EQF-Note 2016-10-16

Background for these notes is:
Chris van Tienhoven: Encyclopedia of Quadri-Figures
http://www.chrisvantienhoven.nl/

Cubics of Generalized Cyclologic Centers

Generalized cyclologic centers are defined by Tsihong Lau
https://groups.yahoo.com/neo/groups/AdvancedPlaneGeo
metry/conversations/messages/3275
here reduced to a starting constellation of two cyclologic triangles and their cyclologic centers. Then the generalized cyclologic centers give a cubic (see #1988), here reduced to perspective cyclologic QA-triple triangles (see QA-Tr-4). There are triples of pairwise perspective QA-triple triangles with the same cubic of generalized cyclologic centers. Two examples are already described in #1988 and #1990, here a third one is researched.

2. Example

X1X2X3   QA-triple triangle of QG-P1
Y1Y2Y3   QA-triple triangle of QG-P18
Z1Z2Z3   QA-triple triangle of QG-P19
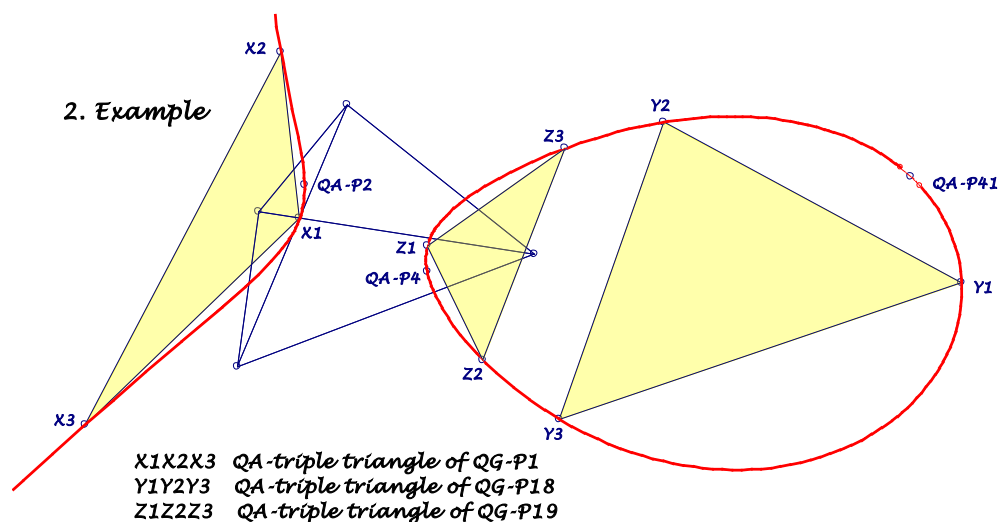
The cubic of generalized cyclologic centers shall be shortened by *CGCC*.

1. Example (see #1988 and #1989)
    The *QA*-triple triangles of *QG-P1, QL-P1, QG-P16*
    … have pairwise the same cubic *QA-Cu1* as *CGCC*.

2. Example (see #1990, #1991 and #1992)
    The *QA*-triple triangles of *QG-P1, QG-P18, QG-P19*
    … have pairwise the same cubic *QA-Cu7* as *CGCC*.
    This cubic is *QL-Cu1* for the quadrilateral of the *QA*-triple triangle of *QG-P18* and the perspective line of the three *QA*-triple triangles.

3. Example
   In the table *QA-Tr-4* there remains only one pair of perspective cyclologic *QA*-triple triangles wrt *QG-P5* and *QL-P1*.
   If we define a new *QG*-point *QG-Px*, we can consider a third *QA*-triple triangle:

Let *QG-Px* be the image of the Miquel point *QL-P1* wrt the Möbius transformation, centered in *QA-P3* and swapping *QA-P4* and *QA-P9*.

The *QA*-triple triangles of *QG-P5, QL-P1, QG-Px*
… have pairwise the same cubic *QA-Cux* as *CGCC*.
This *CGCC* is *QL-Cu1* for the quadrilateral of the Miquel triangle *QA-Tr2* and the perspective line of the three *QA*-triple triangles.

3. Example

X1X2X3   QA-triple triangle for QL-P1
Y1Y2Y3   QA-triple triangle for QG-P5
Z1Z2Z3   QA-triple triangle for QG-Px

common perspective line
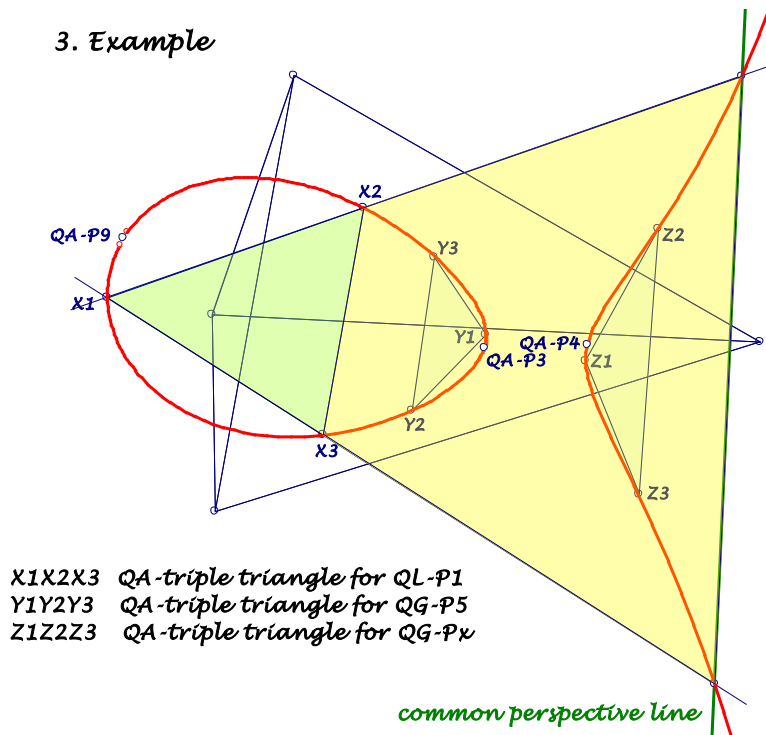
This *CGCC* is a nonpivotal isogonal circular cubic wrt the Miquel triangle.

Final remark:
   The three *QG-Px* for a quadrilateral are collinear. The line bears *CSC(QL-P17)* and is orthogonal to *QL-P26.CSC(QL-P17)*.

Eckart Schmidt
http://eckartschmidt.de
eckart_schmidt@t-online.de