

THE INSTITUTE FOR ADVANCED STUDY
PRINCETON, NEW JERSEY

SCHOOL OF HISTORICAL STUDIES

19 February 1958

My Dear M. Michel,

I know you will be very busy now with plans and arrangements for the Brussels Fair. Please however give me leave to ask you two questions urgently needed in current research.

1) In your "Un service de l'heure millenaire" you give a photo of the water clock relics at th 'Carillon' of the medersa in Fez. Can you provide me with a good photo of this suitable for reproduction? I also would like to know anything you can tell about just what the bells look like and whether there is any trace of the workings.

2) I am compiling a reasonably complete corpus of greek and roman sundials and other scientific objects, and finding out in detail how they work. Do you know any such antique dials in not so obvious places? If so I would be glad of any note.

All sincere regards,

Derek J Rice

February 25th, 58

Dr. Derek J. Price
Inst. for advanced Study
Princeton N-J.

My dear Price,

Although so busy with the Brussels Fair, I am glad to be able to give you some informations on both the Fes waterclock and on greek or roman dials.

1) Fes-Waterclock. My photo was a Kodachrome after which a bad printing block was made. I can send you this printing block if you want it. My kodachrome itself is too small. I think that the best thing would be to write to "Ed. La Cigogne, 1, Rd-Pt Lapérouse, Casablanca" who have good photographs from this clock, especially n°834 "Détail de l'Horloge de Bou Anania, Fès el-Balf".

The working parts of the clock seem to have fully disappeared. The building itself is in very bad condition, and as visible on my photo, some windows have been roughly reconstructed or even stopped. The bells, on the contrary, seem to be complete. They consist in 12 bronze bowls, on brackets or consoles. I was not allowed to go in the building, as this belongs to a mosque where foreigners are not admitted.

Mr. W.Groubé, of the Travaux Publics in Taourirt (Morocco) has sent me five years ago an extract of a book which might be interesting. It is the ZAH RAT EL-AS (The Myrtle Flower) of Abu'l-Hasan 'Ali el-Djaznâi, translated by A.Bel (Ed. Jules Carbonel, Alger, 1923). I cannot copy the whole extract, which is somewhat long, but can give you a resume: Initially, there were marble plates on the minaret of the Quaroûyîn Mosque, with a kind of sundial indicating the times for prayers. About 1307 AD (or 1286AD) a clepsydra was built in the same minaret. In AD 1317 this clock was rebuilt in the present room. A large recipient in cedar-wood held two earthenware vessels, the one higher than the other, with a calibrated pipe between them. On the side was a basin on which were marked the hours, the minutes and the time for the prayers... This machinery was neglected and restored in AD 1346. Abu Abdallah placed then an astrolabe-dial on the south-east side, with rotating cursors

In the ~~xxxx~~ year AD ~~1346~~ 1357, Abu 'l Hassan 'Ali ~~et-Tilimsânî~~ et-Tilimsânî made a Mâgâna with cups and bowls (i.e. bells) opposite the northern door of the new Medersa (This is our clock H.M.) Every hour, a stone fell in one of the cups, and a window opened.

From this all, you can infer that the Fes-clock is not older than many European clocks, although its general design seems to proceed from the roman monumental clocks, notably that in Petra, etc.

2) Greek and roman sundials. Of course you know the Tower of the Winds in Athens (although I am inclined to believe that its dials are not as old as the monument itself. I have not seen any portable dial either roman or greek. There is a scaphe (a hollow half-sphere) in the museum gardens in Split, as far as I can remember. I believe to have seen an other scaphe in the Pergame-Museum in Syria. I have no photos. Please find enclosed a Kodachrome which I took under very bad circumstances in Volubilis near Meknès (Morocco)(Roman Empire)It is interesting because of unusual model (vertical hollow cylinder). Scientific objects of this period are practically nil.

Glad if I can be of some help

yours very truly