Magnolia x soulangeana Fruit development and dissection.

I) *Immature green aggregate fruit* – August -

Aggregate fruits form from single flowers that have many carpels. They are not joined together, i.e. each pistil contains one carpel and normally forms one fruitlet. The shape of the aggregate fruit is determined by the number of the carpels that continue their development to maturity. In this case only one is developing, distorting the remainder of the fruit.

a) Longitudinal section aggregate fruit. *Actual size*.
b) Developing follicle and fruitlet removed from aggregate fruit to show its attachment to the central structure or receptacle. One of the neighbouring follicles shows two immature fruitlets attached to the receptacle via their funicles. *x2 natural size*
c) Developing, but still immature white fruit attached to half the follicle by the funicle. The funicle emerges from the fruitlet and passes through the follicle wall. It will attach to the receptacle. *x2 natural size*

II) *Green and Pink semi-mature aggregate fruit* – September

All the following x 2 natural size

a) Follicle containing two almost mature, bright red fruitlets.The follicle has been opened along its natural seam revealing the fruitlets in situ. However, in opening the follicle and removing it from the central receptacle, the funicle has been gently pulled from the inside of the fruitlet.

   The picture shows how each funicle emerges from each fruitlet, passing through the follicle wall. It then attaches to the receptacle. The follicle was attached to the receptacle at the nearest edge.

   When the aggregate fruit is fully mature, the follicles split longitudinally to reveal the developed fruitlets resting inside. The fruitlets then drop and hang from the follicles by the thread-like funicle, where its movement and bright colour should attract birds.
b) A split fruitlet showing;
   i) Right: The fleshy outer half encased by the thin red aril.
   ii) Left: The seed, with its funicle attached to the top of the seed (left side) and passing across it in a groove. When inside the fruitlet, part of the funicle lies coiled in the indentation visible inside the left edge of the fleshy outer casing.
c) A split fruitlet showing the seed inside. The funicle does not pass across this side of the seed, therefore it has left no marks.
d) A split seed showing;
   i) The seed inside its case. Visible is the smooth side, unmarked by the funicle.
   ii) The second half of the case reflecting the shape of the seed in (d.i)

The seed from (d.i) turned over, showing pronounced patterns caused by the funicle as described earlier.