```
les4-_w23 Fri Jun 01 16:28:50 2018 1
```

```
% this is ../../crops/18r/planning/current pedigrees/primary dominants/les4- w23
% generated Friday, June 01, 2018 at 21:28:50 UTC (=1527888530.808083) by compute pedigrees/1.
% Horizontal pedigrees, generations at same indentation. S: Mo20W; W: W23; M: M14.
% !!! => cross was not by Toni; references to image locations on right.
% W23/Les4-
 06R0021:0000000 x 06R0021:0000000
      06R0021:0002107 x 06R0021:0002106
           09R201:S0040209 x 09R1345:0017802
                                                        09R1345:0017802: [09r/aleph/21.8-[11]]
          09R201:S0042606 x 09R1345:0017802
                                                        09R1345:0017802: [09r/aleph/21.8-[11]]
           09R201:S0042610 x 09R1345:0017809
                                                        09R1345:0017809: [09r/aleph/21.8-[13]]
                10R205:S0000807 x 10R3004:0019805
                                                             10R3004:0019805: [10r/gimmel/9.8-[112]]
               10R205:S0001111 x 10R3004:0019804
                                                             10R3004:0019804: [10r/gimmel/9.8-[111]]
                                                                  11R3305:0018210: [11r/aleph/18.8-[1028]]
                     11R205:S0052007 x 11R3305:0018210
                          11N205:S0037811 x 11N3420:0010807
                               12R205:S0002807 x 12R3591:0023606
                                                                            12R3591:0023606: [12r/bet/6.8-[83],12r/bet/8.8
-[165]]
                               12R205:S0010608 x 12R3591:0023604
                                                                            12R3591:0023604: [12r/bet/6.8-[82],12r/bet/8.8
-[164]]
                                    12N3952:0018503 x 12N3952:0018503
                                                                                 12N3952:0018503: [12n/bet/13.1-[853]]
    12N3952:0018503: [12n/bet/13.1-[853]]
                                    12N3952:0018504 x 12N3952:0018504
                                                                                 12N3952:0018504: [12n/bet/13.1-[854]]
   12N3952:0018504: [12n/bet/13.1-[854]]
                                    12N3952:0018508 x 12N3952:0018503
                                                                                 12N3952:0018503: [12n/bet/13.1-[853]]
                                                                                 12N3952:0018503: [12n/bet/13.1-[853]]
                                    12N3952:0018509 x 12N3952:0018503
                                    12N3952:0018512 x 12N3952:0018503
                                                                                 12N3952:0018503: [12n/bet/13.1-[853]]
                                    12N3952:0018601 x 12N3952:0018504
                                                                                 12N3952:0018504: [12n/bet/13.1-[854]]
                                    12N3952:0018603 x 12N3952:0018504
                                                                                 12N3952:0018504: [12n/bet/13.1-[854]]
                                    12N3952:0018605 x 12N3952:0018604
                                                                                 12N3952:0018604: [12n/bet/13.1-[858]]
                                    12N504:B0039703 x 12N3952:0018712
                                                                                 12N3952:0018712: [12n/bet/13.1-[866]]
                                    12N504:B0039704 x 12N3952:0018604
                                                                                 12N3952:0018604: [12n/bet/13.1-[858]]
                                    12N504:B0039707 x 12N3952:0018706
                                                                                 12N3952:0018706: [12n/bet/13.1-[862]]
                                    12N504:B0039712 x 12N3952:0018707
                                                                                 12N3952:0018707: [12n/bet/13.1-[863]]
                                    12N504:B0039802 x 12N3952:0018708
                                                                                 12N3952:0018708: [12n/bet/13.1-[864]]
                                    12N504:B0040610 x 12N3952:0018504
                                                                                 12N3952:0018504: [12n/bet/13.1-[854]]
                                    12N504:B0040712 x 12N3952:0018503
                                                                                 12N3952:0018503: [12n/bet/13.1-[853]]
                                    12N504:B0040713 x 12N3952:0018501
                                                                                 12N3952:0018501: [12n/bet/13.1-[852]]
                               12R3591:0023604 x 12R3591:0023604
                                                                            12R3591:0023604: [12r/bet/6.8-[82],12r/bet/8.8
-[164]] 12R3591:0023604: [12r/bet/6.8-[82],12r/bet/8.8-[164]]
                                    12N205:S0037610 x 12N3953:0018803
                                                                                 12N3953:0018803: [12n/bet/13.1-[868]]
                                         13R4195:0006402 x 13R4195:0006402
                                                                                      13R4195:0006402: [13r/bet/1.8-[1714]
,13r/bet/21.7-[1423],13r/bet/25.7-[1575]] 13R4195:0006402: [13r/bet/1.8-[1714],13r/bet/21.7-[1423],13r/bet/25.7-[1575]]
                                         13R4195:0006403 x 13R4195:0006402
                                                                                      13R4195:0006402: [13r/bet/1.8-[1714]
,13r/bet/21.7-[1423],13r/bet/25.7-[1575]]
                                         13R4195:0006404 x 13R4195:0006404
                                                                                      13R4195:0006404: [13r/bet/21.7-[1424
```

```
],13r/bet/25.7-[1576]] 13R4195:0006404: [13r/bet/21.7-[1424],13r/bet/25.7-[1576]]
                                         13R4195:0006407 x 13R4195:0006402
                                                                                      13R4195:0006402: [13r/bet/1.8-[1714]
,13r/bet/21.7-[1423],13r/bet/25.7-[1575]]
                                         13R4195:0006411 x 13R4195:0006402
                                                                                       13R4195:0006402: [13r/bet/1.8-[1714]
,13r/bet/21.7-[1423],13r/bet/25.7-[1575]]
                                         13R4195:0006412 x 13R4195:0006404
                                                                                      13R4195:0006404: [13r/bet/21.7-[1424
],13r/bet/25.7-[1576]]
                                         13R4195:0006416 x 13R4195:0006404
                                                                                      13R4195:0006404: [13r/bet/21.7-[1424
],13r/bet/25.7-[1576]]
                                         13R4195:0006418 x 13R4195:0006404
                                                                                      13R4195:0006404: [13r/bet/21.7-[1424
],13r/bet/25.7-[1576]]
                                         13R504:B0002701 x 13R4195:0006404
                                                                                      13R4195:0006404: [13r/bet/21.7-[1424
],13r/bet/25.7-[1576]]
                                         13R504:B0002703 x 13R4195:0006402
                                                                                      13R4195:0006402: [13r/bet/1.8-[1714]
,13r/bet/21.7-[1423],13r/bet/25.7-[1575]]
                                         13R504:B0003318 x 13R4195:0006404
                                                                                       13R4195:0006404: [13r/bet/21.7-[1424]
],13r/bet/25.7-[1576]]
                                         14R4195:0010302 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
11
                                         14R4195:0010304 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
]]
                                         14R4195:0010307 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
]]
                                         14R4195:0010309 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
11
                                         14R4195:0010310 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
]]
                                         14R4195:0010312 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
]]
                                         14R4195:0010317 x 14R4195:0010306
                                                                                      14R4195:0010306: [14r/bet/18.8-[2212
]]
                                    12N3953:0018802 x 12N3953:0018804
                                                                                 12N3953:0018804: [12n/bet/13.1-[869]]
                               12R3591:0023606 x 12R3591:0023606
                                                                            12R3591:0023606: [12r/bet/6.8-[83],12r/bet/8.8
-[165]] 12R3591:0023606: [12r/bet/6.8-[83],12r/bet/8.8-[165]]
                               12R3591:0023612 x 12R3591:0023612
                                                                            12R3591:0023612: [12r/bet/6.8-[84],12r/bet/8.8
-[166]] 12R3591:0023612: [12r/bet/6.8-[84],12r/bet/8.8-[166]]
                               12R503:B0011909 x 12R3591:0023604
                                                                            12R3591:0023604: [12r/bet/6.8-[82],12r/bet/8.8
-[164]]
                               12R503:B0012501 x 12R3591:0023606
                                                                            12R3591:0023606: [12r/bet/6.8-[83],12r/bet/8.8
-[165]]
                          11N205:S0037903 x 11N3420:0010804
                          11N205:S0037904 x 11N3420:0010801
                10R305:W0010519 x 10R3004:0019804
                                                             10R3004:0019804: [10r/gimmel/9.8-[111]]
                     11R305:W0050404 x 11R3306:0018310
                                                                  11R3306:0018310: [11r/aleph/18.8-[1030]]
                     11R305:W0050414 x 11R3306:0018307
                     11R305:W0051910 x 11R3306:0018310
                                                                  11R3306:0018310: [11r/aleph/18.8-[1030]]
                     11R305:W0051913 x 11R3306:0018306
                                                                  11R3306:0018306: [11r/aleph/18.8-[1029]]
```

les4w23	Fri Jun 01 16:28:50 2018 3
	11N305:W0034711 x 11N3421:0010904 12R305:W0000503 x 12R3592:0023701
1.1	15R305:W0000708 x 15R4352:0010903 15R4352:0010903: [15r/bet/11.8-[2628
]]	15R305:W0000711 x 15R4352:0010904
	16R4491:0008009 x 16R4491:0008006 16R4491:0008006: [16r/gimmel/30
.7-[275]]	
E [100]]	16R505:B0002519 x 16R4491:0008008 16R4491:0008008: [16r/gimmel/26
.7-[129]]	17R4491:0007603 x 17R4491:0007610 17R4491:0007610: [17r/gimmel/1.
8-[300]]	1/R4491.000/003 X 1/R4491.000/010 1/R4491.000/010. [1/1/glimie1/1.
	17R4491:0007606 x 17R4491:0007611 17R4491:0007611: [17r/gimmel/1.
8-[299]]	
8-[300]]	$17R4491:0007607 \times 17R4491:0007610$ $17R4491:0007610: [17r/gimmel/1.$
0 [300]]	17R4491:0007608 x 17R4491:0007610 17R4491:0007610: [17r/gimmel/1.
8-[300]]	
	17R4491:0007610 x 17R4491:0007610 17R4491:0007610: [17r/gimmel/1.
8-[300]]	17R4491:0007610: [17r/gimmel/1.8-[300]] 17R4491:0007611 x 17R4491:0007611 17R4491:0007611: [17r/gimmel/1.
8-[299]]	17R4491:0007611: [17r/gimmel/1.8-[299]]
	17R4491:0007612 x 17R4491:0007611 17R4491:0007611: [17r/gimmel/1.
8-[299]]	1554401,0005610, 1554401,0005610
8-[300]]	17R4491:0007613 x 17R4491:0007610 17R4491:0007610: [17r/gimmel/1.
0 [200]]	17R4491:0007619 x 17R4491:0007610 17R4491:0007610: [17r/gimmel/1.
8-[300]]	
0 [2001]	17R505:B0003012 x 17R4491:0007610
8-[300]]	15R305:W0000713 x 15R4352:0010904
	15R305:W0000903 x 15R4352:0010908
]]	
11	15R305:W0000904 x 15R4352:0010908 15R4352:0010908: [15r/bet/11.8-[2635
1 1	12R305:W0000504 x 12R3592:0023708
	12R305:W0000510 x 12R3592:0023712
	11N305:W0035001 x 11N3421:0010902
	11N305:W0035302 x 11N3421:0010901 10R405:M0001008 x 10R3004:0019804
	11R405:M0001006 x 10R3004:0019804 10R3004:0019804 [101/g1mme1/9.6-[111]] 11R405:M0051301 x 11R3307:0018406 11R3307:0018406: [11r/aleph/18.8-[1089,1092,1094]]
	11R405:M0051310 x 11R3307:0018406
	11N405:M0035707 x 11N3422:0011002
	12R405:M0008204 x 12R3593:0023814
	$\frac{12R405.M0006205 \times 12R3593.0023811}{14R405.M00001402 \times 14R3959:0010509} \qquad \frac{12R3593.0023811}{14R3959:0010509} \cdot \frac{[121/a1epii/9.8-[2002]]}{14R3959:0010509}$

```
les4- w23
              Fri Jun 01 16:28:50 2018
11
                                   14R405:M0001404 x 14R3959:0010509
                                                                               14R3959:0010509: [14r/bet/18.8-[2208,2213
]]
                                        15R405:M0001101 x 15R4353:0011002
                                                                                     15R4353:0011002: [15r/bet/11.8-[2664
]]
                                             17R4492:0007902 x 17R4492:0007906
                                             17R4492:0007903 x 17R4492:0007906
                                             17R4492:0007904 x 17R4492:0007909
                                             17R4492:0007905 x 17R4492:0007906
                                             17R4492:0007907 x 17R4492:0007906
                                             17R4492:0007910 x 17R4492:0007909
                                        15R405:M0001102 x 15R4353:0011002
                                                                                     15R4353:0011002: [15r/bet/11.8-[2664
11
                                        15R405:M0001103 x 15R4353:0011002
                                                                                     15R4353:0011002: [15r/bet/11.8-[2664
]]
                                   14R405:M0001408 x 14R3959:0010509
                                                                               14R3959:0010509: [14r/bet/18.8-[2208,2213]
]]
                              12R405:M0008208 x 12R3593:0023802
                                                                           12R3593:0023802: [12r/aleph/9.8-[2005]]
                         11N405:M0037305 x 11N3422:0011001
      06R300:W00I7717 x 06R0021:0002101
          06N301:W0005102 x 06N1304:0016603
          06N301:W0005705 x 06N1304:0016604
          09R201:S0042908 x 09R1304:0017512
                                                       09R1304:0017512: [09r/aleph/18.8-[265,269,273]]
               10R205:S0007312 x 10R1033:0020004
                                                            10R1033:0020004: [10r/gimmel/9.8-[114]]
               10R205:S0007313 x 10R1033:0020010
                                                            10R1033:0020010: [10r/gimmel/9.8-[117]]
                                                            10R1033:0020002: [10r/gimmel/9.8-[113]]
               10R205:S0007903 x 10R1033:0020002
                    11R205:S0050104 x 11R3190:0017807
                                                                 11R3190:0017807: [11r/aleph/18.8-[1034]]
                    11R205:S0050106 x 11R3190:0017801
                                                                 11R3190:0017801: [11r/aleph/18.8-[1038]]
                         11N205:S0031807 x 11N3417:0010510
                              12R205:S0003702 x 12R3588:0023201
                                                                           12R3588:0023201: [12r/aleph/8.8-[1945]]
                                   12N205:S0036705 x 12N3948:0017506
                                        13R4085:0006101 x 13R4085:0006108
                                                                                     13R4085:0006101: [13r/bet/21.7-[1420
],13r/bet/25.7-[1568]] 13R4085:0006108: [13r/bet/1.8-[1719],13r/bet/21.7-[1422],13r/bet/25.7-[1570]]
                                        13R4085:0006103 x 13R4085:0006108
                                                                                     13R4085:0006108: [13r/bet/1.8-[1719]
,13r/bet/21.7-[1422],13r/bet/25.7-[1570]]
                                        13R4085:0006104 x 13R4085:0006108
                                                                                    13R4085:0006108: [13r/bet/1.8-[1719]
,13r/bet/21.7-[1422],13r/bet/25.7-[1570]]
                                        13R4085:0006108 x 13R4085:0006108
                                                                                     13R4085:0006108: [13r/bet/1.8-[1719]
,13r/bet/21.7-[1422],13r/bet/25.7-[1570]] 13R4085:0006108: [13r/bet/1.8-[1719],13r/bet/21.7-[1422],13r/bet/25.7-[1570]]
                                        14R4085:0010002 x 14R4085:0010011
                                                                                     14R4085:0010011: [14r/bet/18.8-[2183
]]
                                        14R4085:0010004 x 14R4085:0010011
                                                                                     14R4085:0010011: [14r/bet/18.8-[2183
]]
                                        14R4085:0010006 x 14R4085:0010011
                                                                                     14R4085:0010011: [14r/bet/18.8-[2183
]]
                                        14R4085:0010008 x 14R4085:0010011
                                                                                     14R4085:0010011: [14r/bet/18.8-[2183
]]
```

```
les4- w23
                Fri Jun 01 16:28:50 2018
                                         14R4085:0010016 x 14R4085:0010011
                                                                                      14R4085:0010011: [14r/bet/18.8-[2183
]]
                                         14R505:B0002307 x 14R4085:0010011
                                                                                      14R4085:0010011: [14r/bet/18.8-[2183
11
                                         17R4085:0007102 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
311
                                         17R4085:0007103 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R4085:0007104 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R4085:0007108 x 17R4085:0007109
                                         17R4085:0007111 x 17R4085:0007109
                                         17R4085:0007113 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R4085:0007114 x 17R4085:0007109
                                         17R4085:0007117 x 17R4085:0007109
                                         17R505:B0005007 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R505:B0005111 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R505:B0005112 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
311
                                         17R505:B0005113 x 17R4085:0007106
                                                                                      17R4085:0007106: [17r/gimmel/2.8-[32
3]]
                                         17R505:B0005115 x 17R4085:0007109
                                         17R505:B0005116 x 17R4085:0007109
                                    12N205:S0038206 x 12N3948:0017509
                                    12N205:S0038509 x 12N3948:0017512
                               12R205:S0008410 x 12R3588:0023204
                                                                            12R3588:0023204: [12r/aleph/8.8-[1943]]
                          11N205:S0037809 x 11N3417:0010506
                     11R205:S0050107 x 11R3190:0017803
                                                                  11R3190:0017803: [11r/aleph/18.8-[1037]]
                     11R305:W0048518 x 11R3190:0017804
                                                                  11R3190:0017804: [11r/aleph/18.8-[1035]]
                     11R305:W0048519 x 11R3190:0017801
                                                                  11R3190:0017801: [11r/aleph/18.8-[1038]]
                                                                  11R3190:0017807: [11r/aleph/18.8-[1034]]
                     11R305:W0048818 x 11R3190:0017807
           09R201:S0042910 x 09R1304:0017515
                                                        09R1304:0017515: [09r/aleph/21.8-[9]]
      06R400:M00I2110 x 06R0021:0002104
      06R400:M00I7810 x 06R0021:0002101
           06N201:S0011304 x 06N1705:0021603
           06N201:S0011308 x 06N1705:0021606
           06N301:W0027808 x 06N1705:0021601
                07R301:W0025106 x 07R2771:0042301
                     11R305:W0050408 x 11R1735:0018103
                                                                  11R1735:0018103: [11r/aleph/18.8-[1032]]
                          11N305:W0031107 x 11N3418:0010608
                               12R305:W0000502 x 12R3589:0023303
                               12R305:W0001406 x 12R3589:0023301
                                                                            12R3589:0023301: [12r/aleph/8.8-[1944]]
                                    12N305:W0037707 x 12N3949:0017710
                                    12N305:W0038310 x 12N3949:0017706
```

```
les4- w23
             Fri Jun 01 16:28:50 2018
                                         14R4086:0010103 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
                                         14R4086:0010108 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
11
                                         14R4086:0010111 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
                                         14R4086:0010114 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
                                         14R4086:0010116 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
        14R4086:0010116: [14r/bet/18.8-[2206]]
                                         14R505:B0002003 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
                                         14R505:B0002107 x 14R4086:0010116
                                                                                      14R4086:0010116: [14r/bet/18.8-[2206
]]
                                         16R4086:0007609 x 16R4086:0007609
                                         16R4086:0007611 x 16R4086:0007610
                                                                                      16R4086:0007610: [16r/gimmel/26.7-[1
28]]
                                    12N305:W0038312 x 12N3949:0017709
                               12R305:W0001706 x 12R3589:0023307
                                                                            12R3589:0023307: [12r/aleph/8.8-[1946]]
                          11N305:W0041906 x 11N3418:0010604
                     11R305:W0050410 x 11R1735:0018106
                                                                  11R1735:0018106: [11r/aleph/18.8-[1031]]
                07R301:W0027514 x 07R2771:0042301
                07R301:W0029305 x 07R2771:0042302
                07R401:M0024905 \times 07R2771:0042301
                07R401:M0029408 x 07R2771:0042302
           06N301:W0028703 x 06N1705:0021602
                07R301:W0023006 x 07R2770:0042507
                07R301:W0027511 x 07R2770:0042506
                07R401:M0024903 x 07R2770:0042506
           06N301:W0028704 x 06N1705:0021603
           06N301:W0028705 x 06N1705:0021605
           06N301:W0028706 x 06N1705:0021606
           06N401:M0007601 x 06N1705:0021606
           06N401:M0008202 x 06N1705:0021605
           06N401:M0011506 x 06N1705:0021601
                07R201:S0029802 x 07R2772:0042401
                07R201:S0030411 x 07R2772:0042408
                07R201:S0033716 x 07R2772:0042406
                07R301:W0002307 x 07R2772:0042408
                07R301:W0034703 x 07R2772:0042406
                07R401:M0002107 x 07R2772:0042408
                07R401:M0029107 x 07R2772:0042401
                07R401:M0034511 x 07R2772:0042406
                     09R401:M0043503 x 09R2147:0017710
                                                                  09R2147:0017710: [09r/aleph/18.8-[276,281,284]]
                     09R401:M0045307 x 09R2147:0017710
                                                                  09R2147:0017710: [09r/aleph/18.8-[276,281,284]]
                          11R405:M0050303 x 11R2234:0017908
                                                                       11R2234:0017908: [11r/aleph/18.8-[1044]]
                          11R405:M0051007 x 11R2234:0017909
                                                                       11R2234:0017909: [11r/aleph/18.8-[1036]]
```

```
11N205:S0034503 x 11N3419:0010705
                               11N205:S0034504 x 11N3419:0010705
                               11N405:M0032808 x 11N3419:0010704
                                    12N3590:0018002 x 12N3590:0018001
                                                                                 12N3590:0018001: [12n/bet/13.1-[843]]
                                    12N3590:0018003 x 12N3590:0018001
                                                                                 12N3590:0018001: [12n/bet/13.1-[843]]
                                                                                 12N3590:0018001: [12n/bet/13.1-[843]]
                                    12N3590:0018008 x 12N3590:0018001
                                    12N3590:0018103 x 12N3590:0018101
                                                                                 12N3590:0018101: [12n/bet/13.1-[845]]
                                    12N3590:0018105 x 12N3590:0018101
                                                                                 12N3590:0018101: [12n/bet/13.1-[845]]
                                    12N3590:0018107 x 12N3590:0018101
                                                                                 12N3590:0018101: [12n/bet/13.1-[845]]
                                    12N3590:0018108 x 12N3590:0018102
                                                                                 12N3590:0018102: [12n/bet/13.1-[846]]
                                    12N3590:0018109 x 12N3590:0018102
                                                                                 12N3590:0018102: [12n/bet/13.1-[846]]
                                    12N3590:0018110 x 12N3590:0018105
                                    12N405:M0039606 x 12N3590:0017901
                                                                                 12N3590:0017901: [12n/bet/13.1-[841]]
                                    12N405:M0039607 x 12N3590:0017901
                                                                                 12N3590:0017901: [12n/bet/13.1-[841]]
                                    12R503:B0012506 x 12R3590:0023405
                                    12R503:B0012507 x 12R3590:0023401
                                    12R503:B0012608 x 12R3590:0023403
                                                                                 12R3590:0023403: [12r/bet/3.8-[45]]
                                    13R3590:0006303 x 13R3590:0006304
                                                                                 13R3590:0006304: [13r/bet/1.8-[1710],13r/
bet/15.7-[1155],13r/bet/18.7-[1300],13r/bet/21.7-[1418],13r/bet/25.7-[1573]]
                                    13R3590:0006306 x 13R3590:0006304
                                                                                 13R3590:0006306: [13r/bet/1.8-[1709]]
   13R3590:0006304: [13r/bet/1.8-[1710],13r/bet/15.7-[1155],13r/bet/18.7-[1300],13r/bet/21.7-[1418],13r/bet/25.7-[1573]]
                                    14R3590:0010203 x 14R3590:0010209
                                                                                  14R3590:0010209: [14r/bet/18.8-[2207]]
                                    14R3590:0010205 x 14R3590:0010209
                                                                                 14R3590:0010209: [14r/bet/18.8-[2207]]
                                    14R3590:0010207 x 14R3590:0010209
                                                                                 14R3590:0010209: [14r/bet/18.8-[2207]]
                                    17R3590:0007402 x 17R3590:0007412
                                                                                 17R3590:0007412: [17r/gimmel/1.8-[297]]
                                    17R3590:0007406 x 17R3590:0007412
                                                                                 17R3590:0007412: [17r/gimmel/1.8-[297]]
                                    17R3590:0007410 x 17R3590:0007412
                                                                                 17R3590:0007412: [17r/gimmel/1.8-[297]]
                                    17R3590:0007411 x 17R3590:0007412
                                                                                 17R3590:0007412: [17r/gimmel/1.8-[297]]
                               11N405:M0034009 x 11N3419:0010704
           06N401:M0012902 x 06N1705:0021603
                07R201:S0030405 x 07R2769:0042601
                07R301:W0002606 x 07R2769:0042601
                07R401:M0006608 x 07R2769:0042601
           07G201:S0000404 x 07G1705:0001101
                                                 111
                09R201:S0042903 x 09R2228:0017404
                                                             09R2228:0017404: [09r/aleph/18.8-[251,255,259],09r/aleph/21.8
-[5],09r/bet/2.9-[10]]
                09R201:S0042906 x 09R2228:0017412
                                                             09R2228:0017412: [09r/aleph/21.8-[7],09r/bet/2.9-[19]]
           07G301:W0000801 x 07G1705:0001101
           07G301:W0000804 x 07G1705:0001106
           07G401:M0000304 x 07G1705:0001108
                                                 111
           07G401:M0000606 x 07G1705:0001101
                                                 111
```