

THE ARABIC TEXT

The Arabic text edition is based almost exclusively on the Manisa MS م (henceforth M), because this MS is the only one with a nearly complete text. For the first four chapters I have also used the Hebrew translation of Moses ibn Tibbon. This translation is extra important because the first six problemata have not been passed down in M, but they occur in the Hebrew translation.

For the eleventh chapter I have also used the Teheran MS ت (henceforth T). One problema (XI 16 - also present in the excerpt of Ibn at-Ṭayyib) which was lacking in M could be added in this way. This also proves that T was not copied from M and so forms an independent tradition alongside M.

Yet the value of T is limited; a number of its readings are not to be preferred. In 1,7 والرزانة in T versus the *lectio potior* in M والدراية; in 1,15 منتظمة in T versus منهضمة; in 4,16 للخناير versus للعجائر, supported by Ibn at-Ṭayyib 73r.,14 وفي الشيوخ; in 43,4 في الصيد in T versus في الهند, also supported by 895b25 ἐν Ἰνδοῖς. Many copying mistakes are found in T: in 3,14 جواف in T versus جوار; in 3,15 لقيت in T versus بقيت; in 43,13 العدو in T versus القد. T also contains quite a few cases of *parablepsis*, such as 5,28-29 the passage between خروجه and فهم through the *homoioteleuton* in خروجه; 5,43 through والمعز; 8,2 through العمر; 12,14-16 through الى; 29,1 through اليقظة, etc.

Yet both MSS are young. Though the text of T contains many mistakes, some of its readings are preferable to those of M, most clearly in the case of *homoioteleuta*. In 34,33-34 in M through الظل and الظلى; in 39,5-6 through الانسان, and in 42,29-30 through رياح. Hence I have opted for T in a number of cases, for instance in 8,1 حملها; in 8,17 تعجل; in 33,2 يخضع.

Some places could be emended with the help of the Greek text (*PPG*), but because the text of *PPG* deviates strongly from that of *PPA*, the support of *PPG* is limited.

The same applies to Ibn aṭ-Ṭayyib. A number of places could be corrected on the basis of his text, but it is an extract which often uses different words.

On account of the many inaccuracies in his quotations and their fragmentary nature, ar-Rāzī was of little use for constituting the text. The same is true of Qoṣṭā ibn Lūqā. Ibn Māssa did not shed much light on the fourth chapter, nor did the Teheran MS, Maḡlīs 1568 (Leiden Or. 14.256). Other authors who quote the *Problemata Physica* do not offer material for a further improvement of the text.

The MSS display many peculiarities of Middle Arabic, which are not usually included in the critical apparatus. Only interesting and dubious cases are mentioned there. The rules of classical Arabic have been followed in orthography and morphology.

M does not always have pointing, as in IX 7,3 سکول instead of شكول. It is not always correct either, e.g. IX 5,3 نفص in M instead of نقص; cf. also XI 7,5.

The *tā' marbūta* is usually written without points, see VIII 1,4; 1,7; 6,2.

The *šadda* and nunnation and vowel signs are left out as much as possible. M does have a number of words with it, such as حرّ in I 17,17; دارّ in II 15,15 in M instead of دارا; in VIII 6,16 حبّوا; in IX 1,8 يغيّر; in XI 5,7 المولدة and اللبن, in MT XI 42,21 النى, etc.

The *madda* has been left out of آخر in M in V 19,13; sometimes it is written, as in XII 34,2 آلة. Nunnation occurs here and there in M in V 25,13: حسّ, in ed. حسنا. In V 26,7 M reads مرّباً instead of مربى; in VI 8,16 حينئذٍ en in 8,17 بيئاً.

Numerals have two spellings in classical Arabic, and I have therefore opted for the spelling which is closest to that of the MS, like الثلثة in XI 11,21, the reading of M and T, cf. XI 26,9 and XI 59,7¹. However, in XI 36,8 we find in M الثلثة, but in T الثلاثة; likewise in XI 50,6; but the M reading has been included in the text.

1 A somewhat careless use of the numerals: M has واربع.

In general the *hamza* is seldom represented¹. Very often one finds in M and T forms like I 6,4 طبايعها instead of طبائعها, 13,5 مايل instead of مائل, ساير in VIII 1,10 and X 1,6 etc. The bearer of the *hamza* is lacking: ملته instead of ملأته in IV 33,7 or XI 5,4 والمرء instead of المرأة, etc. Sometimes the bearer is present: ملاومة instead of ملائمة as in IV 22,6 and XI 1,8; يتشاوب instead of يتشاءب in VIII 2,1, etc.

The *alif mamdūda*: الهوى written instead of الهواء, as in I 7,32 and IX 8,3; VIII 4,6: الاعضا and 6,2 الاشيا, etc.

Sometimes the *hamza* is written, as in II 25,46 شيء, which became شيئا on account of the acc.-nom. change.

Once, in T XI, 29,12, the spelling الحيوة occurs instead of the usual الحياة.

The *alif maqsūra bi-sūrat al-yā*² occurs rather often written with *alif*, as in M in IX 3,1 IX 3,1 المرضا instead of المرضى, in XI 41,5 MT read الحصا instead of الحصى, in XIII 7,1 اذكا and in XV 15,2 ادنا in M. But the *alif* is rarely preserved for pronominal suffixes suffixen³: منيها instead of مناهم, IV 3,3.

The variation in grammatical gender, as occurs with حيوان, has been incorporated in the text; in XI 47,3 it is fem.; in XI 56,1 M has masc. but T fem. In VIII 1,8 ربح is masc. and likewise in V 21,24. But in IX 1,6 دم is fem., so that M has ان تنير وتشرق, but IX 1,4-5 has الدم المعتدل, and so it has been made masc. الرحم too has been made fem. in XI 19,6, but in MT it is masc. Hence مركبة has been made of MT مركب.

The gender concord between noun and adjective is not always correct, I 17,30 in M الردى; II 13,6 المسهلة المختلف with correction to المختلفة; 14,5 ملائمة; III 11,12 متوسطة; IV 10,29 المستوى.

The use of demonstratives is not always concordant either: in I 18,40 M reads هذا instead of هذه, in I 21,14 هذا; also in I 24,10; II 12,6; 15,18; 20,5. II 1,3 ذلك الرطوبات; III 5,5 ذلك الحركة; IV 19,13 ذلك, but it should be تلك, because it refers to الفضول; IV 32,8 ذلك, but عين is fem.; V 14,11 ذلك الاوجاع; VIII 8,2 وذلك; 24,7 وذلك; VIII 8,2 ذلك.

1 J. Blau, *Grammar*, 1966, I pp. 90-92.

2 J. Blau, *Grammar* § 10.

3 J. Blau, *Grammar*, § 10.3.

In verbs the *alif maqṣūra bi-sūrat al-yā'*¹ also occurs frequently written with *alif*, as in M in VIII 2,4 تلقا instead of تلقى; يبقا in IX 4,1; 13,7; X 1,18 and تبقا instead of تبقى in XV 7,15 or يعنا instead of يعنى, XVI 2,26. But sometimes يلقى is read, as in M in XI 50,11, but not in T. This must also explain the M reading in I 6,2 لقا for لقى.

We also find Middle Arabic in other cases: ينمو for ينمو, XIV 4,23 and in XI 11,12, where M reads تغذو, but T تغذوا. In the same way confusion with the perfect² has led to وينهوا for وينهون in V 24,11 and يالموا for يالمون in IX 9,1. Likewise e.g. in IX 9,9 and XI 40,14, where M has ويرجعوا and T يستعملون and XVI 2,1 where M has ويرجعوا.

Another frequent phenomenon is that the active participle I and VIII of the *verba tertiae waw-yā'* without an article is nevertheless given a *yā'*³, like مستوى for مستو, as in I 27,3; IV 19,9, and VIII 8,15. Likewise e.g. باقى for باق in IV 20,7 and XI 14,21 M مستغنى but T مستغن, and in XIV 8,17 M reads مسترخى.

The same category includes cases like IV 11,6 نواحى instead of نواح; V 15,22 and 23 مجارى instead of مجار, and XI 51,12 عالى for عال in MT. The opposite case also occurs: in XII 52,3 M reads المجار. Separate mention need to be made of the word خاص (VI 1,46), which is often spelt in M as خاصى, as in IV 30,8; 33,18; XI 43,20 (MT) and 43,51 (MT); 60,30 (MT).

Gender concord in verbal forms is very variable and too much to mention. I therefore give a very limited number of examples here: XII 12,2 يتولد والخشونة have been corrected, but I 24,11 يكون امراض كثيرة has been maintained⁴. In this regard VIII 1,15 ان تحث الطبيعة is striking alongside VIII 1,13, where M has the masc. form. In I 18,4, however, M has ويفيدها with the subject وتفيدها. It has been corrected to ويفيدها.

Finally, some remarks on the syntax of Middle Arabic. The confusion of nominative and accusative occurs frequently in M: nom. instead of acc.: II

1 J. Blau, *Grammar* § 10.

2 Cf. J. Blau, *Grammar*, § 39, note 11.

3 For this, see J. Blau, *Grammar*, § 100.

4 Cf. H. Reckendorf, 1977, § 15.

12,13 العلتين for العلتان; II 32,12 سراجا; V 25,13 حسن; V 26,8 منتن زهم سهك شبيهه. Acc. instead of nom.: I 8,10 وهو قابلا; III 14,4 هو مولودا; V 19,18 تخاخلا.

The disappearance of the apocopate form or at least its variable use¹: in I 7,28 لم تسيل for لم تسيل; in I 11,14 لم نصيب for لم نصب; VIII 2,13; 2,21; IX 15,3. The apocopate form occurs a few times, as in VIII 2,27; IX 1,6; 14,6; XI 29,15 (only in T); 54,13, and XII 17,8.

The construction with two *nomina regentia*² is frequent: VI 31,4 في تأن وطول; XI 7,5 وكثرة وقلة خروجه; XI 5,9 ندى اللحم والجلد مدة وطول زمان; XI 12,16 وقت.

Other phenomena can be mentioned, like the treatment of diptote words as triptote, as in M in XI 25,3–4 املسا for املس, the use of الى with احتاج, see for instance VI 1,51–54; 18,3; XII 41,16, and XV 9,6, but the most frequent phenomena have been mentioned here.

Finally, the full stops in the text edition have been placed to improve the readability of the text. But M does not usually have full stops, except at the end of the problema. T also has full stops in the text, but these seem rather to demarcate sections within a problema.

The numbers of the Bekker text are in the left-hand margin of the English translation, but because the Bekker text deviates strongly from the Arabic text, the similarity is often confined to a single word. Since the problemata are small and less small pieces, the separate problemata have been numbered, as is usual in all the *Problemata* editions, while the lines have been numbered per problema. The critical apparatus is arranged in the same way.

As regards the critical apparatus, it also contains a comparison with the Hebrew text, because this text was important for establishing the Arabic text. In many cases the deviation is in the Hebrew text with between brackets the probable reading of the Arabic MS of the Hebrew translator. If such an addition is lacking, the deviation is independent in the Hebrew tradition and does not go back to a deviation in the Arabic MS of Moses ibn Tibbon.

1 J. Blau, *Grammar*, § 86.

2 Cf. J. Blau, *Grammar*, § 229.1 and M. Ullmann, *Gelbsucht* 1983, p. 61.