Contents of Bulletin nr. 89, September 2005 R. Hooijenga

found may provide some new City interest in the sundial, it is hoped. Roebroeck did some preliminary tests on the construction. The arch is still plumb, in spite of traffic. With a temporary style, the readout is still quite accurate. The hour lines and furniture have not moved in all those years' repainting, because they are slightly deepened. – It should be possible gnomonically to fix the dial quickly.

New web site Frans Maes F.W. Maes 25
Frans Maes maintains a highly informative site on all kinds of sundials. The new address of this web site is now www.fransmaes.nl/zonnewijzers.

Conehenge F.J. de Vries 26
In the middle of this dial, a sphere sits in an invisible cone. Its shadow shows Babylonian and Italian hours as discussed before. At the end of azimuth lines (here spaced 15 degrees) are cones formed by rotating their respective azimuth plane around the pole. The cones for north and south degenerate into lines, shown as thin rods. The cones are truncated, but an essential part is left. The cone indicating the same time as the one in the centre is in the direction of sunset or sunrise for that particular day.

The horizontal sundials: Genk 2 and 3 F.W. Maes 28
See also http://www.fransmaes.nl/genk/. This is the eighth part of the tour of the Genk sundial park. After last instalment's world first, the cone dial, the author now discusses two implementations of the classic horizontal sundial. Outwardly different as they are, they share a common principle.
The *table sundial* is a heavy round stone slab of 1.2 m (4') diameter, supported by legs as heavy. Its Roman numerals run from VI through XVIII (the information panel says 5-19). An index allows one to read the date. The motto reads *[This is] to oblige a shadow*. The dial is best read from the north, and furniture layout is according, differing from the original draft. – A comparable dial is that of Ian Finlay, on the Luik university campus.
The *large horizontal sundial* is just that, with upright blocks of stone for hour points and a bench which completes the circle. Integrated with park elements, this is a simple and elegant design. – The readout is inaccurate. A sagging pole style is not uncommon in boggy soil, but in this case, the style height is a trifle too high rather than too low (an example of a supported style is that of the Menkemaborg dial in fig. 7). The real problem is in the hour markers: the distances between 5 and 6 and between 6 and 7 are not equal, and 10, 11 and 12 are too close together. The markers are not arranged perfectly circularly, either. They are also difficult to read (fig. 8).
A problem with horizontal sundials is drainage. A common solution is a slight slope of the dial face. The revised hour line pattern may be found using the *translation rule*, which states that every plane sundial is equivalent to a horizontal dial somewhere on earth (fig. 9). Other dials are sloped for esthetical reasons (fig. 10), or in order for them to be easily readable from some point (fig. 11).
The large number of horizontal dials at Genk is somewhat surprising, as horizontal dials are relatively rare compared to other types. In central and southern Europe one finds mainly vertical (wall) dials; in The Netherlands and Flanders there is more variety. Only in the USA are horizontals predominant.

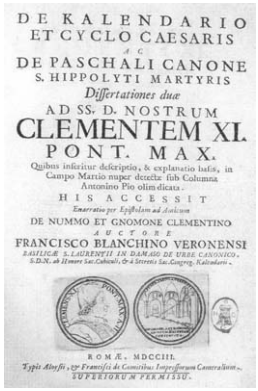
Sundial maker Jan Koopman H.W. van der Wyck 33
Picture of the frontispiece of a 1773 set of sundial plate drawings.

What is a bequest? Treasurer 33
When a person bequeaths a sum to *De Zonnewijzerkring*, the inheritance tax is only 8%, explains the author. This is so because the Society is recognized as a legal entity serving a social interest.

Sundial added to Municipal Trust list H.W. van der Wyck 33
The city of Zwolle added seventeen objects to their monuments list, among them this 1754 vertical west declining sundial, 'La meridiana'.

Tips for Rome trips F.W. Maes 34
The author shares his experience with visits to a carefully selected subset of the 70 objects on the *Rome Sundials Trail* by Nicola Severino. Of the multiple sundials, the one in the Quirinal palace garden looked promising, but the gardens are only open to the public on 2 June. Unfortunately, the author was fifty-one weeks early. – Piazza Montecitorio and Piazza San Pietro are freely accessible to the public, and so are their meridians. The first is from 1996 and by Zagari. It uses the Augustus

obelisk as its gnomon. The second, by Gilii, is from 1817. – The Santa Maria degli Angeli e dei Martiri features the 1702 Blanchino meridian. A tympanum under the gnomon hole blocks the sun except for a short period around noon; fortunately, the church is then open to visitors. – In the Trinité des Monts, over the Spanish Steps, we find a 1637 reflection dial by Père Emmanuel Maignan. There are € 5,- tours Tuesdays 11 o'clock, in French; and Fridays, the same time, in Italian. – In 1644, Maignan constructed another reflection dial in the Pallazo Spada; however, not in the Galleria (with the Borromini gallery that appears four times as long as it actually is), but in a different part of the building. Sometimes there are tours, on Sunday mornings, starting from the Galleria, but the author has no details. The mirror is missing anyway, so the sundial does not work.


DE KALENDARIO
ET CYCLO CAESARIS
AC
DE PASCHALI CANONE
S. HIPPOLYTI MARTYRIS
Dissertationes duæ
AD SS. D. NOSTRUM
CLEMENTEM XI.
PONT. MAX.
Quibus inseritur descriptio, & explanatio Isidis, in Campo Martio nuper detectæ sub Columna Antonino Pio olim dicata.
HIS ACCESSIT
Enarratio per Epistolam ad Amicum
DE NUMMO ET GNOMONE CLEMENTINO
AUCTORE
FRANCISCO BLANCHINO VERONENSI
ROMÆ. MDCCIII.

Blanchino's book on the calendar

Hour line construction on an almost-west dial A.J.M. van den Beld 37
The problem with the usual horizontal dial construction is here that the foot point of the gnomon is very far away. In answer to a question by Horikx (B05.2.10), the author presents an alternative construction. The real work is done in fig. 3, which constructs a line through a given point U and the inaccessible foot point D, where D is determined only by two other lines that, by definition, have their intersection there. – The other two figures derive these lines as translated hour lines from an auxiliary sundial on a folded down horizontal plane with a likewise folded down gnomon and its projection.

Sundials in The Netherlands A.G.M. Bron 39
What decides whether a sundial will be added to the file? Bron explains some of his ideas on this process. Most armillary spheres would not qualify, but as this instalment proves, there are exceptions. On the other hand, portable or window sill dials ought not to be added, not being "at or by buildings", and Bron proposes to remove one that somehow made its way in. And then there are those dials that will be mentioned in this section, but will not be added to the file.
South Holland – **'s Gravenhage 24**: armillary sphere of the 'Haarlem' type (with auxiliary scales for the periods near the equinoxes). Diameter 73 cm (29"). Fair condition, but positioned incorrectly. *Zeeland* – **Middelburg 03a**: to be removed from the file; ivory diptych dial. **Middelburg 04**: very clean armillary sphere by Tim Vos of Laren; 63 cm (25"), Roman numerals. **Nieuw en St. Joosland**: a sweet little armillary of 23 cm (9") diameter. The 'angel' wind vane is unlikely to work well. This sundial should be over 120 years old. *South Limburg* – **Cadier en Keer** (no registration): well-wrought armillary sphere, but without numerals and quite plain. A garden ornament. **Kerkrade** (no registration): armillary sphere, hidden under botanical garden foliage. **Reymerstock 01**: armillary sphere, adjustable for latitude as well as equation of time and longitude, by Eugène Roebroeck and Wybe Westra. Scales for clock time and apparent solar time. See also Bulletin, nr. 84 (Jan 2004).

Literature 1531..1537 D.L.J.M. Verschuuren 44
1531. Deutsche Gesellschaft für Chronometrie, Jahresschrift 2004. This book contains 240 pages and nine sundial articles. *1531.3 Combining sundials and clocks*. In one 1660 example, the shadow of the gnomon moved together with the (hour) hand of a clock. The only difference would have been the equation of time, if it were in use. *1531.8. A model to derive the analemmatic sundial from an equatorial ring dial*. The method itself is well known, but the author went so far as to construct the projection planes in acryl sheet models for better understanding. – 1533. Zonnetijdingen, 2005-1. *1533.1 Preface*: congratulations on the second quinquennium of the Flemish Sundial Society. – 1534. La Busca de Paper. *1534.3. A book on our cultural heritage*. The Societat Catalana compiled a catalogue of 175 interesting sundials in Catalonia. The title is *Rellotges de Sol de Catalunya*. No further information concerning availability.

Equation of Time and Declination for 2006 Th.J. de Vries 51
Values of EOT and solar declination for every day in the new year, at 12 hours Central European Time.