Dating the artefact

The attributes that can be used to date this artefact are the type of mould, the colour and the maker’s mark. However, they provide conflicting results.

Firstly, the two-piece mould with post-bottomed base is either semi- or fully-automatically machine made, manufactured after c.1900-1920 (Boow 1991:46). It has been suggested that semi-automatic machine made bottles were not made by AGM until 1918, although this date is not definitive (Stuart 1993:18).

Secondly, the amethyst colour is produced by the exposure of manganese dioxide in the glass to ultraviolet light from the sun (White 1978:66). Manganese dioxide was added during the manufacturing process to make the glass clear by counteracting the colours produced by the raw ingredients (Newman 1977:91,192). This technique was commonly used at the end of the nineteenth century, as concerns about the effect of direct light on food subsided and consumers preferred to see the contents (Vader and Murray 1975:10; Lockhart in press 2005). The cessation of manganese as an ingredient in bottle glass is often thought to have been around 1916, as a consequence of World War I, and is discussed in further detail below (Vader and Murray 1975:10; Newman 1970:74; Burke and Smith 2004:369; Casey and Lowe Associates 2000 Appendix 3.5).

Finally, manufacturer’s marks and trademarks are a common, and often reliable, means of dating artefacts such as glass and ceramics. The Australian Glass Manufacturers used several different trademarks over time (Arnold 1985:27). The mark on this artefact (Fig. 1) was used between 1934-1948 (Arnold 1985:27; Graham 1981:107).

Discussion

The method of manufacture and the trademark suggest that the artefact was made after World War I, while the colour dates it to before the war, resulting in a variation of nearly twenty years. Therefore, it is necessary to re-evaluate the commonly accepted dates for amethyst glass in Australia.

The shortage of manganese previously imported from Germany and the rising costs, are normally given as the reasons that manganese dioxide stopped being used in glass during World War I (Kendrick 1964; Miller and Pacey 1985:44). When supplies returned to normal after the war, these factors no longer would have been an issue. Although a decrease in supplies had an affect on the use of manganese in glass, the decline was more closely related to the introduction of semi and fully automatic machine-made bottles. Manganese dioxide is more effective in the manufacture of handblown glass, made using crucibles in an oxidizing environment, than in machine-made bottles, manufactured using open tanks and have less oxygen (Lockhart in press 2005). Hence, the introduction of automatic manufacturing machines in c.1900-1920 (Boow 1991) had a greater effect on the cessation of the use of manganese dioxide than did the war. There is no clear cut-off point for the use of manganese, although there is evidence that it was still in use, albeit on a very small scale.
in the United States in 1933 (Lockhart in press 2005) and in Australia until the 1940s (Carney 2004 pers. com.).

The Australian Glass Manufacturers Company Limited were incorporated in 1915, following the amalgamation of the Melbourne Glass Bottle Works Company Limited and Waterloo Glass Bottle Works Company Limited (Fountain 2000:92; Vader and Murray 1975:14). Therefore any bottles with an AGM mark were made after 1915, and machine-made bottles after 1918 (Stuart 1993:18). This supports the post-1934 date for the glass.

Conclusion

Dating solarized amethyst glass has recently come under discussion (Lockhart in press 2005) and the discovery of this artefact supports a later date for the use of manganese dioxide. Another possible explanation is that the particular AGM trademark was used before 1934, although to date there is nothing to indicate that this is the case. It is more likely that solarized amethyst coloured glass, whereas commonly thought to be manufactured before 1916, continued into the 1930s.

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References

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WALTER BURLEY GRIFFIN AND A MUSEUM OF ARCHAEOLOGY AT THE HEART OF AUSTRALIA’S CAPITAL

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An exhibition at the National Archives of Australia in 2002 put on view the remarkable drawings made by Marion Mahony Griffin for her husband Walter Burley Griffin’s designs, the designs that won the 1912 competition for Australia’s new national capital in Canberra. Within those designs is an archaeological element, not before noticed, which we report in this note.

Griffin’s designs, though much compromised like all grand plans for great cities, survive in the shape of Canberra today. The fundamental axis, from Mount Ainslie through the War Memorial to the Parliament, is unblemished. There have been many losses. Instead of the extensive railway system and its grand central station, there exists today only a single-platform terminus with just two trains each way a day to Sydney. Roads for Canberra’s cars now swallow up Griffin’s park lands by the lake. Other things reported in the exhibition show that there are unchanging elements in how architectural and archaeological projects are actually conducted. Mrs Griffin complained she had only five weeks to do the drawings, when ‘it isn’t possible to do them in nine weeks’. (The extra four weeks referred to the travelling time by ship from San Francisco to Sydney). Completed somehow just in time, they were taken from Griffin’s Chicago office towards midnight, to catch the last train, which would catch the last ship, which would reach Australia just in time for the competition’s closing date (Vernon 2002:13). Drawn on linen, and then lithographed on to heavy cotton, they strikingly reflect conventions of Japanese wood-block prints – the prints which the Griffins’ employer, Frank Lloyd Wright, collected.

Griffin was more than a designer charged with placing a defined set of public buildings and ancillary settlements into an ordered landscape. He largely decided what those buildings and their surroundings should be, even down to the species of street trees, as the fitting things that would define the Australian capital, and thereby the nation. This is where a place for archaeology came in. An element in Griffin’s designs were the buildings of high culture, which he concentrated into a group at the foot of Mount Ainslie, extending across the flat land to its west. Here would be a monumental railway terminus, on the European model, and on the higher ground above it the cathedral, the military college (the one element which was constructed) and the opera house (not built, whilst the opera house in Sydney was, and became famous). Then on the lower ground beneath and to the west would be three cultural buildings, a ‘Gallery of Plastic Arts’, a ‘Plant Conservatory’ – and the ‘Museum of Archaeology’ (Fig. 1).

Reid’s (2002) account of Griffin’s plans for Canberra says nothing as to why Canberra needed a Museum of