

# REGIONAL GEOLOGICAL CONTROLS ON INTRUSION-RELATED MINERALIZATION NEAR THE GREEN BAY - LOBSTER COVE FAULT SYSTEM, CENTRAL NEWFOUNDLAND

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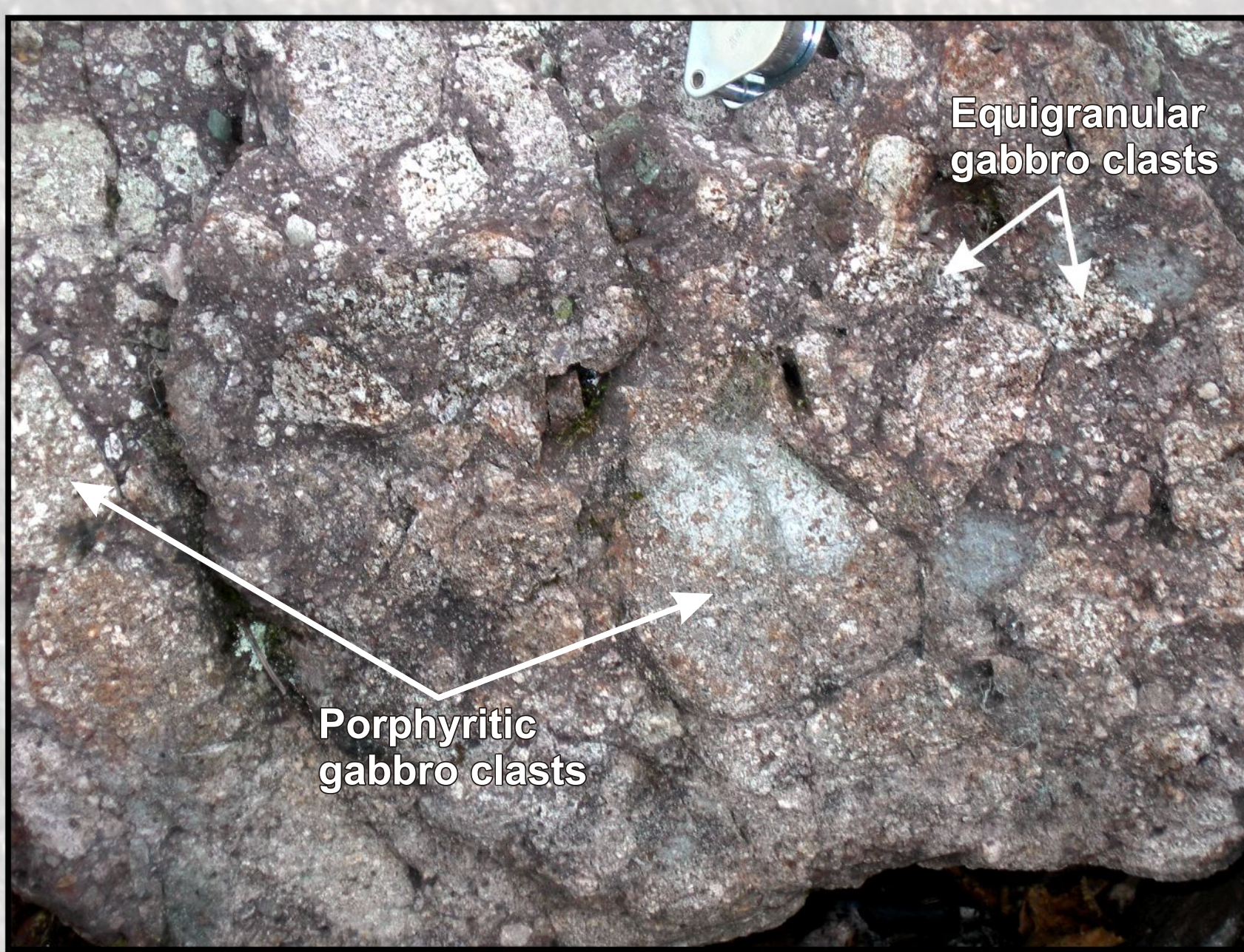
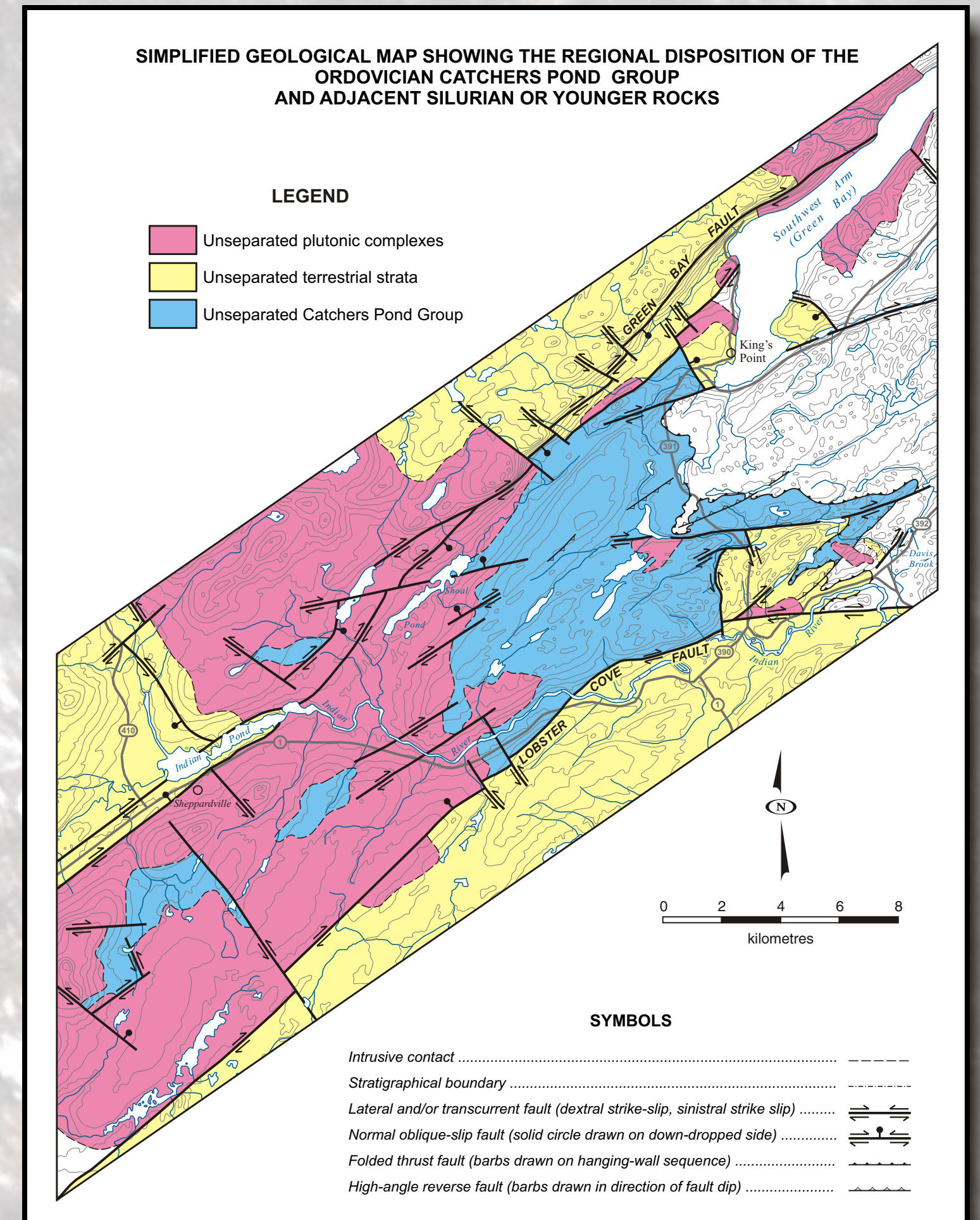
Whereas the Catchers Pond schist belt is syntectonically intruded by Early Silurian gold-bearing felsic and coeval mafic minor intrusions, the folded and weakly cleaved Silurian stratified rocks and the adjacent parts of the Catchers Pond Group are posttectonically intruded by copper-bearing diorite stocks and associated high-level microgranitic plutons. These major intrusions and later swarms of flow-layered felsic porphyries, tuffisites and sheeted mafic dykes were emplaced sequentially along strands of the Green Bay and Lobster Cove faults.

Northeast- and northwest-trending brittle faults locally offset the posttectonic plutons and their country rocks in most parts of this fault system. Tectonic movements related to these steeply-dipping conjugate structures produced gently plunging hematite slickenlines on the chalcopyrite-bearing quartz veins exposed at the White Horn Brook MODS showing near the Indian River. Cemented fault gouges or narrow cataclastite zones in carbonitized granodiorite and jasperitized granite are generally occupied by abundant mafic and felsic porphyritic dykes. South of Sheppardville, near the Jawbone Pond MODS showing, the structural contacts of chloritized diorite plutons are intruded by quartz-pyrite

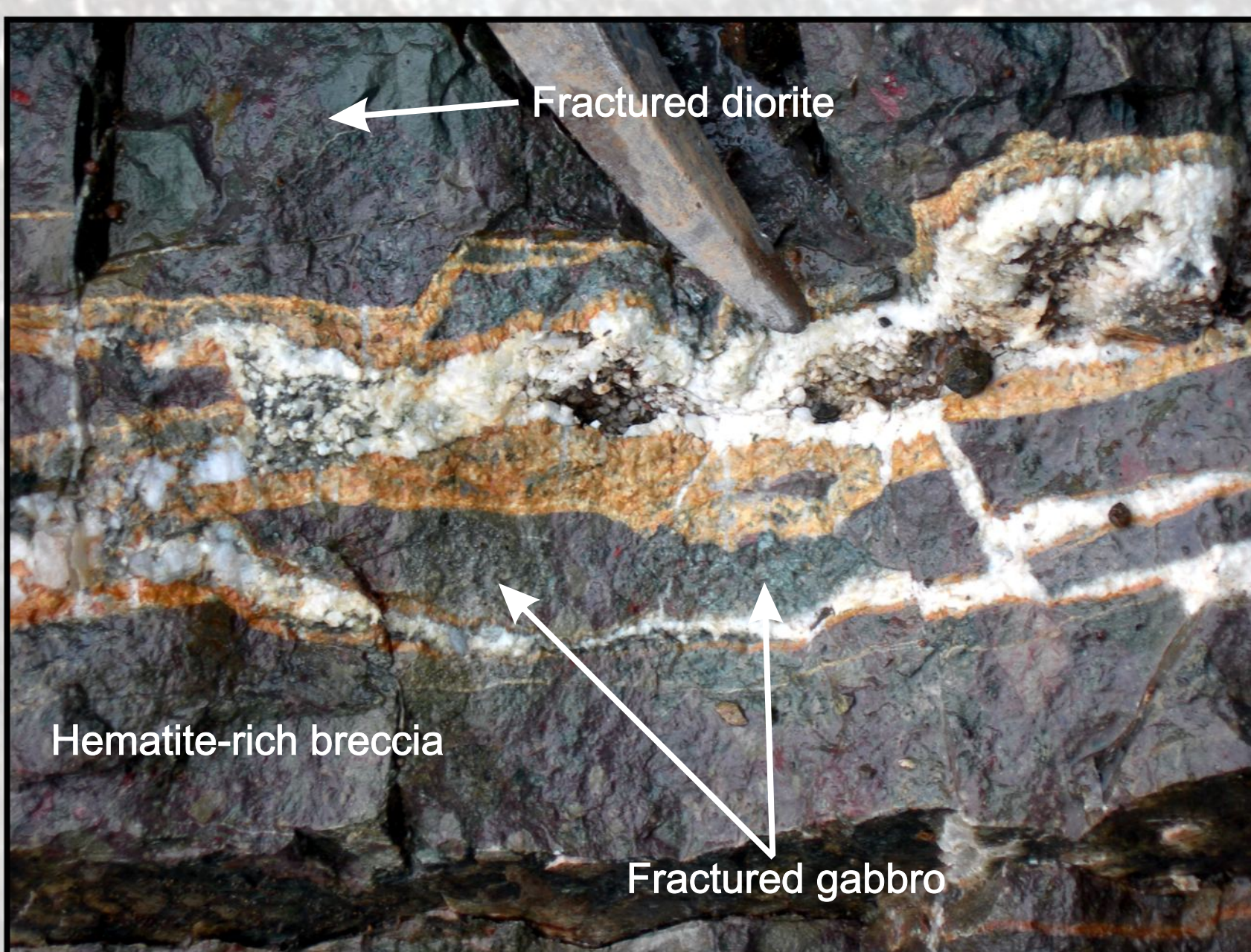
veins or injected by diabase dykes carrying chalcopyrite-filled amygdules.

Near Indian Pond, Davis Brook and King's Point, fault-bounded sequences of redbed conglomerate, historically considered to be Carboniferous in age, are marked by lithologically distinctive plutonic and volcanic clasts. Much of these conglomerates' extrusive detritus is texturally similar to that of rhyolite and basalt flows seen in the stratigraphically lower parts of the nearby Silurian volcanic units. However, some of the mafic and felsic intrusive detritus is postulated to have been sourced in posttectonic plutonic and hypabyssal rocks [e.g., E560061 N5484376] that crosscut regionally folded and tilted Silurian strata [e.g., E560672 N5485466].

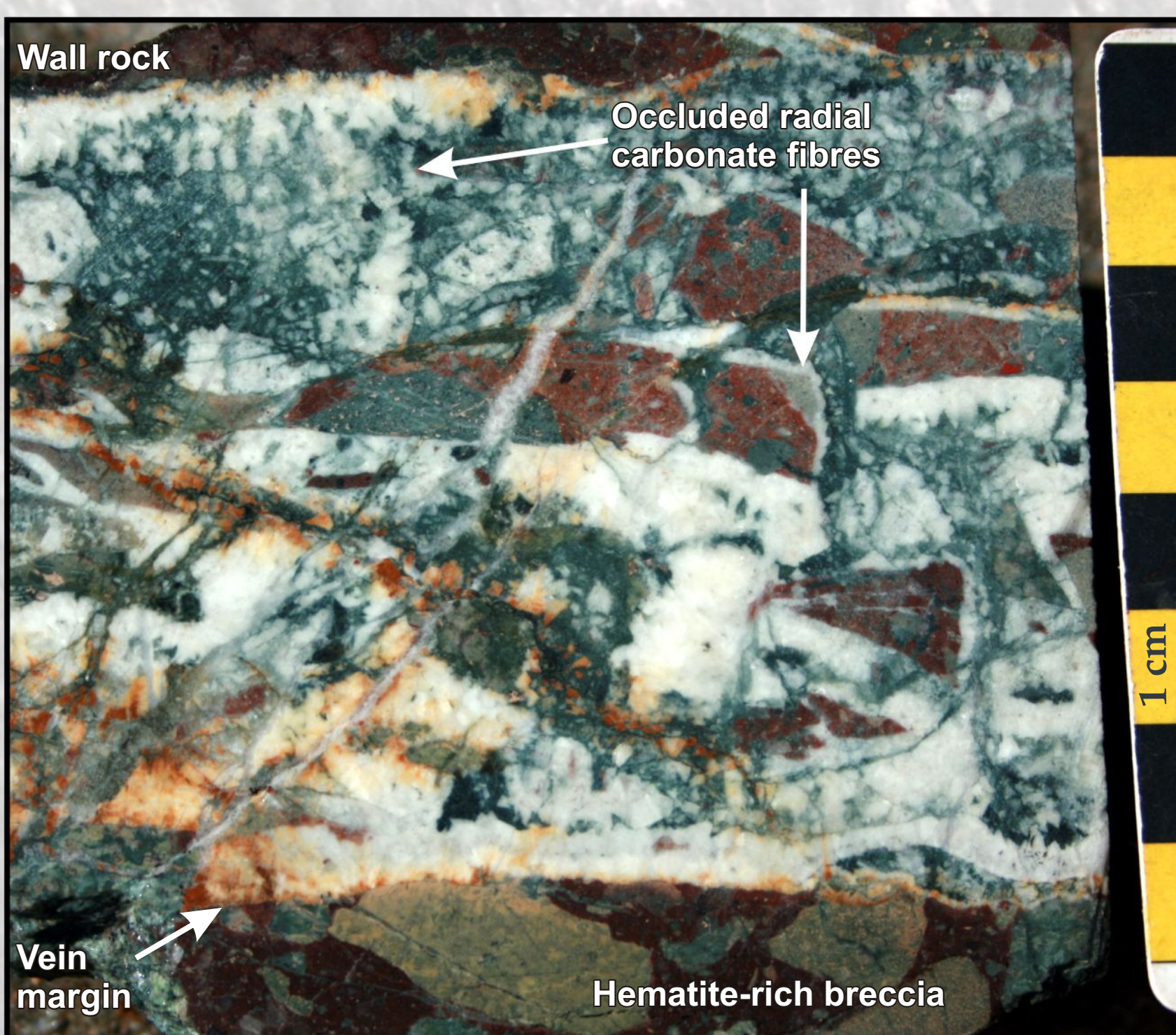
This type of exhumed plutonic clast, together with the reworked fragments of ignimbrite, autobrecciated hematitic basalt and aegirine-riebeckite-bearing tuff, contrasts these conglomerates with those observed within the interbedded sedimentary and volcanic strata of the Early Silurian terrestrial basins. It might suggest the presence of multiple overlap sequences that lie above the same Ordovician basement.



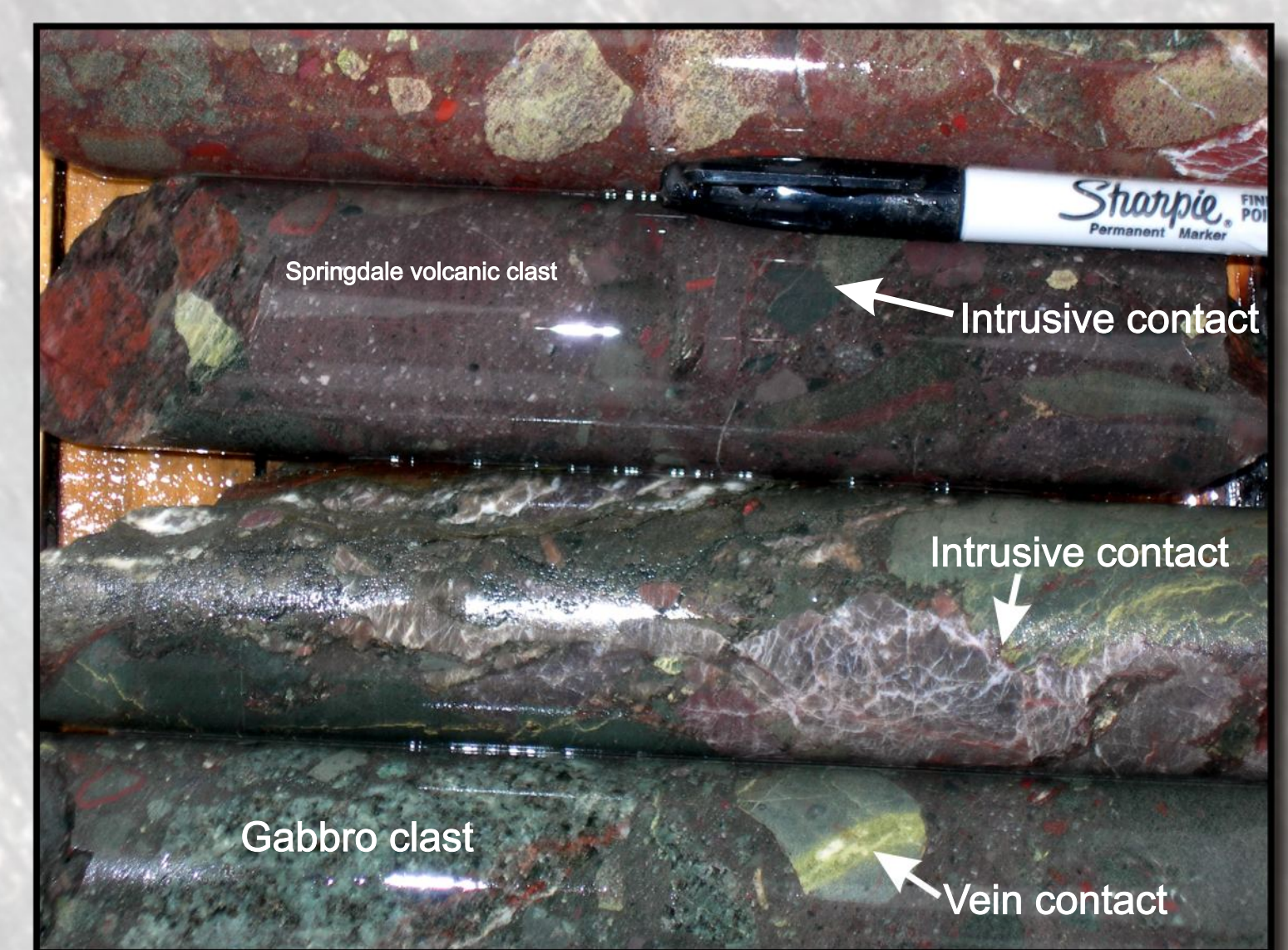
Monolithic conglomerate composed of gabbro clasts forms a locally developed regolith near a nonconformity separating paleo-weathered plutonic basement and undated sedimentary cover.



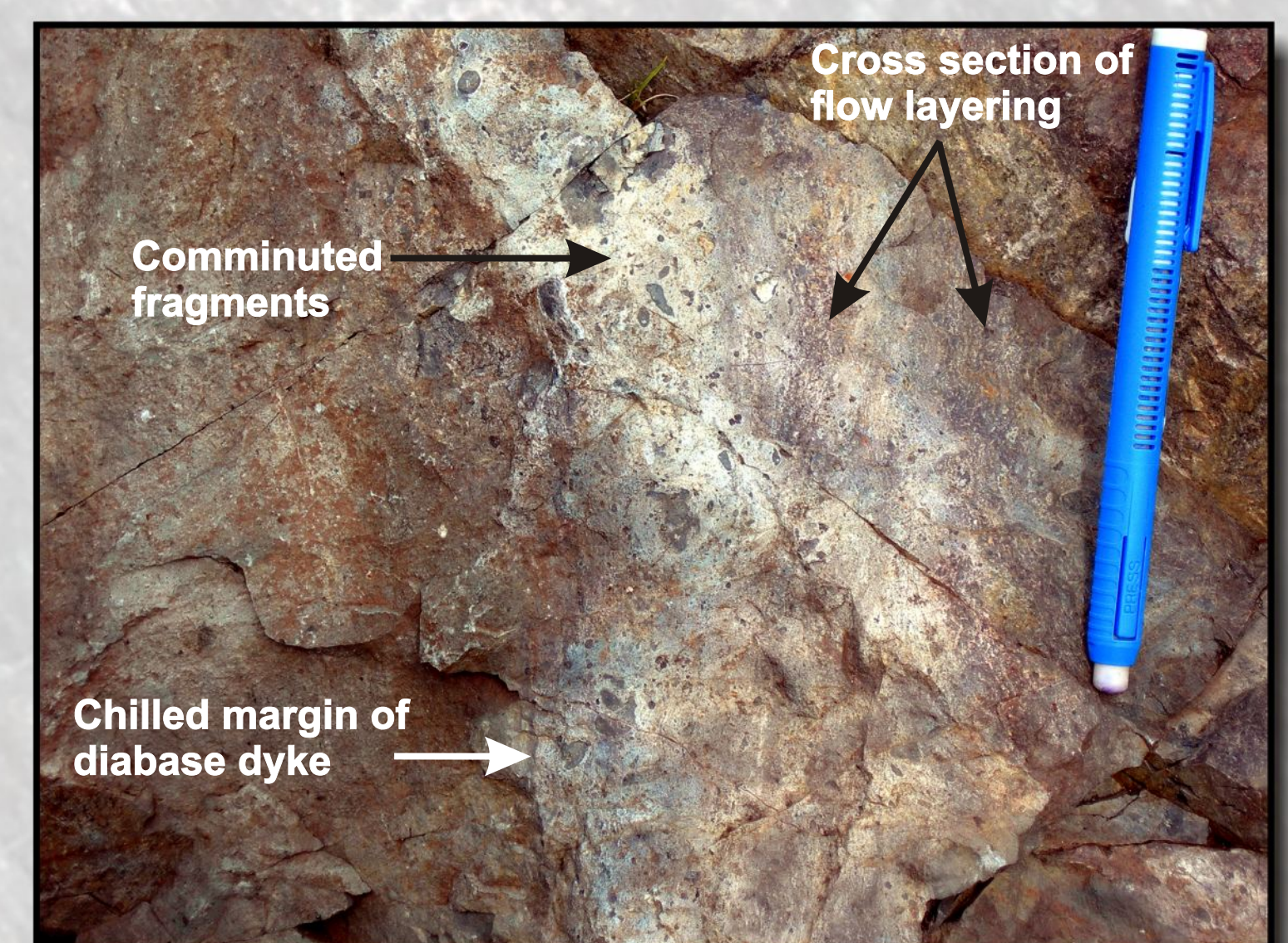
Zoned carbonate - quartz veins displaying a central cavity-fill texture intrude a fractured zone of hematite breccia developed in an unconformity-bounded body of gabbroic basement.



Jasperitized wall rock inclusions in a carbonate-quartz vein hosted by a hematite-rich breccia were occluded by fibrous carbonate and later brecciated in jigsaw-fit style.



Boundaries of mafic intrusions and their country rocks are preserved within altered and veined fragments in the basal sedimentary breccia near Davis Brook. Note also the presence of rounded volcanic clasts derived from the lower Springdale Group.



Variably-sized particles of iron carbonate-altered diorite were spalled from the wall rock of a mineralized tuffisite intrusion near the Indian River section of the Lobster Cove fault zone.

