The “12 Sons of Jacob” Windows1 in the Lower Merion Synagogue (Upon entering the renovated sanctuary, Tevet 5763/February 2003) [Last update: August 24, 2003] Gilad J. Gevaryahu Translated from Hebrew by David H. Wiener Edited by Emilie S. Passow Introduction The Encyclopaedia Britannica reports that the art of stained glass is the offspring, now in a translucent medium, of such earlier art forms as mosaics and enameling, which involve composing monumental images out of many separate pieces. Historical writings provide evidence that colored glass windows were used from the 3rd century onwards (Lactantius c.240 - c. 320 and others). Stained glass itself is described in various texts and has been found in excavations before the 12th century. Thus, by the late Middle Ages, the master glazier's workshop was a highly organized enterprise, capable of producing various types of designs, whose intricacy was limited only by the expense a patron was prepared to incur (Encyclopaedia Britannica, Chicago, 1981. Vol. 17, pp. 566-576). In terms of Jewish art, gold glass fragments were found as early as Roman times in the catacombs of Rome, and arguably a depiction of the symbols for the Twelve Tribes were found in Yafia, a synagogue from the Byzantine period. Elaborate mosaic patterns were found in many early synagogues excavated in Israel such as Kefar Nahum, Hamat Gader, Hamat Teveria. Moreover, in many other synagogues, as in Bet Alpha, Gaza, Sipphoris, and Susia, even animal and human figures were drawn (Lee I. Levine, The Ancient Synagogue. Yale University Press, 2000, pp.214-218). Dr. Stephen S. Kayser, Curator of the Jewish Museum in New York, in an introduction to the stained glass windows of a prominent Philadelphia synagogue, notes: "What is not generally known is that the earliest glass windows preserved are light in color. Dating from the 11th century, these windows, interestingly enough, show the figure of Moses and David, as well as the Prophets Daniel, Hosea, and Jonah." Kayser did not provide the reference for these windows, but the cathedral of Augsburg in Germany fits the description. Some date these windows to the beginning of the 12th century. (Light from our Past-A Spiritual History of the Jewish people Expressed in 12 Stained Glass Windows designed by Louis D, Kayser. Rose B. Goldstein, Philadelphia, 1959) The earliest recorded use of stained glass window in a synagogue occurs in a responsum by Rabbi Elyakim ben Rabbi Yoseph from Mayence. Concerned about the propriety of the stained glass windows with drawings of lions and snakes that had been mounted in their synagogue, members of the Cologne community sought the advice of Rabbi Elyakim. When asked whether such animal drawings violated the Biblical prohibition "Thou shall not make to yourself a graven image" (Ex. 20:4, Deut. 5:8), he ruled against these images. It is conceivable, however, that Rabbi Elyakim was unaware of the extensive use of animal and human images in mosaic floors of synagogues in earlier centuries, especially in Israel. Rabbi Ephraim ben Itzhak (d. 1175) a contemporary of R. Elyakim, disagreed with his decision 2 . The halachic issue arose "after the fact," since the windows with snakes and lions already decorated this synagogue, perhaps for quite some time. Although the responsum did not specify that the animal images on the windows were "colored," the parallel use of colored stained glasses windows in churches in Germany at the time lead to the conclusion that the windows in the synagogue were also colored. We do not know the date of this responsum, and even the dates of Rabbi Elyakim’s life are not completely clear. We do know, however, that he was the father-in-law of Raban, who was born c. 1090 and died in 1170. In his own writings, Raban indicated that his father-in-law lived to ziknah, which, based on Avot 5:31, indicates that he reached his 60s.3 However, if ziknah was used in the sense of old age (e.g., Gen. 19:4 or Ps. 71:18) then age 60 and above is the probable meaning. Aptowitzer4 concluded that he was born in c.1070 based on the fact that his sonin-law was born in 1090 and he should have been about 20 years older. This information frames Rabbi Elyakim’s life from 1070s5 to c.1148, suggesting that the responsum was written either very late into the 11th century or early in the 12th century. Thus, Rabbi Elyakim’s tenure as head of the rabbinical court in Mayence coincides with the early spread of stained glass in Western Europe.6 We do know from the text of the First Crusade that the synagogue of Cologne and that the Jewish community of Cologne were destroyed in 10967 We know from other sources that this synagogue stood there for about 100 years (1000-1096)8 . Now the question is which stained glass windows were described in the responsum of Rabbi Elyakim? Was it from the old synagogue which was destroyed in 1096? or, rather, from the newly rebuilt one? I find it hard to believe that the community which was completely gone could in a matter of a couple of years build itself and rebuild the old synagogue with new stained glass, that is, a fancy building with expensive stained glass windows. Further, the responsum is dealing with stained glass widows which are already installed, not a question if the community could use such stained glass windows in a new building under construction. This analysis suggest that the windows of the question must have been from the old synagogue, that is, the synagogue which was destroyed in 1096, and the responsum was by a ~30 years old Rabbi Elyakim. If this speculation is correct - then we can date the stained glass and the responsum from late 11th century. This is further supported by the fact that the art and use of stained glass windows was already known at the 11th century in Germany as attested in the writing of Rashi (Isaiah 54:12). Rashi was a student at Mayence. The question itself is of great historical importance, although only Jewish art historians seem to be aware of it. The that the innovation was included in a synagogue at that early date. The responsum, therefore, is an early written reference to the use of stained glass in a building, and may be the very earliest use in a synagogue. As to the nd Judah respectively. One must wonder if indeed the Cologne synagogue did not have the images of the 12 sons of Jacob in the windows.9 Rashi, we should add, provided an even earlier source for the use of stained glass in a building.10 Lower Merion Synagogue windows The windows in the Lower Merion Synagogue represent the twelve sons of Jacob, a group which is not identical to the twelve tribes of Israel. To understand this distinction, we need to recall that upon being designated as one of Jacob’s heirs in place of Reuven, who lost his place as the first-born, Joseph received the two portions due to the first-born. Thus Joseph’s two sons, Menasseh and Ephraim, were transformed into tribes and Joseph himself is not counted as a tribe. The illustrations on the windows are based largely on the 1955-1956 Israeli stamp set depicting the twelve sons of Jacob (shown here). Although the Midrash (Bamidbar Rabba, Parshah Bet) is an important source for their depictions, it is not a primary one. The artists’ colors for each tribe, for example, do not derive from the Midrash, which was based on the stones of the Choshen (i.e., breastplate of the Kohen Gadol) as described in Shemot 28:17 and 39:10. (Rashi, Bamidbar 2:2) Instead, the artists clearly took the verses and depictions principally from Jacob’s blessings to his sons (Bereshit 49), and from Moshe’s blessing (Devarim 33). Only in the instances of two sons, Simeon and Isaachar, did the illustrators fail to use verses from the two blessings. Those case are explained below. A. Reuben (Depicted on the window: dudaim [often translated as mandrakes]) Verse on the stamp’s tab: “Let Reuben live…” (Devarim 33:6). Midrash Bamidbar Rabbah: “Reuben’s stone is odem (אדם ( [translated as ruby or carnelian], and its standard is colored red, and dudaim דודאים] ,often translated as mandrakes or love apples] are depicted upon it.” The image of the dudaim to represent Reuben derives from the following verse: “And Reuben went in the days of wheat harvest, and found mandrakes in the field…” (Bereshit 30:14). Ironically, however, the dudaim signify Reuben’s disgrace, for Reuben was omitted from Jacob’s blessing because of his relationship with Bilhah, his father’s concubine (Bereshit 35:22). Indeed, as Jacob explicitly explains later, “because thou wentest up to thy father’s bed, then defilest thou it.”According to some of our interpreters, moreover, the flag of Reuben included the shape of a man or the face of a man with dudaim. (Ramban, Bamidbar 2:2; Radak, Ezekiel 1:28) Thus dudaim as a symbol for Reuben comes from the Midrash, which fully exposes his iniquity. Aware of this negative association, the illustrators of the Israel Bar Mitzvah medallion (1961) presented the sun as Reuben’s symbol, inasmuch as he was the first-born. Consequently, however, they were led to use the donkey as Issachar’s symbol.! (More about that below.) There are those, however, who believe the symbol of dudaim is not a negative one, for the tribes of Issachar and Zebulun were born as a result of the acquisition of the dudaim. (Bereshit Rabba 72:5) Dudaim in Bereishit also represent a kind of aphrodisiac (Ramban, Bereshit 30:15); and even the very word dudaim (דודאים (reminds us of dodim (דודים) (lovers, love). B. Simeon (Depicted on the window: the wall and gate of the city of Shechem) Verse on the stamp’s tab: “all the tribes of Israel together” (Devarim Midrash Bamidbar Rabbah: “Simeon is pitdah (פטדה] translated as topaz], and its standard is colored green, and Shechem's wall and gate are depicted upon it.” According to the Israel Postal Authority, which authorized the series of stamps based on the 12 tribes, many scholars believe that the tribe of Simeon lived in Schechem even before the conquest of the land of Israel by Joshua, and use this possibility to explain why the conquest of Shechem is not mentioned at all in the Book of Joshua . From this perspective, the picture of the gate of Shechem is appropriate for the tribe of Simeon, and The Encyclopedia Judaica includes this explanation. However, while control of Shechem by the tribe of Simeon at the time of the conquest is speculative, the actions of Simeon and Levi in Shechem after the defiling of their sister Dinah constitute a definite/definitive connection between Simeon and Shechem. Moreover, the Book of Joshua (Chapter 19) informs us that the southern parts of Israel were given to Simeon in the midst of the land given to the tribe of Judah, including the city of Beer Sheva. Significantly, since Simeon and Levi do not receive blessings from Jacob, it was not possible to use Jacob’s blessings as a source of symbols for the tribes of Simeon and Levi. Nor does the tribe of Simeon receive a blessing in Parshat Vezot Habracha at the end of the Book of Devarim; indeed, the tribe of Simeon is not even mentioned, and, in fact, disappears as time goes on, as stated/predicted in Jacob’s blessings: “I will divide them in Jacob, and scatter them in Israel” (Bereishit 49:7). Consequently, Simeon’s killing of the men of Shechem after their circumcision as revenge for Dina’s rape makes the gate of Shechem an apt symbol for his tribe. Many scholars further believe that the verse “וברצונם רועק שור” “at their whim they hamstrung an ox (shor),” should be vocalized as shur and not shor, as the meaning of shur is wall. It is likely that the source of the error in drawing the wall and the gate is the Targum Onkelos, followed by Targum Jonathan where King James Translation of the Bible picked it up(“and in their self-will they digged down a wall”)(Bereshit 49:6). Several British illustrators added a sword to Simeon’s symbol, according to the verse “their weaponry is a stolen craft” (Bereshit 49:5). Moreover, not all commentators found Simeon’s act shameful. Regarding this episode, Rashbam states, “in commemoration of their bravery, that they killed the men of Shechem (Bereshit 33:18) - not ‘their shame’ but specifically ‘their bravery’.” Rav Chaim Ben Attar, in his commentary “Or Hachaim,” justifies killing the men of Shechem as a legal obligation. In his commentary to Bamidbar Rabbah, MaHarZo (Moreinu Harav Zeev Wolf son of Harav Yisrael Isser Einhorn of Horadno) states, “‘Shechem’ \*is a symbol for Simeon] because of their bravery and devotion in Shechem. Even though Levi was with him, Simeon was the older and more important one. And this teaches us his praiseworthiness: that he was zealous about licentiousness.” And thus there are commentators who find in the execution of the men of Shechem something positive. Our sages also associate another episode with Simeon which is not positive in our eyes, that is, that he married his half sister Dinah (Bereshit Rabbah, Parshah 80), but this matter, too, is connected to the episode of Shechem. In summary, the majority opinion is that Simeon’s symbol depicts him in an unfavorable light, but the gate remains an image associated with Simeon. C. Levi (Depicted on the window: the Choshen) Verse on the stamp’s tab: “\*And of Levi he said: Thy Thummim and Thy Urim be with Thy holy one+… They shall teach Jacob Thine ordinances, and Israel Thy law” (Devarim 33:10). Midrash Bamidbar Rabbah: “Levi is bareket (ברקת] (translated as emerald or agate], and its standard is colored one-third white and onethird black and one-third red, and the Urim and Tumim are depicted on it.” The Urim and Tumim have twelve stones, each for a tribe, and these were used for various puposes for the benefit of the tribes. Likewise, Levi's role as a tribe was for the service in the Temple in Jerusalem for the benefit of Israel (i.e., the twelve tribes), and hence he got no territory of his own. D. Judah (Depicted on the window: a lion) Verse on the stamp’s tab: “Judah is a lion's whelp” (Bereshit 49:9). Midrash Bamidbar Rabbah: “Judah is nofech (נפך] (translated as turquoise or granite], and the color of its standard resembles the sky, and a lion is depicted on it.” The lion is the symbol of Judah for its strength, the strongest animal. In fact Judah was the chosen leader of Israel from early own, and the kings of Israel were from the tribe of Judah. E. Issachar (Depicted on the window: sun and stars) Verse on the stamp’s tab: “And of the children of Issachar, men that had understanding of the times” (I Chronicles 12:33). Midrash Bamidbar Rabbah: “Issachar is sappir (ספיר] (translated as sapphire or lapis lazuli], and its standard is colored a blue-like black, and the sun and moon are depicted upon it, after (I Chronicles 12) 'And of the children of Issachar, men that had understanding of the times.'” The blessing, “Issachar is a large-boned ass” (Bereshit 49:14) is not particularly appropriate11. Even though the book of Devarim - “And of Zebulun he said: Rejoice, Zebulun, in thy going out, and, Issachar, in thy tents” (Devarim 33:18) – This passage thus portrays Issachar using the image of a tent. However, the comparison of a tribe to a tent was already made for Gad by Midrash Rabbah. Therefore Midrash Rabbah was compelled to employ the representation in I Chronicles of Issachar as being well versed in calculating time according to the sun and stars. Many erroneously believe that this window, alludes to Joseph's famous dream and represents Joseph, but it does not. A number of Jewish and Gentile illustrators did not follow the Midrash here and drew the symbol of the tribe of Issachar as a donkey as was done by the illustrators on Israel Bar Mitzvah Medallion, 1961. F. Zebulun (Depicted on the window: a ship) Verse on the stamp’s tab: “\*Zebulun shall dwell at the shore of the sea..+ He shall be a shore for ships” (Bereshit 49:13). Midrash Bamidbar Rabbah: “Zebulun is yahalom (יהלום] (translated as diamond or onyx], the color of its standard is white, and a ship is depicted upon it, because of 'Zebulun shall dwell at the shore of the sea.'” G. Dan (Depicted on the window: scales of justice) Verse on the stamp’s tab: “Dan shall judge his people” (Bereshit 49:16). Midrash Bamidbar Rabbah: “Dan is leshem (לשם] (translated as opal], and the color of its standard resembles sapphire, and a serpent is depicted upon it, because of 'Dan shall be a serpent (Bereshit 49:17).” It is obvious that the decision to employ the scales of justice as Dan’s symbol rather than the serpent is anchored in the perception of the serpent as a pejorative symbol. It is true, though that the serpent also symbolizes healing, as in the copper serpent (nachash nechoshet - נחש נחשת) (Bamidbar 21:9), however its negative image prevailed over its positive image. Later Jewish illustrators are consistent in their use of the scales of justice, yet the Midrash and the Gentile illustrators employed the image of the serpent. Some of our interpreters maintain that the depiction of Dan should rather be an eagle. (Ibn Ezra Bamidbar 2:2; Ramban Bamidbar 2:2; Radak Ezekiel 1:28) H. Naftali (Depicted on the window: a hind) Verse on the stamp’s tab: “Naftali is a hind let loose” (Bereshit 49:21). Midrash Bamidbar Rabbah: “Naftali is achlamah (אחלמה] (translated as amethyst or agate], and the color of its standard resembles clear wine whose redness is not strong, and a hind is depicted upon it because of 'Naftali is a hind let loose.'” I. Gad (Depicted on the window: military tents) Verse on the stamp’s tab: “Gad, a troop shall troop upon him” (Bereshit 49:19). Midrash Bamidbar Rabbah: “Gad is shevo (שבו] (translated as agate or amethyst], and the color of its standard is neither white nor black but a mixture of black and white, and an encampment is depicted upon it, because of 'Gad will recruit a regiment.'” J. Asher (Depicted on the window: an olive tree) Verse on the stamp’s tab: “As for Asher, his bread shall be fat” (Bereshit 49:20). Midrash Bamidbar Rabbah: “Asher is tarshish (תרשיש] (translated as beryl, chrysolite, topaz or aquamarine], and the color of its standard resembles a precious stone with which women adorn themselves, and an olive tree is depicted upon it because of 'As for Asher, his bread shall be fat.'” K. Joseph (Depicted on the window: a sheaf of wheat) Verse on the stamp’s tab: “\*And of Joseph he said:+ Blessed of HaShem be his land” (Devarim 33:13). Midrash Bamidbar Rabbah: “Joseph is shoham (שוהם] (translated as onyx], and the color of its standard is very black, and Egypt was depicted on it - for the two princes, Manasseh and Ephraim, who were born in Egypt.” The image of a sheaf of wheat comes from Joseph's dream, where the brother's sheaves bow to his (Bereshit 37:5-8). It also relates to his interpretation of Pharaoh's dream about the seven stalks of grain (Bereshit 41:22-24) and the subsequent accumulation, while the grand Vizier of Egypt, of grain during the seven good years as it is narrated in Bereshit 41:48-49. L. Benjamin (Depicted on the window: a wolf) Verse on the stamp’s tab: “\*Benjamin is a wolf that raveneth+ in the morning he devoureth the prey …” (Bereshit 49:27). Midrash Bamidbar Rabbah: “Benjamin is yashfeh (ישפה] (translated as jasper], and the color of its standard resembles all twelve colors, and a wolf is depicted upon it because of 'Benjamin is a predatory wolf.'” The order of the brothers/tribes The brothers are presented in varying orders in different lists. The above list follows Midrash Rabbah, which is matched to the order of the stones in the Choshen. The sons of the handmaidens were treated as a group; hence Dan, Naftali, Gad and Asher always appear together. The Midrash even takes up this problem: “Rabbi Joshua of Sachnin said in the name of Rabbi Levi, why are the names of the tribes of Israel not identical in all places? Rather, one precedes the other, and the second then precedes the first? So that people would not say, the sons of the ladies were placed first and the sons of the handmaidens last. This comes to teach that no one was greater than another” (Shemot Rabbah, Parshah 1:6). And, while the sons of the handmaidens appear as a group, still they do not come last in Jacob’s blessing, and so it is in other enumerations. It should be pointed out that Jacob himself, when he fled from his brother Esau, was the one who separated his children into groups according to their level of danger. That is, the children of Rachel were in the most secure location, after them the children of Leah, and in the most dangerous location he placed the children of the handmaidens (Bereshit 33:1-2). The Ramban deals with the variations in the orders in Parashot Vayigash and Shelach. A selection of the different enumerations of the brothers in the Tanach, and the rationale for their depiction, follows. Not all lists are included, as some deal strictly with tribal issues, for instance, where Menashe and Ephraim are listed instead of Joseph.12 Bereshit 29-3013 Bereshit 35 Bereshit 46 Bereshit 49 Shemot 1 Bamidbar 1 Bamidbar 26 Order of birth (also of stamps) By order of Mother's marriage Per size of group Jacob's blessing Descending to Egypt Census Census 1. Reuben (Leah) Reuben Reuben Reuben Reuben Reuben Reuben 2. Simeon (Leah) Simeon Simeon Simeon Simeon Simeon Simeon 3. Levi (Leah) Levi Levi Levi Levi Judah Gad 4. Judah (Leah) Judah Judah Judah Judah Issachar Judah 5. Dan (Bilhah, maidservant of Rachel) Issachar Issachar Zebulun Issachar Zebulun Issachar 6. Naftali (Bilhah, maidservant of Rachel) Zebulun Zebulun Issachar Zebulun Joseph Zebulun 7. Gad (Zilpah, maidservant of Leah) Jospeh Gad Dan Benjamin Benjamin Joseph 8. Asher (Zilpah, maidservant of Leah) Benjamin Asher Gad Dan Dan Benjamin 9. Issachar (Leah) Dan Joseph Asher Naftali Asher Dan 10. Zebulun (Leah) Naftali Benjamin Naftali Gad Gad Asher 11. Joseph (Rachel) Gad Dan Joseph Asher Naftali Naftali 12. Benjamin (Rachel) Asher Naftali Benjamin Joseph was already in Egypt, so he was not enumerated. Levi was not enumerated per Bamidbar 1:49. Levi was not enumerated. Bamidbar 34 Devarim 27 Devarim 33 Joshua 1614 Ezekiel 4815 Ezekiel 48 I Chronicles 2 Settlement list Blessings and curses on Mount Gerizim and Eival Moshe’s Blessing Division of Israel Division of Israel Ezekiel’s Gates Judah Gerizim:Simeon Reuben Ever HaYarden: Reuben Dan Reuben Reuben Simeon Levi Judah Gad Asher Judah Simeon Benjamin Judah Levi Half of Menashe (Joseph) Naftali Levi Levi Dan Issachar Benjamin Eretz Yisrael:Judah Menashe (Joseph) Joseph Judah Joseph Joseph Joseph Half of Menashe (Joseph) Ephraim (Joseph) Benjamin Issachar Zebulun Benjamin Zebulun Benjamin Reuben Dan Zebulun Issachar Eival: Reuben Issachar Simeon Judah Simeon Dan Asher Gad Gad Zebulun Benjamin Issachar Joseph Naftali Asher Dan Issachar Simeon Zebulun Benjamin Zebulun Naftali Asher Issachar Gad Naftali Levi was not enumerated. Dan Asher Naftali Zebulun Asher Gad Reuben & Gad settled in EverHaYarden Naftali Simeon is entirely omitted from this list Dan Gad Naftali Asher The Arrangement of the Windows in the Synagogue16 The order of the Stained Glass Windows in the Lower Merion Synagogue is according to the Targum Yerushalmi on Shemot 28:17-20. The commentary on the Targum Yerushalmi points out there that is not likely that “the children of the handmaidens were placed ahead of the children of the wives;” thus, the meaning of the word כתולדותם (Shemot 28:10) is, “according to the degree of their importance according to their birth.” Joseph Gad Dan ARON Issachar Levi Reuben Benjamin Asher Naftali KODESH Zebulun Judah Simeon 1Designed by Ascalon Studios, Inc. 2Urbach, Efraim Elimelech Ba`ale ha-Tosafot: Toldotehem, Hiburehem, Shitatam. Jerusalem, Mosad Bi'alik, 1986, p. 206. 3In the introduction to Raban's responsa, Shalom Albeck (Warsaw, 1904) concluded that Rabbi Elyakim died after 1145 and before 1152. Urbach dated his death to c. 1148. Ibid.p. 379. 4Mavo le-Sefer Rabiah (Jerusalem, 1984, p.48) 5In a book edited by Vivian B. Mann titled Jewish Texts on the Visual Arts, Cambridge University Press, 2000, pp. 71-75, Rabbi Elyakim Ben Yosef of Mayence is dated "born circa 1170" instead of 1070. Mann is off by 100 years, and the source of her (or the translator) error is the conversion of the Jewish year “Taf, Taf, Lamed” (numerically 830+240=1070). Mann’s source for the date “Taf, Taf, Lamed” was either from Mavo le-Sefer Rabiah by V. Aptowitzer (Jerusalem, 1984, p.48) or from Mehkarim beSifrut haTeshuvot by Itzhak Ze'ev Kahana, (Jerusalem, Mosad Harav Kook, 1973, p. 351) who quoted him. Mann miscalculation postdated the stained glass windows at the Cologne synagogue by 100 years. Her title “Stained Glass in the Colonge Synagogue ca. The Year 1200" ignores also that Ephraim b. Isaac of Regensburg disagreed with Elyakim b. Joseph of Mayence and that his responsum is from 1152 (Raphael Loewe, Open Thou Mine Eyes: Essays on Aggadah and Judaica Presented to Rabbi William G. Braude on his Eightieth Birthday, Ktav, New Jersey, 1992, p. 128). 6For the responsum of R. Elyakim see Piskei Avodah Zara, Vol. 3 of the Or Zarua, section 203. The Mordechai quotes a shorter summary in Avoda Zara section 440 and even a shorter version in Radbaz 4:107. I am indebted to Larry Rabinovich for the lead to Rabbi Elyakim and to these references and for the next footnote. Note that Moses Sofer (1762-1839), the Hatam Sofer, ruled against a stained-glass window above the Ark bearing the figure of the sun with rays, with God's name (i.e., the tetragrammaton) inscribed in the middle of the sun, and inscribed: "From the rising of the sun even to the going down of the same the Lord's name is to be praised," on the ground that the people bowing to the Ark would be worshiping the sun. (Responsa Hatam Sofer, Part II, Yore De'ah, Siman 129) 7Sefer Gezerot Ashkenaz veTzarfat, Habermann, Jerusalem, 1965, pp. 43-44, 52, 76. See also Robert Chazan, "Sippur Ma'asei Kolonia" in Alei Sefer, 1984, p. 65. 8http://www.edwardvictor.com/Colongneframe2main.htm 9The earliest hard evidence of the use of colored glass dates from the ninth century in the form of fragments, mostly human heads and bodies. By the middle of the twelfth century stained glass was becoming common in churches, culminating a development that began in the midto-late eleventh century. See, Hugh Arnold, Stained Glass of the Middle Ages in England and France, Adam and Charles Black, London, 3d ed. 1955, pp. 24-25; Painton Cowen, Rose Windows, Thames and Hudson, 1979, p. 7. 10Rashi (1040-1105) to Isaiah 54:12 quotes an even earlier source “yesh potrim” about the use of stained glass against the windows. (Thanks to Aviad A. Stollman, who called my attention to this reference.) Note that Rashi was familiar with glass making process and he obtained his information directly from the glass makers (Sanhedrin 91a). This interpretation of "Shimshotayich" to Isaiah 54:12 is based on the view of “yesh potrim” that the root of the word is "shemesh," and refers to stained glass. Ibn Ezra (c.1092-1167), Radak (c.1160-c.1235), Abarbanel (1437-1508) and others agree. 11The Abuhav synagogue in Safed for that very reason presented no picture for Issachar nor for Dan, as neither donkey nor snake seemed appropreate. Only the names of the tribes are presented. (Source: http://www.zfat.co.il/bazz.htm). 12According the Braita (Sota 36a) the order of the names of the twelve sons on the stones of the Choshen is as follows: 1. Judah, 2. Reuben, 3. Simeon, 4. Levi, 5. Dan, 6. Naftali, 7. Gad, 8. Asher, 9. Issachar, 10. Zebulun, 11. Joseph, 12. Benjamin. This list put Judah first as he became the leader, and King David and future kings came out of his descendants. Rabbeinu Hanina ben Gamliel (Per Rashi) has the following order: 1. Reuben, 2. Simeon, 3. Levi, 4. Judah, 5. Issachar, 6. Zebulun, 7. Benjamin, 8. Dan, 9. Naftali, 10. Gad, 11. Asher, 12. Joseph. Rambam's order (Sefer Avoda, Hilchot Kelei ha'Mikdash 9:9) is as follows: 1. Reuben, 2. Levi, 3. Issachar, 4. Naftali, 5. Gad, 6. Joseph, 7. Simeon , 8. Judah, 9. Zebulun, 10. Dan, 11. Asher, 12. Benjamin. Rambam's method thus put Reuben on the top of the stone on the right shoulder, and put Simeon on the top of the stone of the left shoulder and so forth, back and forth, according to the order of their birth. 13This is the order according to Targum Yonatan on Shemot 28:17-20. The commentary on Targum Yonatan specifies that the word כתולדותם , “according to the order of their birth,” is what mandates the arrangement according to birth order. According to Josephus as well (Antiquities 3,7,5), the names on the stones of the Choshen followed the order in which the fathers of the tribes were born. 14Levites got no inheritance (Joshua 14:3) 15Levites received no inheritance 16During his trip to Israel in February 2003, LMS member, Dr. Joel Betesh noted that, in the synagogue of Rav Ovadiah Yosef in Jerusalem as well, the order of the windows is identical to that of Lower Merion Synagogue.