

## **Appendix E**

### **University of Aberdeen Natural Philosophy Collection of Historical Scientific Instruments**

#### **Existing collections, including the subjects or themes for collecting**

The Natural Philosophy collection is based upon material that has been in use in the University of Aberdeen, primarily for the purpose of teaching and research in the area that used to be called Natural Philosophy. Modern collecting has primarily been in the fields of physics, medical physics, astronomy, computer science, and engineering. It is one of the most diverse collections of historical scientific instruments in any British university, and one of the most extensive, covering 250 years of the evolution of this genre. Physically, the collection encompasses a wide range of apparatus, from the simplest demonstration pieces to state-of-the-art research equipment.

The collection is estimated to be about 3,000 items. The smallest items are individual components, like microscope objectives and slides; several of the largest items weight over a tonne, such as the electron microscope, an unusual X-ray generator of the 1950s with a demountable X-ray tube and a pioneering reciprocal space explorer for X-ray structural crystallographic work.

In addition to the scientific instruments, there is a significant amount of accompanying documentation in terms of instrument manuals, student experiment instructions, illustrative photographs of equipment and related matters, glass-plate slides and negatives produced for teaching and research, instrument catalogues, books and pamphlets relating to scientific equipment, and assorted relevant material.

The collection has registered status.

#### **Significant objects or individuals:**

About 50 pieces, or fragments of pieces, in the collection can be associated with an 1822 inventory of Marischal College equipment, and further contemporary items are assumed to come from King's College. These cover subjects such as Astronomy, Electrostatics & Magnetism, Mechanics, Optics, Pneumatics and Hydraulics, Surveying and Navigation.

The collection follows the diversification and specialisation of Natural Philosophy in the 19th century, with particularly significant examples in Optics and its applications, Acoustics, Meteorology, Current Electricity and its measurement, and its public application at the end of the century in the fields of lighting and power.

The 20th century component of the collection is one of its major strengths. Some themes covered are X-rays and their application in medicine and crystallography, electronic instruments, electrical measurements and the evolution of electrical components, the expanding use of the electromagnetic spectrum, measuring radioactivity, measuring properties of materials and the development of precision instrumentation, the evolution of computational machines, optical equipment, changing techniques in teaching physics. Special topics include superconductivity, liquid helium, electron diffraction, science and the second world war, seismology, atmospheric research, the growth of synthetic crystals, surveying and mechanical measurement.

The collection includes apparatus used at the University of Aberdeen by a number of professors of distinction. Internationally famous have been Professor James Clerk Maxwell, Nobel Prize winning Professor G. P. Thomson and Professor R. V. Jones; men of national

reputation, Professors Patrick Copland, Charles Niven, FRS, Sir John Carroll and the meteorologist George Aubourne Clark, and many others of local note.

**Criteria governing future collecting policy, including the subjects or themes for collecting:**

The Natural Philosophy Collection of Historical Scientific Instrument's principles and priorities for collecting are:

- Preserving in appropriate condition apparatus related to the practice of physics, medical physics, astronomy, computer science and engineering at the University that is of interest in the context of the history of science, cultural history and the history of the University and the region.
- Collecting items that are relevant to displays and other interpretation aimed at the public understanding of the physical sciences, of scientific techniques and of the applications of physics and engineering.
- Preserving apparatus that has been associated with notable academics, teaching and research venues connected with the physical sciences that feature, or deserve to feature, in the history of the University of Aberdeen.
- Maintaining a link with the evolution of scientific equipment and techniques in the fields of physical science and engineering, to keep its relevance to modern science.
- Collecting new scientific equipment only where it has a strong relevance to the physical science that is, or has been, taught or practised in the University.
- Collecting scientific equipment that is no longer in use, from departments practising physical science within the University, where it fits with the other principles and priorities of the collecting policy.
- Collecting equipment from the Computing Centre where it has a strong link with research into the physical sciences conducted at the University of Aberdeen or advances in computing science made at the University of Aberdeen, and where it fits with the other principles and priorities of the collecting policy. (The creation of a comprehensive collection of computing equipment is outwith the scope of the policy; potential acquisitions should have a link to significant research performed at the University.)
- Considering equipment offered from other academic departments whose main business is not physical science, where this otherwise meets the principles and priorities of this policy. (Objects related to the research or teaching of other scientific disciplines may be more appropriately acquired by the relevant collection, if this exists within the University.)
- The Natural Philosophy Collection of Historic Scientific Instruments may collect drawings, paintings, maps, prints, photographs, photographic slides, film and digital media that are of relevance to the history of the research and teaching of the physical sciences and engineering in the University of Aberdeen.
- The Natural Philosophy Collection of Historic Scientific Instruments may accession into the permanent museum collections printed and manuscript ephemera – e.g. instruction manuals, trade catalogues, leaflets, advertisements, letters, pamphlets, teaching notes,

experiment instructions – when the material provides information about a particular object or group of objects in the collections, or illustrates a significant area in the history of teaching and research into the physical sciences and engineering at the University of Aberdeen.

- All potential acquisitions will be considered in the context of severe storage restrictions, and in the context of staffing and collections care arrangements.

**Period of time for future collecting:**

The collections primarily contain objects from the nineteenth and twentieth century, although there is some older material dating back to the eighteenth century. In keeping with the context of the collection within the history of the University of Aberdeen, material collected should date between 1500 and the present day.

**Association/geographical area to which collecting relates:**

Collecting relates to the history of physical science taught and practiced primarily at the University of Aberdeen, and exceptionally in North-East Scotland in general. The Natural Philosophy Collection of Historic Scientific Instruments will not normally acquire material from outside the University.