Columns x–xiv: This is a collection of hymns and prayers, thus differing in content from much of the rest of the writing. God's past help to his people is recited, and he is called on to deliver them from their enemies, aided by the angelic hosts (xii.4). God is referred to as a "mighty man of war" (xii.9: gibbor ha-milhamah). At least one blessing is given by the priests (xiii.1); another is sung by the victorious Israelite army (xiv.2–18).

Columns xv–xix: This section is partially parallel to vii.9–ix.9, but there are differences. For example, it is envisaged that there will be Israelite casualties (xvi.11; xvii.8–9; War Scroll x, ii.11). This is apparently a way of testing "according to the mysteries of God." There is also no cavalry among the troops. There is only an anonymous "enemy" rather than named opponents, except for "the king of the Kittim" in xv.2 (redactional according to Davies, 1977, pp. 88–90).

Extensive discussion about the growth of the book is beyond our purpose here, but some points are important. Columns ii–ix are based on the realities of the battlefield, but they were not written by a soldier. Just as some of the military manuals of the Greco-Roman world were written by armchair military historians and were debated in the philosophical schools, so this section may well have been written by a priest with some knowledge of warfare (Duhaïme 1988). The military data have been put in a framework which gives them a different slant, however. The conduct of the campaign is led by the priests; the battle has been ritualized; and, most importantly, the central description of columns ii–ix is now preceded by column i and followed by columns x–xix, which give an eschatological context to the battle.

The details of the battle now fit in with this eschatological context. For instance, a number of different trumpet sounds are described in the War Scroll (iii.1–11). The trumpet was very important in warfare because in the noise and confusion of battle it was one of the best ways to communicate to the troops, and the ones described in the War Scroll are those we see in the Bible. Besides the priests and Levites who sound the signals (vii.12–ix.9), ensigns and standards (1QM iii.13–iv.18) were also widely used by ancient armies, much as flags are used today; however, the amount of space devoted to this gives them a significance far beyond their place in actual warfare. Similarly, the slogans (1QM iii, iv, vi) remind one of those mentioned in 2 Maccabees 8.23 and 13.15, but they seem to have an end in themselves in the War Scroll. The data may at times be those of a military manual, but the message is a theological one.

The enemies named at various places are traditional enemies and could be reappled to represent a particular historical enemy (as the "Kittim" seem to represent the Romans in Dn. 11:30). But just as Gog and Magog are taken up in Revelation as names for the eschatological enemies destroyed by Christ, so the Kittim and others in the context created by column i have become the "Sons of Darkness" to be defeated by the stereotyped righteous who now become the "Sons of Light" and fight not according to human plans but only to the strict schedule of a divine timetable. As always, God is the supreme divine warrior, commanding angelic hosts.

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LESTER L. GRABBE

WAR OF THE SONS OF LIGHT AGAINST THE SONS OF DARKNESS. Known also as the War Scroll (1QM), this Hebrew manuscript was among those scrolls from Qumran Cave 1 acquired by the Hebrew University, Jerusalem, and first published (posthumously) by Eleazar Sukenik in 1955; two fragments (1QM) appeared in Discoveries in the Judaean Desert, 1 (pp. 135–136). It contains 19 columns (originally, at least 20) of which the first 14–19 lines (originally, at least 21–22) are preserved. It describes a war which is sometimes presented as between the "Sons/Children of Light" and the "Sons/Children of Darkness" (aided by a nation called the "Kittim"), but sometimes as between "Israel" and "the nations." This feature, and other variations in language and ideology, suggest a composite document, whose originally independent sources have nevertheless been organized in a way that offers a generally coherent if sometimes puzzling picture. Seven fragments (4Q491–97) of similar materials have also been published by Baillet in Discoveries in the
Judaean Desert. 7. According to the editor, these comprise a shorter recension of 1QM, but the relationship between them and the War Scroll (1QM) is in fact variable. The War Scroll I (first published by Hunzinger), is clearly an earlier and shorter version of 1QM xiv. However, not all of the Qumran Cave 4 texts fragments have parallel texts in the War Scroll (1QM), and while some Cave 4 fragments may represent some of the source material from which War Scroll (1QM) was drawn, or perhaps even an earlier version of that composition, they do not all belong to a single manuscript (War Scroll 4QM and War Scroll 4QM² are papyri). Paleographically, some are older, some contemporary, and some younger than War Scroll (1QM) (Baillet, summarized by Duhaime, 1995, pp. 80-81). The existence of other texts related to a final war, but not forming part of a War Rule (such as 4Q285, 4Q497), suggest that behind War Scroll (1QM) may lie a set of beliefs and writings on the theme of the eschatological battle, only some of which crystallized into a Rule. The designation M, therefore, cannot safely be taken to designate a single document, even in differing recensions: the term War Rule should be confined to 1QM.

Contents. Column i opens with the title: "And th[is . . . ] the war," then summarizes that war, opening with a battle between the "Sons/Children of Light" and the "Sons/Children of Darkness," the latter being nations living in Palestine or on its borders, (traditional biblical enemies of Israel—Edom, Moab, Ammon, Philistia), in league with "Kittim" who are present in Syria and Egypt and whose "domination" is hereby ended, and "those who violate the covenant" (cf. Dn. 11.32: presumably certain Judeans). Columns ii–ix deal in more detail with subsequent battles between the now reunited twelve tribes of Israel and the nations of the world (drawn from Gen. 10), involving six-year campaigns interspersed with sabbatical years, making a total of forty years of combat, including the initial battle. Column ii opens with the restoration of the Temple cult, presumably in the seventh year of the war, and the twenty-six priestly courses show that the typical Qumranic 364-day calendar is being adopted. Columns iii–ix list inscriptions on trumpets and banners, lengths of banners, battle arrays and weaponry, ages of participants, and, finally, military maneuvers. Columns x–xiv contain a varied collection of liturgical pieces: some dualistic and some not; some with explicit settings in a battle context, and some without. Columns xv–xix describe in detail a seven-stage battle between the Children/Sons of Light and the Children/Sons of Darkness, directed by priests, assisted by heavenly hosts and finally won, after alternate successes by either side, by direct divine intervention. If a coherent sequence is to be reconstructed from this document, the battle must correspond to that of the first seven years outlined in column i. It is therefore possible, though not necessary, that several columns have been lost after column xix. The fragment 1Q33 shows that there was at least a column xx.

The scroll thus combines, by means of the arrangement of its parts and a prefatory outline (i) a nationalistic scheme of world conquest by Israel with a seven-stage dualistic confrontation between the forces of light and darkness. The balance between fantasy and reality is precarious: the dualistic battle proceeds as if minutely choreographed, where the enemy falls after a single throw. The "nationalistic" sections (ii–ix) contain some apparently more realistic data, though the idea of world conquest, with even enemy combatants observing sabbatical years, is hardly credible.

Genre, Composition, Date. Though it is sometimes described as apocalyptic, the War Scroll (1QM) is clearly not an apocalypse: no heavenly revelation is claimed. The most plausible comparison is with Hellenistic and Roman military manuals, specifically the "tactical treatise" (Duhaime, 1988), which, though transmitted in a fairly standard form, could be adapted. Even so, the concept advanced in this composition is thoroughly idealistic and its execution involves heavenly forces. Duhaime thinks that three documents ii–ix, x–xiv, and xv–xix have been independently redacted in both the War Scroll (1QM) and what he sees (with Baillet) as a different recension represented by the Cave 4 texts. Most scholars accept a division into these three sections, ii–ix, x–xiv, and xv–xix. The fragment War Scroll I provides some evidence for a pre-dualistic war rule, of which the War Scroll (1QM) xv–xix is a dualistic redrafting. But the date and circumstances of such a rule are unclear, and whether it originated inside the circles responsible for distinctive Qumran features (e.g. dualism, 364-day calendar) is also an open question. The analysis by Davies, which demonstrates that xv–xix represents an elaboration into seven stages of a single battle plan already present in 1QM vii–ix, tells against the view of van der Ploeg and von der Osten-Sacken that the dualistic sections (i, xv–xix) are the earliest parts of the War Scroll (1QM) that were subsequently elaborated by nondualistic material. Some features, such as the use of lightly armed forces rather than heavy infantry, the use of the ambush, and the tradition of banners with a slogan ".... of God" and the singing of hymns after battle feature in the books of Maccabees, and point to a basis in Hasmonean warfare (as Davies has also argued).

As for the date of composition of War Scroll (1QM) itself, both Carmignac and Yadim took the view that 1QM is the product of a single author, and the overall unity of plan makes this probable, though "compiler" is evidently a preferable term. The scroll's description of the weaponry and tactics led Yadim to posit an imperial Roman
date for it (the mention of "king of the Kittin" in xv.2 might support this). Certainly, most scholars now see the Kittin in the War Scroll (1QM) as Romans, whose status as a major power in the Levant dates from the early-middle 1st century BCE. The composition of the War Scroll (1QM) itself should probably be assigned, then, to the late first century BCE or early first century CE, a date supported by the Herodian script (bearing in mind a paleographical margin of error of fifty years or so). Such a period makes plausible the view of a final war that would have to involve a confrontation with the Romans, against whom a hostile attitude is now expressed (unlike e.g., the attitude in the Habakkuk commentary, where they are not treated as enemies, but agents of divine punishment on a corrupt Jewish leadership). Despite its idealistic character, therefore, the War Scroll (1QM) may reflect a real political tension in Judea, and an anticipation of the struggle with Rome that eventually occurred in 66 CE. Its sentiments might also explain how certain Jews may have come to see a war with Rome as one in which their god would intervene decisively.

Links with Biblical Literature. A list of Hebrew scripture quotations in the War Scroll (1QM) has been compiled by Carmignac (Revue biblique 63:234–260, 375–390). The significant cases are as follows: Daniel 11.40–12.3 is the basis for the war scenario in the War Scroll (1QM); Numbers 1–10.10 inspires the presentation of a twelve-tribe nation-army; and Genesis 10 prompts the list of nations to be conquered. Deuteronomy 20.2–4 and Numbers 10.9 are also quoted in x.1–6 to justify speeches of encouragement before battle. Finally, although there are no clear textual allusions, Ezekiel 38–39 (the Gog prophecy) may have contributed to the notion of a final war in which God defeats a mighty army of nations.

Although there is no evidence of any direct borrowing of the War Scroll in the New Testament, the book of Revelation also describes a final war in which earthly and heavenly forces combine. As already mentioned, the scrolls give evidence of a wider set of Jewish traditions about the final war, from which the author of Revelation may well have drawn.

Links with Other Qumran Texts. There are very few demonstrable direct links between the War Scroll (1QM) and other Dead Sea Scrolls, although there are several general features in common, such as angelology. The closest parallel is with the dualistic section of the Rule of the Community (1QS ii.13–iv.26). There is an especially close connection between the War Scroll (1QM xiii.1–6) and Rule of the Community (1QS ii.1–18), both of which are dualistic blessing and cursing liturgies. The organization and composition of the "congregation of Israel," into thousands, hundreds, fifties, and tens, including age lim-

its for various kinds of service, is shared by the War Scroll (1QM) and Rule of the Congregation (1QSa). The organization of the Temple service and the citation of biblical rules of warfare are both shared by the Temple Scroll, but there is no evidence of direct influence. The views of some scholars (e.g., van der Osten-Sacken, B. Z. Wacholder, The Dawn of Qumran, Cincinnati, 1983), that the War Scroll has influenced other Qumran writings is not borne out by any detailed comparison. Indeed, while the word yahad is used in the War Scroll several times, it never designates a particular community, as in Rule of the Community.

Significant Features of the War Scroll. The most interesting ideological features of the War Scroll are its dualism and the leadership of the war. The dualism is very similar to the formulation in the Rules of the Community (1QS iii.13–iv.26). The precise identity of "Children/Sons of Light" is an intriguing problem. Column i.3 speaks of the "exiles of the Children/Sons of Light return from the wilderness of the nations to encamp in the wilderness of Jerusalem"; as with many Qumran texts, the presence of biblical phrases and the possibility of metaphoric sense makes it hard to conclude for certain whether some "Sons of Light" are held to be in the Diaspora and will join forces with the Judean children/Sons of Light. The supernatural leader of the "Children/Sons of Darkness" is Belial, and human leadership comes from the Kittin (the Romans, as already in Daniel 11.30). It is the Jewish god (and his angelic armies) who fights for the children/Sons of Light and who for the most part is called upon in the liturgy. But in the liturgical fragments in columns xii and xvi we find the "Prince of Light" and "Michael." It may be legitimate to identify these figures, though it should also be recognized that the material in the War Scroll (1QM) is not necessarily homogeneous. More puzzling is the human leadership of the children/Sons of Light; although the "Prince of the whole Congregation" is mentioned in column v.1 as the owner of a shield, he is otherwise entirely absent, and the fighting is directed by priests, although they themselves are not permitted to fight; it is a priest who also gives the addresses before and during battle. The lack of a "messianic" figure in the one context where he might be expected (the figures in 4Q285) cannot be due to accident or carelessness, and illustrates the variety of eschatological roles presented in the Qumran collection.

From the historical point of view, the significance of the War Scroll is its evidence of military sources and even concepts of a "final war" that may be linked with the early Hasmonean period, and the light it sheds in turn on the ideological background to the war of 66 CE. As to its possible Essene authorship: While Philo claims that the Essenes were pacifist (Every Good Man Is Free, 87), Jo-
sephus speaks of Essenes being tortured by the Romans during the 66–70 CE war (The Jewish War 2.149) and of individual Essene warriors.

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**PHILIP R. DAVIES**

**WAR RULE.** See War of the Sons of Light against the Sons of Darkness.

**WAR SCROLL.** See War of the Sons of Light against the Sons of Darkness.

**WATER SYSTEMS.** Throughout the periods of human history in Palestine, settlements were founded in the Judean wilderness for reasons of climate, industry, isolation, military advantage, and security; the foremost consideration in establishing such a settlement was to provide an adequate and reliable water supply to meet the needs of the residents. Since there is little to no rainfall in this desert region throughout most of the year, recourse was made to ingenious methods to provide the needed water.

Two sources of water were available to the residents of the Judean wilderness: natural springs and rainfall. If there were no springs in the vicinity of the settlement, then the residents were forced to depend upon rainfall. Rainfall occurs only in the winter months and that largely in the mountains to the west. It was therefore necessary to store water collected in the winter for use throughout the remainder of the year. Thus there were three aspects of ancient water systems: collection, transport, and storage. [See Cisterns and Reservoirs.]

The systems employed to collect and convey spring water and rainwater were sophisticated and utilized the latest technology. Transport mechanisms included stone conduits, mortared rubble conduits covered with waterproof plaster (Qumran, Jericho), sealed clay pipelines (Hyrkania, Jericho), aqueducts employing bridges and tunnels (Cypros, 'Ein-Gedi, Hyrkania), and dams (Hyrkania, Khirbet ed-Deir, Masada). [See 'Ein-Gedi; Masada, *article on Archaeology*; and Qumran, *article on Archaeology*.] Water in an open conduit can flow only downhill, thus limiting its end-use location. A tightly sealed pipeline, however, can take advantage of the siphon effect and rise almost to the height of its source after descending into valleys. This innovation of the Hasmonean period allowed pipelines to follow straight-line courses into low areas rather than having to construct long detours around them. In addition, in some instances running water could be supplied to fortresses and palaces situated on hilltops. Clay pipes have the advantage of being low in cost, easy to lay, secure when buried, and sanitary.

An important element in the construction of water systems in antiquity was the use of impermeable plaster. By sealing conduits, clay pipes, cisterns, and reservoirs with lime plaster, the loss of water was prevented. The plaster was made by first reducing limestone to lime powder (calcium oxide) in a limekiln. Then water was added (slaking) to produce a waterproof substance (calcium hydroxide). In the Hellenistic and Roman periods, crushed potsherds were added to the mixture.

Water resource technology in antiquity proved to be a boon to modern scholarship. This technology allowed communities to settle in the Judean wilderness. As they settled, they brought with them, produced, and stored written documents. Because of the arid climate of the region, many of these documents survived the centuries to be discovered and studied in modern times. Were it not for the water resource technology that allowed communities to survive in the Judean wilderness, modern scholarship would have been robbed of a large percentage of the written documents recovered from ancient Palestine.

**Hasmonean Period.** During the Hasmonean period (152–37 BCE), the Judean wilderness was highly developed, and the construction of elaborate water systems reached its peak. From the palaces and villages of Jericho, to the fortresses throughout the region, to the religious community at Qumran, settlements utilized water from every conceivable source.

At Jericho (Tühl Abu el-'Alayiq), where the upper