Supplementary Information

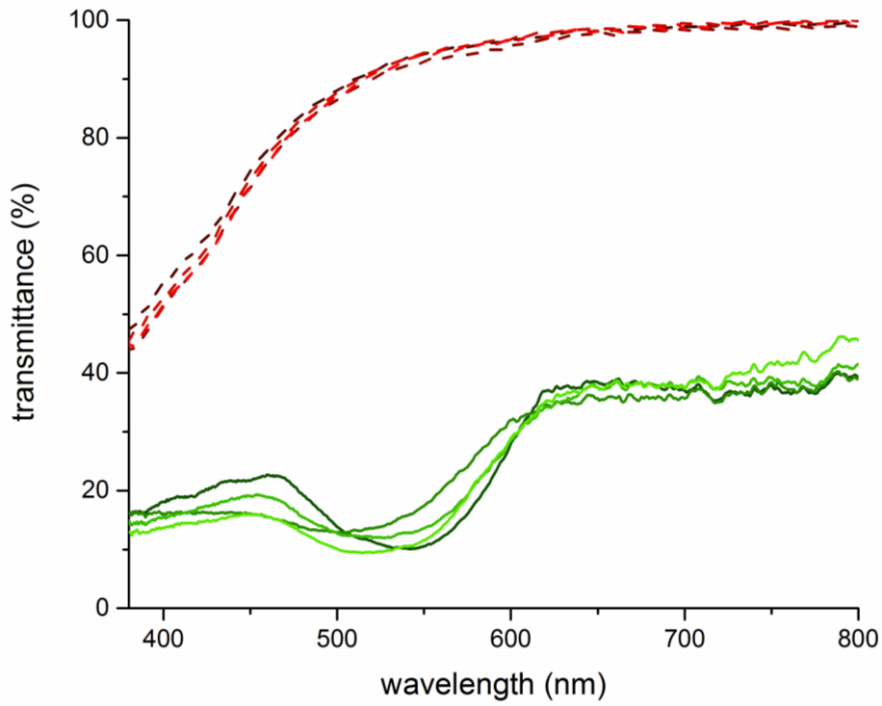

Figure S1: Transmittance spectra of single wing scales in air (solid lines) and immersed in a refractive index fluid with n = 1.55 (dashed lines). The strong absorption at UV wavelengths indicates the presence of a wavelength-selective absorbing pigment. The transmittance through at ~540 nm for the air-immersed scales show the photonic response of the nanostructure present in the scales (Figure 2).

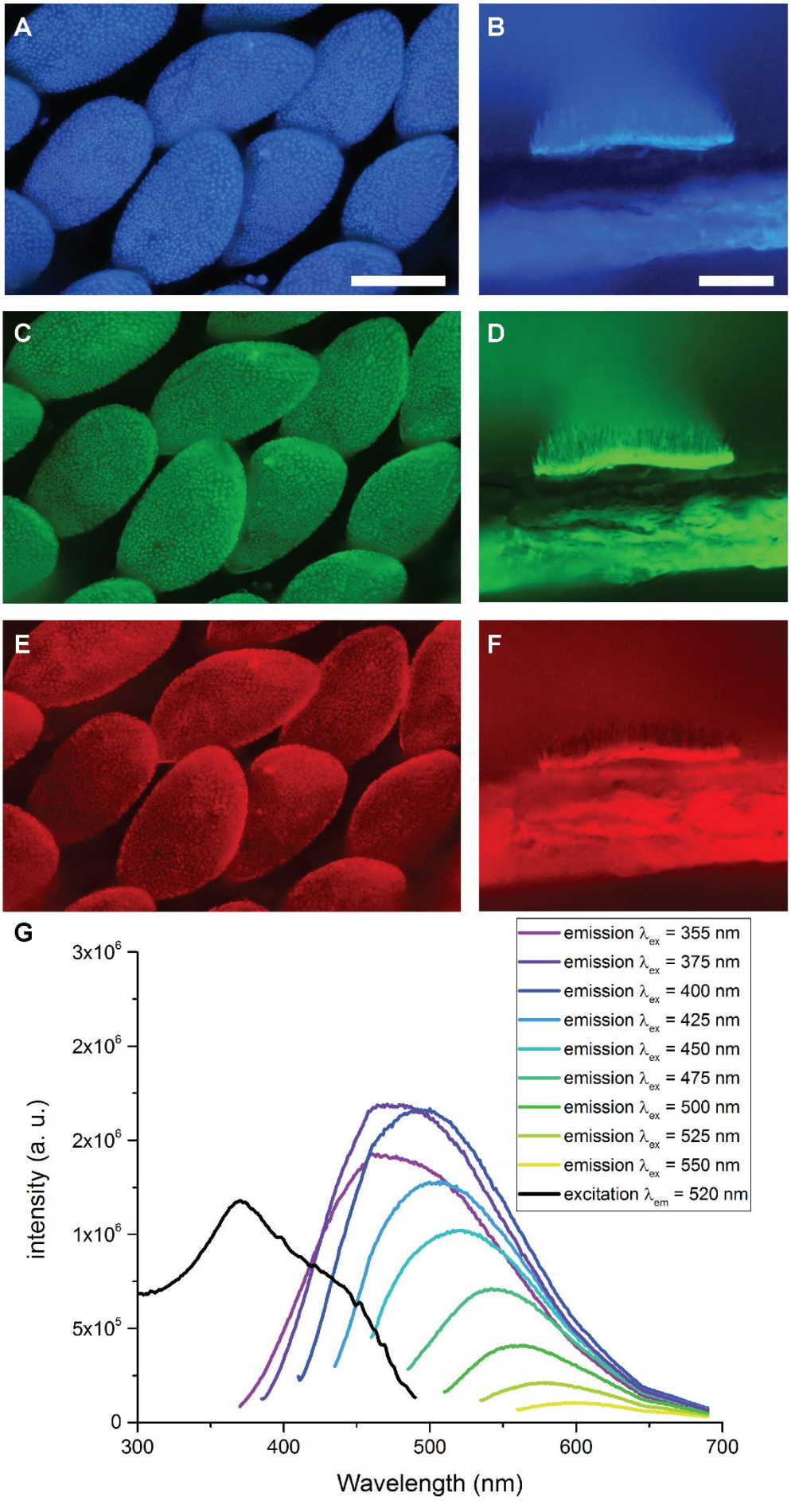

Figure S2: Fluorescence microscopy of *H. argentea* scales in (A,C,E) top-view and (B,D,F) for the cross-section of a single scale. The different panels show (A,B) UV-induced blue fluorescence (excitation 330-380 nm / cut-off 420 nm), (C,D) blue-induced green fluorescence (excitation 450-480 nm / cut-off 515 nm), and (E,F) green-induced red fluorescence channel (excitation 510-550 nm / cut-off 590 nm), respectively. Scale bars: (A,C,E) 50 um, (B,D,F) 20 um. (G) Spectrofluorimetric characterisation. The emission (colour solid lines) and the excitation (black solid line) of the sample are plotted. For emission measurements, the excitation wavelength was varied from 355 to 550 nm. The excitation measurement was carried out with a fixed emission wavelength of 520 nm.

Figure S3: Different *Hoplia argentea* specimen with different degrees of missing scales, resulting in a shift from the green to brown colour. Scale bar: 2 mm.

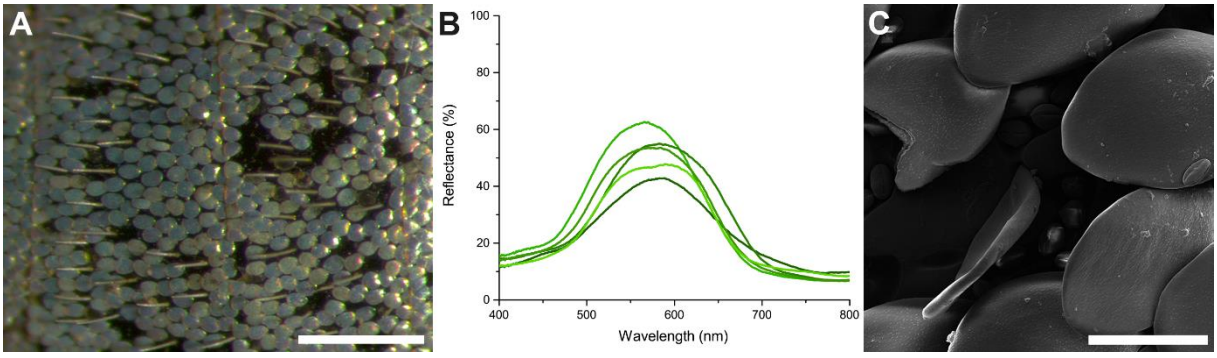

Figure S4: (A) Ventral side of *Hoplia argentea*. (B) Reflectance spectra of scales from the ventral side. (C) SEM of the ventral side scales. We note the absence of filaments. Scale bars: (A) 500 µm, (C) 50 µm.