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**Late Appearance of Early Arab Cartography.
A 19th C. Manuscript Map by Az-Zayyānī:
Its Toponymy and Its Vision of the World¹**

Abstract

The question of survival of the Ptolemaic cartographical tradition in the Arab World, all through the Idrisian transmission chain and down to the modern times, is the subject of this article. A handwritten map found in Arabia, which – in this author’s opinion – was authored by a Moroccan intellectual Az-Zayyānī at the break of the 18th–19th cc., is apparently the last pre-modern Arabic cartographical creation. It’s history is obscure, but the physical shape bears strong resemblance to the other two published maps by the same author (whereabouts of those two manuscript specimens, unfortunately, are unknown at present). The map is analysed in respect of its geographical contents as depicting the world, as well as of the intellectual horizons the map presented to its users at its time, and questions about its relevance are asked.

Keywords: Moroccan culture, manuscripts, Arab cartography, Idrisian tradition, Abū al-Qāsim az-Zayyānī

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1. Early Arab Cartography

Under this heading we usually understand the classical period of the Arab cartography which began with translations of the Ancient works by Ptolemy (ca 100–168 B.C.) into Arabic (8–9th cc.), followed by the earliest Arabic cartographic productions (8–9th cc.), at present only known from verbal second-hand accounts, and with the so-called Al-Balḥī school (9th c.) and independent works by Al-Bīrūnī (11th c.). It reached its apex with the famous geographer Al-Idrīsī (12th c.) and his map of the world produced at the order of King Roger of Sicily. The tradition of Idrisian cartography barely survived until the early 17th c. and came to an end with the sudden but isolated outburst of the very characteristic portolan maps executed by Aṣ-Ṣafāqīsī family in Tunisia.

However, two centuries later, quite unexpectedly, the Idrisian tradition reemerged in Morocco like the Phoenix from the ashes and made its last known appearance, marking the final stage of premodern Arabic cartography. It was an early 19th c. map of the world by a Moroccan Az-Zayyānī (1734/35–1833), which, like most of all previous cartographic productions of the Arabs, was not an independent item *per se* but was meant to accompany and illustrate a written text.

Thus ended the premodern Arabic cartography based on Ptolemy's works. Five years after the death of Az-Zayyānī, an Egyptian intellectual Rifā'a Badawī Rāfi' at-Taḥtāwī (1801–1873) elaborated and published an Arabic translation of Conrad Malte-Brun's *Géographie universelle*, under the title: *Al-ḡuḡrāfiyā al-ʿumūmiyya'*; this was accompanied by a geographical dictionary: *At-Ta'rifāt aš-šāfiya' li-murīd al-ḡuḡrāfiyā* (*Visible definitions for seekers of geography*), published in Al-Qāhira (Būlāq) in 1838. It was the beginning of a completely new era in Arabic geography and cartography.

2. Az-Zayyānī, his book and his map

On the 12th day of the month Rabī' al-Awwal of the Muslim (Hiḡrī) year 1233, corresponding to 20th or 21st of January 1818, a Moroccan statesman, traveler, poet and historian, named Abū al-Qāsim az-Zayyānī, successfully completed his main and most important work, drawing on history and geography, titled *At-Turḡumāna' al-kubrā fī aḥbār al-ma'ūr barr^{am} wa-baḥr^{am}* (*The great interpreter of relations from the inhabited world on land and sea*). In fact, none of his works (about fifteen titles altogether) were ever completed in the proper sense of the word, because until the last of his days the author used to place additional notes on the margins of his books which thus amplified the earlier texts and always tried to bring out some new material for readers.

At the beginning of the 20th century *At-Turḡumāna' al-kubrā* came to be known to exist in only two manuscripts in unspecified private Moroccan collections in the cities of Salā and Marrākuš (Salé and Marrakech), as vaguely mentioned by Évariste Lévi-Provençal in 1922. Forty five years later, in August 1967, the book was published in the Arabic

original in Morocco, without any indication as to the origin of a handwritten codex (or codices) on which the printed edition was based.

The manuscript of *At-Turğumāna' al-kubrā* was accompanied by a map which was meant – in principle – to illustrate the book and give its readers a better spatial presentation of the facts mentioned in its contents. There was only that one map in the book, and at present we have no information about anything else beside the map.

That map from *At-Turğumāna' al-kubrā* is the subject of the present short study. How the purpose of the map was achieved, will be discussed below.

3. The Map (copies A and B)

The map accompanying *At-Turğumāna' al-kubrā* has until recently been only known from two technically imperfect printed photographs in black and white.

The first of them in the order of appearance and which will be called here Map A, was reproduced from the original and published by Évariste Lévi-Provençal in 1922, as the plate/figure 3 on p. 188, in his book. Lévi-Provençal named it facticiously “la carte des mers” (“map of the seas”) but gave no information as regards the source of the reproduced map and which codex (possibly one of the two mentioned above) it originally came from. The same Map A was again reprinted after the Lévi-Provençal’s book by J.B. Harley and D. Woodward (1992, p. 172) in their insightful study of Islamic cartography. The authors inform us sadly that “attempts to locate a manuscript of this work [*At-Turğumāna' al-kubrā*] have proved fruitless”.

A photograph of the second copy of the map, here called Map B, was included in the Arabic printed edition of *At-turğumāna' al-kubrā*, (Az-Zayyānī 1967, between pp. 30–31), without indication of the source of both the map and the text. It could have been reproduced from one of the codices mentioned by Lévi-Provençal in 1922, or from a different one. We have no information about where in the manuscript text the map was originally inserted. It is not known which of the two hitherto known maps came from which codex (Salā or Marrākuš, or possibly another one).

This author’s endeavours in detecting the present whereabouts of the two earlier known manuscripts of *At-Turğumāna' al-kubrā* and/or their maps did not yield any result. Nor could it be ascertained if there exist any other manuscripts of that book except those two from Salā and Marrākuš. *Nota bene*, recently an information was received from a source which choose to remain anonymous, that the Map A could be found in a manuscript no. Ms. 2470 in the collection of Al-Ḥizāna' al-Ḥasaniyya' of the Royal Palace in Rabat, but that indication could not be confirmed.

Both Maps A and B are very similar but at the same time certainly distinct, like any two manuscript copies of the same work. Map A was reproduced by both Lévi-Provençal and Harley/Woodward in its entirety, while the Moroccan reproduction of the Map B covers only its right half (that is its Western part, since the map, following an old Islamic tradition in cartography, was oriented towards the South). No information is available on

the actual size of those maps, but both maps were apparently folded in two, to match the size of their respective codices.

4. A third copy of the map appears

Forty one years after the printing of the Arabic text of *At-Turğumāna' al-kubrā*, in 2008, another copy of apparently the same map, which will be called here Map C, appeared on the antiquarian market in Saudi Arabia. In November of that year it was acquired for the library of Ibn Khaldun Institute in Poland.

The vendors could furnish only basic information about Map C. It had remained for quite a long time as a property of a Saudi family in the city of Ğudda (Djedda, Jeddah), who recently decided to sell it. The map is a separate sheet obviously extracted from a book. The last owners of the map, and the vendors alike, had no information about the book itself nor about earlier owners of the map. It may only be hypothetically assumed that at a certain time, between ca mid 19th century and mid 20th century, the map was brought to Arabia by a Moroccan (or, more largely speaking, Mağribian) pilgrim who covered a part of his travel and living expenses during *hağğ* through selling it to a local customer. Unless new evidence comes to light, the veracity of both the vendor's story and our hypothesis cannot be tested.

Was the map taken out of one of the earlier mentioned manuscripts or still from a third one? That question cannot be answered without close examination of all the manuscripts of *At-Turğumāna' al-kubrā*, but their number and present locations remain unknown. In consequence it is not known, either, how many other similar maps may exist now in unsearched and uncatalogued collections.

5. Map C – physical description

Map C is a hand-written copy, drawn and painted in water-colors on what appears to be a thin, white, hand-made sheet of paper, pasted to another thin white paper (*doublure*). It has a shield water-mark which still awaits identification. The reverse side of the second sheet is clear, without any drawing or writing on it. The map was folded in two, apparently so as to match the size of the book of which it was an integral part.

The size of the map within drawn frames, is 37.8 cm (bottom) or 38.5 cm (top) by 28 cm (right) or 27.8 cm (left). The overall size of the whole sheet, with margins, is 42 cm by 31.5 cm. When folded in two, the map has the size of a modern A-4 office paper. The manuscript, from which the map originates, was therefore of significant dimensions and certainly must have been a sumptuous object.

Map C is very similar in shape and disposition to the other two maps, but contains visibly more extensive toponymic coverage. It seems that Map C was drawn separately from A and B (those two seem more to resemble each other than C). It is interesting to

note, however, that Map B has a compass rose in lower right (NW) corner, while Maps A and C do not.

Numbering of pages, executed in pencil on a painted side, is preserved in the center of upper (Southern) margins of the map, in European figures as used in the Maghrib (contrary to Middle-Eastern usage), judging by the character of writing. Page numbers 531 and 532, indicating two halves of the map, go from right to left, according to Arabic way of reckoning the pages. It may be assumed that the numbers follow the numbering of pages of the non-extant (?) manuscript of *At-Turğumāna' al-kubrā*, from which Map C originates. It should be noted that the number 5 in both cases has overwritten another undecipherable number (perhaps 2?).

One can certainly ask questions about correct attribution of Map C. Is it really a map produced to illustrate the book by Az-Zayyānī? There is no definitive argument to support this hypothesis. On the other side, however, there is a strong resemblance between the three maps in outline and disposition, and also a visible lack of any other similar maps, known to exist in other books originating from the same region and times (in fact – from any area and any times). It is most unlikely that in a period when Arabic maps were almost no longer produced (except this special case) there could emerge, out of nothing, a complete, separately created, cartographic work. That allows us to believe that we really have before us a third sister – an original map from *At-Turğumāna' al-kubrā*.

Another mysterious fact is the deliberate change of the numbering of pages. Who did that, when and why? Was the map initially integrated with one manuscript and then removed and put into another one?

Finding manuscripts of this book, that may possibly still exist somewhere, and comparing them with Map C, could perhaps give a final argument in favor of our interpretation or offer a new solution of the problems.

The map is unevenly preserved. Quite big spaces are in almost perfect condition and are easy to read. However, even there there are wormholes which sometimes mutilate the inscriptions. The fold in the middle is in bad condition with some small parts of the map missing: ca 1 cm² in the bottom part (Northern Europe), ca 2 cm² in the middle part (Northern Mesopotamia), and ca 4–5 cm² in the upper part (Central Arabia).

The second layer of paper was apparently used to repair the damages incurred by the original map, while the margins were on the reverse reinforced with still other bands of paper. Subsequently the map was again injured with wormholes everywhere and at the heavily used fold, and the two halves are now hardly attached to each other.

6. Contents of Map C

Judging from the imprecise topographical outlines and awkwardly spelled geographical names, the map comprises in the South (upper side), in Africa, the basin of Nīl as-Sūdān, the Nile of the Sudan, that is Senegal and Niger rivers, represented according to the old

Arab tradition as a one single waterway, originating together with Nīl Miṣr, the Nile of Egypt in an (unnamed) big lake, detaching from the Nile and flowing into the (unnamed) Atlantic Ocean. Further to the East (left) the map comprises the big part of the Indian Ocean and includes India and China with its eastern shores.

The bottom left (North-Eastern) part of the map shows the country of Yāğūğ (Biblical Gog and Magog), well separated from the rest of Asia by the (unnamed) mythical Alexander's Wall. The country of Yāğūğ extends as a narrow strip far to the West and finally touches on the North Sea.

The North-Western (bottom right) corner of the map includes the whole of England, Ġazīra^t Niqlāṭira^t, written over an irregular shape with the very characteristic promontory of Cornwall, and another, oblong island, located immediately to the North-East of England, named Ġazīra^t R.slānda^t. This island, which seems displaced from some other original location, allows free interpretation. May be it is Iceland. That Iceland, however, could perhaps be rather identified as Ireland, that was more commonly known to extra-European world. Another explication could be that the name repeated a German name of Russia – Russland, overheard during author's travels and applied to an island lying a bit out of context (distant Russia extending somewhere to the North-East of England).

Two more islands adjoin Great Britain from the left/Eastern side. The first, whose name was in greater part mutilated by bookworms, can still be identified (after Al-Idrīsī) as Ġazīra^t Narbāga^t or Narfāga^t, i.e. Norway. The other one, lying more to the East and close to the country of Yāğūğ, does not have a name on it.

To sum up, the map shows – in its own way – all of Asia and Europe and about half of the African continent. The presented part of Africa (with adjoining seas) occupies ca 20% of the space on the map, Europe occupies another 20%, and the remaining 60% remains as the share of Asia.

Shapes of all geographical features are very general, disproportionate and disfigured.

The scale of the map cannot be established for the whole of it since the proportions differ from one place to another.

The Asiatic part of the map, on which space is rendered in a symbolical rather than real way, and which does not offer fixed places for calculation, roughly corresponds to scale 1:24,000,000 when measured from North to South and 1:34,000,000 in the West-East direction.

In Europe and Africa it is quite different but not more precise. The scales vary from 1:15,000,000 (calculated after the distance İstanbul–Hamburg) and 1:13,000,000 (Ceuta–Alexandria), through 1:9,200,000 (İstanbul–Tīnbuktū) and 1:9,100,000 (Rome–Ġudda^t), to 1:8,500,000 (Ceuta–Hamburg) and 1:6,300,000 (İstanbul–Rome).

The map has the shapes of continents and islands drawn with countour lines in black.

Mountain chains are marked with black wavy or meandering lines.

Inland waters, that is rivers and lakes, are marked in red.

The nomeclature and short explicative texts on Map C (similarly to A and B) are in a typical cursive Mağribī script.

Names of inhabited places are written also in black but there are no special marks to indicate the location of those entities. Occasionally found black dots rarely coincide with localities, and the closer examination reveals their true nature as small worm-holes.

The seas, including the Caspian Sea, are all painted with an uneven layer of brownish green paint, reminding us of the colour of spinach. This paint occasionally overlays and covers some islands and inscriptions that were put on the map earlier. It seems that the paint was applied later, by the author or may be even a subsequent user, as if to make the map more decorated and nicer.

In analogy to Maps A and B, and following more than a millennium of the cartographical tradition of Ptolemy, transmitted by Al-Idrīsī, Map C is divided with black lines vertically (latitudinally) into seven climates (*iqḷīm*), starting with the Southerthermost one at the top of the map and ending with the Northernmost at the bottom of the drawing. Each climate is subsequently divided into ten horizontally (longitudinally) arranged sections (*ḡuz'*). This conventional grid system tries to arrange the global space orderly and reveals superficial similarity to the existing modern topographical grid networks. The technical bases of the two systems are incompatible and the grids should not be mistaken through taking one for the other or *vice versa*. As can be seen from Al-Idrīsī's or Az-Zayyānī's maps, they are now hardly comparable.

It should be remarked that most of the lines, that were originally drawn in black, have faded and now represent various shades of grey.

Contour lines depicting continents and islands extend in several places far beyond the frames of the map into the margins, together with inscriptions on them. That phenomenon can also be observed, although to a lesser degree, on Maps A and B. Oceans of Map C are painted also when they overlap the margins.

7. Toponymy

This section on toponymy will not include the review of all place names overwritten on the map, leaving their detailed study for another occasion. Some remarks are however due in order to better understand the nature of the map.

Geographical names on the map may be approximately reckoned and split by continents as follows:

Europe – 107 names (most of them in the Iberian peninsula),

Africa – 179 names,

Asia – 272 names (most of them in the Middle East).

It makes roughly 558 lexical units appearing on the map, with the reservation that after a careful study some of them may in reality appear to constitute jointly just one name and others may possibly have to undergo a division. Nevertheless, the quantities and proportions would not change considerably.

A brief review of the names on the map reveals that they belong to several categories:

1. Names of populated places;
2. Oronymic features, like: a) seas, gulfs and lakes, b) islands, c) mountains, d) rivers;
3. Regionyms referring to: a) physical areas, b) historical and political areas, c) tribal areas.

The toponymic coverage of the map is uneven, both as regards the relations between the continents and various categories of names. It is not in proportion to actual density of human settlements. Some seemingly important orographic elements, shown on the map in drawing, are devoid of names.

I would like to highlight just some particular features.

Many toponyms are equivocal and many of them are repeated.

They may either mean a tribe itself or a tribal territory, like the name At-Turk – *the Turks*. Al-ḥarāb – *the ruins*, which are dispersed (alongside with the name At-Turk) over large territories of North-Eastern Asia, may refer either to concrete abandoned human dwellings of whatever kind or, alternately, to a naturally devastated, unfertile and inhospitable land.

Among others we find the tribal name Qibḡāq, without any generic term (it could be, for example, bilād, or dār, or arḍ, or some other one), but certainly referring to a territory. Another structure of a regionym, more developed, is exemplified by Maḡālāt al-Ġuzz – *transhumance expanses of the Oguz tribe*. located not too far away from Qibḡāq. The interchangeable and repeated names like Al-Mafāza¹ and Al-Qafr, both of them meaning *desert*, may either refer to particular area bearing such a name or have a quite general character. Interesting to observe that some of them actually appear inside a neatly delimited area.

Names of populated places appear to be as if selected at random and sometimes it is difficult to ascertain when they mean a concrete place and when a territory. Some of them are repeated in areas where they never belonged – like Al-Banādiq, Venice, appearing all along the Eastern shore of the Apennine Peninsula. Place names along the Nīl as-Sūdān are systematically repeated on both shores of the river.

Most of geographical names, in all continents, seem to repeat (although in a more limited selection) the names known from Al-Idrīsī's works, that is reflecting the reality from before 800 years, at least verbally – because their localisation on the map leaves a lot to desire. Some names shown in Al-Maḡrib repeat expressions earlier encountered in the geographical descriptions by Ibn Ḥaldūn (1332–1406), like Maḡālāt al-Barbar or Maḡālāt Hayyib wa-Ruwāḥa¹.

The highest density of populated places is shown all around the Mediterranean Sea: the Maḡribian shores, Egypt, the Levant and Asia Minor, then Spain. In those areas, and in comparison with Maps A and B, Map C offers a true richness of toponyms.

There are, however, also signs of newer times, the names of entities that became known to our author through more up-to-date evidence. The name Ar-Rūsiyā (Russia,

Al-Idrīsī's Rūsiyya⁴) appears alternately with Al-Mūsik (Moscow, or the state of Muscovy), the name which could not be known to classical Arab geographers (see also above about the possible German name of Russia). Opposite Great Britain, on the European continent, we find Ġ.nb.rq (Hamburg), a very important economic center during the lifetime of Az-Zayyānī.

Interweaving old, obsolete names with newer ones introduces a lot of confusion into the geographical knowledge of the readers that could be gathered from the map. The names match but a little with geographical descriptions contained in *At-Turğumāna' al-kubrā*, which further complicates the process of communication between the author and the reader.

8. Textual descriptions

A few descriptive texts appear on Map C, like: Arḍ al-Yunān bi-hā – *a land [with] Greeks on it*, and a little further to the North: [*Arḍ] bi-hā Arnāwūt – [*a land*] *on which [there are] Albanians*.

Hardly detectable inscriptions, because of an overlying paint, can be traced on the Adriatic Sea, Black Sea and the Caspian Sea. For comparison, Maps A and B reveal several more inscriptions, including some numerical data, in the maritime areas.

The full list of names and descriptions from the map should be carefully compiled and studied in comparative light, specially as regards its relationship with the book itself and its two other sister maps, A and B, as well as other premodern Arabic sources, particularly Al-Idrīsī's work, on which this map seems to be directly dependent. The more insightful research will allow to identify all features named on the map and to establish correct spelling of the names, as well as assessing the informative value of the textual descriptions.

The first glimpse on the map and the book allows us to find, however, that the contents of this Idrīsīan map has in general little connection with the contents of the book, conceived according to a different scheme and outline, and the book is definitely less dependent on the descriptive geographical work by Al-Idrīsī than the map.

9. Relevance of the map and the vision of the world

Az-Zayyānī's map, the epigon of classical Arab cartography, appeared when the Arab geographical science was in a precarious situation. How could it happen?

Self isolation of the Moroccan Empire that some later observers called the "Japan of the West" created a split and separation from the modern trends in life and science that were coming to the Mediterranean. The Ottoman Empire under a pressing need to keep control of its waters as well as waters that – not yet? – belonged to the Empire, developed its own school of portolan cartography. This drew on Turkish intelligence sources and extensively used foreign maps, acquired for that purpose from (mainly) Italian producers

and other European cartographers. The technological transfer took place there on a large scale and led to the development of Turkey's own cartographers who could satisfy the requirements of military and civil administration.

The exchange of technology and information between Al-Mağrib and the Ottomans was meagre, if any. Ottoman maps (for instance, those produced by Piri Reis, ca 1465–1554) used place names of the Mağribian sea shores in all sorts of European spellings, retransliterated into the Arabic script of the Ottoman Turkish. Confusion was complete as no information flow between two culturally related countries could really be observed in that sphere.

At the same time Moroccans remained isolated from the outside world by the will of the 'Alawī sultans, in fear of the competing Ottoman power and of the progress of European influence in the country and of possible aggression from that side (as we see from further history, those fears were quite justified). Thus they missed a chance of the development of intellectual exchange and technological transfer.

Az-Zayyānī, as other Moroccans of his times, had only the Arabic classical tradition at his disposal and used it the best he could, building a dead-end of that ancient and medieval tradition in modern times. Though his map may seem all too simplistic for our taste, it was nevertheless an important source of information for the readers in his closed-in society and offered them a wider vision of the world from which they were separated. There lay the relevance of the map for the contemporary users.

Continuation of the classical tradition in Arabic geography did not end completely with the appearance of first translations of modern scientific works from French. The Arabs did not only feel attached to their old poetry but also to their old scientific traditions which could last and last in parallel to the new developments. In Egypt, which looked to be so much culturally advanced in comparison with Morocco, Muḥammad Amīn al-Ḥāniḡī wrote a geographical dictionary which was a direct supplement to the famous dictionary *Mu'ğam al-buldān* by Yāqūt al-Ḥamawī (13th c.) and had it printed in 1907.

Az-Zayyānī should be praised for what he did in the given circumstances and not blamed for what the others did not. His map will remain a rare and intellectually significant document from those difficult times and conditions.

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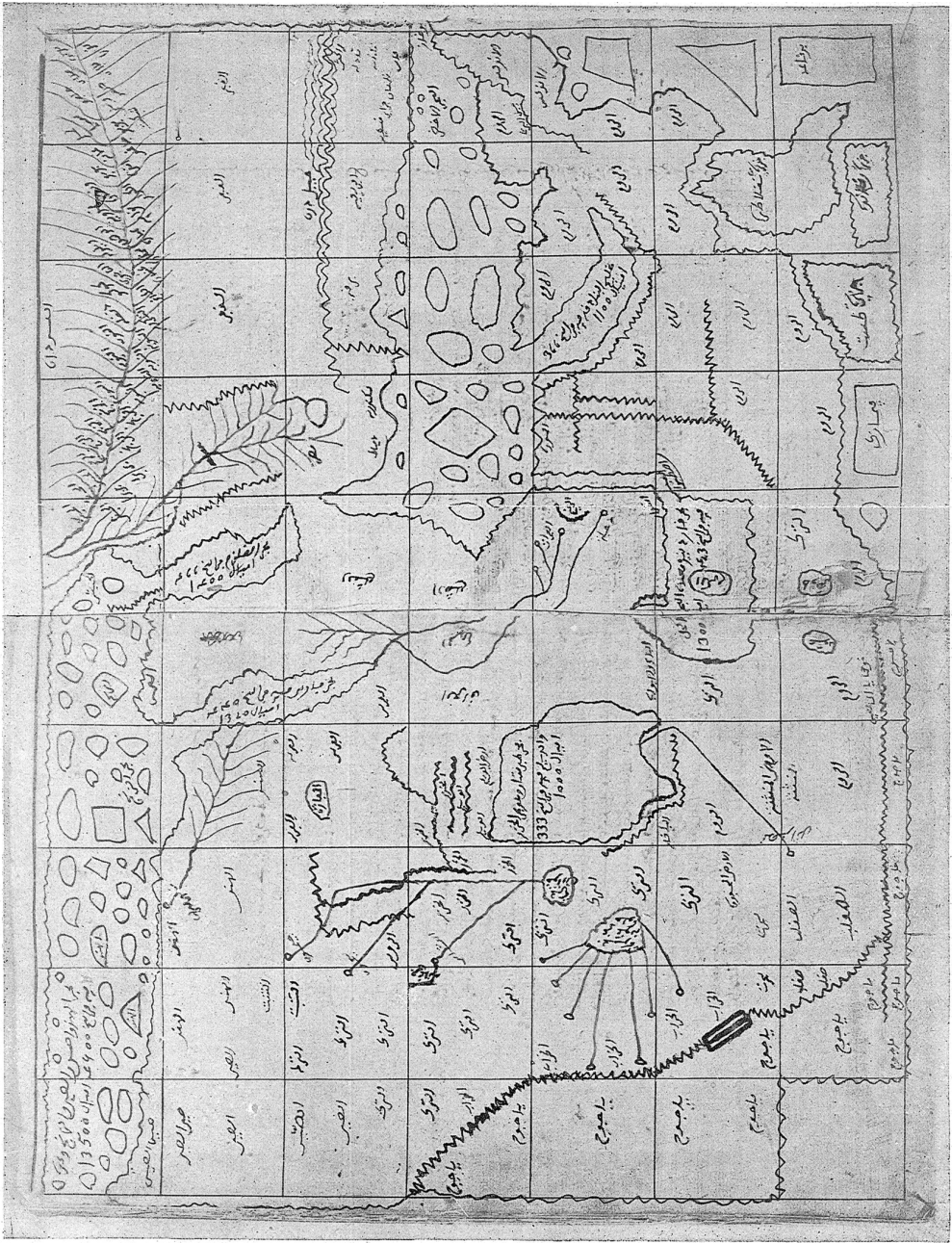
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Map A



جانب من خريطة ابي القاسم الزياني كما وضعها بالترجمة ونحن ننشرها على علاتها وان كان فيما يبدو لم يقصد الوضع الحقيقي للكرة الارضية بل التقريب فقط وقد اشرنا الى الشمال الذي عكسه المؤرخ باشارة تبين الاتجاه

Map B



Map C