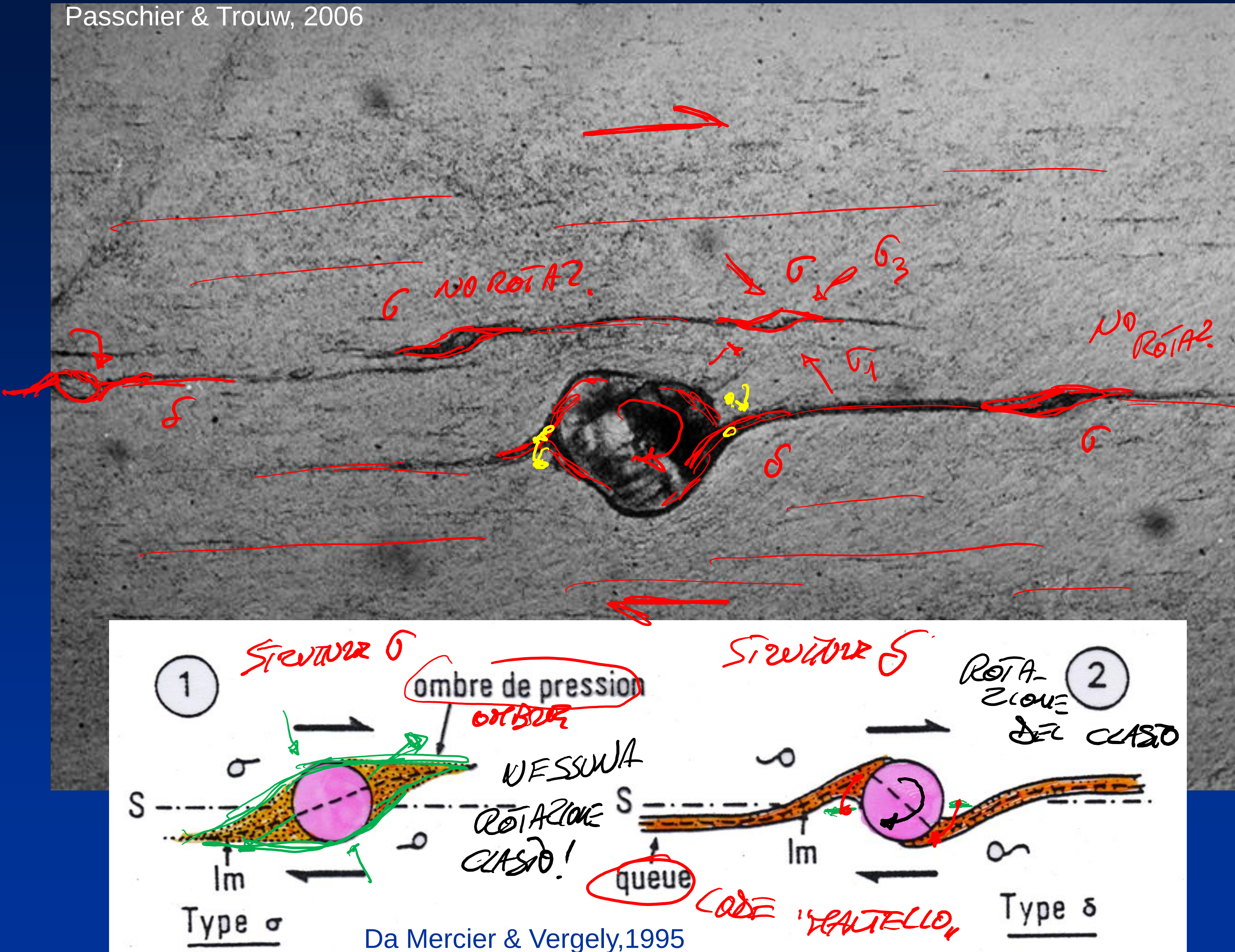
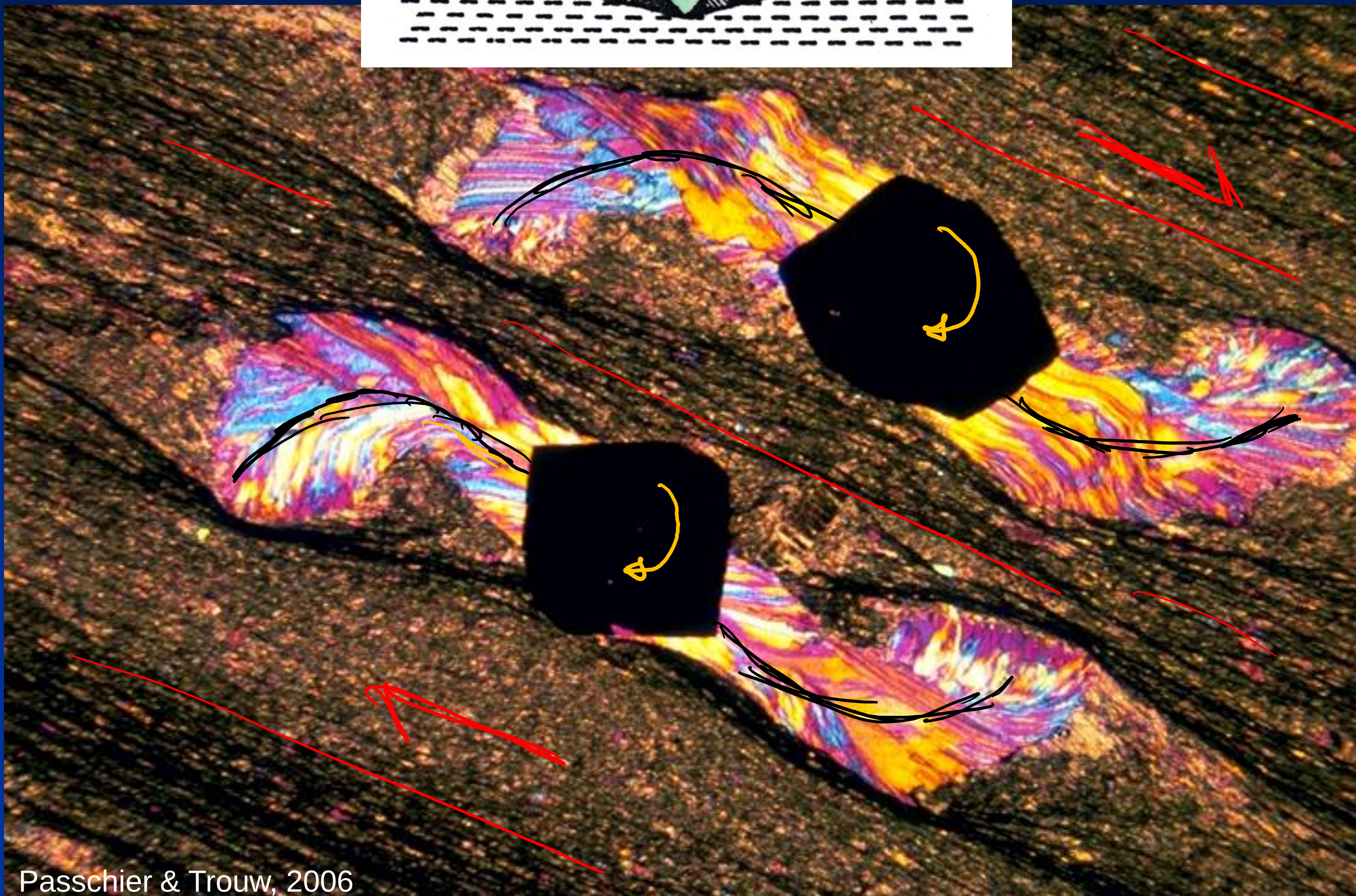


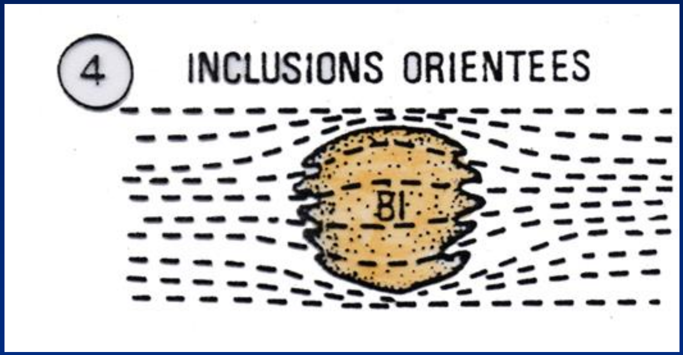
Passchier & Trouw, 2006

Da Mercier & Vergely,1995

Da Mercier & Vergely,1995



Fabric “snowball” a “S” nei porfiroclasti



Da Mercier & Vergely,1995

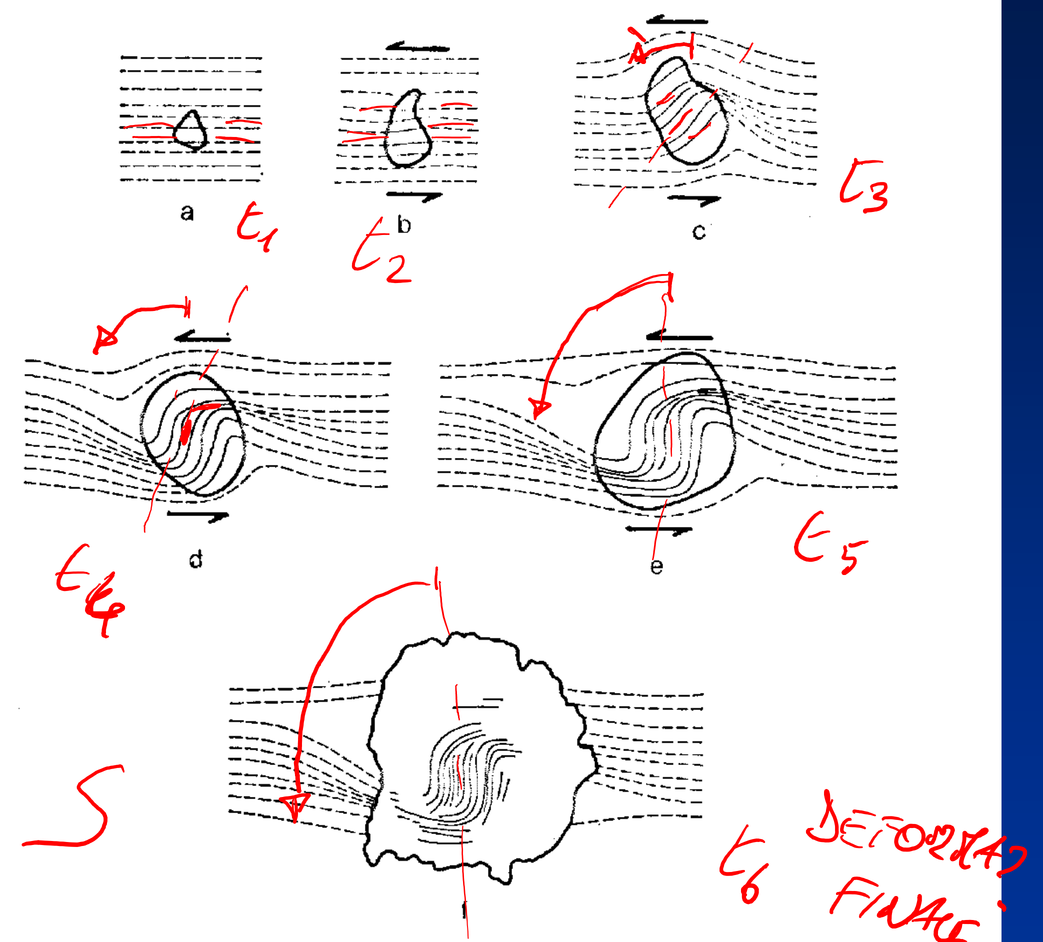
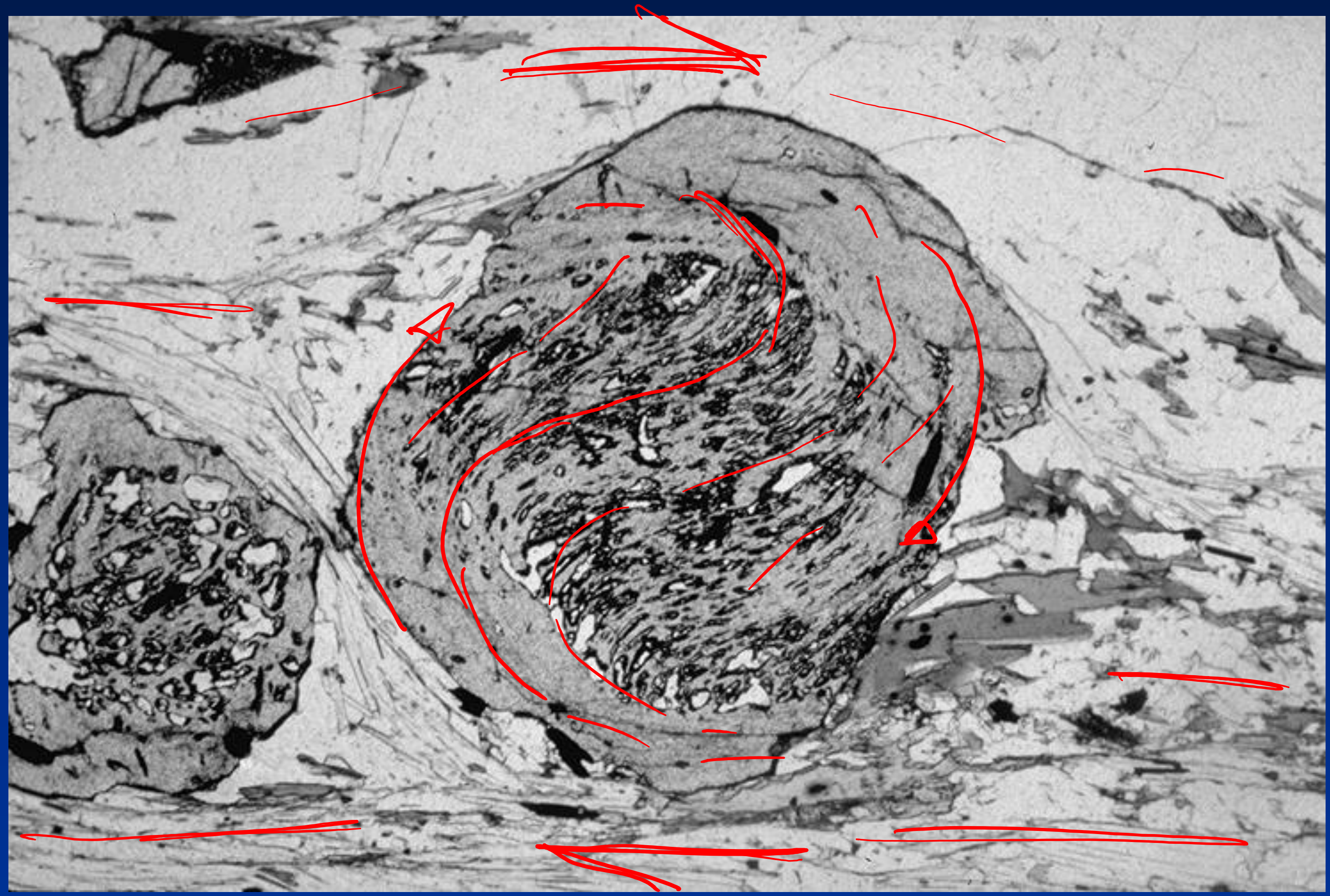


Figure 9.5 Model for the development of Snowball S-fabrics in porphyroblasts, especially garnet (after Spry, 1963).

Da Barker, 1990



Passchier & Trouw, 2006

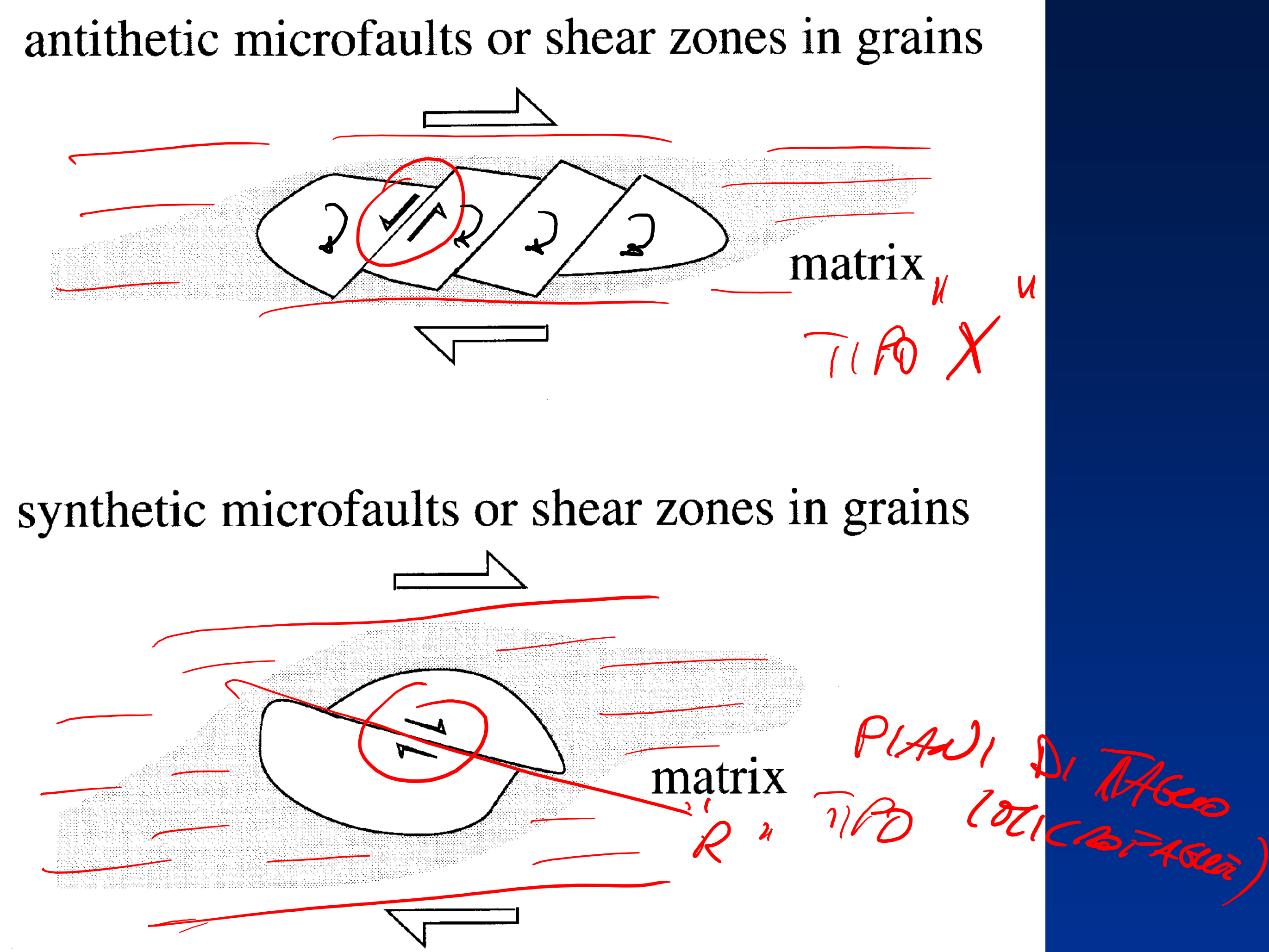
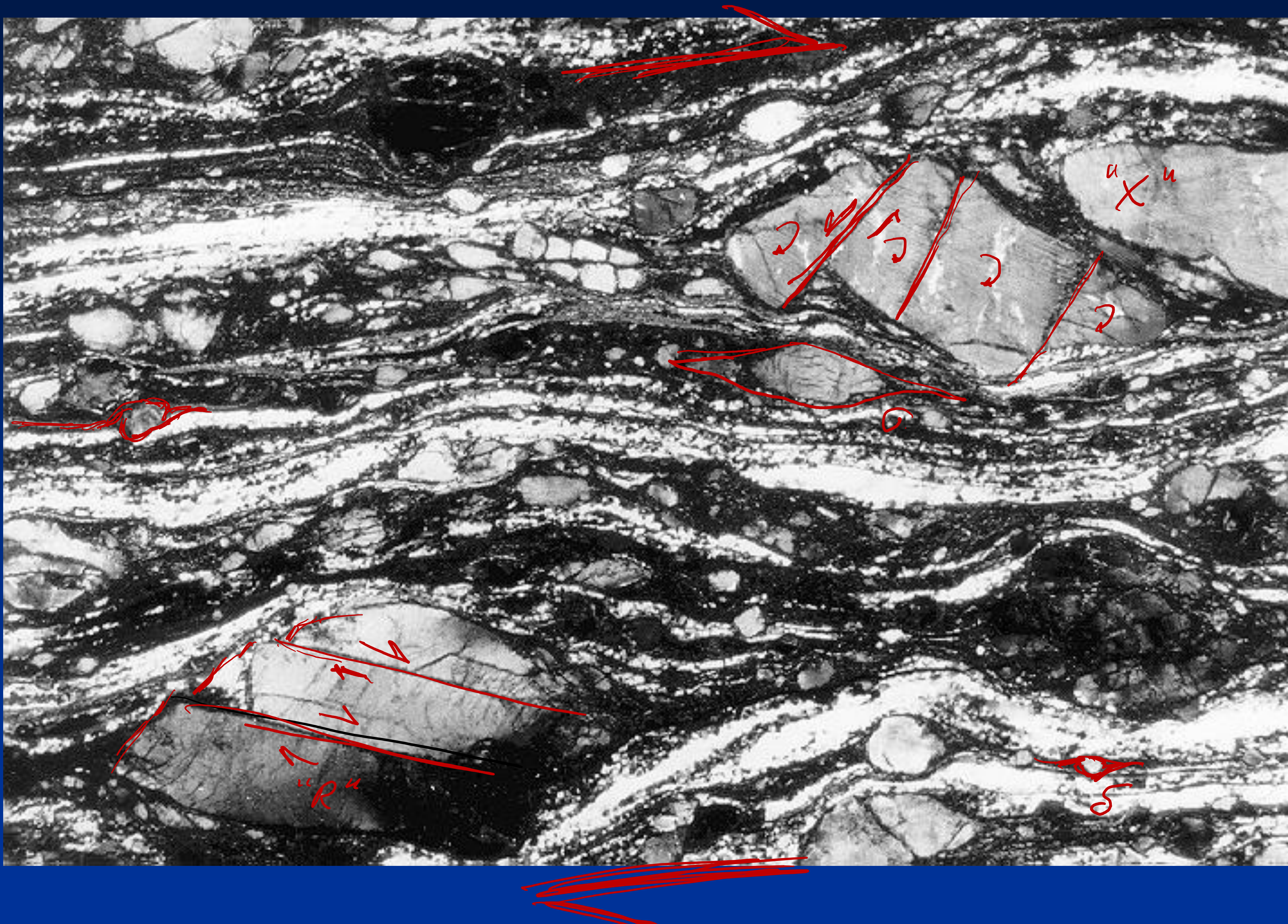
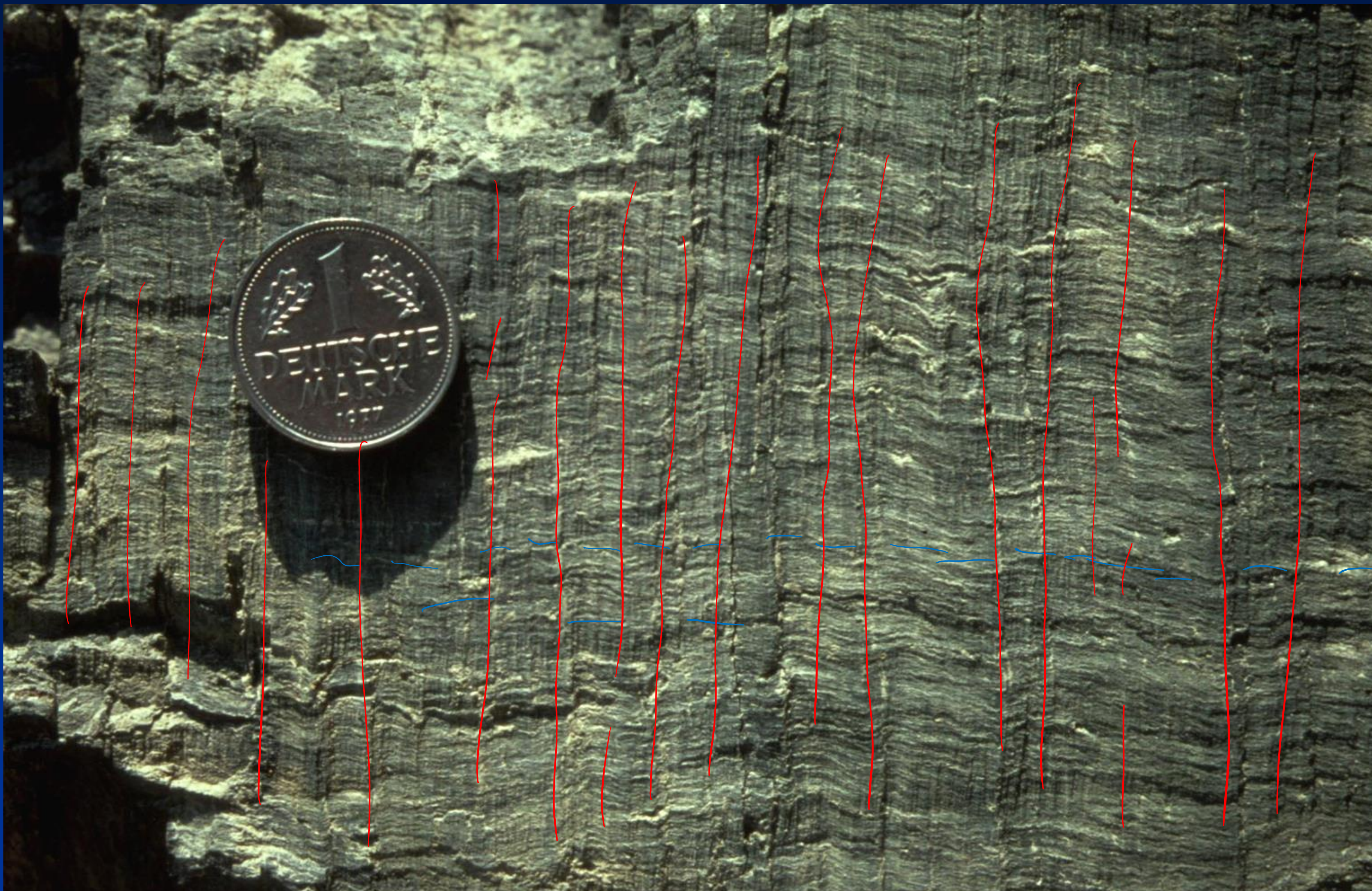


Fig. 5.31. Illustration of the two mechanisms of formation of stepped fragmented grains at similar bulk shear sense *(large arrows)*

Passchier & Trouw, 2006

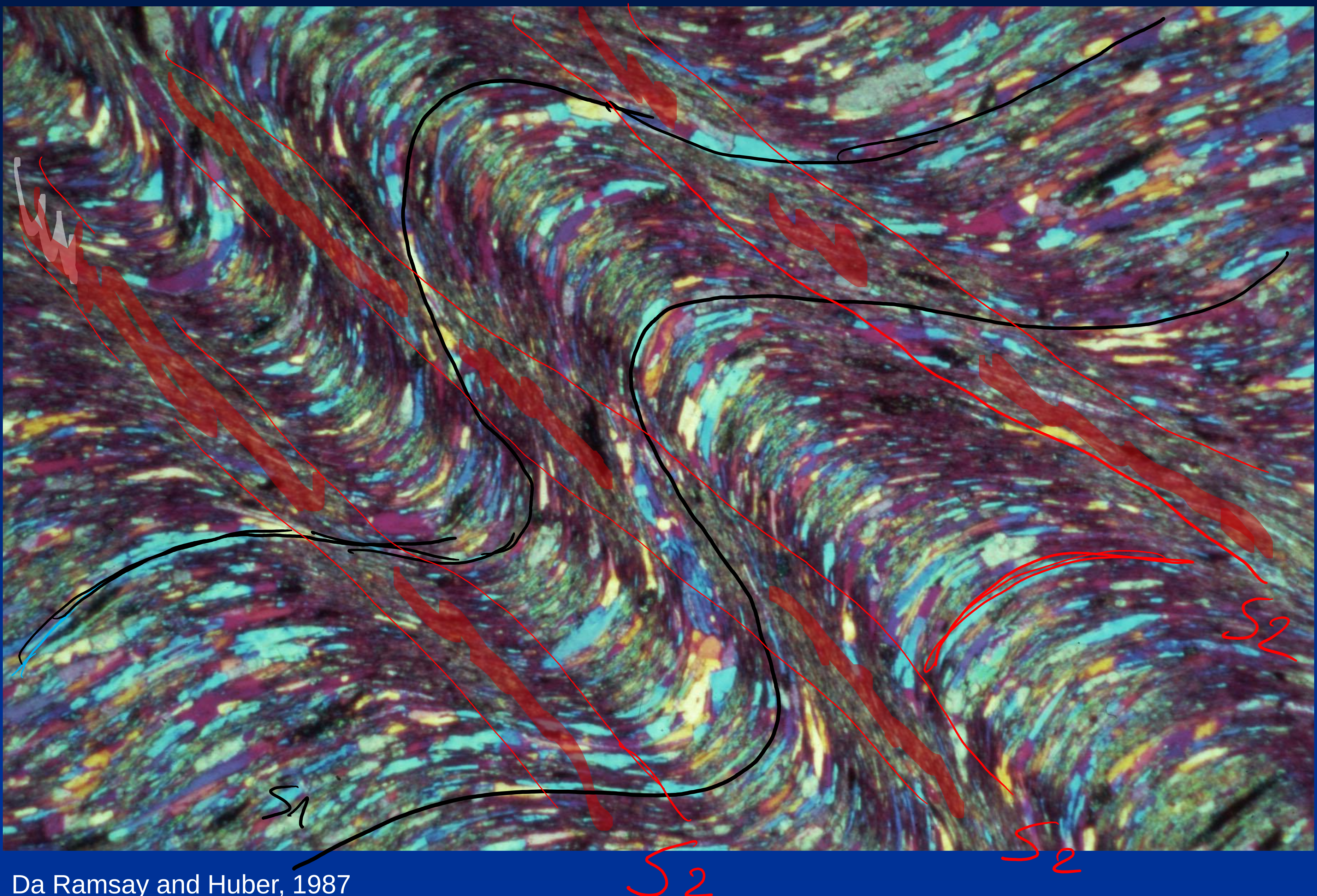

"X"
"R"

Clivaggio da crenulazione

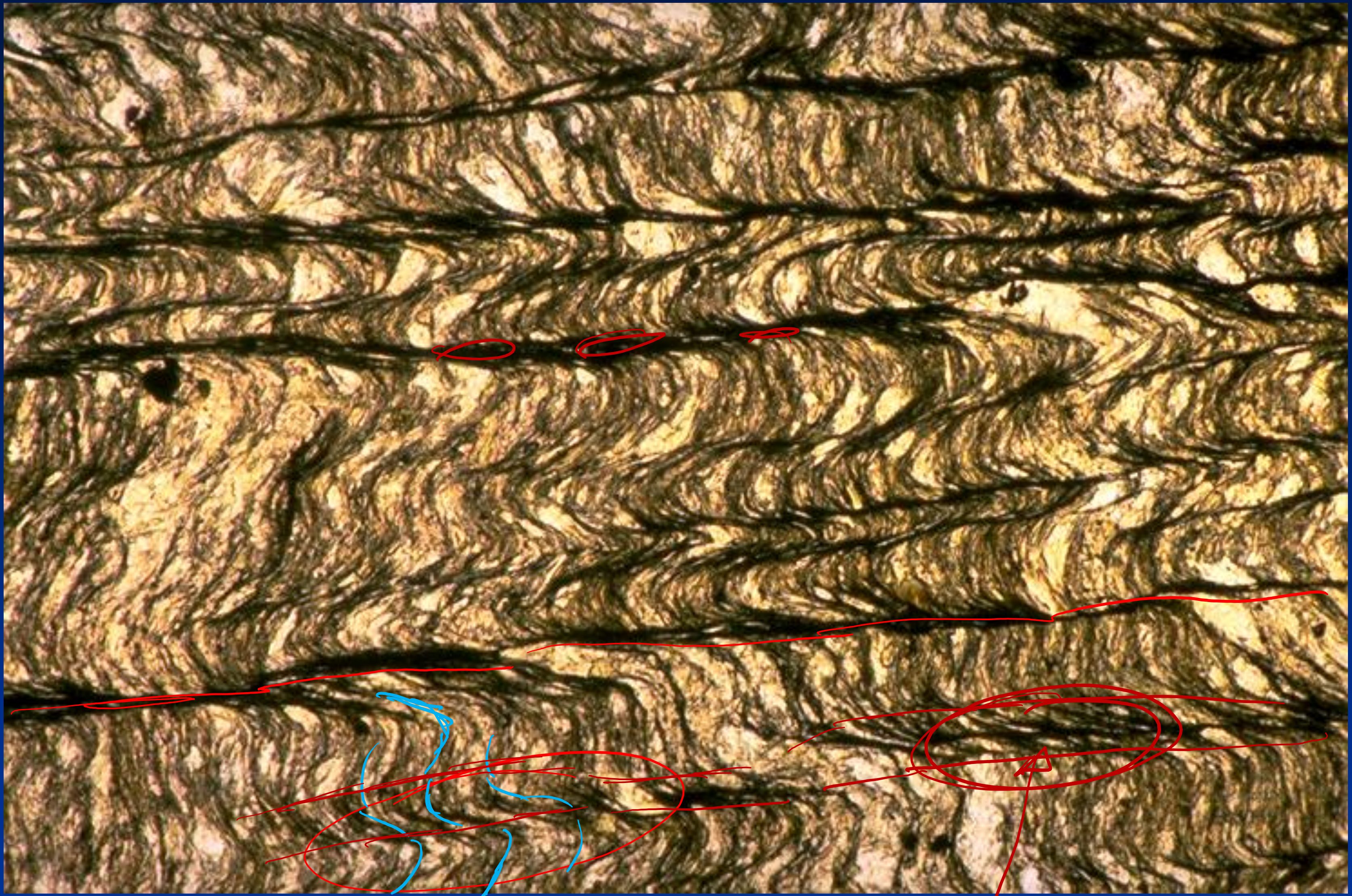


Da Ramsay and Huber, 1987

Da Ramsay and Huber, 1987



Da Ramsay and Huber, 1987



Passchier & Trouw, 2006

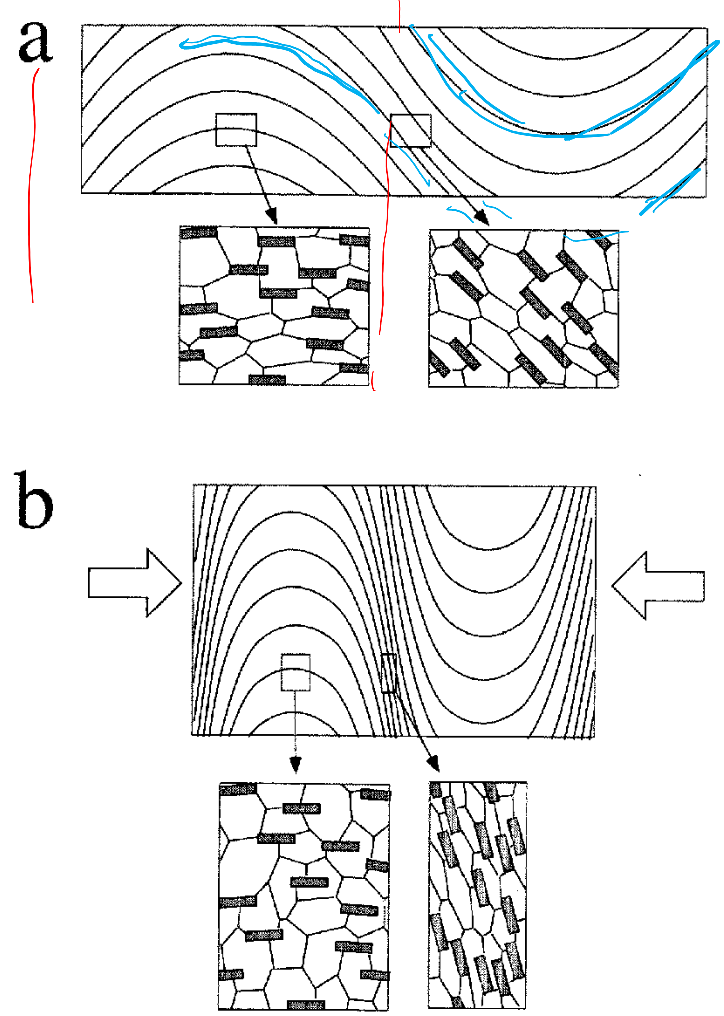
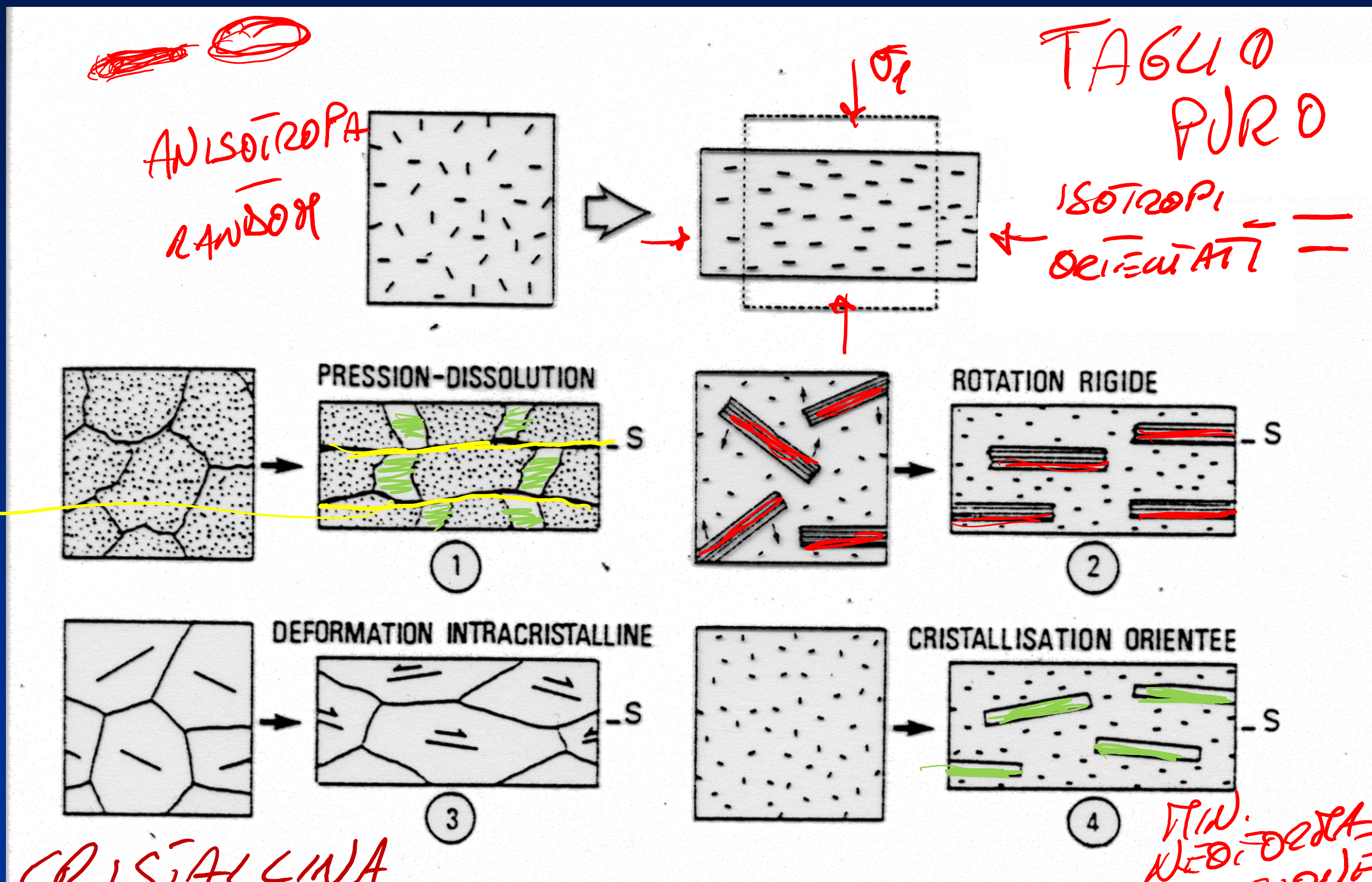


Fig. 4.21 a,b. Progressive tightening of folds with formation of a differentiated crenulation cleavage (S_2) by preferential dissolution of quartz in fold limbs caused by the orientation of quartz-mica contacts with respect to the σ_1 direction; resolved normal stress over these contacts is higher in fold limbs than in hinges. **a** and **b** are two stages in progressive deformation (cf. Figs. 4.11, 4.12)

SCHIACCIAMENTO DEI FIANCHI DI MESOPIEGHE

Passchier & Trouw, 2006

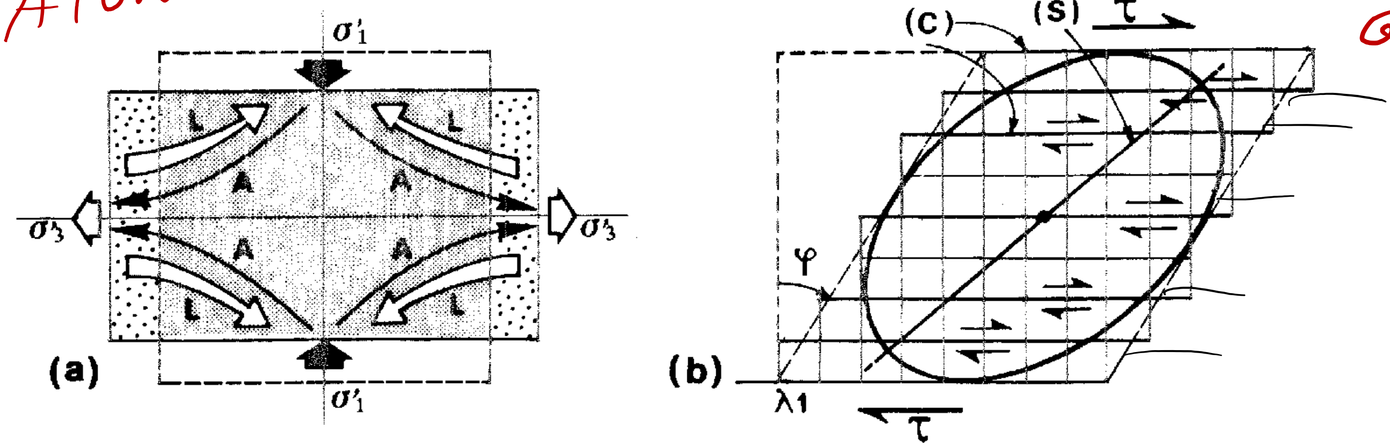
Genesi della foliazione



Da Mercier & Vergely,1995

DIFFUSIONE DI ATOMI E LACUNE

SCORRIMENTO SU PIANI CRISTALLOGRAFICI



7.2. (a) Déformation coaxiale d'un cristal par diffusion des atomes (A) et des lacunes (L) ;
(b) Déformation non co-axiale d'un cristal par glissement sur une seule famille de plans cristallographiques.

Da Mercier & Vergely,1995

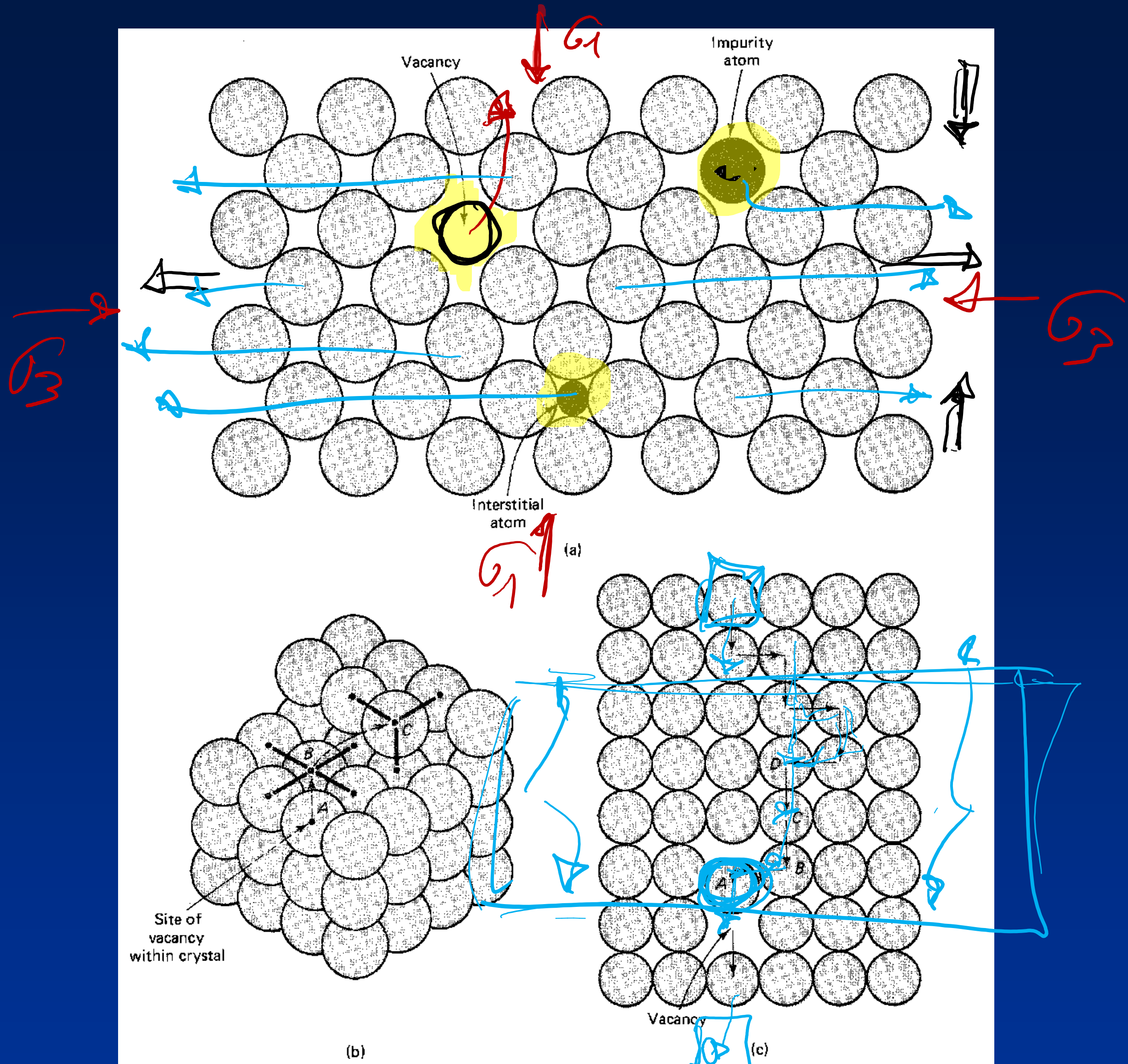
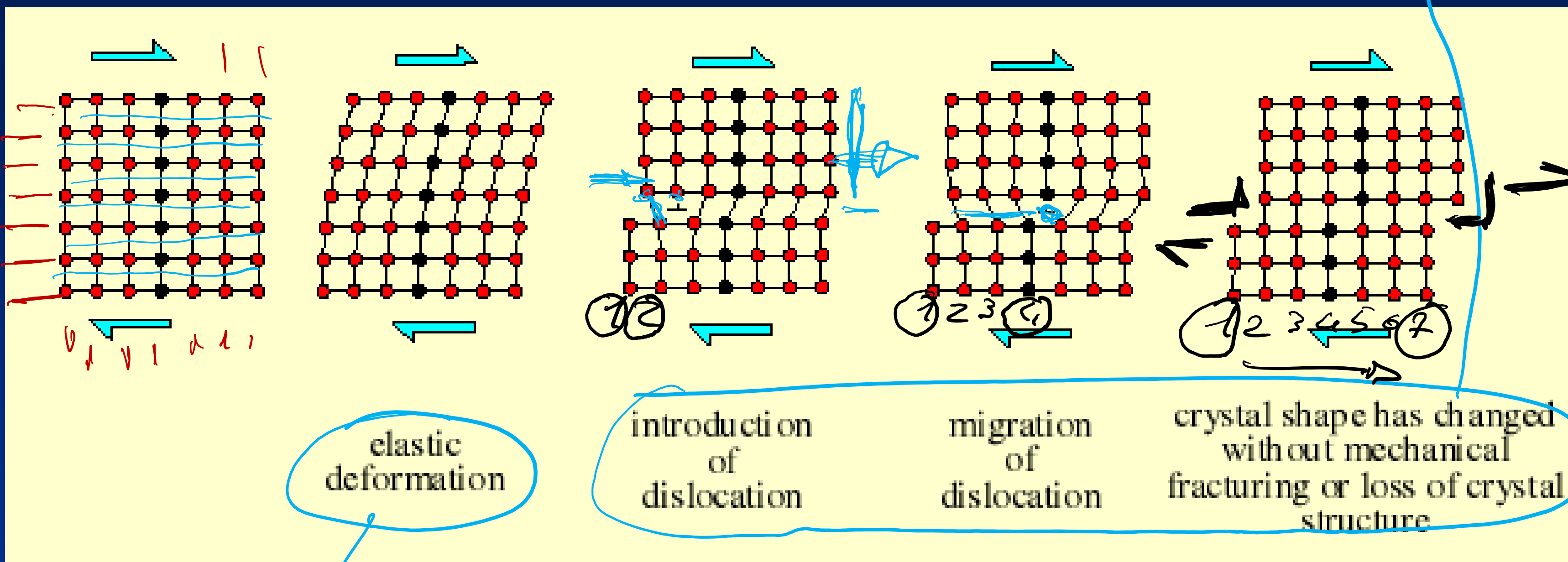


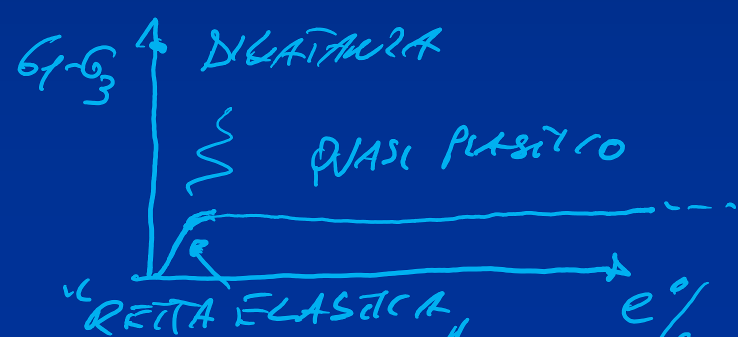
FIGURE 4–5 (a) Simple kinds of point defects. (b) Creation of a vacancy at *A*, one layer below the surface of the crystal, requires breaking five bonds of the atom at *B*, moving it to *C* on the surface of the crystal and forming three bonds, breaking five bonds of the atom at *A*, and moving it to *B*, forming four bonds. Thus the energy required to form the vacancy is the energy of the net three bonds broken. (c) Vacancies play an important role in solid-state diffusion. For example, atom *A* is moving into an adjacent vacancy, atom *B* may then move into the hole left by *A*, atom *C* may then move into the hole left by *B*, and so on, producing a flux of one atom downward across the crystal and one vacancy upward across the crystal.

Da Suppe, 1985

COMP. QUASI PLASTICO



RETTA ELASTICA



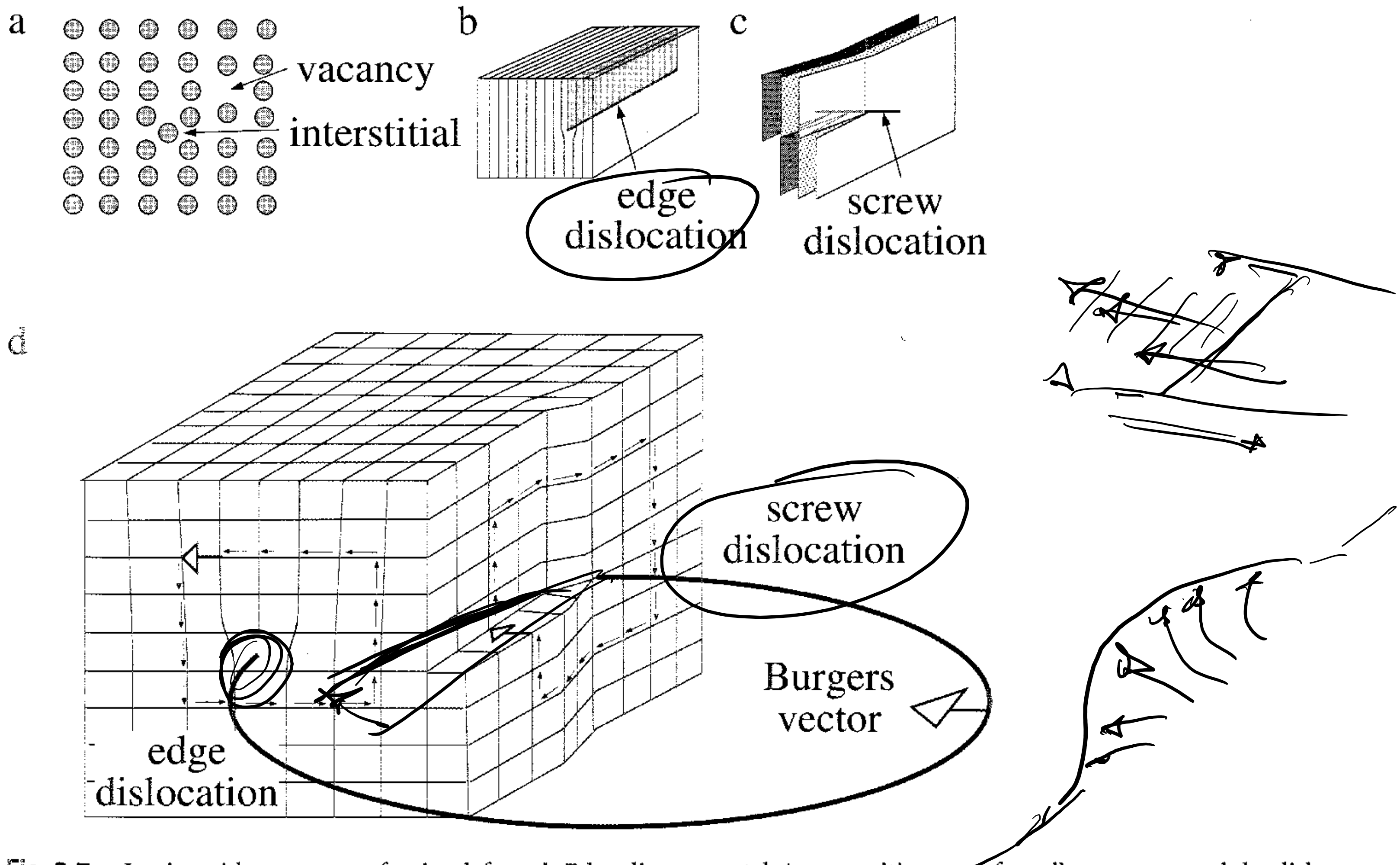
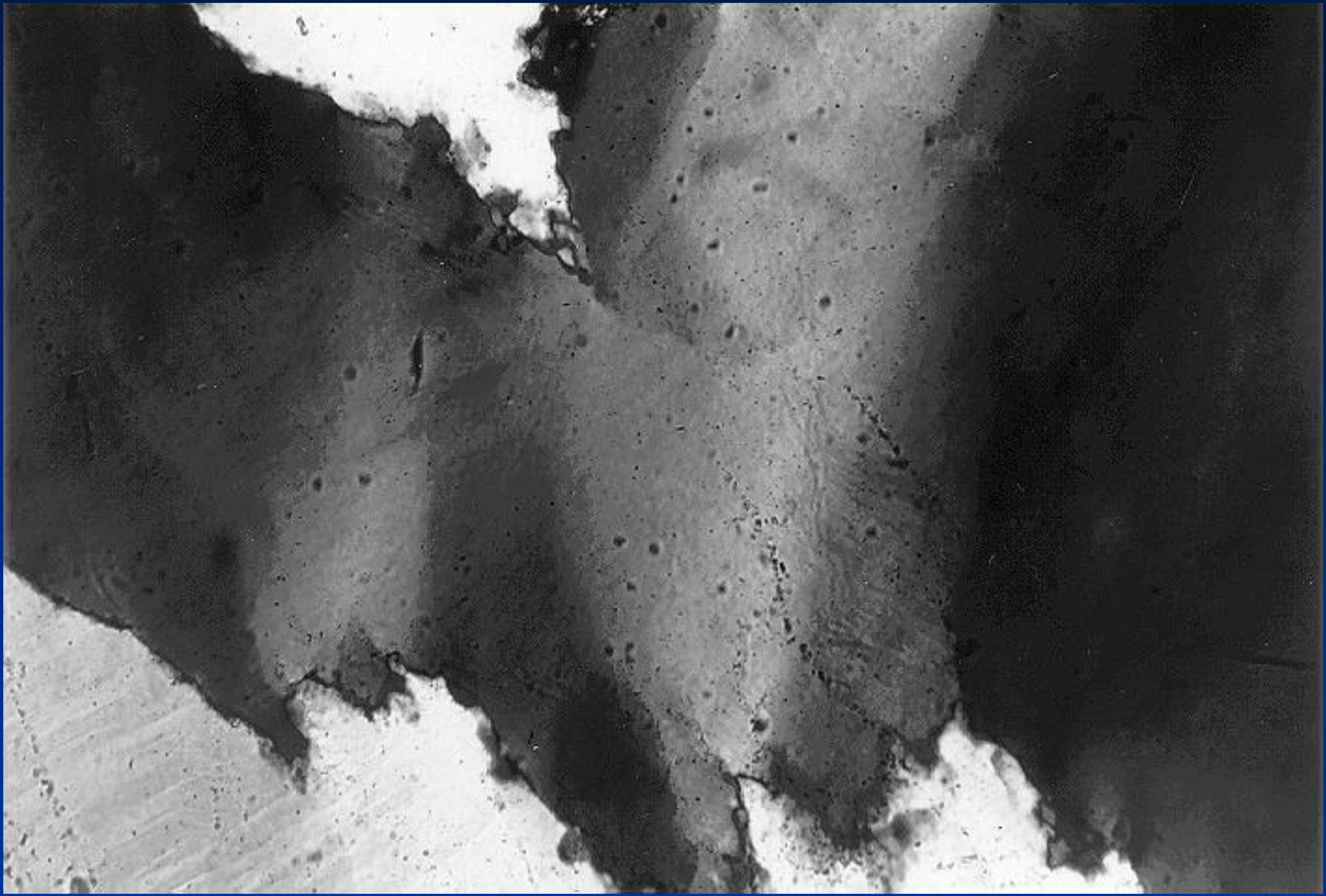
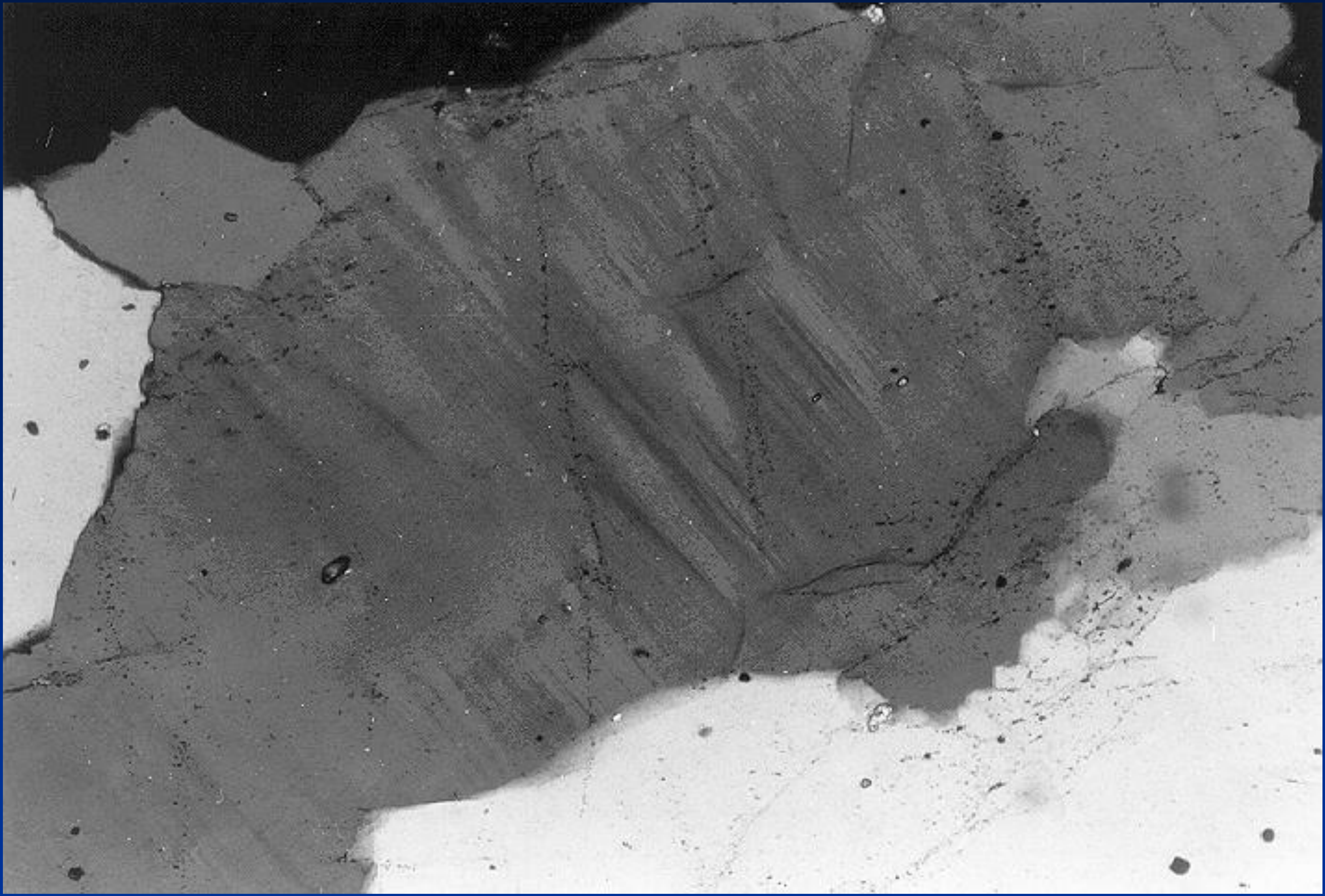


Fig. 3.7. a Lattice with two types of point defects. **b** Edge dislocation defined by the edge of a half-plane in a distorted crystal lattice. **c** Screw dislocation defined by a twisted lattice. **d** Dislocation with edge and screw dislocation regions in a crystal. A square itinerary of small arrows around the dislocation is used to find the Burgers vector of the dislocation, indicated by ***open arrows***

Da Passchier & Trouw, 2006

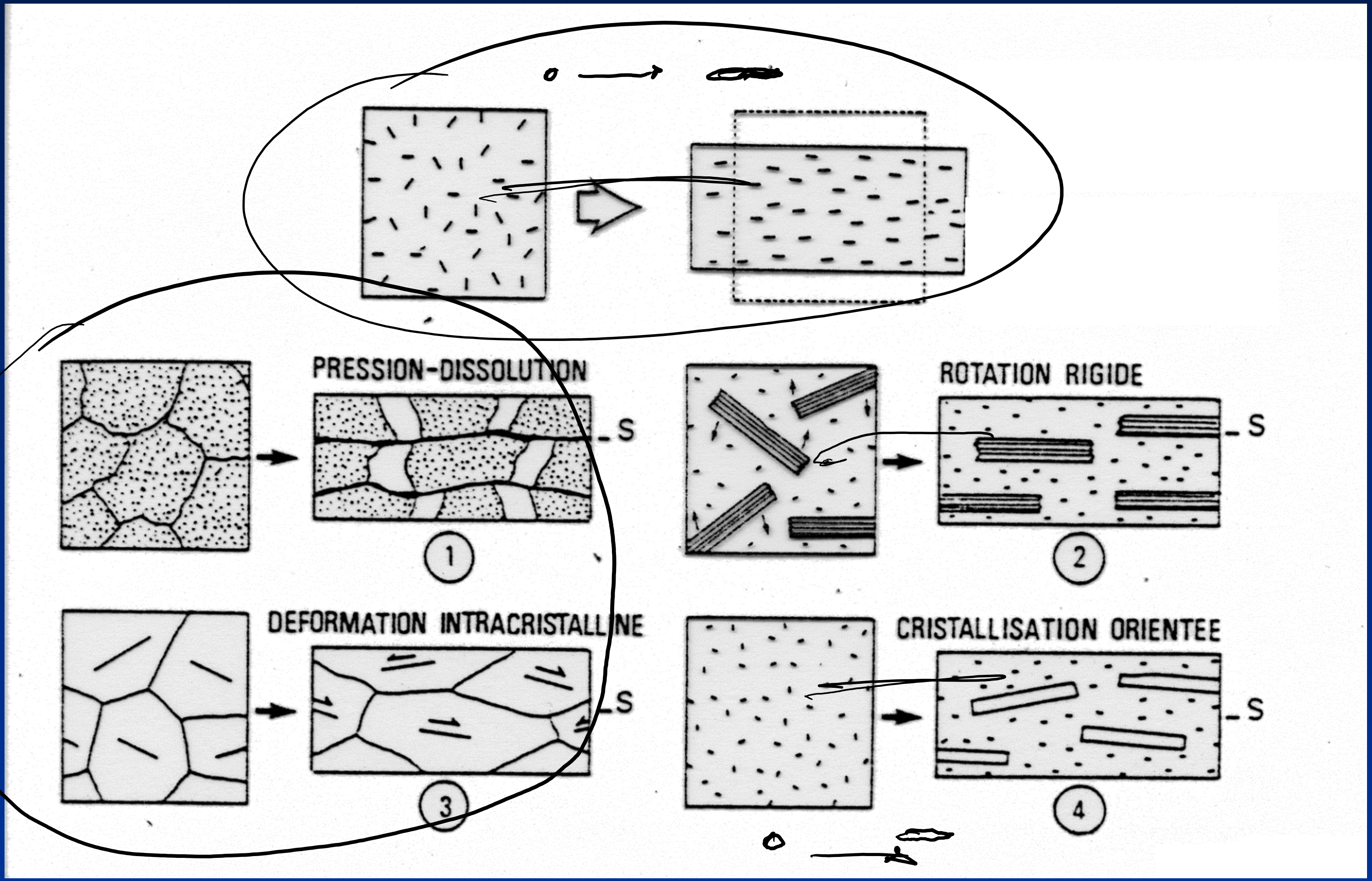


Da Passchier & Trouw, 2006

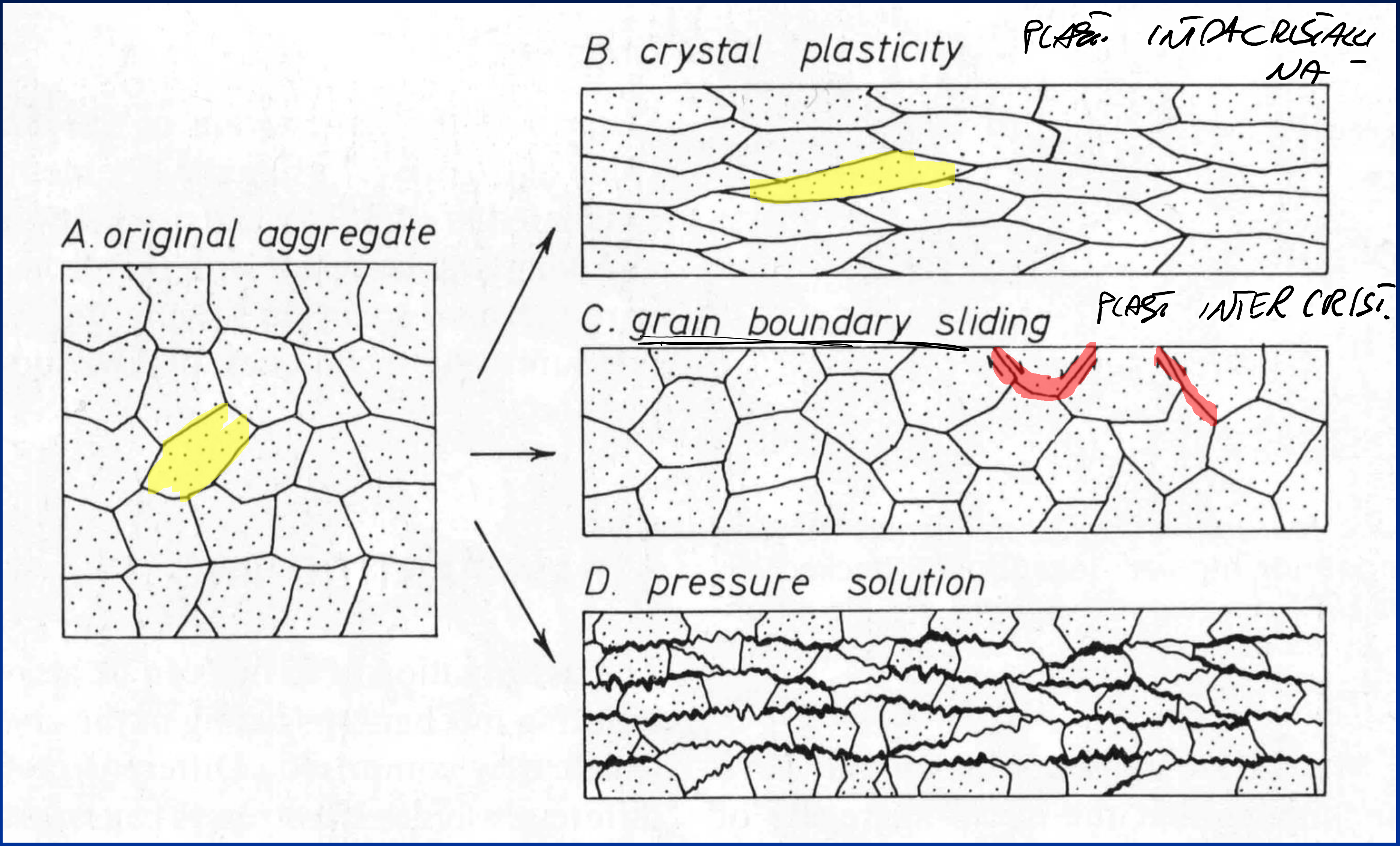


Da Passchier & Trouw, 2006

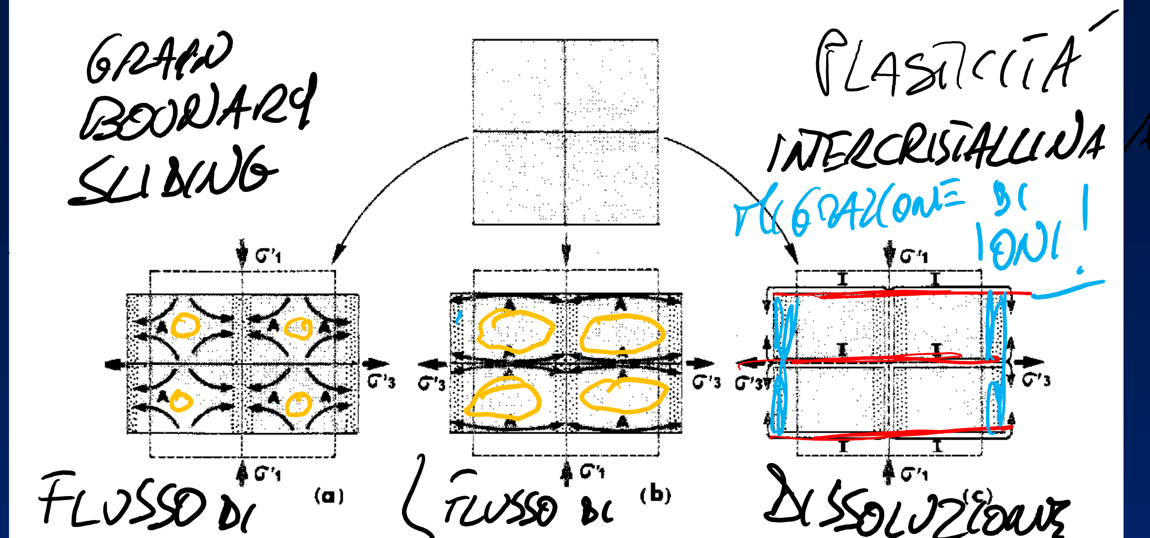
Genesi della foliazione



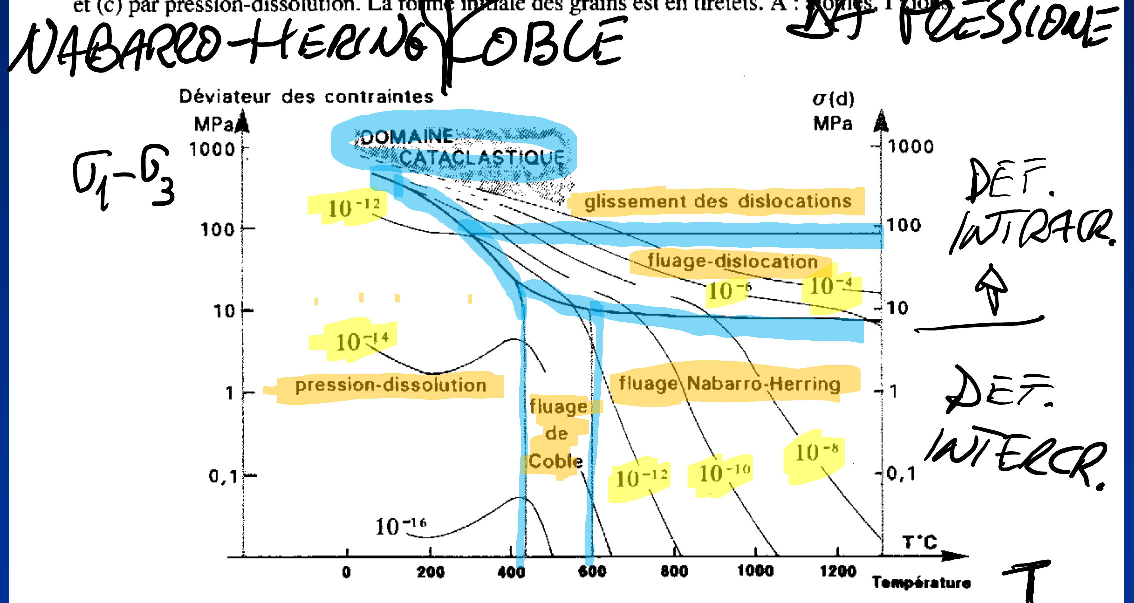
Da Mercier & Vergely,1995



A. original aggregate
B. crystal plasticity
C. grain boundary sliding
D. pressure solution



7.6. Mécanismes de transfert de matière par diffusion (a) fluage de Nabarro-Herring, (b) fluage de Coble et (c) par pression-dissolution. La forme initiale des grains est en tiretets. A : atomes, I : ions.



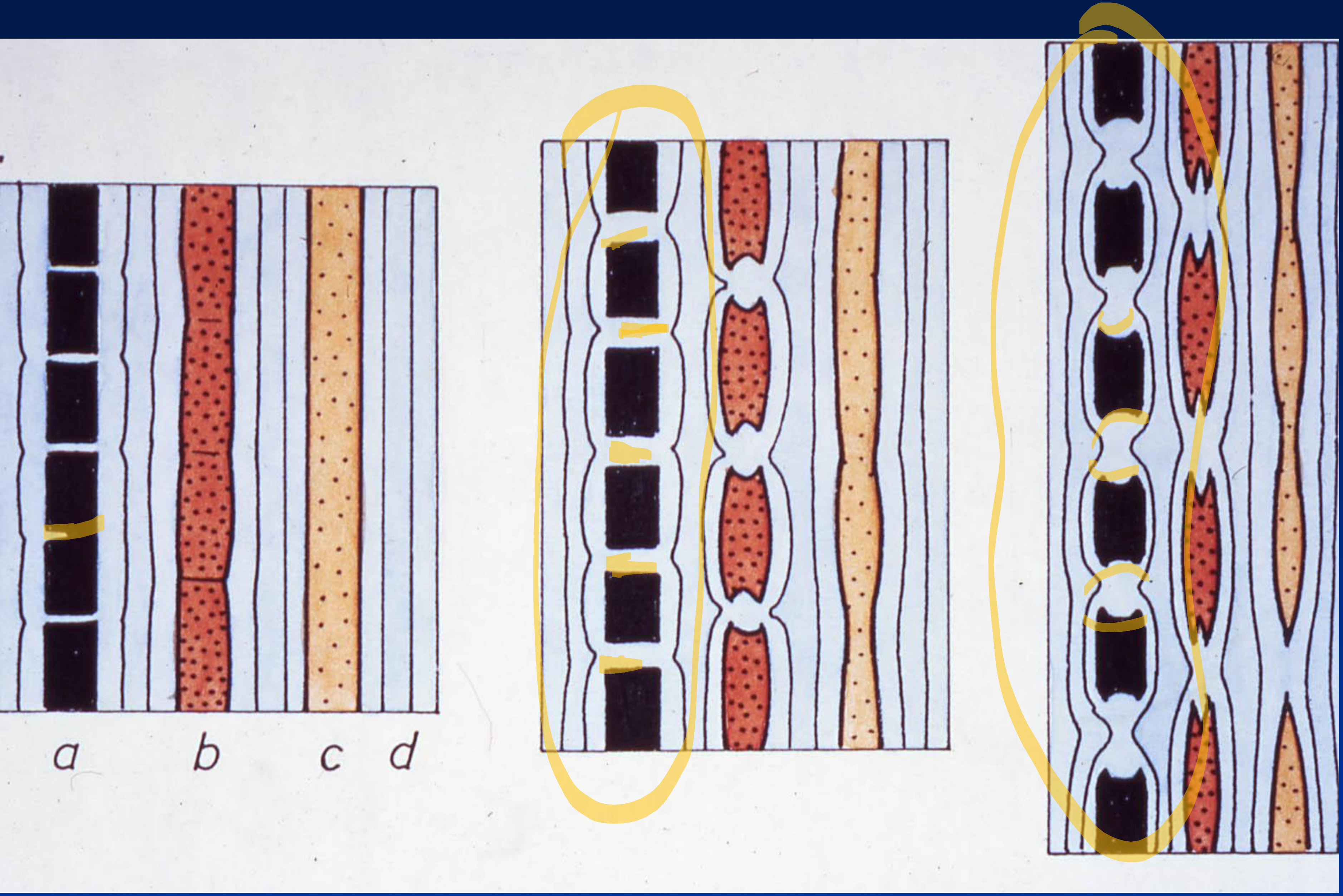
7.7. Carte des domaines (T – σ) de déformation de la calcite ; la taille des grains est de 100 μ et la pression de fluide de 100 MPa pour la pression-dissolution (d'après Rutter, 1976, *Phil. Trans. Roy. Soc. London*, A283, 43-54). Les courbes représentent les taux de déformation par seconde. On a considéré que pour $\dot{\varepsilon} > 10^{-4}\ S^{-1}$ la déformation est cataclastique à basse température.

Da Mercier & Vergely,1995

Strutture fragili-duttili

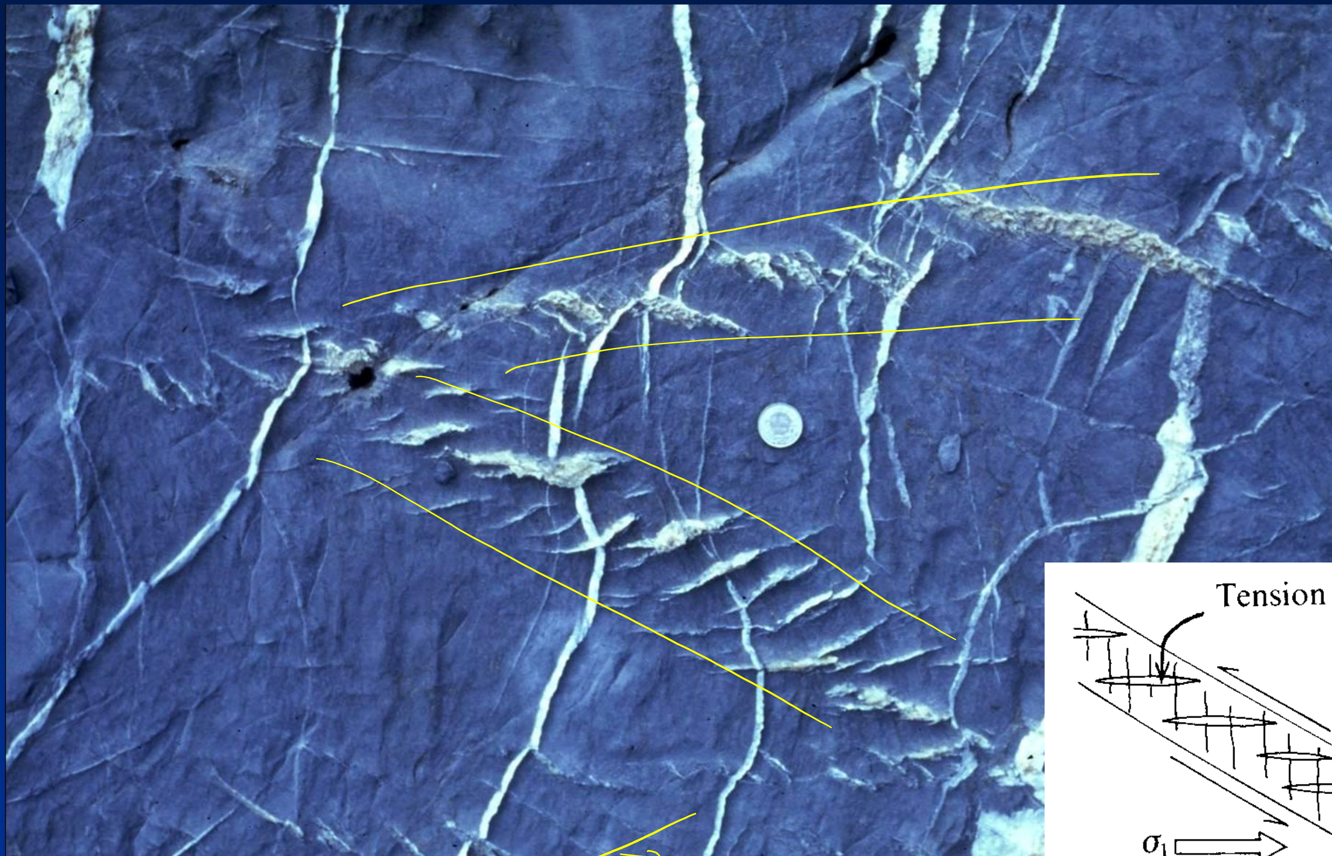
(certi casi di boudinage; vene a schiera)

Strutture fragili-duttili: certi casi di boudinage



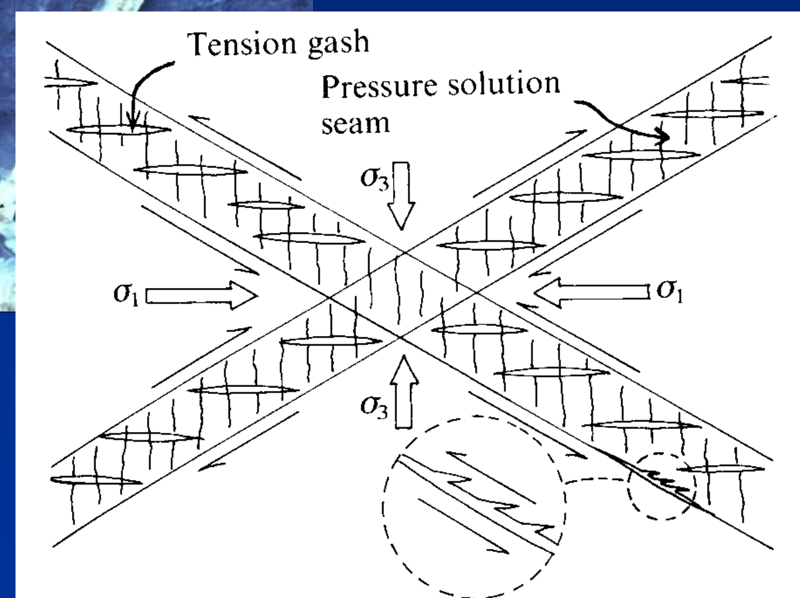
Da Ramsay, 1967

Strutture fragili-duttili: vene sigmoidali a schiera



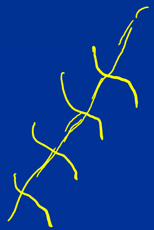
Da Ramsay and Huber, 1987

VENE A SHIERA



Da Price and Cosgrove,1990

Da Ramsay and Huber, 1987



Da Mercier & Vergely, 1996

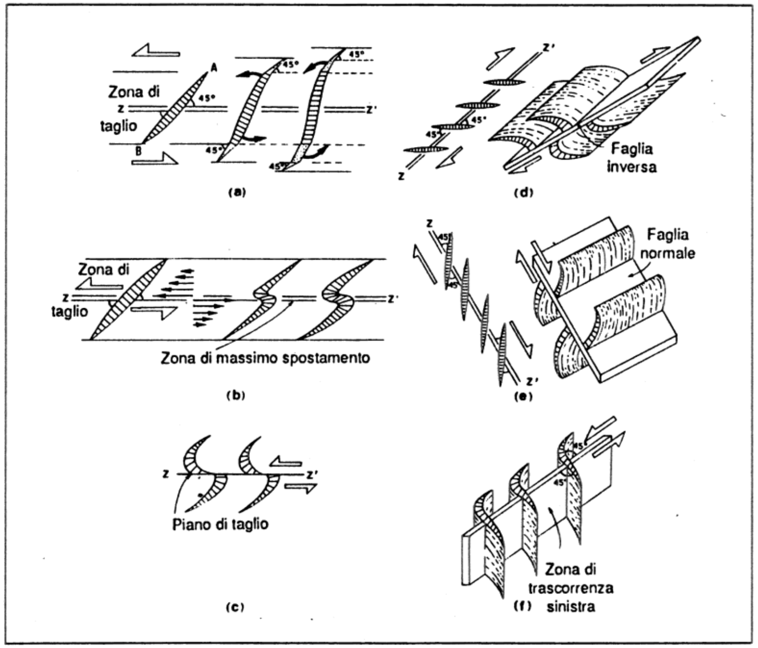
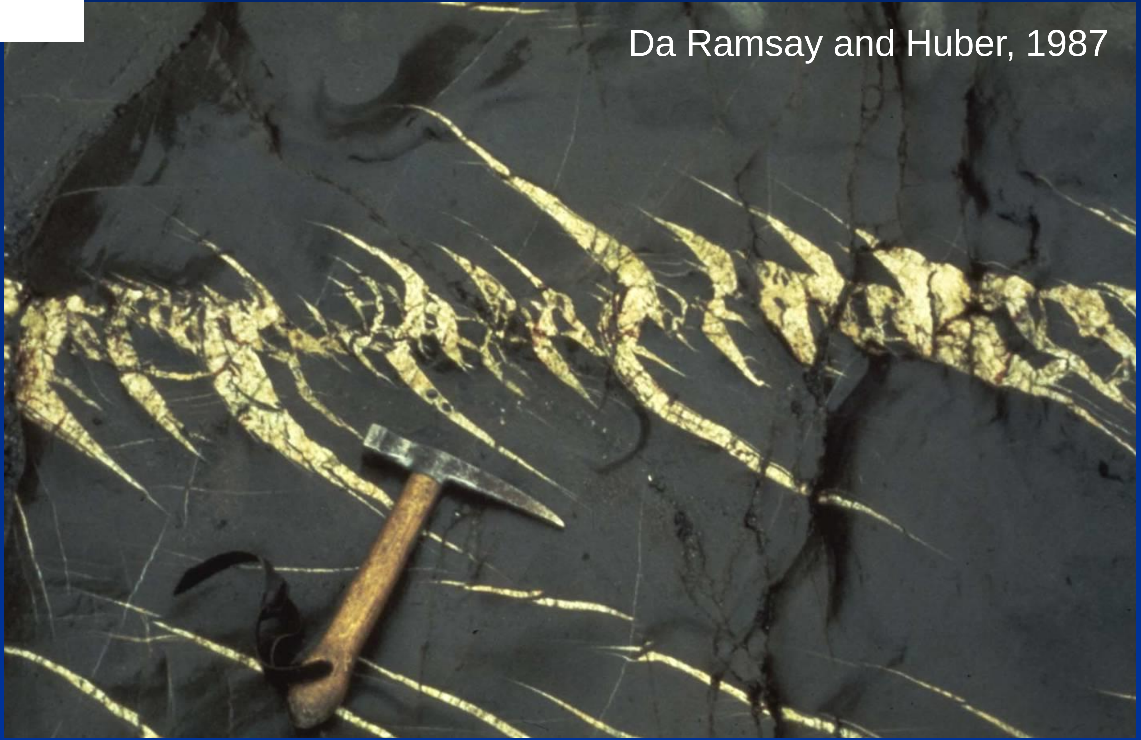
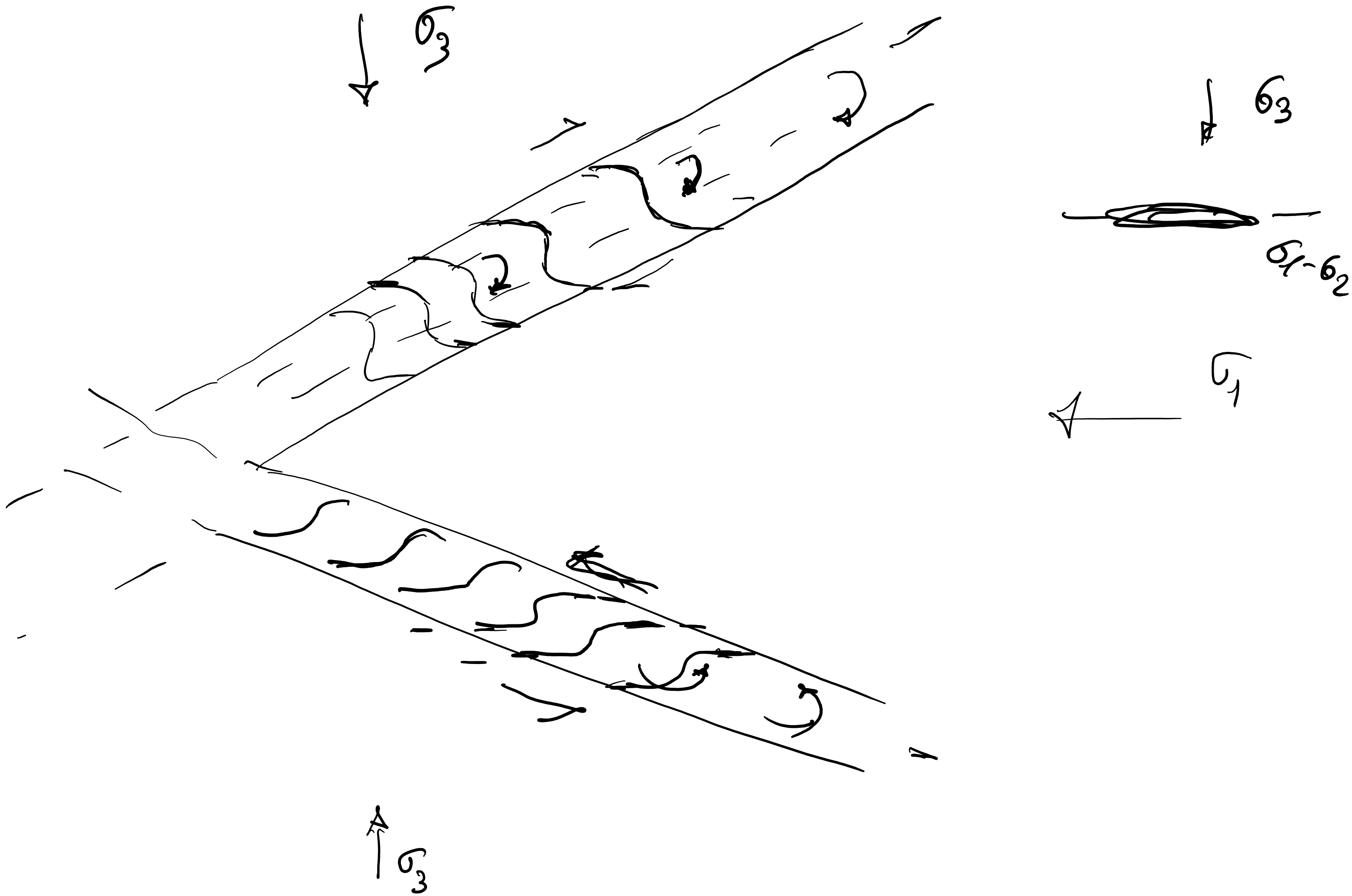


Figura 4.18. Squarci da tensione «en échelon» lungo una zona di taglio zz'.

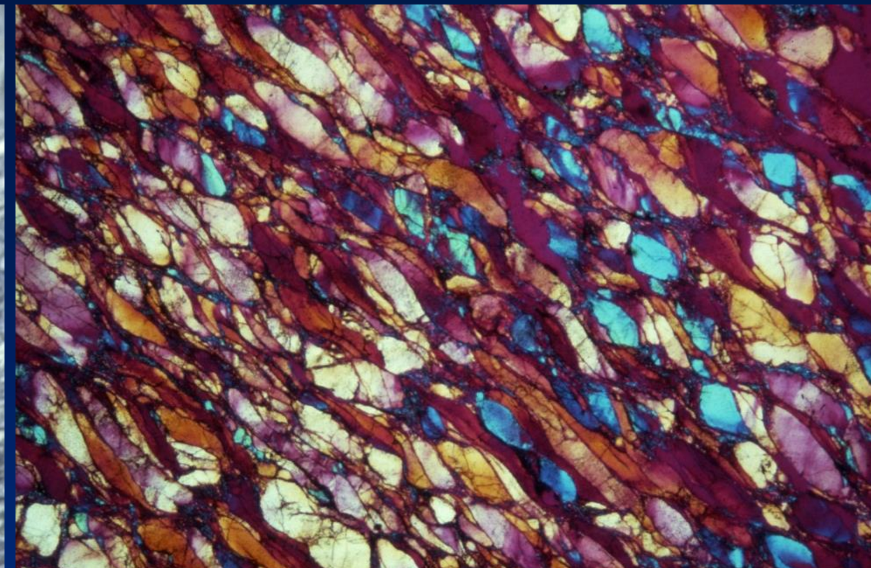
Da Ramsay and Huber, 1987





σ3
σ3
σ1-σ2
σ1
σ3

Classificazione del Clivaggio

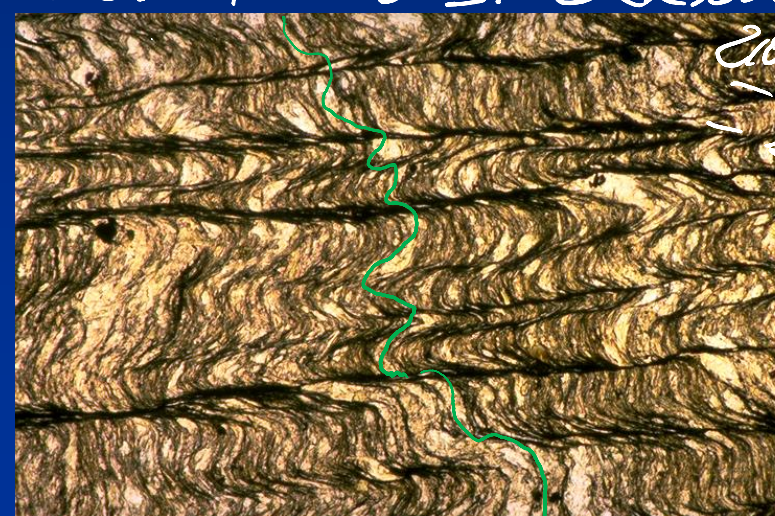


GNEIS FOLIATION

FOLIAZIONE CONTINUA

SLATY CLEAVAGE

CLIVAGGIO DI CRENULAZIONE

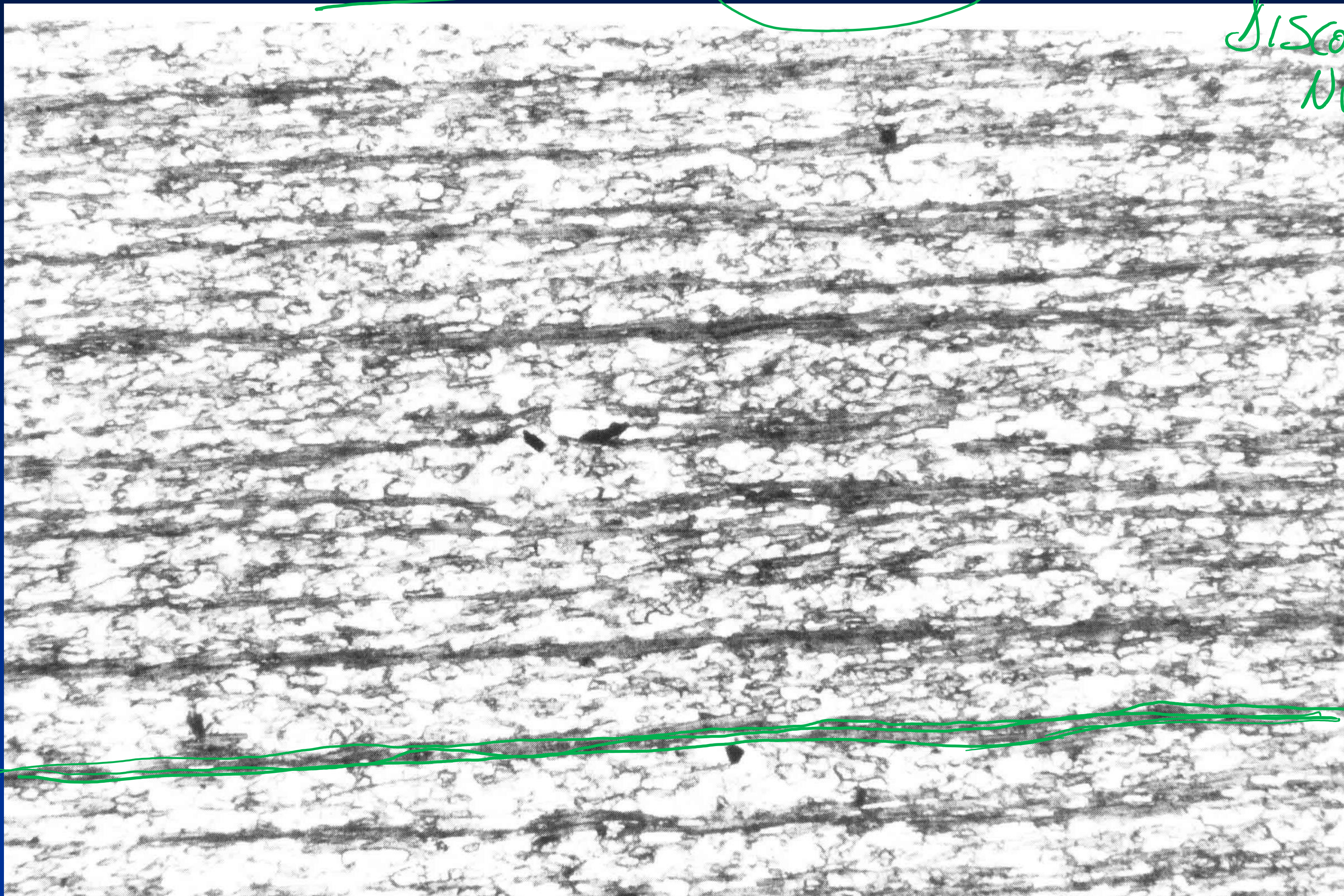


Passchier & Trouw, 2006

S_1

Cleavage domains e microlithons

FOLIAZIONE – CLIVAGGIO
DISCONTINUA



Passchier & Trouw, 2006

DOMINIO DI C.O.F.

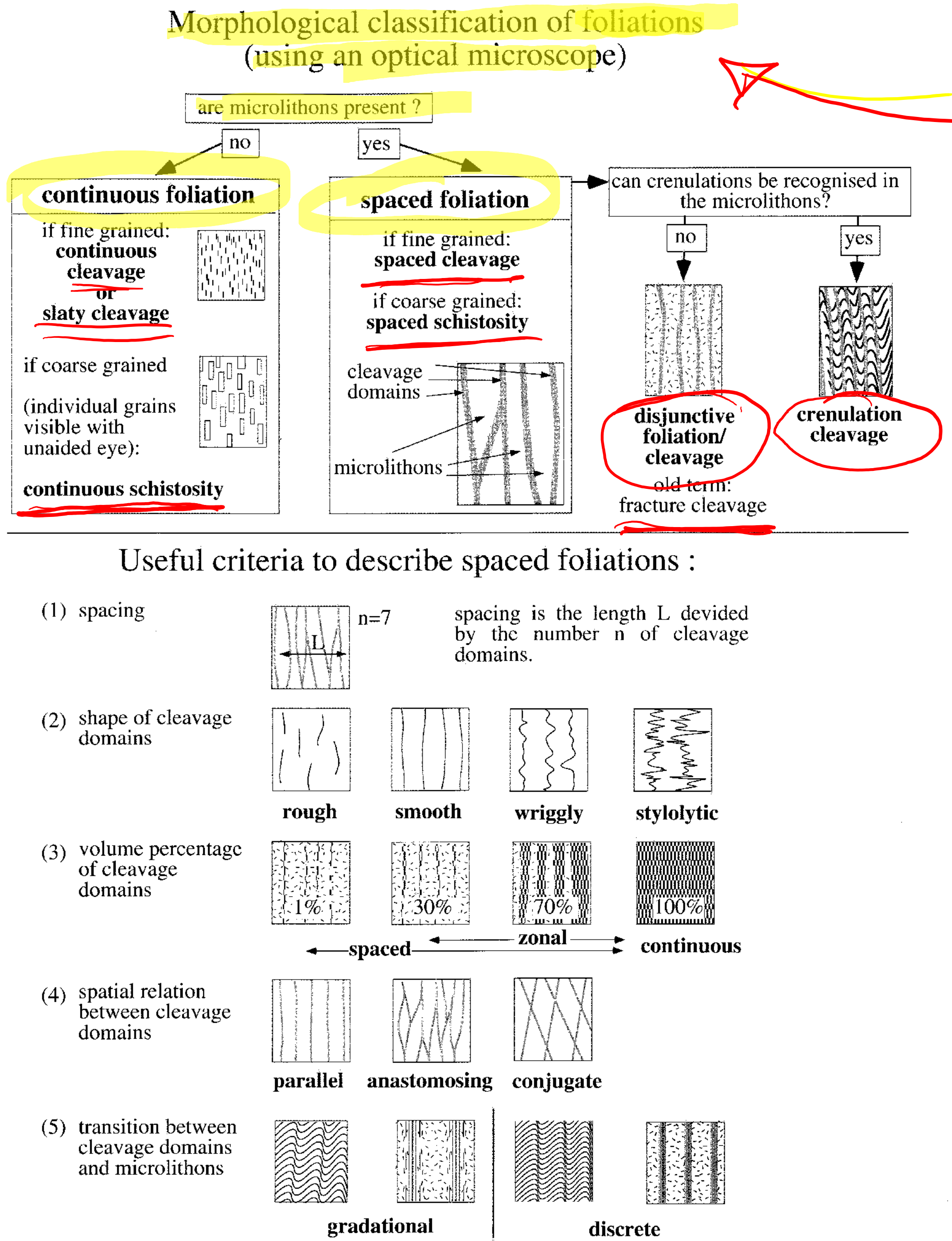


Fig. 4.6. Morphological classification of foliations using an optical microscope. (After Powell 1979 and Borradaile et al. 1982)

SLATY CLEAVAGE

GNEIS FOLIATION

FOLIA- ZIONE

MICROTEC- TONICS

Da Passchier & Trouw, 2006

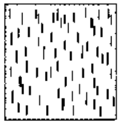
Morphological classification of foliations
(using an optical microscope)

are microlithons present ?

no →

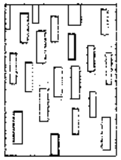
continuous foliation

if fine grained:
continuous cleavage or slaty cleavage



if coarse grained

(individual grains visible with unaided eye):



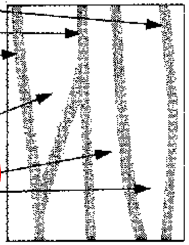
continuous schistosity

yes →

spaced foliation

if fine grained:
spaced cleavage

if coarse grained:
spaced schistosity



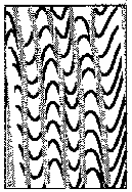
can crenulations be recognised in the microlithons?

no →

disjunctive foliation/ cleavage

old term:
fracture cleavage

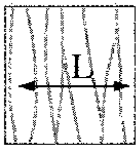
yes →



crenulation cleavage

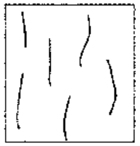
Useful criteria to describe spaced foliations :

(1) spacing



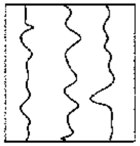
spacing is the length L devided by the number n of cleavage domains.

(2) shape of cleavage domains

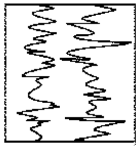


rough

smooth



wriggly



stylolytic

fracture cleavage

Useful criteria to describe spaced foliations :

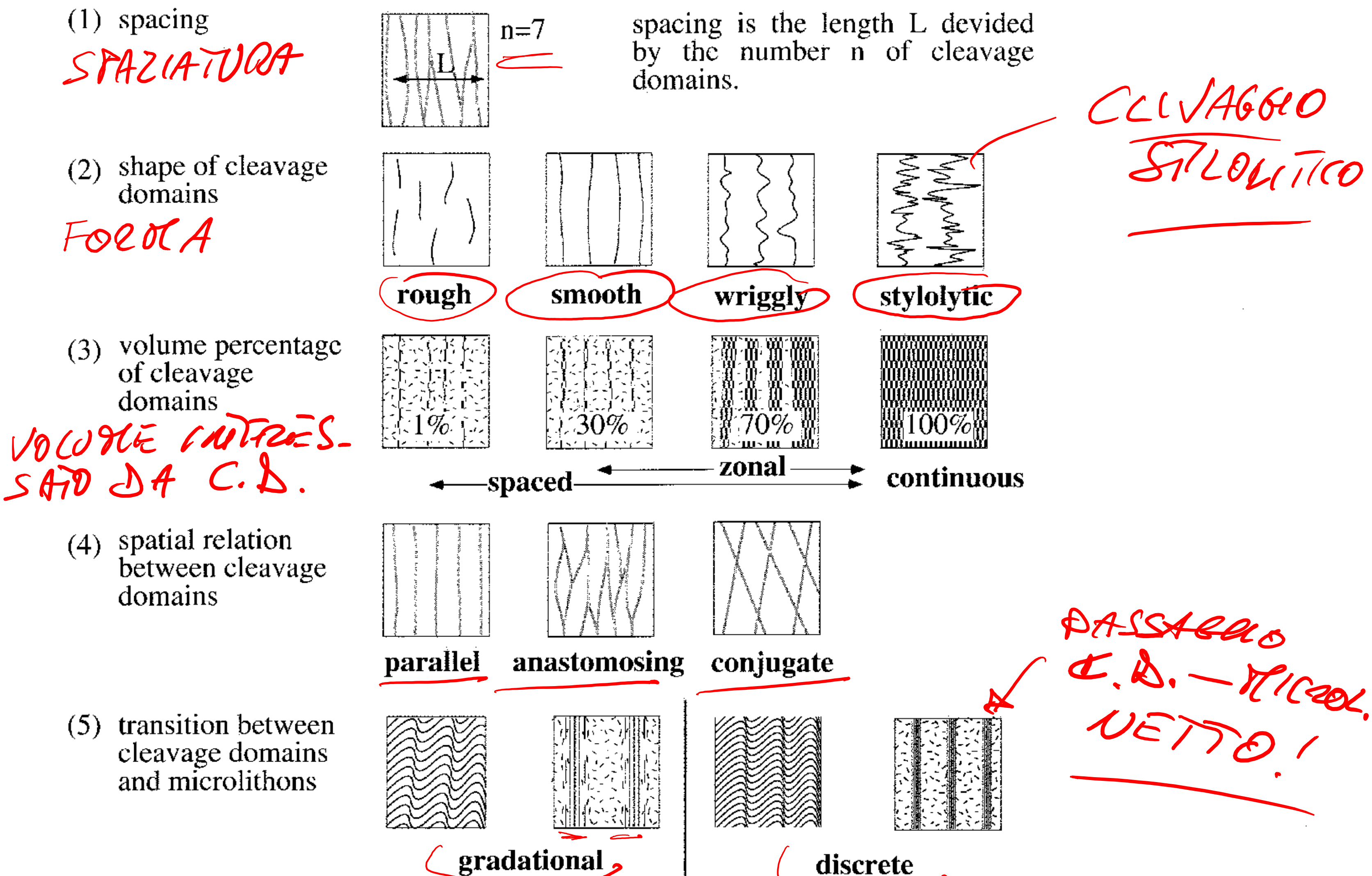


Fig. 4.6. Morphological classification of foliations using an optical microscope. (After Powell 1979 and Borradaile et al. 1982)