These lead to the changes

$$\dot{L}_1 \;\mapsto\; \dot{L}_1 - \left(\frac{1}{6\pi\mu a_2} - \frac{1}{4\pi\mu L_1}\right) F, \tag{5.41}$$

$$\dot{L}_2 \;\mapsto\; \dot{L}_2 - \left(\frac{1}{4\pi\mu L_2} - \frac{1}{6\pi\mu a_2}\right) F, \tag{5.42}$$

in Eq. (B.1), which together with correction coming from Eq. (5.40) leads to the average swimming velocity

$$\overline{V}(F) = \overline{V_0} + \frac{F}{18\pi\mu a_R}, \tag{5.43}$$