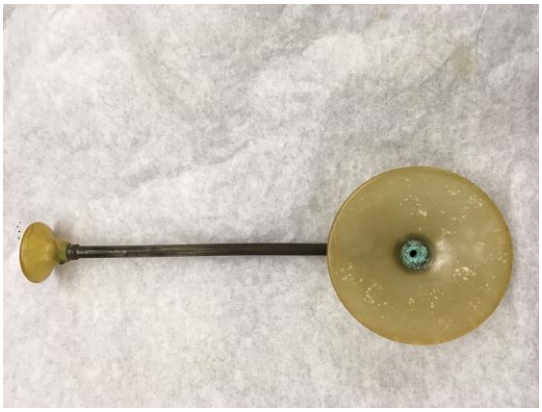
Under the radar: The Conservation of a 19th Century Plastic Stethoscope

The Royal College of Physicians' Library, Archives and Museum Collection contains a significant number of paper based artefacts spanning several centuries. This large collection is stored in optimal environmental conditions. However, within the collection there is also a handful of plastic artefacts whose destructive nature could pose issues not only to themselves but also to the neighbouring artefacts. It is the duty of the RCP paper conservator to care about the objects in the immediate vicinity of their specialism, while keeping the bigger picture in mind. The conservator needed to address potential hazards derived from the plastic objects, such as off-gassing and leaking of plasticiser.

The case study that is being analysed in depth is a 19th century portable folding stethoscope made of metal (nickel) and plastic (cellulose nitrate). This artefact was housed in an archival box without lid next to a leather covered box and a polyethylene bag containing a glass thermometer. Acid free tissue was found wrapped around the stethoscope, acting as a barrier. Visible traces of oxidation by-products can be observed on the acid free tissue. A preventive conservation plan was required, therefore it was drafted, agreed upon and implemented. The plan included testing for off gassing, rehousing and monitoring schedule. The off gassing was tested using Cresol Red pH indicators in the form of gel strips. The strips were created in the laboratory and placed next to the object in order to observe colour changes. Rehousing and monitoring plans were agreed upon with the collection's curator.

The stethoscope case highlighted key elements related to conservation practice. First is that most curators are not fully aware of the urgency for action in order to inhibit the degradation and minimise the harmful effects of the plastic-based materials in their collection. Another element is that conservators need to always be alert to the potential hazards that might not be immediately linked to their specialism. The importance of seeking knowledge in the literature and attending relevant seminars was proven useful. The observation process, alongside the preservation actions can be used as an example on future acquisitions of relevant type.



Pic. 1: The upper side of the object (credits: A. Soulioti)