



Fig. 4 Electromagnetic instruments in Case 4: electrotherapy apparatus; two magneto-electric motors; interrupter and in foreground a commutator. Photo: Jean François Loude.

We went on to be shown too many plants and trees to go into detail but they included a very early plant, so old that they had been found in fossils. Then there was the 'Elephant Yucca' named thus because it has elephant like skin, 'Papyrus' which grows in Sicily near Syracuse – still used for paper and food, the 'Blood Dragon plant' (a tree that comes from the Canaries) so named as its sap is used as a colourant, the soft nut tree from Nepal the fruit used for washing, 'Mimosa Argentina' which has the fastest tactile response- this is a plant when animals touch it, it immediately closes, looks dry and uninviting and finally the coffee plant *Coffea Arabica* which grows to 10m. There was also a fine avenue of Silk Floss trees with their bulbous trunks (green when young) and with a very spiky bark.

We ended our interesting tour of the Gardens by going to the University's Botany and Plant Ecology building on the periphery of the Garden where several instruments had been put on display.

Michael Stewart

The Historical Collection of Physics Instruments of Palermo University

The Historical Collection of Physics Instruments at Palermo University which we visited next comprises more than 500 objects. The instruments date back to the beginning of the 19th century, notable from when in 1811 Domenico Scinà held the chair of experimental physics, up to the middle of the 20th century.

Professor Aurelio Agliolo Gallitto welcomed the SIS party and guided us through the collection. The majority is housed in about twenty specially designed pitch-pine cabinets (each approximately two metres wide and three metres high), with glass to front



Fig. 5 Large Hippi Chronoscope without its glass cover, introduced in 1848 by the clockmaker Matthäus Hippi for use in experimental psychology. Photo: Jean-François Loude.

and sides. Therefore, the instruments could be viewed without removal from cabinet, although close examination and photography were encouraged by opening the cabinet doors. The exhibits are well displayed with clear labels to provide information about each instrument and its maker.

This collection was the largest and most varied of the physics instruments that we saw in Palermo. Many of the older instruments were for demonstration purposes, whilst others were designed for measuring. Many of the earliest instruments were made in the physics laboratory but in 1863 Pietro Blaserna bought many instruments

from France, England and Germany.

The following gives an indication of the scope and contents of the display cases, based on the sample noted by the author during the visit (display case numbers in viewing order and not officially numbered):

Case 1: Pneumatics (including model Magdeburg hemispheres, air pumps, weight of air demonstration), hydrostatics (hydrometers, manometer), aeolipile, De Saussure type hygrometer, mechanics (chemical balances, inclined plane, gyroscope, whirling table), standard metre.

Case 2: Sound (set of Helmholtz resonators and group of Chladni plates, both by Koenig. Sirens, tuning forks, metronome, organ pipes). Barometer, calorimeter.

Case 3: Mainly electrostatics including bank of Leyden jars, gold-leaf electrometer, Cavendish hemispheres. Also, resistance boxes, induction coils, galvanometers.

Case 4: Electromagnetism (dynamo, motors, demonstration equipment) (Fig. 4). Magnetic dip circle.

Case 5: Light (spectroscope, camera lucida, large mounted prism by Duboscq, large optical bench, mirrors).

Case 6: Light (including a saccharimeter by Duboscq, polariscope by Biot, mounted Nicol prisms, microscopes).

Case 7: Light (including a fine refractometer by Caruso, reflecting telescope by W & S Jones, refracting telescope by Bardin).

Case 8: Electricity (resistance boxes, many meters and galvanometers, Leyden jars, Geissler tubes).

Cases 9 and upwards: Electricity (meters and demonstration apparatus, valves etc.). Mechanics (including fine balances), Hydrostatics (capillary tubes, pressure gauges, hydrometers), Light (optical bench spectroscope). The later instruments were in these cases. A large quantity of instruments and apparatus could not be recorded in the time available.

The above is a sample of the instruments; the full collection is much broader.

Two 19th century instruments of particular note are a fine armillary sphere attributed to Henry Drechsler and a Hippi chronoscope (Fig. 5) – an electromagnetic clock with an accuracy of one-hundredth of a second used for experiments in physics and psychology. Also on display is the ioni-



Fig. 6 The Observatory domes on the roof of the Cappella Palatina and the State Apartments. Photo: Claus Jensen.

sation chamber used by Emilio Segre and Carlo Perrier for the studies that led to the discovery of the element technetium in 1937 whilst working at the University of Palermo.

Not all instruments in the collection have yet been identified. Therefore, at the end of the tour Professor Agliolo Gallitto invited us to help identify a sample of these 'mystery objects' which were laid on a table. Various suggestions were made, one being that some weights were part of an Atwood machine.

At the end of the visit, which seemed far too short, the SIS group thanked Professor Agliolo Gallitto for showing us this splendid collection.

Terry Sear

Tuesday, 6 September

Palatine Chapel and Royal Palace

Our second day in Palermo started with an impressive visit to the Palazzo dei Normanni, home to the Sicilian Parliament in the western part of the city. This imposing Norman building houses several venues including the Cappella Palatina (Palatine Chapel), the State Apartments and Parliament Chamber, complete with the domes of Palermo Observatory on the roof (Fig. 6). Our guide Simona, who accompanied us throughout the study tour led the party to see the magnificent Palatine Chapel. It was built on top of an earlier chapel which became its crypt. It was commissioned in 1131 by the Norman king Roger II soon after his coronation and was consecrated in 1143, and dedicated to St Peter the Apostle.

The building took the form of a byzantine domed basilica plan with triple apse with two side aisles with granite columns dividing the nave. The quality and beauty of the

decoration including mosaics is breathtaking. The Normans in this period lived side by side with the Arabs in peace and they were influenced by Islamic art and used Arab designs and skills as can be seen in the Chapel.

The mosaics are pure Byzantine with bilingual inscriptions in Greek and Latin produced by mosaicists brought in from Constantinople. The most important ones include Christ the Pantocrator with Archangels and angels in the dome and over the sanctuary, and Christ blessing the faithful. The wall mosaics of the nave clearstories and side aisles are amongst the most famous medieval mosaics in the world. Old Testament kings and prophets are on the arches with scenes from the Old Testament in the nave and the lives of St Peter and Paul in the aisles. Those walls that don't have mosaics are clad in marble paneling mainly white and green and some purple porphyry all being used in the Byzantine and Islamic art forms.

The entire floor is in decorative geometric designs formed by cut pieces of coloured marble and glass known as opus sectile. It was likely that master craftsmen from Salerno in Campania were brought to Palermo as they were known for their expertise in this type of floor.

Finally, the nave of the chapel has the most wonderful ceiling all made of wood by Egyptian Muslim craftsmen. The type of ceiling is known as 'marqarnus' which is a coffered or honeycomb construction which in this case is covered with gesso and then painted with scenes thought to depict daily life at court and the kingdom with people playing chess, hunting, dancing and playing music, and people eating and drinking. The majority focusing on the ruler Roger who himself is depicted.

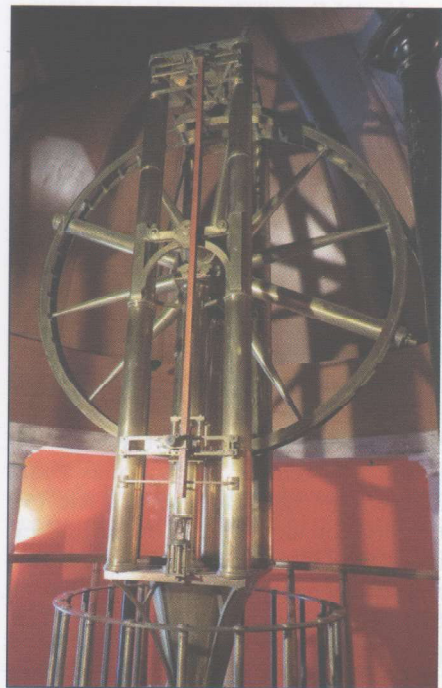


Fig. 7 Ramsden Circle. Photo: Robert Schmidt.

This was a memorable visit.

Michael Stewart and Louise Devoy

Palermo Observatory

After enjoying the splendours of the Cappella Palatina and the State Apartments, we climbed the stairs up to the Observatory. Founded in 1790 by Giuseppe Piazzi (1746-1826), the Observatory is renowned for its Azimuth Transit Circle supplied by Jesse Ramsden in 1789¹ (Fig. 7). Piazzi used this unique instrument to create an accurate star catalogue which included many stars that were below the horizon for more northerly observatories. We assembled in the main reading room where librarian Donatella Randazzo kindly gave us an overview of the Observatory's 10,000 item collection, before we were invited to view some of its highlights. A fine copy (2^o: XXXII, 240 pp.) of Giuseppe Piazzi's *Della Specola Astronomica de'Regi Stude di Palermo Libri Quattro* (Palermo: Reale Stamperia, 1792) was open to the large folding plate with an engraved illustration (55.5 cm x 43.5 cm) of the Ramsden circle, which was just a few steps away from where we were assembled. Other highlights included a selection of 19th and 20th century instrument makers' catalogues and Piazzi's own handwritten observation notebooks. *Bulletin* readers can explore the collection for themselves by visiting <http://www.astro.unipa.it/biblioteca/homebiblio.html>

Louise Devoy