```
% this is ../../crops/18r/planning/current_pedigrees/primary_dominants/les2-_mo20w
% generated Friday, June 01, 2018 at 21:28:50 UTC (=1527888530.684756) 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.

% Mo20W/Les2-

 06R0002:0000000 x 06R0002:0000000
      06R0002:0000204 x 06R0002:0000202
          10R205:S0001109 x 10R1236:0016504          10R1236:0016504: [10r/gimmel/8.8-[12,13]]
          10R205:S0005508 x 10R1236:0016506          10R1236:0016506: [10r/gimmel/8.8-[14]]
              11N205:S0038203 x 11N3399:0007709
              11N205:S0038208 x 11N3399:0007708
              11N205:S0039107 x 11N3399:0007703
          10R305:W0004512 x 10R1236:0016506          10R1236:0016506: [10r/gimmel/8.8-[14]]
              11N305:W0031410 x 11N3400:0007805
                  12N305:W0035905 x 12N3559:0008511
                  12N305:W0035906 x 12N3559:0008505
                      14R305:W0000704 x 14R4220:0006819     14R4220:0006819: [14r/bet/17.8-[2112]]
                      14R305:W0000708 x 14R4220:0006812     14R4220:0006812: [14r/bet/17.8-[2103]]
                      14R305:W0000715 x 14R4220:0006805     14R4220:0006805: [14r/bet/17.8-[2114]]
                      14R305:W0001009 x 14R4220:0006811     14R4220:0006811: [14r/bet/17.8-[2116]]
                      14R305:W0001010 x 14R4220:0006812     14R4220:0006812: [14r/bet/17.8-[2103]]
                  12N305:W0035909 x 12N3559:0008501
              11N305:W0032601 x 11N3400:0007801
              11N305:W0032909 x 11N3400:0007809
          10R305:W0005104 x 10R1236:0016504          10R1236:0016504: [10r/gimmel/8.8-[12,13]]
          10R405:M0005004 x 10R1236:0016506          10R1236:0016506: [10r/gimmel/8.8-[14]]
              11N405:M0038406 x 11N3401:0007903
              11N405:M0038407 x 11N3401:0007903
              11N405:M0038409 x 11N3401:0007903
      06R0002:0000208 x 06R0002:0000207
          06N201:S0004401 x 06N1012:0000205
              07R201:S0028907 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R201:S0031508 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R201:S0033605 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R301:W0022109 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R301:W0033507 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R401:M0031901 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
              07R401:M0033406 x 07R2318:0038611          07R2318:0038611: [07r/gimmel/11.8-[237,238,239]]
          06N201:S0004404 x 06N1012:0000201
              07R201:S0027605 x 07R2324:0038413          07R2324:0038413: [07r/gimmel/11.8-[228,229,230]]
          06N201:S0004408 x 06N1012:0000206
              07R201:S0028205 x 07R2316:0038701
              07R201:S0034301 x 07R2316:0038701
              07R201:S0034303 x 07R2316:0038712          07R2316:0038712: [07r/gimmel/11.8-[247,248,249]]
```

(Handwritten annotations in red: "KO202" near top; "S" with brace and "2" beside the 11N205 lines; "W" with brace and "4" beside the 14R305 lines; "M" with brace and "2" beside the 11N405 lines; "KO207" boxed near the 11N405 lines.)

```
                    11N205:S0031905 x 11N1631:0008603
                    11N205:S0039109 x 11N1631:0008602
                    11N205:S0039110 x 11N1631:0008607
              07R301:W0027811 x 07R2316:0038701
              07R301:W0028103 x 07R2316:0038701
              07R301:W0034401 x 07R2316:0038712            07R2316:0038712: [07r/gimmel/11.8-[247,248,249]]
              07R401:M0027701 x 07R2316:0038701      !!!
              07R401:M0029403 x 07R2316:0038701
              07R401:M0034501 x 07R2316:0038712            07R2316:0038712: [07r/gimmel/11.8-[247,248,249]]
         06N201:S0005601 x 06N1012:0000202
         06N201:S0014304 x 06N1012:0000202
              07R301:W0021210 x 07R2322:0038513
         06N301:W0004207 x 06N1012:0000201
         06N301:W0004501 x 06N1012:0000205
         06N301:W0004502 x 06N1012:0000208
              10R305:W0006505 x 10R2315:0017105            10R2315:0017105: [10r/gimmel/8.8-[31]]
              11R305:W0051918 x 11R3284:0054005                11R3284:0054005: [11r/aleph/18.8-[1003]]
                11N305:W0038002 x 11N3405:0008710
                11N305:W0038004 x 11N3405:0008710
                11N305:W0038303 x 11N3405:0008710
         06N301:W0011403 x 06N1012:0000206
         06N401:M0005203 x 06N1012:0000201
              10R405:M0003809 x 10R2326:0017208            10R2326:0017208: [10r/gimmel/9.8-[32]]
              10R405:M0005003 x 10R2326:0017209            10R2326:0017209: [10r/gimmel/9.8-[33]]
              11R405:M0051308 x 11R3285:0054110              11R3285:0054110: [11r/aleph/18.8-[1002]]
              11R405:M0051312 x 11R3285:0054108              11R3285:0054108: [11r/aleph/18.8-[1004]]
                11N405:M0038502 x 11N3406:0008801
                  12N405:M0037212 x 12N3569:0011705
                  13R405:M0002504 x 13R4079:0004909        13R4079:0004909: [13r/bet/12.7-[1073],13r
/bet/16.7-[1186],13r/bet/19.7-[1333],13r/bet/22.7-[1467],13r/bet/27.7-[1617]]
                  12N405:M0039410 x 12N3569:0011710
                  12N405:M0039411 x 12N3569:0011704
                  12N405:M0039512 x 12N3569:0011705
                11N405:M0038503 x 11N3406:0008801
              10R405:M0005007 x 10R2326:0017212            10R2326:0017212: [10r/gimmel/9.8-[34]]
         06N401:M0012003 x 06N1012:0000205
         06N401:M0024301 x 06N1012:0000202
         07G201:S0000109 x 07G1012:0001001
         07G201:S0000110 x 07G1012:0001005
              09R201:S0033615 x 09R2222:0014806            09R2222:0014806: [09r/bet/1.9-[75],09r/bet/23.8-[36,37]]
              09R201:S0033907 x 09R2222:0014809
              09R201:S0041401 x 09R2222:0014810            09R2222:0014810: [09r/bet/1.9-[77],09r/bet/23.8-[38,39]]
              09R201:S0041714 x 09R2222:0014806            09R2222:0014806: [09r/bet/1.9-[75],09r/bet/23.8-[36,37]]
              10R205:S0007304 x 10R2207:0017303              10R2207:0017303: [10r/gimmel/9.8-[35]]
                11R205:S0051806 x 11R3246:0053906              11R3246:0053906: [11r/aleph/18.8-[1005]]
                  11N205:S0037505 x 11N3404:0008504
                  12N205:S0036412 x 12N3920:0011307
```

```
                                    13R4078:0004602 x 13R4078:0004605          13R4078:0004602: [13r/bet/1.8-[1734]
]        13R4078:0004605: [13r/bet/1.8-[1721,1732],13r/bet/12.7-[1065],13r/bet/16.7-[1178],13r/bet/19.7-[1325],13r/bet/22.
7-[1459],13r/bet/27.7-[1609]]
                                    13R4078:0004605 x 13R4078:0004605          13R4078:0004605: [13r/bet/1.8-[1721,
1732],13r/bet/12.7-[1065],13r/bet/16.7-[1178],13r/bet/19.7-[1325],13r/bet/22.7-[1459],13r/bet/27.7-[1609]] 13R4078:0004605
: [13r/bet/1.8-[1721,1732],13r/bet/12.7-[1065],13r/bet/16.7-[1178],13r/bet/19.7-[1325],13r/bet/22.7-[1459],13r/bet/27.7-[1
609]]
                                    13R4078:0004606 x 13R4078:0004605          13R4078:0004605: [13r/bet/1.8-[1721,
1732],13r/bet/12.7-[1065],13r/bet/16.7-[1178],13r/bet/19.7-[1325],13r/bet/22.7-[1459],13r/bet/27.7-[1609]]
                                    14R4078:0007501 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007504 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007506 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007509 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007513 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007514 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R4078:0007516 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R505:B0002106 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                                    14R505:B0002109 x 14R4078:0007502          14R4078:0007502: [14r/bet/17.8-[2145
,2147]]
                            12N205:S0037601 x 12N3920:0011306
                            12N205:S0037602 x 12N3920:0011302
                       11N205:S0037506 x 11N3404:0008505
                       11N205:S0039108 x 11N3404:0008506
                  11R205:S0052003 x 11R3246:0053906              11R3246:0053906: [11r/aleph/18.8-[1005]]
                10R205:S0007902 x 10R2207:0017311              10R2207:0017311: [10r/gimmel/9.8-[37]]
                10R205:S0007910 x 10R2207:0017303              10R2207:0017303: [10r/gimmel/9.8-[35]]
           07G301:W0000202 x 07G1012:0001005
           07G301:W0000807 x 07G1012:0001001
             09R301:W0041611 x 09R2224:0014906              09R2224:0014906: [09r/bet/1.9-[79],09r/bet/23.8-[40]]
           07G401:M0000305 x 07G1012:0001001
           07G401:M0000307 x 07G1012:0001005
           07G401:M0000603 x 07G1012:0001006      !!!
             09R401:M0043212 x 09R2227:0015006              09R2227:0015006: [09r/bet/1.9-[82],09r/bet/23.8-[41,42]]
             09R401:M0043213 x 09R2227:0015006              09R2227:0015006: [09r/bet/1.9-[82],09r/bet/23.8-[41,42]]
             09R401:M0043806 x 09R2227:0015012              09R2227:0015012: [09r/bet/1.9-[91,99],09r/bet/23.8-[45],09r/g
immel/1.9-[94]]
             09R401:M0044104 x 09R2227:0015005
             09R401:M0044106 x 09R2227:0015006              09R2227:0015006: [09r/bet/1.9-[82],09r/bet/23.8-[41,42]]
             09R401:M0044107 x 09R2227:0015009              09R2227:0015009: [09r/bet/1.9-[89],09r/bet/23.8-[43,44]]
```

```
              09R401:M0045305 x 09R2227:0015012              09R2227:0015012: [09r/bet/1.9-[91,99],09r/bet/23.8-[45],09r/g
immel/1.9-[94]]
          10R205:S0005515 x 10R1012:0016608          10R1012:0016608: [10r/gimmel/8.8-[15]]
          10R305:W0004811 x 10R1012:0016608          10R1012:0016608: [10r/gimmel/8.8-[15]]
          10R405:M0005008 x 10R1012:0016608          10R1012:0016608: [10r/gimmel/8.8-[15]]
          14R305:W0000709 x 14R1012:0007616          14R1012:0007616: [14r/bet/17.8-[2179]]
          14R305:W0000804 x 14R1012:0007613          14R1012:0007613: [14r/bet/17.8-[2175]]
          14R305:W0001002 x 14R1012:0007613          14R1012:0007613: [14r/bet/17.8-[2175]]
          14R305:W0001012 x 14R1012:0007612          14R1012:0007612: [14r/bet/17.8-[2176]]
            15R305:W0000906 x 15R4351:0010005          15R4351:0010005: [15r/bet/15.8-[2779]]
              16R305:W0001404 x 16R4498:0009503          16R4498:0009503: [16r/gimmel/30.7-[267]]
              16R305:W0001406 x 16R4498:0009505          16R4498:0009505: [16r/gimmel/30.7-[282]]
                17R305:W0001912 x 17R4557:0016506          17R4557:0016506: [17r/gimmel/2.8-[395]]
                17R305:W0002003 x 17R4557:0016502          17R4557:0016502: [17r/gimmel/2.8-[385]]
                17R305:W0002009 x 17R4557:0016502          17R4557:0016502: [17r/gimmel/2.8-[385]]
                17R305:W0003917 x 17R4557:0016502          17R4557:0016502: [17r/gimmel/2.8-[385]]
              16R305:W0002803 x 16R4498:0009514          16R4498:0009514: [16r/gimmel/26.7-[118]]
              16R305:W0002804 x 16R4498:0009503          16R4498:0009503: [16r/gimmel/30.7-[267]]
              16R305:W0002805 x 16R4498:0009505          16R4498:0009505: [16r/gimmel/30.7-[282]]
            15R305:W0000907 x 15R4351:0010005          15R4351:0010005: [15r/bet/15.8-[2779]]
            15R305:W0002807 x 15R4351:0010008          15R4351:0010008: [15r/bet/15.8-[2784]]
            15R305:W0002810 x 15R4351:0010008          15R4351:0010008: [15r/bet/15.8-[2784]]
          14R305:W0003701 x 14R1012:0007707          14R1012:0007707: [14r/bet/17.8-[2173]]
            15R305:W0002808 x 15R4389:0010806
            15R305:W0002901 x 15R4389:0010801
              16R305:W0000701 x 16R4499:0009607          16R4499:0009607: [16r/gimmel/30.7-[276]]
              16R305:W0002801 x 16R4499:0009605          16R4499:0009605: [16r/gimmel/30.7-[274]]
              16R305:W0002902 x 16R4499:0009605          16R4499:0009605: [16r/gimmel/30.7-[274]]
              16R305:W0002906 x 16R4499:0009614          16R4499:0009614: [16r/gimmel/30.7-[288]]
              16R305:W0002911 x 16R4499:0009614          16R4499:0009614: [16r/gimmel/30.7-[288]]
                17R305:W0001719 x 17R4558:0016606          17R4558:0016606: [17r/bet/2.8-[403]]
                17R305:W0001817 x 17R4558:0016606          17R4558:0016606: [17r/bet/2.8-[403]]
                17R305:W0001820 x 17R4558:0016606          17R4558:0016606: [17r/bet/2.8-[403]]
                17R305:W0003816 x 17R4558:0016602          17R4558:0016602: [17r/gimmel/2.8-[394]]
                17R305:W0003906 x 17R4558:0016602          17R4558:0016602: [17r/gimmel/2.8-[394]]
                17R305:W0003908 x 17R4558:0016602          17R4558:0016602: [17r/gimmel/2.8-[394]]
              16R305:W0003001 x 16R4499:0009607          16R4499:0009607: [16r/gimmel/30.7-[276]]
              16R305:W0003002 x 16R4499:0009607          16R4499:0009607: [16r/gimmel/30.7-[276]]
              16R305:W0003003 x 16R4499:0009607          16R4499:0009607: [16r/gimmel/30.7-[276]]
            15R305:W0002906 x 15R4389:0010806
            15R305:W0003104 x 15R4389:0010801
            15R305:W0003202 x 15R4389:0010806
            15R305:W0003208 x 15R4389:0010801
          14R305:W0003705 x 14R1012:0007707          14R1012:0007707: [14r/bet/17.8-[2173]]
          14R305:W0003706 x 14R1012:0007707          14R1012:0007707: [14r/bet/17.8-[2173]]
        06R0002:0000209 x 06R0002:0000203
          10R205:S0000815 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
```

```
10R205:S0007004 x 10R1235:0016705          10R1235:0016705: [10r/gimmel/8.8-[16]]
10R205:S0007005 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
10R305:W0004514 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
10R305:W0005103 x 10R1235:0016705          10R1235:0016705: [10r/gimmel/8.8-[16]]
10R305:W0010518 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
10R405:M0001007 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
10R405:M0005001 x 10R1235:0016710          10R1235:0016710: [10r/gimmel/8.8-[17]]
10R405:M0005013 x 10R1235:0016705          10R1235:0016705: [10r/gimmel/8.8-[16]]
```