Laboratorio número 4-Petrología Ígnea y Metamórfica

ROCAS PIROCLÁSTICAS

Formación

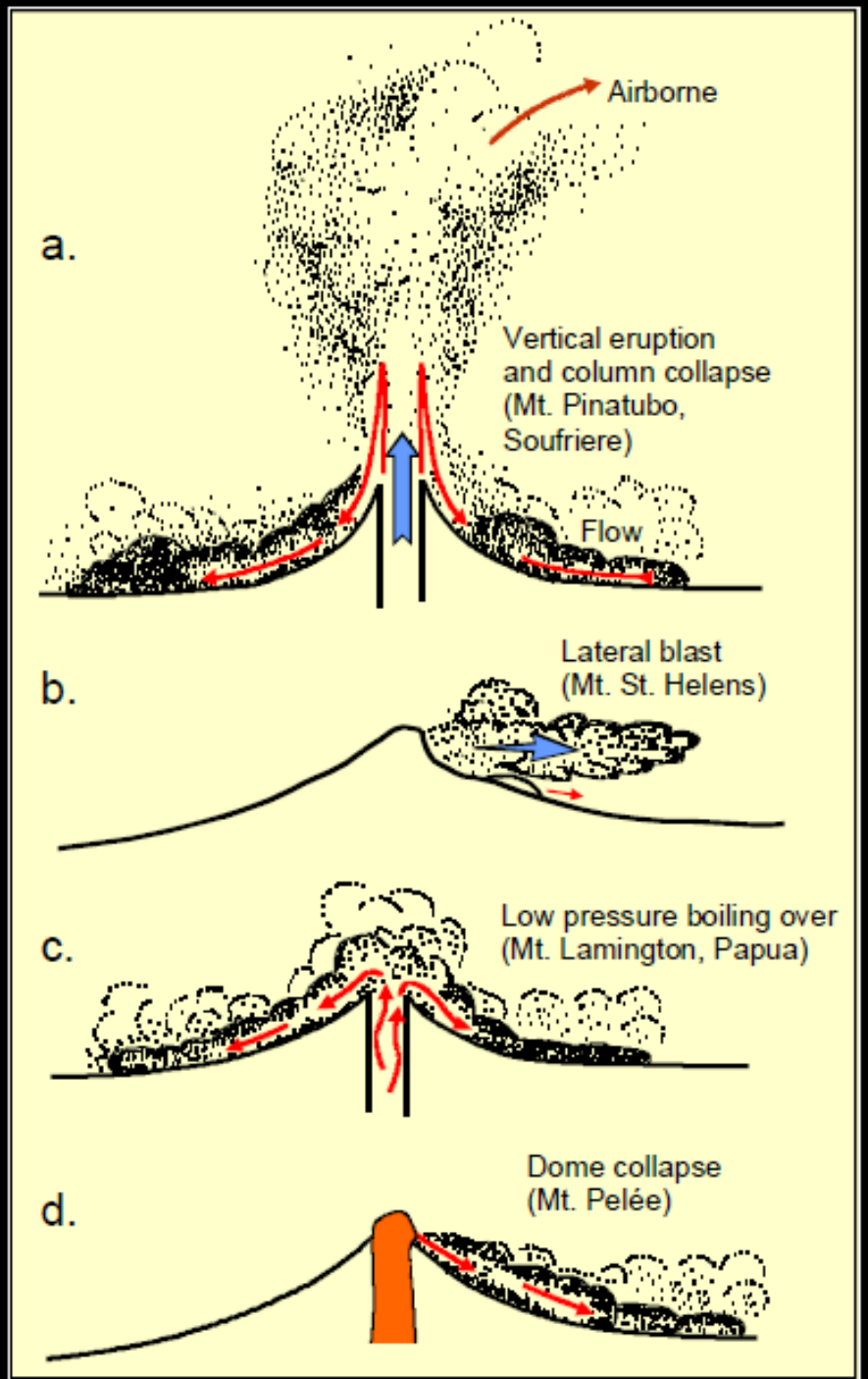
Erupciones explosivas y posterior depositación de material

Ukinrek, Alaska (1977) -- Ukinrek is located in the Bering Sea lowland, about 1.5 km south of Becharof Lake. The violent 1977 eruption lasted 12 days and generated two magnificent maars. *Courtsey of USGS.*

Tipos de mecanismos de generación de flujos piroclasticos.

After MacDonald (1972), Volcanoes. Prentice-Hall, Inc., Fisher and Schminke (1984), Pyroclastic Rocks. Springer-Verlag. Berlin.

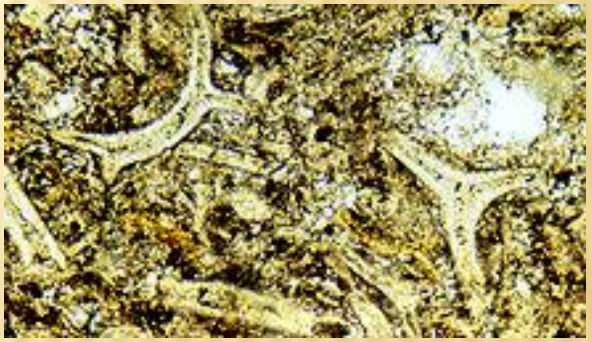
a. collapse of a vertical explosive or plinian column that falls back to earth, and continues to travel along the ground surface. **b.** Lateral blast, such as occurred at Mt. St. Helens in 1980. **c.** "Boiling-over" of a highly gas-charged magma from a vent. **d.** Gravitational collapse of a hot dome (Fig. 4-18d).



FORMAS DE IDENTIFICACIÓN

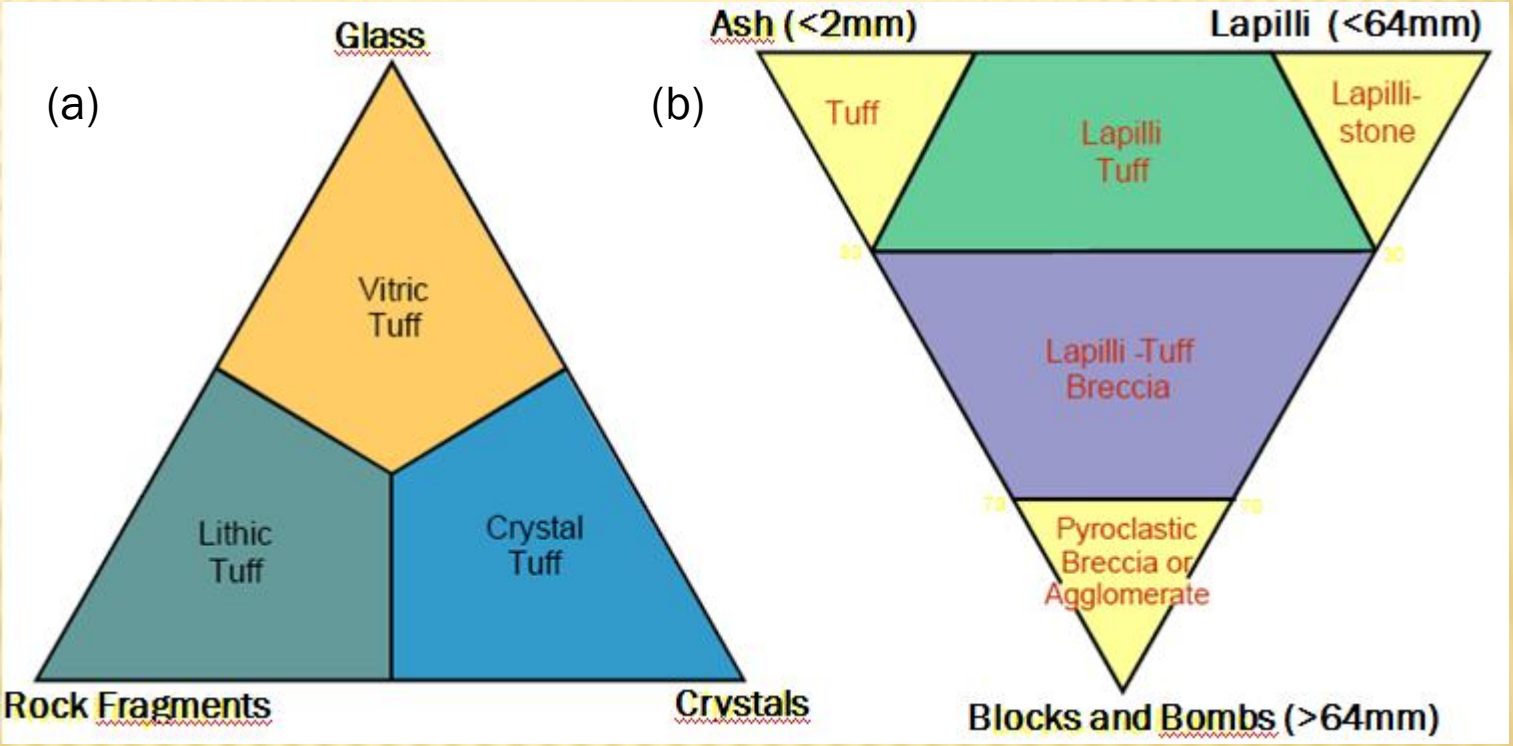
- Fragmentos líticos
  - Juveniles
  - Accesorios
  - Accidentales

- Minerales Fragmentados



- Esquirlas
- Fiammes

Clasificación Rocas Piroclásticas



Classification of the pyroclastic rocks. **a.** Based on type of material. After Pettijohn (1975) *Sedimentary Rocks*, Harper & Row, and Schmid (1981) Geology, **9**, 40-43. **b.** Based on the size of the material. After Fisher (1966) Earth Sci. Rev., **1**, 287-298.

TEXTURAS

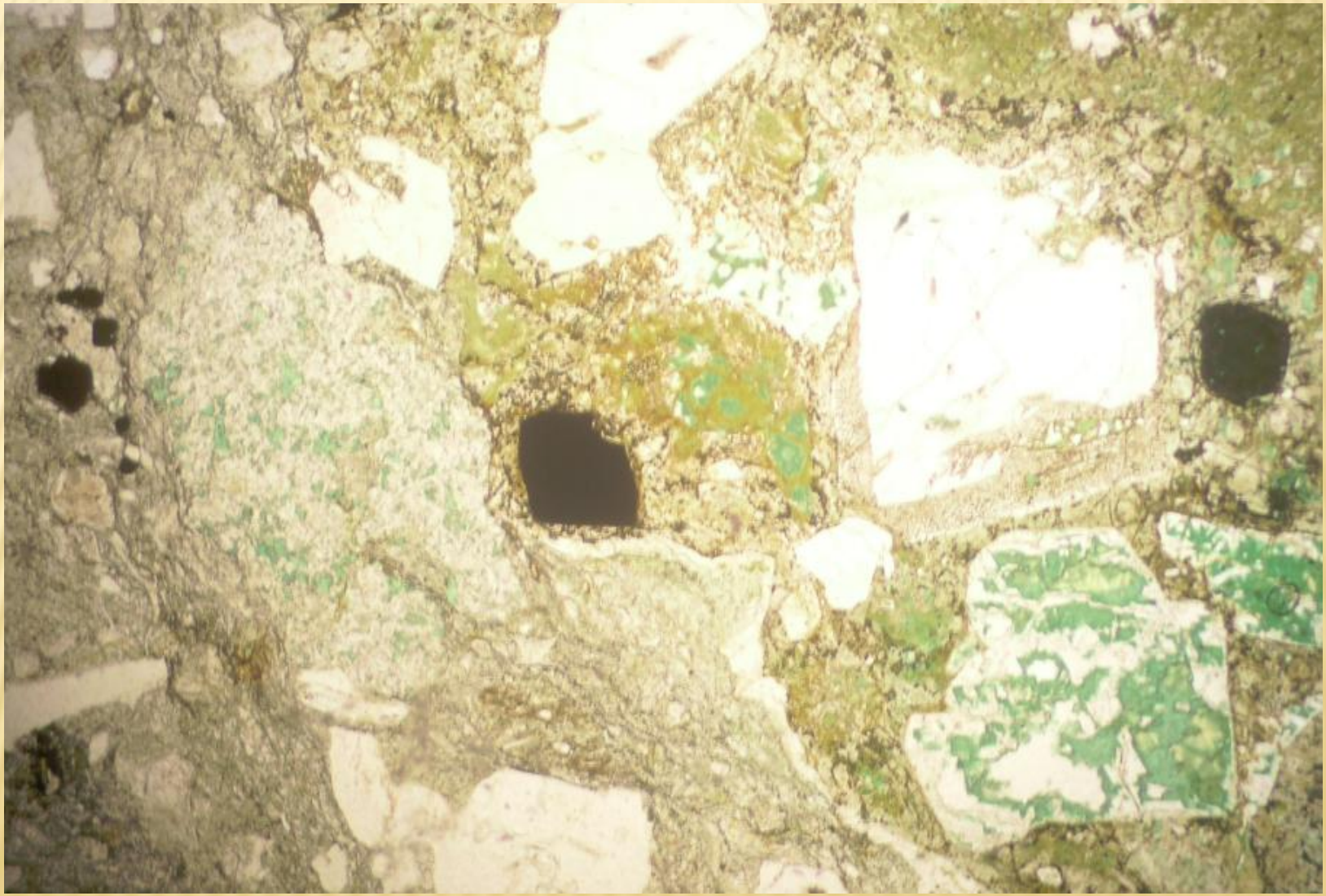
- Texturas típicas a encontrar en depósitos piroclásticos

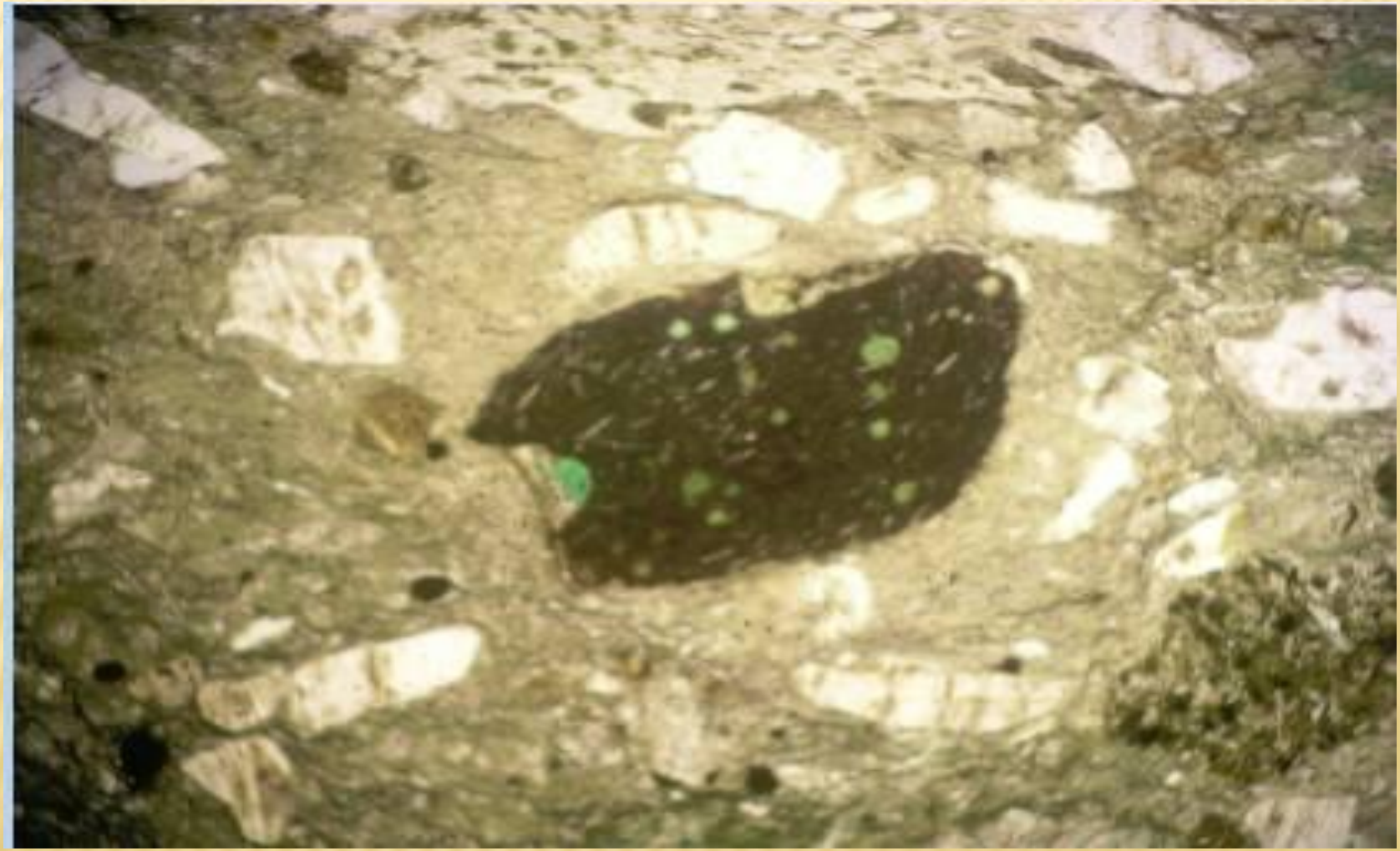
- ✓ Textura Fragmentada
- ✓ Textura Eutaxítica o Vitroclástica
- ✓ Textura Axiolítica

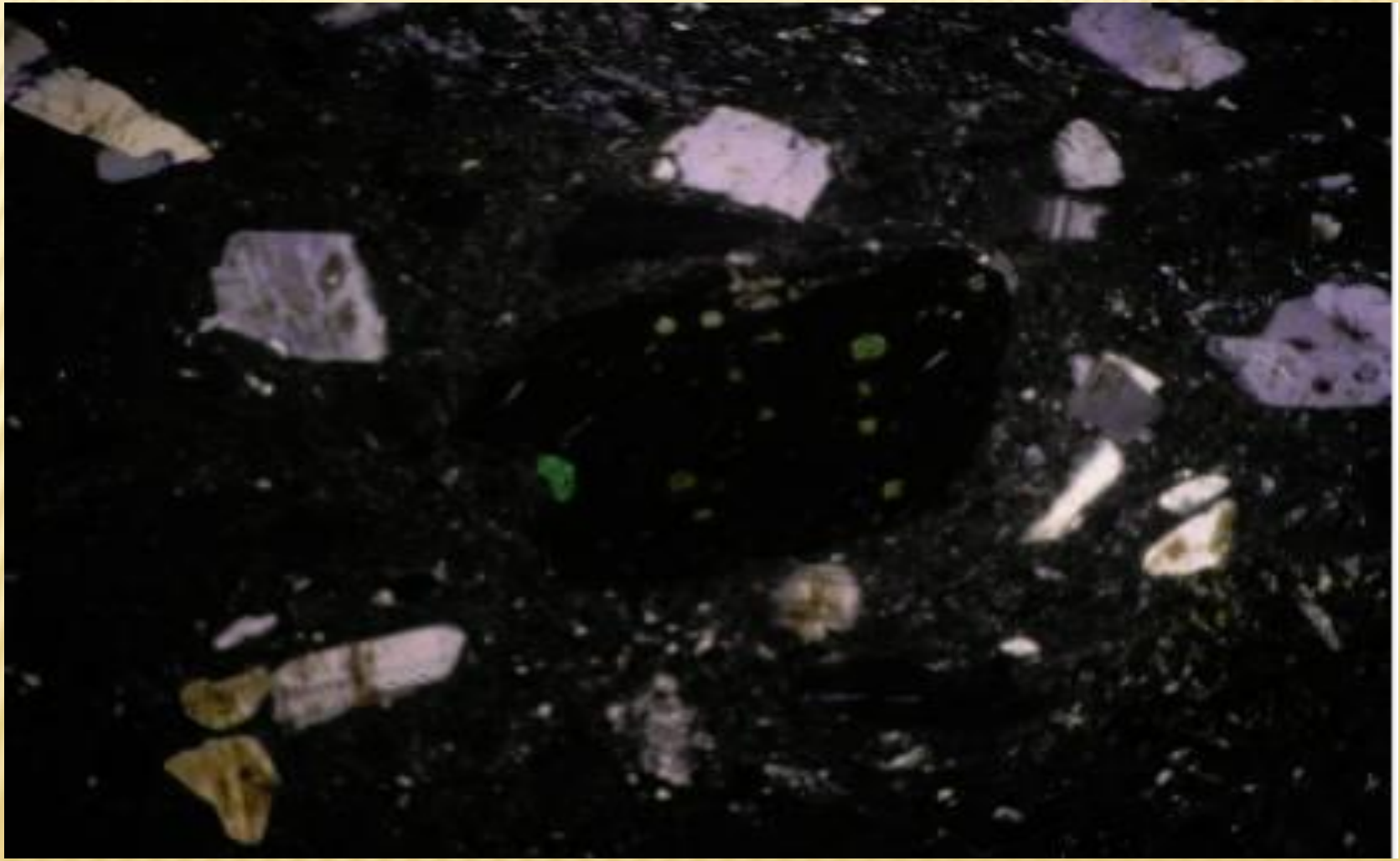
TEXTURA FRAGMENTADA

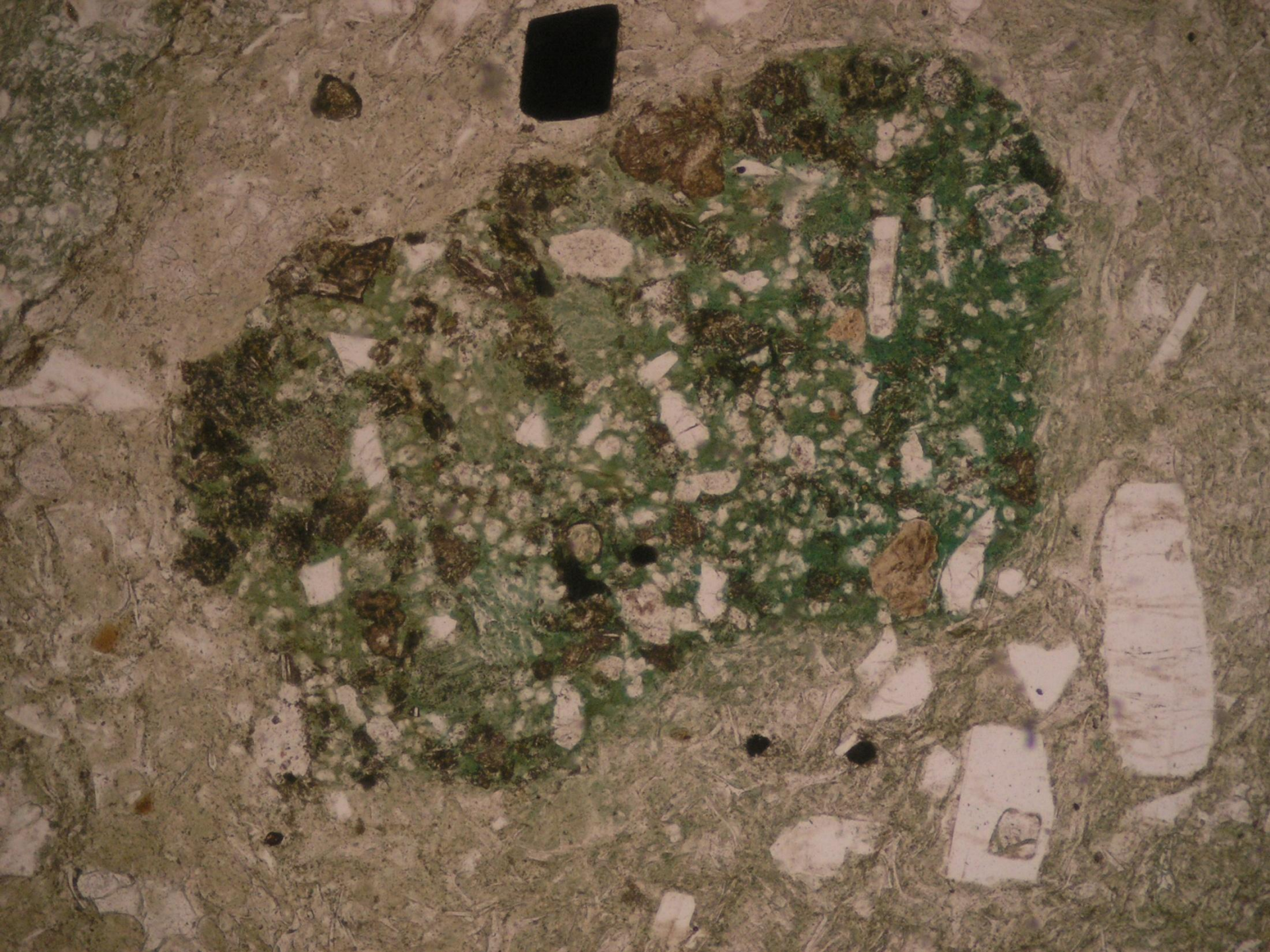
- Textura característica de rocas piroclásticas. Mezcla de fragmentos de rocas, cristales, fragmentos de estos y vidrio

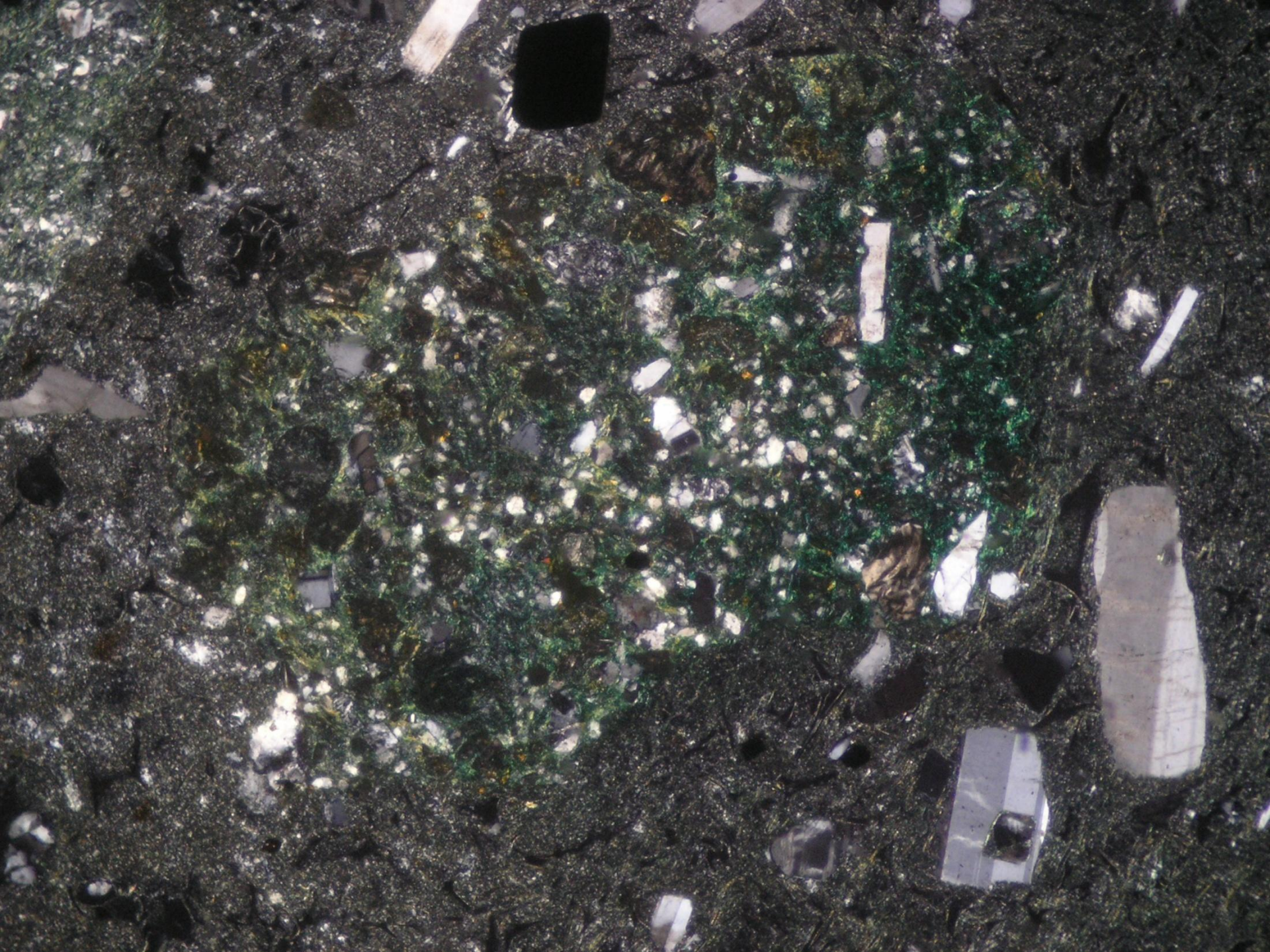
TEXTURA FRAGMENTADA

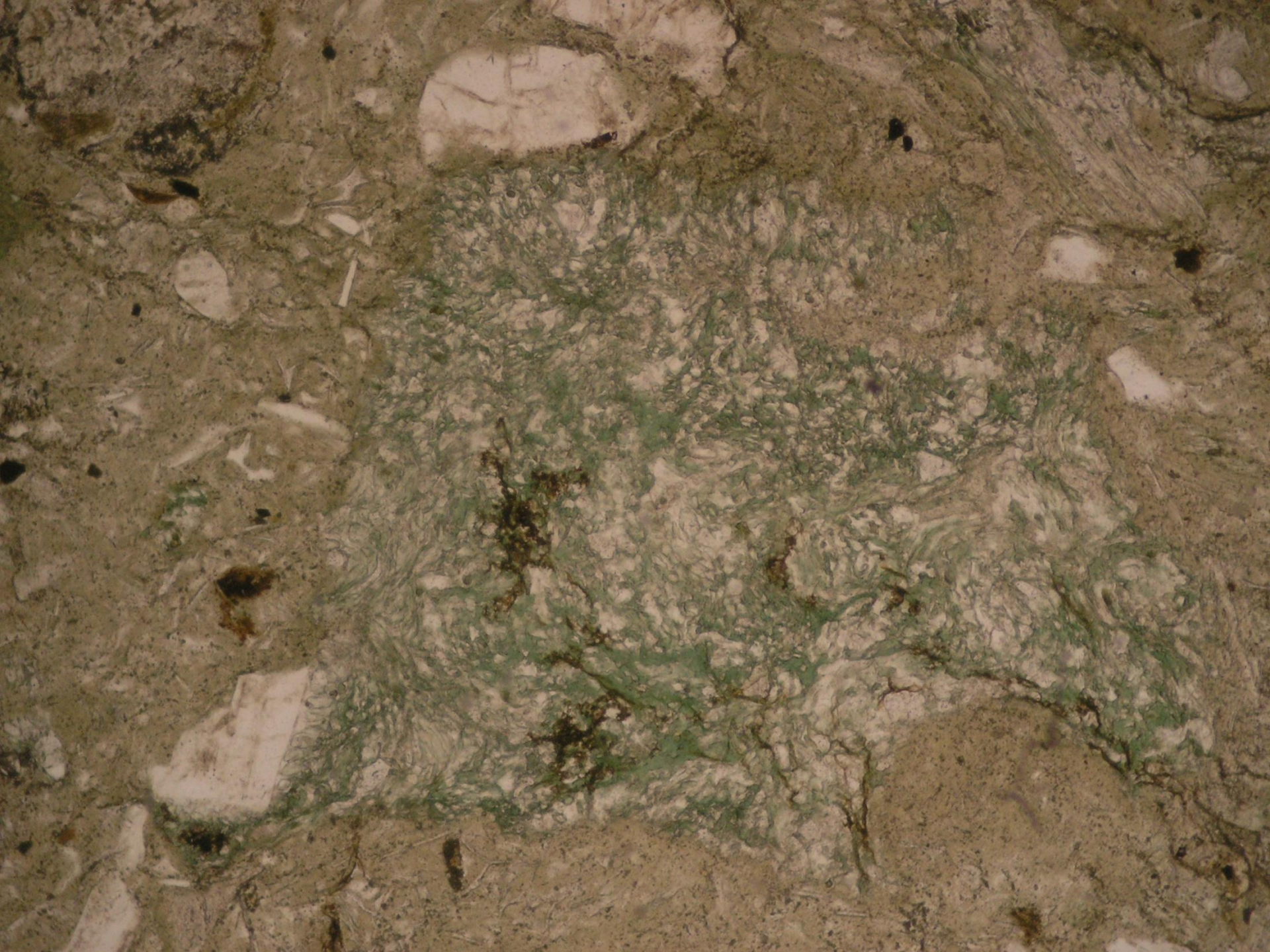


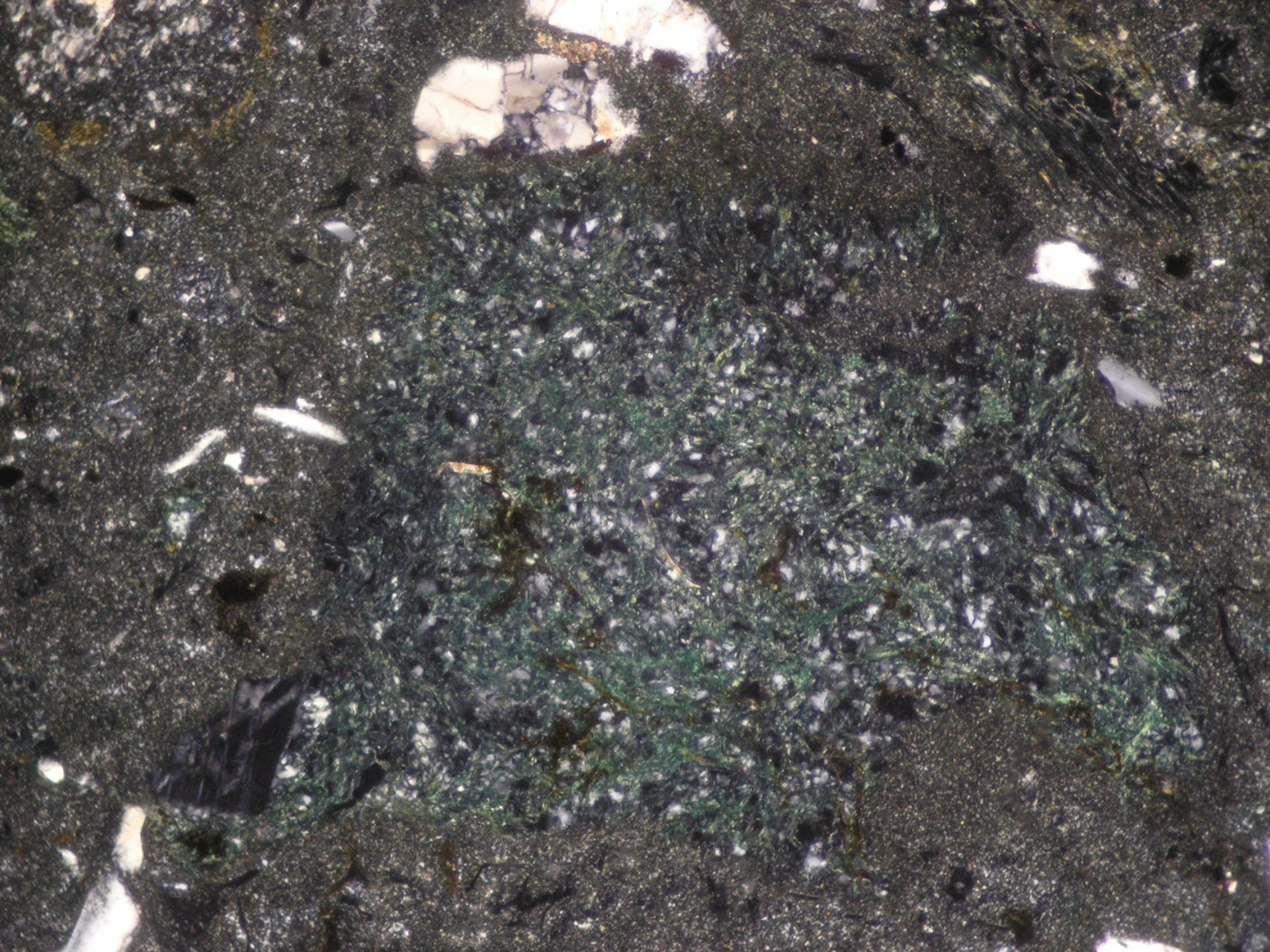










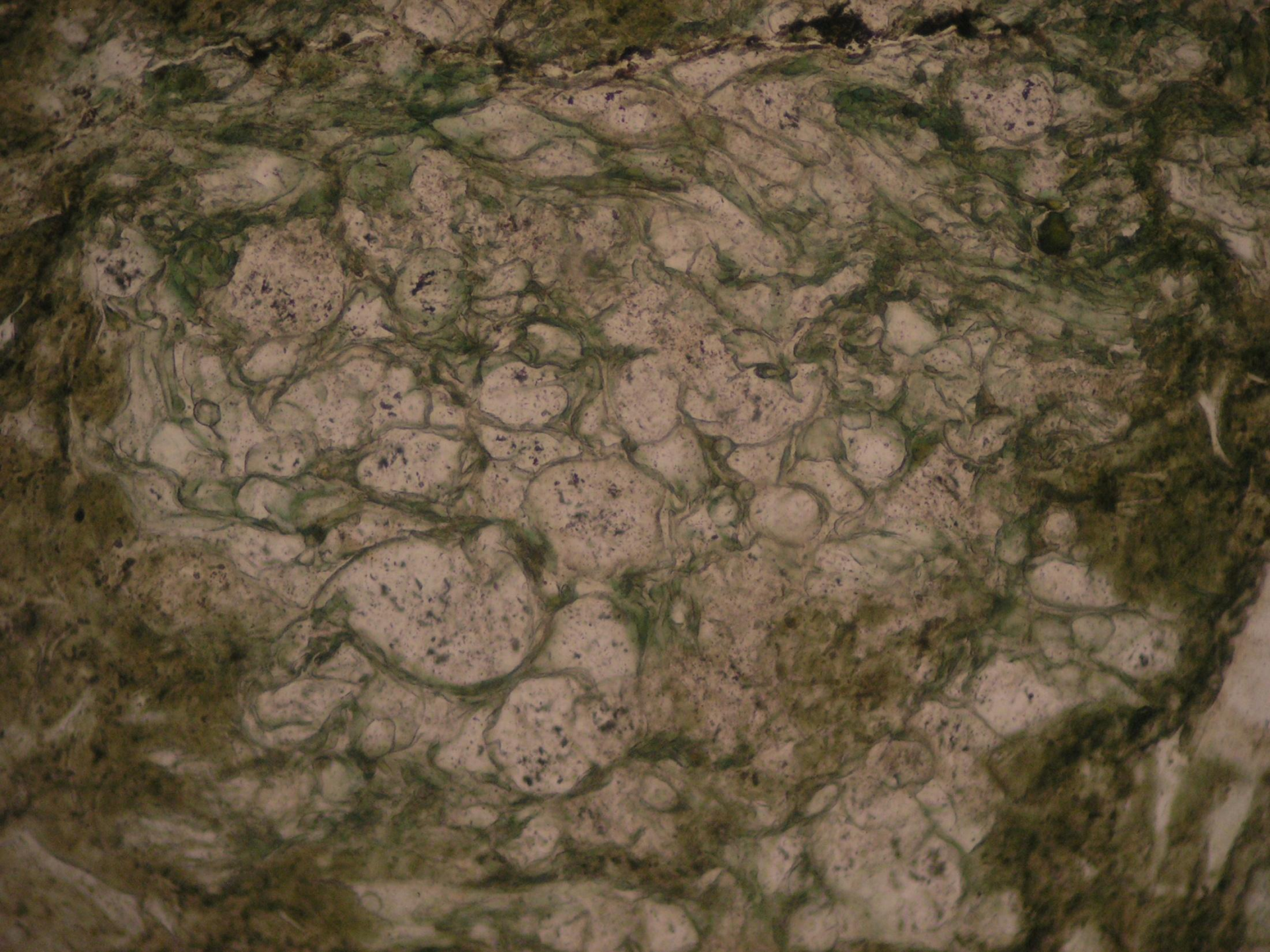


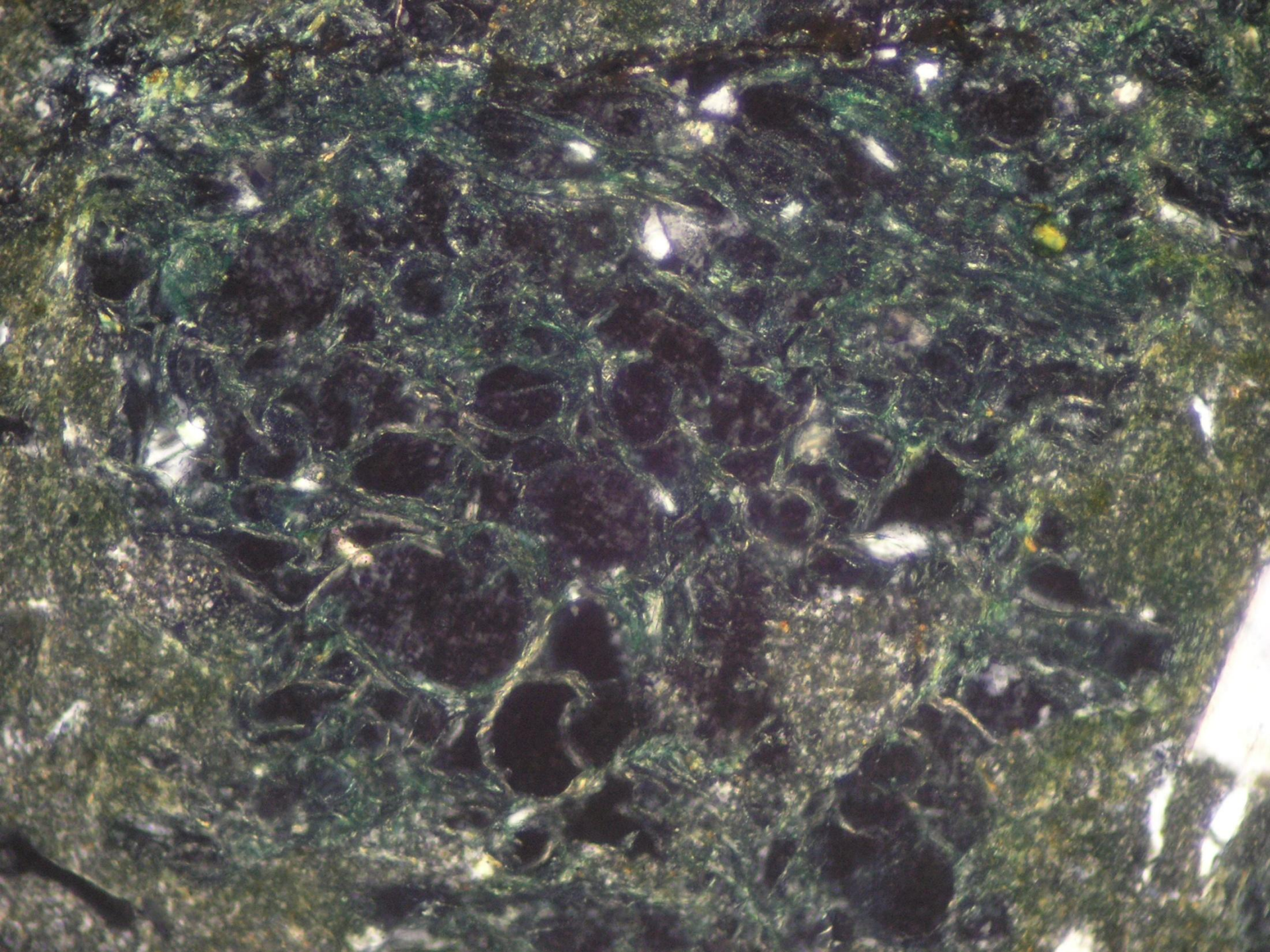
TEXTURA EUTAXÍTICA O VITROCLÁSTICA

- Formada por fragmentos de vidrio aplastados llamados fiammes.

TEXTURA EUTAXÍTICA O VITROCLÁSTICA

TEXTURA EUTAXÍTICA O VITROCLÁSTICA





TEXTURA AXIOLÍTICA

- Fibras radiales que emergen a través de un núcleo formadas por desvitrificación.

TEXTURA AXIOLÍTICA