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## The Future of the Qumran Scrolls

Tourists from all over the world continue to flock to the unique, cave-simulated Shrine of the Book situated on the southwest extension of modern Jerusalem opposite the new Hebrew University. They go to see the famed Qumran Scrolls. I have noticed that many a visitor stands in almost reverent silence before the glass-enclosed, soft-lighted cases where the ancient inscribed leather scrolls and fragments have been beautifully displayed.

Centered directly beneath the shrine's dome, which is shaped like one of the fifty jar covers discovered in Qumran Cave I in 1949, and dominating the entire exhibit is a great cylinder more than twenty-five feet in circumference for displaying the great Isaiah Scroll (1QIs<sup>a</sup>), the oldest extant book of the Bible. The mounting is so designed that should an emergency arise, the cylinder could be lowered into a rock-cut cave below. One is immediately impressed by the prodigious lengths to which scholars and builders have gone to exhibit with artistic decor and academic dignity this priceless heritage from biblical history.

On entering the shrine in June, 1966, I was shocked rather than impressed by the exhibit. It was not, however, for lack of appreciation of the architectural and scientific artistry, but because of an immediate awareness that the scrolls, especially the great Isaiah Scroll, revealed distinct evidences of marked deterioration. Even though many years had elapsed since my previous close study of the scrolls, I became alarmed over the distinctly apparent darkening of the leather, over which I had labored in 1948 and 1949. The text was by no means as readable as I remembered it then.

Through the examination of the condition of many of the Qumran documents, it has become clear that as leather deteriorates, it darkens until it is reduced to a deep amber-colored gelatinous mass not unlike hardened glue. Then, when subjected to high humidity or excessive moisture, it begins to act like glue and, finally, gradually evaporates. It was this advanced state of disintegration of some of the leather fragments that was mistakenly called "pitch" in the early days of the scroll discovery.<sup>1</sup> The oldest fragment from all eleven Qumran caves, 4QEx<sup>f</sup>, to judge from its paleography,<sup>2</sup> is so darkened that its text cannot be seen at all with the naked eye. It can, however, be seen by holding it before a strong light, for the leather is somewhat translucent. Infrared film, fortunately, produced a fairly readable photograph of the text, according to Frank Cross, who is preparing its publication.<sup>3</sup>

If deterioration of the scrolls is so marked after less than two dozen years since the first discovery in the winter of 1946-47,<sup>4</sup> the future of the Qumran Scrolls becomes a matter of major concern. Will all the scrolls in time be reduced to a blackened gelatinous mass that will gradually evaporate into thin air?<sup>5</sup>

During an interview with Yigael Yadin in Israel, I expressed my concern; and Yadin agreed that many others shared this same alarm. Many consultations with scientific experts had already been held to discuss and analyze the problem. A larger effort was even then being planned for the fall of 1966 to bring together experts from all over the world to focus their technical knowledge on this archeological riddle. Thus, I left Israel with the assurance that if modern science possesses the skills, the Qumran Scrolls will be assured preservation for future generations to view in the Shrine of the Book.<sup>6</sup>

To trace the history of the disintegration of the scrolls, it is necessary to recall at least two factors which preceded the deposit in ancient times: 1) The long usage of 1QIs<sup>a</sup> in the Qumran Community left its special impact upon that scroll in the form of darkening of the back of the scroll from the many hands that held it during reading; then too, there were the many ancient repairs. These were features noted in the earliest reports.<sup>7</sup> 2) The evidence of violent treatment of many of the scrolls prior to their deposit has also been noted with: 1QH, one section of which was discovered in a severely twisted condition; 1QIs<sup>b</sup>, the condition of which may have been the result of violent abuse<sup>8</sup>; 1QDan<sup>a, b</sup> and 1QPrayers, which reveal clearly violent treatment in ancient times<sup>9</sup>; and numerous cases among the Cave IV fragments.<sup>10</sup>

During nineteen centuries in the caves, the scrolls seem to have suffered proportionately less disintegration than either before their deposit or since

their discovery. The exact degree of loss from the ravages of time cannot, of course, be known, as a result of the conditions under which the discovery was made by those unconcerned with academic matters. Those scrolls which had the good fortune to remain in their jars apparently suffered the least. It is my opinion that the only way to account for the splendid condition of 1QIs<sup>a</sup>, 1QS, and perhaps 1QpHab, 1QM, 11QPss, and a few others over so many years is that the jars in which they were stored remained intact. The fact that many large rocks fell from the ceiling of Cave I during the centuries may account for the unfortunate condition of many of the other scrolls from that cave.<sup>11</sup> It is reasonable to suppose that the serious condition of those which display violent treatment (such as 1QH, 1QDan<sup>a, b</sup>, 1QPrayers) may have resulted from hasty and unprotected deposit in the cave about A.D. 70, thus exposing them more fully to the elements. It is difficult, to be sure, to go much beyond speculation concerning the causes of the condition of each piece when discovered, but the variations are extensive.

It will doubtless never be known how many scrolls and fragments have been lost for all time as a result of the discovery and handling of most of them by the Ta'amireh Bedouins and the merchants who were consulted or acted as mediators. Only a few details about their condition in this period of the history of the scrolls have been documented. From my interviews with the three Bedouins who discovered the first three scrolls,<sup>12</sup> I was able to confirm that 1QIs<sup>a</sup> had a sheet of uninscribed leather which formed a cover and that it was broken apart and lost during the time the scroll was carried about.<sup>13</sup> From examination of the many lacunae along the lower edge of 1QIs<sup>a</sup>, it was clearly apparent that most of those breaks occurred during the time the scroll was in their hands and prior to February 19, 1948, when I first examined it. The Bedouins readily admitted that they had stretched the scroll to its full length in one of their tents on at least one occasion. Beyond these meager bits of evidence, however, very little could be gleaned from the Bedouins.<sup>14</sup> John Allegro has claimed that some large fragments of scrolls from Cave I were buried by Khalil Eskander Shahin (Kando) in his backyard in Bethlehem, only to find later that the damp soil had reduced them to worthless gluey lumps.<sup>15</sup> If this undocumented story is reliable, it would demonstrate the rapidity with which moisture may affect the disintegration of these documents, for they could not have remained in Kando's backyard longer than six months, judging by the rapidly developing scroll events at the end of 1948 and following.<sup>16</sup>

Once the first four scrolls reached the hands of the Assyrian Orthodox Community of Saint Mark's in Jerusalem in July, 1947, a somewhat better handling can be assumed. At least, they were wrapped in newspapers and

kept together in a leather satchel.<sup>17</sup> Nevertheless, some fragments along the lower margin of 1QIs<sup>a</sup> crumbled away from that scroll, for I found numerous pieces in the satchel when I began to repair the scroll preparatory to photographing it on February 21, 1948.<sup>18</sup> Apparently some attempts to repair the Isaiah Scroll had been made by either Kando or the Assyrians, for at several points pieces of paper had been attached on the back of the scroll to strengthen particularly fragile areas.<sup>19</sup>

Despite all the care that was exercised with the scrolls from February, 1948 on, at least one small piece crumbled away unnoticed even at the time 1QIs<sup>a</sup> was being photographed. When studying the color transparency of col. XLVIII recently, I discovered a stray bit of leather with an upside-down *'aleph* obscuring the final *law* of *ntybw* in line eight of the column. The fragment measured only 3 by 8 mm. Tracing it through earlier photographs, I found it on one negative on the left margin of col. XLVI between lines 7 and 8,<sup>20</sup> and finally discovered it on the negative made on February 21, 1948, folded over and partly obscuring a *yodh* in the third line of col. LII through which ran a crack. It thus proved to be the *'aleph* from the word *'š* in Is 65: 5.<sup>21</sup> One very small gap in the great Isaiah Scroll can therefore be restored from photographs, though it is missing from the original.

Some concerns were felt for the preservation of the Cave I scrolls as they were carried about to several exhibitions during 1949 and 1950 and during their stay in a bank vault in New Jersey, where variations in temperature and humidity could be encountered.<sup>22</sup> With the sale of the Saint Mark's scrolls to Israel in 1954, they were returned to Jerusalem; but variations in temperature and humidity were destined to continue to affect the scrolls, even there, despite the greater care given them. It is my conviction, on the basis of the evidence, that high and varying humidity has been the primary cause of the obvious disintegration of the scrolls. The authorities in Israel claim that it is light and exposure to air (oxidation?) that have been primary offenders, but the evidence is persuasive that moisture changes have been the major cause.<sup>23</sup>

Any traveler to the Qumran cave area is immediately aware of the extremely low level of humidity encountered there, except during the very short and sporadic rainy season during the winter months.<sup>24</sup> Considering the orientation of Caves I and XI, from which the best-preserved MSS have been recovered, it is understandable why moisture would affect the contents of those caves less than it would the others with more exposed entrances. Destruction from vermin, however, is quite another matter, and apparently was a major loss factor for scrolls in all the caves.<sup>25</sup>

I have no frame of reference for judging the effects of the past two decades on the multitude of fragments housed in the Palestine Archeological Museum

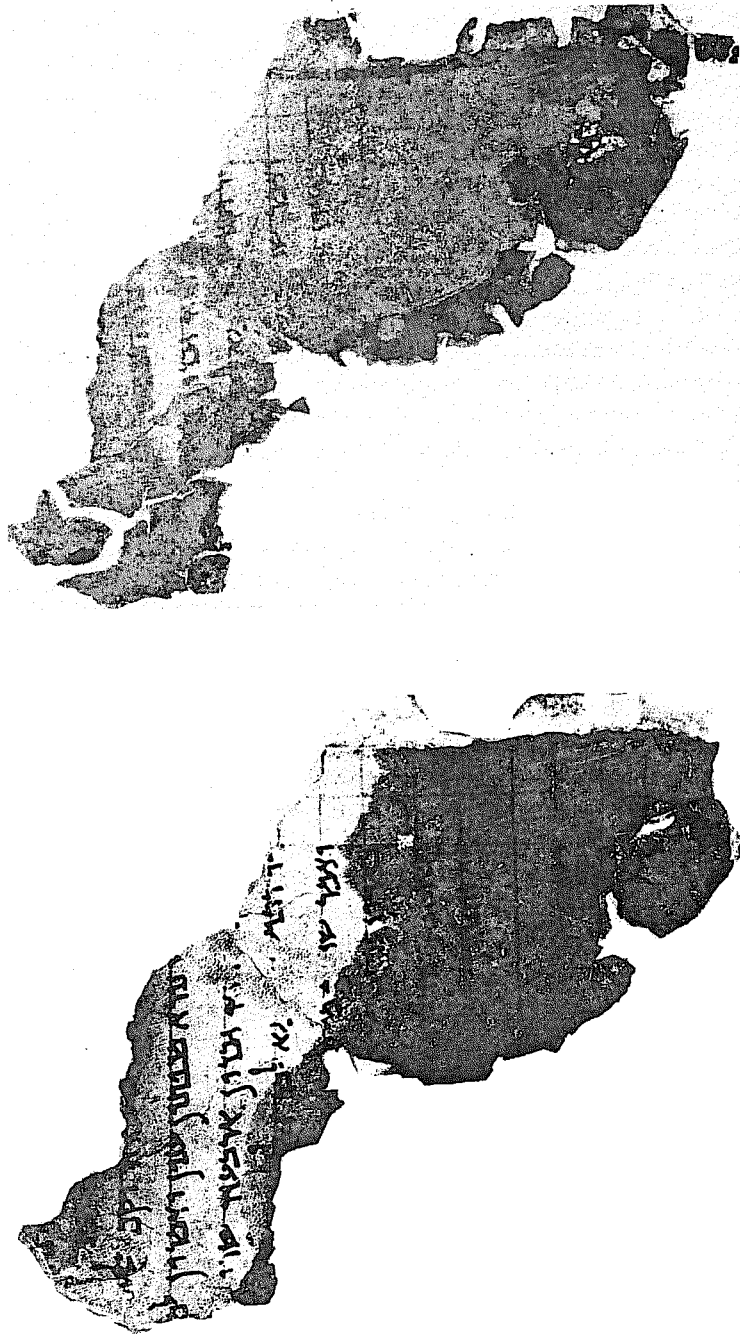
and the Amman Museum, but Frank Cross has mentioned in private conversation that evidence for disintegration of these fragments is an equal cause for concern. The problems relative to the discovery, retrieval, and probable losses of this material from Caves I, II, IV, and XI are well known.<sup>26</sup>

Before 1QIs<sup>a</sup> was mounted on the cylinder in the Shrine of the Book, it was strengthened against crumbling with a very fine nylon netting, which was apparent to the viewer only on close examination. It doubtless served an important function, but would have no value against damage caused by humidity, air, or light. In the meantime, however, the whole shrine has been air-conditioned and humidity-controlled, which should contribute significantly to assuring a future to the scrolls contained therein. Since it is believed by the experts that light is an important factor, that problem has also been carefully studied and adjusted, according to the curator.<sup>27</sup>

Having become aware of the problem of accelerated disintegration of the scrolls since their discovery, I was prompted to seek ways to preserve all the negatives, and especially the color transparencies, of the Cave I scrolls and fragments which I had recorded in 1948-49. Even negatives are vulnerable, unless "archival quality" treatment is given them at the time they are processed.<sup>28</sup> But the dyes used in color films, as indicated by their manufacturers on every package, are far more vulnerable to the ravages of time than are leather documents. The preservation of color films therefore poses another problem for the future of the scrolls.

On a recent examination of the color transparencies made in Jerusalem in 1948 from three Cave I scrolls, I detected evidence of some loss of color, especially in those transparencies which had been occasionally removed from their storage container and subjected to light. Efforts to preserve these materials have therefore been vigorously pursued. Each color transparency has now been duplicated on fresh color film by a process aimed at restoring whatever loss of color could be detected. In addition, a set of color negatives has been produced from the transparencies.<sup>29</sup> A new set of black-and-white negatives has also been produced from them by a special process to be described elsewhere.<sup>30</sup> Several sets of "archival quality" natural-sized enlargements have been prepared, and all the photographic materials have been housed in a special safe under controlled humidity conditions.<sup>31</sup> No longer will any of the original color transparencies be released to publishers for reproduction, but, instead, color duplicates will be provided as needed.<sup>32</sup>

Ultimate preservation of the color reproductions of the scrolls as they appeared in 1948, however, can best be accomplished only through high quality publication, using separation negatives and four-color plates printed on the best and most durable papers. It was for this goal that I pressed



Two photographs of the same section of 1QDan<sup>b</sup>. The left one was taken by the author in 1949 (© John C. Trever, 1964). The right one, taken about 1965 and reprinted here by courtesy of his Grace, Archbishop Athanasius Y. Samuel, was published in A. Y. Samuel, *The Treasure of Qumran*, Philadelphia, Westminister, 1966, p. 205.

the ASOR on my return from Palestine in 1966. It is good to report that such a volume, entitled *Scrolls from Qumrân Cave I: The Great Isaiah Scroll, The Order of the Community, The Pesher to Habakkuk*, appeared in late 1972. A companion volume, to include many additional color reproductions from my Qumran Cave I materials, will be issued later from the Dead Sea Scroll Research and Preservation Center recently established at Baldwin-Wallace College to pursue these matters in the future.<sup>33</sup> Despite the splendid series of *DJD* published by Oxford University and the volumes produced by the Hebrew University, it should be the objective of those who control the rest of the Qumran materials to follow a similar publishing procedure in full color with at least the most important of all the other Qumran Scrolls.<sup>34</sup> Obviously, such a procedure would involve great expenditures, for which budgets are lacking, but worldwide concern could solve that dilemma.

The most startling and yet instructive illustration of Qumran Scroll deterioration became evident with a publication by the former owner of some of the Cave I scrolls, A. Y. Samuel.<sup>35</sup> In an appendix to his autobiography, he included reproductions of some Qumran fragments which he has continued to retain in his possession—namely, 1QDan<sup>a,b</sup>, 1QPrayers, 1Q19<sup>bis</sup> (a fragment of the “Book of Noah” material related to Enoch), and p1Q70<sup>bis</sup> (the largest piece of papyrus recovered from Cave I).<sup>36</sup> Having labored patiently to separate the matted mass of nine layers of leather, in which form most of these same fragments were first handed to me in February, 1949,<sup>37</sup> I was immediately struck by the severe extent of deterioration the intervening seventeen years had produced. From photographs taken in both black-and-white and color at each step in the process of separating and assembling the fragments in April, 1949, it is now apparent that large gaps have developed in the original pieces where previously the text had been extant. Fortunately, these areas are preserved on the photographs. Notice the striking difference, produced by exposure over a period of time, in two photographs of the same fragment in the illustration opposite.

There were several points on these fragments, however, where no attempt was made to separate them, because of the lack of time and technical resources. Through the years it was hoped that further details might be recovered from these fragments with more careful treatment. All these points have now disintegrated away, with complete loss of these details.<sup>38</sup>

Deterioration of the scrolls which is beyond the control of modern technology is one thing, but the kind of deterioration exhibited in the Samuel volume is a warning about what may be expected for the future of the scrolls if scientific attention to their care is not provided. In view of the fact that these fragments have not been exhibited often or extensively and thus not subjected to light and air, but have been kept largely in a bank vault,

it seems likely that the cause of their disintegration is high humidity, for which the New Jersey area, where they are kept, is well known. From their photographic reproduction in the Samuel volume, it is apparent that not only have many areas of these fragments been further reduced to the state of gelatinous "glue" but also other areas have now evaporated away, leaving only gaps where before there had been darkened leather. Since I returned the fragments to Samuel on December 3, 1949, and at that time they revealed no sign of new disintegration, all this radical change took place between then and whenever the photographs were made that were published in 1966—or less than seventeen years.

It will be noted that the piece of papyrus which was published on page 208 of Samuel's book shows no change from the photograph made by me in April, 1949,<sup>39</sup> which may indicate that papyrus is far less affected by moisture—or whatever the basic cause of disintegration may be—than is leather.

The evidence from Samuel's volume should serve as a warning to any traveler to the Near East who may have secured fragments of Qumran materials through devious channels in order to secure unique "souvenirs," that their future is short-lived except with the most exacting attention to technical matters of their preservation. Those who do possess such fragments should, rather, turn them over to competent authorities. The future of even the best-cared-for scrolls, indeed, may be problematic without even better and probably extremely costly techniques of storage and exhibition.

#### NOTES

<sup>1</sup> The only evidences of which I am aware that an actual "glue" was used by the men of Qumran are those which appear at the joining point of columns XLIII and XLIV of 1QIs<sup>a</sup> and the less apparent adhesive used for the repairs on the back of the same scroll (cf cols. I-IV, XVIII-XIX, XXV, etc.). For a scientific note on the disintegration of the leather, see D. Barthélemy and J. T. Milik, *DJD*: I, Oxford, Clarendon Press, 1955, p. 40. For some illustrations of disintegrated leather, see J. C. Trever, "Completion of the Publication of Some Fragments from Qumran Cave I," *RQ* 19 (Nov., 1965), 336 and plates II and VII: b, c.

<sup>2</sup> Frank M. Cross, "The Development of the Jewish Scripts," in G. Ernest Wright, ed., *The Bible and the Ancient Near East*, Doubleday, Anchor Books edition, 1965, p. 179 and p. 175, fig. 1, line 3.

<sup>3</sup> The next oldest fragments—4QSam<sup>b</sup> and 4QJer<sup>a</sup>—reveal their script fairly well despite their very dark leather. Since infrared photographs recover the text remarkably well from these very disintegrated fragments, their publication fails to reveal the actual state of the leather on which they are inscribed. Frank Cross' publication of 4QSam<sup>b</sup> in *JBL* 74: 3 (Sept., 1955), opp. p. 151, for instance, hardly reveals the almost black condition of the originals at the time of their discovery (but compare John M. Allegro, *The People of the Dead Sea Scrolls*, Garden City, Doubleday, 1958, plate 64). A good way to observe the process of disintegration of leather is to examine the entire 1QIs<sup>a</sup> Scroll

and 1QM. Both scrolls are very dark at the beginning, which formed the outside layers of the scrolls during the centuries in the cave; toward the center of each, the leather is lighter, until it becomes a cream white or light tan toward the end. It is obvious that the nearer the leather was to exposure to air in the cave, the more rapid was its disintegration.

<sup>4</sup> For the evidence regarding this date for the discovery, see J. C. Trever, *The Untold Story of Qumran* (hereafter *USQ*), Old Tappan, Revell, 1965, pp. 103-4, 194-96. The information given there modifies somewhat that which appeared in J. C. Trever, "When Was Qumran Cave I Discovered?", *RQ* 9 (Feb., 1961), 135-41.

<sup>5</sup> See above, pp. 471 f.

<sup>6</sup> Since 1966, various reports have reached me about the presence or absence of the Isaiah Scroll in the shrine exhibit. Some have said they saw a facsimile there; others claim to have seen the original. A letter, dated September 28, 1970, from a friend just returned from Israel, says, "Unfortunately, the Isaiah Scroll was not on exhibit, but there was a note that it had been removed for repairs." A letter, dated December 23, 1970, from Magen Broshi, curator of the shrine, says that the Isaiah Scroll is being kept in "a safe storage." He continues by saying that "in a few weeks we intend to return one sheet for exhibition."

<sup>7</sup> See *BASOR* 111 (Oct., 1948), 5-6. As has already been pointed out in my "1QDan<sup>a</sup>, the Latest of the Qumran Manuscripts," *RQ* 26 (April, 1970), 285, it is more than likely that 1QIs<sup>a</sup> was deposited in Cave I long before the demise of the community about A.D. 70, judging from these evidences of disintegration in ancient times and other factors.

<sup>8</sup> E. L. Sukenik, *The Dead Sea Scrolls of the Hebrew University*, Jerusalem, Magnes Press, 1955, figs. 14 and 10, respectively.

<sup>9</sup> See J. C. Trever, *RQ* 19 (Nov., 1965), 326 f. and plate II.

<sup>10</sup> See John M. Allegro, *op. cit.*, plates 47-48.

<sup>11</sup> The appearance of 1QApocGen may be accounted for on such a basis, since one part of the tightly rolled scroll appears to have been exposed to air and humidity, perhaps as a result of its jar having been broken.

<sup>12</sup> *USQ* (see fn. 4), pp. 103-6, 169-71 and indicated notes.

<sup>13</sup> *Ibid.*, p. 196, note 19.

<sup>14</sup> Just when 1QS was divided into two parts between cols. VII and VIII could not be determined from the interviews. See *ibid.*, p. 196, note 20.

<sup>15</sup> *The Dead Sea Scrolls*, Baltimore, Penguin Books, 1956, p. 19.

<sup>16</sup> See *USQ*, pp. 146 and 204, note 9, where I challenge Allegro's chronology for this event. G. L. Harding, in *DJD*: I, p. 4, assumes that the additional fragments secured by Yusef Saad from Kando were a part of the original find, thus ignoring the Assyrian "clandestine excavation" in the fall of 1948, when much additional material apparently was secured from Cave I.

<sup>17</sup> They also reversed 1QIs<sup>a</sup>, so that its more fragile beginning was at the center of the roll. For the record of these scrolls during this period see *USQ*, pp. 107-10, 112-13.

<sup>18</sup> These bits of unscribed fragments, some thread and repair material, mostly from 1QIs<sup>a</sup> (one tiny piece from 1QS, and four pieces of 1QApocGen, plus one gelatinous mass with some linen cloth attached) have been carefully preserved by me.

<sup>19</sup> See *USQ*, plate facing p. 49 (reproduction of 1QIs<sup>a</sup>, cols. XXXII-XXXIII), where such a repair appears at the extreme left on the back of col. XXXIV.

<sup>20</sup> This was the 13 × 18 cm negative made on outdated portrait film (cf *USQ*, pp. 78 f.).

<sup>21</sup> The fragment failed to appear at all in *The Dead Sea Scrolls of St. Mark's Monastery*, New Haven, ASOR, 1950; for there col. LII was printed from a negative made in April, 1949, after the scroll had arrived in the United States and the fragment had disappeared entirely.

<sup>22</sup> The Isaiah Scroll was frequently unrolled for publicity purposes in connection with the exhibits, sometimes without proper caution. See frontispiece to A. Y. Samuel's *Treasure of Qumran*, Philadelphia, Westminster Press, 1966; also pp. 188 and 190.

<sup>23</sup> See below.

<sup>24</sup> H. J. Plenderleith, a renowned expert on the preservation of antiquities, once told me that he believed the humidity conditions at the Qumran Caves were equal to, or even lower than, those in the Faiyûm of Egypt, whence such an abundance of ancient papyrus has been recovered. Yigael Yadin remarked facetiously at the close of an interview with me in 1966 that perhaps the only solution to the preservation of the scrolls was to return them to the caves. The projected plans of the Jordanians to build a museum for the scrolls near the site of Khirbet Qumran held real merit in this regard.

<sup>25</sup> The deep scallops which are so prominent along the edges of 1QS, 1QpHab, 1QM, and 11QPss were apparently the result of this cause.

<sup>26</sup> John Allegro, *op. cit.* (1964 ed.), pp. 27-51.

<sup>27</sup> I do not know whether or not similar precautions have been applied to the vast collection of Cave IV fragments and the other materials in the Palestine Archeological Museum, but the authorities are now alerted to the needs. The materials in the Amman Museum may have an advantage, since the problem of high humidity is not so serious there. Jordanian officials should be alerted, if they have not been already, to the factor of the effect of light upon inscribed fragments in their exhibit.

<sup>28</sup> The ASOR has returned all the negative materials to me for proper attention to their preservation.

<sup>29</sup> Color negatives, technically called "internegatives," are valuable for producing better quality display color prints.

<sup>30</sup> See *Scrolls from Qumran Cave I*, p. 8, n. 9.

<sup>31</sup> While the scrolls and fragments themselves need a humidity range of about 5 to 10 percent for best preservation, the photographic materials survive best in a range of 30 to 40 percent.

<sup>32</sup> Unfortunately, this policy was not applied soon enough, for the original transparency of 1QIs<sup>a</sup>, col. XLIX was lost while in the hands of a publisher in 1951. With every duplicate made from a color transparency, there is a slight loss in definition, which increases in succeeding generations of duplicates. This procedure is therefore by no means a permanent solution for preservation. A few black-and-white negatives also were lost and/or damaged during the years. Substitute negatives have been prepared from the color transparencies in these cases.

<sup>33</sup> The first project of the new center has been to produce a high quality microfilm which includes all the texts from Cave I whose photographs are under my control. On a good microfilm reader, the texts can be read from this film with great ease, for they project to twice the size of the originals.

<sup>34</sup> Admittedly, some of the scrolls that can be recovered only with infrared film would not make satisfactory color reproductions.

<sup>35</sup> *The Treasure of Qumran: My Story of the Dead Sea Scrolls*, Philadelphia, Westminster Press, 1966.

<sup>36</sup> Apparently the photographs reproduced there were made about 1965.

<sup>37</sup> See J. C. Trever, *RQ* 19 (Nov., 1965), plates II and VII.

<sup>38</sup> Compare the photograph on page 190 of A. Y. Samuel's book, which illustrates the condition of the fragments when exhibited at the Oriental Institute of the University of Chicago in December, 1950, with the appearance of the same fragments in the appendix to the book.

<sup>39</sup> See J. C. Trever, *RQ* 19 (Nov., 1965), plate VII.