COLOUR PLATES

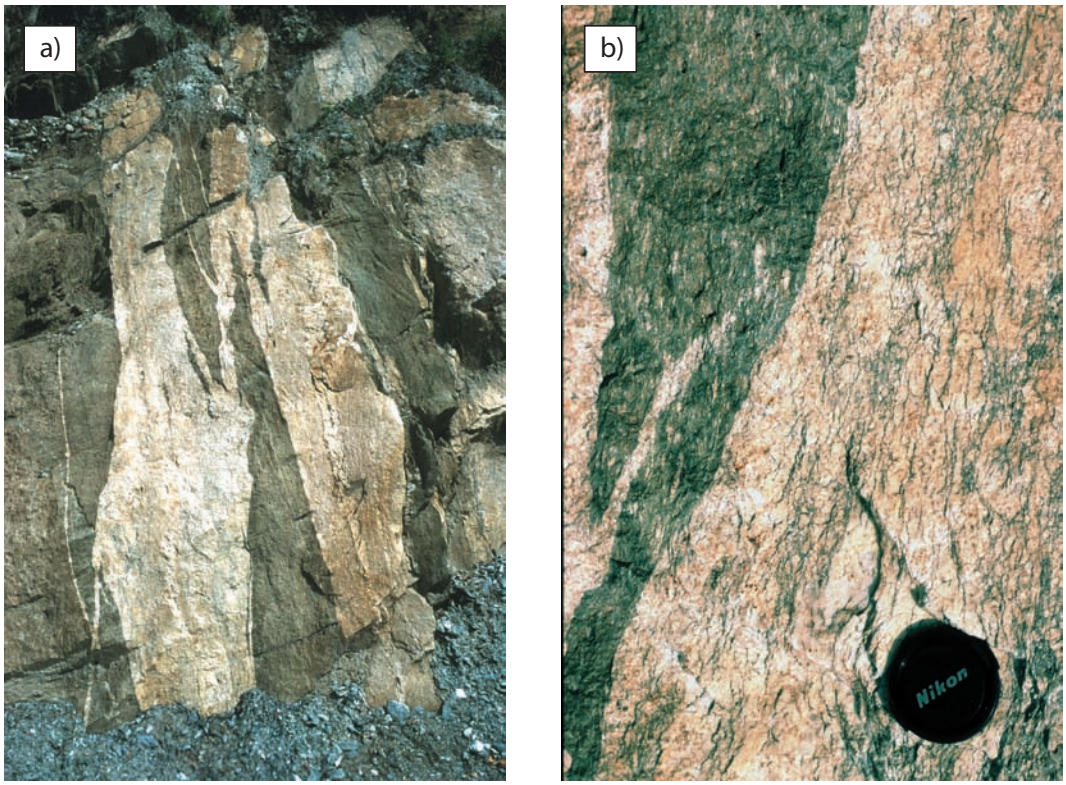

Plate 1: Pre-alpine structures: a) Aplitic veins in epidote-rich metatonalitic rocks within the Bard unit. The steeply dipping, greenschist-facies S_2 foliation is sub-parallel to the intrusive contacts. b) Close-up image of the aplitic dike showing the S_2 foliation, dfined by elongated quartz aggregates, epidote and mica. Middle Aosta Valley near Hone. c) Alpine Greenschist-facies shear zone crosscutting high temperature textures in feldspar-rich rocks of the II DK Unit. Val Mastallone near Rimella.

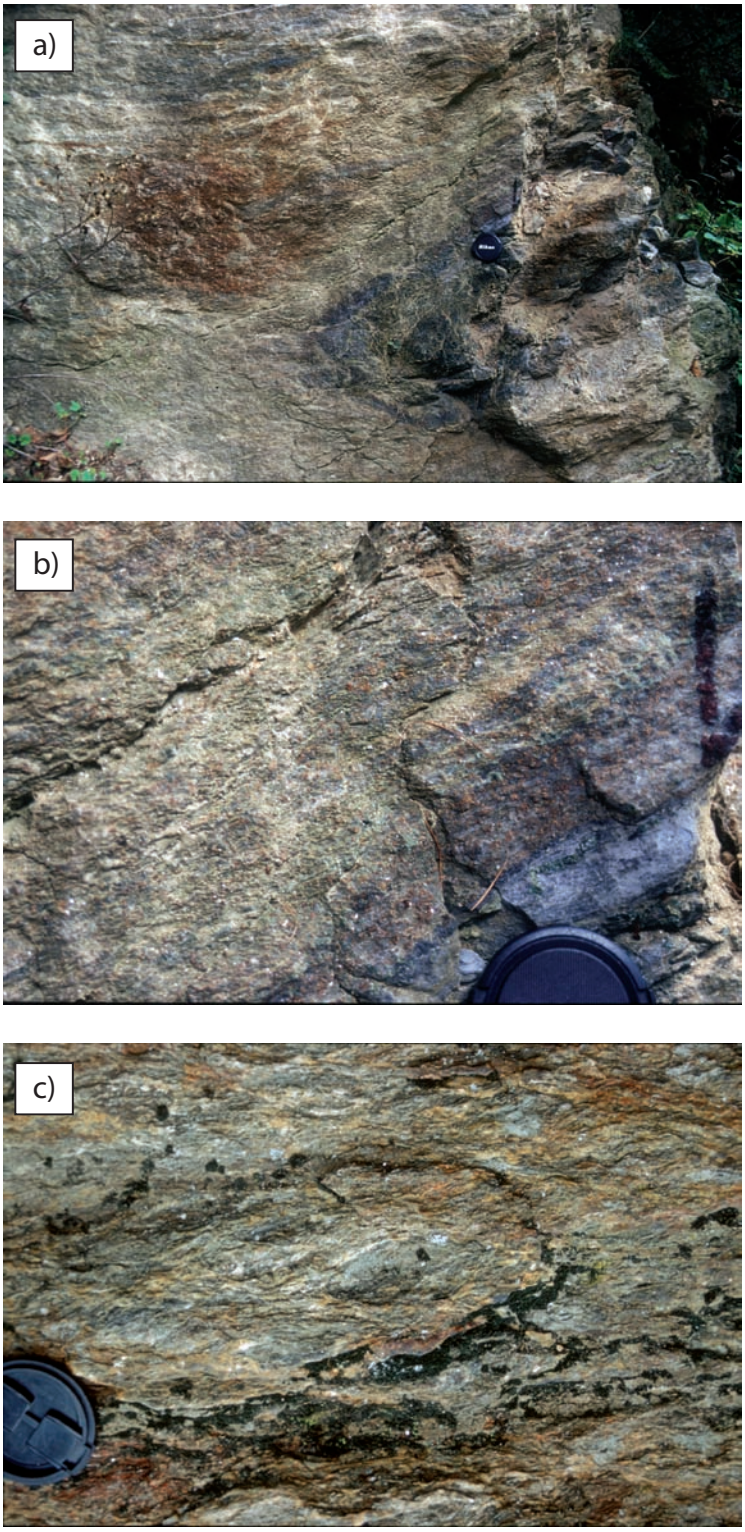

Plate 2: Fabric domain 1 structures. a) Metre-scale refolded mafic boudin within metapelitic achist. The refolded high pressure foliation parallel to the lithological contact (S_1) is defined by phengitic white mica, omphacite and sodic amphibole. b) The newly developed axial plane foliation is also defined by high pressure mineral assemblages such as omphacite, zoisite and phengite. c) Large omphacite crystal surrounded by an eclogite facies foliation defined mainly by phengite and zoisite. Mombarone Unit, Aosta valley near Cima di Bonze.

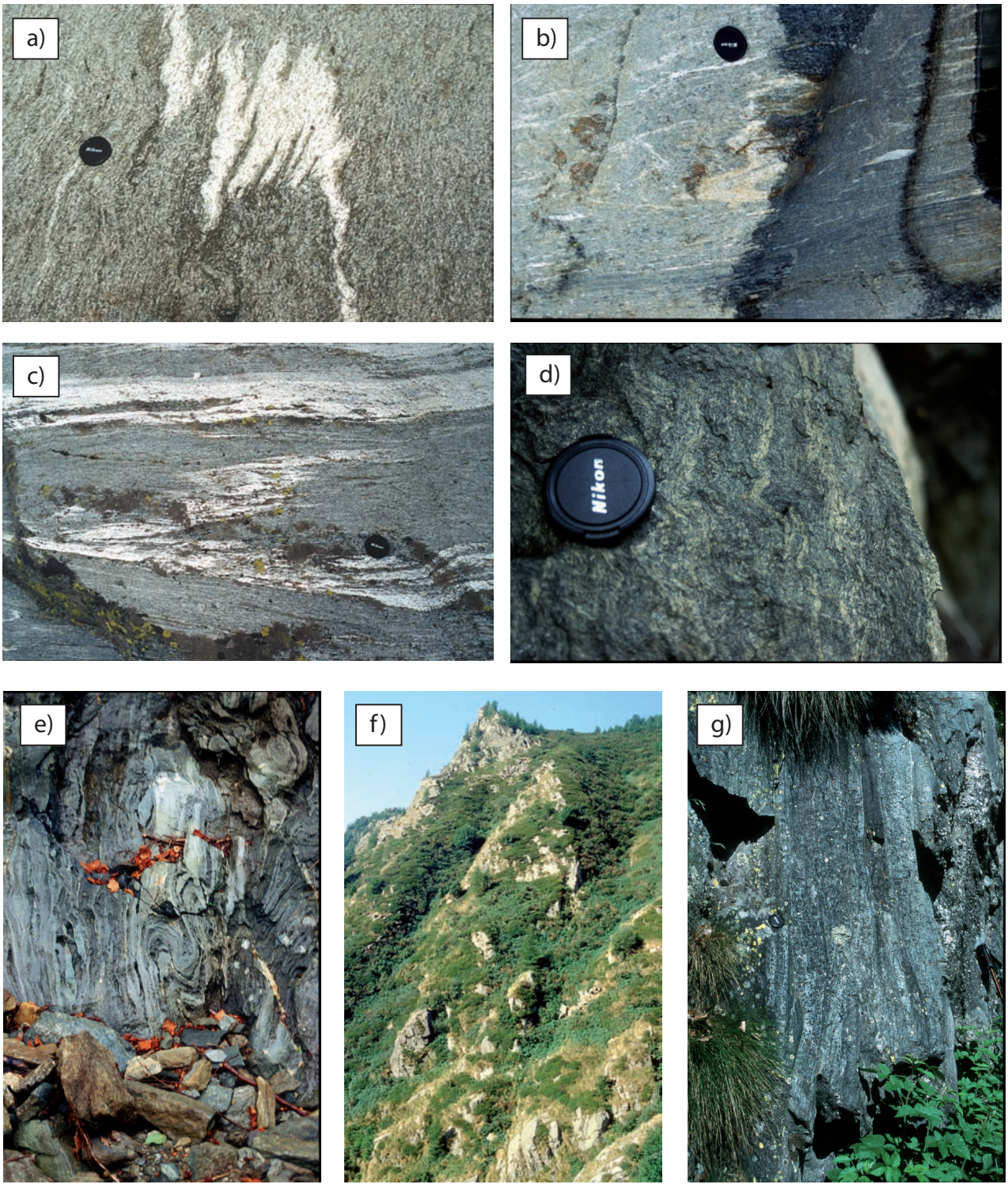

Plate 3: Fabric domain 2 structures. a-c) Dm-scale close to isoclinal greenschist-facies F_2 folds in the Bard Unit. Mark the weak D_3 overprint resulting in open to close F_3 folds with subhorizontal axial planes shown in a); middle Chiusella Valley near Tallorno. d) D_2/D_3 overprinting relations in the external part of the Bard Unit. Close to isoclinal, steeply dipping F_2 folds are refolded by subhorizontal F_3 folds; Aosta valley near Hone. e) Open to close dm-scale F_2 folds in metabasites from the MCC Unit; middle Chiusella Valley. f) Steeply dipping D_2 shear zone in the Chiusella Valley. Mark the open refolded orientation of the steeply dipping S_2 foliation. g) Detail of the greenschist-facies D_2 shear zone in the external part of the Bard Unit; Aosta Valley near Hone.

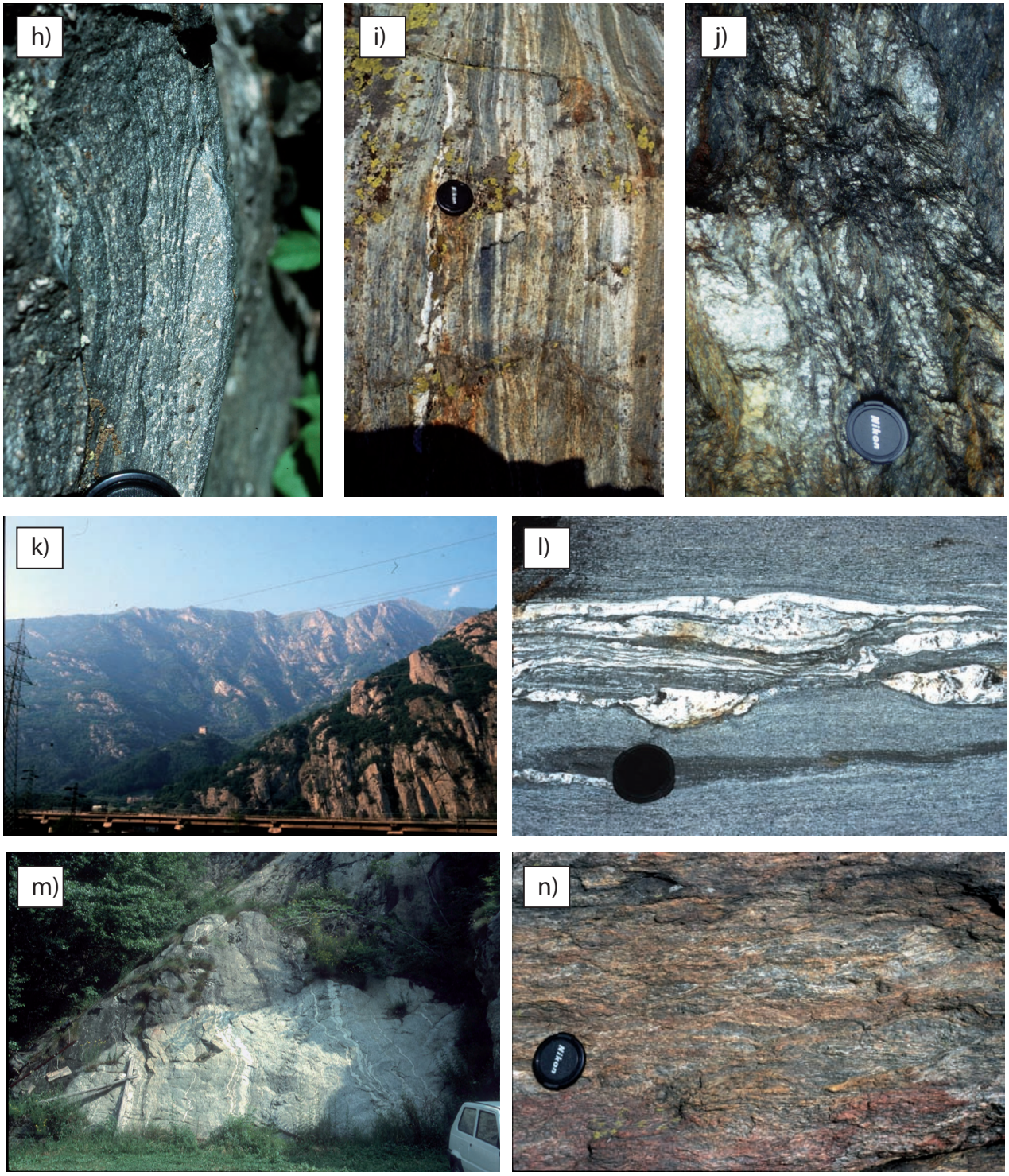

Plate 3 contd.: Fabric domain 2 structures. h) Isoclinally folded quartz-feldspar aggregate in the late stage D_2 shear zone near Hone. In this area F_2 folds refold greenschist-facies fabrics. In contrast, as can be seen in e) in more internal parts early F_2 folds refold blueschist-facies fabrics. i) Blueschist-facies D_2 shear zone in the Chiusella valley. j) Open to close F_2 folds refolding a blueschist facies S_1 foliation defined by white mica and sodic amphibole. Middle Chiusella Valley near Fondo. k) Refolded steeply dipping greenschist-facies S_2 foliation in the most external part of the Bard Unit; between Bard and Verres. l) Greenschist-facies D_2 shear zone in the more external part of the Chiusella Shear Zone; middle Chiusella Valley near Tallorno. m) F_3 refolded greenschist-facies S_2 in metabasite from the middle Aosta valley near Bard. n) Sinistral syn-D_2 shear bands in blueschist-facies metapelitic rock from the middle Aosta Valley near Bard.

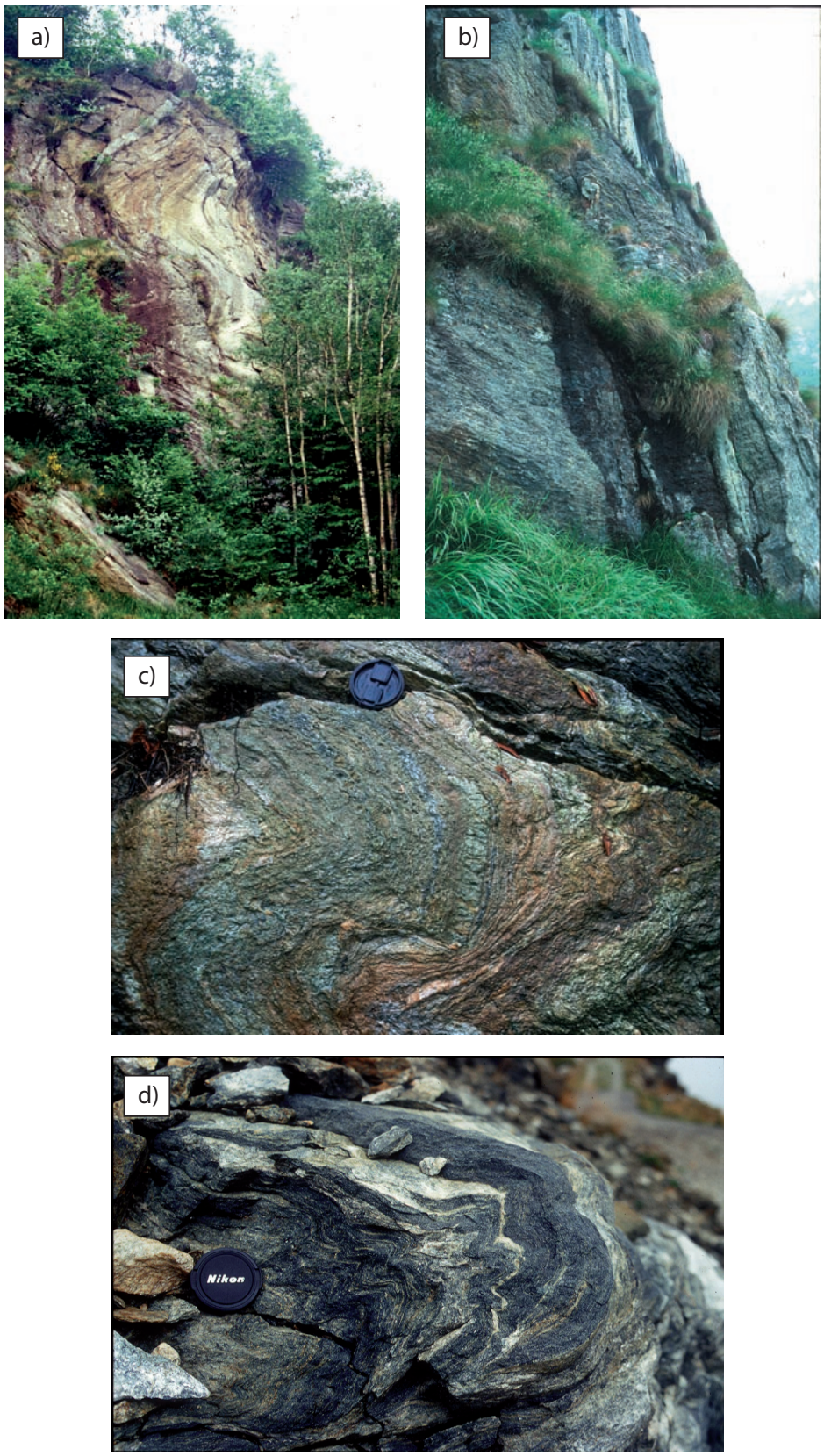

Plate 4: Fabric domain 3 structures. a) Open and close decametre-scale subhorizontal F_3 folds within the Mombarone Unit. The well-developed steeply dipping S_2 foliation is strongly overprinted in a structural sense, but mineral assemblages often show only few signs of syn-D_3 metamorphic overprint. b) Small scale syn-D_3 structural disequilibrium between quartz-rich metapelites (dark) and aplitic intrusions (light). Whereas in the metapelitic rocks a moderately dipping axial plane foliation (S_3) is developed competent lithologies (intrusives) well-preserve the older, steeply dipping S_2 foliation; middle Chiusella Valley near Cma. di Bonze. d) Cm-scale F_3 fold refolding a blueschist-facies D_2 mylonite at the contact between the Mombarone and Bard Units; Scalaro near Cma. di Bonze.

Plate 4 contd.: e) Decametre-scale parasitic F_3 folds in the upper limb of a large scale F_3 structure. The large scale fold closes towards the east, which is towards the right in this image; Middle Aosta Valley near Ivery. f) Regional-scale D_3 top-down-to-SE shear zone outcropping in the upper parts of Monte Voghel and Monte Vlou (peaks in the centre of the image). g) Cm-scale top-down-to-SE shear bands in metapelitic rocks of the Mombarone Unit; lower Chiusella Valley.

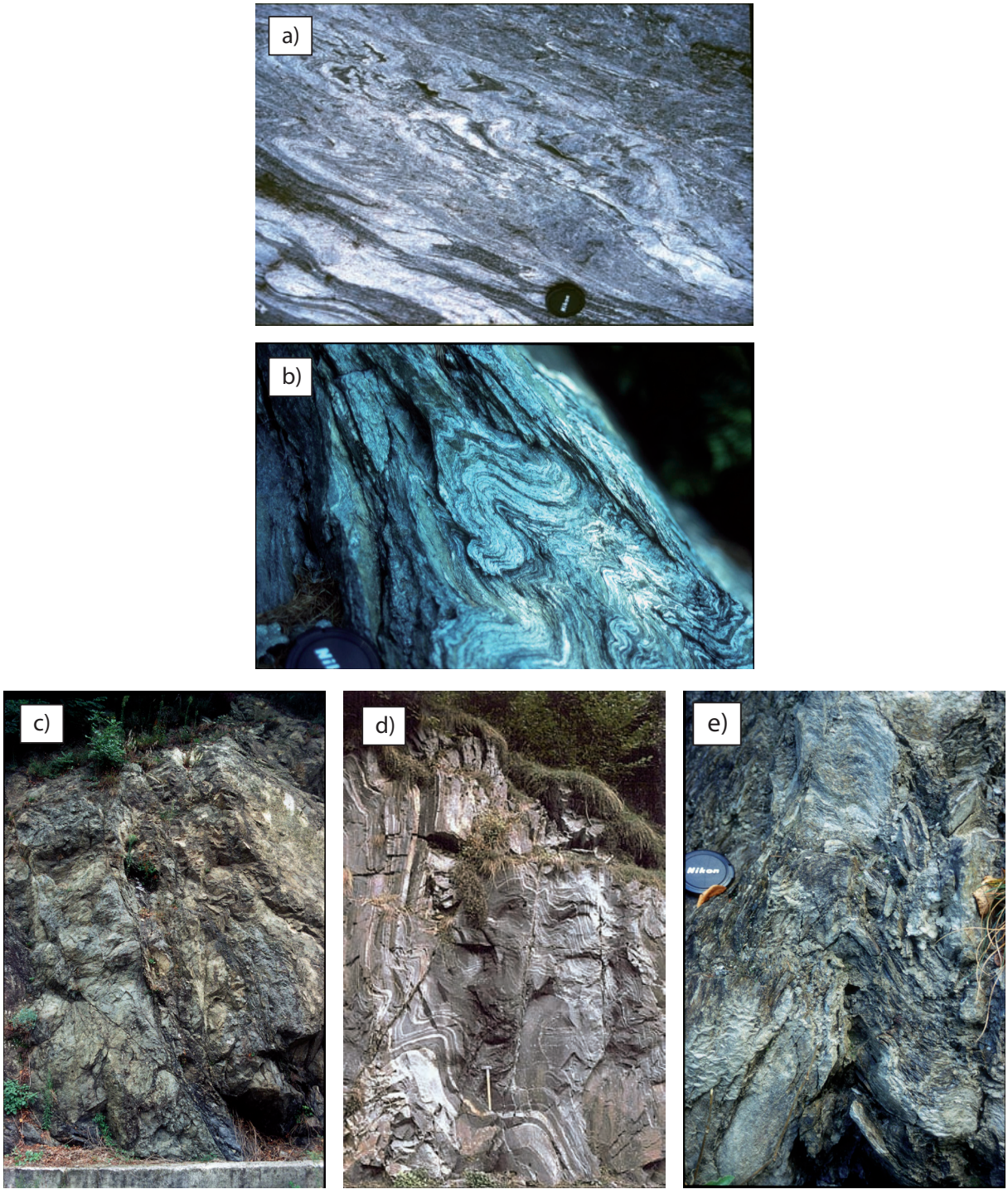

Plate 5: Fabric domain 4 and 5 structures: a) Hearts and anchor structures in feldspar-rich greenschist-facies gneiss. Shear sense indicators show top-down-to-SE kinematics caused by the normal faulting along the Gressoney Shear Zone. Upper Sesia Valley near Alagna. b) Close to isoclinal cm-scale F_4 folds with a newly developed S_4 foliation in the limbs. Upper Aosta Valley near Hone. c) Steeply dipping brittle D_5 structures at the Sesia-Ivrea contact. Shear sense indicators and lineations indicate top-down-to-E movement with a strong dextral component. Lower Aosta Valley near Andrate. d) Steeply dipping ductile F_5 folds in qtz-rich gneiss. Middle Sermenza Valley near Rimasco. e) Open to close F_5 folds in calc-schists of the ophiolitic unit at the base of the Bard Unit. Aosta Valley near Verres.

Plate 5 continued: f) F_4 folds and reactivated S_3 at the structural base of the Bard Unit. Middle Ayas Valley near Brusson. g) Sesia-Ophiolite contact. The right side of the image shows strongly foliated, qtz-rich gneisses of the Bard Unit, whereas the lithologies on the left side comprise mica-rich carbonates and smaller metabasic lenses of the Piemont Unit. The fabric parallel to the contact is a S_4, in some cases a reactivated S_3 foliation(see f)). The contact is refolded by steeply dipping, open F_5 folds. Upper Gressoney Valley near Pta. Straling. h) Strongly foliated qtz-rich epidote-biotite-white mica gneiss. The main foliation is a steepened S_4, the brittle-to-ductile shearbands, indicating top-to-E backthrusting, belong to the D_5 deformation. Upper Piamprato Valley near Monte Marzo.