$$AF + BD + CE = s\left[1 + \frac{(a-b)(b-c)(c-a)}{abc}\right],$$

$$FB + DC + EA = s\left[1 - \frac{(a-b)(b-c)(c-a)}{abc}\right],$$

$$AF \cdot BD \cdot CE = FB \cdot DC \cdot EA = DE \cdot EF \cdot FD = abc \cos\alpha \cos\beta \cos\gamma,$$

$$\frac{AF}{b} = \frac{EA}{c} = \frac{EF}{a} = \cos\alpha, \quad \frac{BD}{c} = \frac{FB}{a} = \frac{FD}{b} = \cos\beta, \quad \frac{CE}{a} = \frac{DC}{b} = \frac{DE}{c} = \cos\gamma,$$

$$\frac{AF}{FB} = \frac{\cot\alpha}{\cot\beta}, \qquad \frac{BD}{DC} = \frac{\cot\beta}{\cot\gamma}, \qquad \frac{CE}{EA} = \frac{\cot\gamma}{\cot\alpha},$$

$$EF = \frac{a(b^2+c^2-a^2)}{2bc} = a\cos\alpha, \qquad FD = \frac{b(c^2+a^2-b^2)}{2ca} = b\cos\beta,$$

$$DE = \frac{c(a^2+b^2-c^2)}{2ab} = c\cos\gamma,$$

$$DE + EF + FD = \frac{8\Delta^2}{abc} = \frac{abc}{2R^2} = \frac{2rs}{R} = \frac{2\Delta}{R},$$

$$[EFA] = \Delta\cos^2\alpha, \qquad [FDB] = \Delta\cos^2\beta, \qquad [DEC] = \Delta\cos^2\gamma,$$

$$AH = c\frac{\cos\alpha}{\sin\gamma} = 2R\cos\alpha, \qquad BH = a\frac{\cos\beta}{\sin\alpha} = 2R\cos\beta, \qquad CH = b\frac{\cos\gamma}{\sin\beta} = 2R\cos\gamma,$$

$$DH = b\cot\beta\cos\gamma = c\cot\gamma\cos\beta = 2R\cos\beta\cos\gamma,$$

$$EH = c\cot\gamma\cos\alpha = a\cot\alpha\cos\gamma = 2R\cos\gamma\cos\alpha,$$

$$FH = a\cot\alpha\cos\beta = b\cot\beta\cos\alpha = 2R\cos\alpha\cos\beta,$$

$$AH + BH + CH = 2(R+r),$$

$$DH + EH + FH = \frac{s^2 - 4R^2 + r^2}{2R},$$

$$[HBC] = \frac{ab}{2}\cot\beta\cos\gamma = \frac{ca}{2}\cot\gamma\cos\beta = aR\cos\beta\cos\gamma,$$

$$[HCA] = \frac{bc}{2}\cot\gamma\cos\alpha = \frac{ab}{2}\cot\alpha\cos\gamma = bR\cos\gamma\cos\alpha,$$

$$[HAB] = \frac{ca}{2}\cot\alpha\cos\beta = \frac{bc}{2}\cot\beta\cos\alpha = cR\cos\alpha\cos\beta.$$

(Wird fortgesetzt.)