# Reviews

Y. Tzvi Langermann, *The Jews and the Sciences in the Middle Ages*. Variorum Collected Studies Series CS624, Ashgate-Variorum, Aldershot-Brookfield USA-Singapore-Sydney, 1999. VIII + 334 pages.

This volume contains a collection of ten papers related to the History of Science in Jewish communities for the most part in medieval Europe. This geographical and chronological frame has exceptions. Item VII ("The Astronomy of Rabbi Moses Isserles") concerns a Jewish thinker who lived in Cracow ca. 1525-1572 and, chronologically at least, belongs to the Renaissance; item II ("Saʿadya and the Sciences") studies the figure of Saʿadya ben Yosef al-Fayyūmī (882-942) who lived in Baghdad; item IV ("Maimonides and Astronomy: Some Further Reflections") is an essay on Maimonides who lived in al-Andalus, the Maghrib and Egypt. Papers II and IV, already mentioned, as well as I ("Science in the Jewish Communities of the Iberian Peninsula: an Interim Report") are first publications, whilst the seven others had already been published between 1988 and 1993.

Two authors are, nowadays, the leading authorities in the field of Medieval Jewish Astronomy: one is Bernard R. Goldstein who has dedicated a good part of his scholarly life to the study of Mathematical Astronomy in Hebrew sources; the second is the present author who has concerned himself mainly with the analysis of astronomical information which is often found in sources which are, in general, not highly technical. We can find some examples in this volume: item III ("Some Astrological Themes in the Thought of Abraham ibn Ezra") studies astrological themes in Ibn Ezra's biblical commentaries; item IV ("Maimonides and Astronomy") is concerned with two passages to be found in the "Guide of the Perplexed" and in a non-astronomical part of the *Mishneh Torah*. Langermann is a disciple of A.I. Sabra and it is clear that he is mainly interested in Cosmology and in placing Astronomy, and Science in general, within the general frame of Jewish *thought*. This can easily be seen in papers II (on Saʿadya), V ("Acceptance and Devaluation: Nahmanides Attitude towards Science") and VII (on Moses Isserles). Along the same line we find paper VI ("Gersonides on the Magnet and the Heat of the Sun) in which Langermann analyses Levi ben Gerson's solution of two cases of action at distance as they are found in Levi's supercommentaries to Averroes' epitomes of Aristotelian works, particularly *Meteorologica* and *De coelo*. Such cases cannot be explained with Aristotelian Physics and Levi's analysis of the second case is particularly interesting: the sun's light heats the Earth by virtue of a divine force which also produces the influence of other stellar bodies in the sublunary world. In this way

Gersonides links natural philosophy with astrology and religious thought: it is by means of the stellar bodies that God exerts His providence in the human world.

The fact that Langermann lays his emphasis in Jewish thought and in non-technical sources does not imply that he is unable to do otherwise. His item IX ("The Scientific Writings of Mordekhai Finzi") is a brilliant study of all known original scientific works of this author (fl. Mantua ca. 1441-1473), most of which are astronomical tables. This paper allows me to introduce another important characteristic of Langermann's research: he has been working for many years in the Institute of Microfilmed Hebrew Manuscripts in Jerusalem and, among present day scholars, his knowledge of extant Hebrew scientific manuscripts is probably second to none. This knowledge is reflected in most of his papers, especially in items IX (on Finzi), VIII ("Some New Medical Manuscripts from Moscow") and X ("The Hebrew Astronomical Codex MS. Sasson 823", co-authored with K.A.F. Fischer and P. Kunitzsch).

Langermann's book also insists on the importance of Jewish scientists from the Iberian Peninsula. This emphasis appears in most of the papers in this volume and, particularly in the excellent item I ("Science in the Jewish Communities of the Iberian Peninsula"), an essay which complements another masterly survey: B.R. Goldstein's "Astronomy in the Medieval Spanish Jewish Community", in Lodi Nauta and Arjo Vanderjagt (eds.), *Between Demonstration and Imagination. Essays in the History of Science and Philosophy Presented to John D. North* (Brill, Leiden - Boston - Köln, 1999), pp. 225-241. Langermann uses Sabra's scheme for the development of Islamic Science. Sabra speaks of two stages in this development, the first being an "appropriation" of, mainly, Hellenistic materials during the early Abbasid period, while the second is the "naturalization" of these foreign elements which become Islamicized when Muslim scientists begin to cultivate the new sciences. A similar process, although in a more humble level, takes place in the Iberian Peninsula: I agree with Langermann's analysis but I think one should emphasize the fact that the process by which the Jews of Sepharad take possession of Arabic science is limited to Andalusī sources and to those Eastern sources which had previously reached al-Andalus. Although it is perfectly clear that there are other chains of transmission of knowledge coming from the East, the Iberian channel seems to be the principal one and it continues being present in the work of the Jewish translators working in Southern France during the thirteenth and fourteenth centuries. Another item of discussion is the exclusion of Maimonides and Abraham b. Ezra: Langermann justifies their absence in I, p. 40, by the fact that both authors wrote most of their works outside the Iberian Peninsula and, in fact, he devotes two essays to them elsewhere in this volume. The problem, from my point of view, does not lie in the fact that Maimonides lived in Egypt for a good part of his life, or that Ben Ezra wrote in Italy or in Southern France, but rather on the kind of tradition to which they belong, which is clearly Andalusī, as Langermann acknowledges in the case of Maimonides and I think the same thing could be said for Ḇen Ezra.

I have a small set of remarks and comments on partial aspects mainly in the first paper. Some of them are a matter of opinion. Others are bibliographical additions: forgetting a part of the bibliography is an

omission an author inevitably makes when he wants to cover such an enormous field.

- In I, p. 4 Langermann refers to Ḥisdāy (perhaps Ḥasdāy) b. Shaprūṭ as "chief minister of ᶜAbd al-Raḥmān [III] (912-961)"; there seems to be no historical evidence about the famous Jewish physician ever being *wazīr* or, even less, *ḥājib* (= chief minister): Ḥasdāy took part in several diplomatic missions in the Christian kingdoms of the North and he was in charge of one of the offices involved in tax-collection, but it would be difficult to believe that, during the Caliphate, a non-Muslim could have reached one of the highest posts of the administration.

- In I, p. 16 he mentions "the Jews who worked under the patronage of Ṣāᶜid al-Andalusī" in a team effort which produced (as a result) the *Toledan Tables*. The source for this information is Isaac Israeli's *Yesod ha-ᶜOlam* and I consider it highly suspicious: Ṣāᶜid's *Ṭabaqāt al-Umam* bears witness to contacts between this author and the Jews of Zaragoza, who seem to be the source for his knowledge of the Jewish calendar, but no Jew is mentioned in Toledo, where the work was done. I believe this is a myth of the same kind as the inclusion of Muslim collaborators in the Alfonsine astronomical enterprise: in this latter case the work was clearly done by Jews.

- In I, p. 17, in relation to the *zīj* of Joseph ben Isaac ibn al-Waqār of Toledo (second half of the fourteenth century) one should bear in mind the publications of Margarita Castells: "Una tabla de posiciones medias planetarias en el *zīj* de Ibn Waqār (Toledo, c. 1357)" in J. Casulleras & J. Samsó (eds.), *From Baghdad to Barcelona. Studies in the Islamic Exact Sciences in Honour of Prof. Juan Vernet* (Barcelona, 1996), I, pp. 445-452; see also, by the same author, "Notas astrológicas y astronómicas en el manuscrito médico árabe 873 de El Escorial", *al-Qanṭara* 12 (1991), 19-59.

- An interesting remark appears in I, p. 21, in a quotation of Judah ibn Verga (fl. Lisbon, ca. 1455-1480), who states "For it is my opinion that the length of the year is not fixed forever at one set value, but that it rather varies. For the sun has a very small epicycle [...] just as the other stars have". I wonder whether Ibn Verga is referring here to Ibn al-Zarqālluh's solar model with variable eccentricity in which the centre of the solar eccenter revolves around a small epicycle: on this topic the most recent study is Emilia Calvo's "Astronomical theories related to the Sun in Ibn al-Hā'im's *al-Zīj al-Kāmil fī'l-Taᶜālīm*". *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 12 (1998), 51-111.

- I, p. 26 (see also VIII, p. 57) Langermann deals with the problem of measuring the degree of a compound drug in the works of Ibn Rushd and Arnaldus of Vilanova and their echoes on Jewish sources: the authoritative work in this field is Michael R. McVaugh's edition of Arnaldus of Vilanova's *Aphorismi de gradibus*, within the collection *Arnaldi de Villanova Opera Medica Omnia* (Granada-Barcelona, 1975): this work contains an important study in English (pp. 3-136) in which Ibn Rushd's method of measurement is reinterpreted.

- I, p. 28: On Ibn Buklārish's pharmacological work one should see the edition and Spanish translation of the important theoretical prologue made by Ana Labarta, "El prólogo del *Kitāb al-Mustaᶜīnī* de Ibn Buklāriš", in J. Vernet (ed.), *Estudios sobre Historia de la Ciencia Arabe* (Barcelona, 1980), pp. 181-316. An English translation of the same prologue had been published by M. Levey and S.S. Souryal in

*Janus* 55 (1968), 134-166.

- Langermann's volume has good indexes but no list of *Addenda et corrigenda* which would have allowed him to update the information: in VIII, p. 69, he refers to an edition and translation of Ibn Wāfid's treatise on Pharmacology by L.-F. Aguirre de Cárcer as being in press. The volume has in fact appeared: see Luisa Fernanda Aguirre de Cárcer (ed. and Sp. translation), *Ibn Wāfid (m. 460/1067), Kitāb al-adwiya al-mufrada (Libro de los medicamentos simples)*. 2 vols. Madrid, 1995.

- Langermann refers repeatedly to the astronomical tables of Jacob b. David Poᶜel, called Yom Ṭov/ Bonjorn (see I, p. 7, n. 11; I, 23; IX, 14, 17, 18; X, 254). In the first of these references he quotes the edition of the Catalan text of the canons, as well as that of the tables, with a commentary published by J. Chabàs (with the collaboration of A. Roca and X. Rodríguez), *L'Astronomia de Jacob ben David Bonjorn*, Barcelona, 1992. To this one should add: José Chabás, "Une période de récurrence de syzygies au XIVᵉ siècle: le cycle de Jacob ben David Bonjorn", *Archives Internationales d'Histoire des Sciences* 38 (1988), 243-251; J. Chabás, "The Astronomical Tables of Jacob ben David Bonjorn", *Archive for History of Exact Sciences* 42 (1991), 279-314; J. Chabás, "L'influence de l'astronomie de Lévi ben Gershom sur Jacob ben David Bonjorn", Gad Freudenthal (ed.), *Studies on Gersonides. A Fourteenth-Century Jewish Philosopher-Scientist* (Brill. Leiden-New York-Köln, 1992), pp. 47-54. On the lunar cycle used by Poᶜel see also J. Samsó, "Andalusian astronomy in 14th century Fez: the *al-Zīj al-Muwāfiq* of Ibn ᶜAzzūz al-Qusanṭīnī" *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 11 (1997), 73-110.

- Finally, in X, p. 275 n. 47 Langermann mentions the famous *zīj* of Ibn Isḥāq which underwent different versions, one of which is extant in a Hyderabad MS discovered by David King. On this MS see now Angel Mestres, "Maghribī Astronomy in the 13th Century: a Description of Manuscript Hyderabad Andra Pradesh State Library 298", in J. Casulleras & J. Samsó (eds.), *From Baghdad to Barcelona. Studies in the Islamic Exact Sciences in Honour of Prof. Juan Vernet* (Barcelona, 1996), I, 383-443. A complete edition (with commentary) of the canons of this MS, together with a partial edition of the tables, was presented as a Ph.D. dissertation at the University of Barcelona in January 2000 and I hope it will soon be printed.

The reader can see that all these remarks are of minor importance when set against the huge contribution that this work represents. There is no doubt that we have here an excellent book which deserves to be read carefully by anybody interested in Medieval Science or in Jewish Culture.

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Lodi Nauta and Arjo Vanderjagt (eds.), *Between Demonstration and Imagination. Essays in the History of Science and Philosophy presented to John D. North.* Brill's Studies in Intellectual History, Leiden-Boston-Köln, 1999. XIV + 424 pages.

The *Festschrift* is a specific genre inside scientific literature and is quite often undervalued. Tributes are something regarded with a certain suspicion. There are many reasons for this: first of all, they usually lack the elements that bind collective