5 *Design & Production*

Miniature maps are available in great variety, dating from about 1500 and embracing a wide range of cartographers, subjects and styles. They were a small facet of total production but copied most of the features of the larger versions, mapmakers soon perfecting the difficult art of reduction to a minute scale.

Germany, Italy and the Low Countries account for most of the early output, followed later by London and Paris. Charming if rudimentary sixteenth century woodcuts were soon replaced by copper engravings, which predominated during the seventeenth and eighteenth centuries. It is not easy to understand how engravers, working in poor conditions, achieved these exquisite designs.

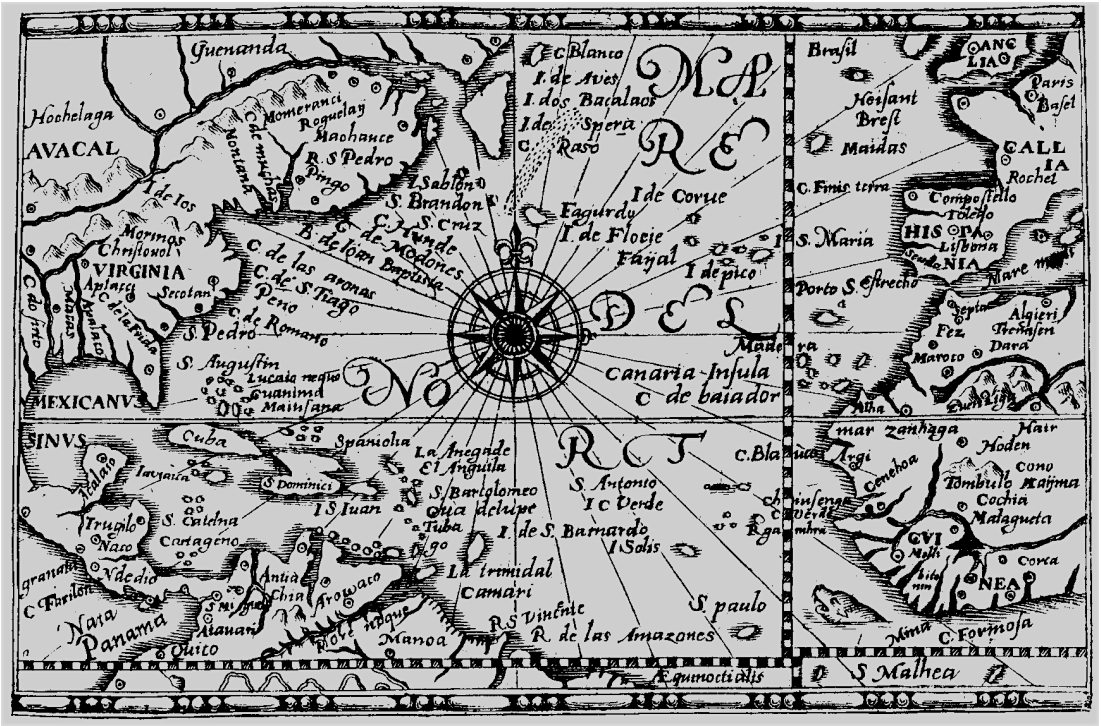
Famianus Strada, Rome, 1645

As their plate marks reveal, most miniature maps were printed from individual ones but they were also engraved more than one to a plate and the sheets cut up. Playing cards were usually produced this way too. Some plates had very short lives. Others had very long ones resulting in wear and damage, which necessitated retouching or replacement.

Because it was relatively easy to rework copper plates, many are known in more than one state, either because of additions or alterations, or both. This often happened if they changed hands. Adding or changing plate numbers was not unusual. Overprinting is another variant sometimes occurring where maps are close to text, when illustrating a page in a book or a letterpress title-page (see Introduction 10). Because both intaglio and relief processes were involved, the paper was printed twice and if the printer was careless, an overlap could happen. This was not possible with woodcuts, which being a relief medium, were printed with the text. Though subject to damage they were rarely altered but variant states were likely if they had inset metal type lettering (see 1550 & 1593).

Miniature maps with circular or oval frames are an uncommon variant to the normal rectangular ones, usually horizontal or landscape but sometimes vertical or portrait. Even more unusual are those with irregular borders or none at all (see 1645, 1825b & 1817) and those within cartouches or other designs (see Introduction 10, 1640, 1819, 1821, 1823). Few borders are decorated with a pattern (see below, 1577 & 1811) and plain ones are usually single or double lines. Degrees of latitude and longitude, plate numbers and titles or other lettering, may all be located outside the border. Any of these features may be incorporated within wide ones: a fairly typical characteristic of circular maps (see 1589, 1602, 1791, 1802 & 1803a), though not always (see 1645 & 1795).

Titles are usual but they sometimes go unrecognized, when found in relatively large lettering across the face of early maps (see below: *Mare del nort*), instead of in a title-piece or outside the border. However, untitled ones are not rare, notably those of the world (see Introduction 10). Not many miniatures have signatures but a few engravers often signed their work, for example Pieter van den Keere and Benjamin Wright.

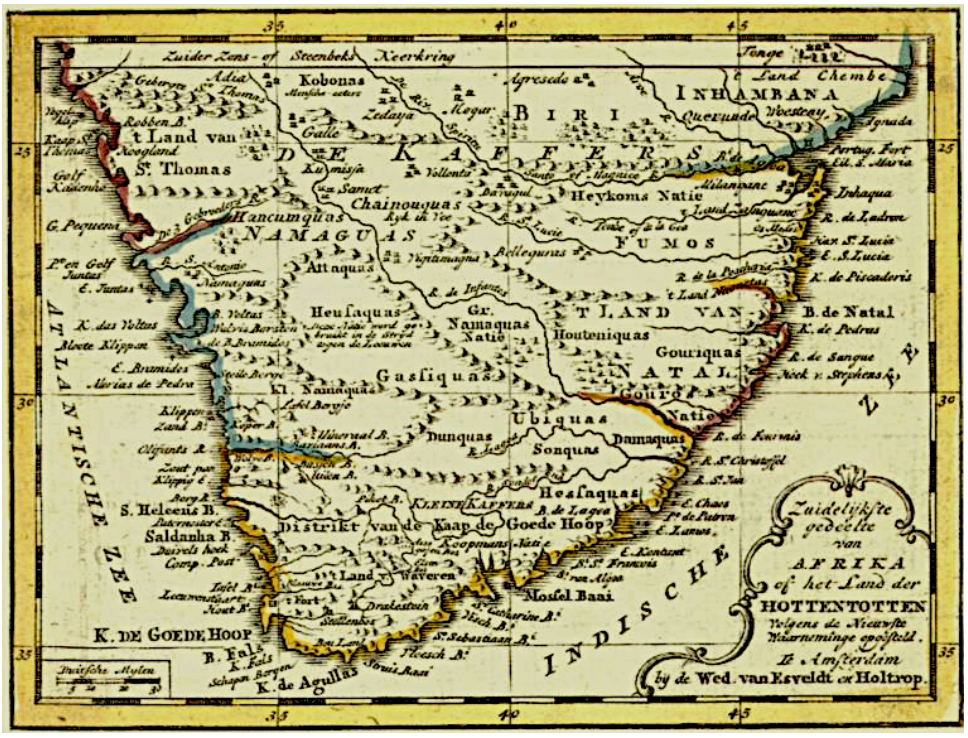


Theodore de Bry, Frankfurt, 1599

Insets, scales and keys, cardinal points and plate numbers, graticules and legends, signatures and imprints are found. Such natural aspects as mountains, rivers, lakes and forests appear. Towns, boundaries, bridges and parkland are indicated, together with roads, canals and railways. There is variety in lettering, symbols, orientation, projection and the methods of showing relief. Decorative features include cartouches and vignettes, compass roses and rhumb lines, figures and wind heads, heraldry, animals and ships.

Wove paper, known as vélin in Europe, was invented in England about 1756. A machine to make paper was eventually patented in France in 1798 but the introduction of machinery into paper making reduced its quality and permanence. In the nineteenth century the pace of change accelerated considerably, as maps became more plain and accurate. New methods of production were developed, including steel plates (see 1827 & 1831a), lithography (see 1828), wood engravings (see 1829), cyanotype (see 1855) and cerography (see 1885 & 1885b), but chromolithography came to dominate.

The scope of world atlases gradually lost its European bias. Other countries produced pocket atlases too, including Japan, Scotland and the United States, where using them as 'comps and promos' originated. Vellum, calf and roan hand-bindings gave way to machine sewing and in-house cloth, but experiments with gutta-percha binding were a disaster (see 1887). Cards, as an alternative to the codex format, became more common but a couple of rare atlases were issued in a leporello format, with the maps printed on a strip of paper folded up in concertina style (see 1830a & 1880a). Other rarities include composite atlases (see 1790a & 1794) and manuscript maps and atlases. Examples come to light from time to time and their uniqueness makes them rather desirable.



Willem Holtrop, Amsterdam, (1794)