<page>139r</page>

<image><http://gallica.bnf.fr/ark:/12148/btv1b10500001g/f283.image></image>

<div>  
<id>p139r\_1</id>  
<head>Casts of <m>lead</m> and <m>tin</m></head>

<ab>  
<add>When it is often melted, it becomes brittle &amp; frangible because it has to be cast very hot and it makes it half-calicanated. Use new stuff.</add></ab>

<ab>The way I have done it for lizards and serpents is with two ℥ of <m>pure tin</m> for one lb. of <m>unrefined lead</m> that is impure. The mold is made out of the aforementioned <m>sand</m>, common for all metals, when it is reheated, leave it to cool until you can put your finger in it without causing a breach in the gate of the cast. As for the <m>lead</m>, it is melted in a crucible with a bellows' fire until both the crucible and the <m>lead</m> are red. When it gets to that state, cleanse it anew with <m>charcoal</m> or with a specially made scraper or with the pufts of the little bellows. This done, leave it to rest in it red state and you can even reheat it, then if you want, throw in a bit of <m>resin</m> to burn away the filth. However, some think it best not to put any in because it leaves filth. But when they are ready to cast, they cannot forget to also thrown in a bean-size quantity of <m>bismuth</m> for each pound of <m>lead</m>. And it must be as red as the melted metal when it enters the mold. If the mold is large, it is much better to put in in a press so that they join well and so that the <m>lead</m> does not come out of the mold. However, should this happen, and that for the first, second or third time your mold does not fill up, cast heartily because for as long as your metal is red it will mix and join with the other one and will come out very neatly like the main one. The same thing can be said for pure <m>tin</m> used for thin things. And that way for doing pure <m>tin</m> is one ℥ of new <m>lead</m> for one lb. of the former. Large molds must be put in a press held tightly between two layers of <m>copper</m>, and then bury the whole thing in <m>sand</m>, which is better than <m>ashes</m>, because being heavy, it will seal better. Otherwise large molds are prone to open because the metal is heavy. Some make square molds</ab>

<ab>  
<margin>left-top</margin>  
When the metal is thick, you do not need to cast as hot as when it is thin.</ab>

<figure><margin>left-top</margin>+</figure>

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Note that If you want to cast with <m>cuttlefish bone</m>, they cannot be too warm because that would burn the <m>cuttefish</m>. For this effect, try paper. It it becomes brown, it is enough, and it is good for casting, but if it blackens the paper, then it is too hot.</ab>

<ab>  
<margin>left-bottom</margin>  
If you want to cast paper with writing on it, make a mixture with half <m>lead</m> and half <m>tin</m>. As soon as it is melted, throw it between two pieces of <m>cardboard</m> on a flat place that is level. And with a point or <m>gold</m> or <m>hard wood</m>, engrave on the left the writing that you want. And having poured the lead onto the <m>cardboard</m>, press onto it the other piece of <m>cardboard</m>.</ab>

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