

Quirks of Jordan River Cartography

Delineation of the Jordan's course has been presented as a type-case of the kind of detailed inquiry which will have to be published before we can have a genuine history of Palestine cartography [R. North, *History of Biblical Map Making*, TAVO 32B, Wiesbaden 1979, p. 94]. Even this case was far from fully investigated, and the fuller details to be presented here will serve at best to recall to other experts how from their experience they can add intriguing supplementary details.

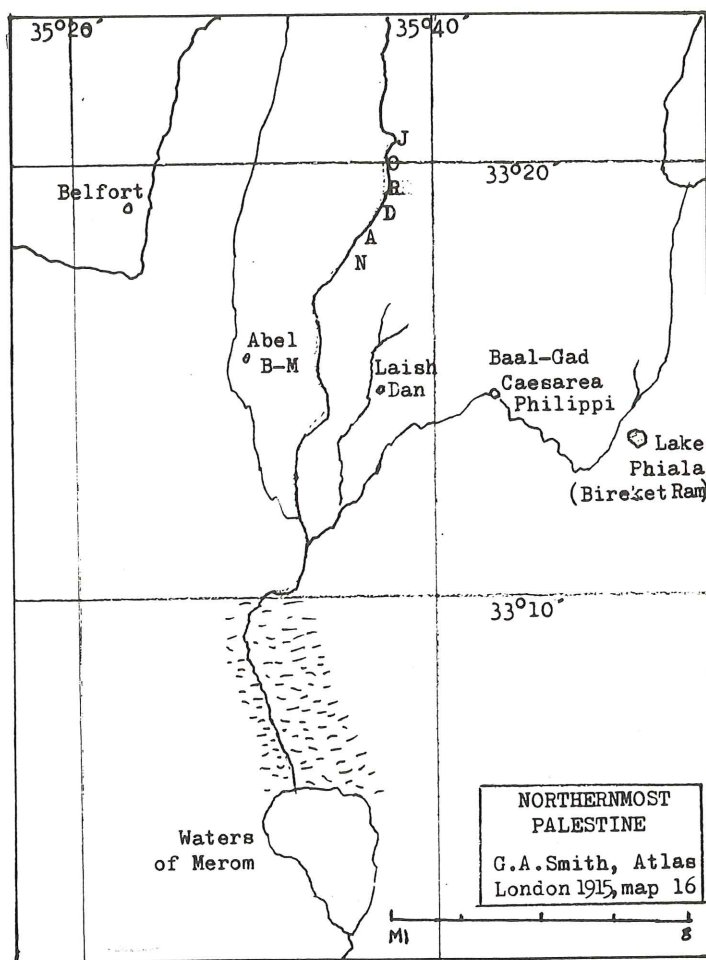
1. The problem begins and ends with Josephus Flavius. It begins with him because he stands at the outset of exploratory empirical research into the Jerusalem and Jordan area. His *War* 3 (509) 10, 7 describes a spring or pool called *Phiala*, 'the Bottle' whose waters flow *underground* for 10 miles into the easternmost Jordan source. It ends with him because our modern cartography, though normally indicating even underground features like caves and tunnels, has not either disproved his claim or made for it the place it deserves on the map.

The best guess so far is that Josephus is speaking of Birket Ram. But this is only *four* miles southeast of Banyas, and has no channel leading to it. Among other lines of investigation, a Florence map of 1300 AD notes 'Phiala spring, the true source of the Jordan', much farther from Dan and southeast of 'Lake Maron', doubtless Hula (FIG. 11 below).

2. Next in time apparently comes the vagary of two separate and parallel streams called Yor and Dan, united at some point south of their origin to form Jordan. This is most strikingly and simply clear on the Sanudo-Vesconte map [1320: ZDPV 21 (1898) pl. 2 p. 128]. North of Lake Maron are two source-points clearly marked Jor (W) and Dan. Similarly on the above-mentioned 1300 Florence map, there is an eastward river named Dan, and an unnamed parallel stream to the west. But here both flow into Lake Maron near Dan. A variant flow of Jor and Dan is shown in FIG. 3.

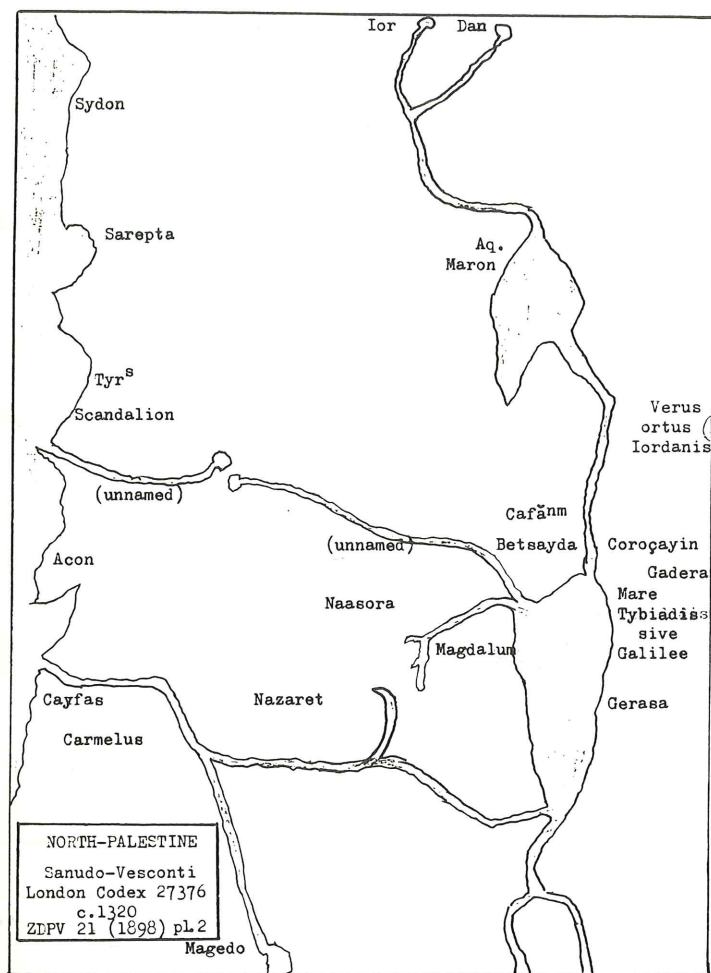
On the British Museum map [ms. Add. 10049], illustrating Jerome's *Onomasticon* but dated 1150, we find the river Dan to the west, and very short. It flows straight from the (perpendicular, i.e. E-W) chain 'Mons Libanus' into the

1. Barely-outdated maps show Josephus' 'Phiala' as ultimate Jordan source.



northernmost point of 'Mare Galilee', with no Hula. The river Jor starts from the (eastern; ?Banyas) extreme of the same mountain (or Antilebanon, not indicated separately), and flows with a slight curvature all the way to the southeast corner, or rather *south of*, Mare Galilee—not unlike the *real* course of the 'Yar'-muk! These Jor and Dan streams, roughly

2. 'Ior' (west) and 'Dan' streams combining to form 'Jordan'.



parallel to each other, are also parallel to *both* the much longer and quite near Euphrates and Tigris. The combined Jor-Dan, and the scarcely-wider Dead Sea, are shown as perpendicular (from a distance) to two long parallel streams flowing into 'the Egyptian sea'.

3. An earlier Florence map [FIG. 5; ZDPV 18 (1895)V] gives all three lakes of the Jordan as round in shape and nearly equal in size. The famous Sever-Beatus map of about 1050 [FIG. 6; Neuss, 1931] has the Jordan (and Lake Tiberias) roughly parallel to the near Nile, but almost *perpendicular* to the Dead Sea; while a Lake in size and shape like Hula is drawn southward independently from the same hills from which Orontes heads northward to the Mediterranean.

A plan of 1180, now in Stuttgart, shows really Jerusalem, and above it the long left-right line of Kedron. Above that and parallel to it is schematically shown a Jordan River with 'Mare Galilee' about halfway between 'Mare Tiberiadis' and 'Mare Paludis' (the Dead Sea) [FIG. 7: ZDPV 15 (1892) pl. 4]. A Ptolemaeus map (FIG. 8) shows the 'Asphalt Lake' (Dead Sea) no larger than Lake Tiberias. (Similarly FIG. 10.)

The beautiful Idrisi map of 1154 (ed. K. Miller, 1927)

shows only *one* lake at the (northern) end of the Dead Sea. But incredibly it has an affluent longer than the Jordan itself, coming into the middle of the Jordan from a point near Lachish (FIG. 9).

4. A quite different kind of anomaly occurs in those maps where the River Qishon is made to flow from Haifa all the way into the southwest corner of Lake Tiberias. It thus corresponds to what today's visitor plainly sees flowing straight westward of Khirbet Kerak, but *out of* the lake. On some of these maps, the Jordan itself flows out straight south from the lake, as Bible-readers normally imagine would be the case. Thus the 1300 Florence FIG. 11, which also has a 'Parvus Jordanes' running into the lake between Magdala and Tabga (extreme north), but from the *west*. Also on the Sanudo [-Vesconte] map, the Qishon (near which is marked 'Carmel'), taking on an affluent from [Megiddo] 'where Necao killed Josiah', flows out of (or into) Lake Tiberias from the west in exactly the same relation to the southward-flowing real Jordan. At the north, besides the already-noted clear 'Jor' and 'Dan', an unnamed affluent flows into Lake Tiberias just north of a shorter affluent from the west (FIG. 2 & 12).

5. The unequalled meanders of the Jordan are now known to take 300 km. to cover a 100 km. distance. Except at one brief stretch, the river lies too deep in its bed for these meanders to be picturesquely visible from the Jericho-Beisan road. Presumably this or a similar stretch furnished the exquisite photo rightly shown by Grollenberg (FIG. 16 below) and in most modern atlases as typical. But early cartographers (except FIG. 15) often grasped the sinuous flow rather as a broad S, and Idrisi reduces it to only a single sweeping curve.

All these vagaries led modern explorers to focus almost primarily on finding the real course of the Jordan. This was one of America's earliest entries into Palestinology competition (Lynch). And an Irishman named Christopher Costigan literally gave his life to the project; he died of exhaustion shortly after exploring in a boat a part of the Jordan and the Dead Sea [PEQ 43 (1911) 13].

With the help of aerial photography [now the Cleave series] and other advanced technologies we possess a clear and consistent picture of the whole course of the Jordan (leaving the Phiala still a question-mark). But who would be so rash as to say that no new techniques may yet be discovered, so brilliant as to make our own Jordan River maps just another amusing quirk along the path of history?

Significance of the Maps

Figure 1 *Birket Ram* as 'Lake Phiala, true Jordan source' (Josephus *War* 3,509) on barely-outdated maps [Smith 1915; also Guthe-Fischer in H. Debes *Handatlas*]; also there but unnamed in Sanudo (FIGS. 2 and 12); a 'Lake Phiala of Josephus, true source of the Jordan' is prominent much farther south on the 1300 Florence map (FIG. 11).

3. Jor and even Dan source well west of castle at Balenas-Dan-Paneas.

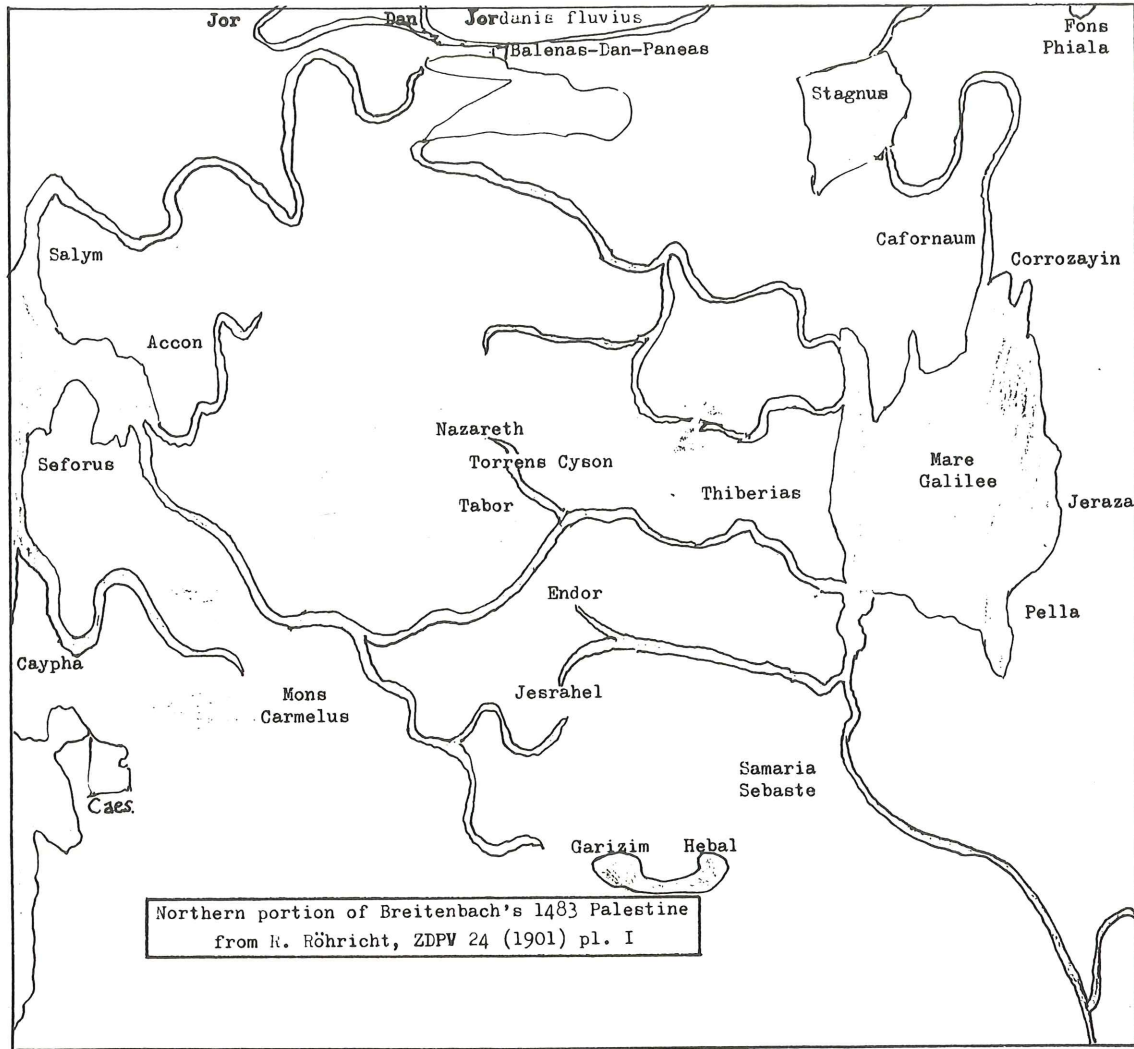


Figure 2 'Jordan' appears so-called not from Hebrew *yārad*, *yōrēd* + *-n* [augmentative or (Da)n 'descending (from) Dan'] but because composed of two streams named Ior and Dan, with Ior 'first i.e. west' on the 1320 Sanudo (-Vesconti) map.

Figure 3 Jor is west of Dan also on Breitenbach's 1483 map, where a castle near the Dan source is called 'Balenas or Dan or Paneas'; so already on the 1300 Florence map (FIG. 11) the 'second' (though unnamed) Jordan source is west of Dan.

Figure 4 But Jor is *east* of Dan, at the place of our Banyas source, and it flows in *south* of the sea of Galilee (at the place of 'Yar'-muk), on this map copied in 1150 but purporting to illustrate a Jerome manuscript of 400. The Dan stream, with no lake Hula but with help from Kishon emerging in the near west, fills the Sea of Galilee. Note that (Yor/Yarmuk-) Jordan is schematized as quite parallel to Euphrates, Tigris, and two rivers (? of Eden) farther east;

and the Jordan or Tigris continuation is perpendicular to the Nile.

Figure 5 On an earlier Florence map, also showing Jor east of Dan and clearly at Caesarea Philippi, the 'Sea of Sodom' is round in shape and smaller in size than the Sea of Galilee (though suitably distant), and not much bigger or rounder than Lake Hula (called Malahac); there is no Yarmuk, Jabbok, or Arnon.

Figure 6 Also roughly equal in size and shape to the Lake of Galilee, but swerved 90° westward perpendicular to the Nile, is the Dead Sea on the world-map of Paris St-Sever, one of the many made around 1050 to illustrate the Apocalypse 1, 19 commentary of Beatus de Liebana 776. A lake suggesting Hula or Phiala is drawn off southward independently from some hills from which the Orontes runs northward to the Mediterranean.

Figure 7 As simplified background for a huge circular Jerusalem with proportional Cedron, the 1180 Stuttgart map

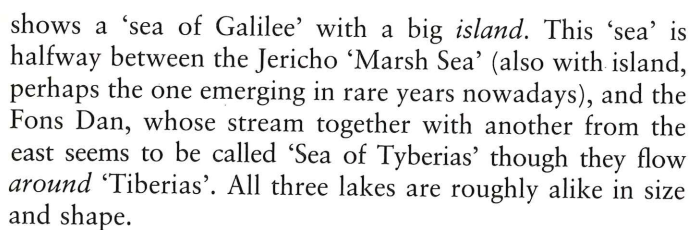


Figure 9 Idrisi's beautifully-colored map, characterized by its snake-like mountain ranges, shows the Dead Sea reversed toward southeast (opposite to Sever FIG. 6), and roughly

5. 'Jor' at Banyas *east* of Dan; 3 lakes roughly equal.

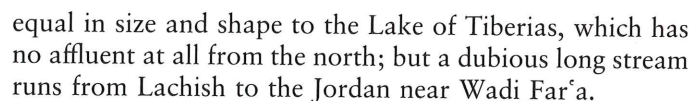
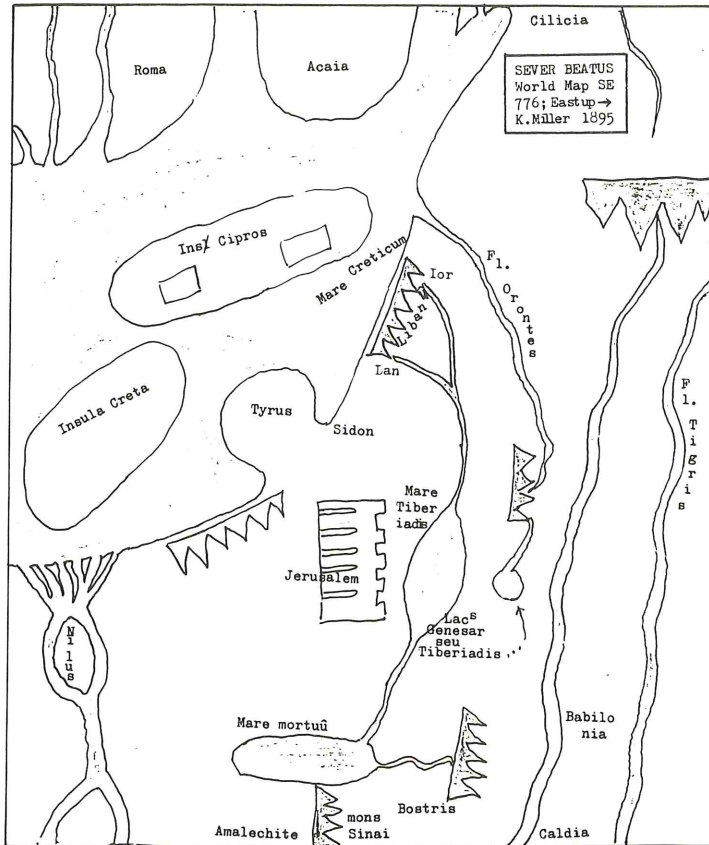
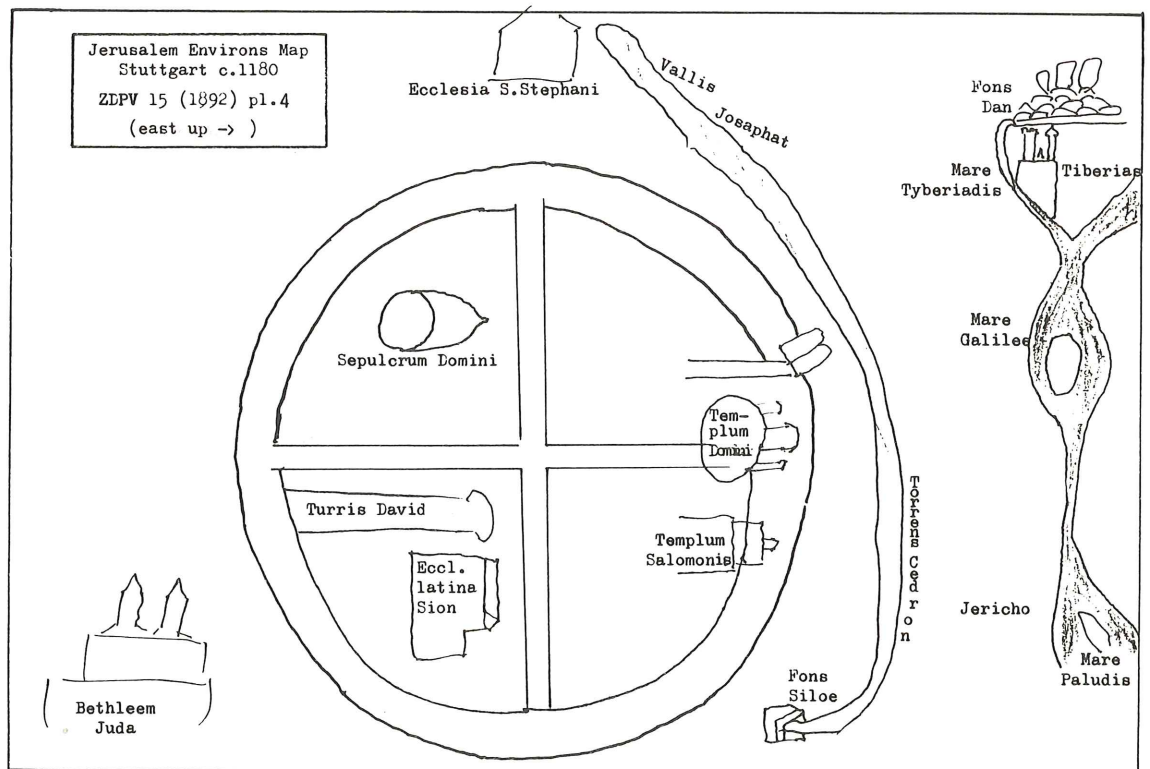


Figure 11 The Torrent Kishon (Jg 5, 21), in reality a sluggish trickle from Esdraelon toward Haifa, is made a Jordan source, or rather *canal* with the Mediterranean, exactly at the point where the Sea of Galilee in fact flows out straight west (1300 Florence map). The Jordan itself is shown

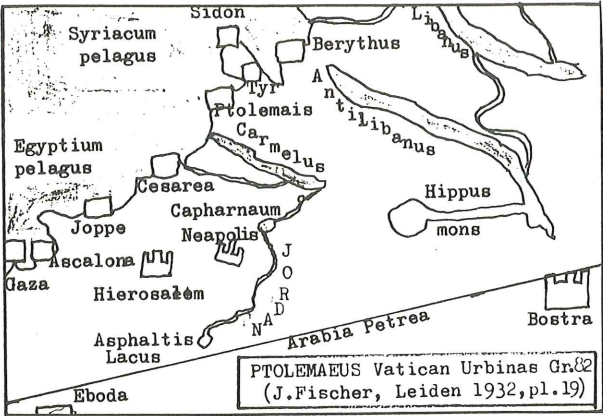
6. Dead Sea equal and *perpendicular* to Jordan (and Nile!); Phiala hinted.



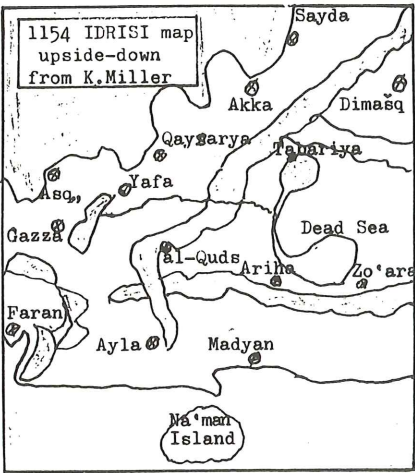
7. Jerusalem-setting 'Sea of Galilee' halfway between equal 'Sea of Tyberias' (Dan) and 'Swamp Sea'.



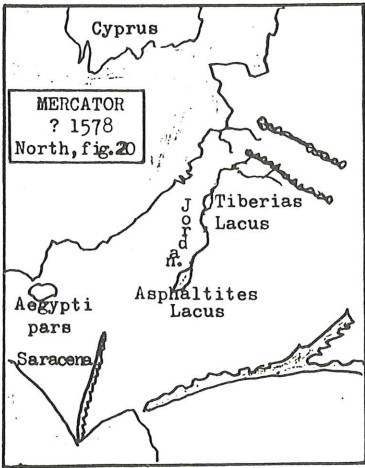
8. Earliest Jordan source and meanders; Dead Sea smaller than Galilee lake.



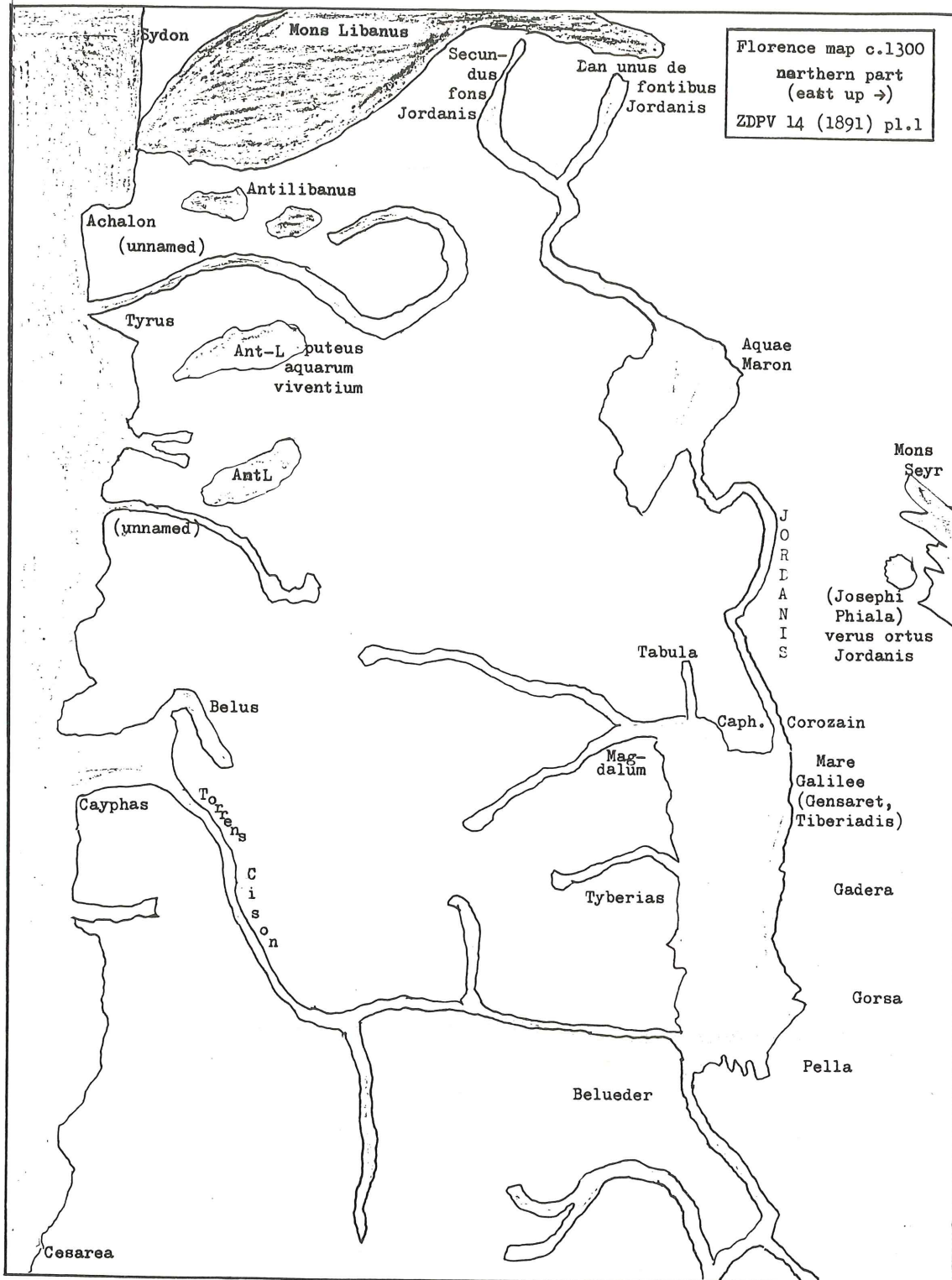
9. Dead Sea reversed eastward; no meanders or north source.



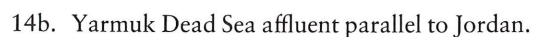
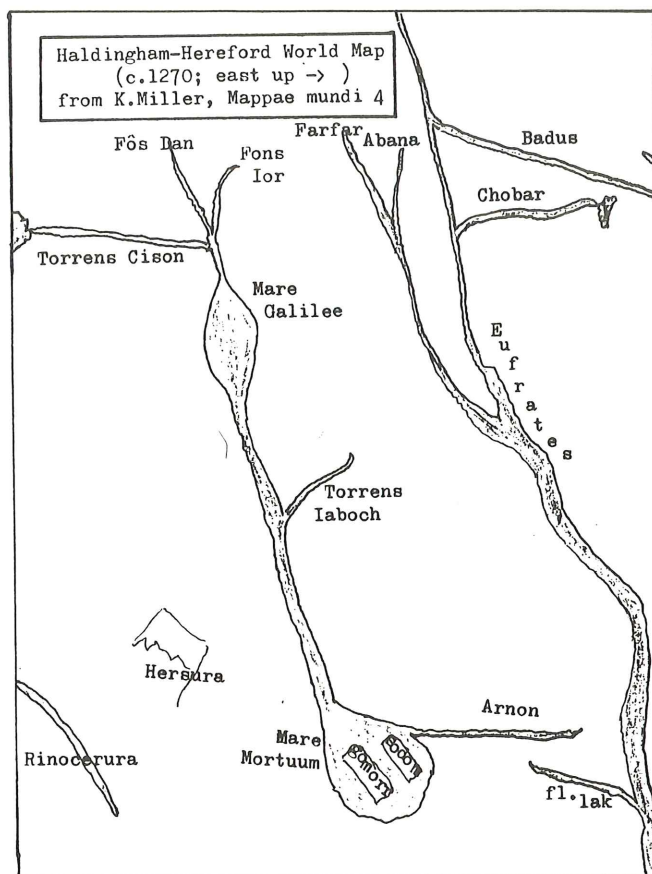
10. Dead Sea too small but suitably distant.



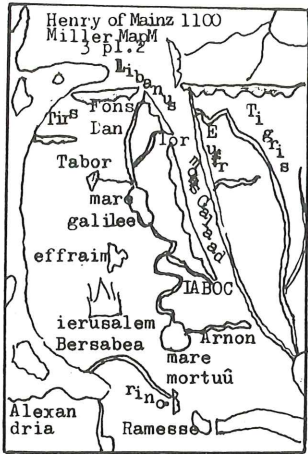
11. Torrent Kishon a Lake(-Jordan) source or rather canal with the Mediterranean.



13. Kishon as westerly Jordan(-Hula) affluent.



15. Early meanders.



flowing out straight south from the Lake, as most people doubtless imagine is the case.

Figure 12 The Sanudo map has (also shown on FIG. 2) a westward outflow, from the Jordan itself somewhat south of the Lake; apparently linked with the Mediterranean outlet (?Kishon) above Haifa. Note that Jabbok is called Arnon, and Arnon Salman.

16. Brief area of Jordan meanders traced from air-photo.

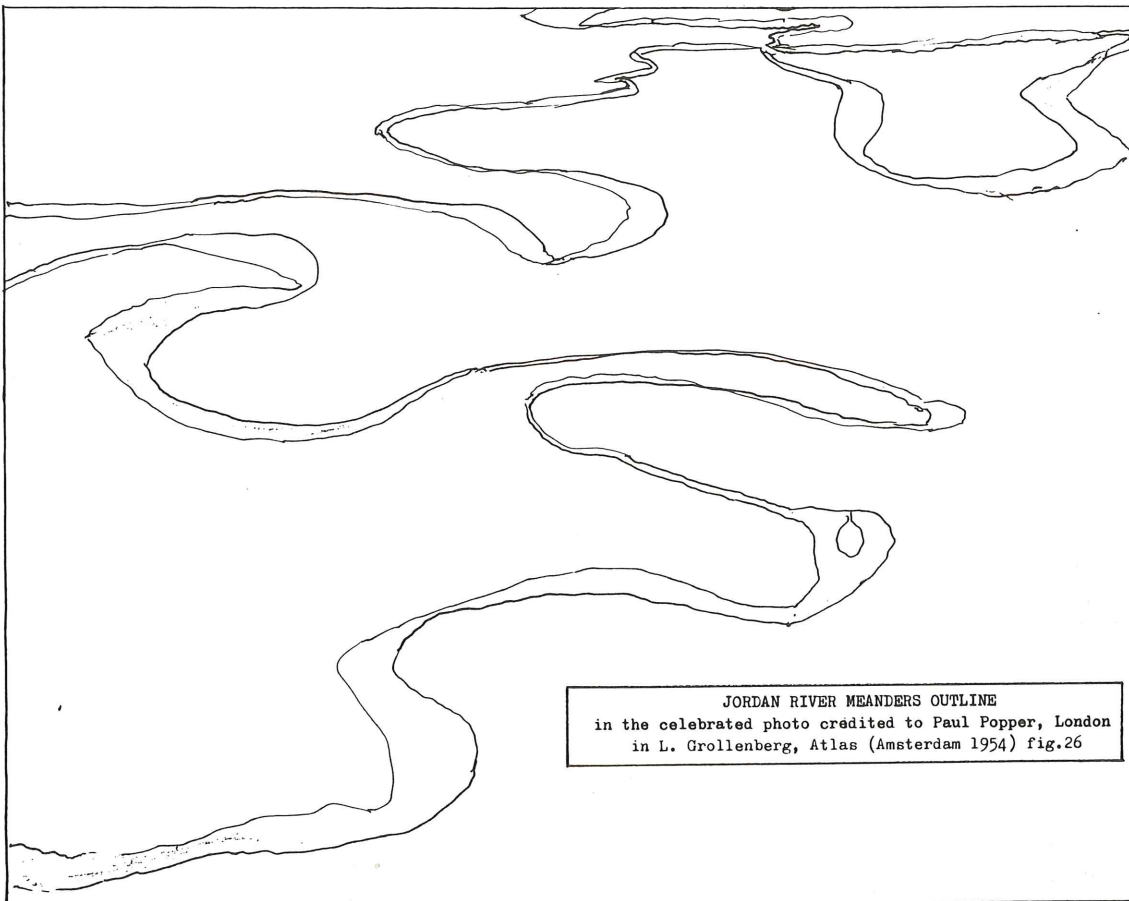


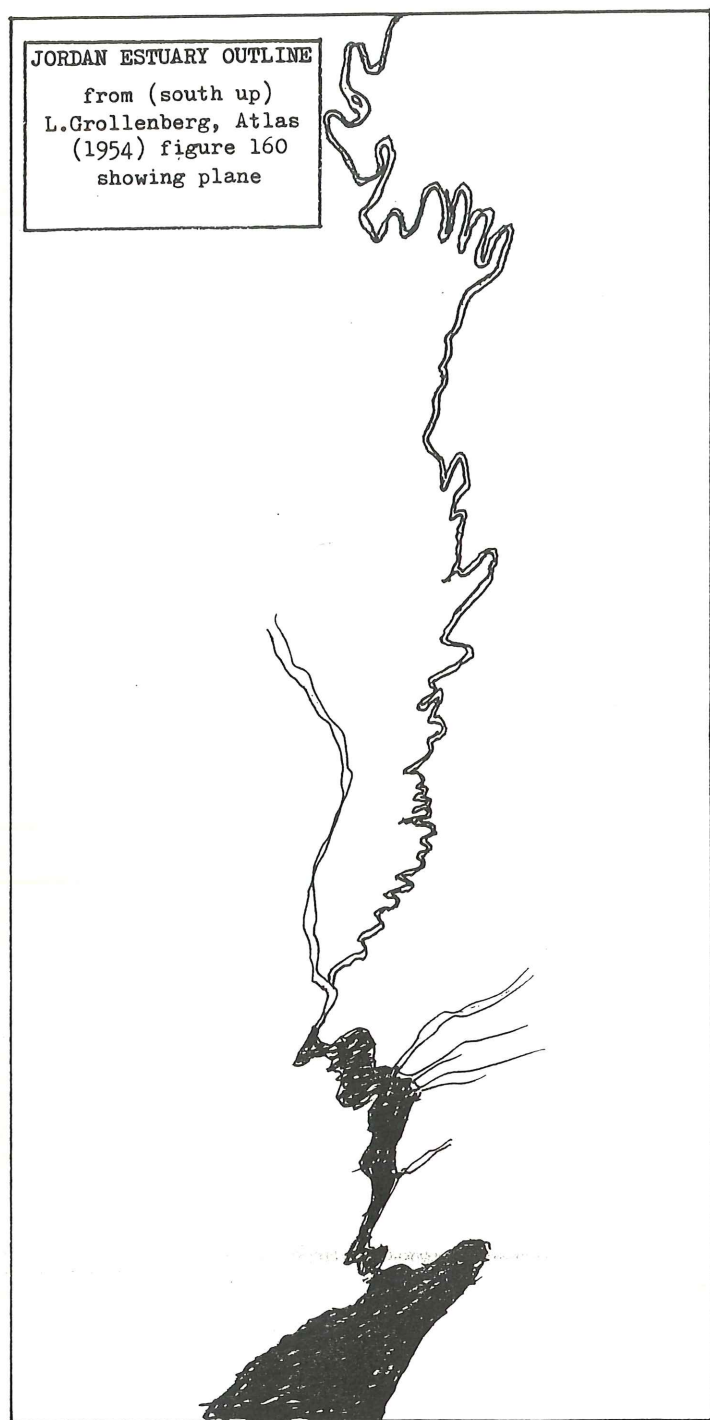
Figure 13 The Torrent Kishon flows *east* from some hill (as in FIG. 4), but *north* of the Lake of Galilee, into the combined Dan(-W)-Jor, replacing Hula, on the world-map in Hereford Cathedral. In the middle of the Dead Sea are two castles Sodom and Gomorrah. Arnon and Jabbok are well shown; but Pharphar and Abana (cf. FIG. 5) as well as Chobar flow into the Euphrates.

Figure 14 Showing the Dead Sea nearly the same size and shape as the Lake of Galilee, the so-called Peutinger map (150 or 350 AD) gives Palestine with surprisingly accurate proportions (excepting Amman and Rhodes), despite the unreally elongated thin form which it gives to the world as a whole. But it has no northern source whatever except the Yarmuk, which it shows flowing *parallel* to the Jordan all the way from Banyas to empty into the Dead Sea from the east.

Figure 15 Best early indication of the sinuous Jordan meanders is this Cambridge map from Henry of Mainz 1100; Ptolemaeus FIG. 8 is not bad; contrast the single C-curve of Idrisi (FIG. 9), the S-curve of Mercator (FIG. 10), and the straight line of FIGS. 3, 6, and 13.

Figure 16 A tracing of the Jordan meanders from the famous Paul Popper photo at one of the few places where the curling stream is not sunk too deep in its bed to allow a

17. Jordan meanders near Dead Sea, from air-photo.



synoptic glimpse of its sinuousness. It is possible that south is at the top of the drawing and photo.

Figure 17 Tracing of the Jordan meanders near its emptying into the Dead Sea, reversed from an air-photo in Grollenberg's Atlas.

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