Some remarks and questions for discussion:

A) Momentum considerations:

Momentum and wavelength of photon:

$$p=\hbar\omega/c=h\,f\,/c=h/\lambda$$
$$\lambda=c/\,f=h/\,p \tag{1}$$

De-Broglie wavelength, generalized for all particles with momentum:

$$\lambda=h/\,p \tag{2}$$

Momentum and wavelength of massive particle, relativistic, p.e. electron:

$$p_e=\gamma\, m_e\, v_e$$
$$\lambda_e=h/\,p_e \tag{3}$$

Momenta for above formula (1):

$$\gamma_p m_p v_p+\gamma_e m_e v_e=\gamma_p{}' m_p v_p{}'+\gamma_e{}' m_e v_e{}' \tag{4}$$

Consider the case where the electron rests before the collision and then the photon is stopped:

$$\gamma_p m_p v_p+0=0+\gamma_e{}' m_e v_e{}' \tag{5}$$

If

$$m_p=m_e \tag{6}$$

then

$$\gamma_p v_p=\gamma_e{}' m_e v_e{}'$$
$$v_p=v_e{}' \tag{7}$$

for free electrons. This result suggests, the electron has the same speed as the photon before. With a non-vanishing binding energy, the speed should be somewhat lesser, but always incredible high yet. In the standard physics, the acceleration of an electron to so high speeds is very complicated. But here is this so easy? Can we do an experiment for to demonstrate this possibility?

B) If the photon rest mass is not smaller then the electron rest mass, in the Compton scattering no backscattering should occur. Is this not a contradiction to the experimental results?

C) Same procedure as in 244(5), but with another electrically charged fermion 'x' instead of the electron:
Same as eq. (1) above:

$$\gamma_p m_p c^2+m_x c^2=\gamma_p{}' m_p c^2+\gamma_x{}' m_x c^2 \tag{1}$$

with $\gamma_x{}', m_x$ = relativistic mass increase and rest mass for particle 'x', as above.

Also as above, eq. (6): If:

$$\omega_p=\omega_x{}' \tag{2}$$

Then follows

$$m_p = m_x \tag{3}$$

i.e. the mass of the photon and particle 'x' are the same and all the energy of the photon is transferred to the particle 'x'.

How can this happen? It looks like the assumption eq.(6 above, 2 here) forces artificially the equality of the masses.