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Theorem. Consider a point $P$ in the sameCon plane as $\triangle A B C$ such that $P$ and its isogonal conjugate $P^{\prime}$ are different finite points. Let $\triangle A_{1} B_{1} C_{1}, \triangle A_{1}^{\prime} B_{1}^{\prime} C_{1}^{\prime}$ be respectively the pedal triangle of $P$ and $P^{\prime}$. Let $A_{2}$ be the point, other than A, that circles $\left(A A_{1} A_{1}^{\prime}\right)$ and $(A B C)$ intersect and define $B_{2}, C_{2}$ cyclically. Let $A_{3}=B B_{2} \cap C C_{2}, B_{3}=C C_{2} \cap A A_{2}, C_{3}=A A_{2} \cap B B_{2}$.

Then $\triangle A_{3} B_{3} C_{3}$ and $\triangle A B C$ are perspective.


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