

215 West St. Augustine
Tallahassee, Fla. USA
March 2, 1962

Dr. Henri Michel
54, Rue de Tenbosch
Bruxelles 5, Belgium

Dear Dr. Michel:

Dr. Derek J. de Solla Price at Yale University has suggested that I write you with regard to information on rock crystal lenses in antiquity, and possibly some information on burning mirrors among the Greeks.

Has something recent been published by you on such lenses? If so, would you please list the reference?

I am very interested also in securing information and references on the use of burning mirrors among the Greeks. I do not know if your interest extends also to that, but they seem to have been known as early as about 400 B. C. by Theophrastus in De Igne. I have seen the recent article in Isis on burning mirrors, but am especially interested in the earliest development of it. Could you suggest where I might look for information?

Albert Neuburger's translated book The Technical Arts and Sciences of the Ancients (New York, 1930), p. 234 contains the following passages: "Furthermore, fire was made with the help of concave mirrors composed of bronze and covered with silver foil, which were already known in 640 B. C." No reference is given for this date. Do you know where I might write to find its source?

Any information you may have on rock lenses and burning mirrors, or concave mirrors, in antiquity including the Near East would be appreciated, including any persons whom I could write. Thanking you, I am

Yours very truly,

Philip Fayen
Philip Fayen

March 13th, 1962

Private address: 54 Rue de Tenbosch

Mr. Philip Fayen
215, West St. Augustine
Tallahassee, Fla. USA

Dear Sir,

Since your letter of March 2 reached me, I have been inquiring from my friends here about informations on burning mirrors among the Greeks. Personally, I do not have any serious datas on the subject, but I have written to Professor Mongenet, and to Dr. Burger, who are the best informed persons here, and I translate here after their answers:

- 1) Abbé MONGENET, 12 Rue des Chartreux, Louvain, professor of greek mathematics at the University of Louvain, writes:

A. LEJEUNE.- Euclide et Ptolémée, Louvain, 1948, p. 75, writes that Ptolemy has probably written about burning mirrors and burning lenses, but that this part of Ptolemy's works is lost.

Demidianos' Optics (no date) mentions a fragment attributed to Geminus (+ 1st cent.)

The Pseudo-Euclid, Catoptrics (no date) speaks of burning mirrors according to Archimedes, but it is dubious. See RASKIN: De Brandspiegel van Archimedes (Philolog. Studien, 10, 1938-39, p. 109-118).

These mirrors are also mentioned in Apollonius, Diocles and Arthemius de Tralles (VIe cent.) See T.H. MARTIN: Sur quelques instruments faussement attribués aux anciens (Bull. di bibl. e di Storia d. Scienze matem. e fisiche, IV, 1871, p. 165-238) or J.A. VOLLGRAFF: De optica in de Oudheid, Leiden, 1910; or J.L. HEIBERG: Gesch. d. Mathematik u. Naturwiss. in Altertum, Munchen 1925, p. 77.

- 2) Dr. D. BURGER, Zinzendorflaan 5A, Zeist (Netherlands) writes:

What I know about burning mirrors has been published in FARADAY (Bull. of the Union of Professors of Natural Science etc) Wolters, Groningen, Postbus 58 (Netherlands). I send herewith a copy of my paper, for Mr. Fayen. All my sources are mentioned in fine. Please ask Mr. Fayen, if he publishes something on the subject, to send me a copy of his paper.

Of course, the same requirement is made for Abbé Mogenet and for myself. I enclose Dr. Burger's extract, which you may keep for yourself.

I deeply regret to be unable to get better informations for the present and remain, dear Sir,

yours truly