L2/23-069

Revised designs of the alchemical symbols block

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The designs of the Alchemical Symbols block could be improved. The current Unicode designs are taken from Newton's manuscripts, but most of the symbols are not unique to Newton. They have great variations in other sources, and Newton's forms are not always representative. I am therefore proposing a new font for the entire alchemical symbols block, with more generic and often simpler designs extrapolated from several historical sources. The designs have been reviewed by William Newman, lead author of L2/09-037 *Proposal for Alchemical Symbols in Unicode*, and others at the *Chymistry of Isaac Newton Project* at Indiana University. Non-alphabetic characters are styled to conform with Denis Moskowitz's designs of the dwarf-planets (1F77B–1F77F) and are based on those and on his designs for other planetary symbols. Alphabetic ligatures are built from the Open Sans font.

Thanks to Deborah Anderson of the Universal Scripts Project for her assistance.

References

Basel: 'Alchemistische Zeichen' display at the Pharmazie-Historisches Museum in Basel. Photo available on Wikimedia Commons as Basel 2012-10-02 Mattes (90).JPG.

Torbern Bergman (1775) *Dissertation on Elective Affinities*.

Andrew Bell (ca. 1800). Plate CXXXII of an unidentified publication. Available online at wellcomecollection.org.

Moyse Charas (1678) *The royal pharmacopoea, Galencial and chymical, according to the practice of the most eminent and learned physitians of France*. Starkey & Pitt, London.

Encyclopédie: (1763) Plates for the 'chymie' entry of the *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers*, volume 2b.

Le Febvre: Nicaise Le Febvre (1670) *A compleat body of chymistry*. London.

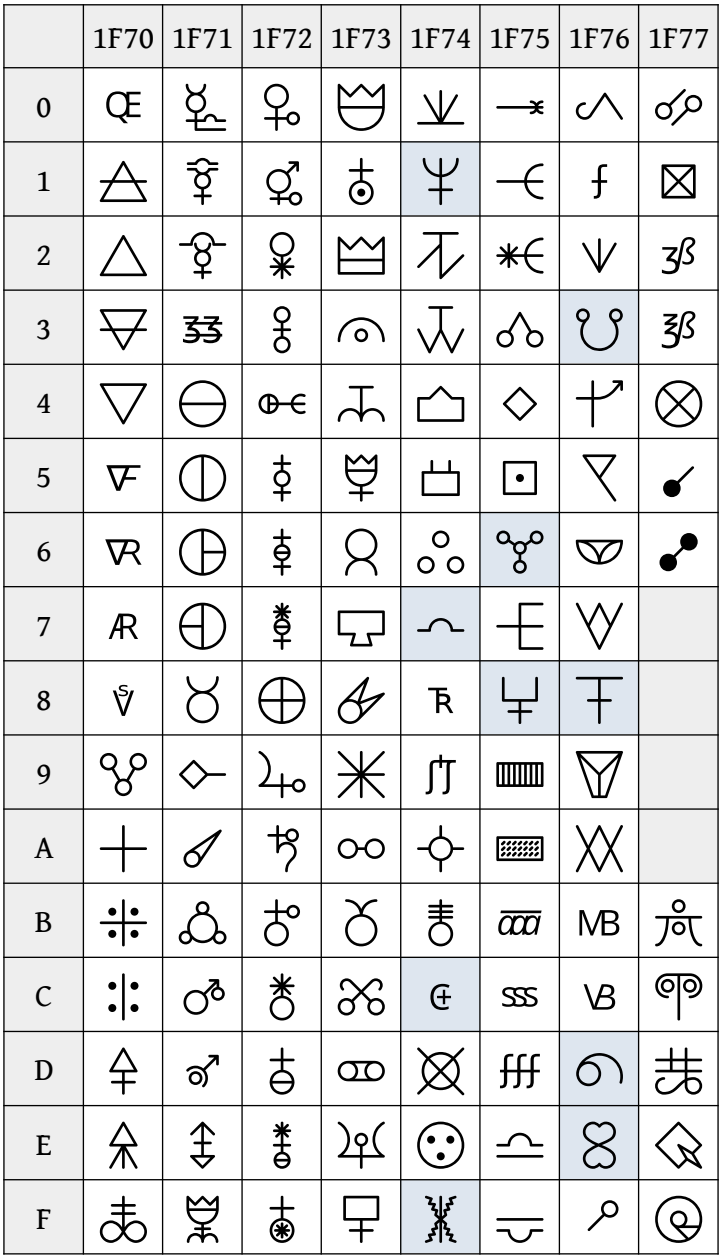
Jordan Stratford (2011) *A Dictionary of Western Alchemy*. Quest Books.

Basil Valentine (1671) *The last will and testament of Basil Valentine, monke of the Order of St. Bennet*. Edward Brewster, London.

Chart

Characters on a blue background have significant changes from the current Unicode font and are illustrated in the figures.

1F700 Alchemical symbols 1F77F



Figures

Justification for notable changes is presented here.

Metal ores

The ore symbols derive from the planetary symbols for the metal plus a ring. The location of the ring is arbitrary. 🜚 is a conflation of U+1F71C 🜾 IRON ORE (Mars for iron plus a ring) and U+1F720 🜔 COPPER ORE (Venus for copper plus a ring). 🝆 BISMUTH ORE is a trident for bismuth plus a ring; this alchemical trident symbol is not supported separately by Unicode. Advisors at the Chymistry Project have reviewed the font and confirmed that the designs are acceptable.

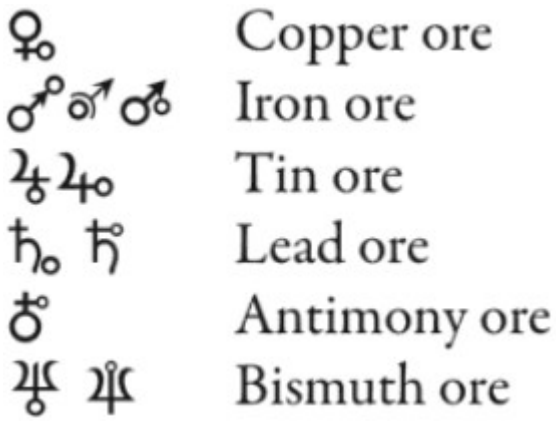


Figure 1. List of symbols from the Chymistry Project. The placement of the ring varies.

1F741 🜁 QUICKLIME

The middle tine is variable (as long as the other two, shorter or even absent), but the symbol derives from a three-tined symbol for calx (not supported by Unicode) plus a cross. It may thus be identical to the planetary symbol for Neptune, U+2646 ♆, and the same glyph is used here for both. However, while the symbol for Neptune may also have a short middle tine, it may have a planetary orb rather than a cross at the bottom, or arrow heads on the tines; neither are possibilities in the symbol for quicklime.

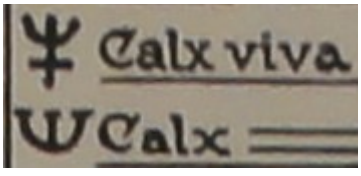


Figure 2. Basel. Quicklime (*calx viva*) and the 3-tine calx symbol it derives from.

Figure 3. Valentine. *Calx* symbol and its derivative *calx viva*.

Figure 4. Bell. 'CV' is for Latin *calx viva*.

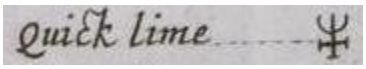


Figure 5. Le Febvre.

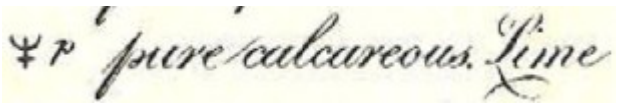


Figure 6. Bergman. (The 'p' is for 'pure'.)

calx
Lime, or quicklime; more generally, any powder derived from calcination. Literally, Latin, "chalk."

Figure 7. Stratford (2011: 18).

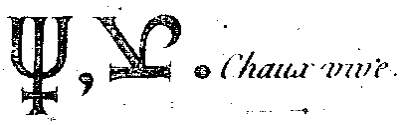


Figure 8. *Encyclopédie*, plate I.

1F747 ⏜ SPIRIT

Occasionally a disambiguating dot may be placed inside this symbol, or an 'sp' adjacent to it, but the request of the Chymistry Project was that the minimal form be the Unicode default.

Figure 9. Basel. The simplest form of the symbol.

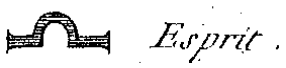


Figure 10. *Encyclopédie*, plate IV.

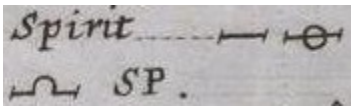


Figure 11. Le Febvre.

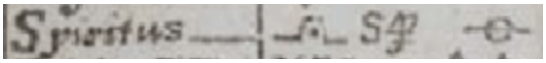


Figure 12. Valentine. An allograph with a dot to distinguish it from ⏦ sublimation, which appears in this source without its bottom stroke.

1F74C 🝌 CALX

The current Unicode design is simply the Latin letter ‘C’. The symbol may have an additional element such as the cross used here.

Figure 13. Valentine. Center is a C+ form. The character at left is the top part of U+1F741 🜁 QUICKLIME (*calx viva*).

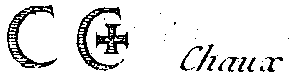


Figure 14. *Encyclopédie*, plate IV.

1F74F 🝏 SCEPTER OF JOVE

This character was changed at the request of the Chymistry Project. The vertical stroke should be straight, as there are only two bolts of lightning. As Newman explained it, “This is supposed to be a vertical rod with crossed thunderbolts, modeled on the Caduceus of Mercury, but substituting the said lightning bolts for the snakes. The rod should be straight.”

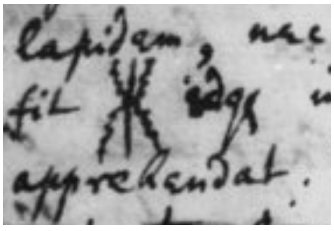


Figure 15. The sole example of the symbol, in Newton’s manuscript.

1F756 🜖 HORSE DUNG

This symbol displays a wide variety of forms. The one selected is simple and symmetrical.

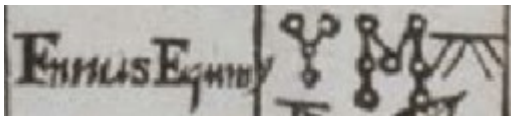


Figure 16. Valentine. The Latin here is *fimus equinus*.

1F758 🜘 POT ASHES

The current Unicode design has a stroke at bottom, but a cross appears to be more usual. Occasionally there is a third tine, like 🜗 U+1F757 ASHES rotated 90 degrees.

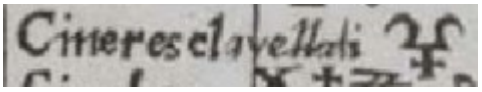


Figure 17. Valentine. The Latin here is *cineres clavellati*.

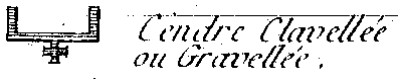


Figure 18. *Encyclopédie*, plate IV.

Figure 19. Charas.

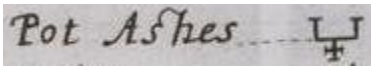
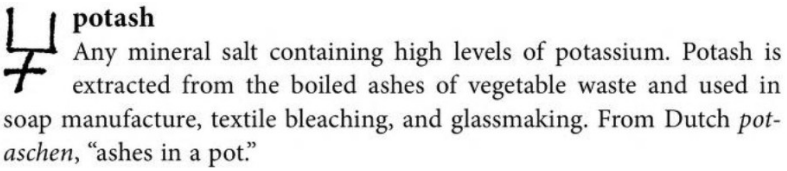


Figure 20. Le Febvre.



potash
Any mineral salt containing high levels of potassium. Potash is extracted from the boiled ashes of vegetable waste and used in soap manufacture, textile bleaching, and glassmaking. From Dutch *pot-aschen*, "ashes in a pot."

Figure 21. Stratford (2011: 66).

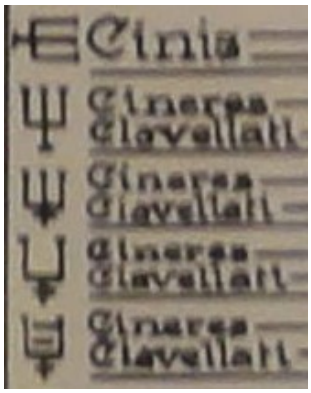


Figure 22. Basel. U+1F757 ASHES (*cinis*, top) and 4 variants of pot ashes. The current Unicode design is not listed.

1F763 🝣 PURIFY

This is the descending node, U+260B ☋, one of several astronomical symbols used in alchemy. (The ascending node, U+260A ☊, is used for sublimation, synonym to Libra, ♎ U+264E/U+1F75E.)

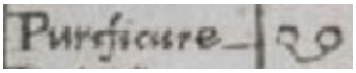


Figure 23. Valentine.

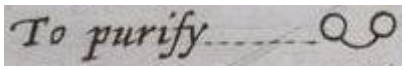


Figure 24. Le Febvre.

Figure 25. *Encyclopédie*, plate III.

1F768 🝨 CRUCIBLE-4

This varies between a simple Latin T (an abbreviation of *tigillum*), a cross ☩ (from the root *crux* in *crucibulum*), and a combined form resembling a ⊤ with a stroke. The intermediate form was selected as it is not obviously covered by other Unicode characters.

tigillum
Crucible. Literally, Latin, "small wooden beam," referring to the Crucifixion.

Figure 26. Stratford (2011: 83)

Figure 27. Bell. The superscript *ble* shows that this symbol is simply *crux*.

1F76D ⍥ RETORT

As with the signs of the zodiac, a retort may be drawn in detail; the selected form is at the abstract end of the range.

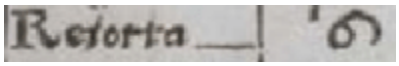


Figure 28. Valentine.

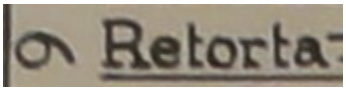


Figure 29. Basel.

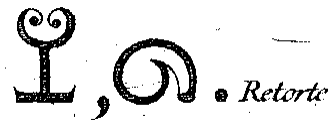


Figure 30. *Encyclopédie*, plate III.

Figure 31. Bell.

retort
A spherical glass vessel with a long, downward-sloping neck, used in distillation. The neck acts as a condenser. In this way a liquid is heated, distilled to vapor, condensed in the neck, and recollected in a receiver. From Latin *retortus*, "to turn back."

Figure 32. Stratford (2011: 74).

1F76E ⧖ HOUR

There are various more- or less-abstract renditions of an hourglass. The selected form is intermediate between common variants and Newton's form.

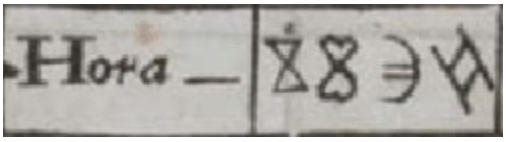


Figure 33. Valentine.

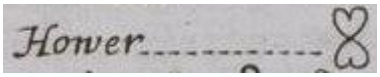


Figure 34. Le Febvre.

Figure 35. Bell.

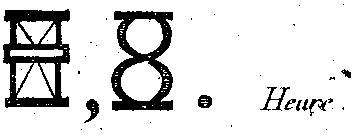


Figure 36. *Encyclopédie*, plate II.