

Book Review:

Analytic drawings and floral diagrams: A. H. Church and A. W. Eichler

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A beautiful new book (Mabberley 2000) memorializing Oxford botanist, teacher and extraordinary artist Arthur Harry Church (1865-1937) inspired me to make a Churchian (analytic) drawing of a flower, and it seemed right, its author having adopted Australia as his home, that I chose not a native plant but that ornament to Australia, the wonga-wonga vine (*Pandorea pandorana*, Bignoniaceae) (Fig. 1).

Church's illustrations are watercolours, ink-outlined with the sweep and precision of an aircraft engineer. He is said to have "drawn from the shoulder" using a mapping pen, and to have been especially pleased if a hair caught in its nib to narrow the line even further. I should not like to have played billiards against him.

Analytic drawings are still quite often presented in textbooks, though they tend to be copied from older works, especially Engler's "Das Pflanzenfamilien". But another kind of illustration, which I have also done for the wonga-wonga, has gone right out of fashion. It is the "floral diagram" (FD), a transverse section with parts shown conventionally. It is very useful for showing the relative orientation of axis, perianth parts, stamens, etc. In the wonga-wonga diagram I have emphasized the location of the splits in the ovary wall at the time of fruit ripeness. This is an important character in the family and here is at right angles to the cross-wall of the ovary.

FDs were perfected by the German botanist A. W. Eichler (1839-1887). I cannot do better than to quote Stafleu (1965):

"Floral diagrams were not invented by Eichler. Baillon had them before him and so had several of the workers of the Flora brasiliensis, but Eichler certainly

developed the art to its highest peak. Rarely have 'floral' diagrams supplied so much information, not only on the structure of the flowers but also on inflorescences and even on phyllotaxis"

Stafleu (1965) called Eichler's work a great classic of the morphology of the flower and noted that it has never been translated into English because "before 1939 a reading knowledge of German was still generally a must for a plant taxonomist". In fact a translation exists, but has not been published (Church 1919: 5).

In the English and American traditions FDs have not been widely used and are rarely met with now, either in the taxonomic literature (but see Moore (1977) for an analysis of the *Ascarina* flower), or in text-books (but see Coombe & Bell 1965). One of the earliest and perhaps the most famous is that of Darwin, showing the generalized plan of an orchid flower; this was reproduced by Thomson (1906). The last English account of flowering-plant families to make much use of FDs is that of Rendle (1953). The works of Hutchinson lack them completely, as does the classic "how to do plant taxonomy" text of Davis & Heywood (1963). In the first flowering-plant volume of a new, magisterial series (Kubitzki et al. 1993) there is only a single FD, though a notable example, in which Corner rationalizes the inflorescence of the "missing link" oak-relative *Trigonobalanus*.

As yet I have not found a text (apart from Rendle) that clearly sets out FD conventions. Given the modern library practice of putting "old-fashioned" works out of the reach of old-fashioned browsers, success in this may be some way off.

References

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Figure 1 opposite: *Pandorea pandorana*.

- A. Flower, longitudinal section just outside the median plane: note articulation at pedicel, short sterile adaxial stamen, dense bearding on corolla tube especially abaxially. Mouth of corolla is c. 1 cm diam.**
- B. Corolla lobes in bud (face view); branched apical part of hair from inside corolla.**
- C. Floral diagram: crenate line around nectary disc, zigzag line in ovary wall showing location of split in fruit, air-space in ovary shown black. Adaxial side uppermost.**
- D. Diagram showing the distribution of hairs at corolla mouth; note the gaps along the centrelines of the 3 lower petals.**

