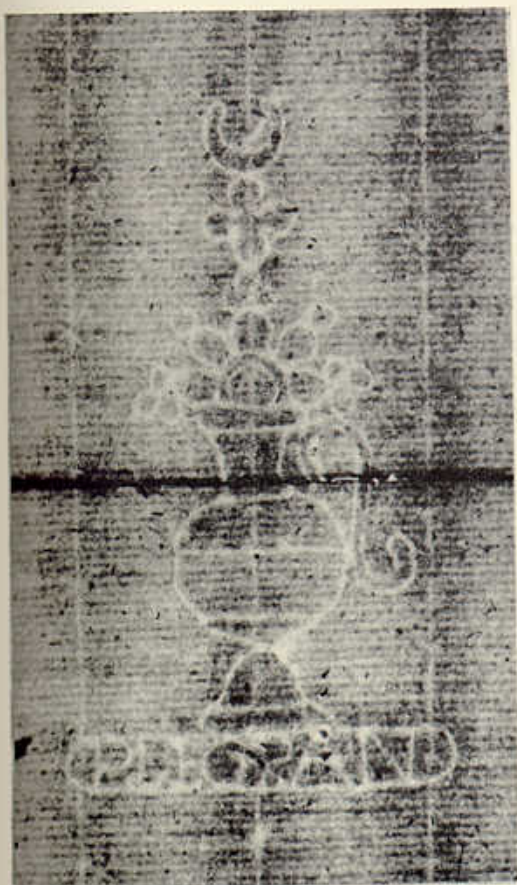


Fig. 2. Twin Watermarks, *a, b*: POT P LEGRAND c. ?1660



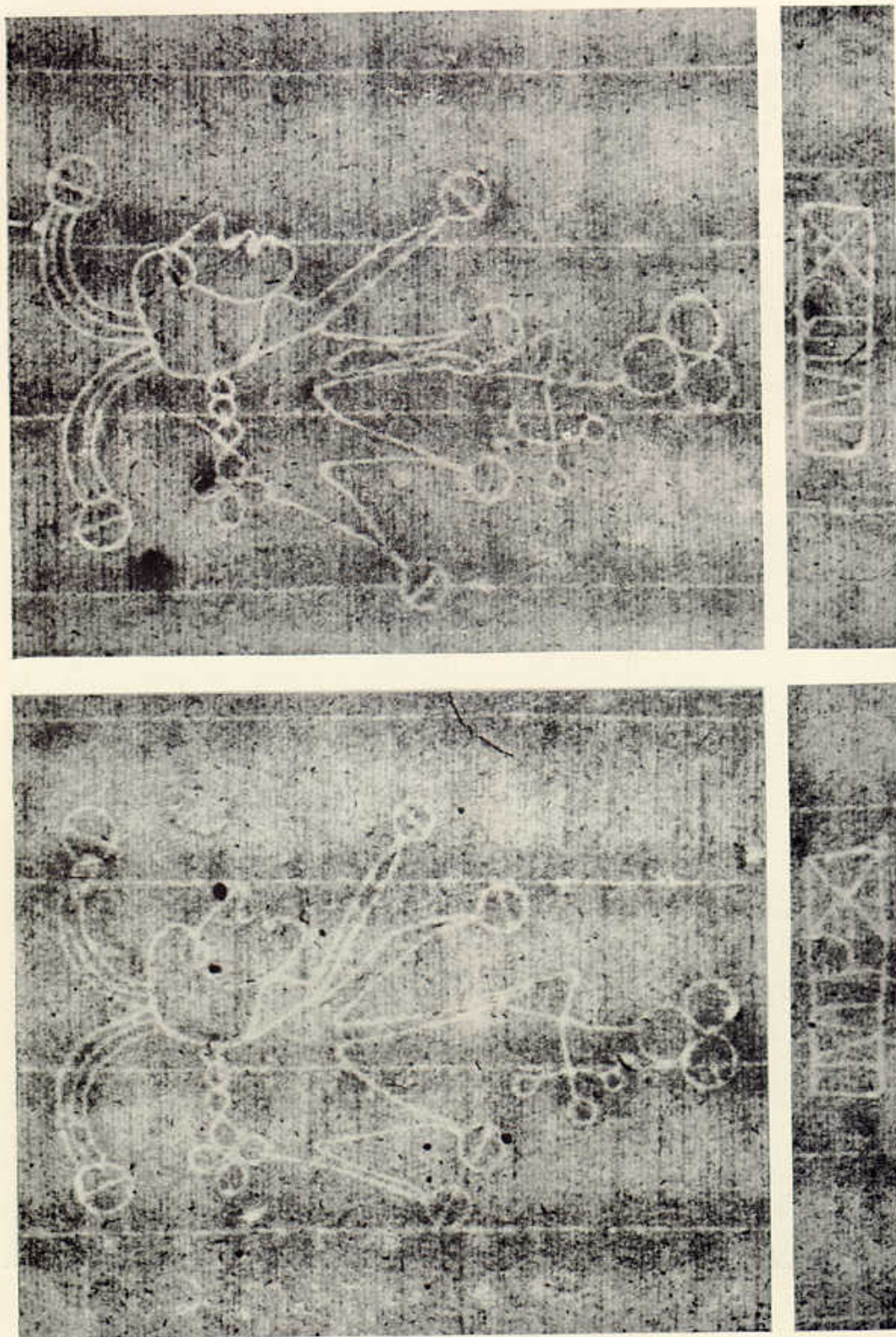


Fig. 3. Twin Watermarks, *a*, *b*: Foolscap & Countermark MPX, c. 1688

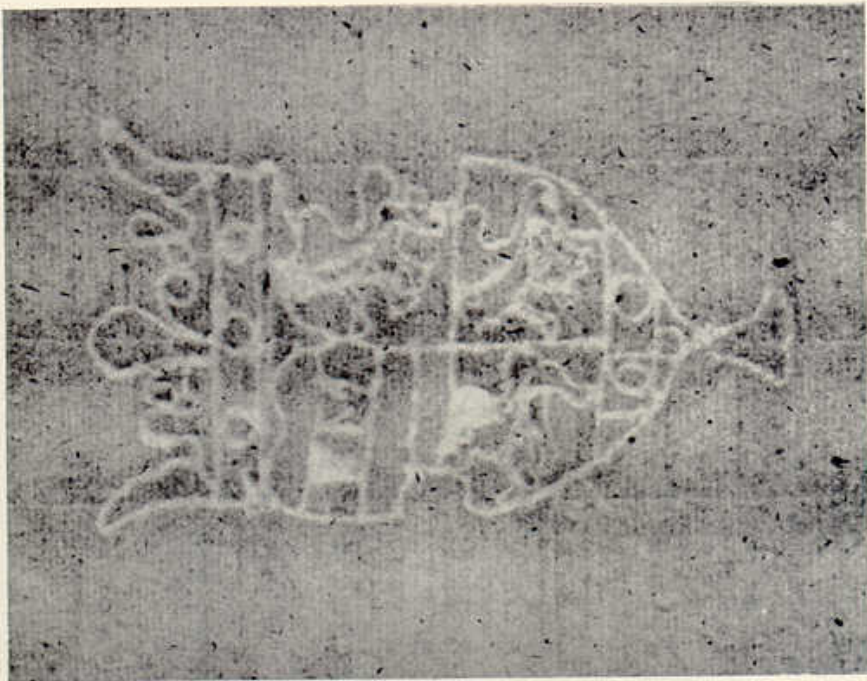
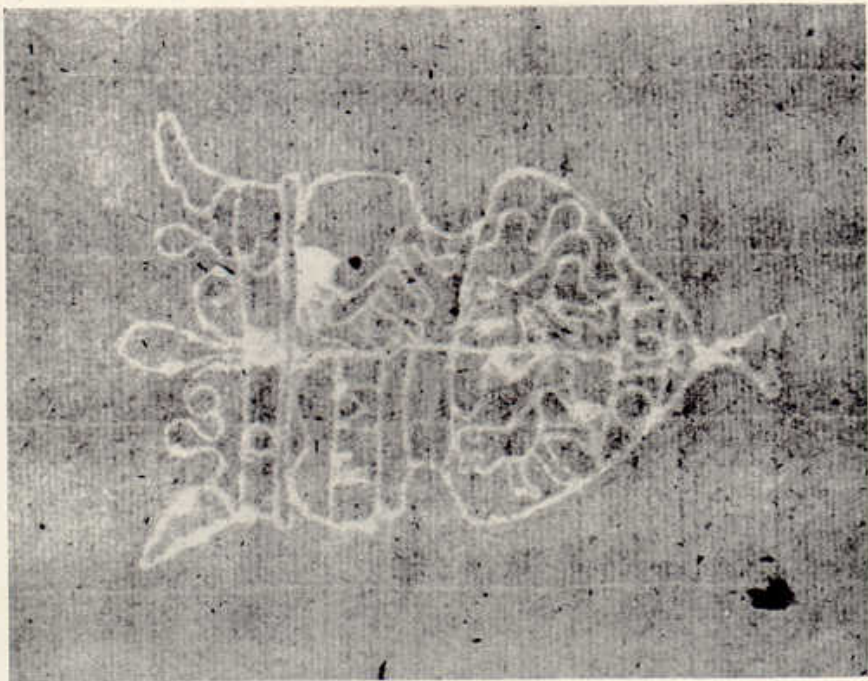


Fig. 4. Twin Watermarks, *a*, *b*; Shield *fm* & Three Lions, *c*. 1610



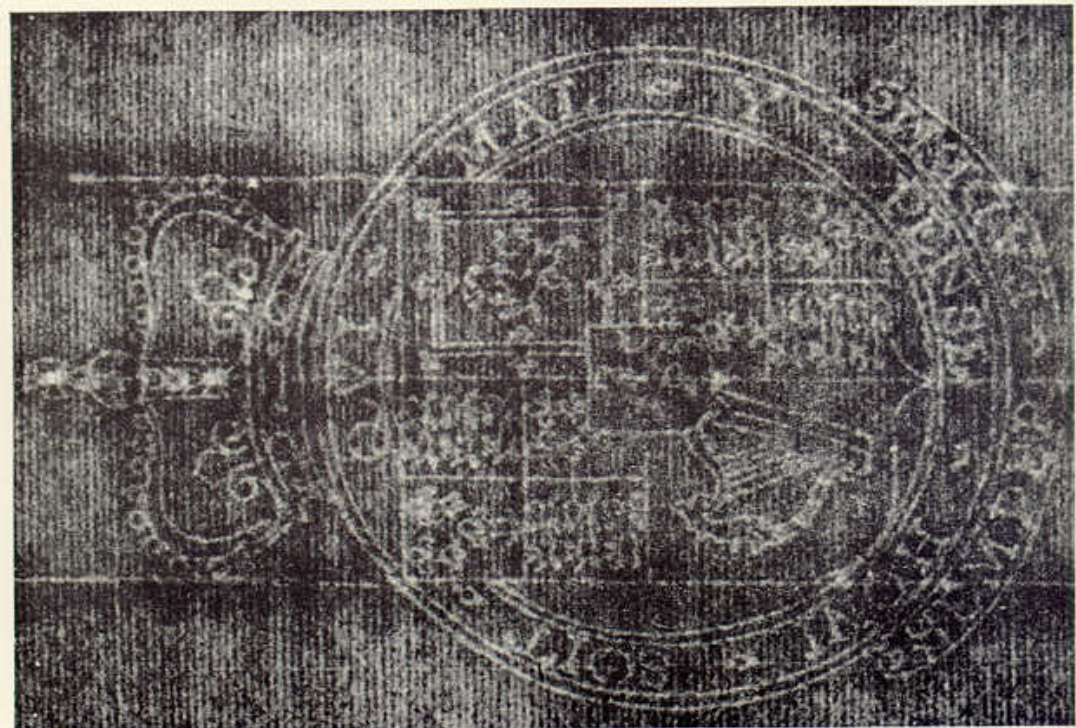
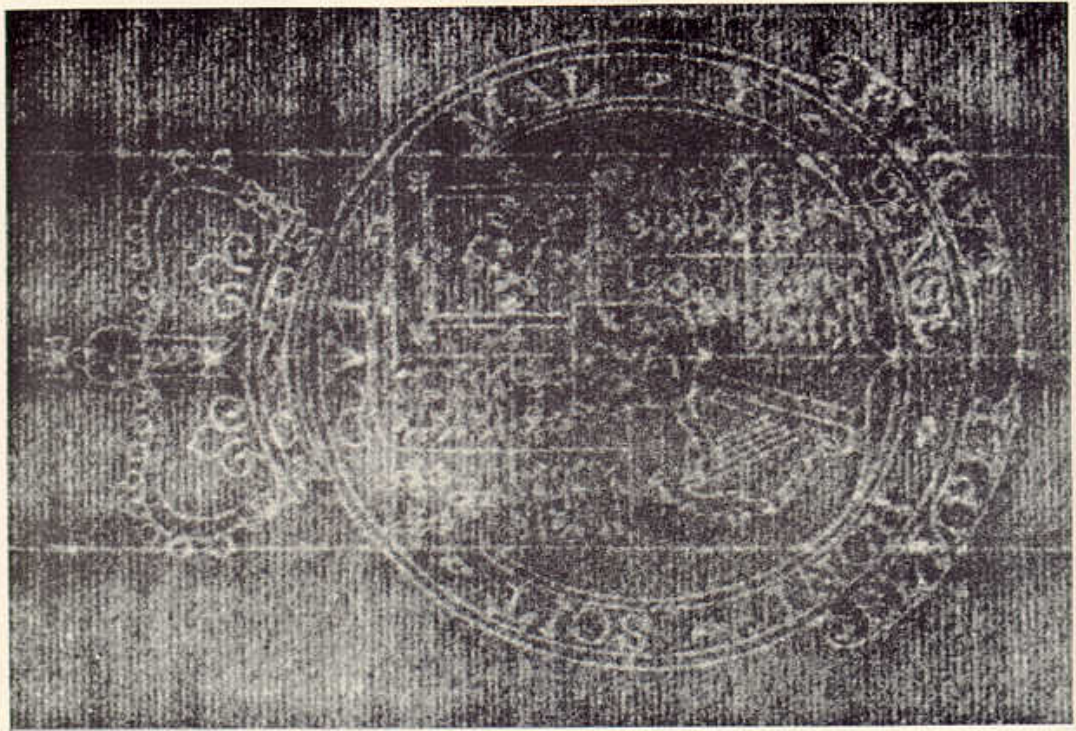


Fig. 5. Twin Watermarks, *a. b.*: Arms of King William III, c. 1710



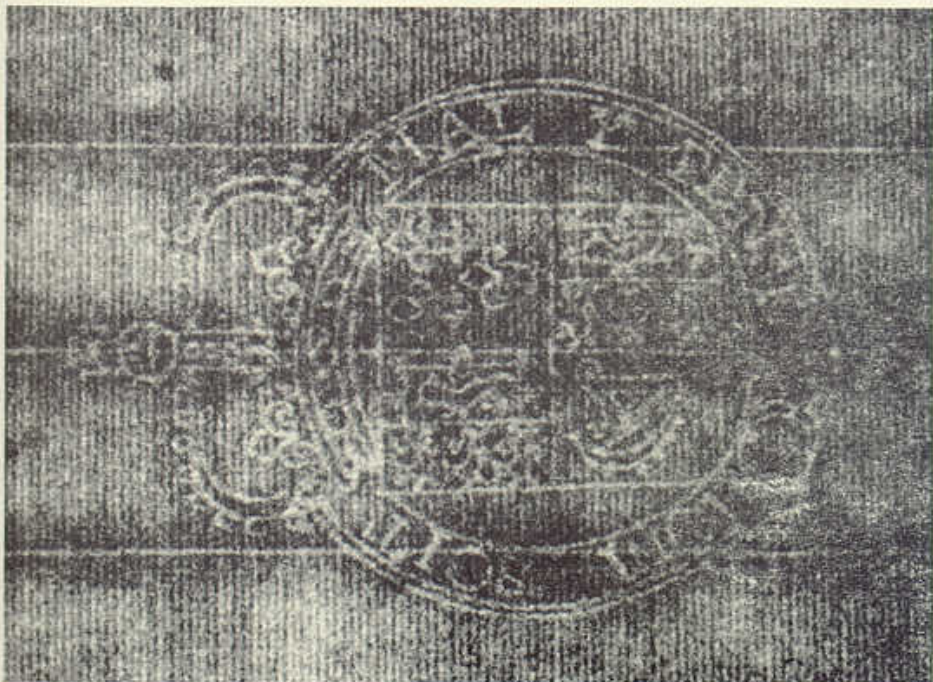
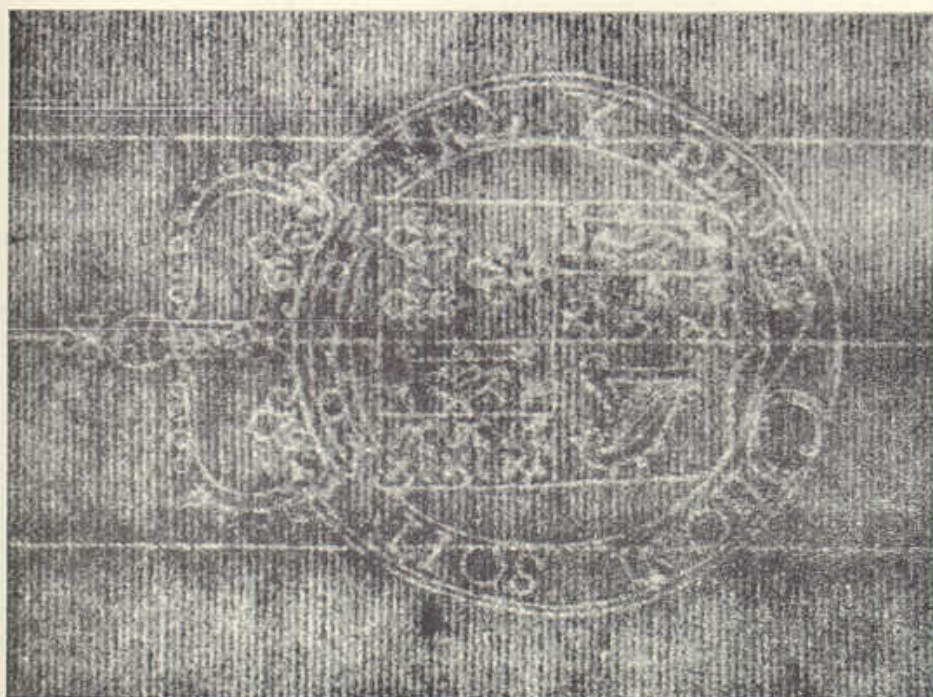


Fig. 6. Twin Watermarks, *a, b*: Arms of Queen Anne, *c.* 1710



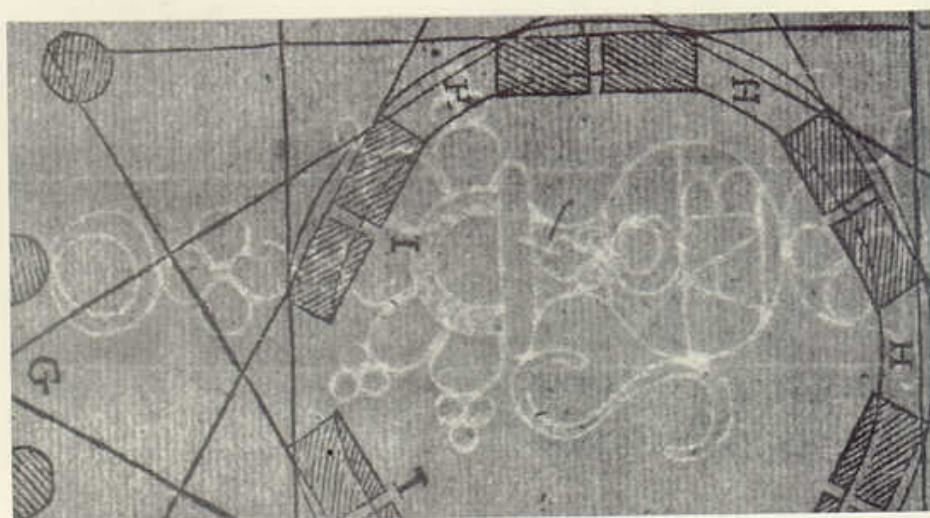
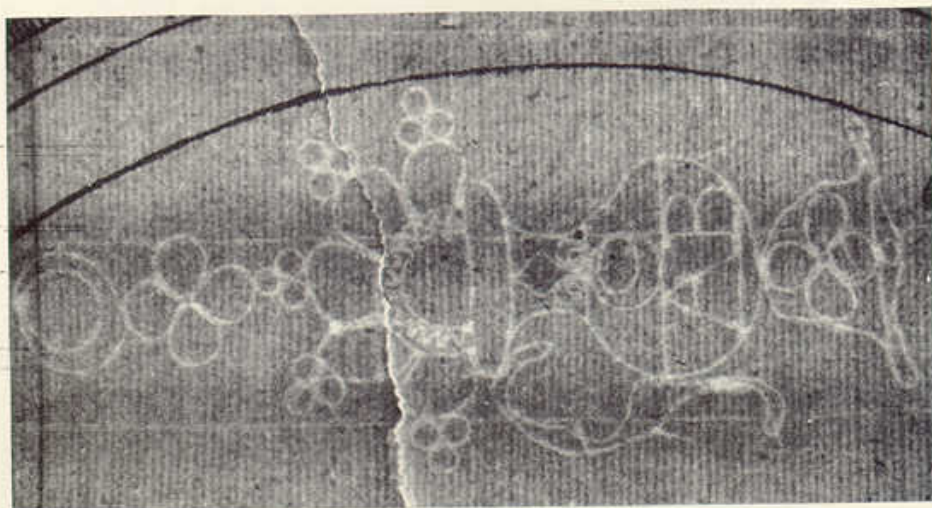


Fig. 7a. Twin Watermark, a, three states: Pot C/AB, 1655

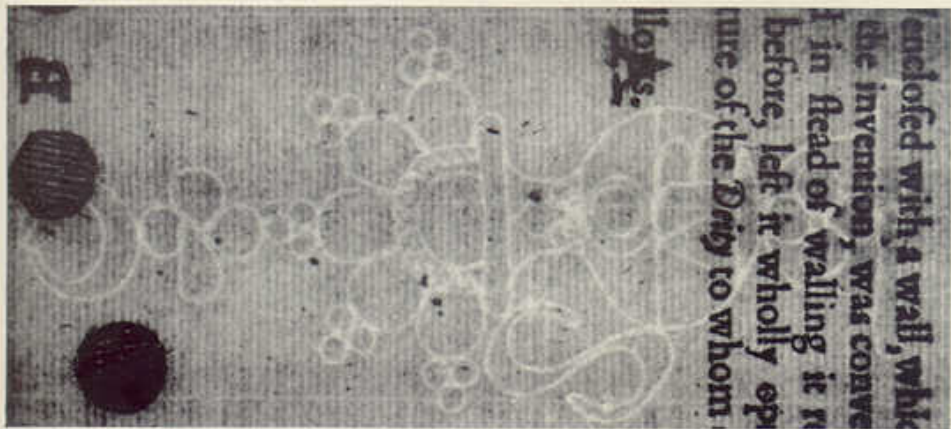
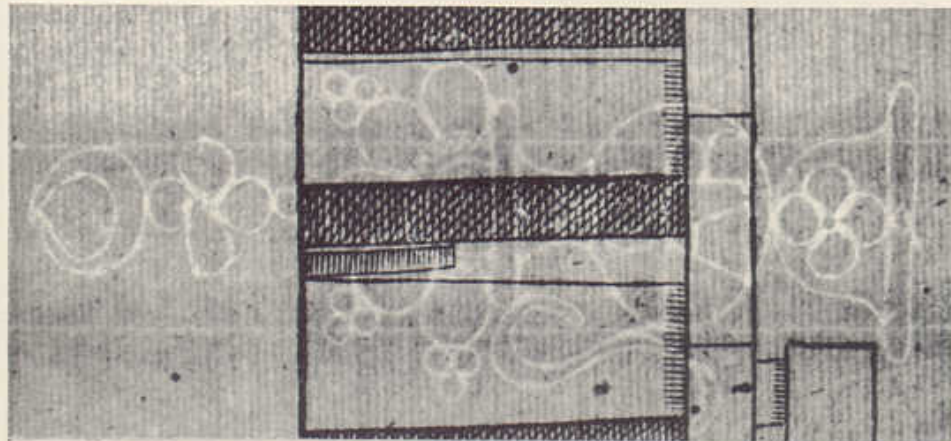
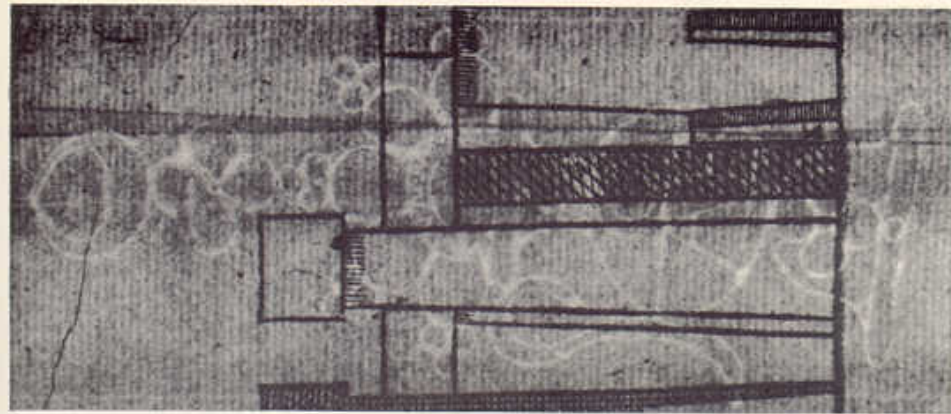
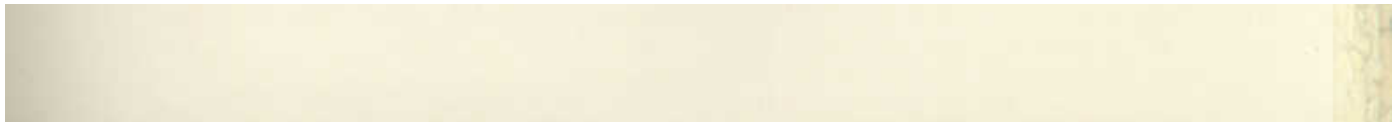


Fig. 7b. Twin Watermark, b, four states: Pot c/AB, 1655



in hand, these had preceded no Abo  
 e. Had he intended to have done it  
 i have encouraged me to conpo  
 or, the desire of seeing his is  
 mine regarding to him for resto  
 die an ungrateful person being  
 mitted to his age I will to what  
 sed words to avoid the  
 top most, into Fobyn a othi has br  
 is Discomodious to the world.

of Pembroke and Montgomerie,  
 on Herbert of Caerdyff and Shrewsbury  
 Part and Rose of Kendall, L. of Firk  
 Marryon and Saint Quintin &c  
 STONEMEN restored  
 As  
 humbly dedicated  
 by

Fig. 8. Twin Watermarks, a, b: Cardinal's Hat IVL, 1655  
 [Engraving by the Pontiac Engraving and Electrotype Company, Chicago]



