

Les Plis :

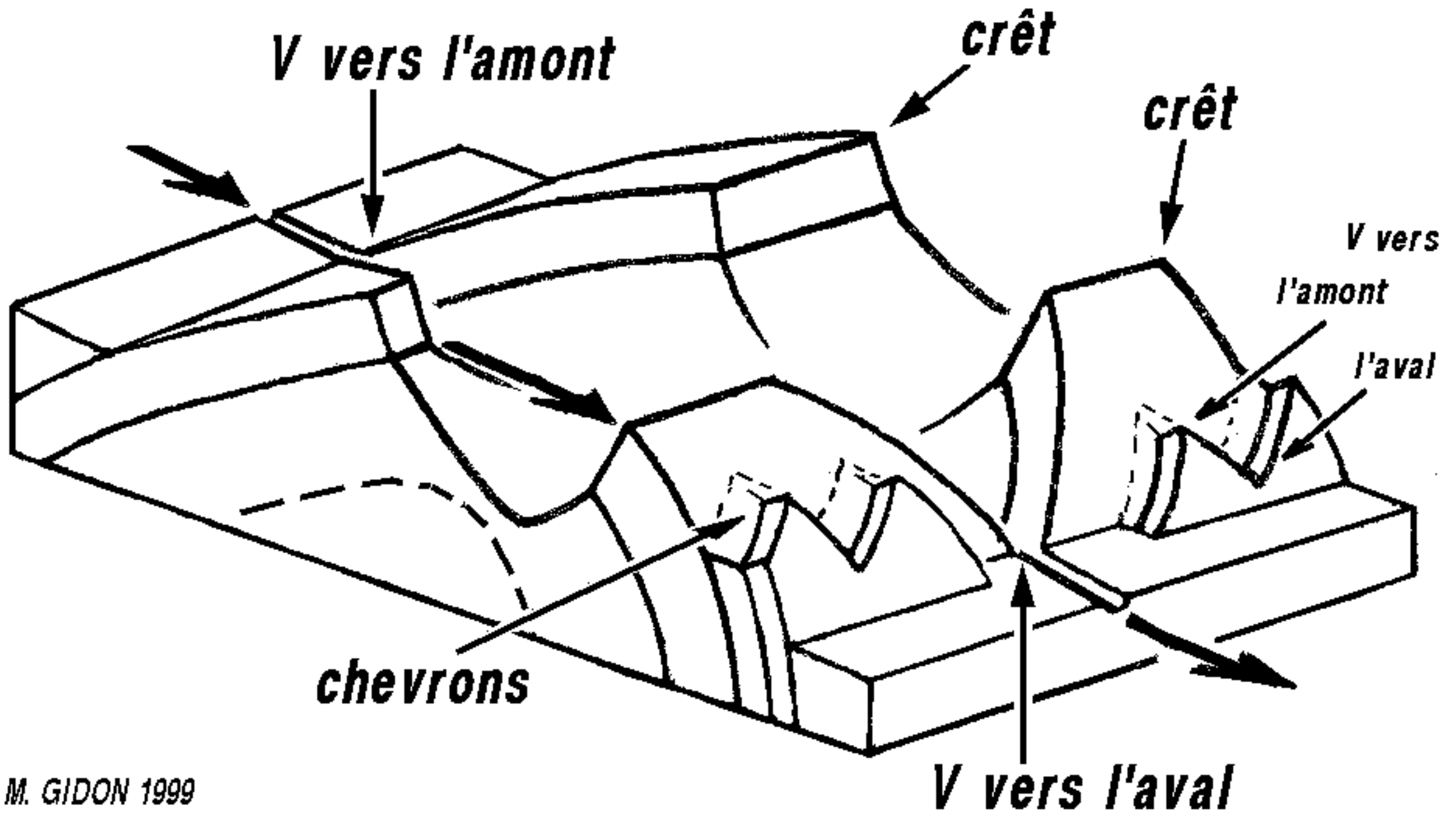
***Diversité de leurs formes,
de leurs modes de formation
et de leurs assemblages***

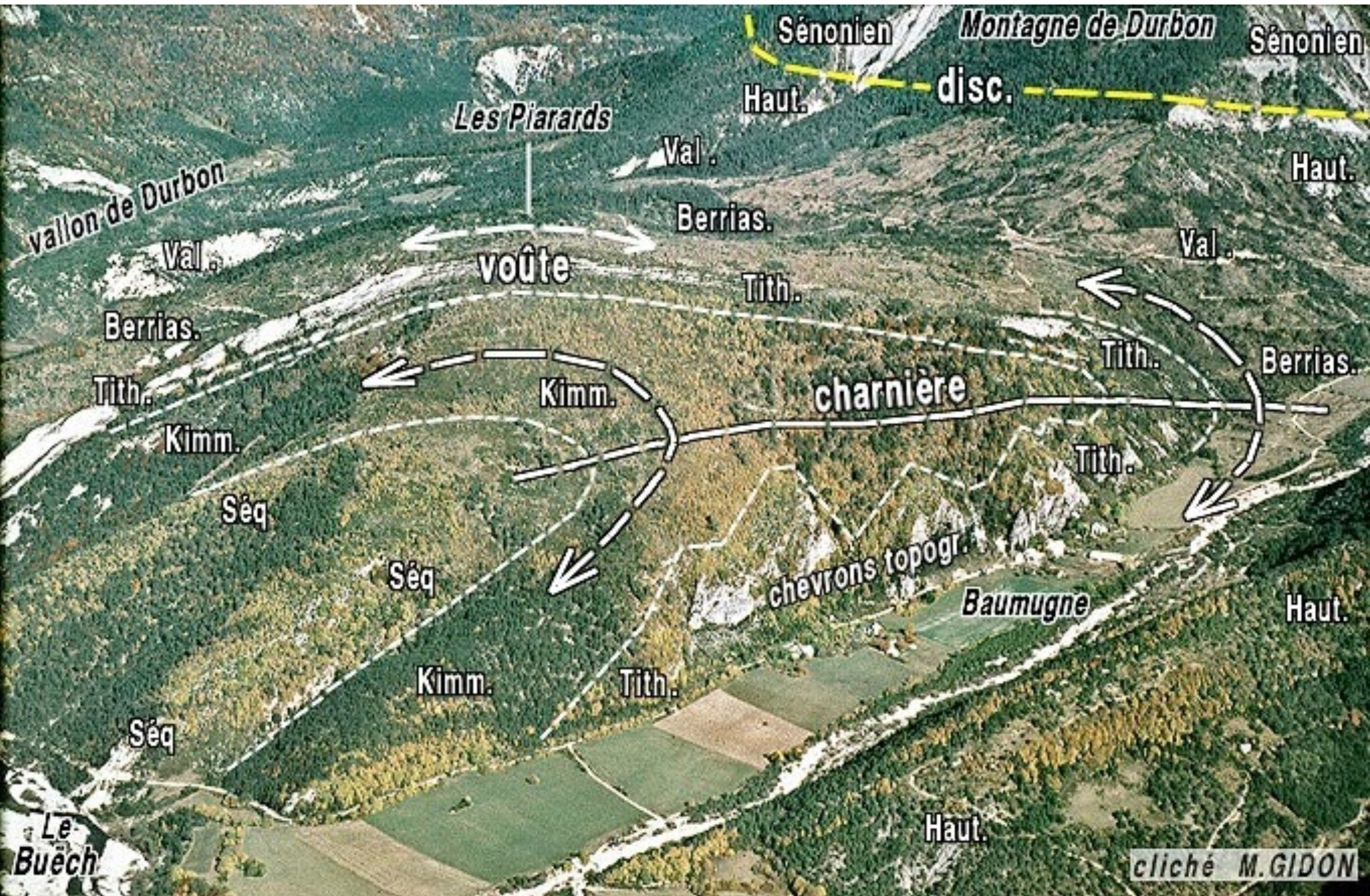
***Leurs relations avec les autres
structures tectoniques***



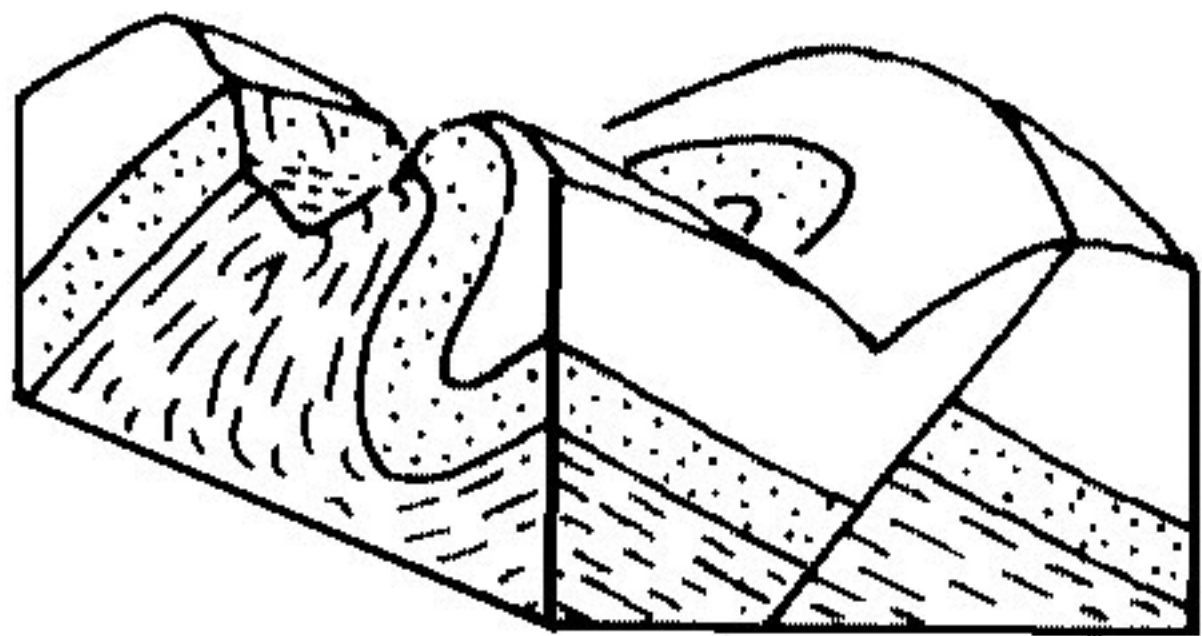




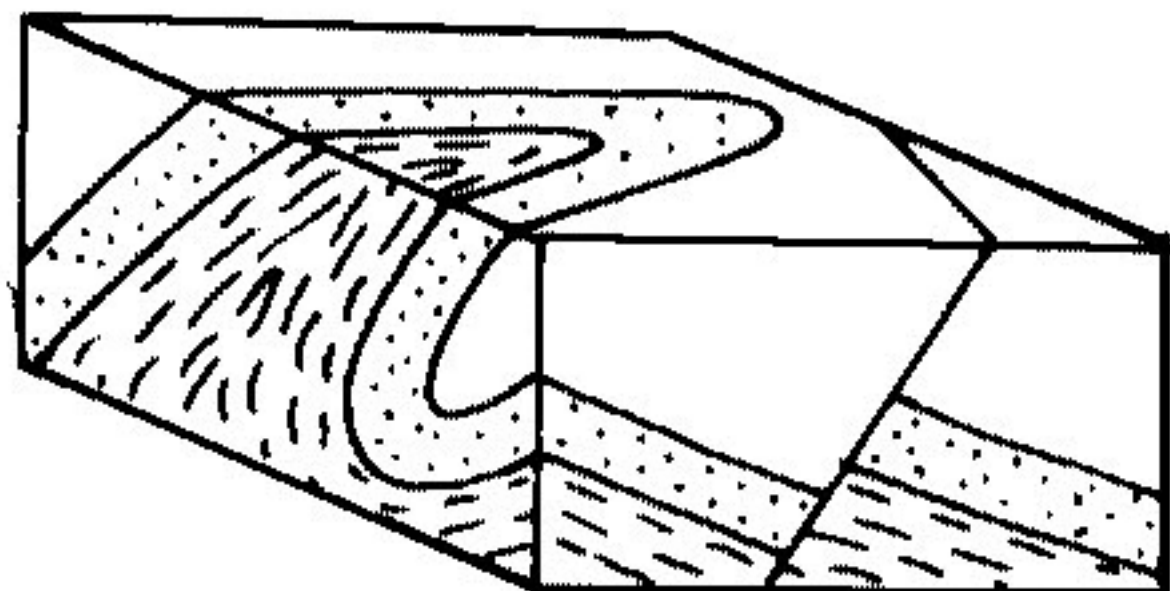




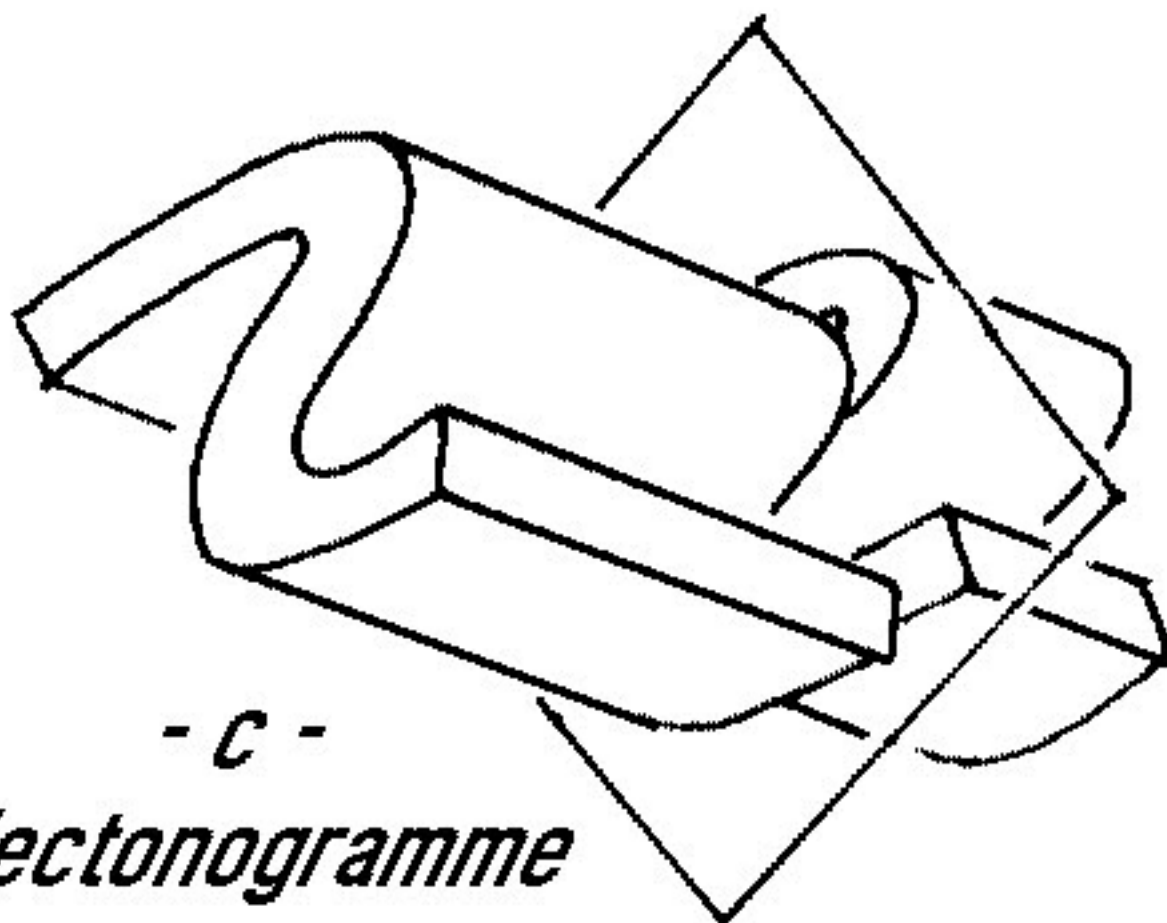
cliché M.GIDON



- a - Stéréogramme



- b - Bloc diagramme



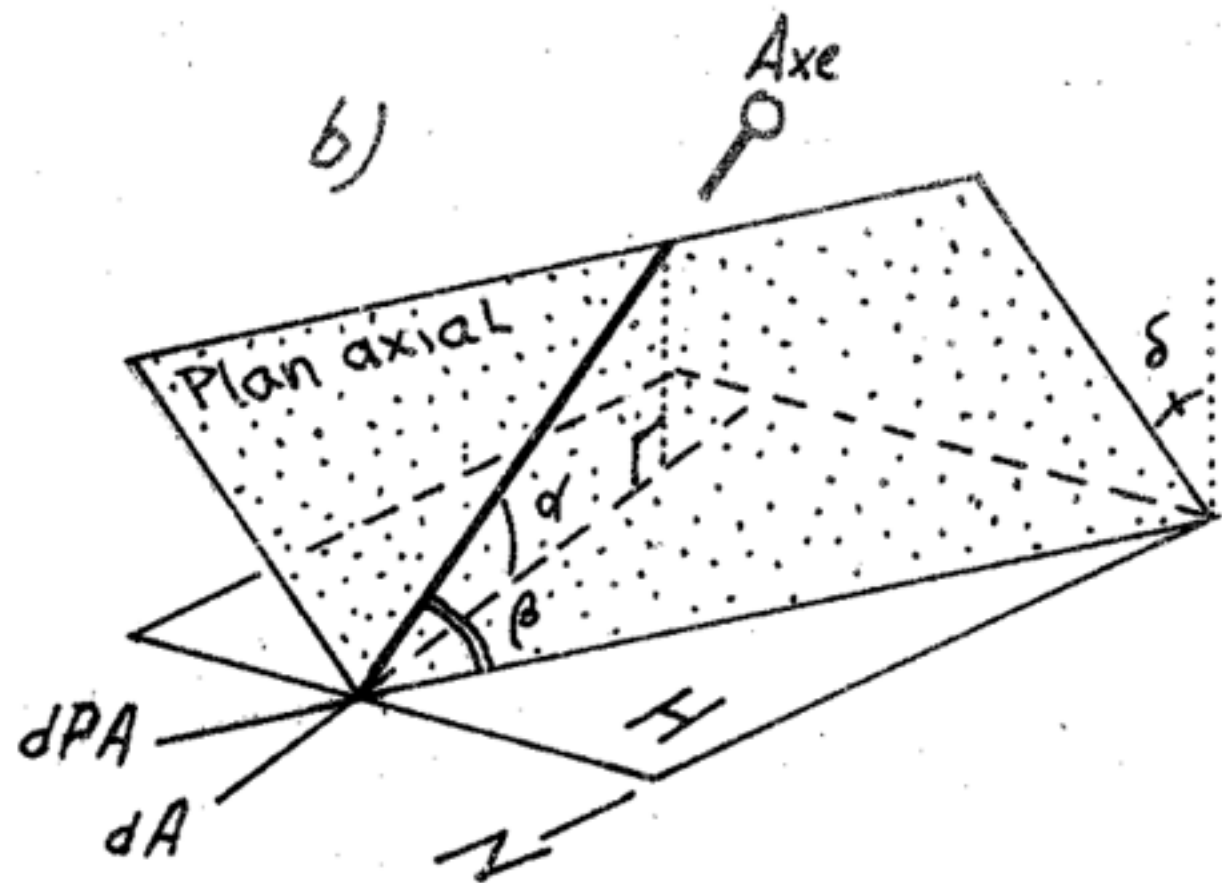
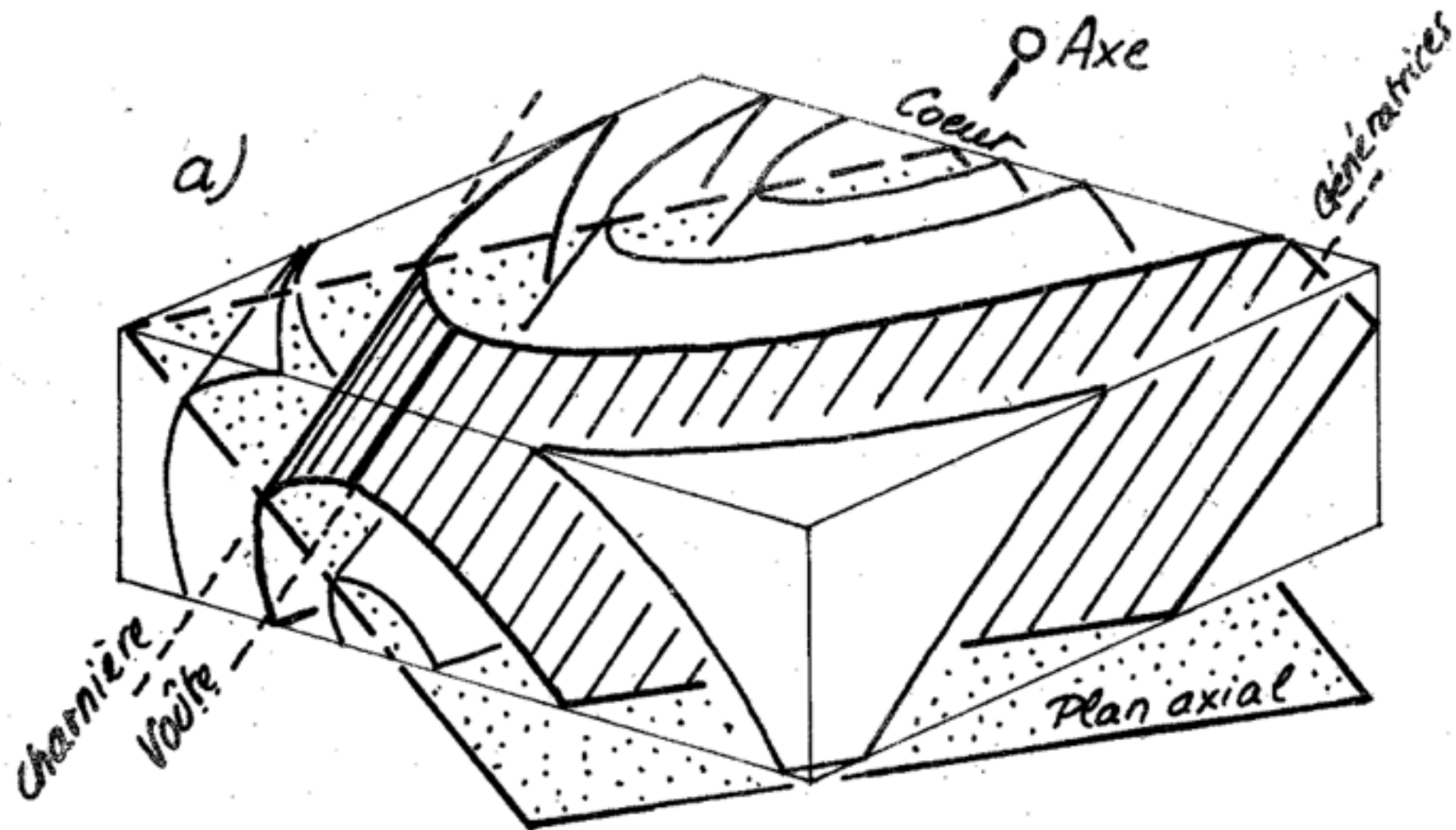
*- c -
Tectonogramme*

Les Plis :

Formes

et

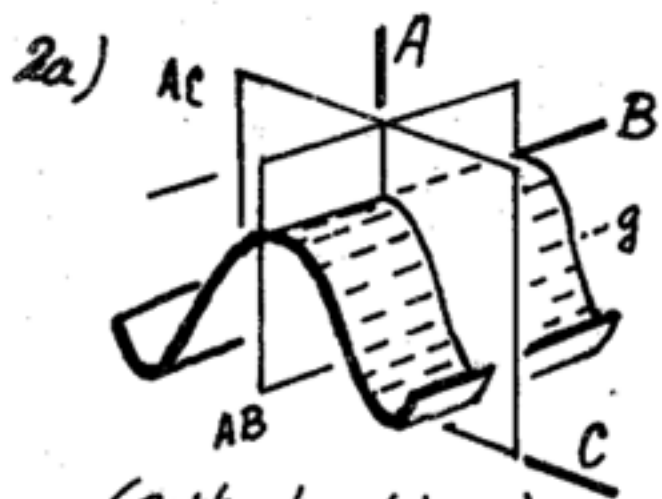
dispositions



$dPA = \text{direction du Plan axial}$
 $dA = \text{direction d'axe}$

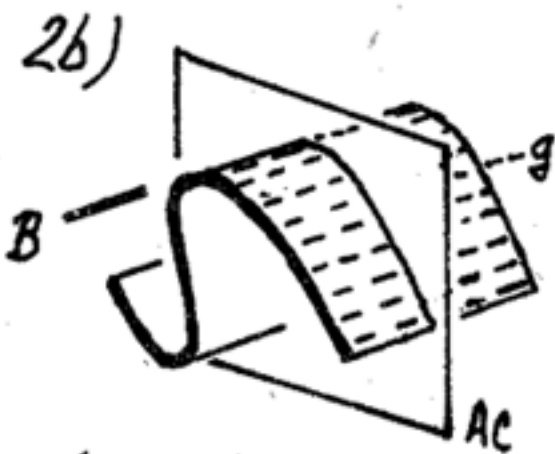
$\alpha = \text{plongement axial}$
 $\beta = \text{pitch axial (dans PA)}$
 $\delta = \text{dèversement}$

② Degré de symétrie

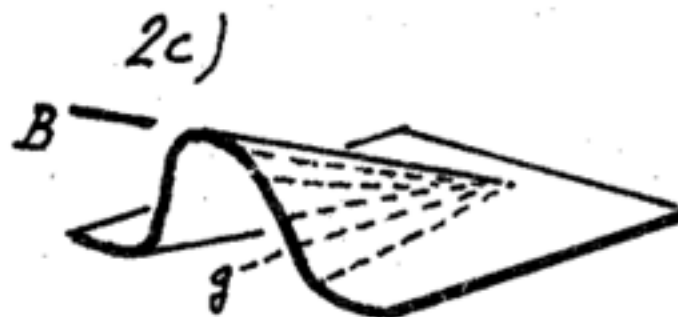


(orthorhombique)

Plis cylindriques

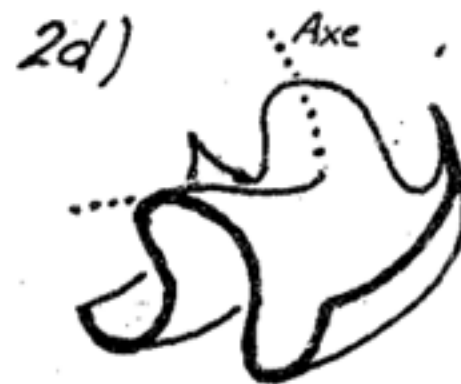


(monoclinique)



(triclinique)

conique



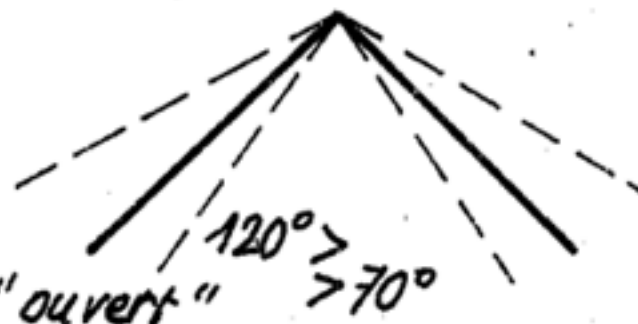
(complexe)

quelconque

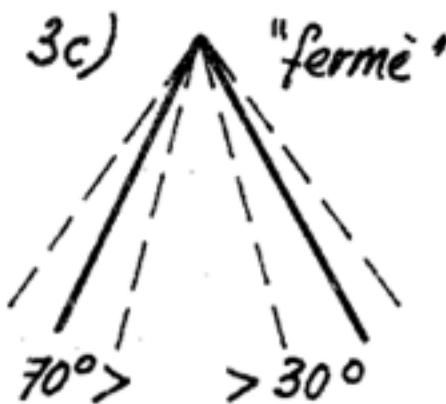
③ "Ouverture" de la charnière



3a) "très ouvert"



3b) "ouvert"



3c) "fermé"



3d) "aigu"

④ Dispositions flancs/charnières

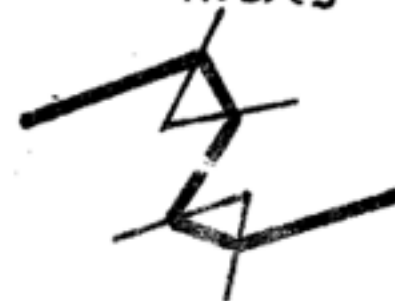
sinueux

anguleux

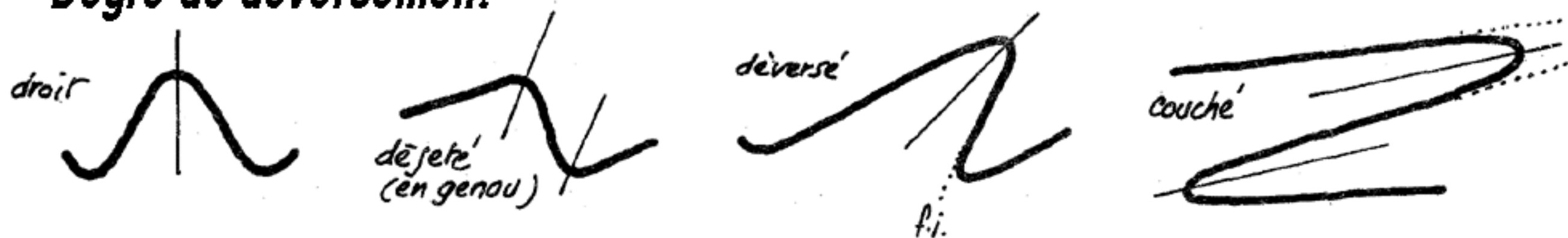
monoclinaux

à 2 charnières

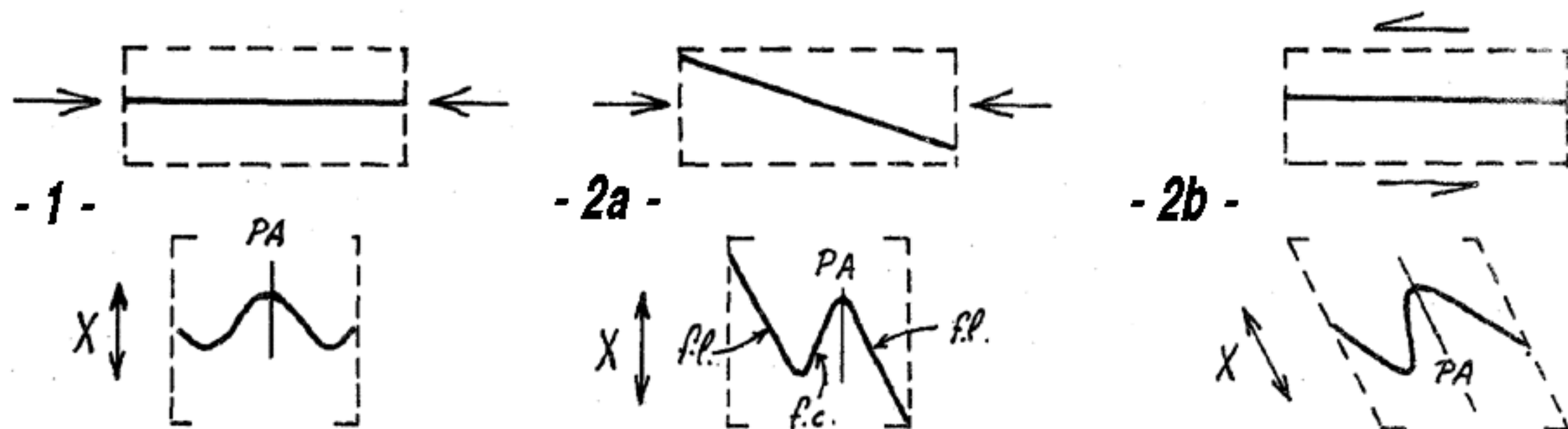
coffrés

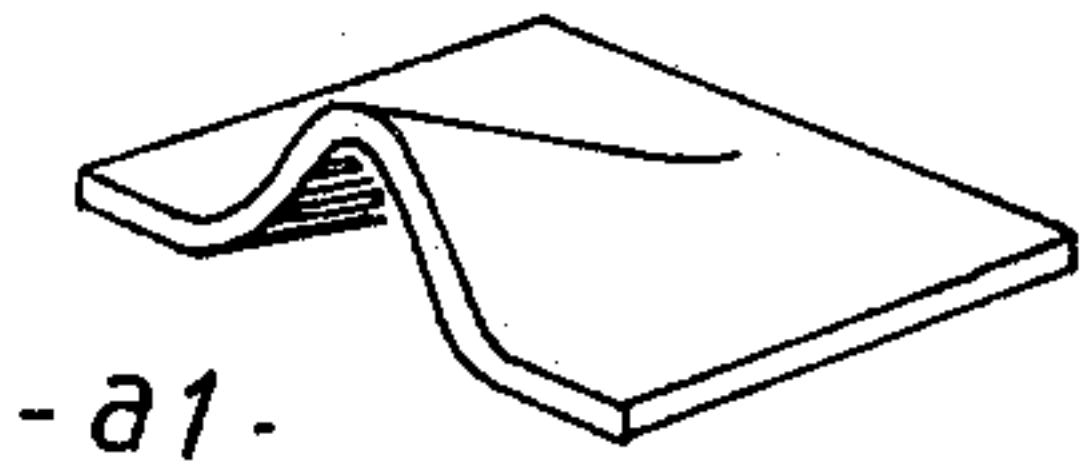


Degré de déversement

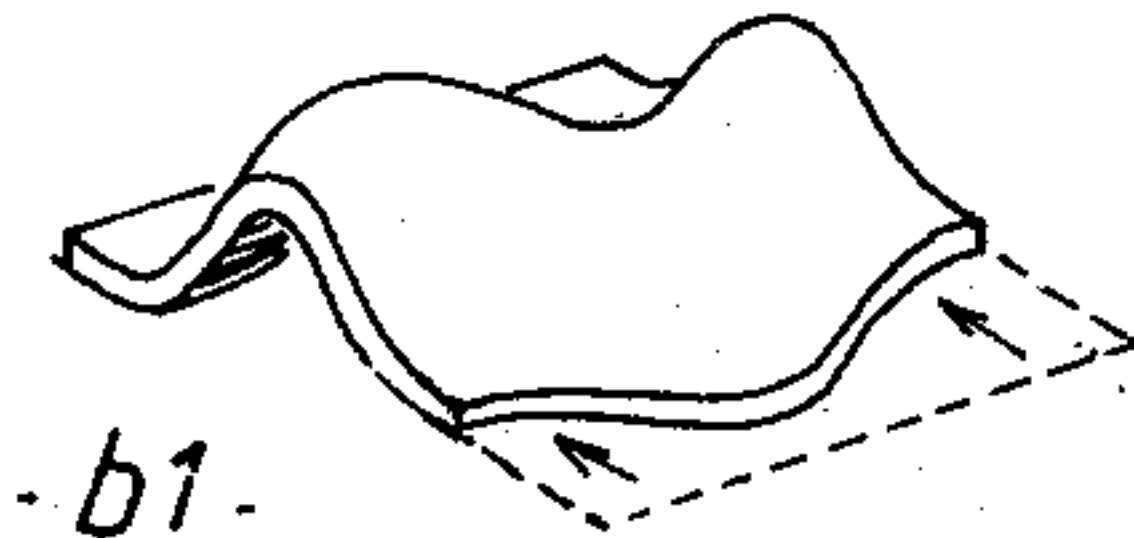


Deux origines du déversement





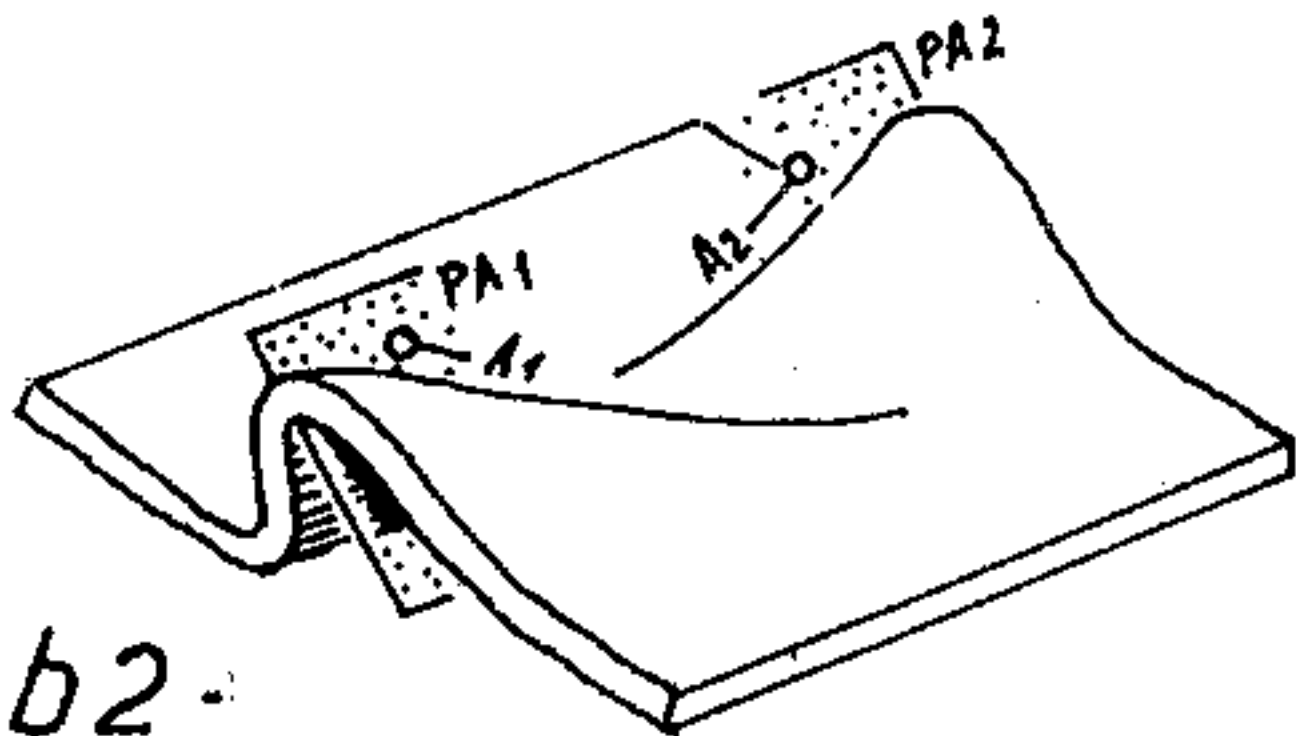
- a1 -



- b1 -



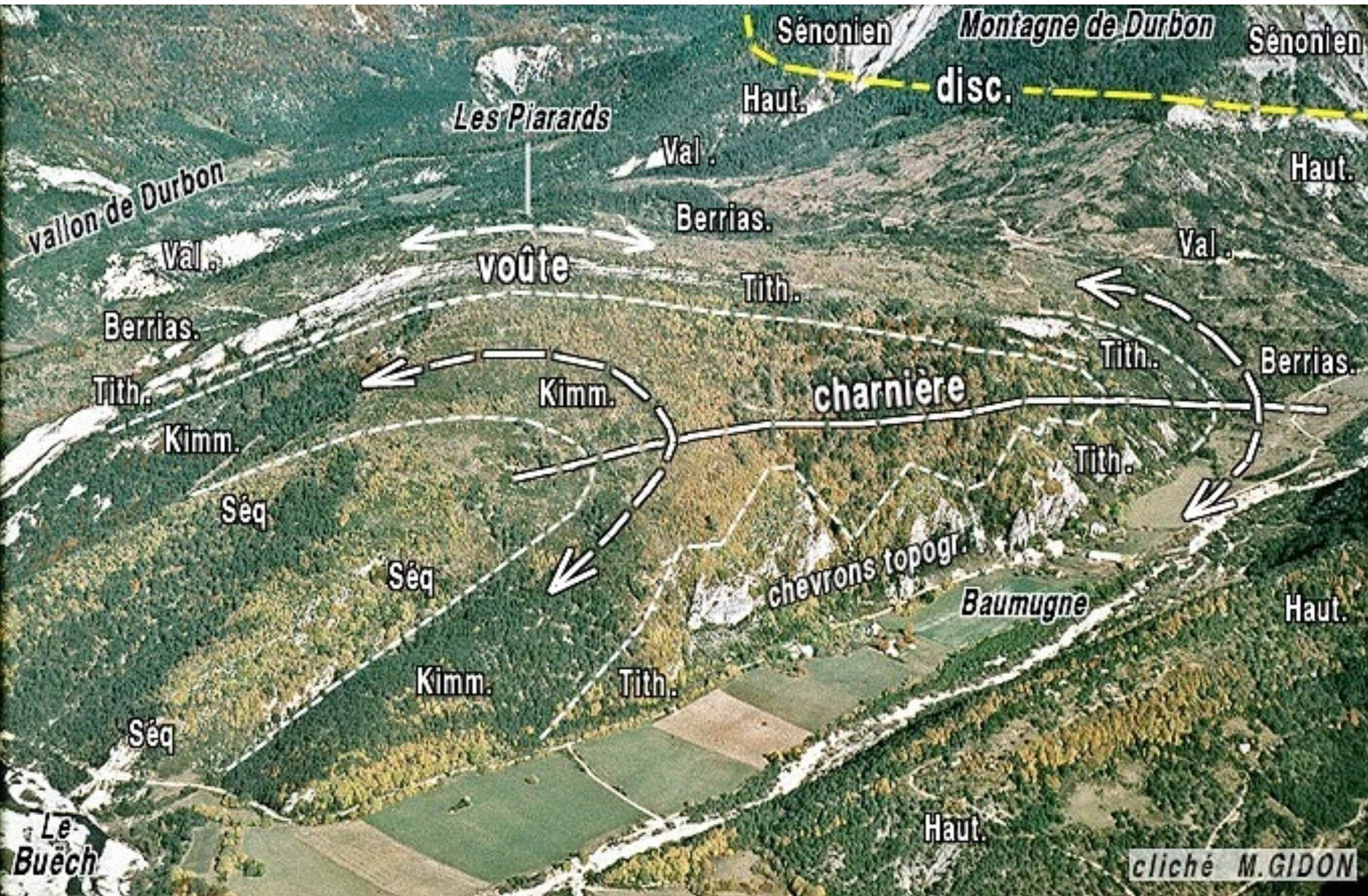
- a2 -

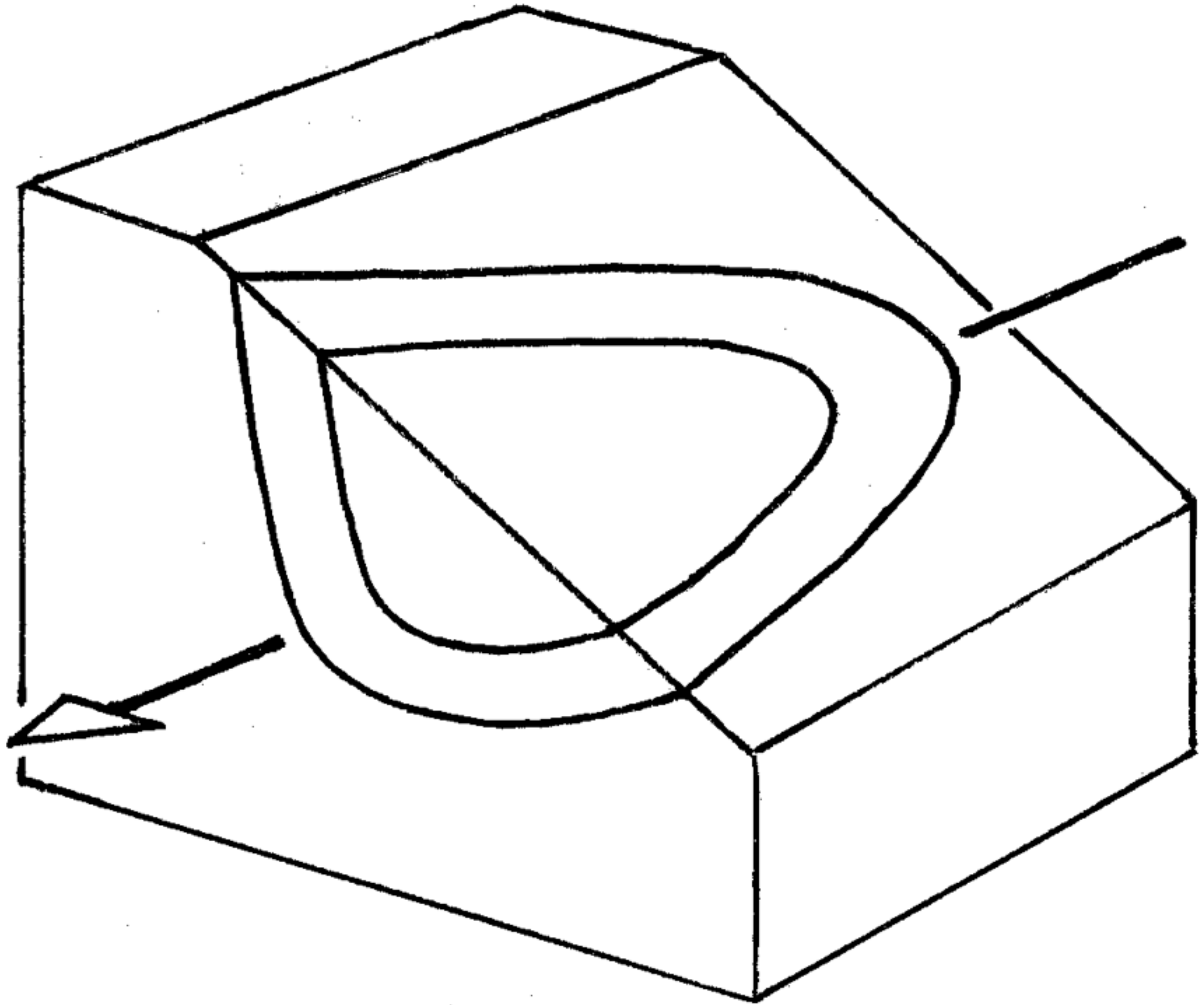


- b2 -













Les Plis :

***Modes de
formation***

Les Plis :

formes et modes de formation :

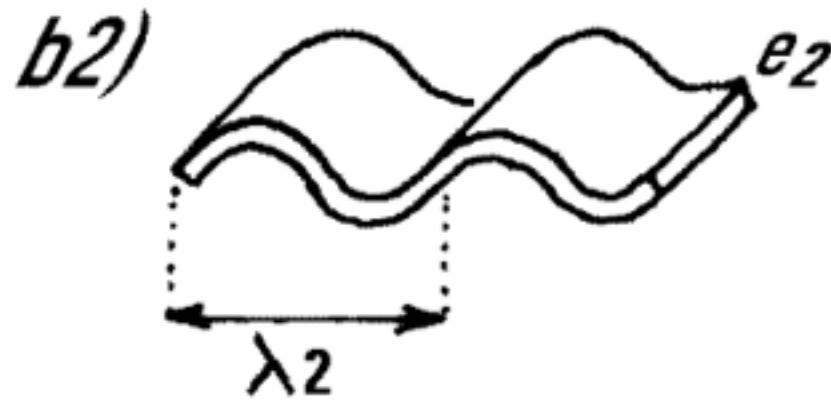
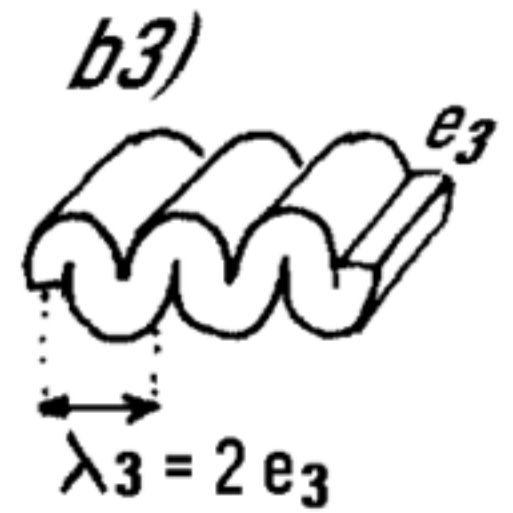
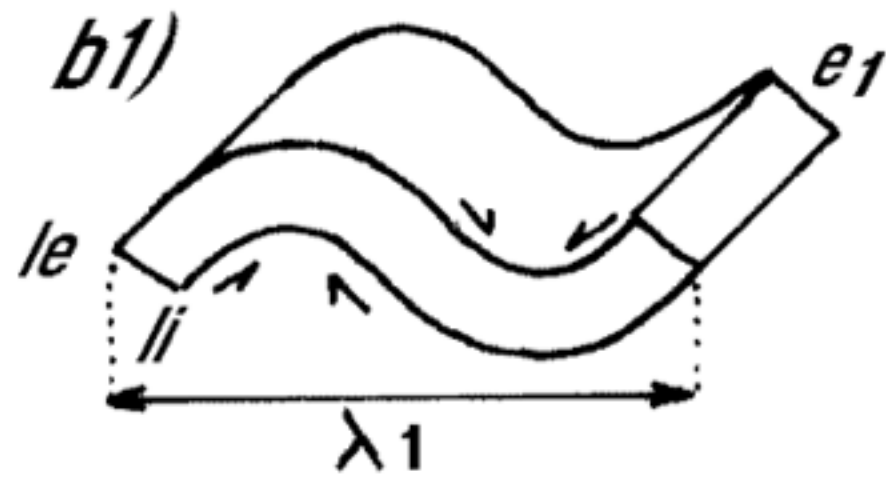
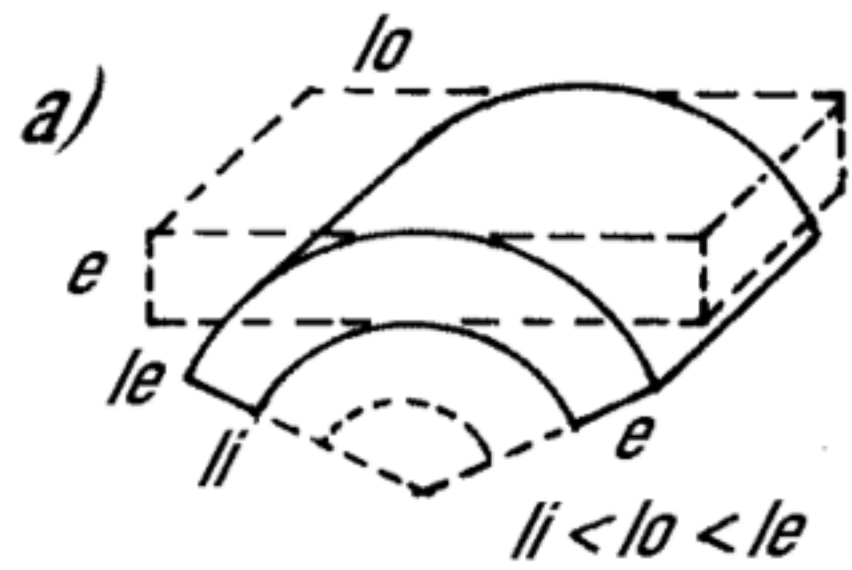
Plis par flexion

("concentriques")



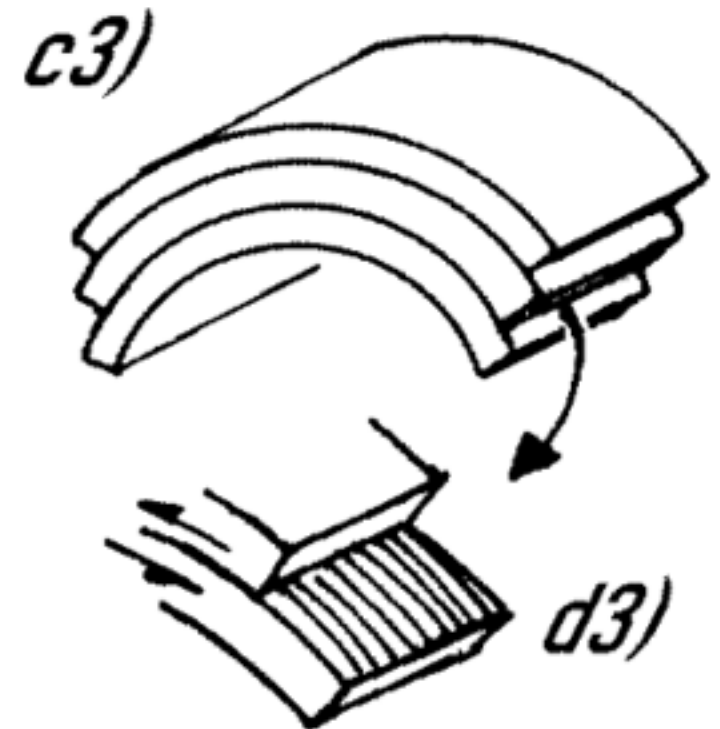
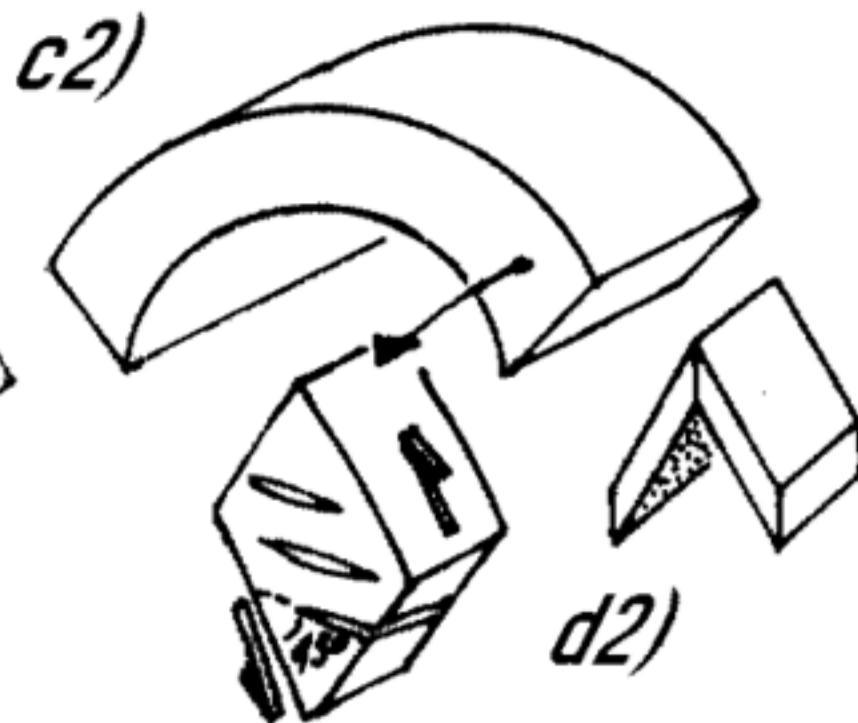
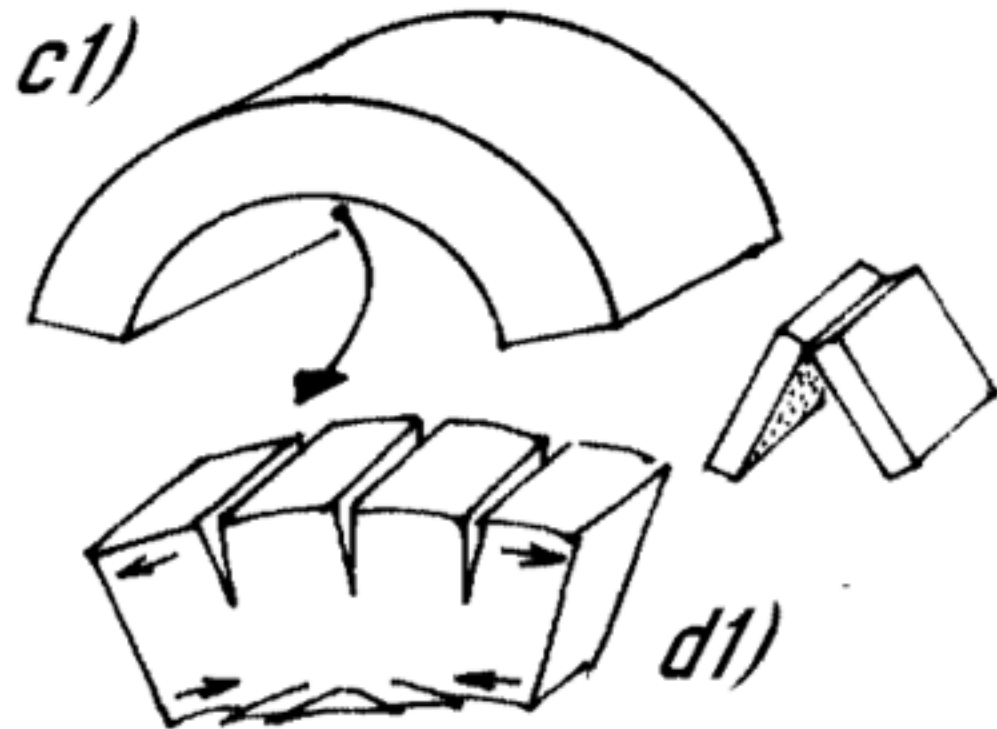


Flexion



$$\lambda = 2\pi e^3 \chi k^{(*)}$$

(*) k dépend du contraste de viscosité entre les couches







Les Plis :

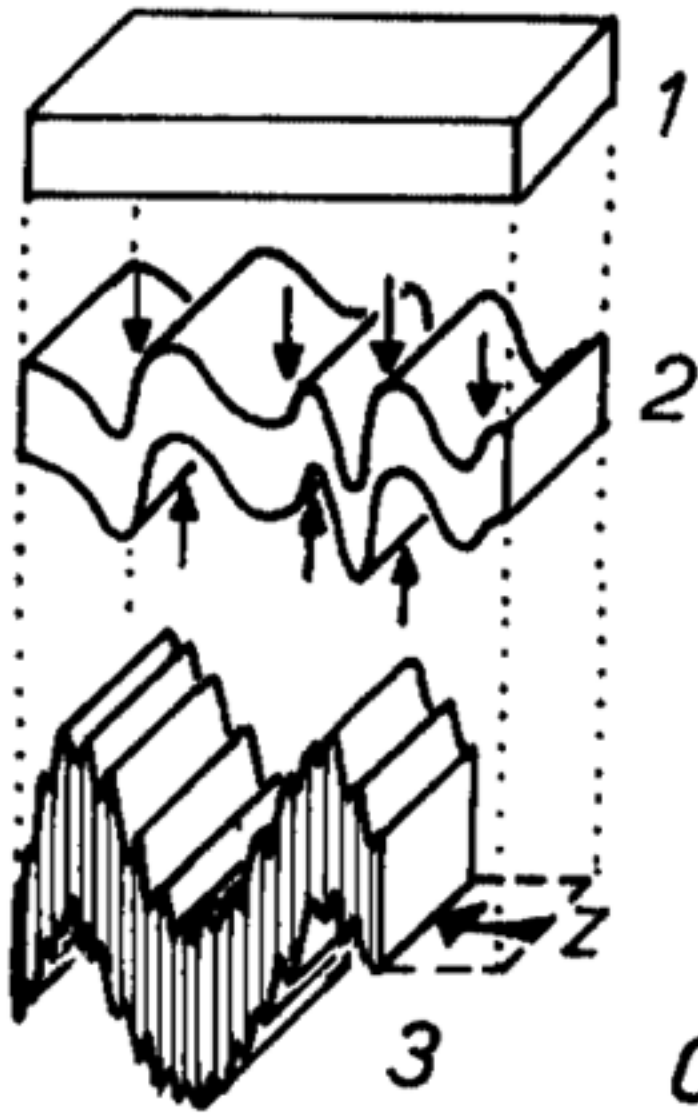
formes et modes de formation :

***Plis par
aplatissement
- glissement
("semblables")***

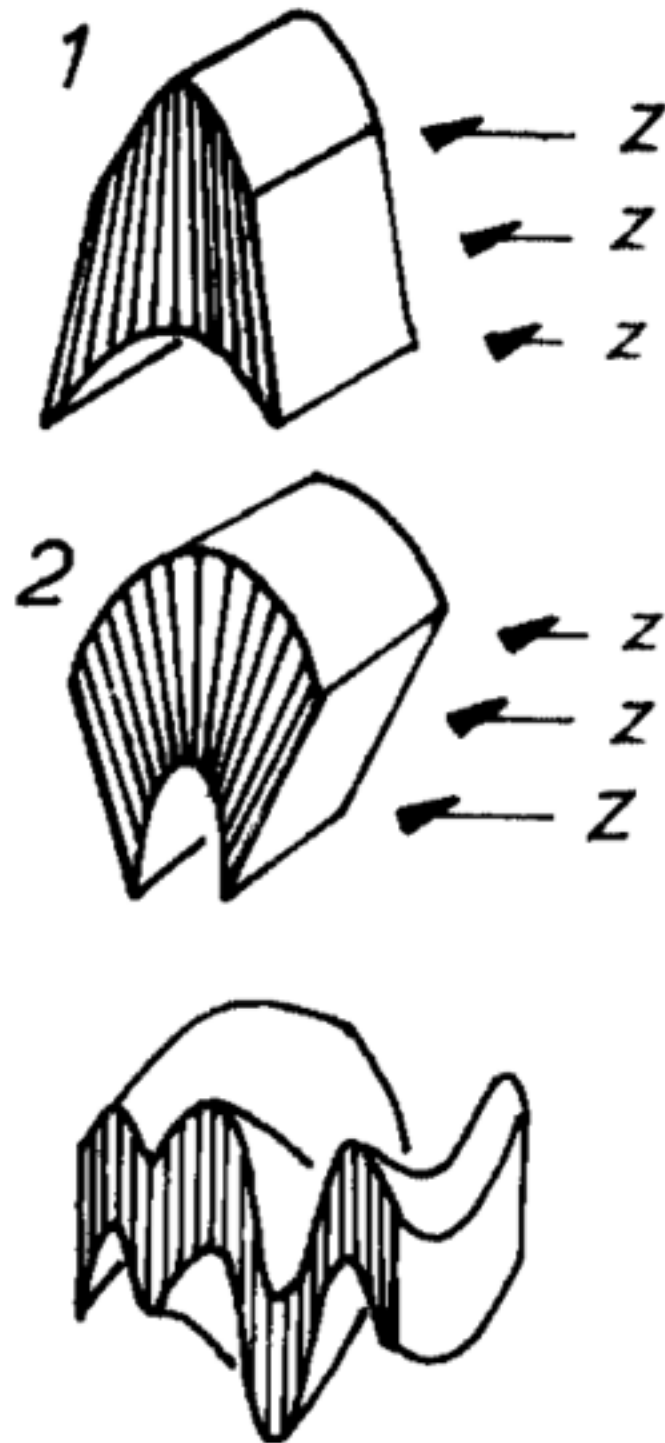


2 / Aplatissement

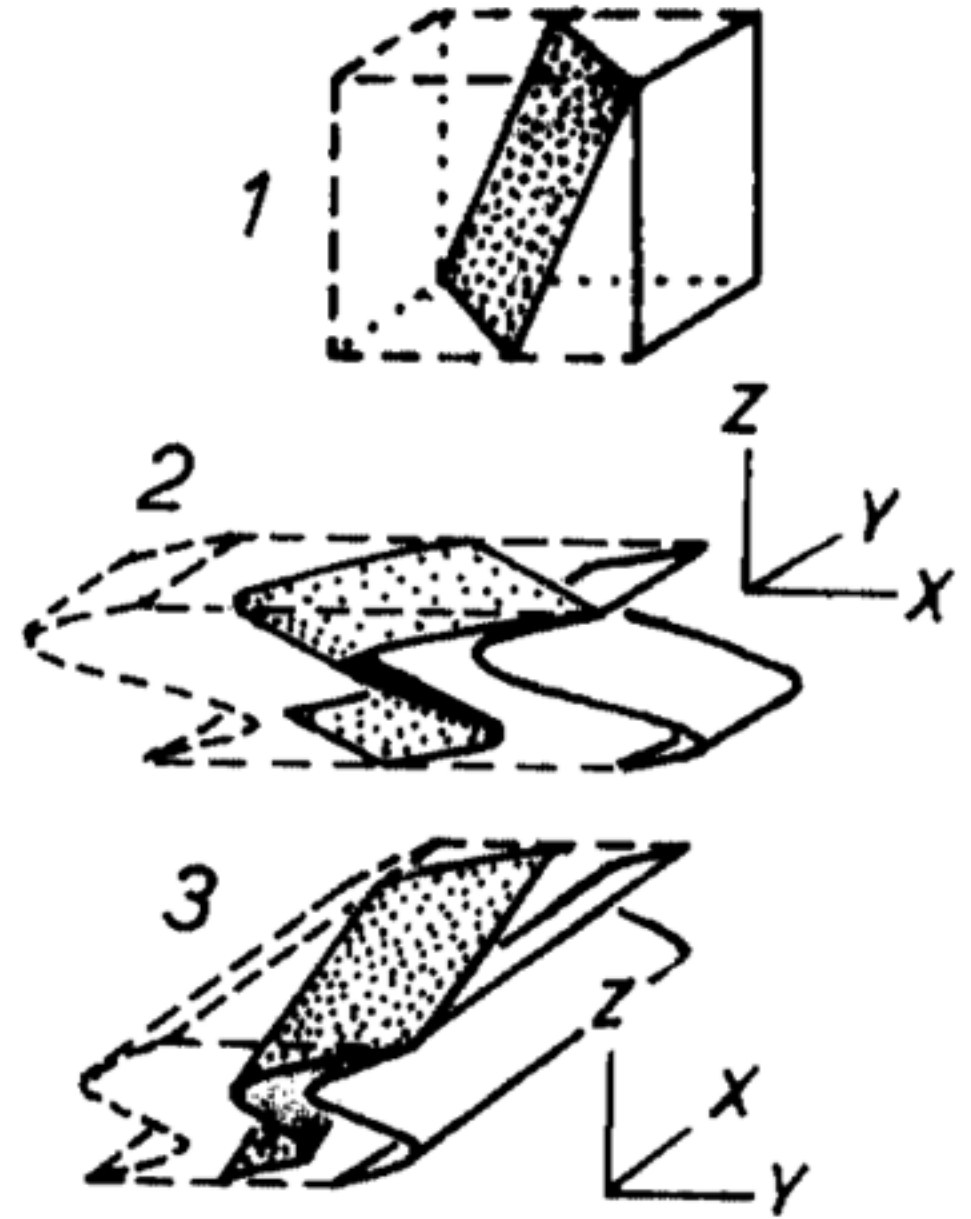
-a-



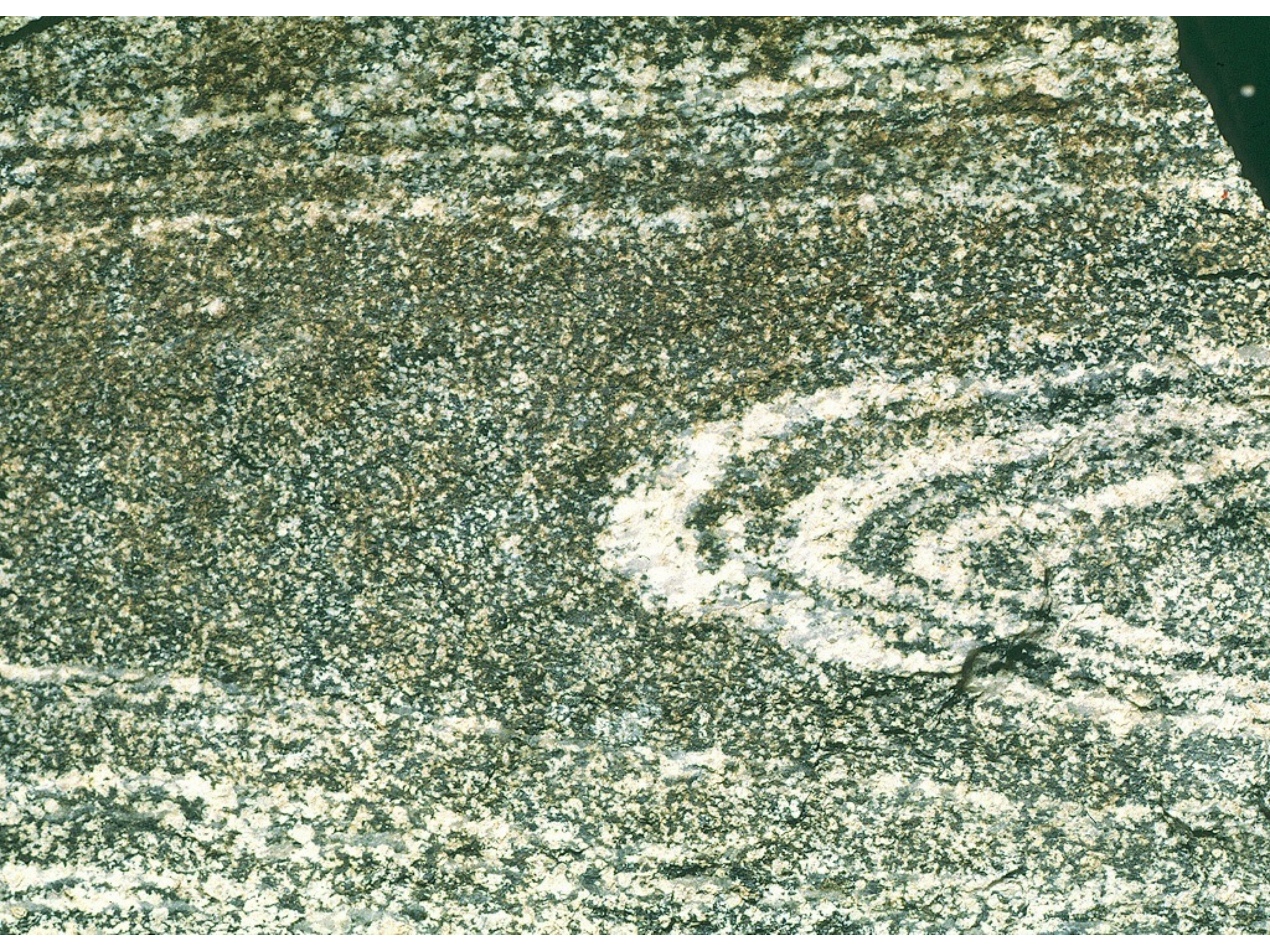
-b-

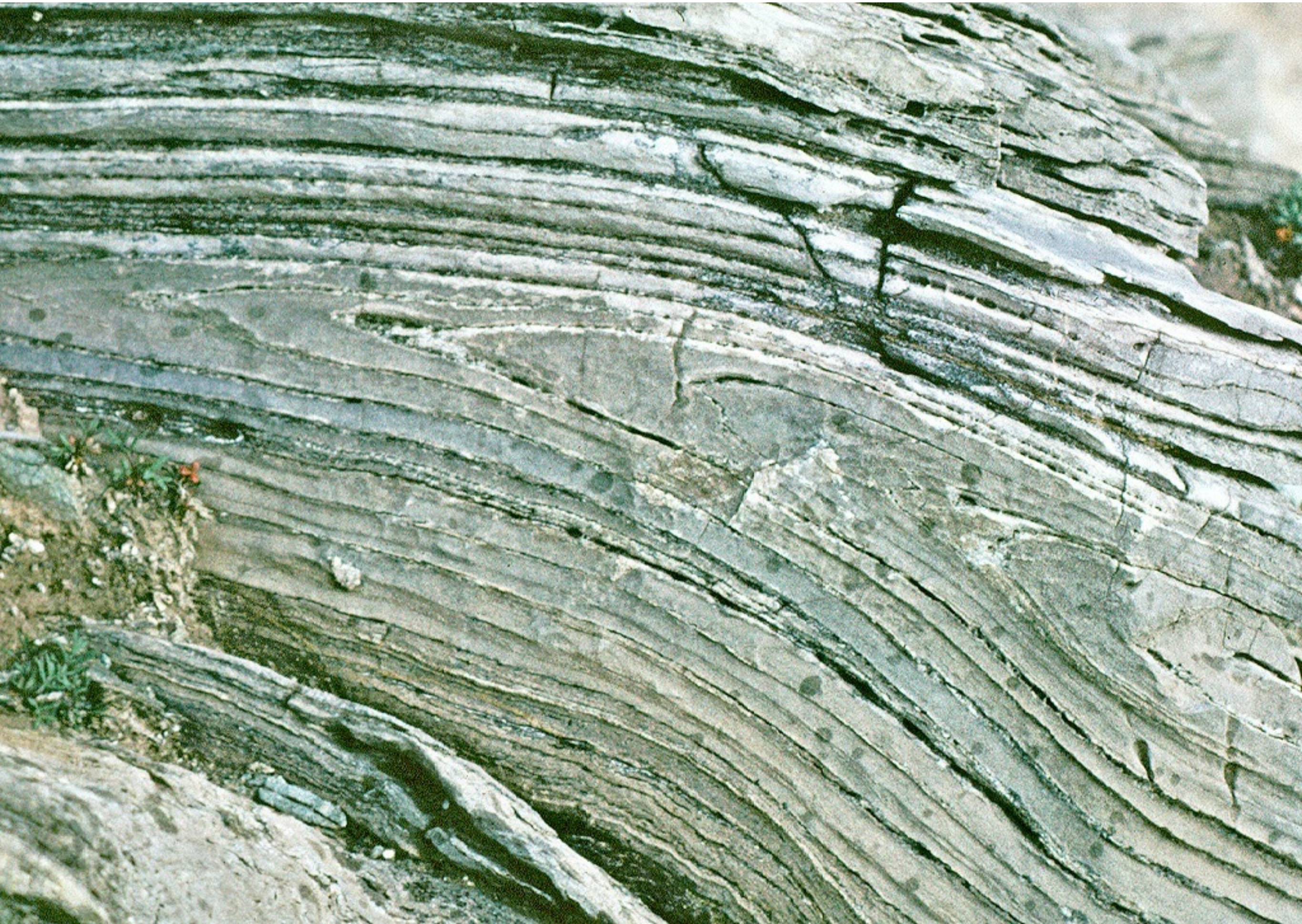


-d-















5 cm

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Les Plis :

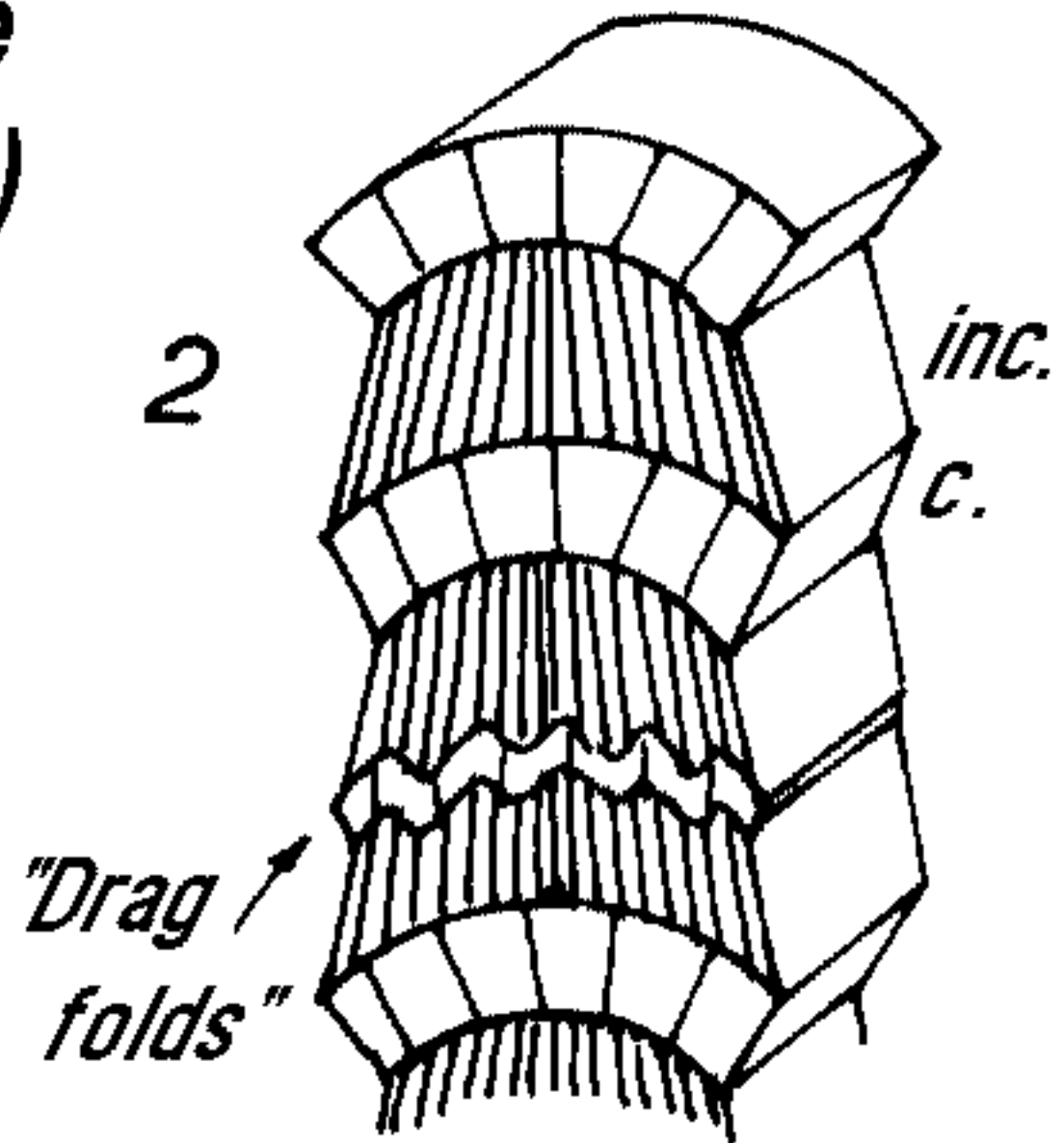
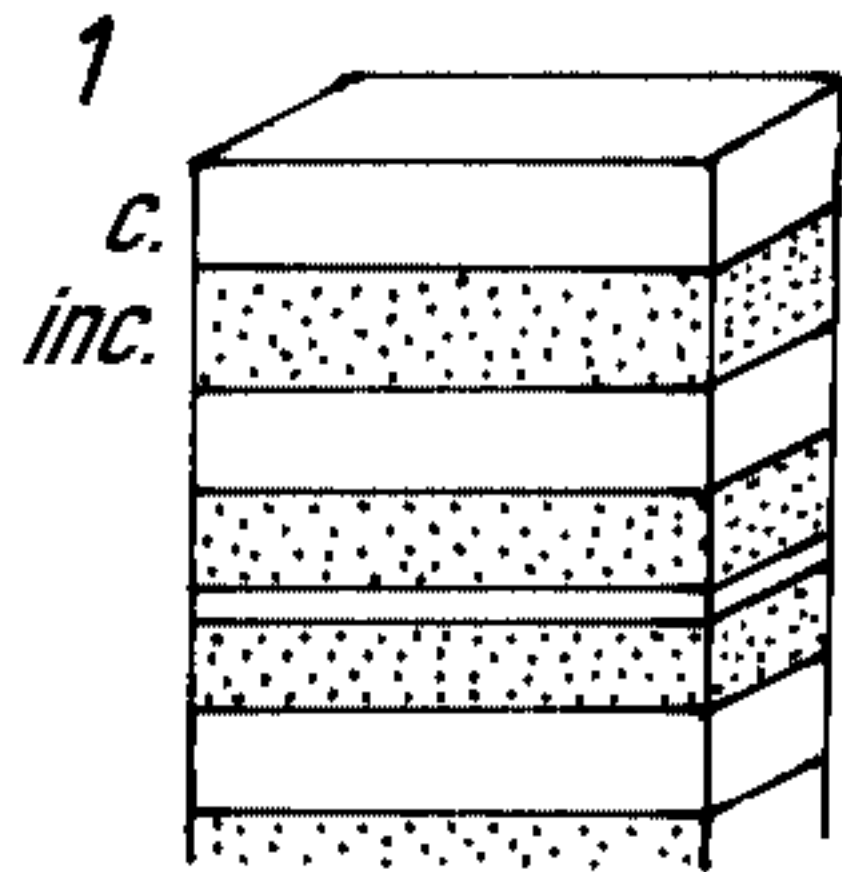
formes et modes de formation :

Plis par flexion

et aplatissement

("mixtes")

Aplatissement combiné au cintrage (plis mixtes)







S1

Ép. charnière

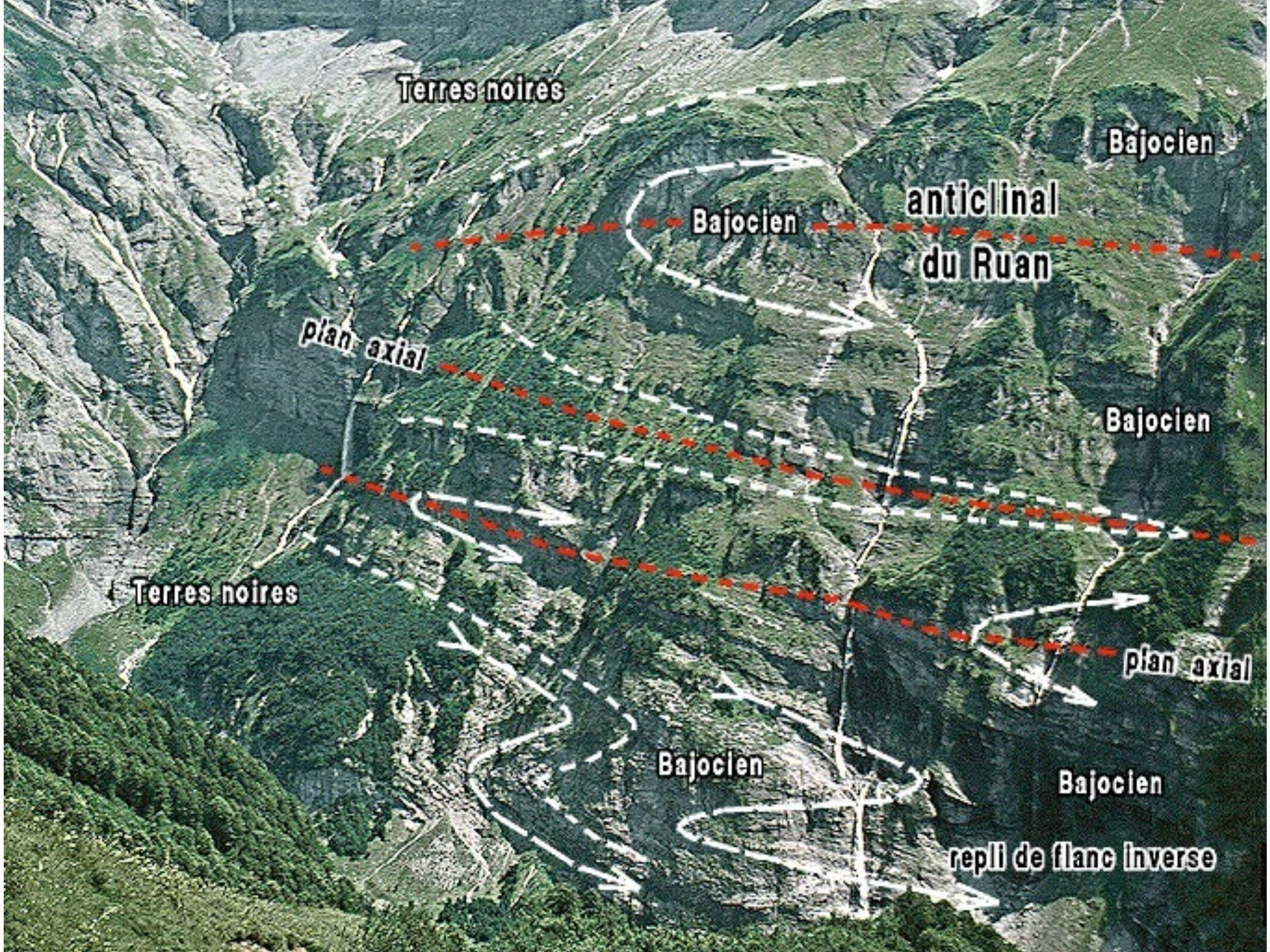
S1

S1

Ép. flanc

plan axial





Terres noires

Bajocien

anticlinal
du Ruan

Bajocien

plan axial

Bajocien

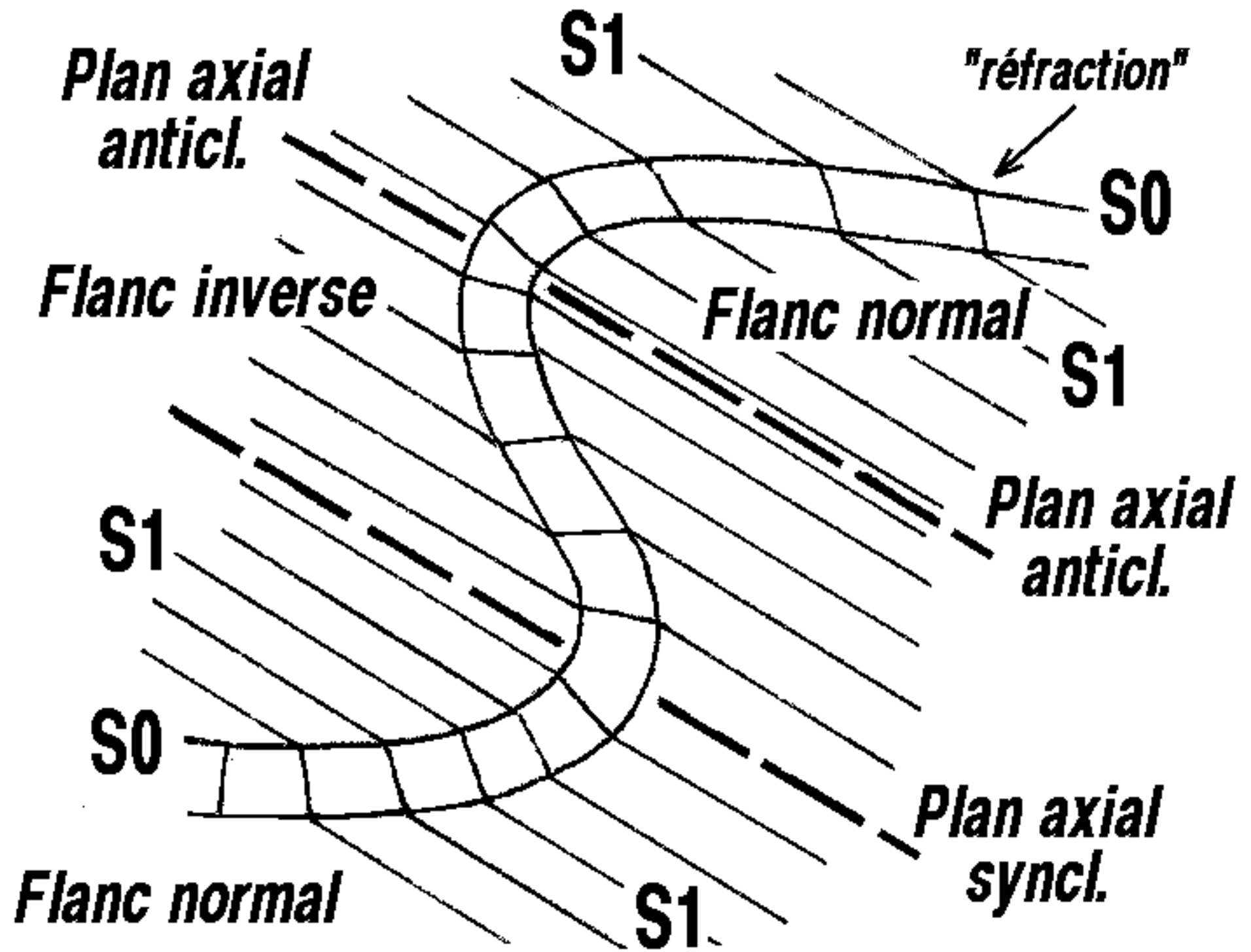
Terres noires

plan axial

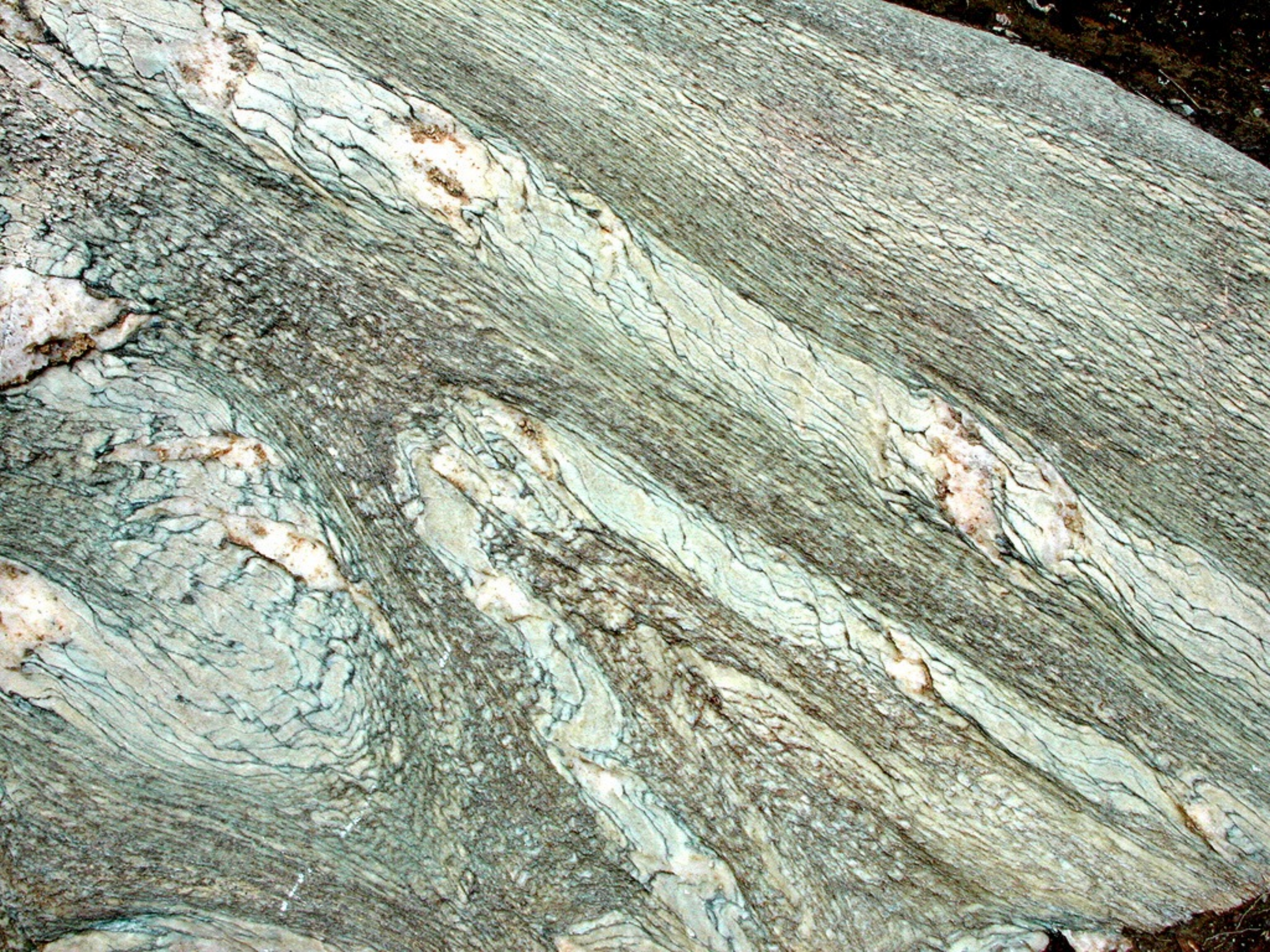
Bajocien

Bajocien

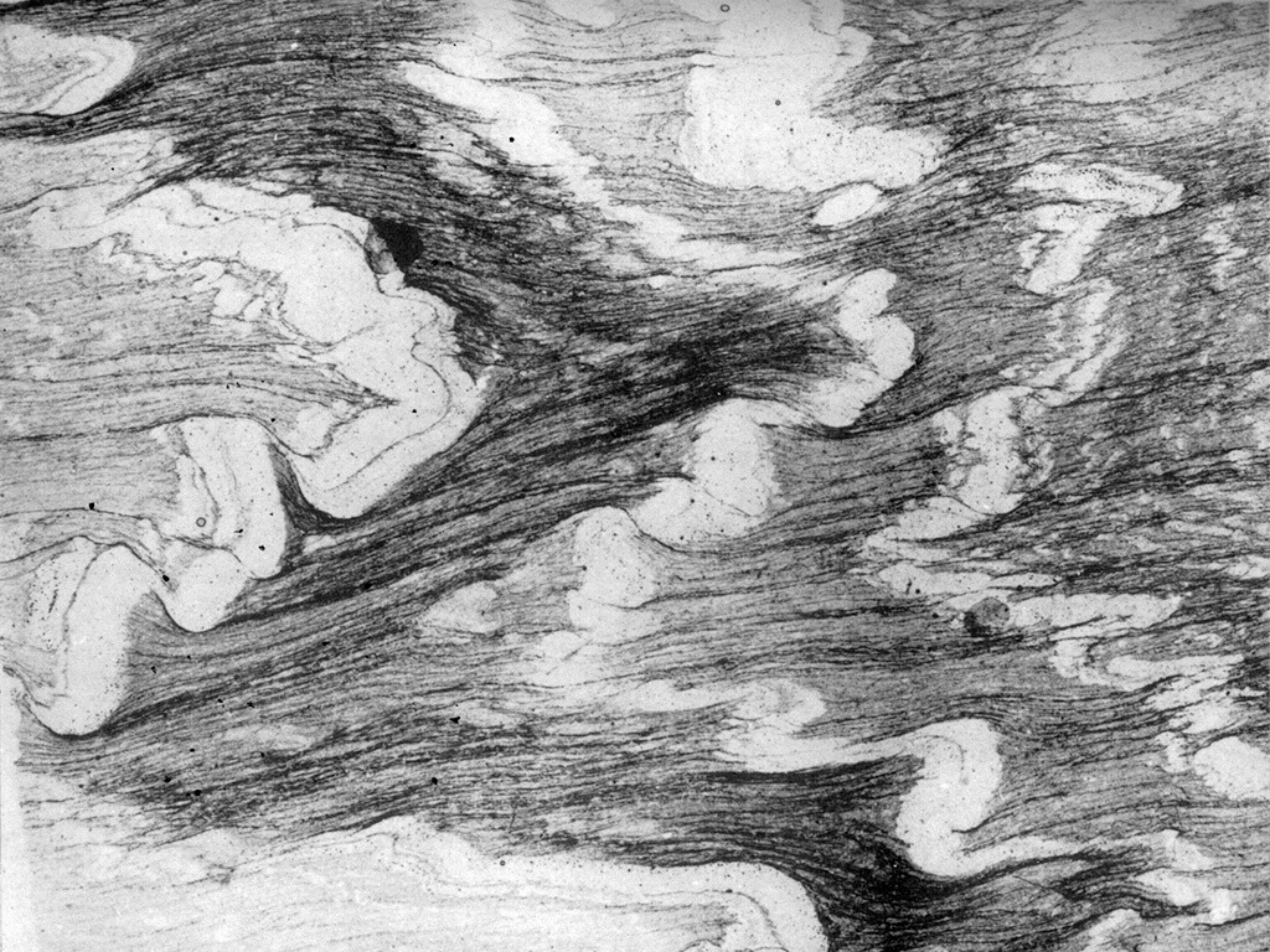
repli de flanc inverse



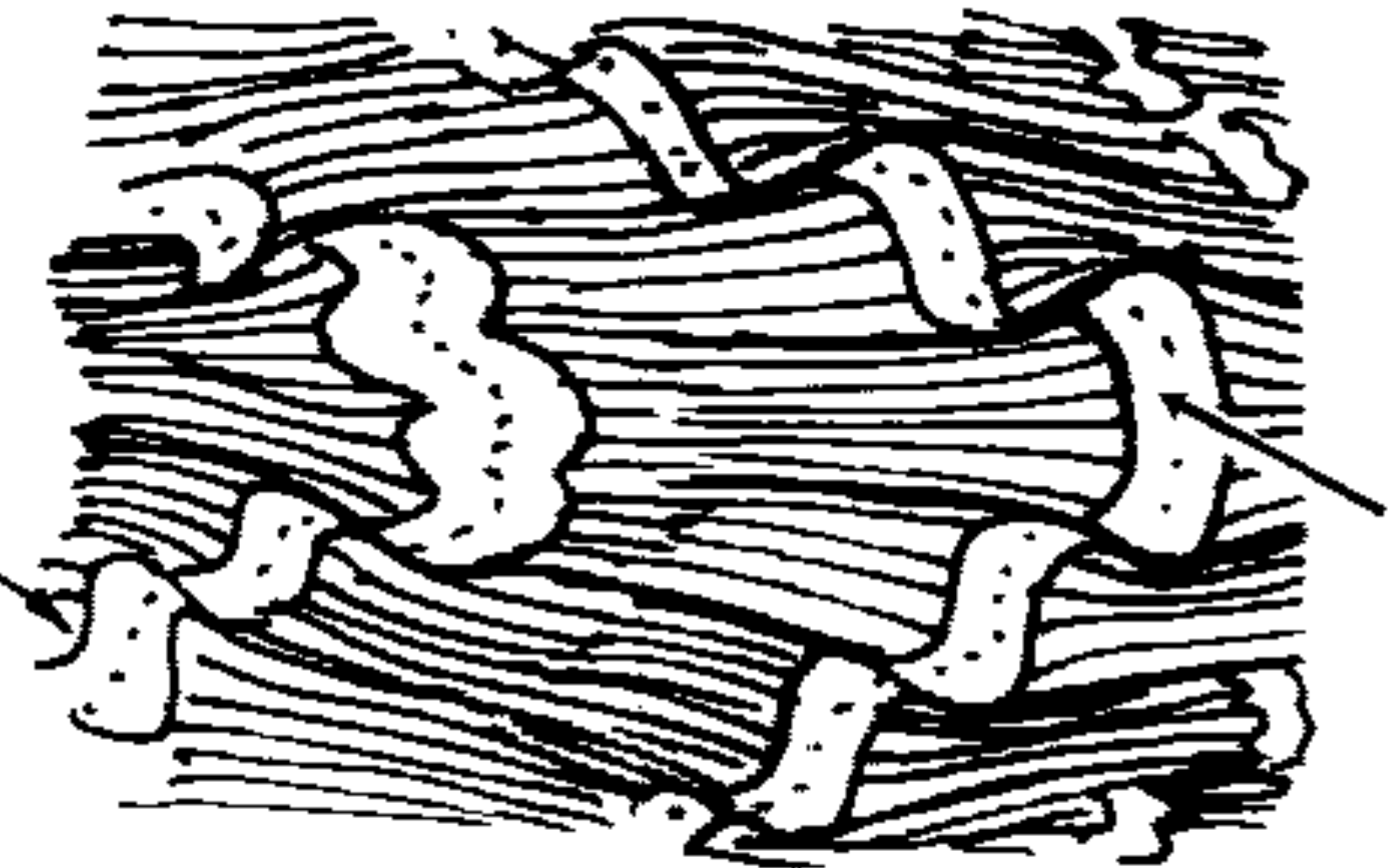






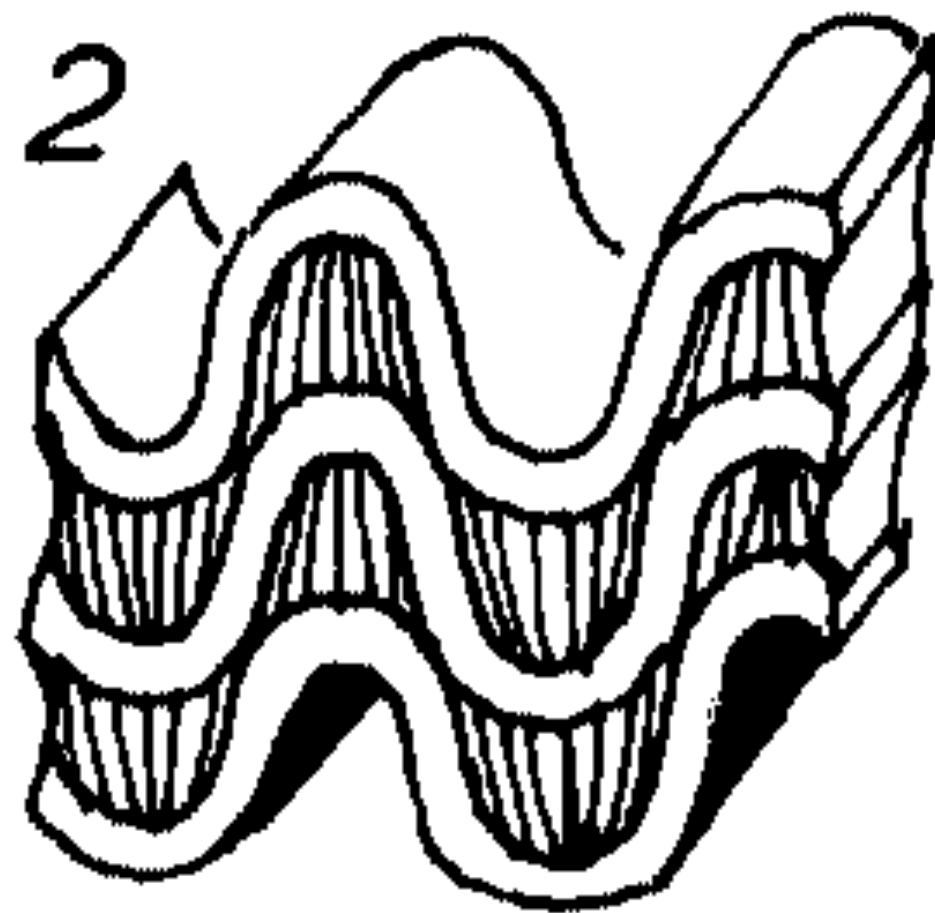
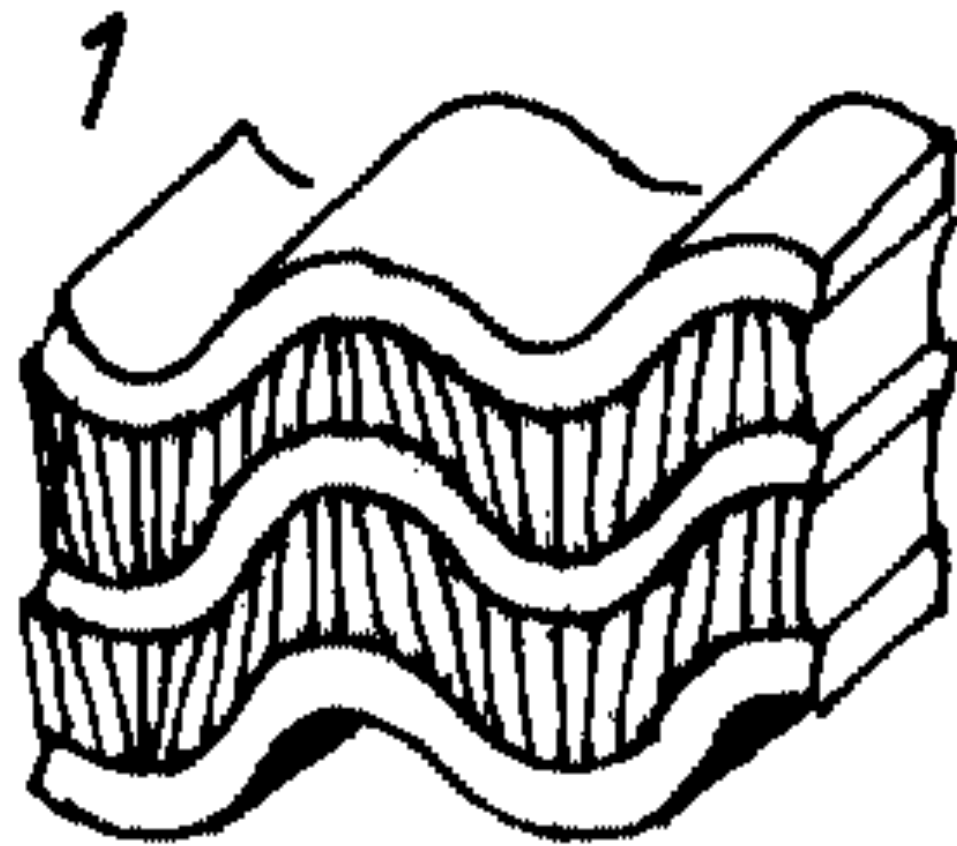


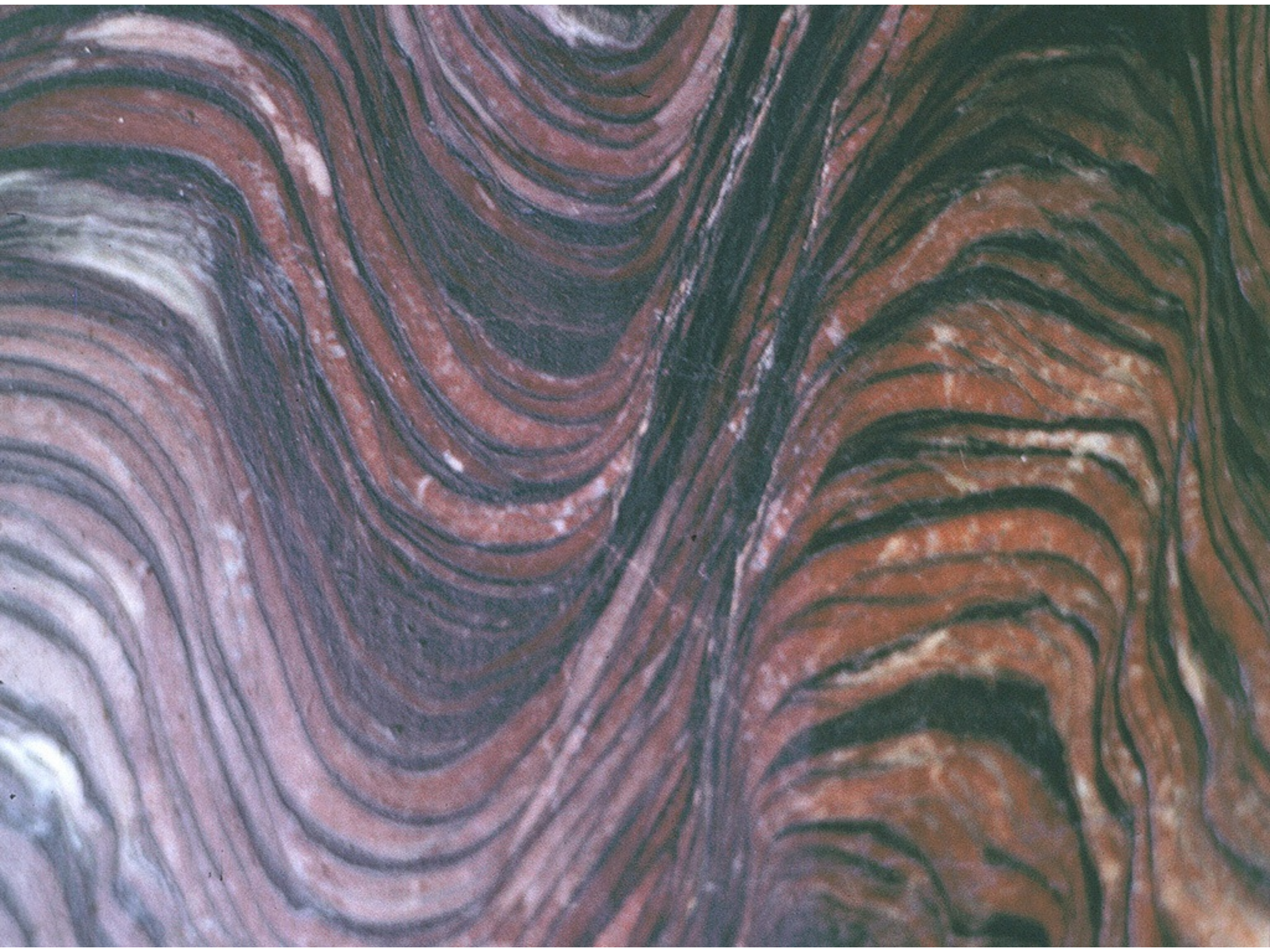
Meneaux



Meneaux





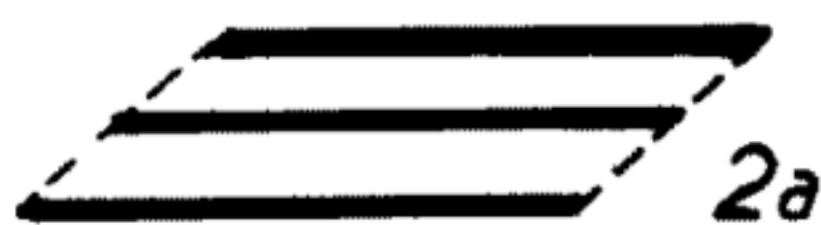


Les Plis :
formes et modes de formation :

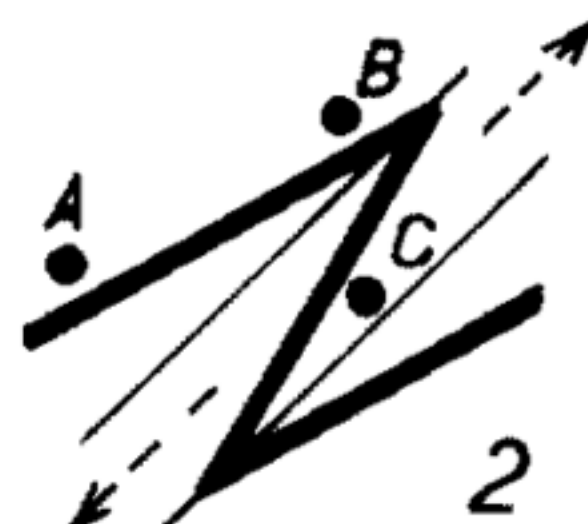
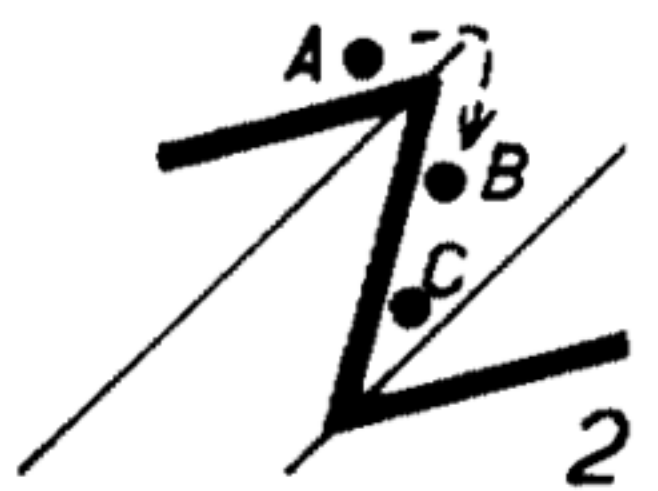
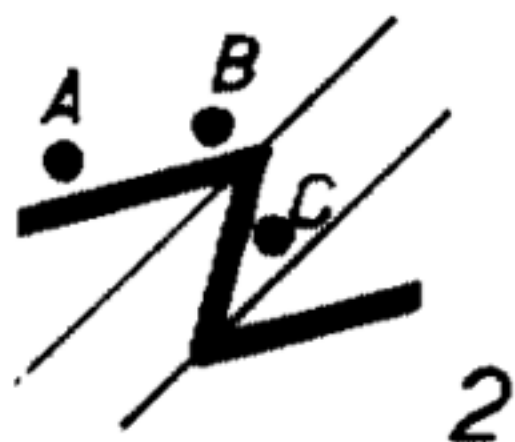
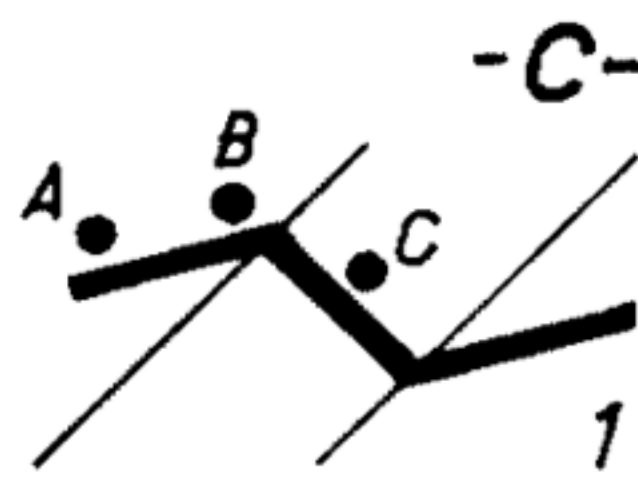
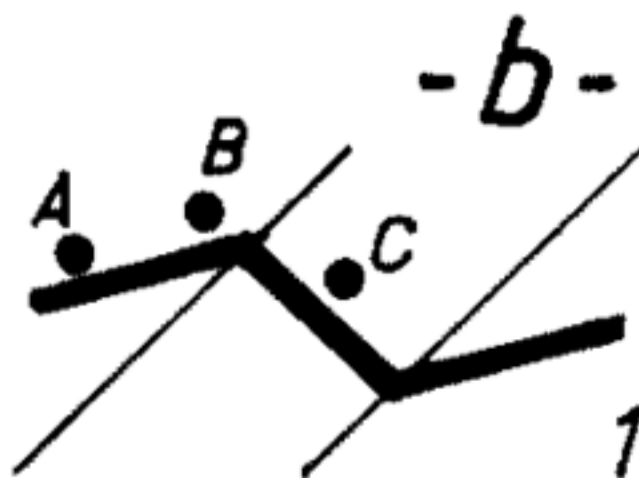
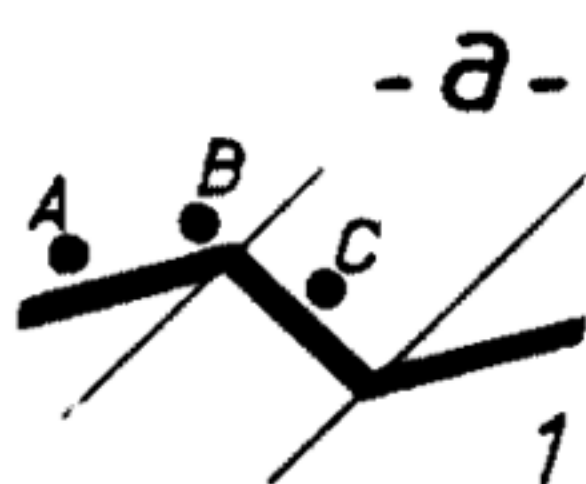
***Plis induits par
un cisaillement***

parallèle aux couches

Plis par cisaillement parallèle aux couches



Naissance

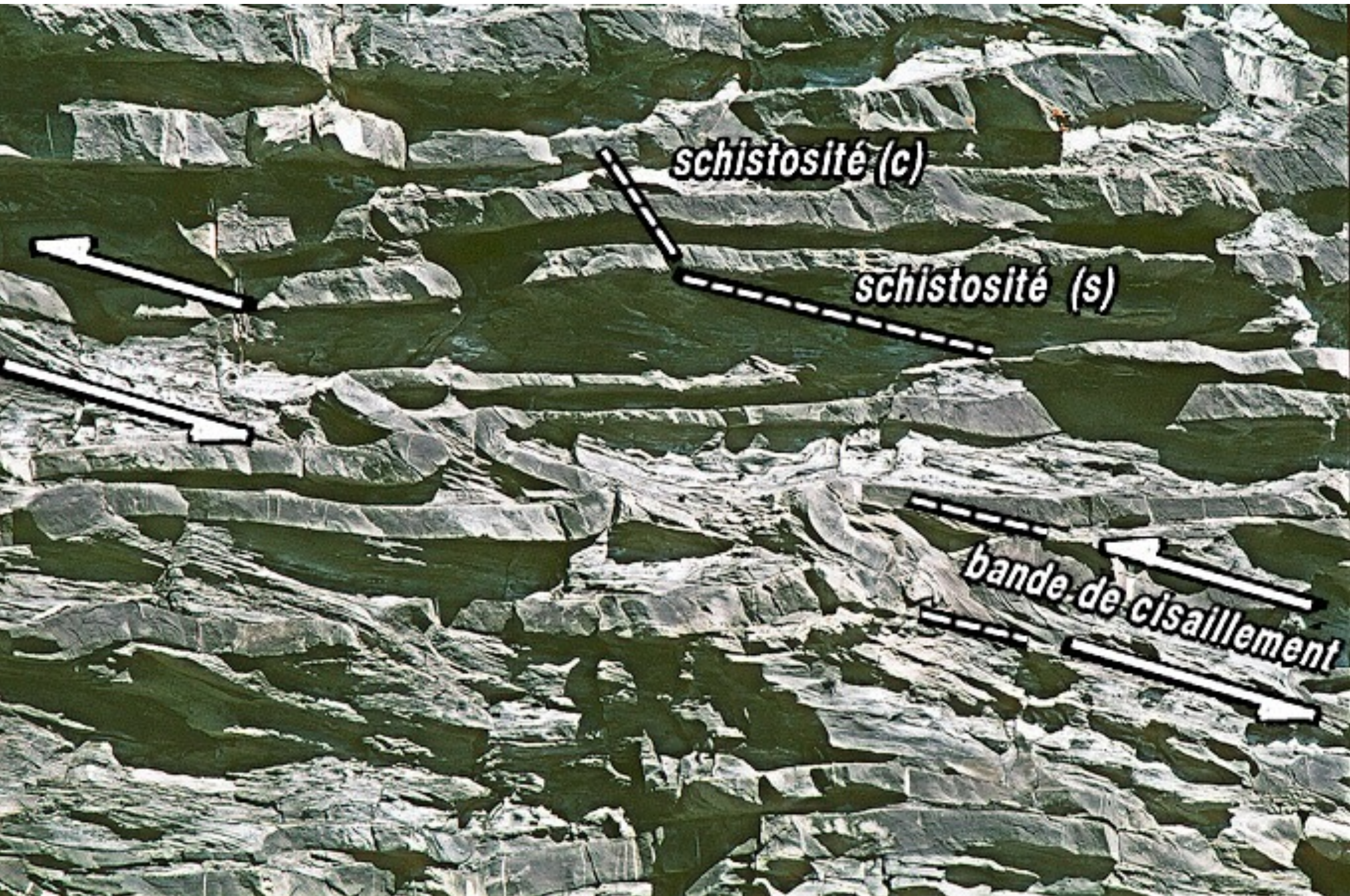


basculément

migration de charnière

étirement

développement



schistosité (c)

schistosité (s)

bande de cisaillement

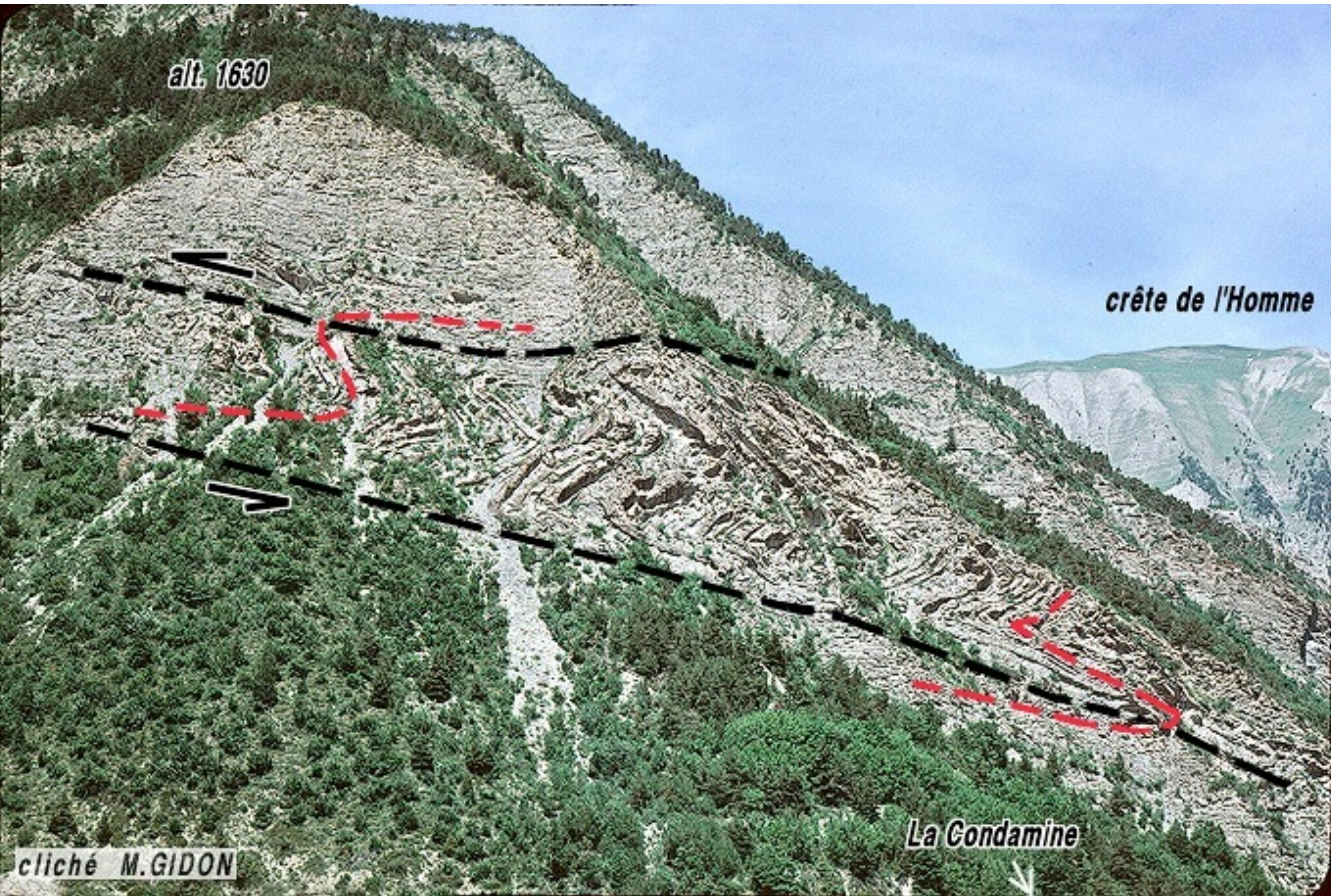


alt. 1630

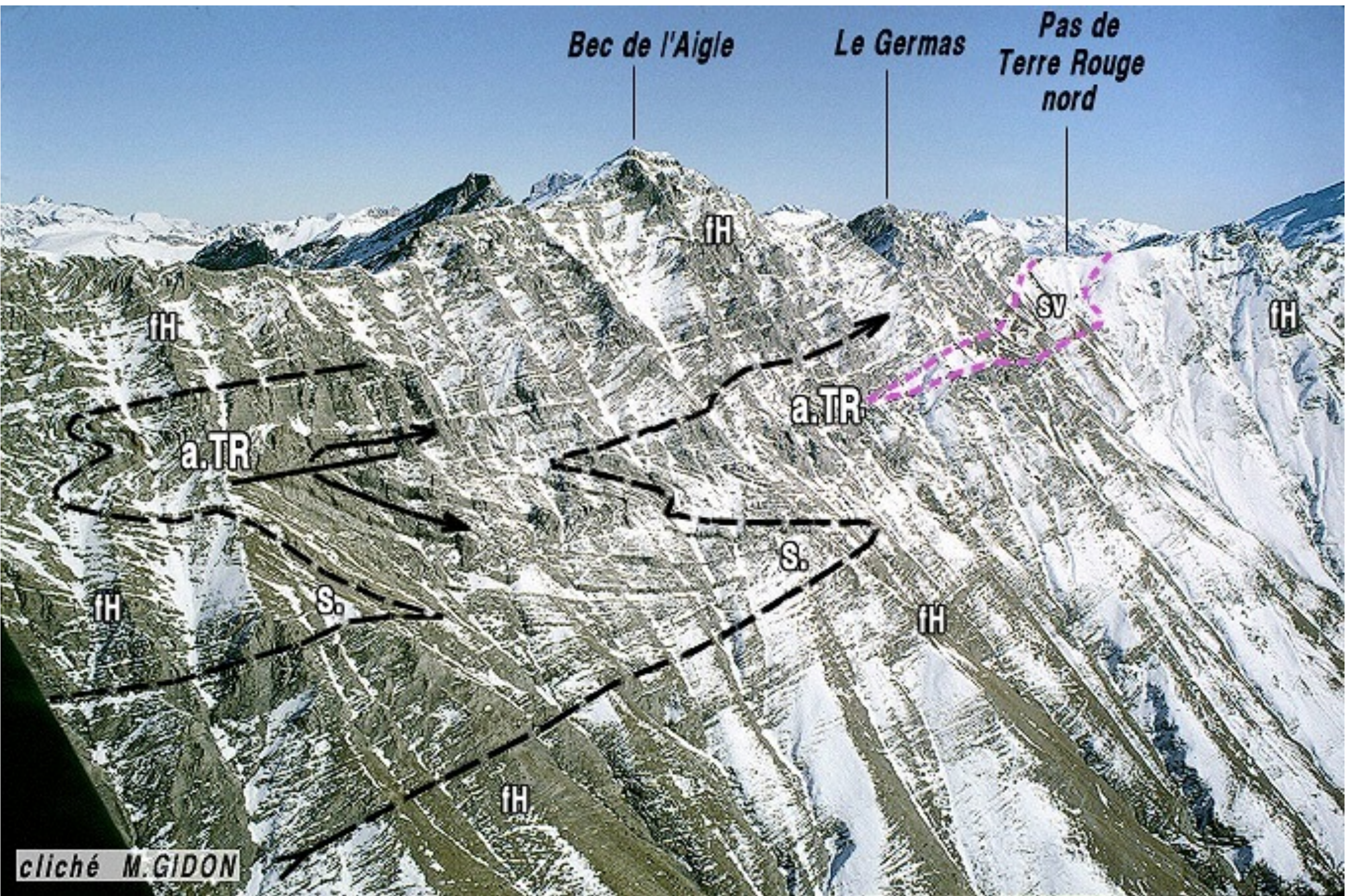
crête de l'Homme

La Condamine

cliché M.GIDON







Bec de l'Aigle

Le Germas

*Pas de
Terre Rouge
nord*

fH

fH

SV

fH

a.TR

a.TR

fH

S.

S.

fH

fH

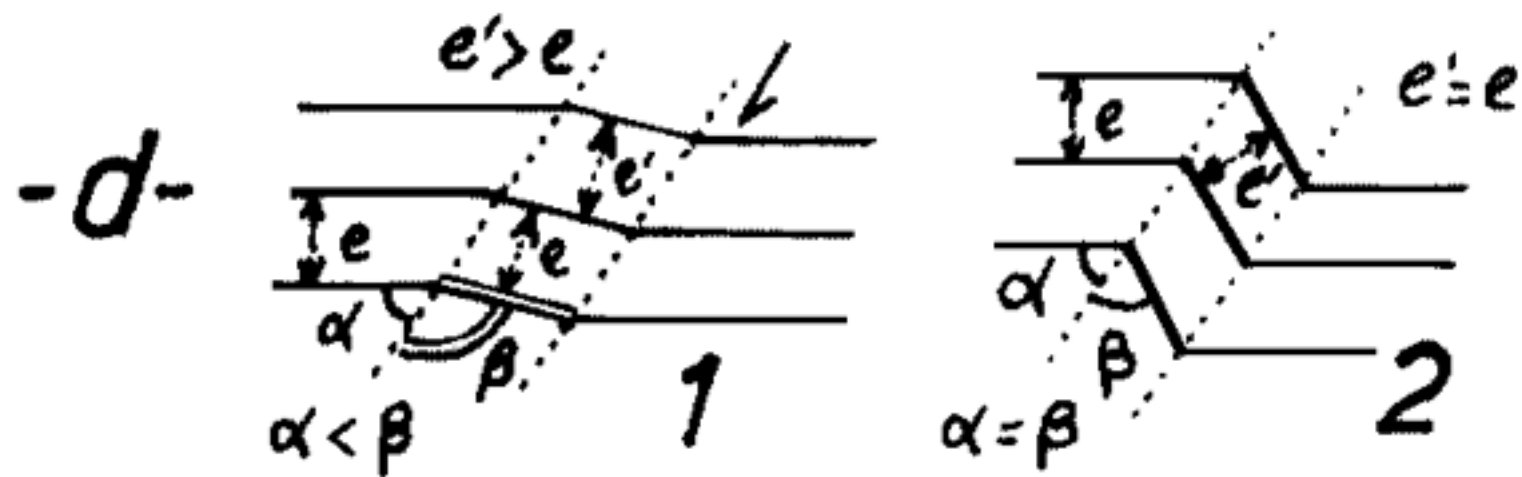
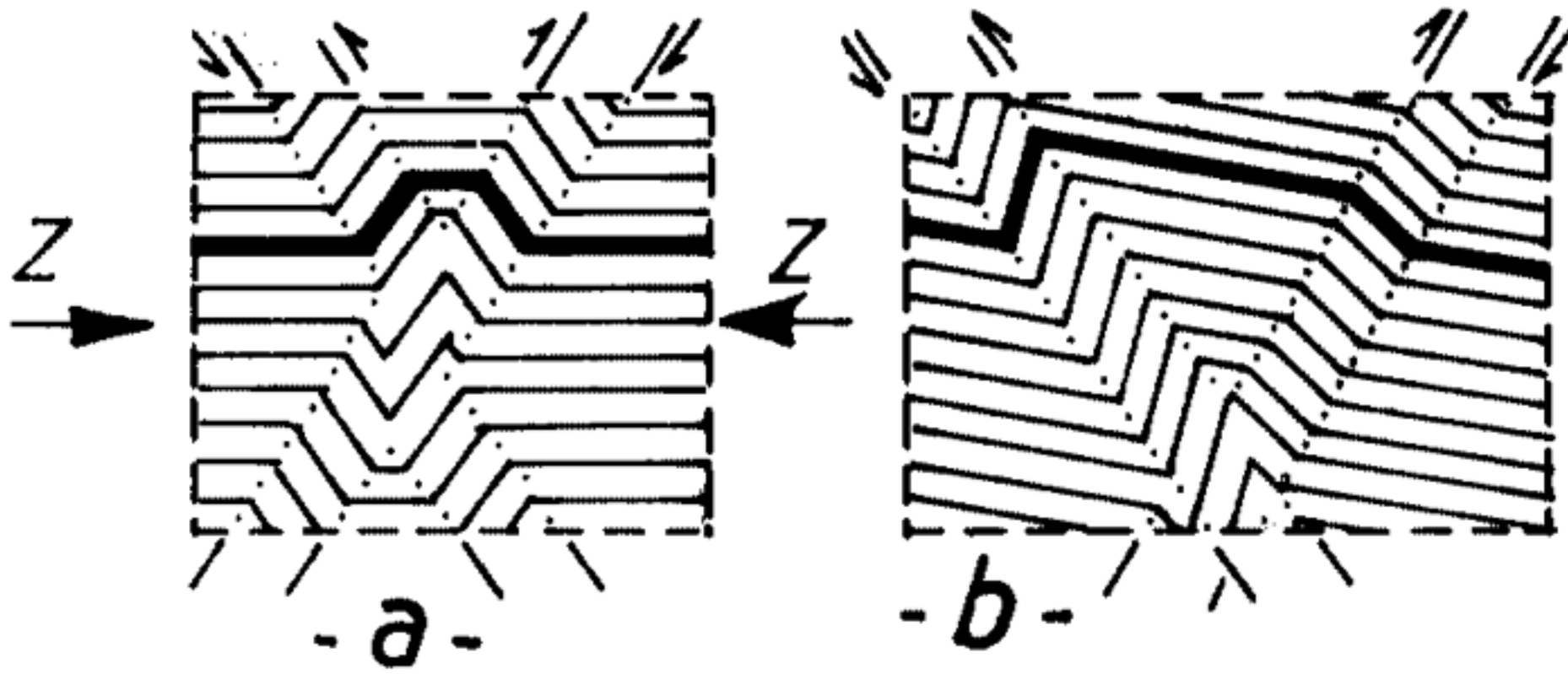
cliché M.GIDON



Les Plis :
formes et modes de formation :

Plis spéciaux
et curieux

Kink bands

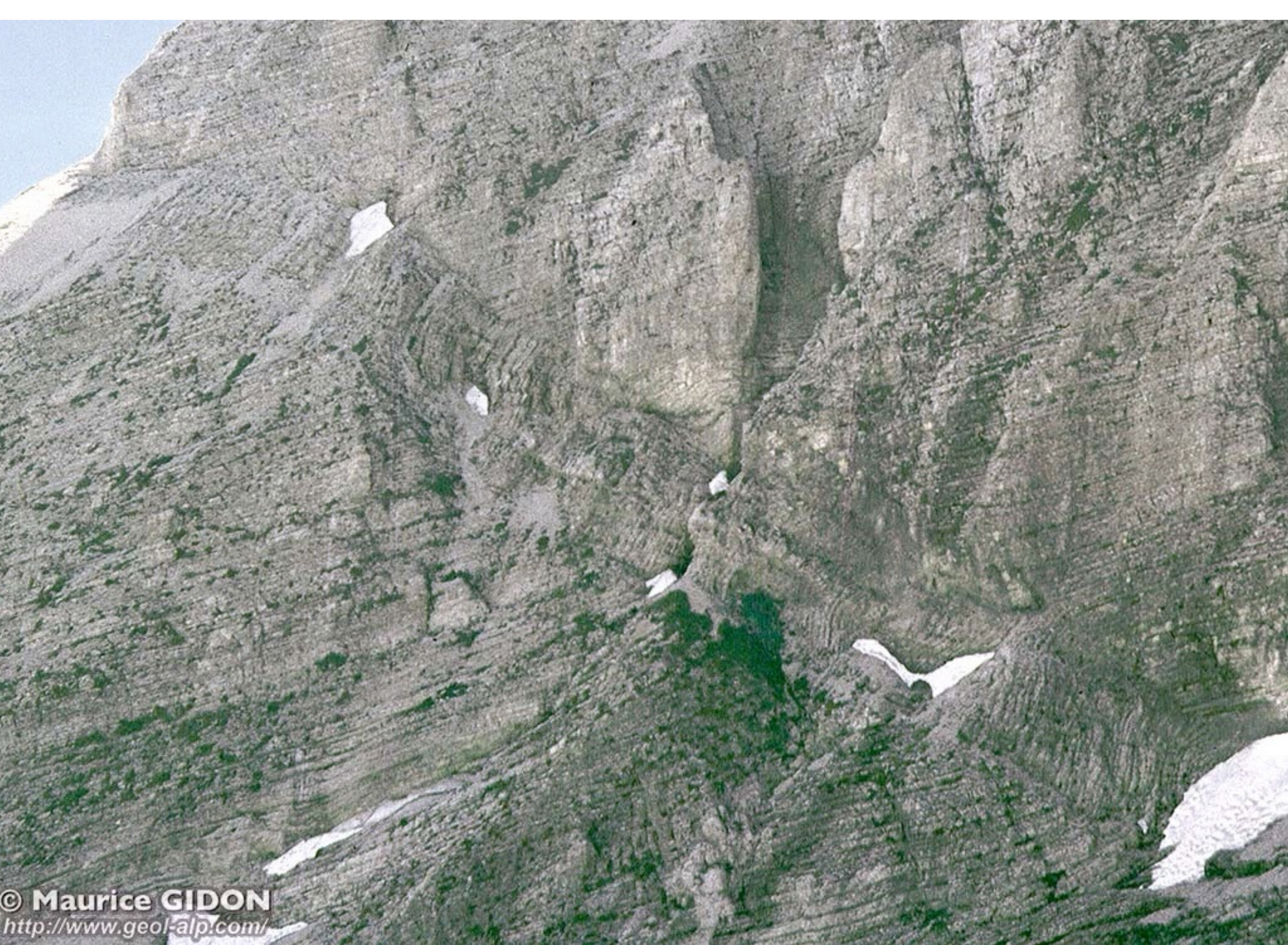


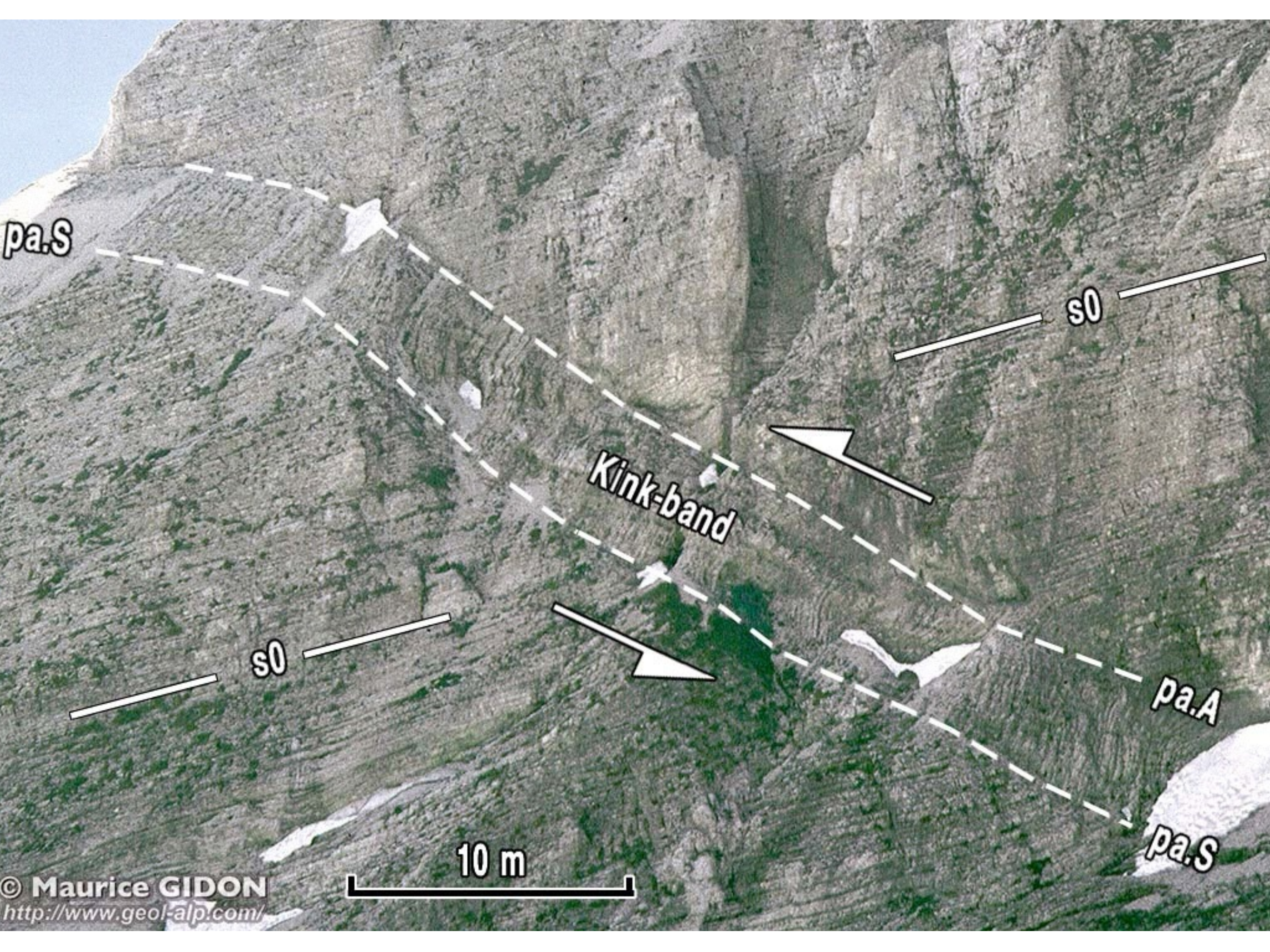












pa.S

s0

Kink-band

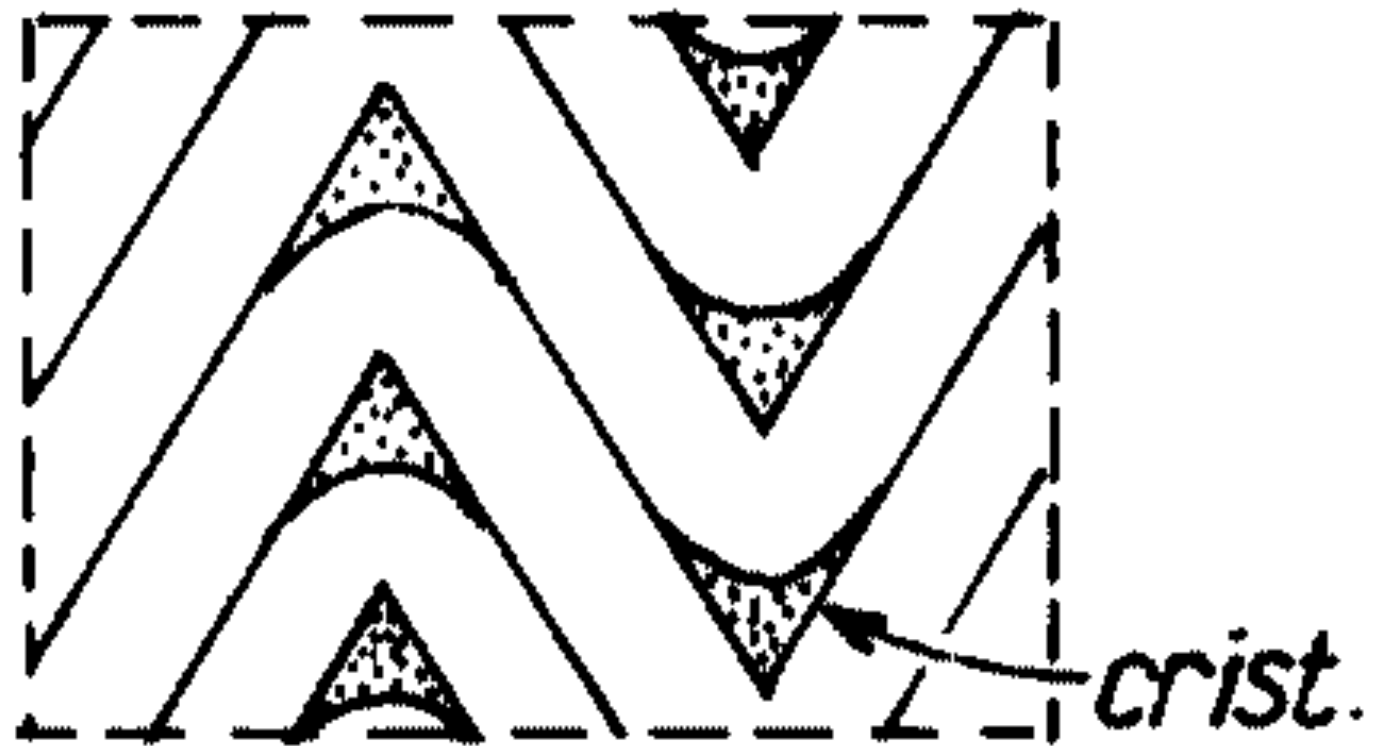
s0

pa.A

pa.S

10 m

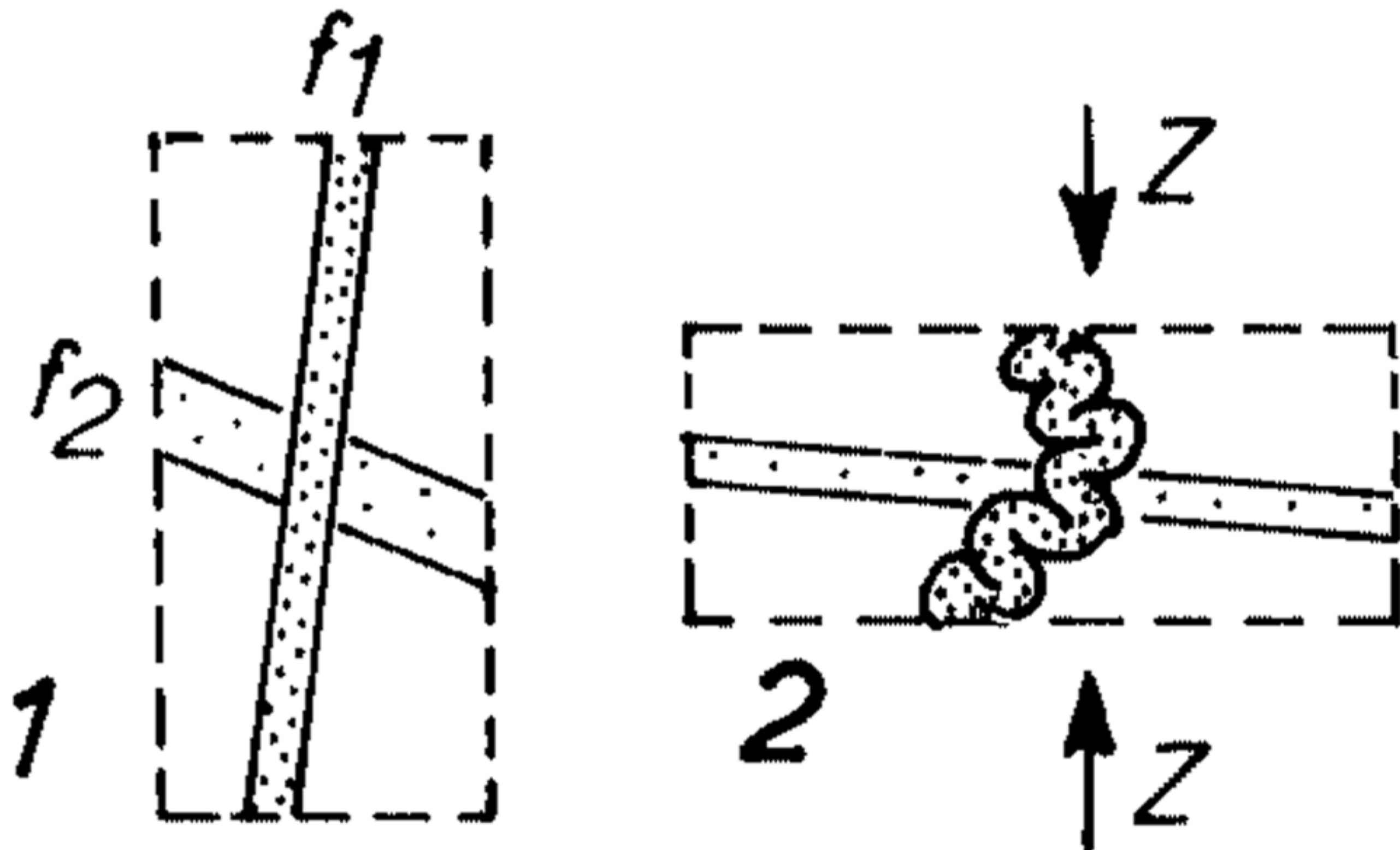




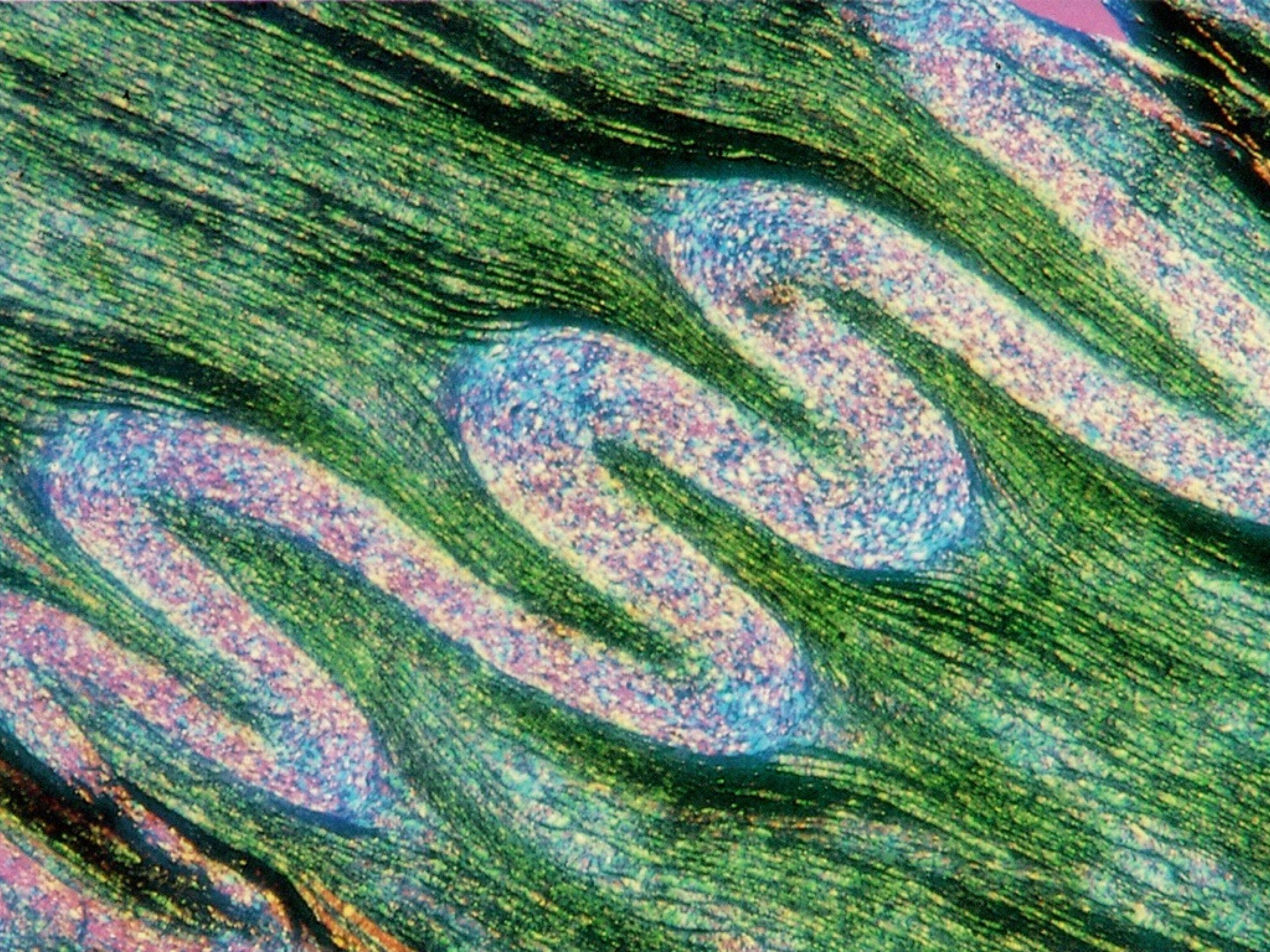
Chevrons

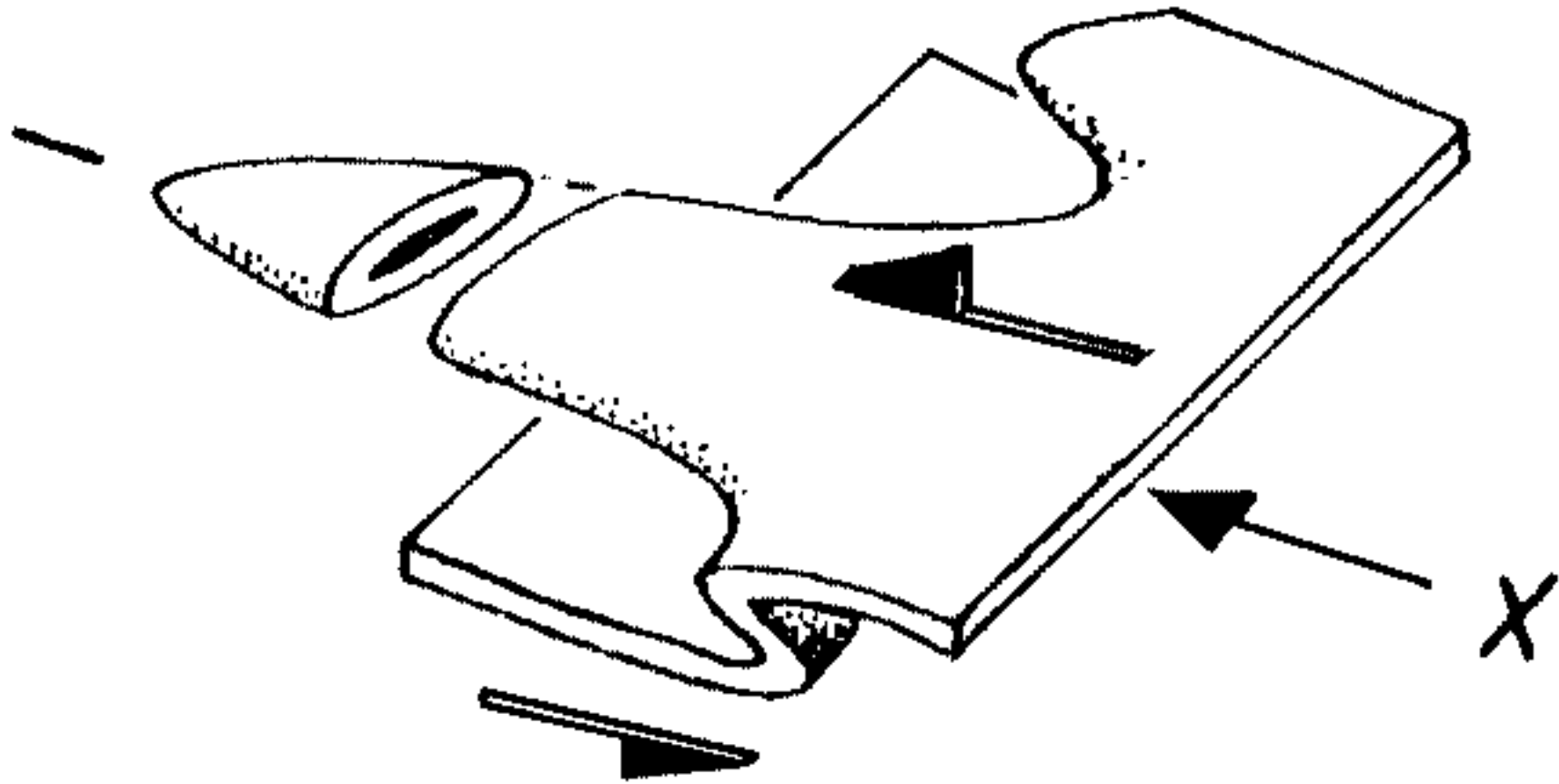






Plis ptygmaticques



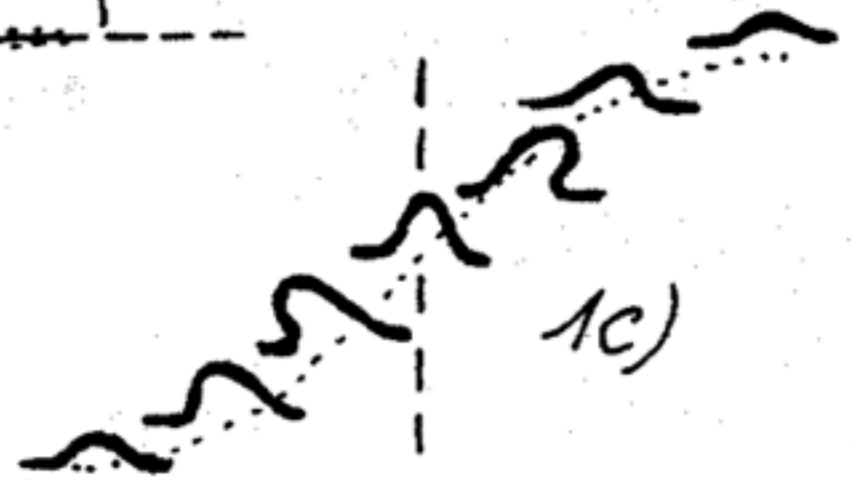
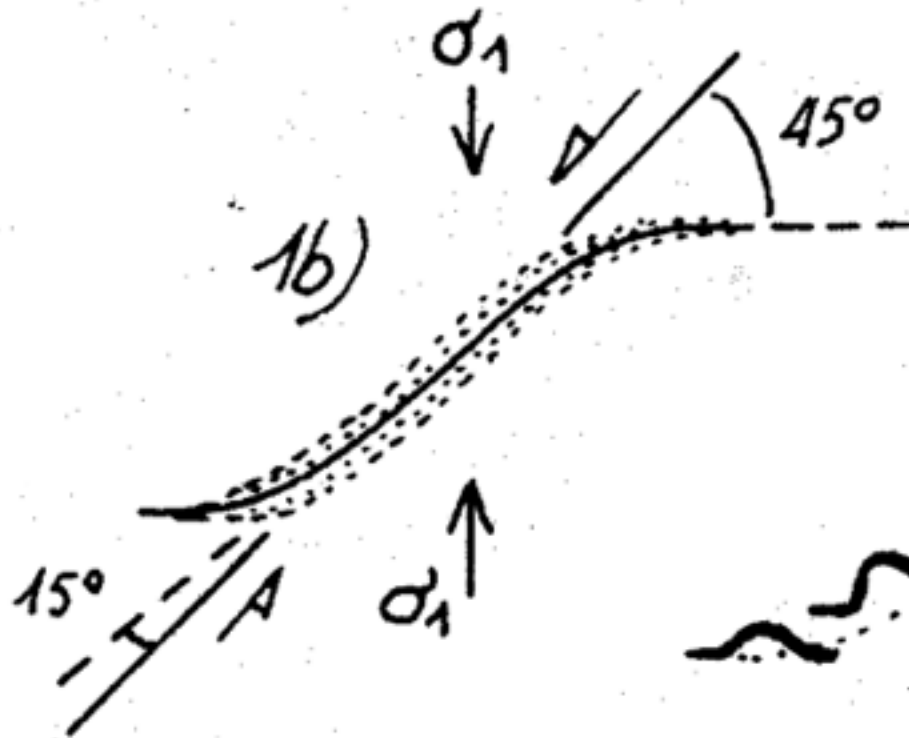
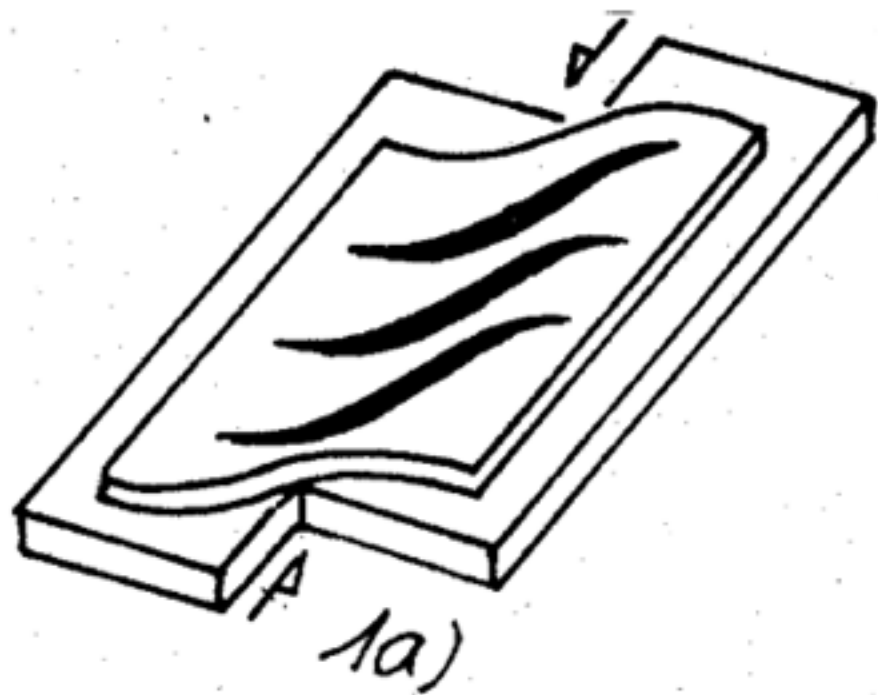


Plis en fourreaux

Les Plis :

***Assemblages
de plis***

1/ Plis en échelons



2/ Virgations



Les Plis :

Assemblages de plis

Plis

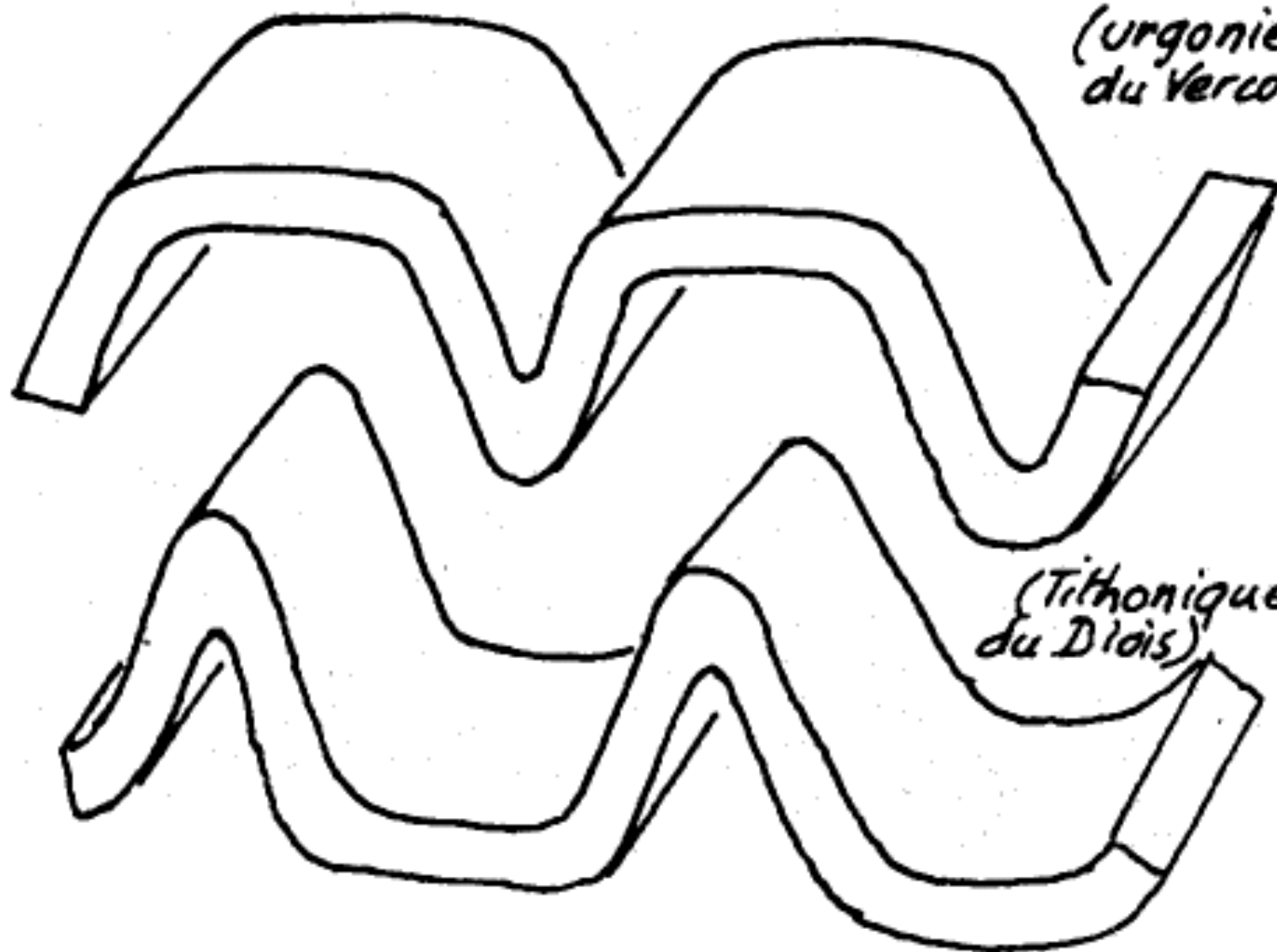
dysharmoniques



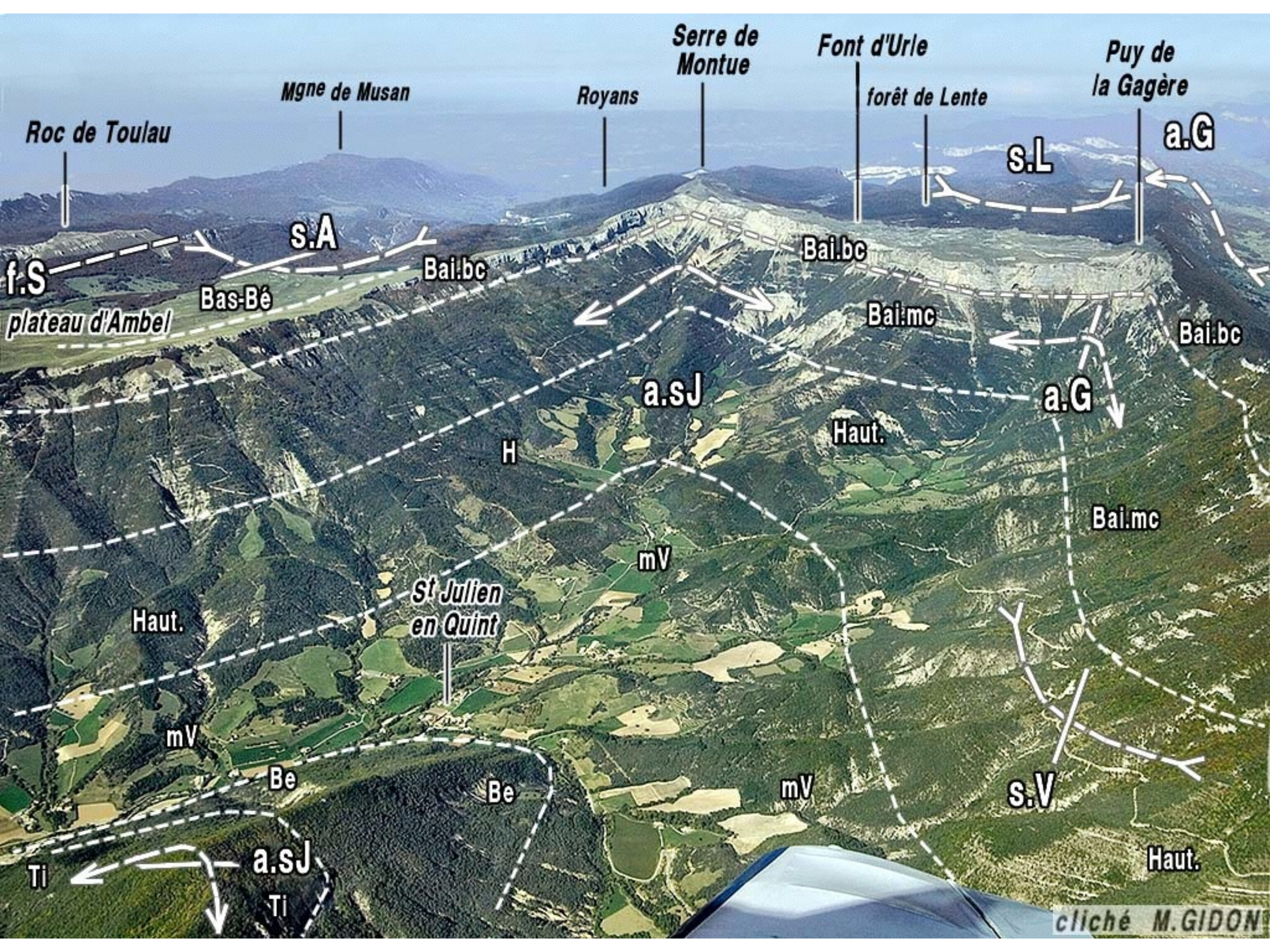


1/ Passage déjectif / éjectif

(urgonien
du Vercors)



(Tithonique
du Diois)



Roc de Toulau

Mgne de Musan

Royans

Serre de Montue

Font d'Urle

forêt de Lente

Puy de la Gagère

f.S

s.A

s.L

a.G

Bas-Bé

Bai.bc

Bai.bc

Bai.bc

Bai.mc

a.s.J

a.G

H

Haut.

Bai.mc

mV

Haut.

St Julien en Quint

mV

Be

Be

mV

s.V

Ti

a.s.J

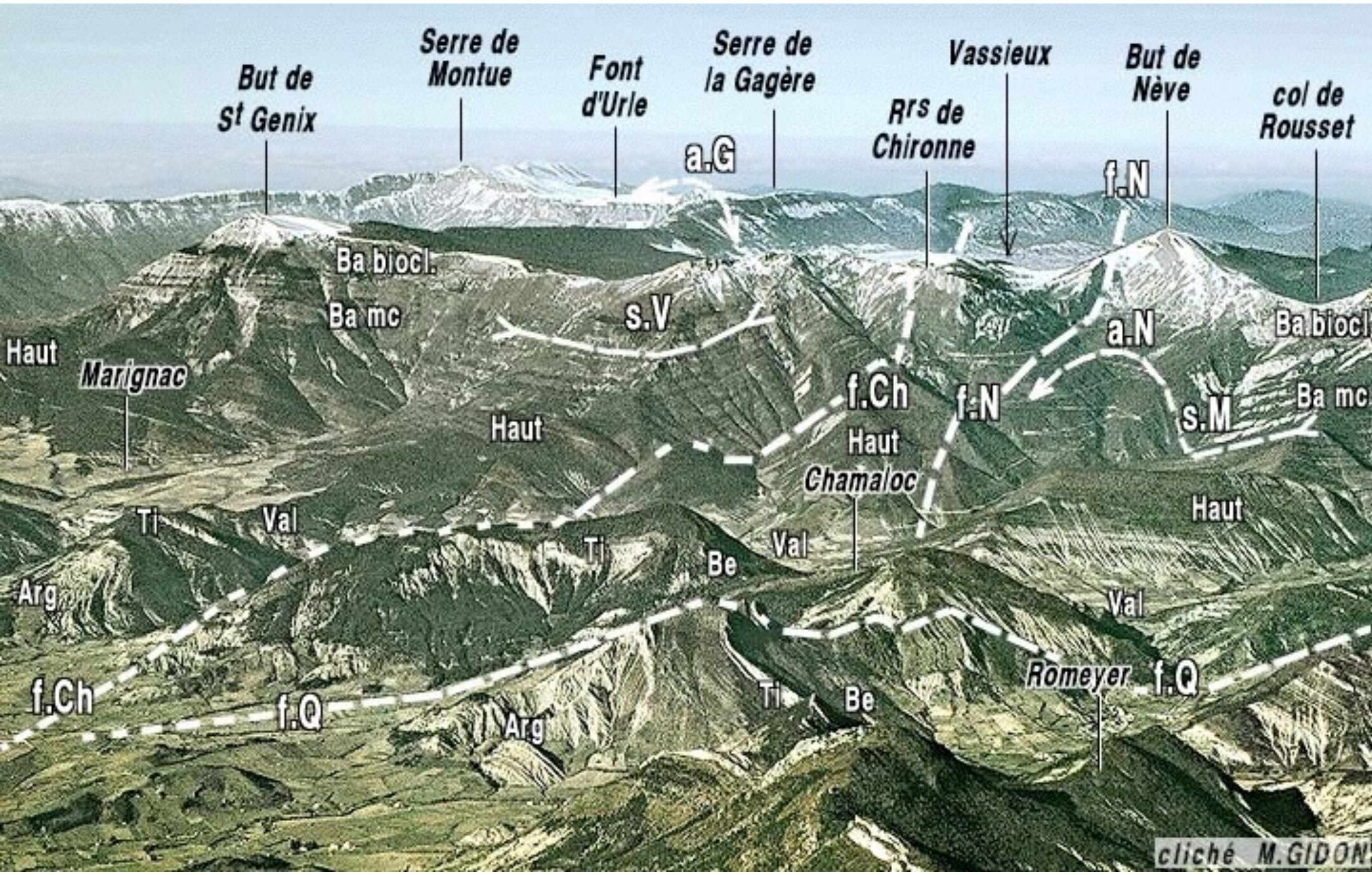
Ti

Haut.

cliché M.GIDON



cliché M. GIDON



But de
St Genix

Serre de
Montue

Font
d'Urle

Serre de
la Gagère

Vassieux

But de
Nève

col de
Rousset

a.G

Rrs de
Chironne

f.N

Ba biocl.

Ba mc

s.V

a.N

Ba biocl.

Ba mc

Haut

Marignac

Haut

f.Ch

f.N

s.M

Haut
Chamaloc

Haut

Ti

Val

Ti

Be

Val

Val

Arg

f.Ch

f.Q

Arg

Ti

Be

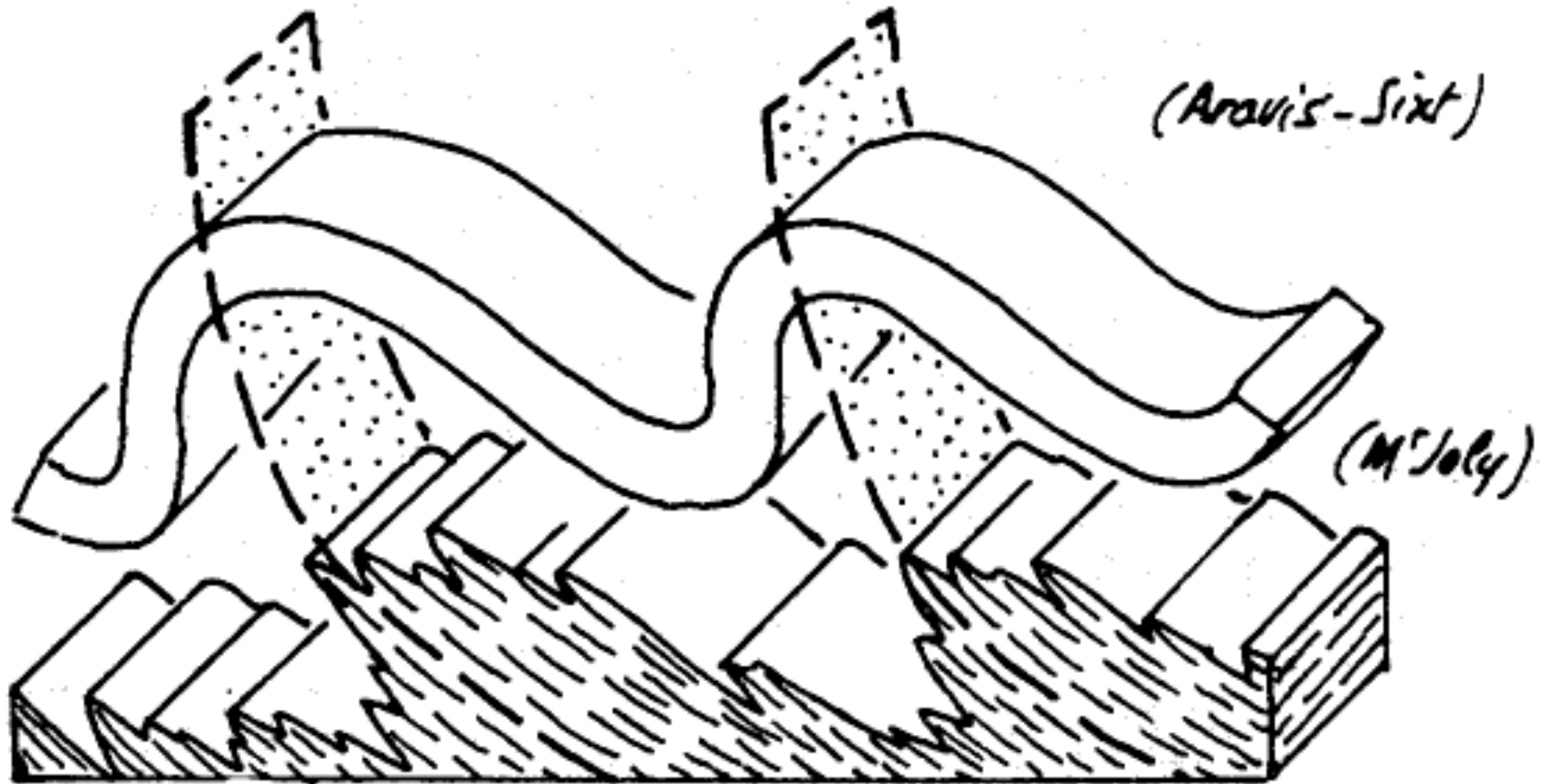
Romeyer

f.Q

cliché M.GIDON

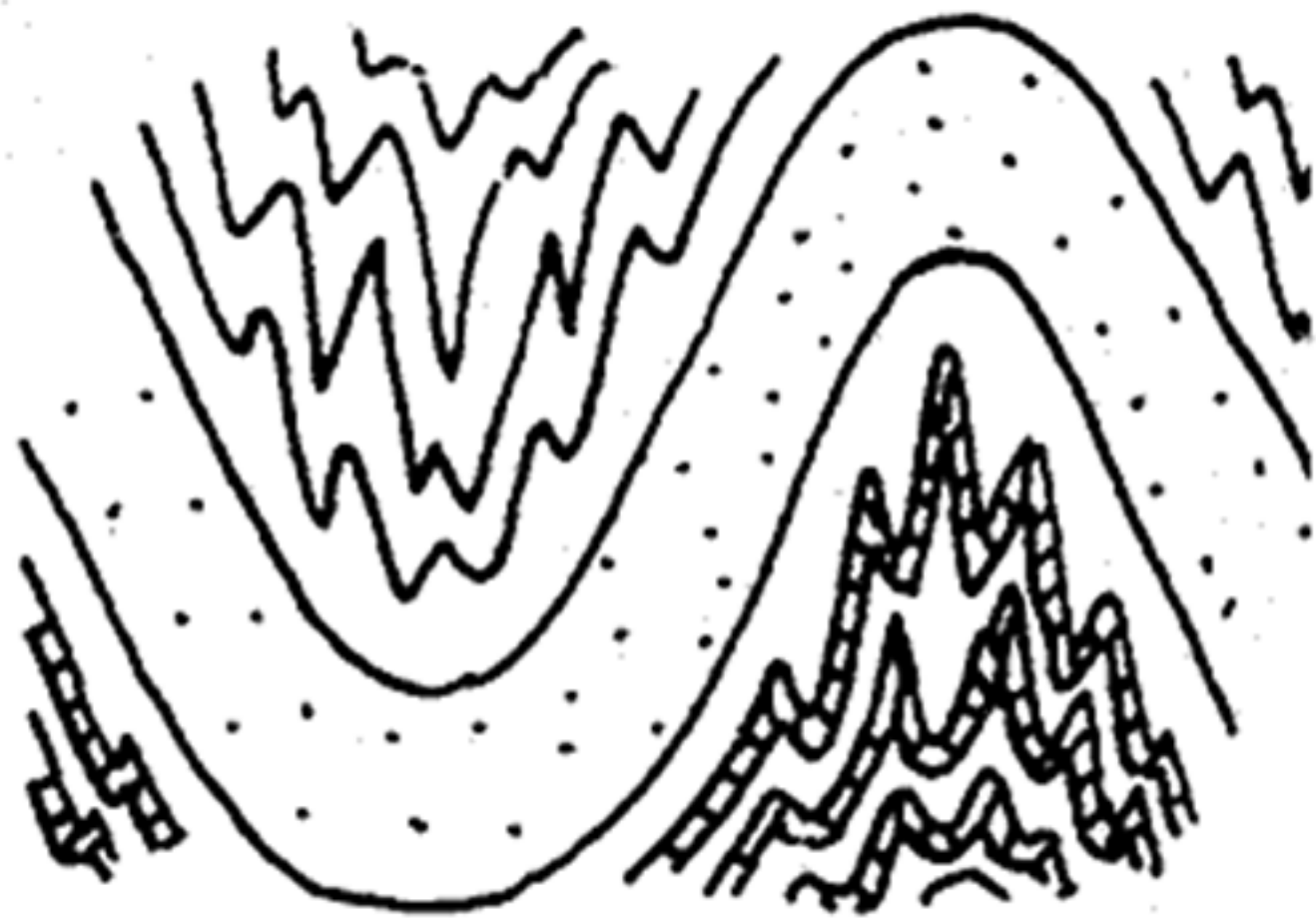


2/ Passage concentrique / semblable





3a) Replis de cœur



3b) Décollements











Jura

Roc des Boeufs

Dt des Portes

pte de Banc Plat

Lanche Close

Veyrier

Parmelan

Urg.

Sé

Ns

cN

U

a.m

S.W

Ns

Bonnet de Tirebras

Sé

cN

Numm. sup

cN

U

Ni

cN

S.e

Ni

Sé

Charbonnet

Numm. inf

Sé

Sénonien

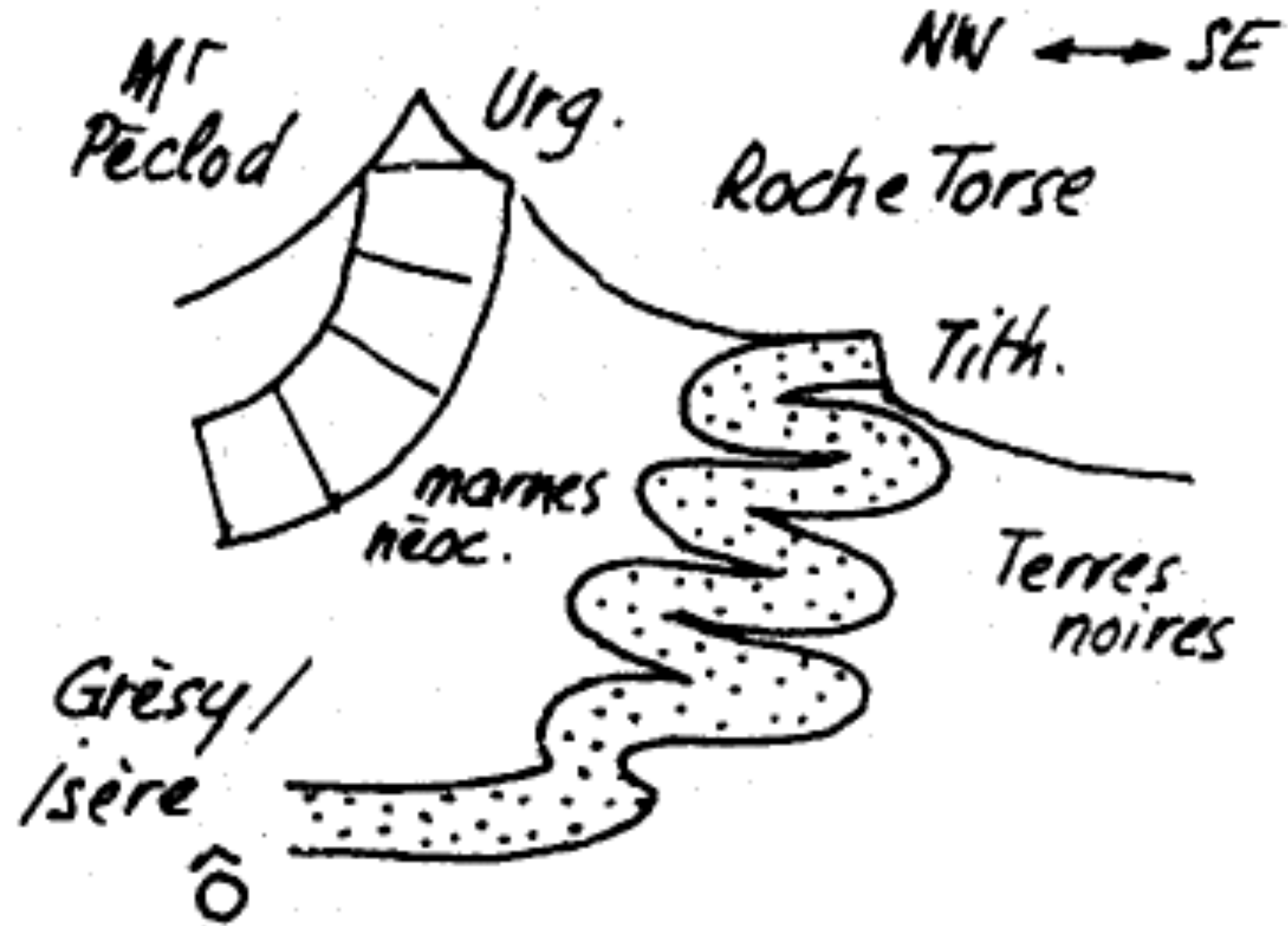
Numm. inf

cliché M.GIDON

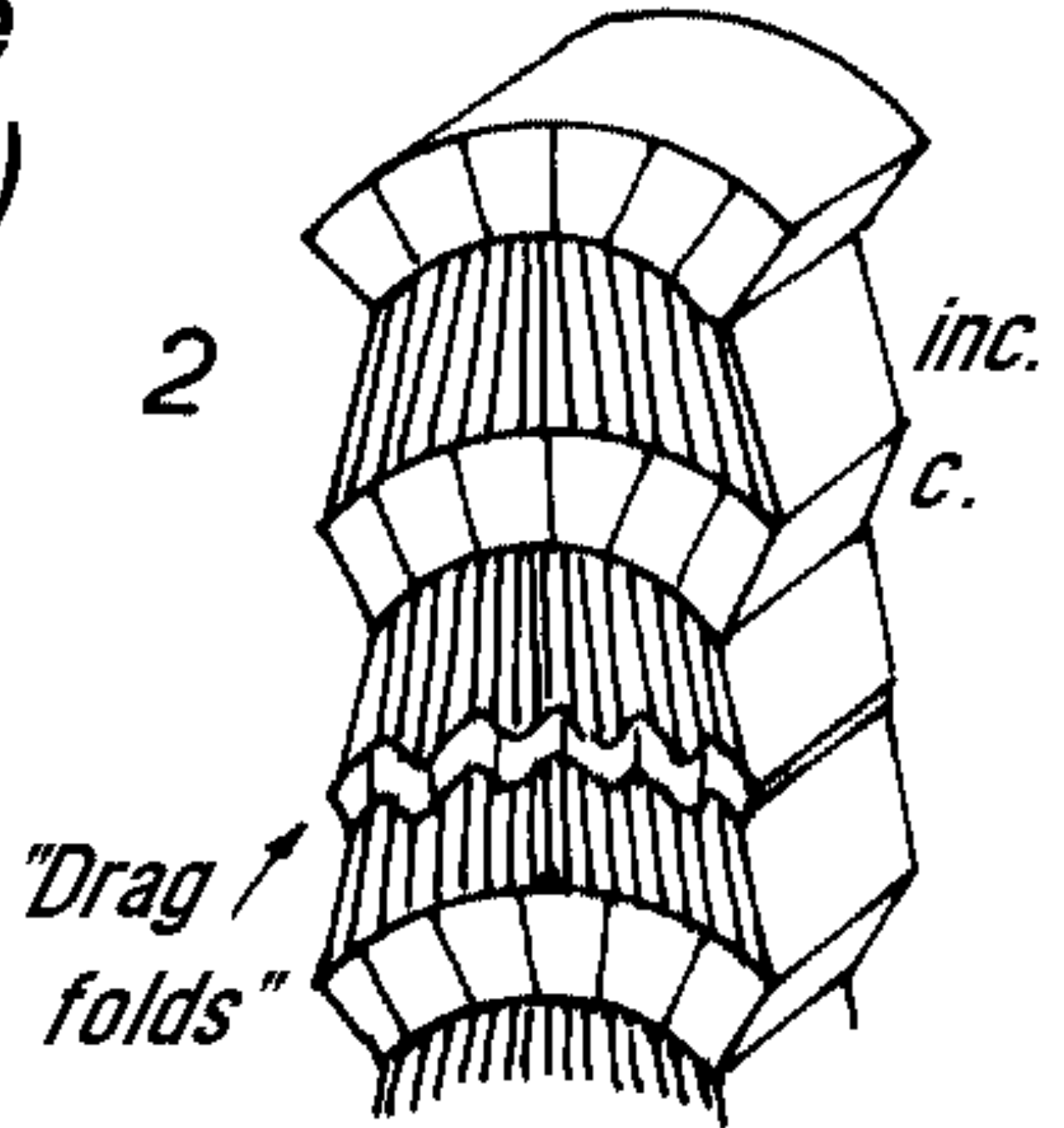
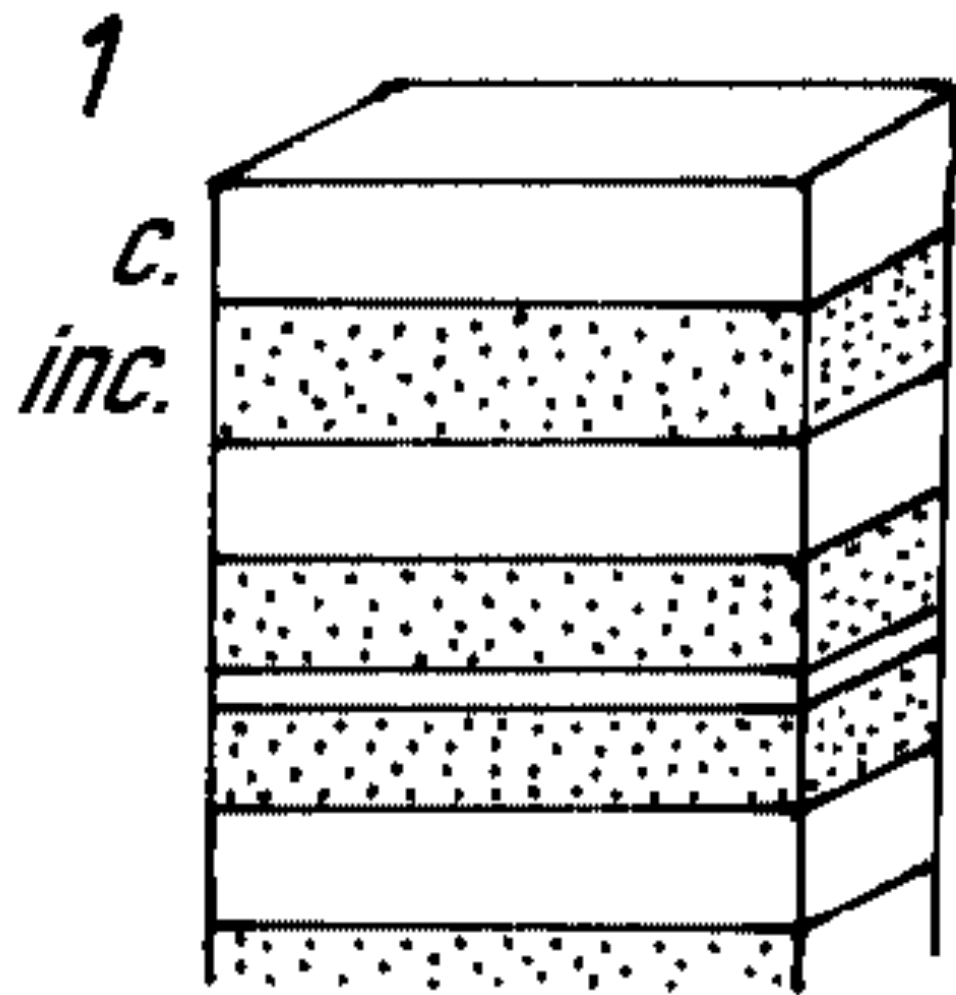




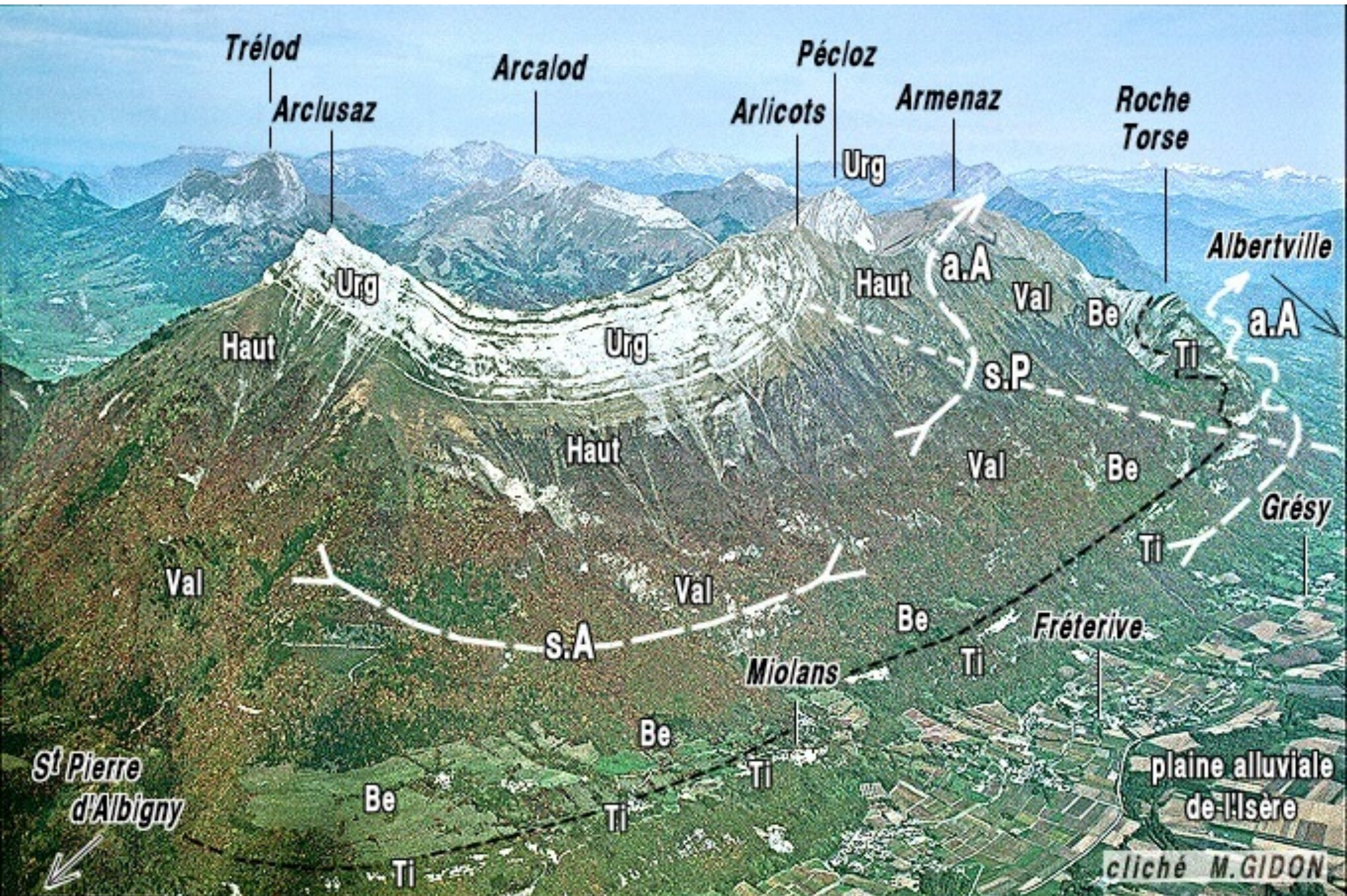
3c) Autonomie



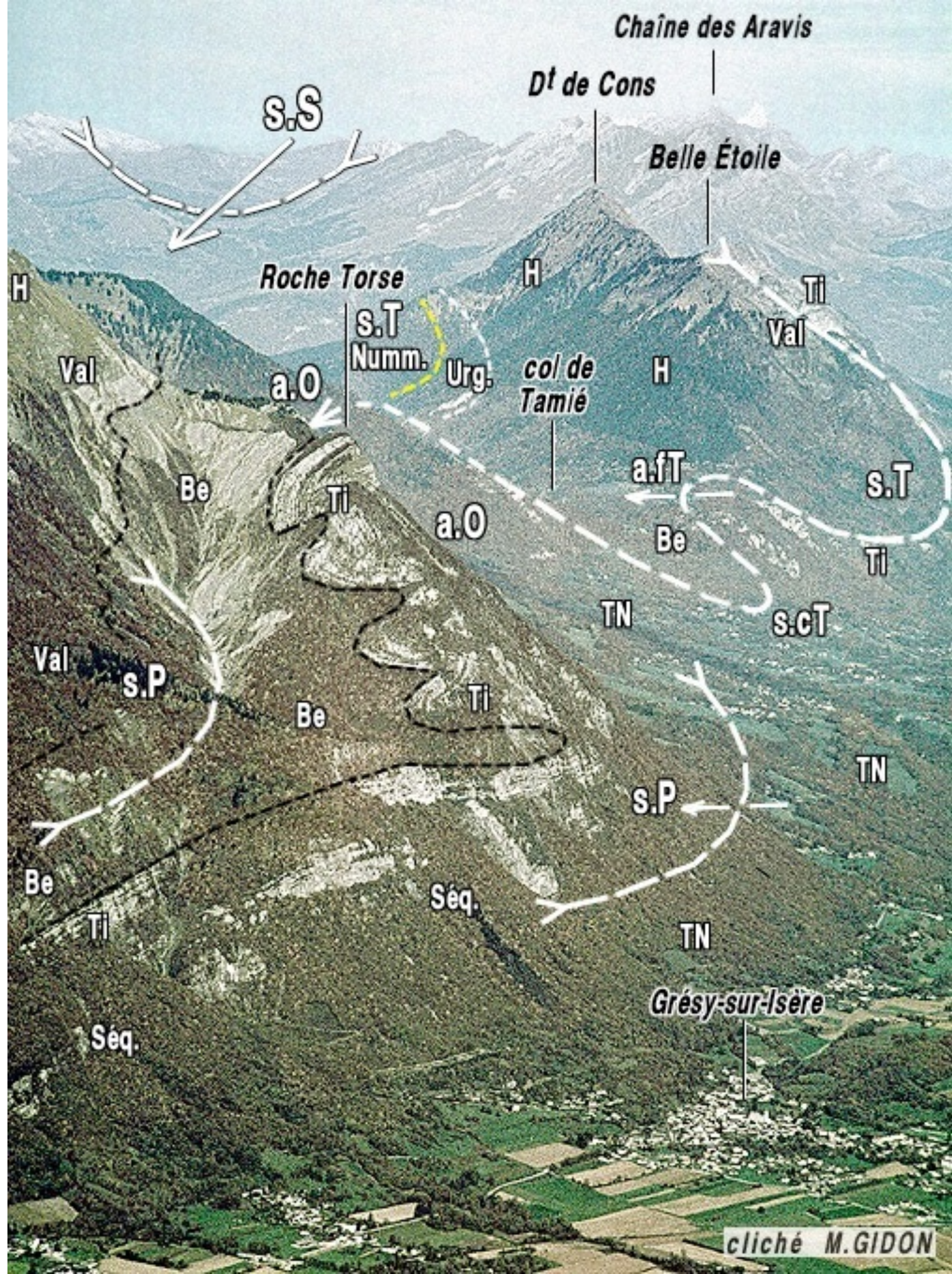
Aplatissement combiné au cintrage (plis mixtes)



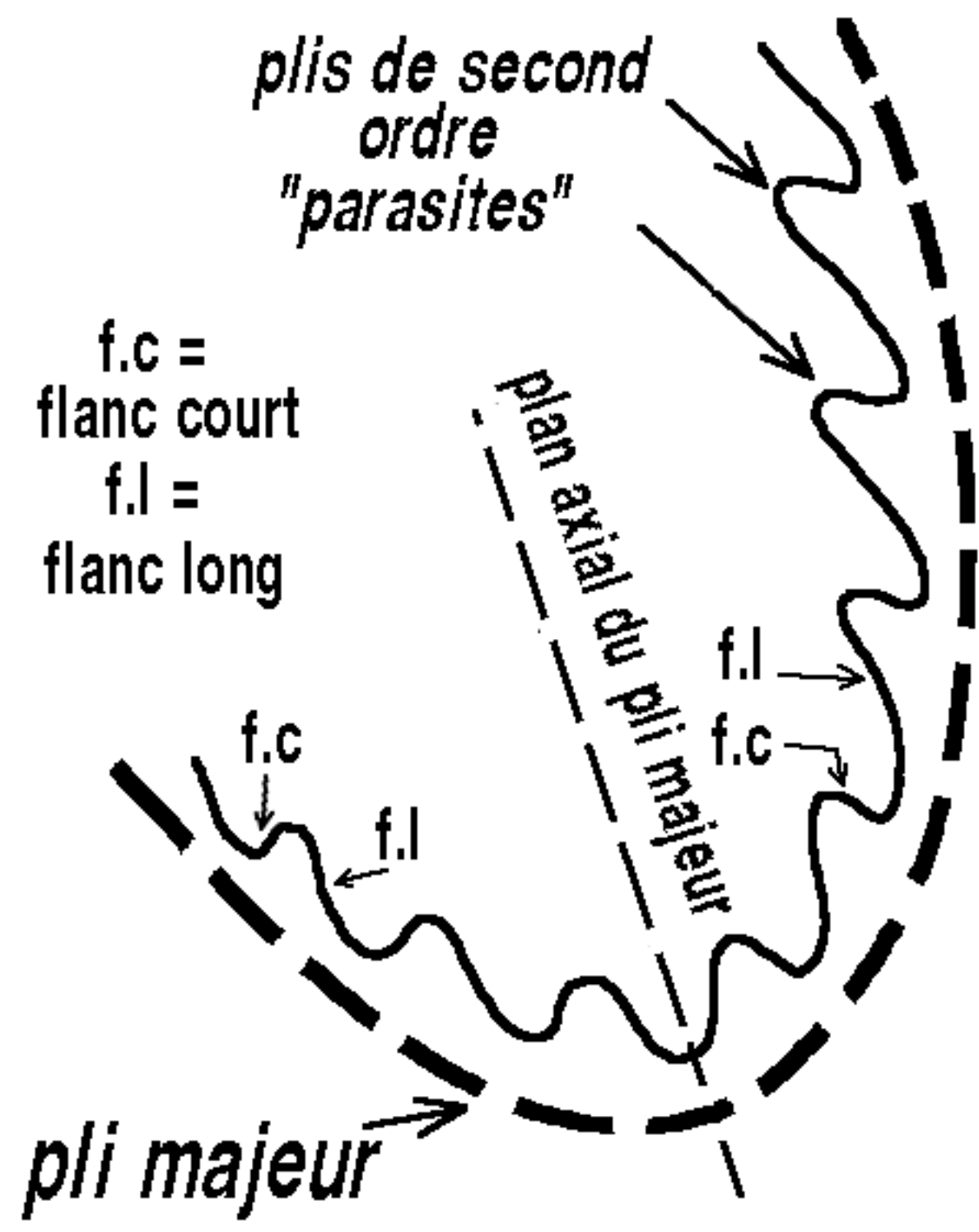








cliché M.GIDON



*plis de second
ordre
"parasites"*

f.c =
flanc court
f.l =
flanc long

plan axial du pli majeur

pli majeur

f.c

f.l

f.l

f.c

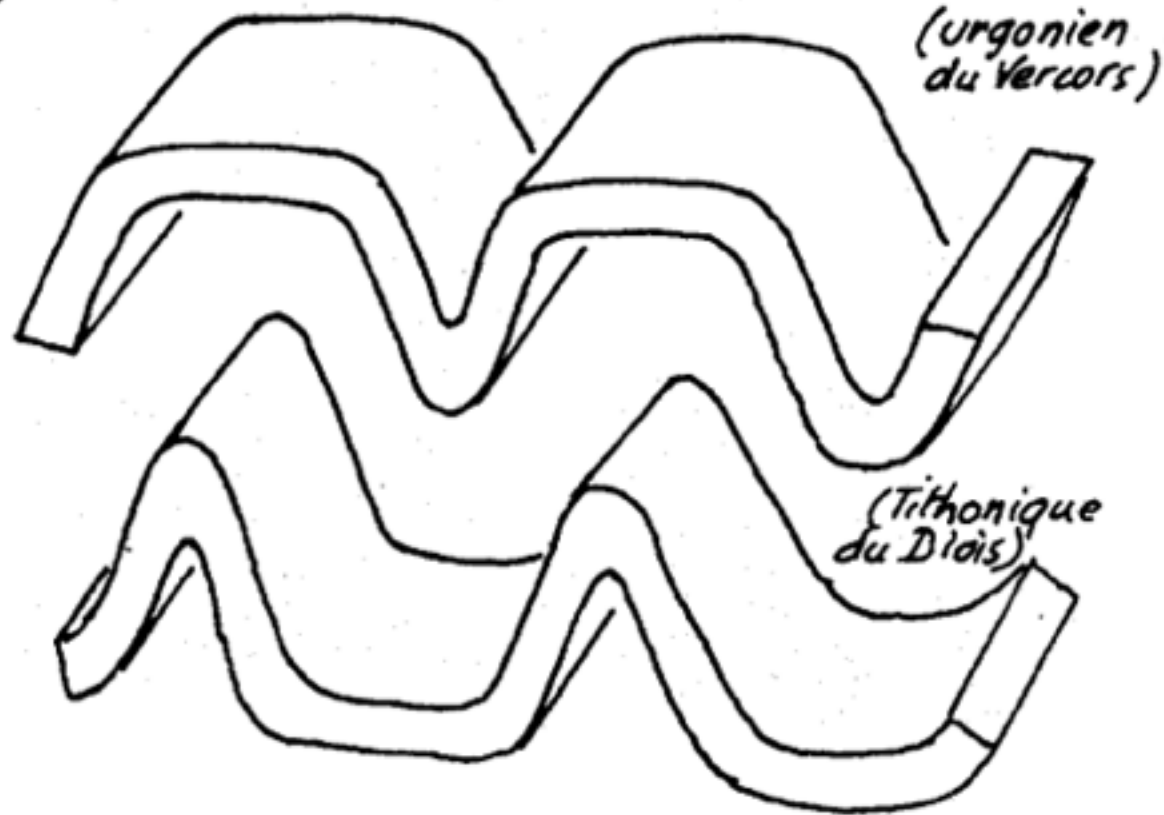




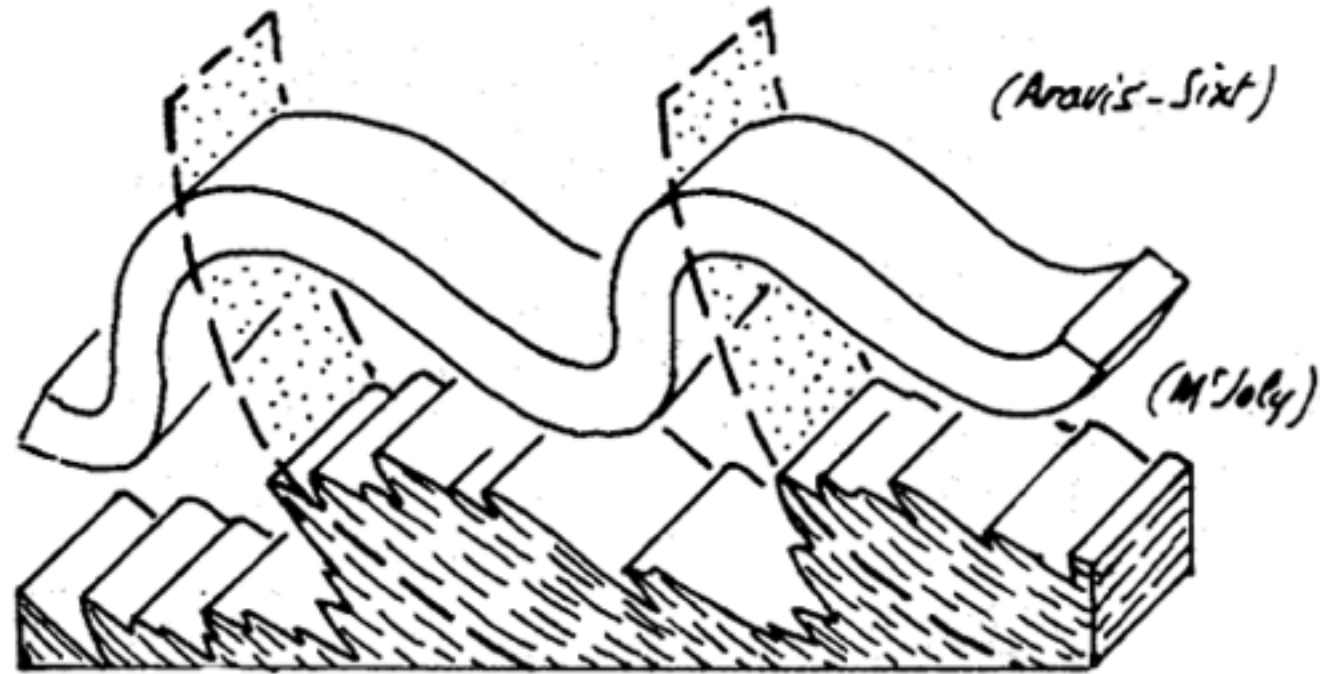
sommet 3092



1/ Passage déjectif / éjectif

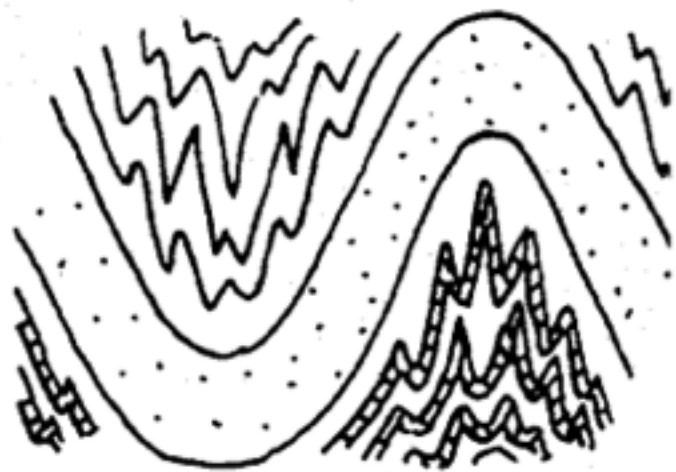


2/ Passage concentrique / semblable



3/ Disharmonie par replis

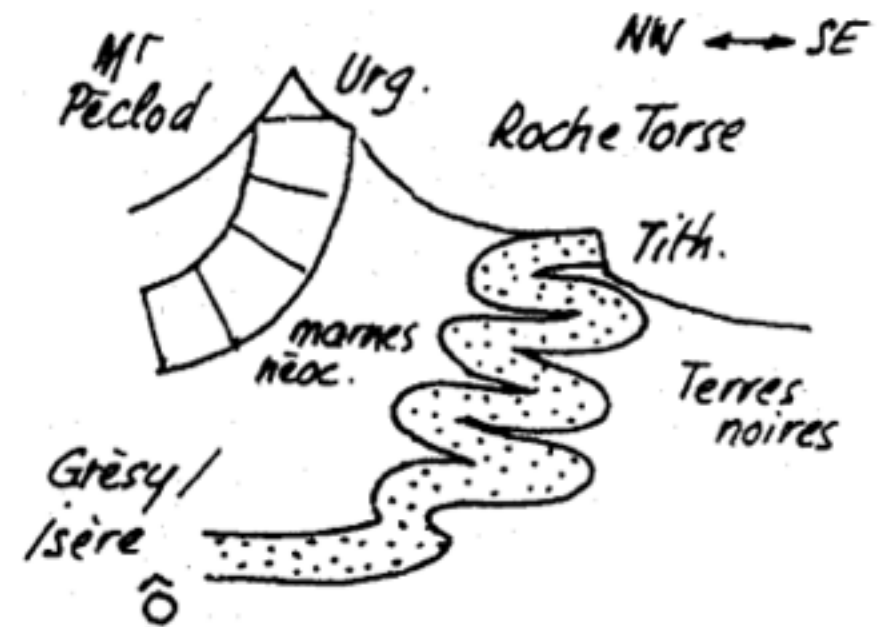
3a) Replis de cœur



3b) Décollements



3c) Autonomie

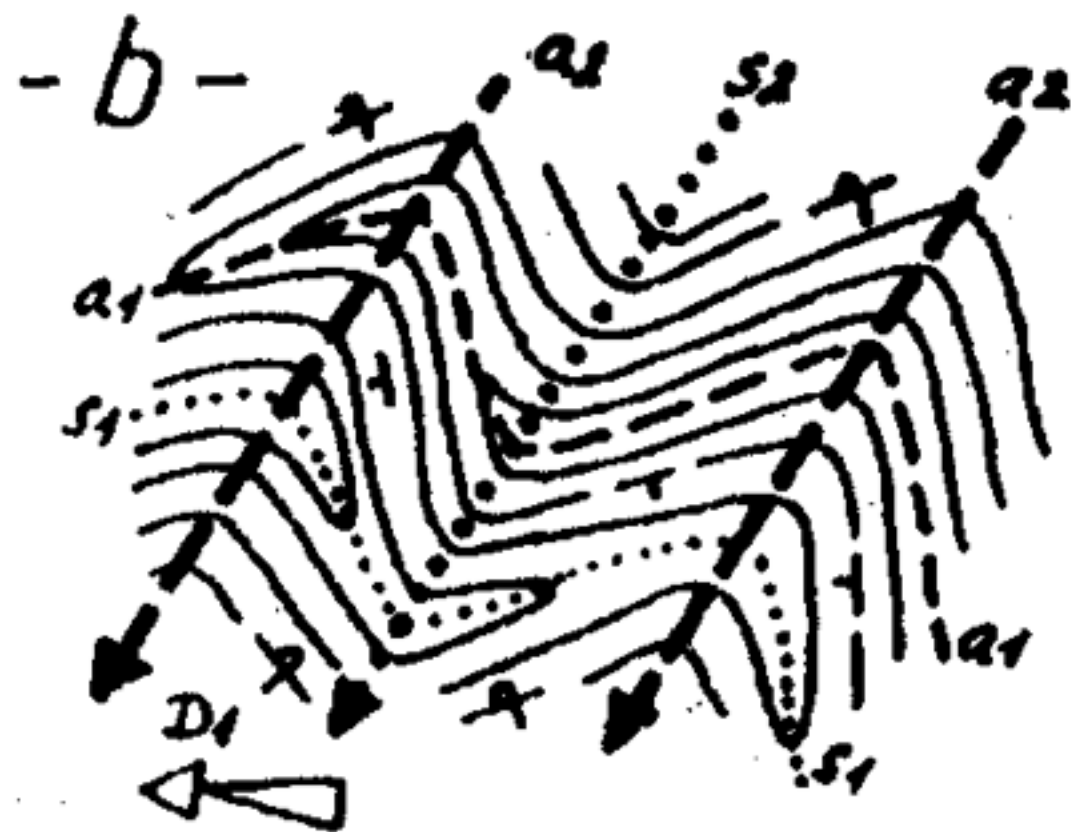
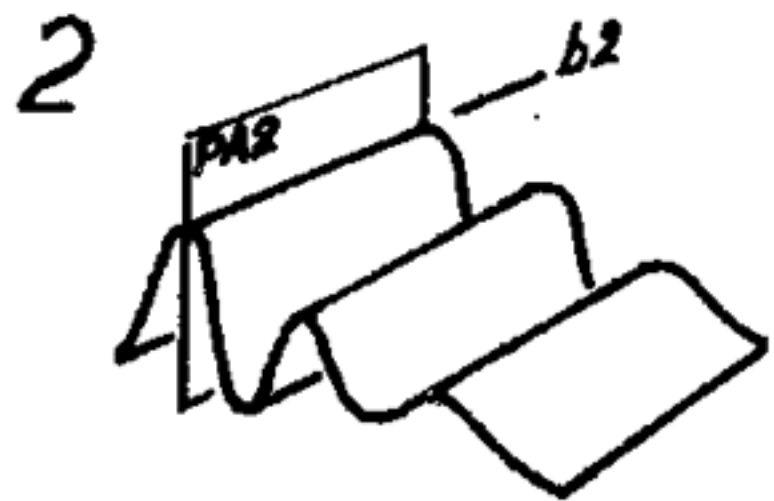
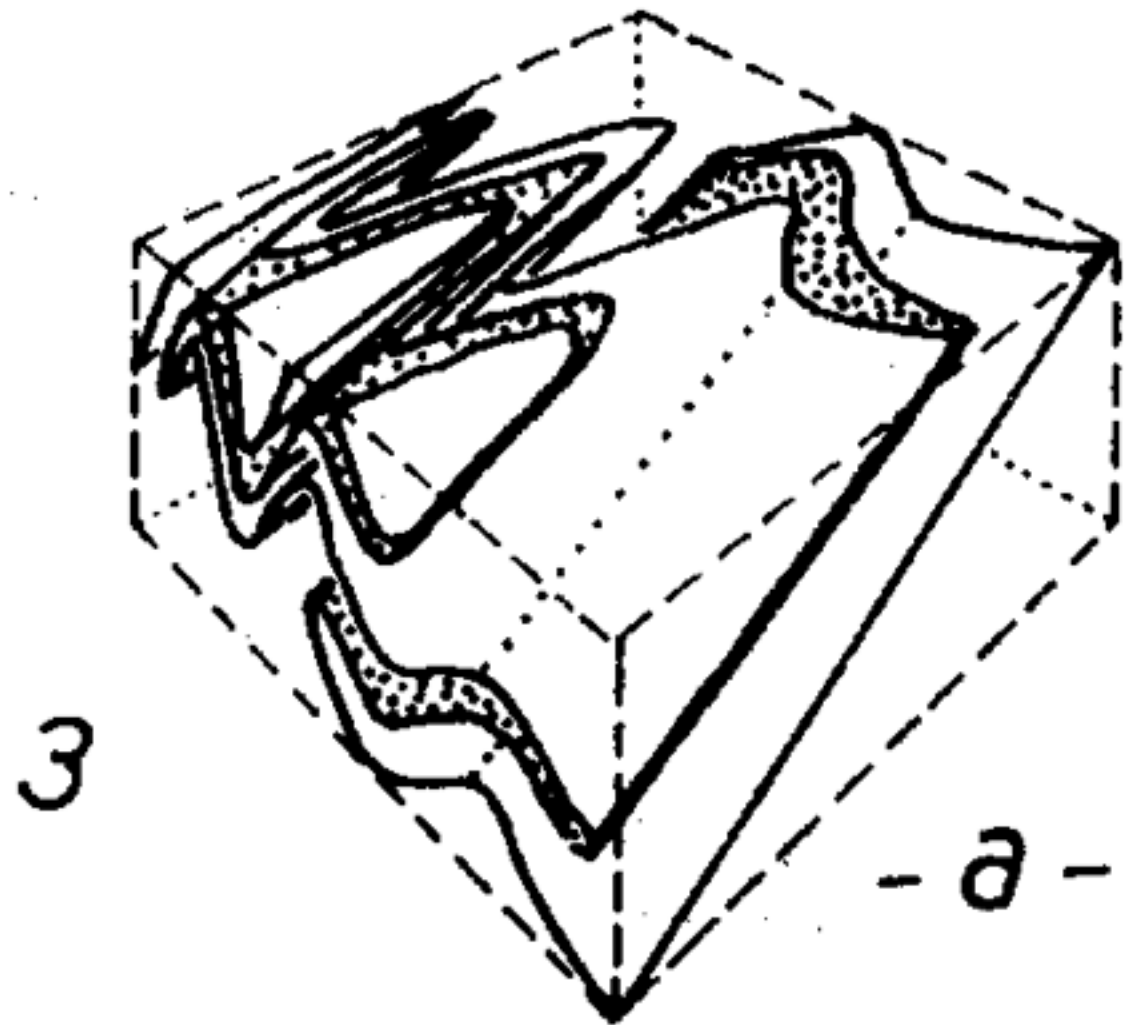
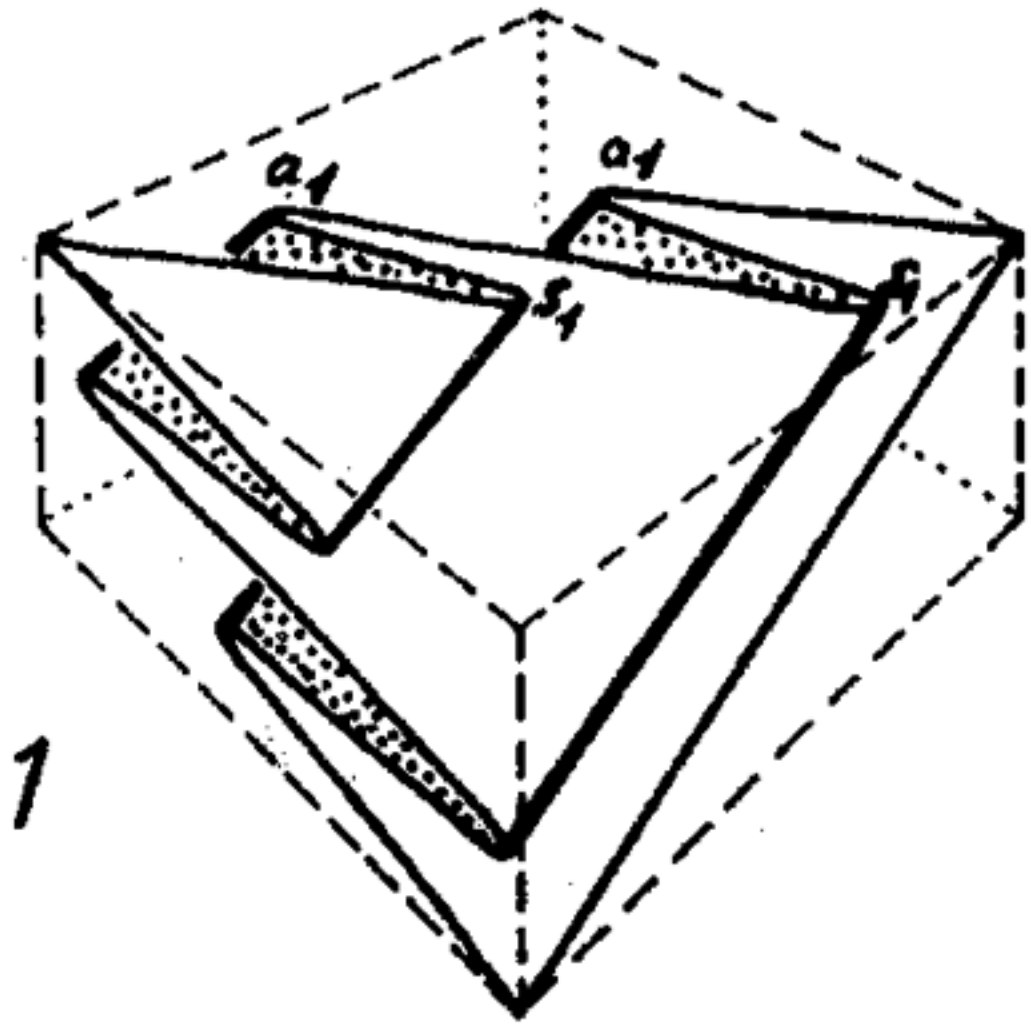


Les Plis :

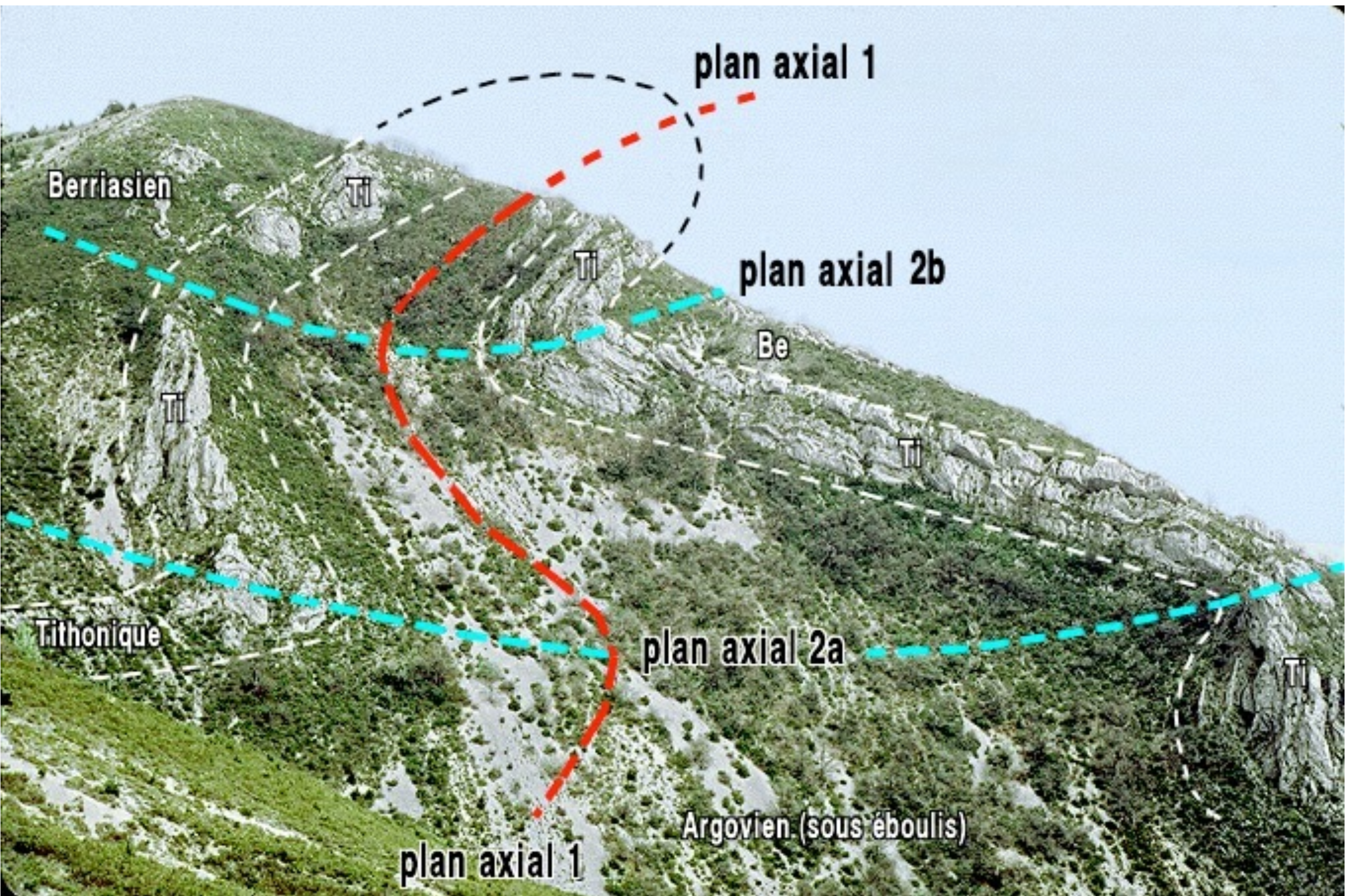
Assemblages de plis

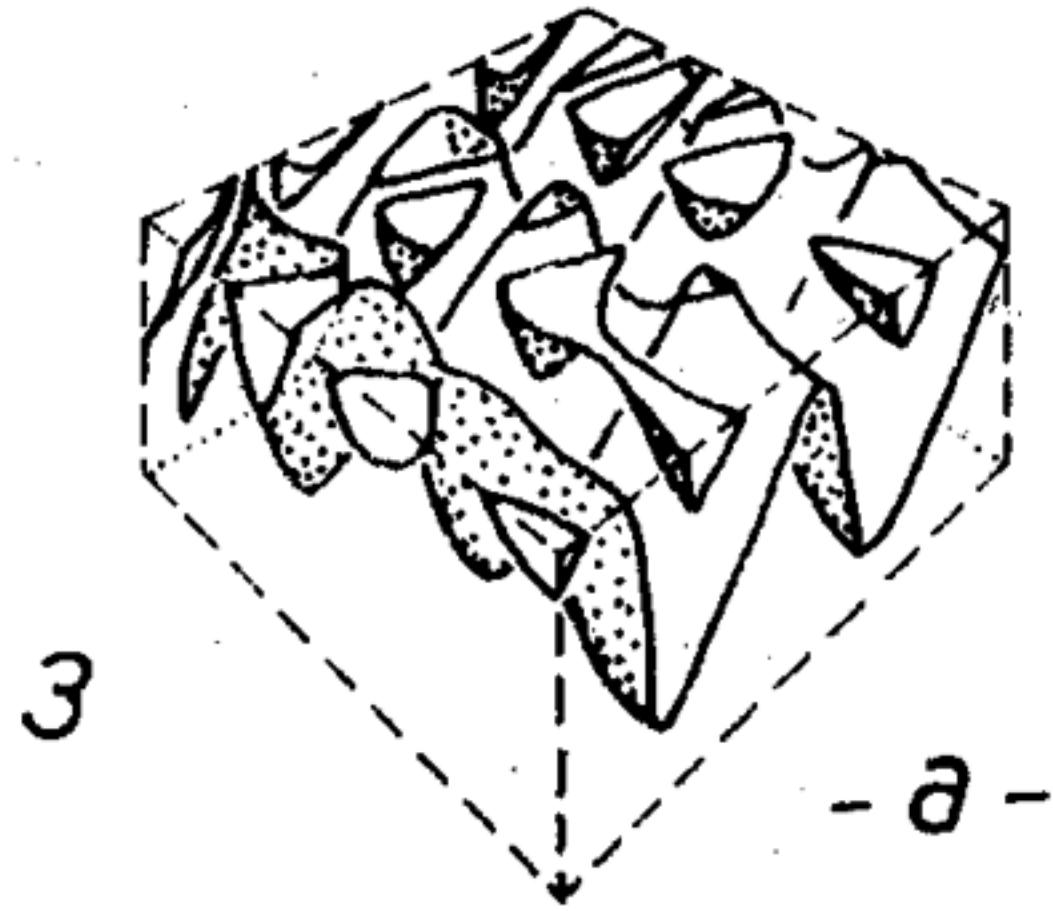
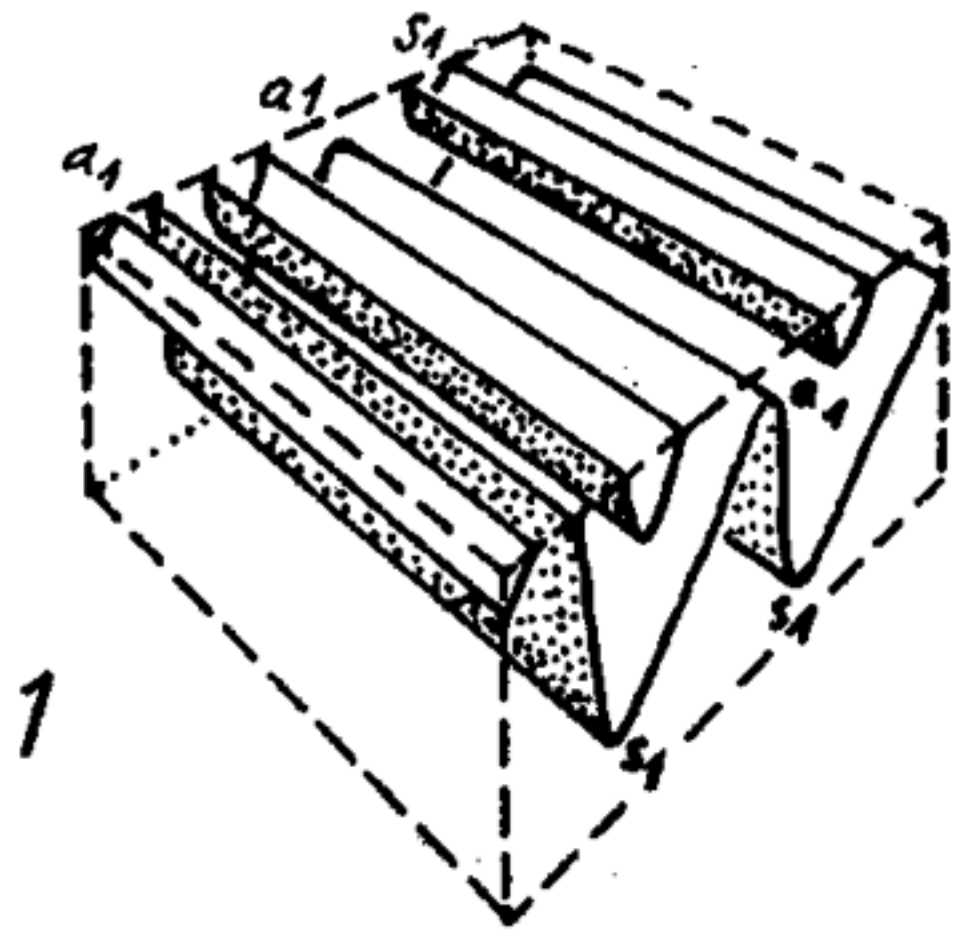
Plis superposés



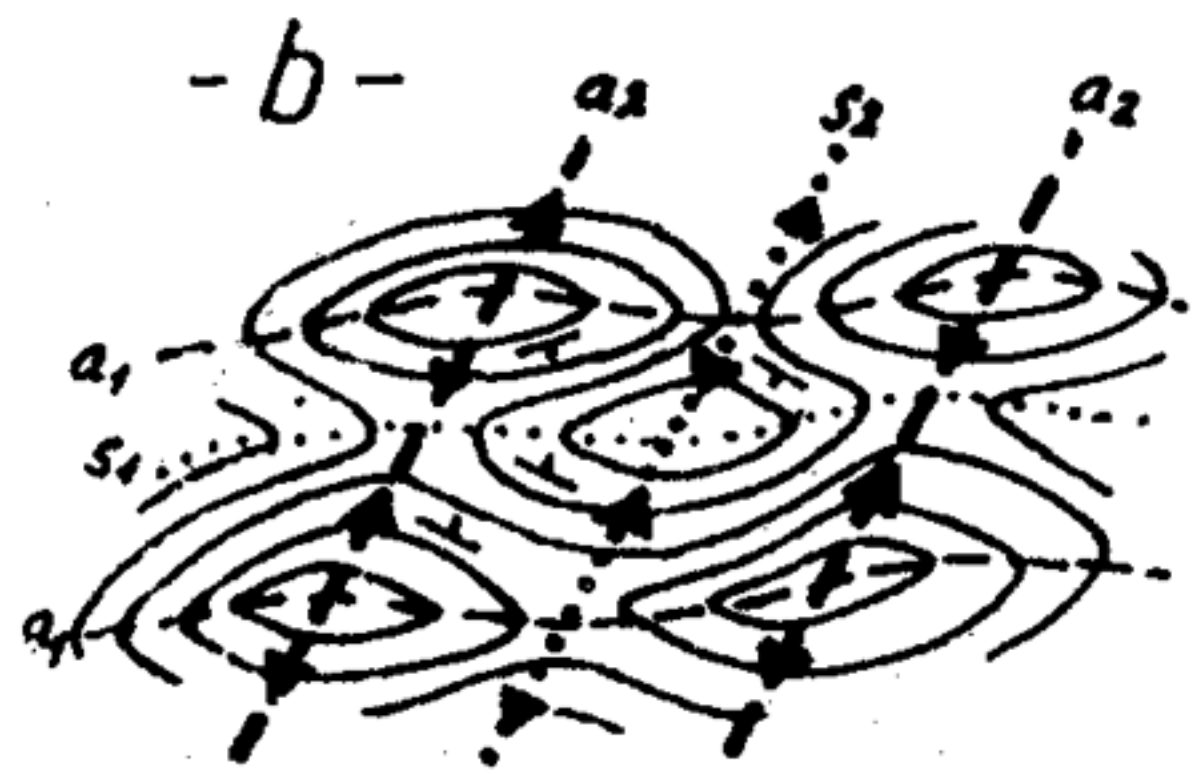
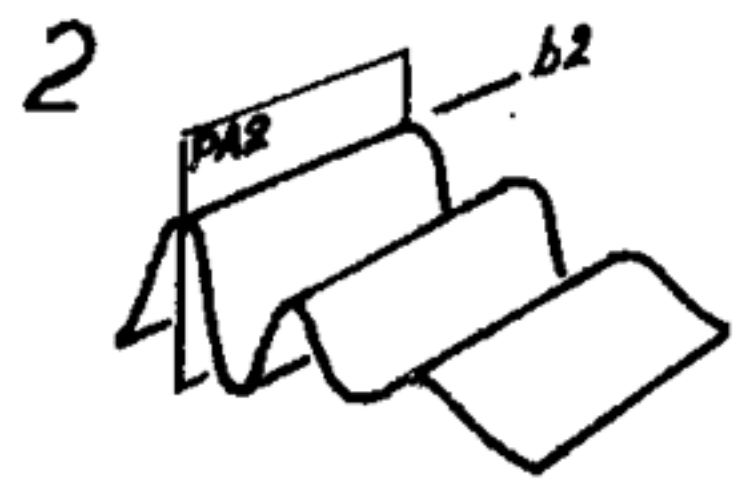




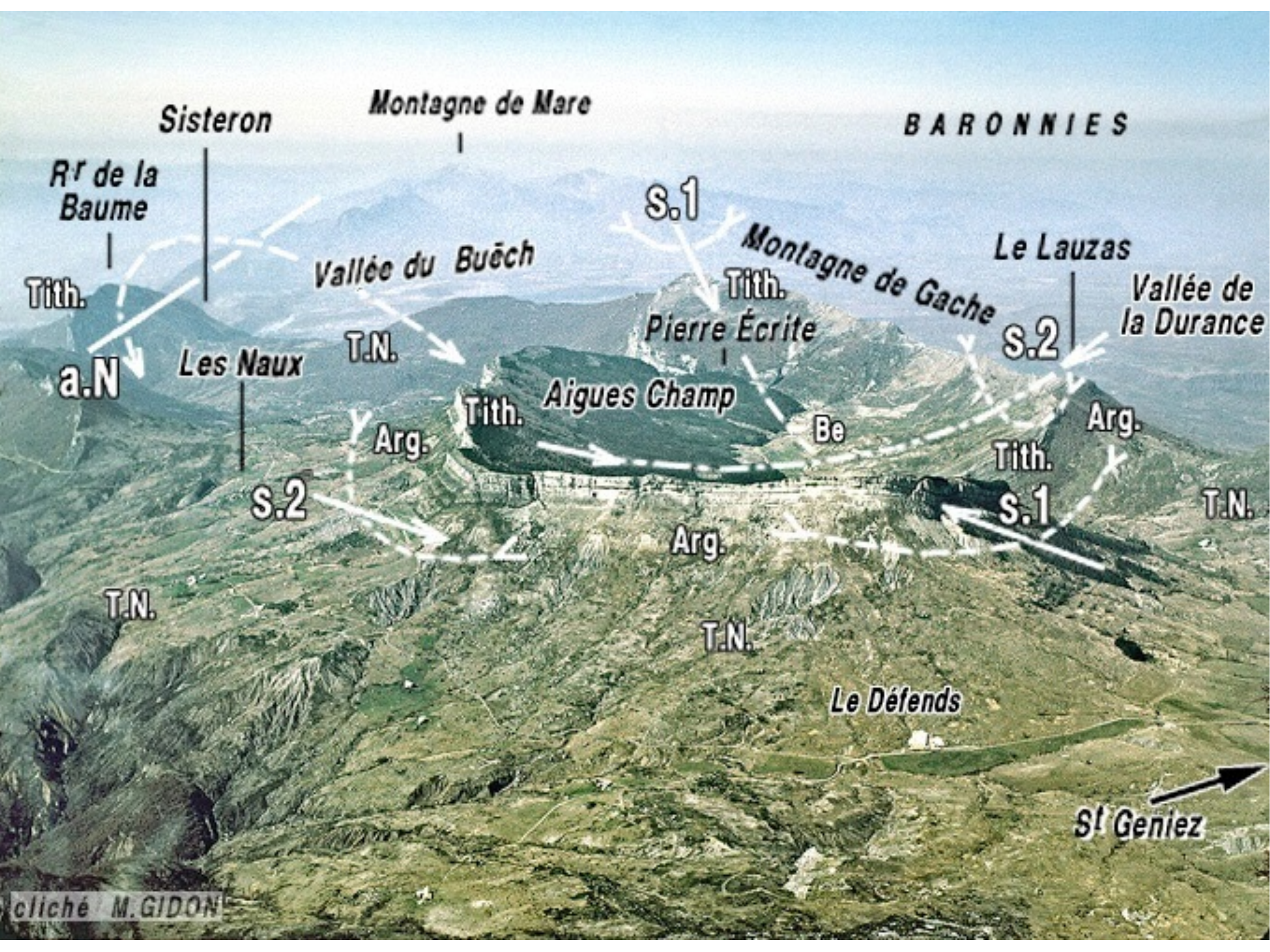




- a -







Sisteron

Montagne de Mare

BARONNIES

Rt de la Baume

Tith.

a.N

Les Naux

Vallée du Buëch

T.N.

S.2

T.N.

Arg.

Aigues Champ

Arg.

T.N.

Le Défends

S.1

Montagne de Gache

Le Lauzas

Vallée de la Durance

Tith.

Pierre Écrite

S.2

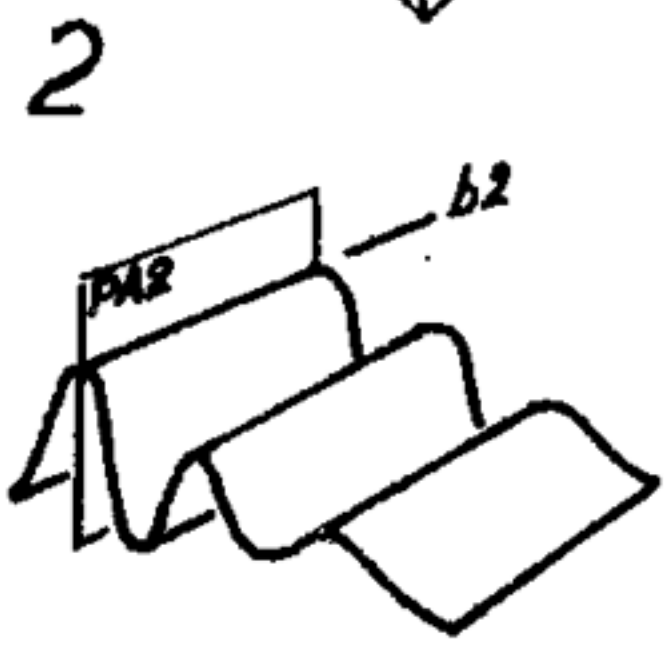
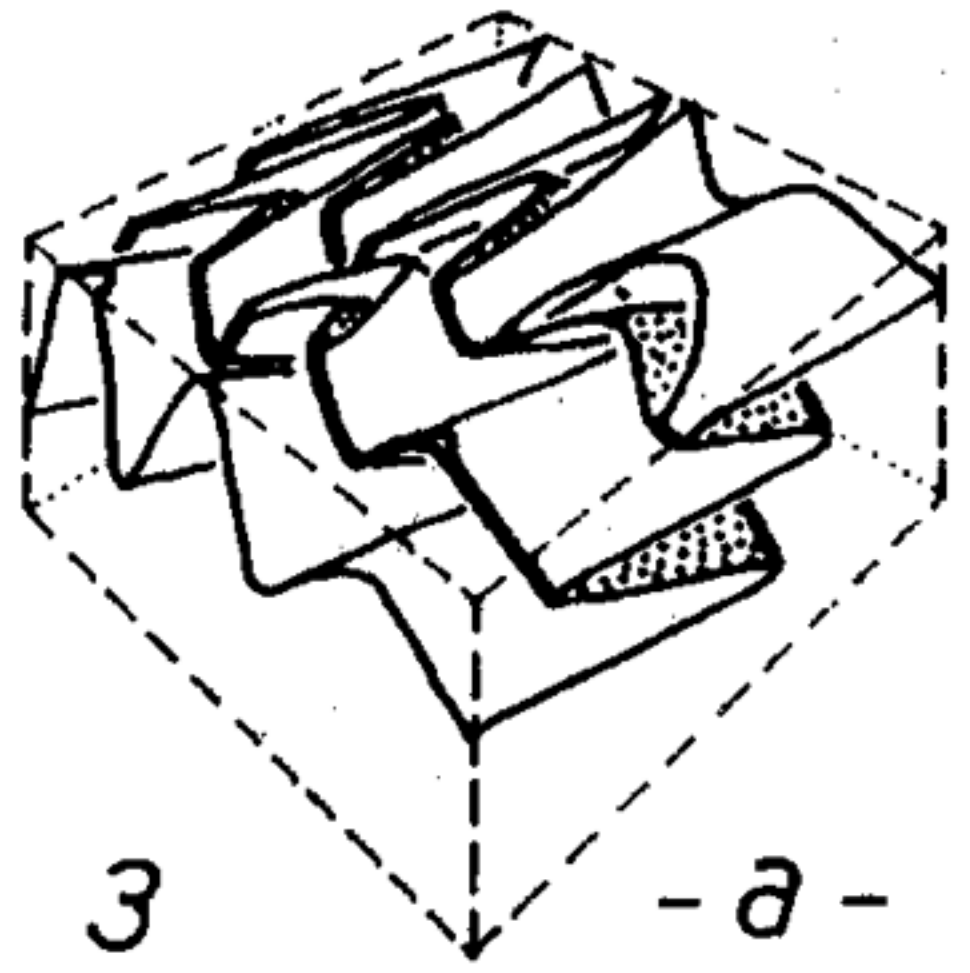
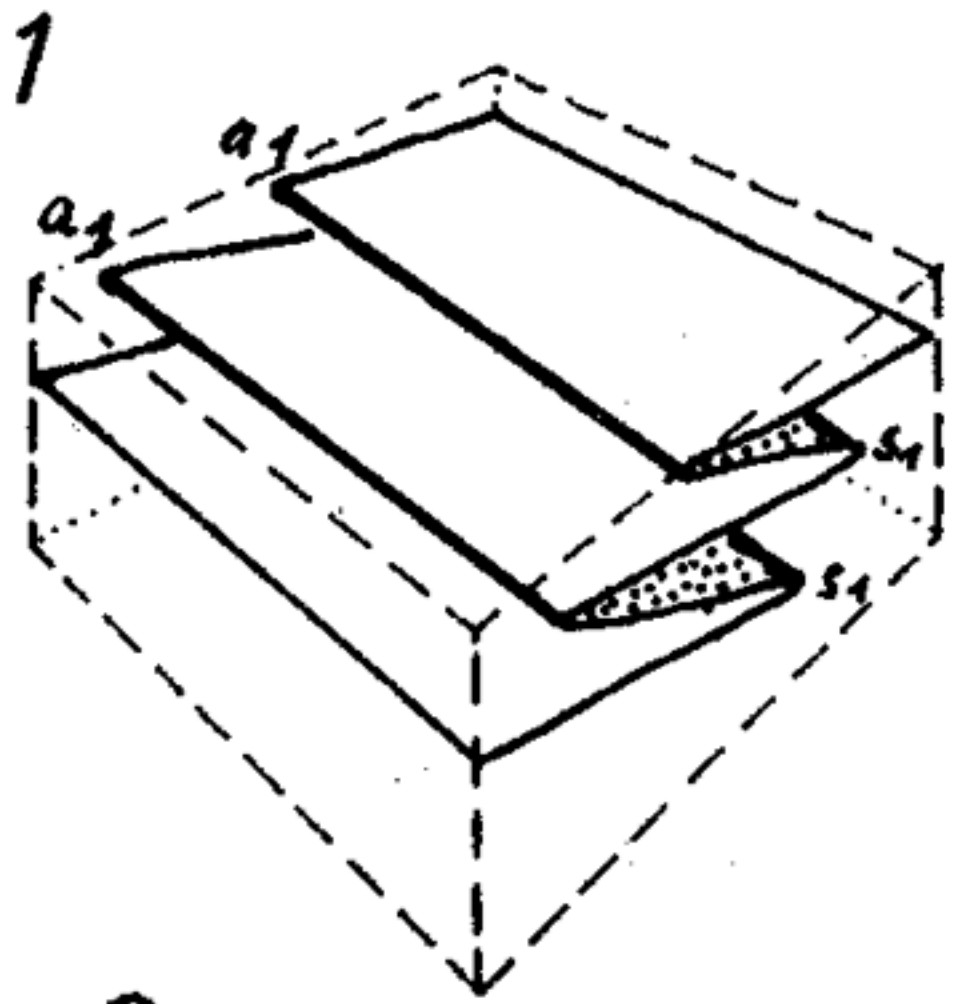
Arg.

Tith.

S.1

T.N.

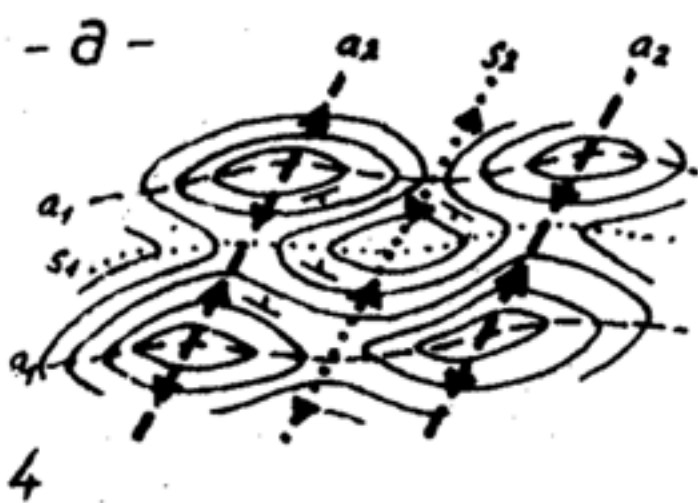
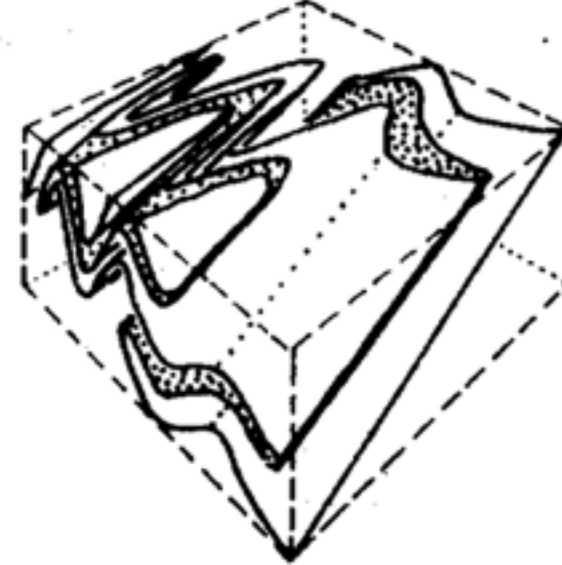
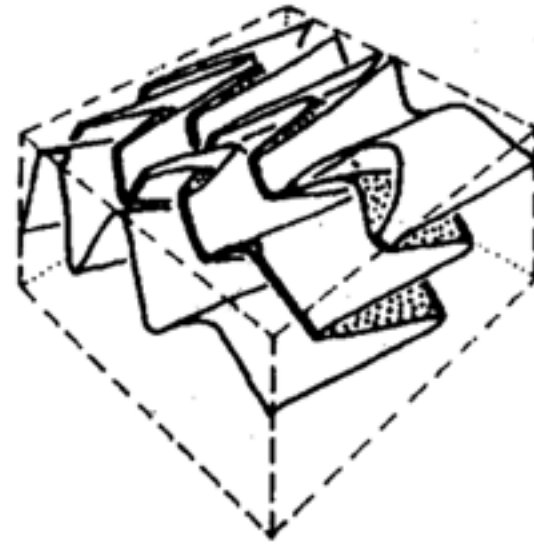
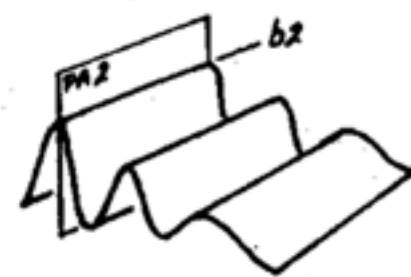
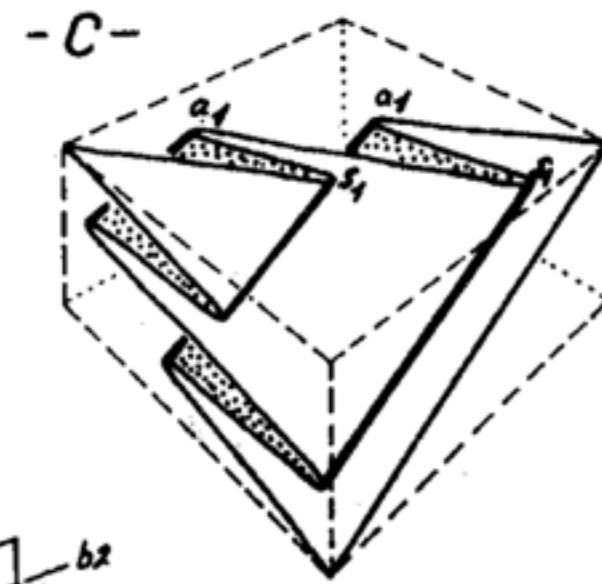
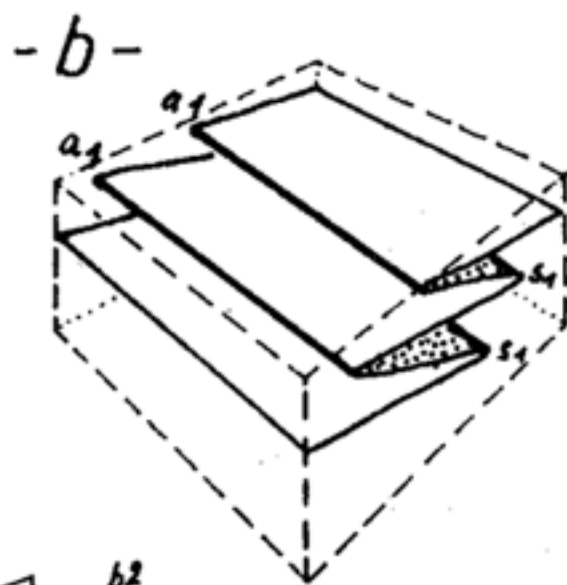
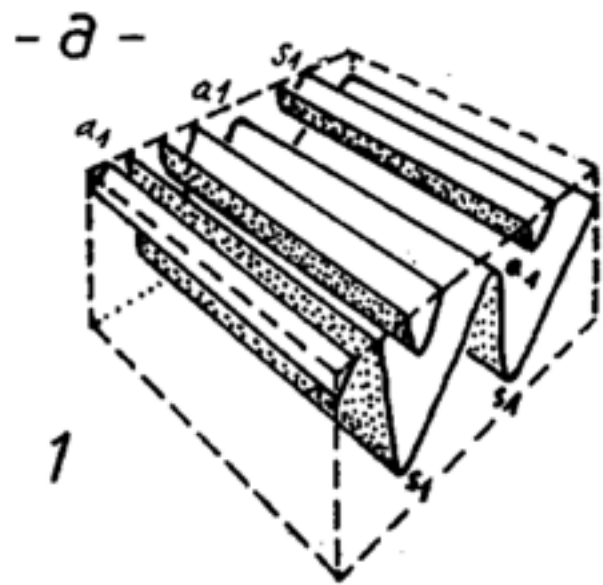
St Geniez



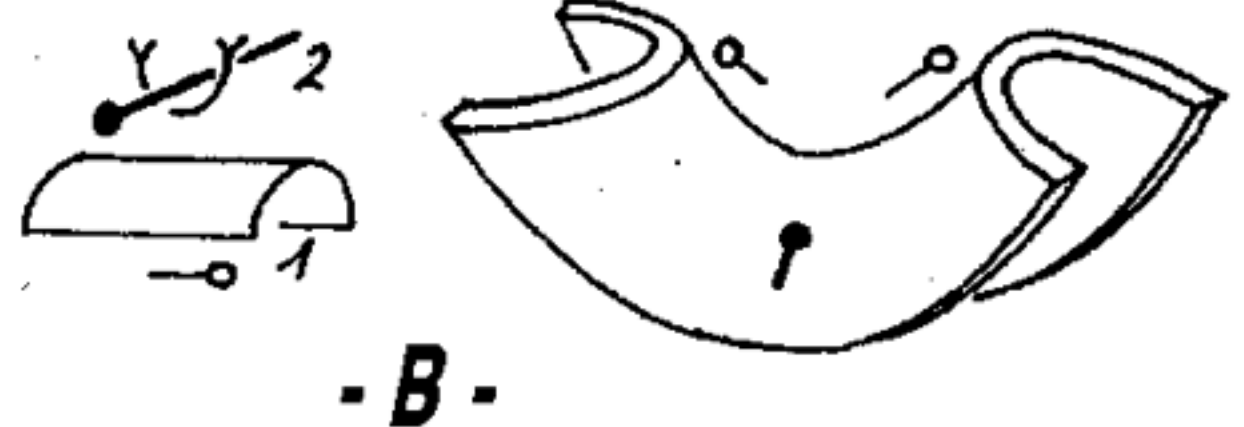
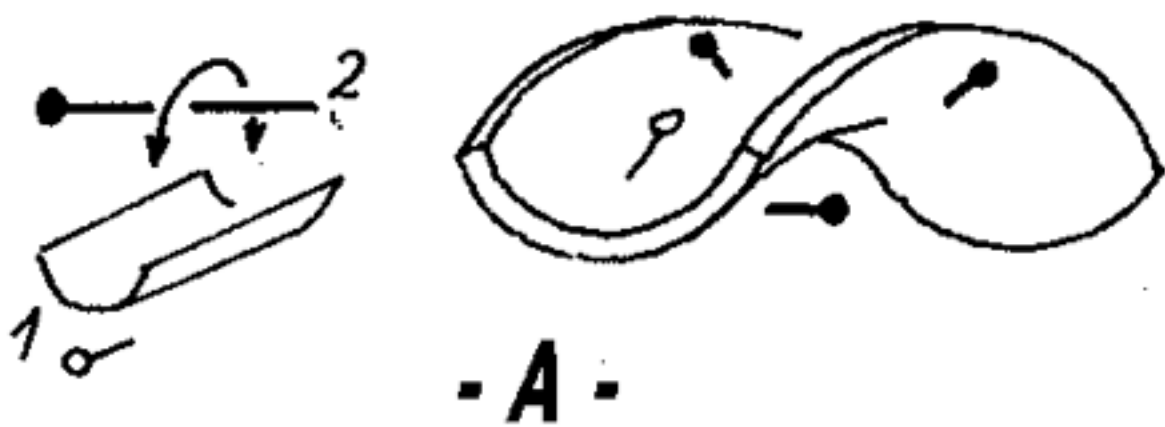
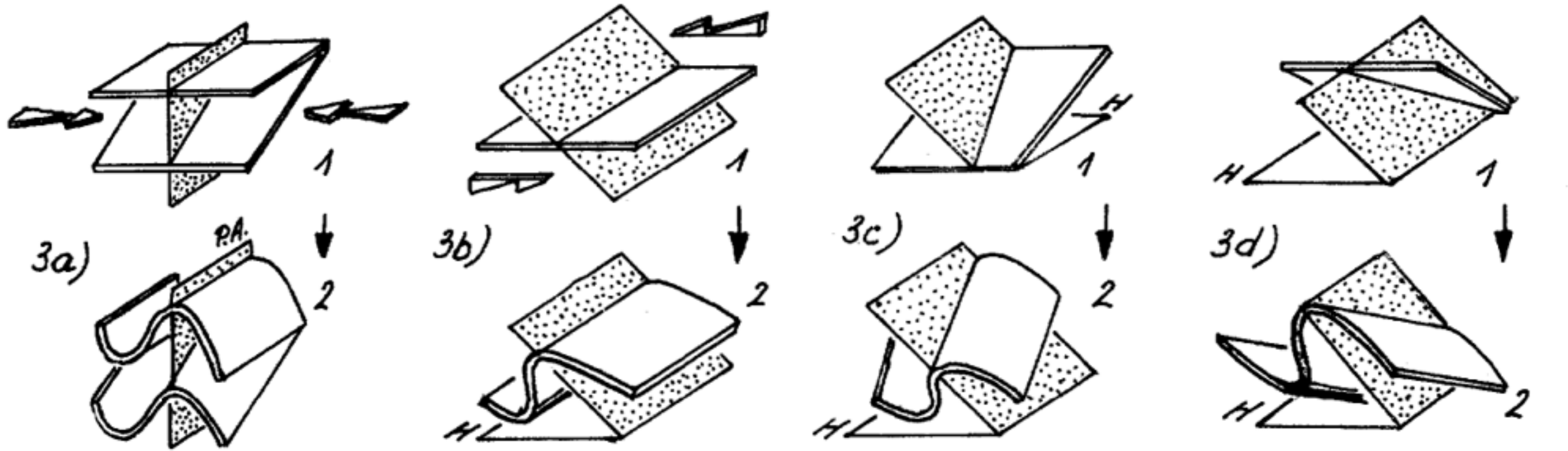








③ Attitude de l'axe, en fonction des pendages initiaux des surfaces repères :



Les Plis :

Plis

synsédimentaires





Le Château

942

L'Asse de Clumanc

cg|O|

Barrême

mN

mN

cN

mN

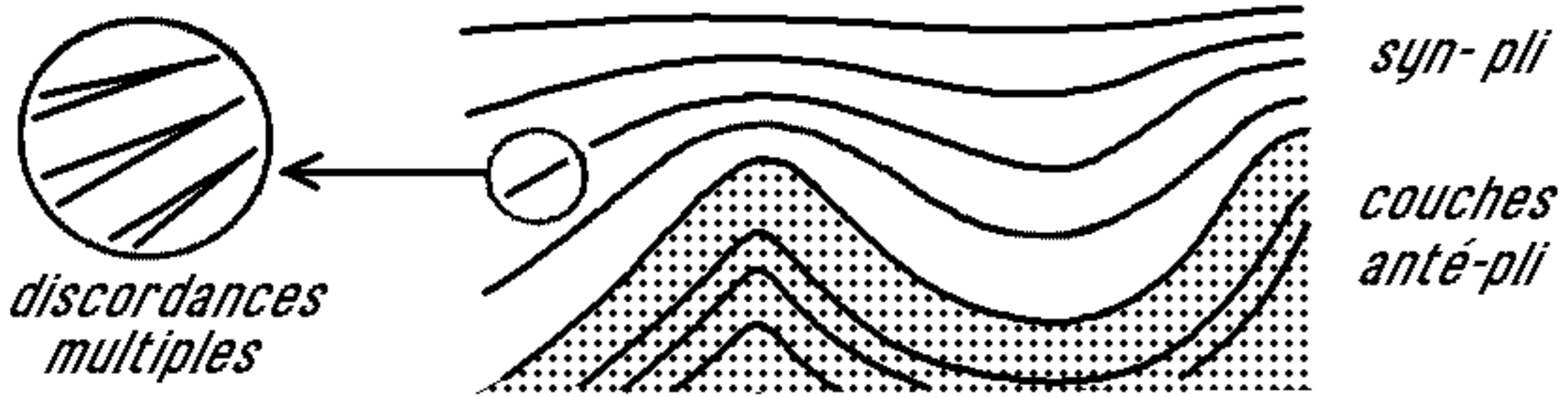
cg|O|

cliché M.GIDON

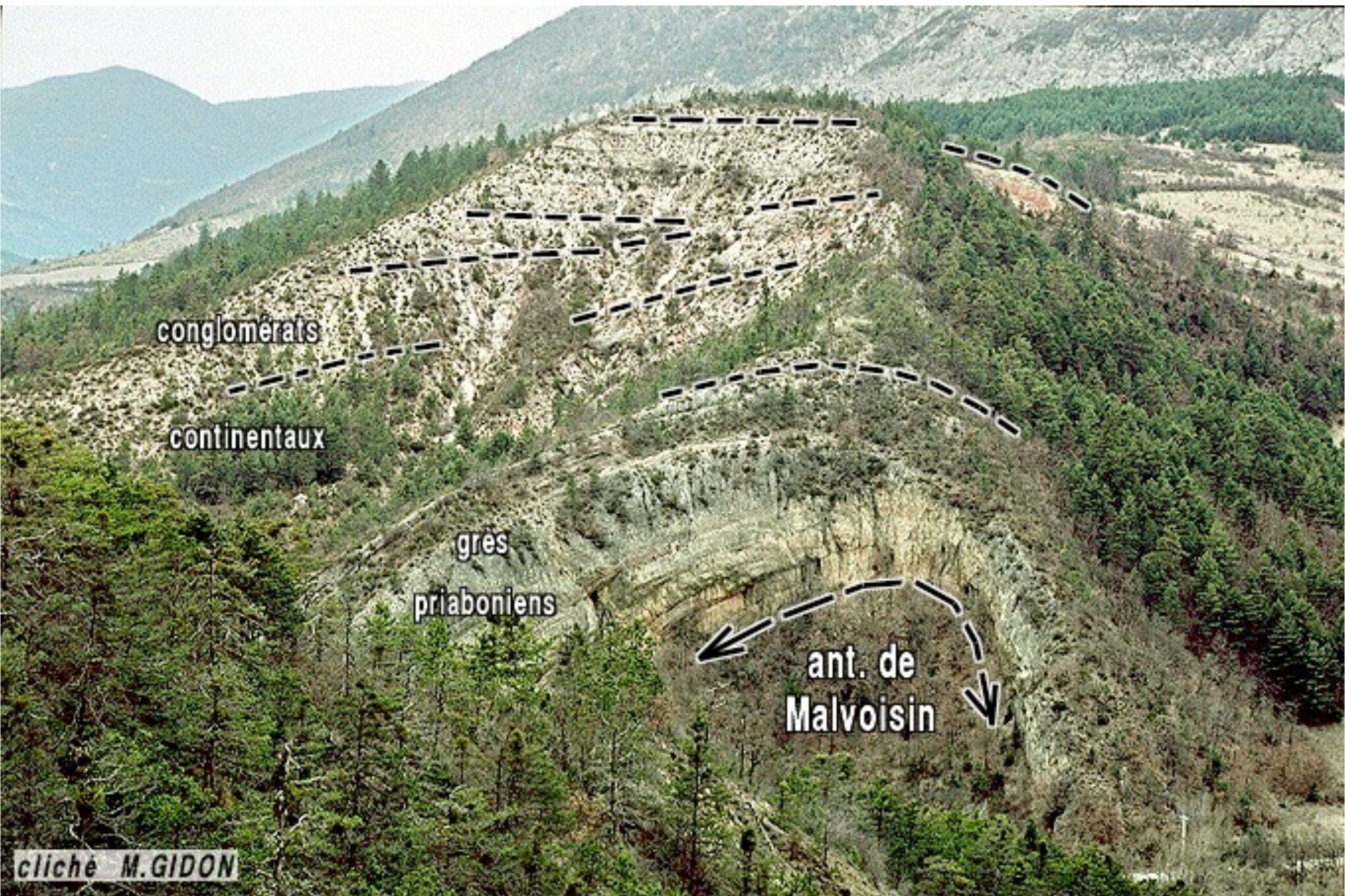
Plis cachetés



Plissement progressif







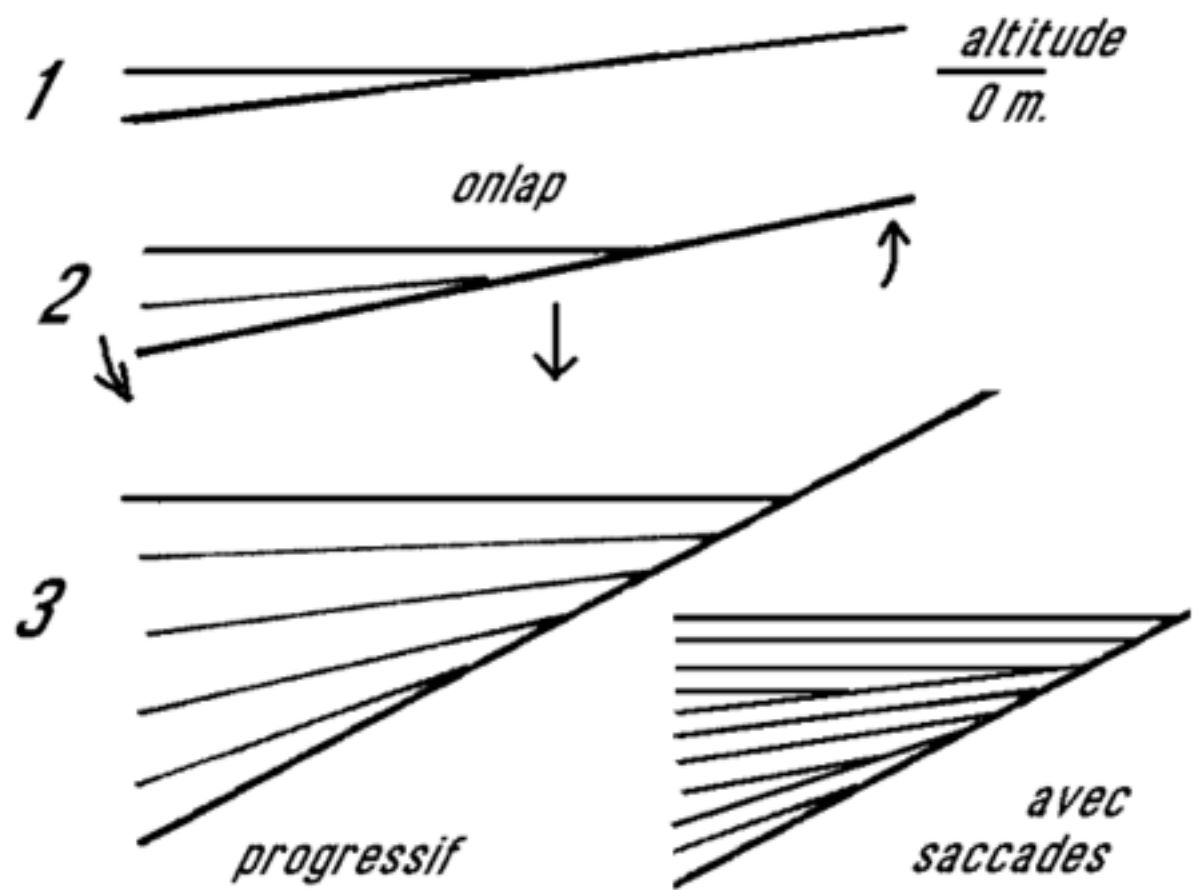
conglomérats

continentaux

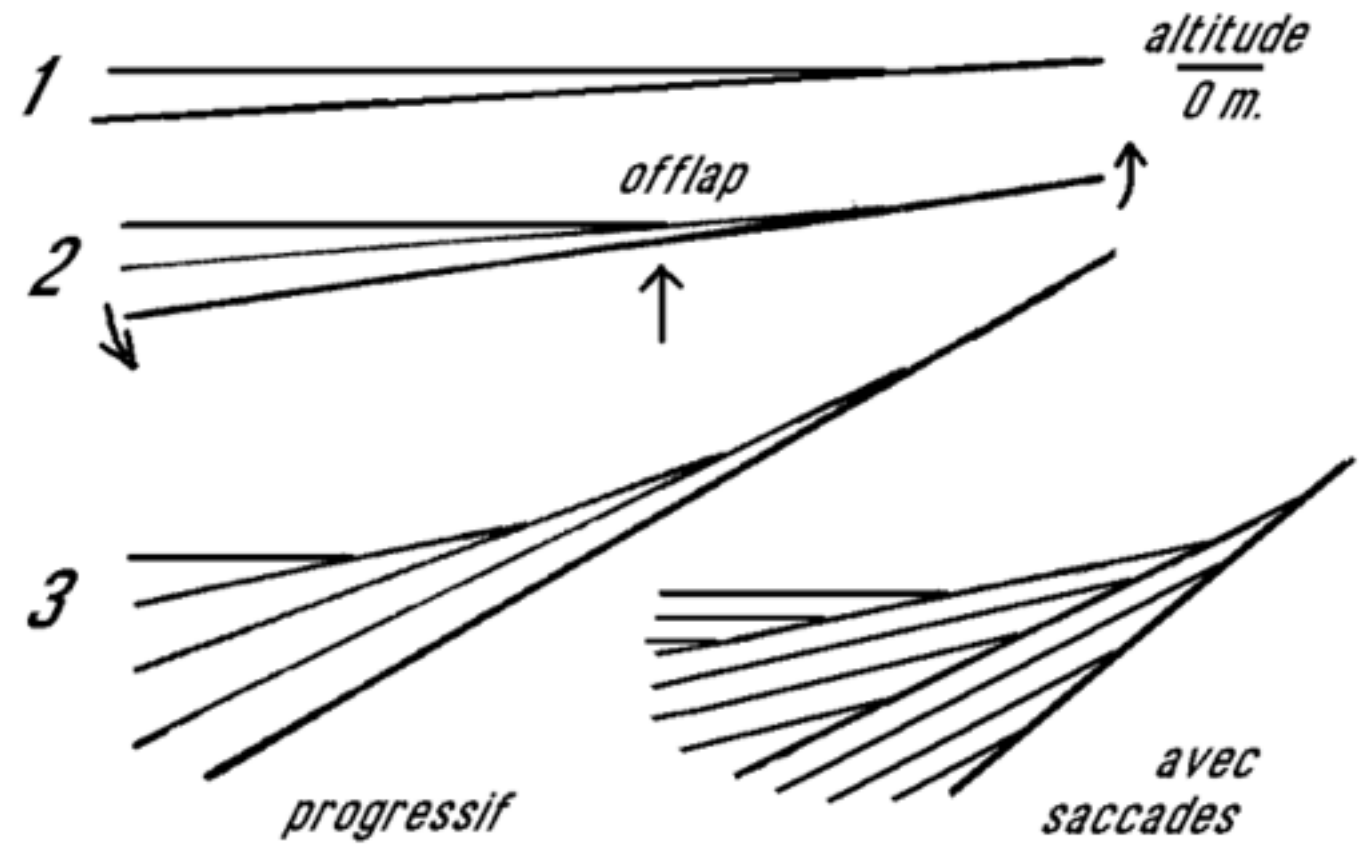
grès
priaboniens

ant. de
Malvoisin

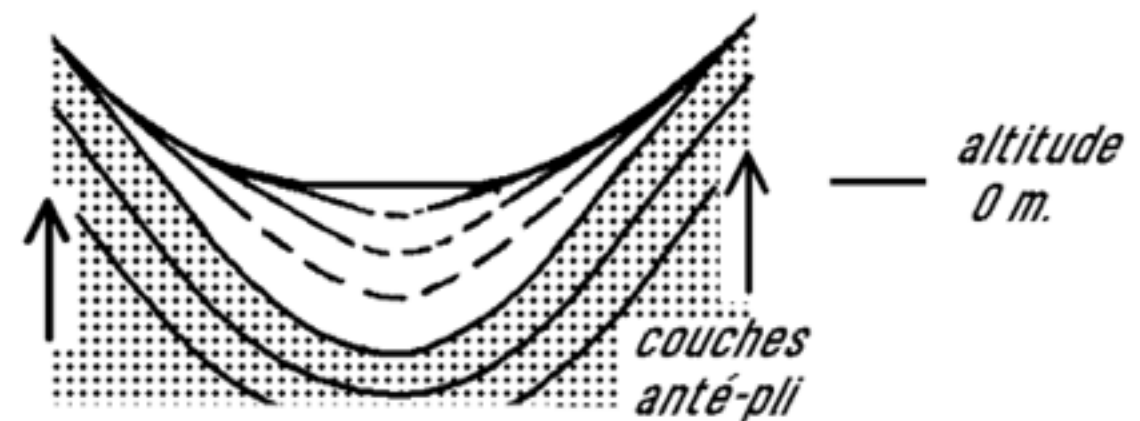
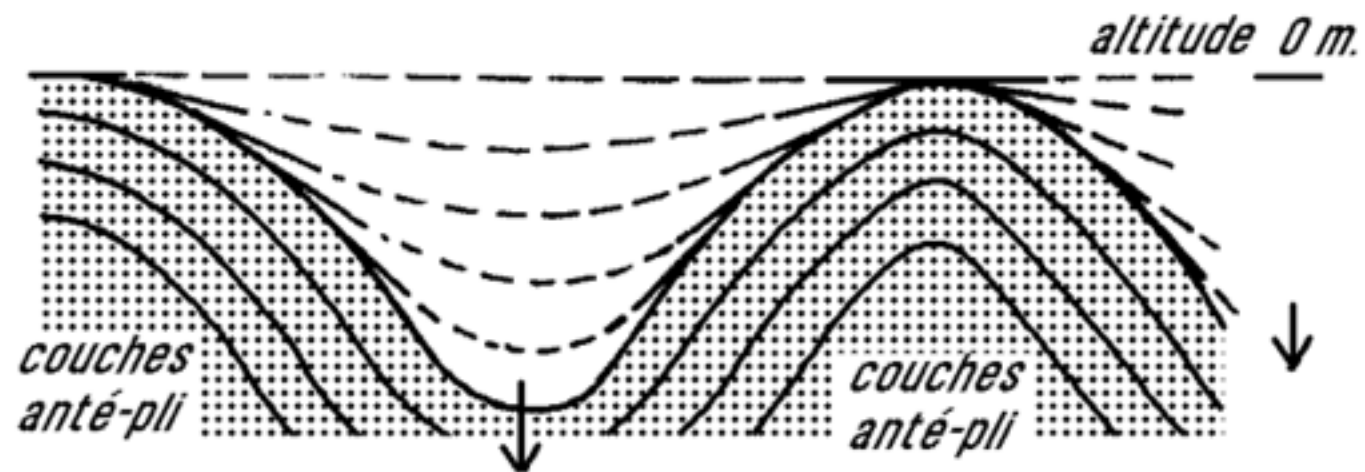
Comblement transgressif



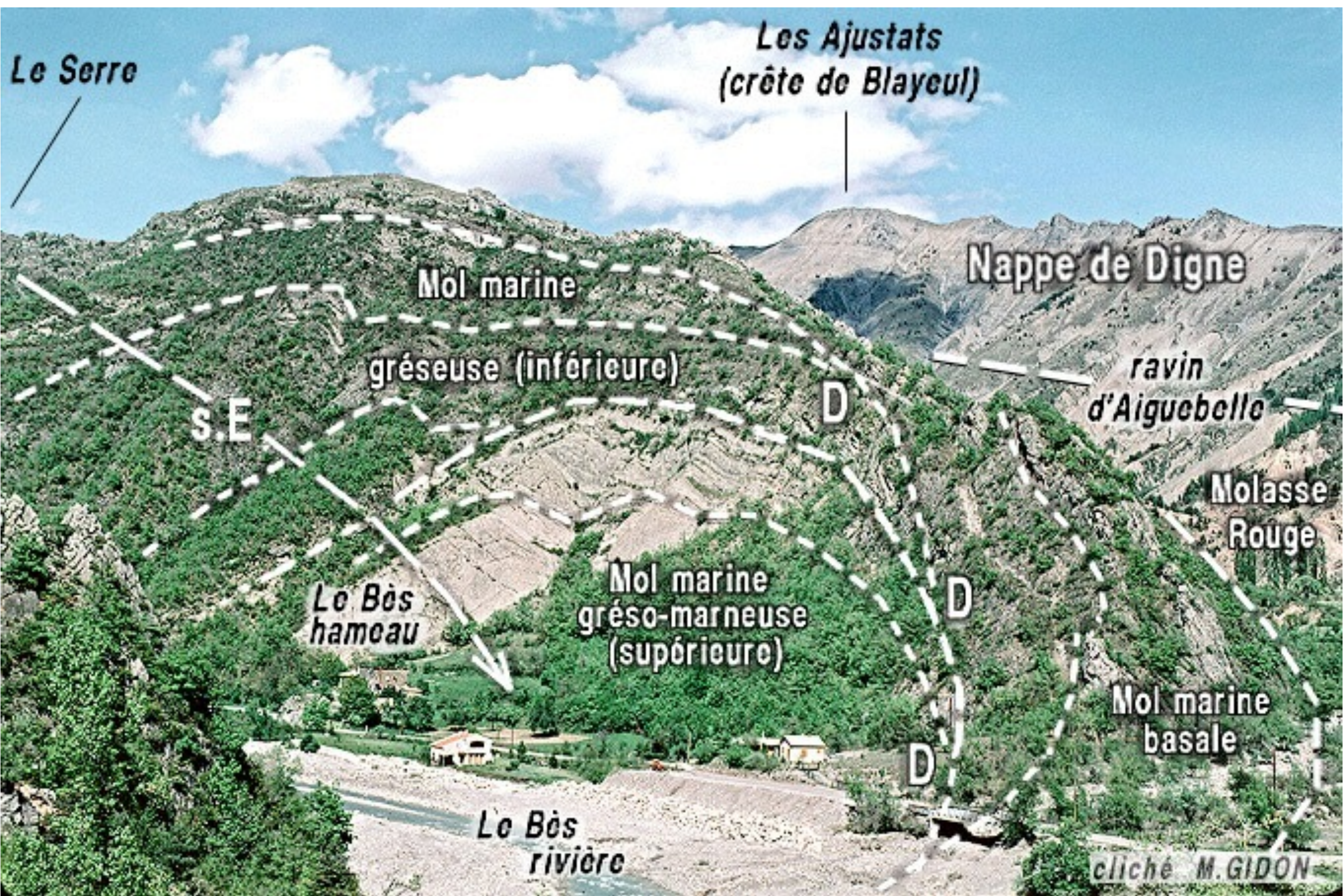
Comblement régressif



Allure des plis correspondants







Le Serre

**Les Ajustats
(crête de Blayeul)**

Nappe de Digne

Mol marine

gréseuse (inférieure)

**ravin
d'Aiguebelle**

S.E

D

**Molasse
Rouge**

**Le Bès
hameau**

**Mol marine
gréso-marneuse
(supérieure)**

D

**Mol marine
basale**

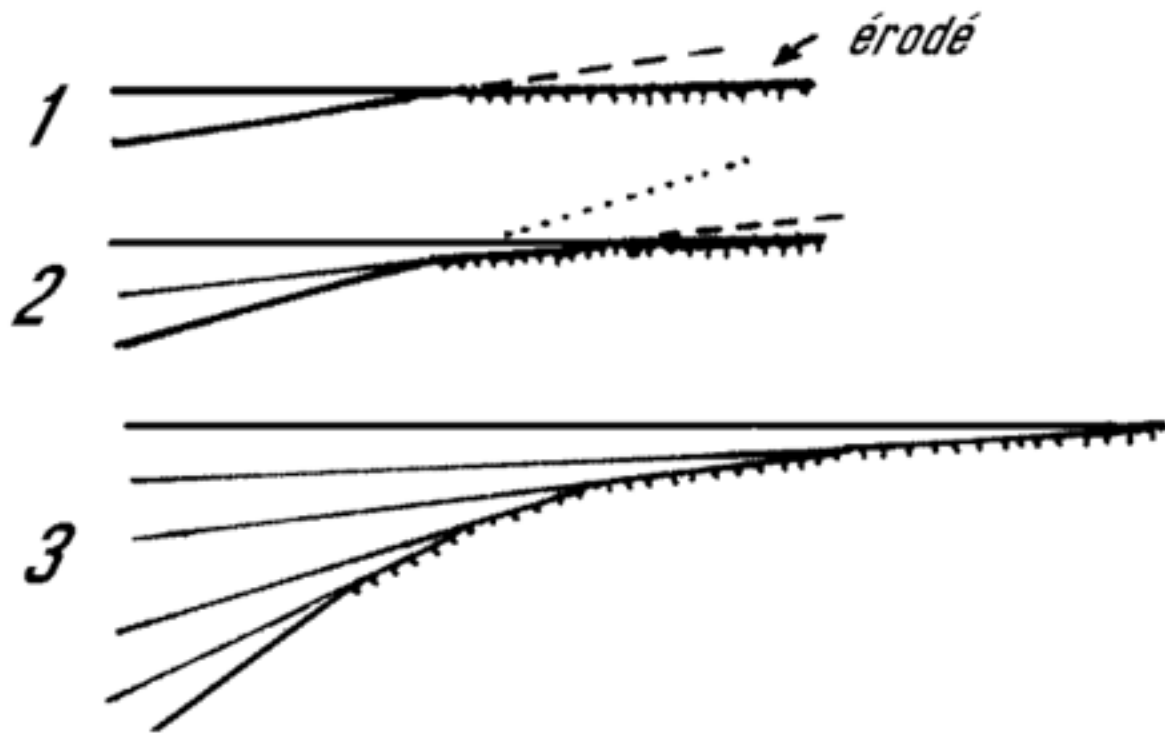
**Le Bès
rivière**

D

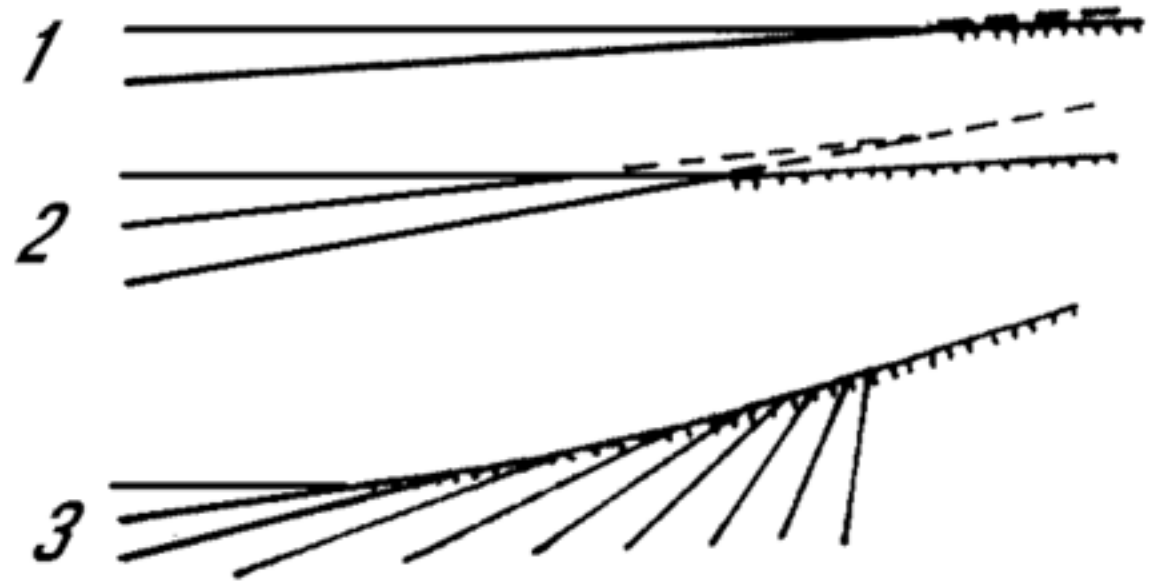
cliché M.GIDON

Influence d'une érosion des parties soulevées

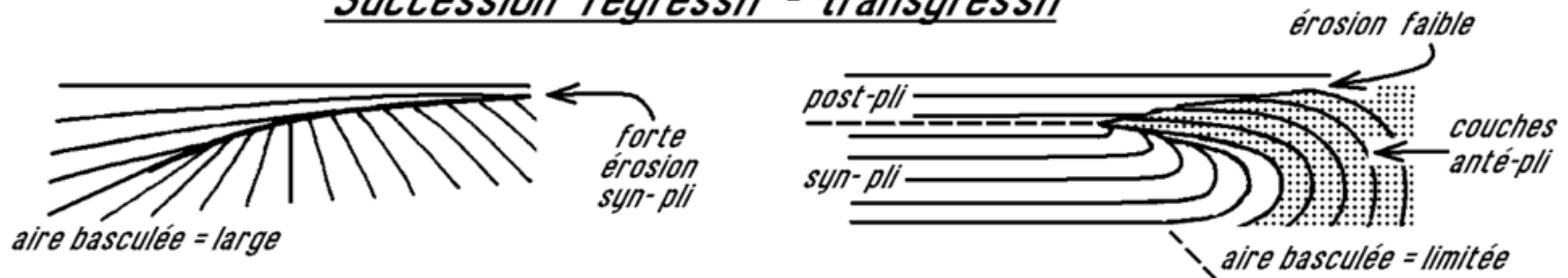
transgressif



régressif



Succession régressif - transgressif







Molasse rouge

éc. d'Aiguebelle

onlap

onlap

∅

onlap

Molasse marine supérieure

Mol marn. grise

Mol marine basale

D1

Molasse marine supérieure

D2

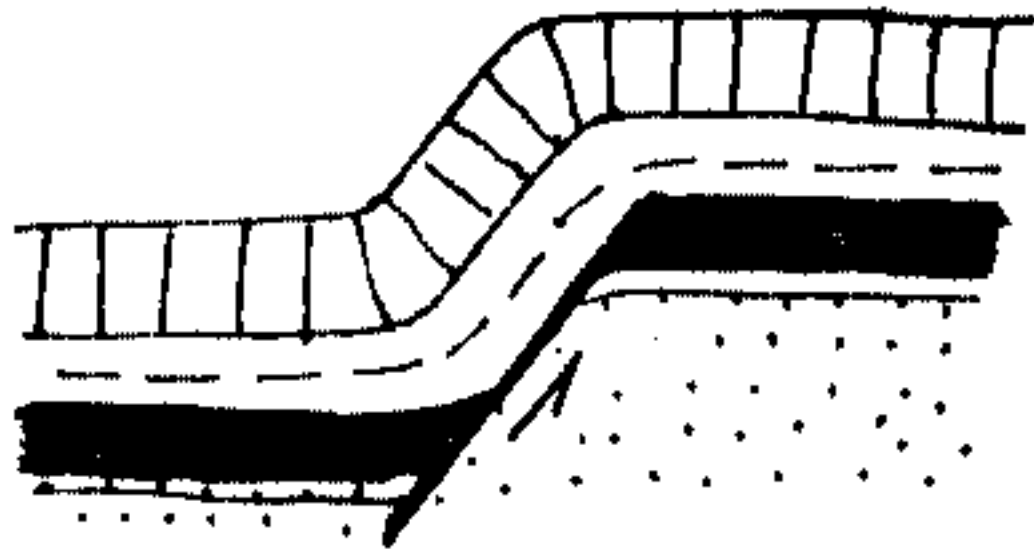
éventail

Les Plis :

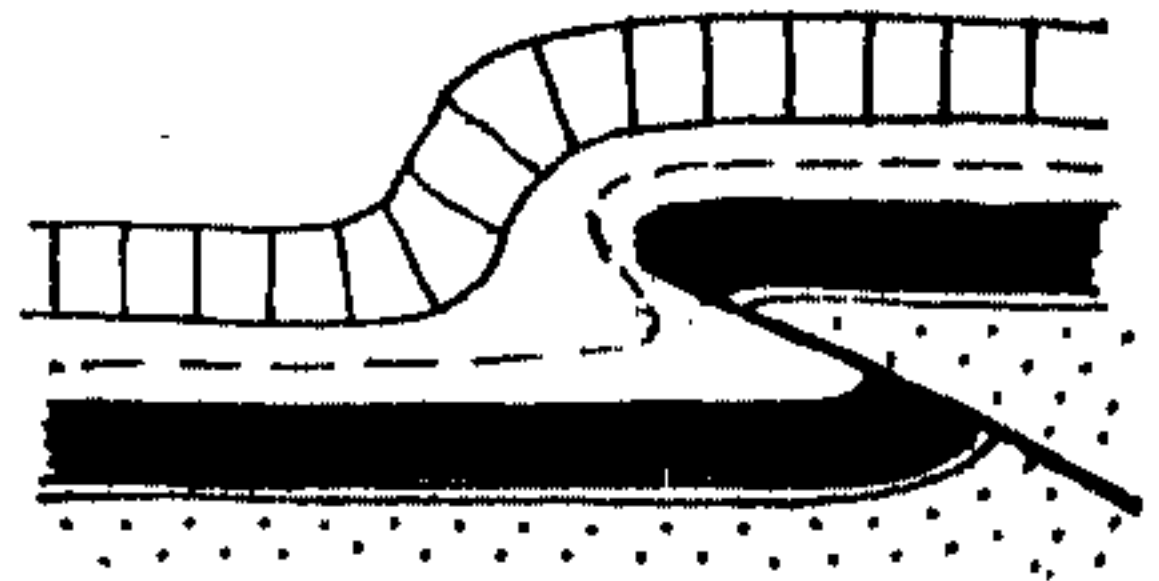
Rapports

plissement

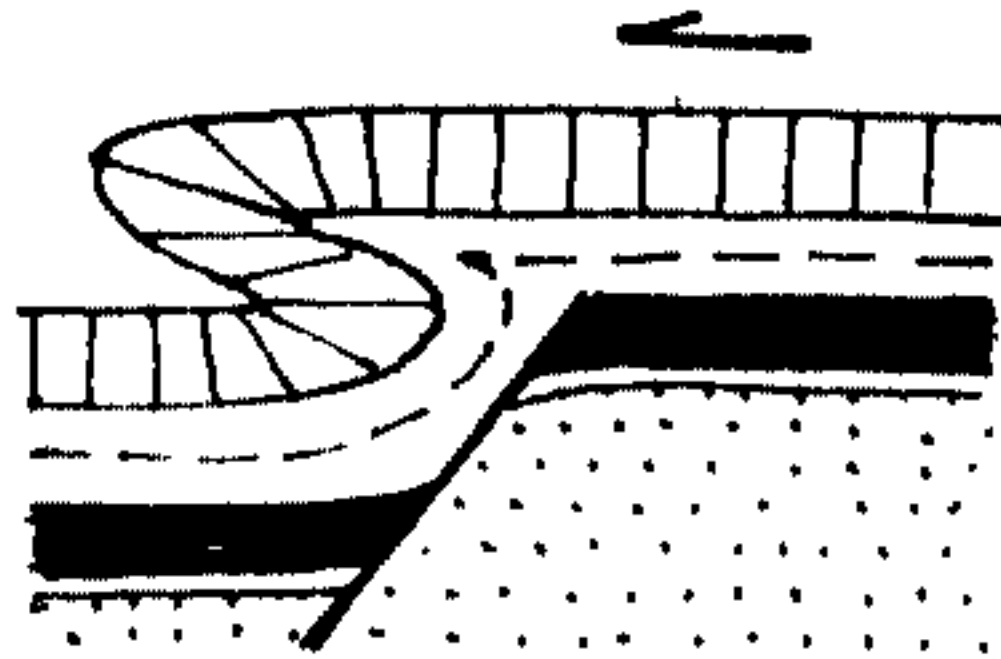
- fracturation



***a) amortissement
d'une faille normale***

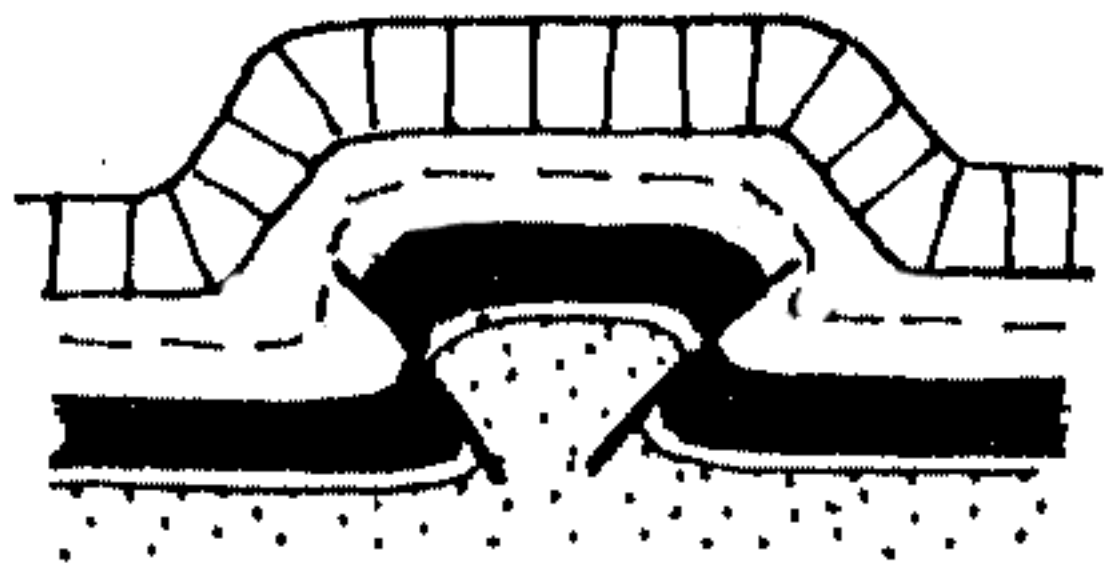


***b) amortissement d'un
chevauchement***

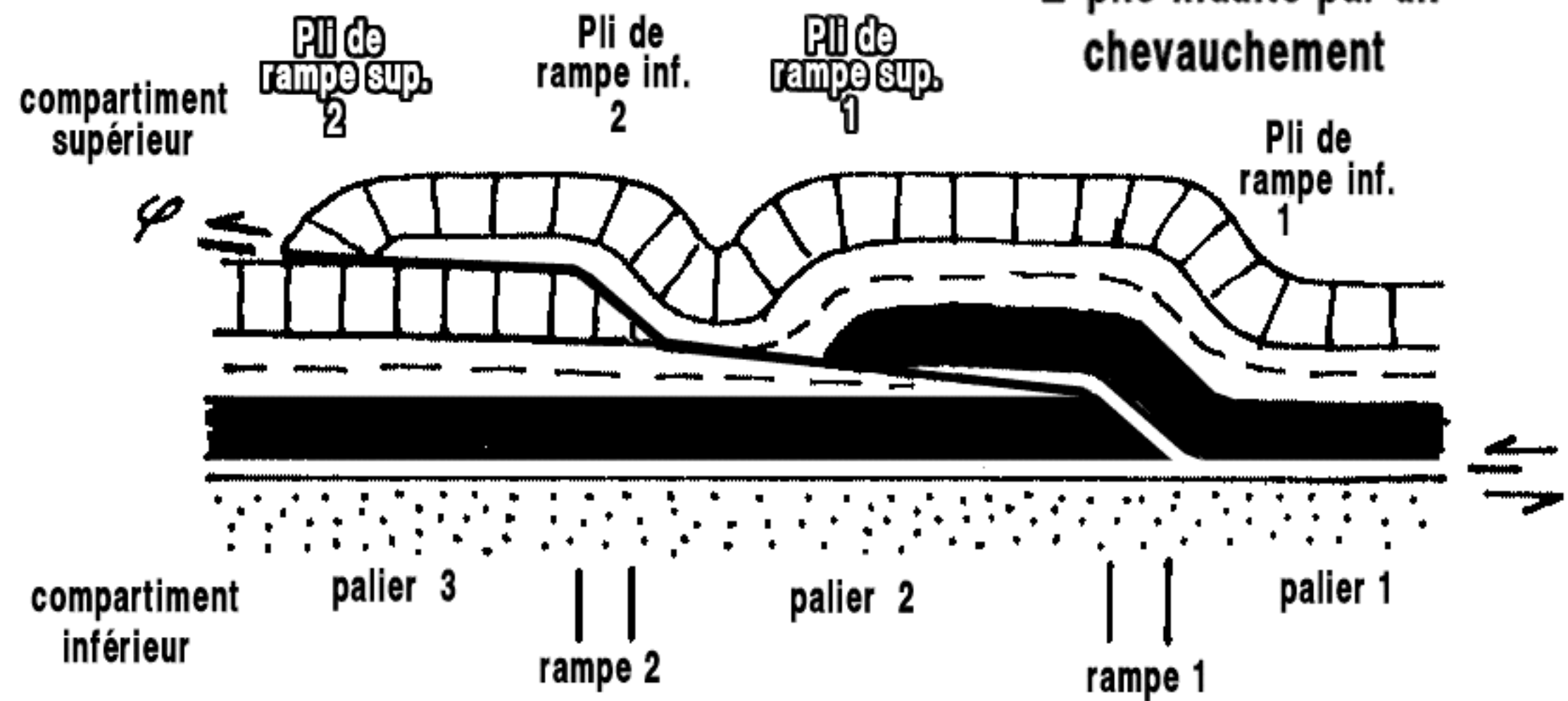


c) pli d'ancrage

1/ amortissement de Failles conjuguées



2/ plis induits par un chevauchement







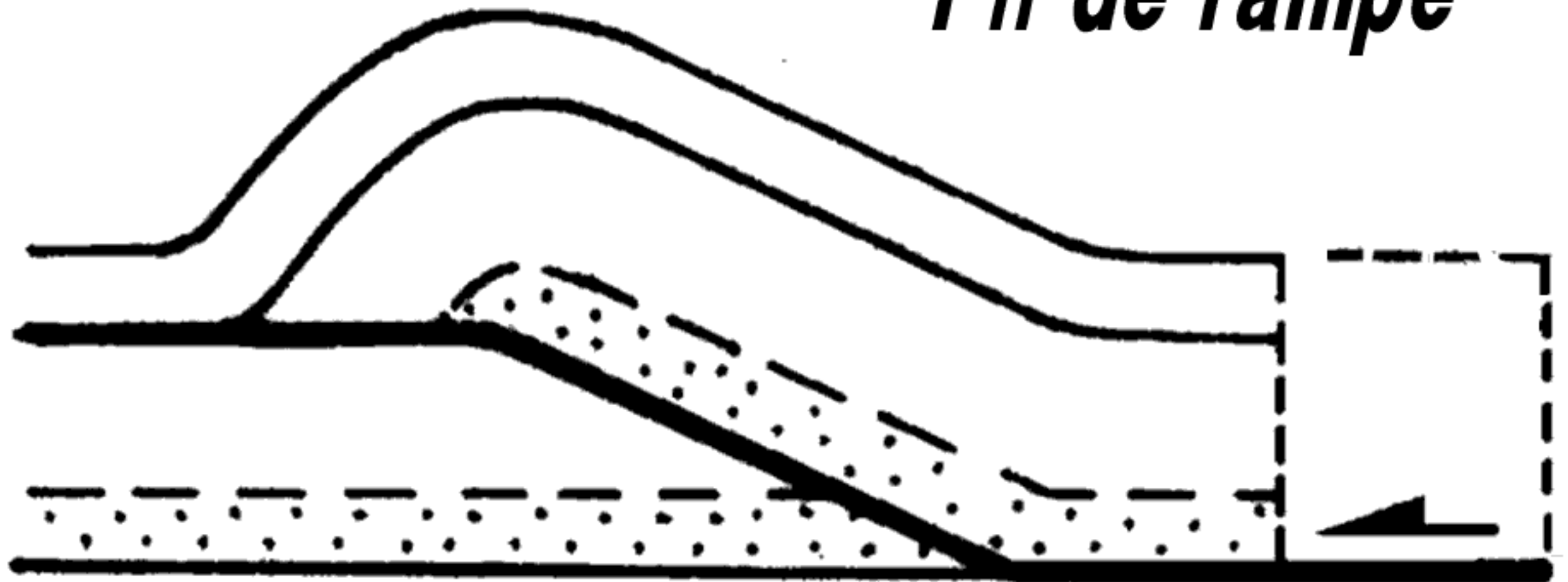
cliché M.GIDON

Les Plis :

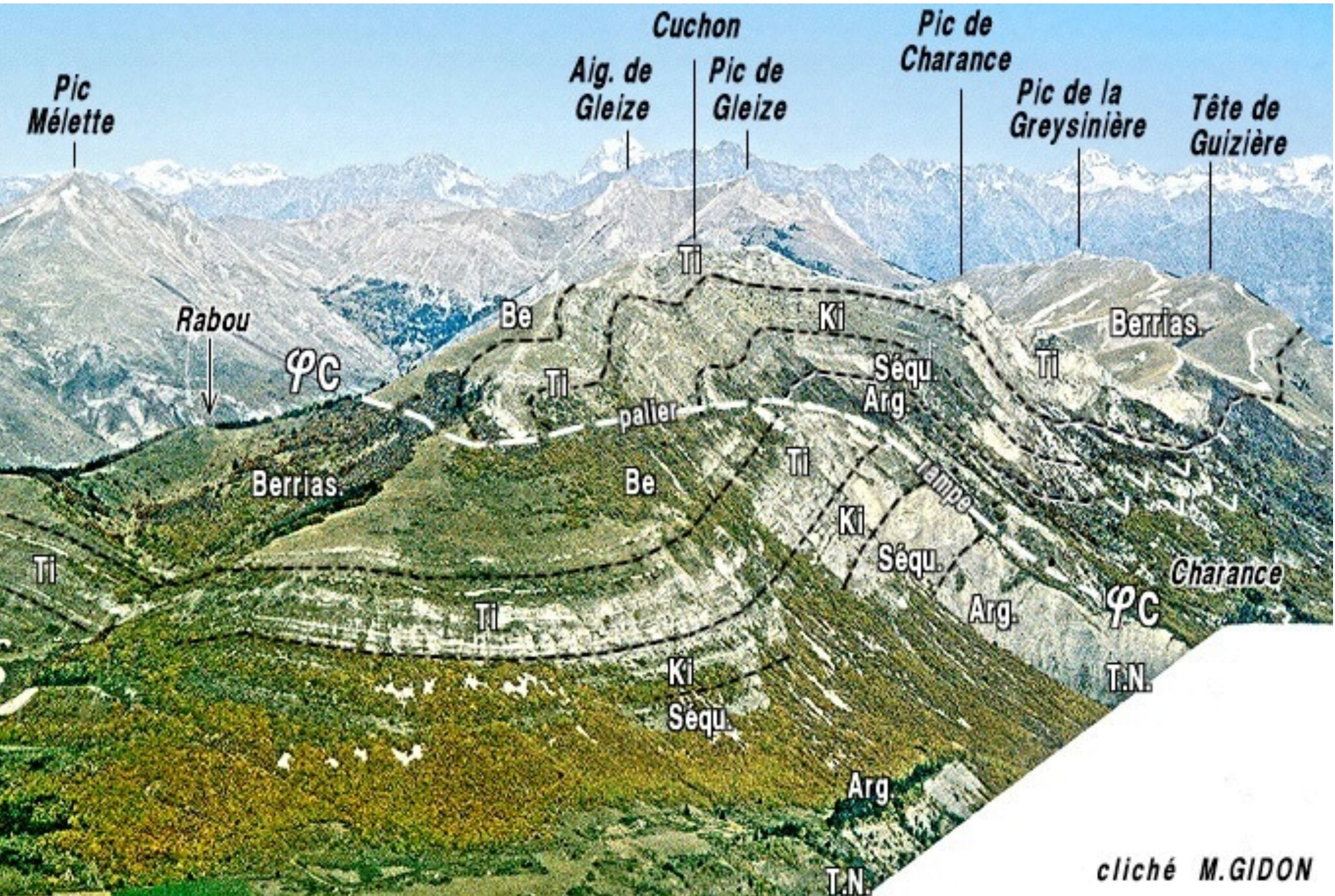
Rapports entre plis et failles

***Plis et
failles inverses***

Pli de rampe



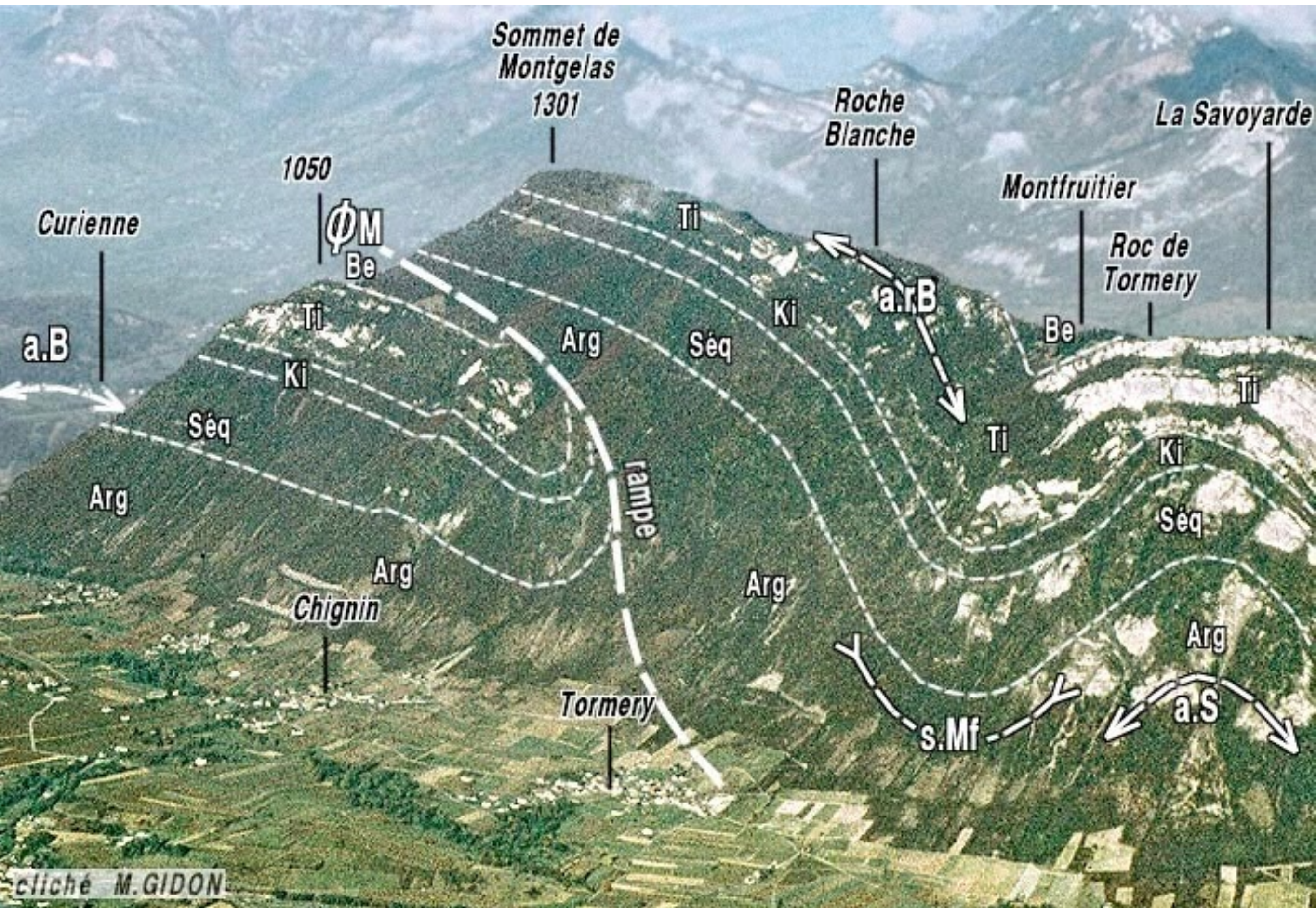




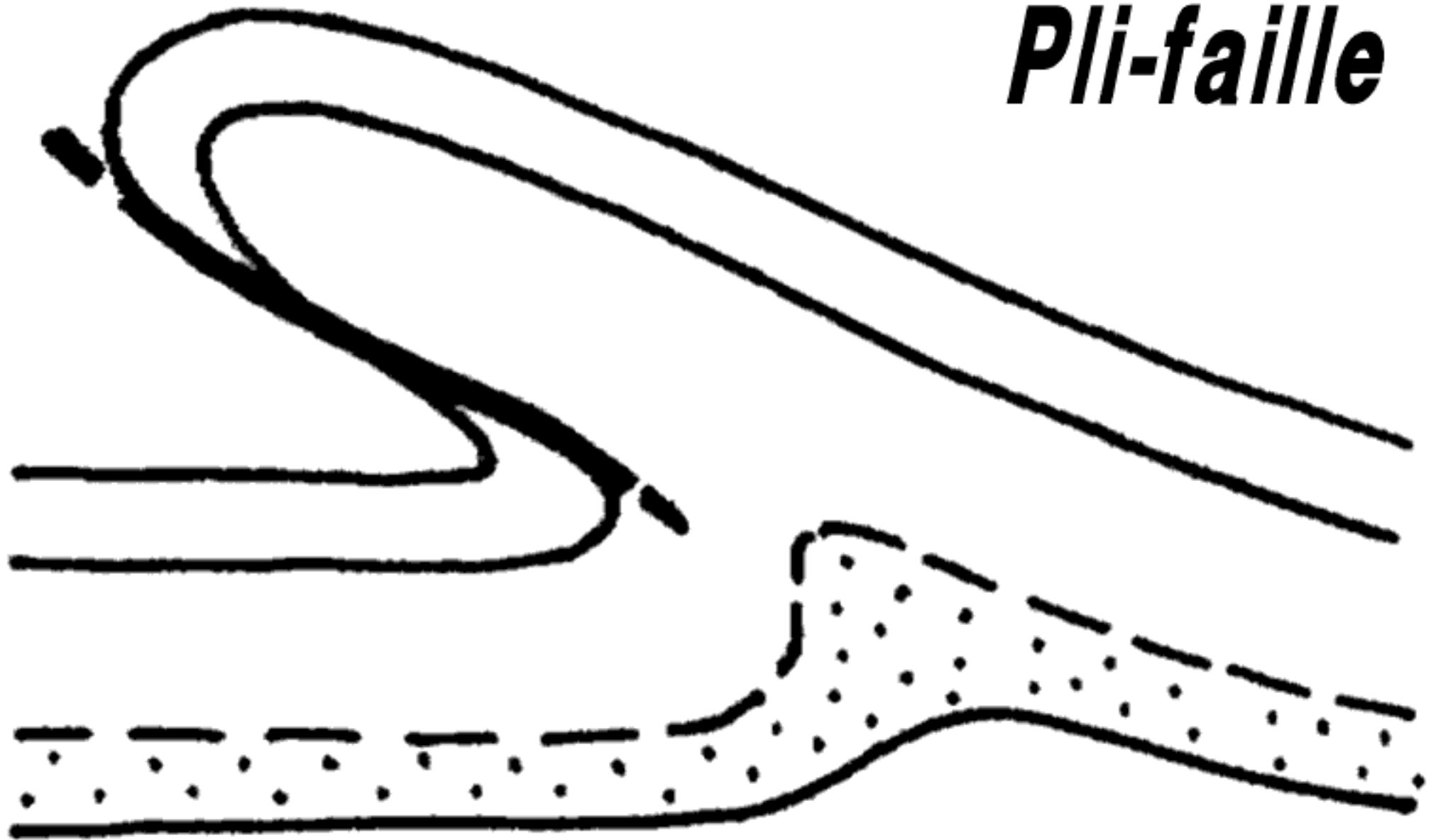
cliché M.GIDON



cliché M.GIDON



Pli-faille







Outheran

Φ_3

Montfred

Joigny

Sénonien sup.

Les Gandy

Be s

Pellaz

Be s

Gorgeat

oF

s.S

a.P

Be s

Entremont-le-Vieux

Sénonien inf.

S.G

Berriasien

Be i

château de Montbel

d.T

Be s

Be i

Ti s

a.E

Be i

s.S

Urgonien

Tithonique

Ti s

Les Courriers

Sé sup.

Sé

gorges du Cozon

Be i

Mioc.

d.A

S.G

Be i

Ti

Be i

CHARTRE MÉD

Φ_3

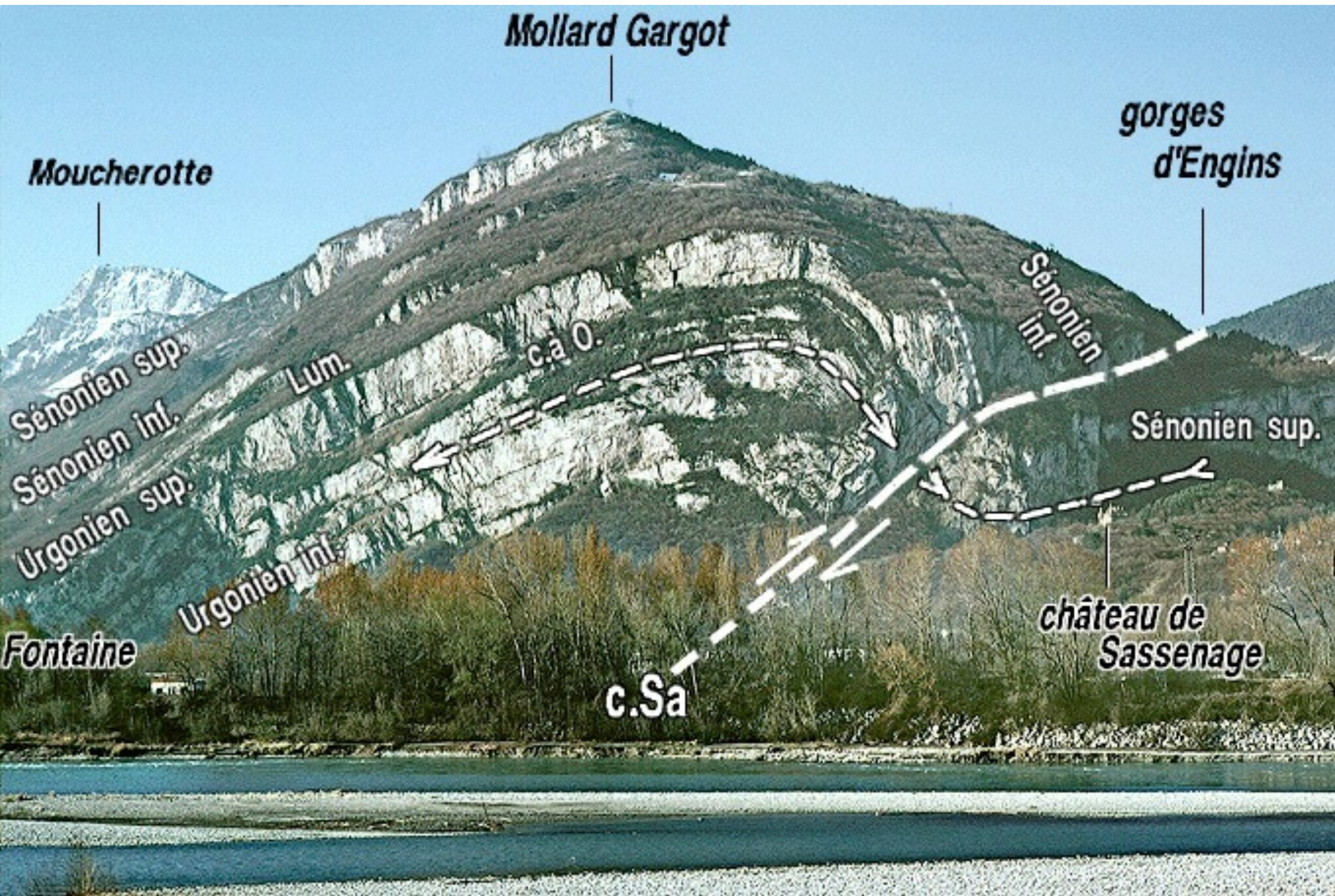
U

Be i

CHARTREUSE ORIENTALE

d.A





Mollard Gargot

Moucherotte

gorges d'Engins

Sénonien sup.
Sénonien inf.
Urganien sup.

Lum.

c.a.O.

Sénonien inf.

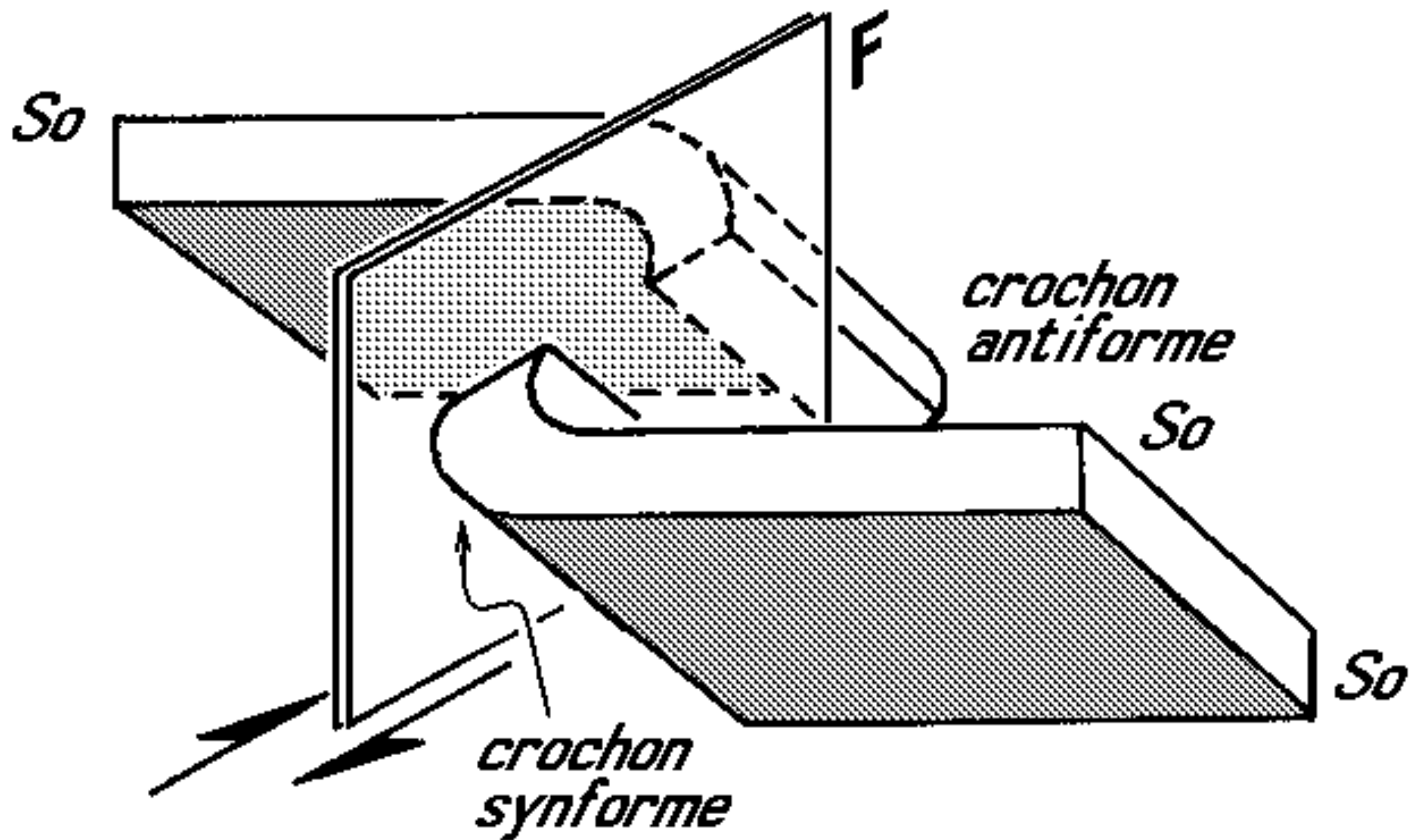
Sénonien sup.

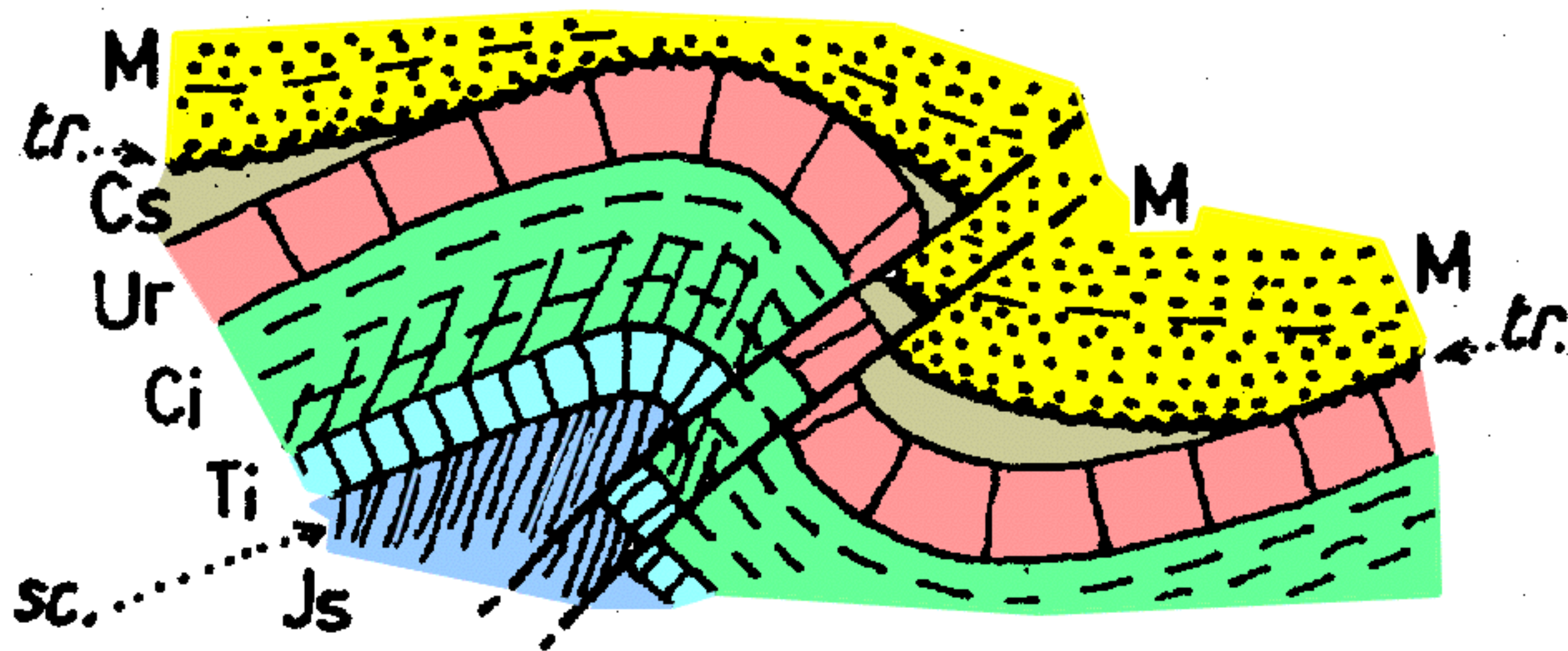
Urganien inf.

Fontaine

château de Sassenage

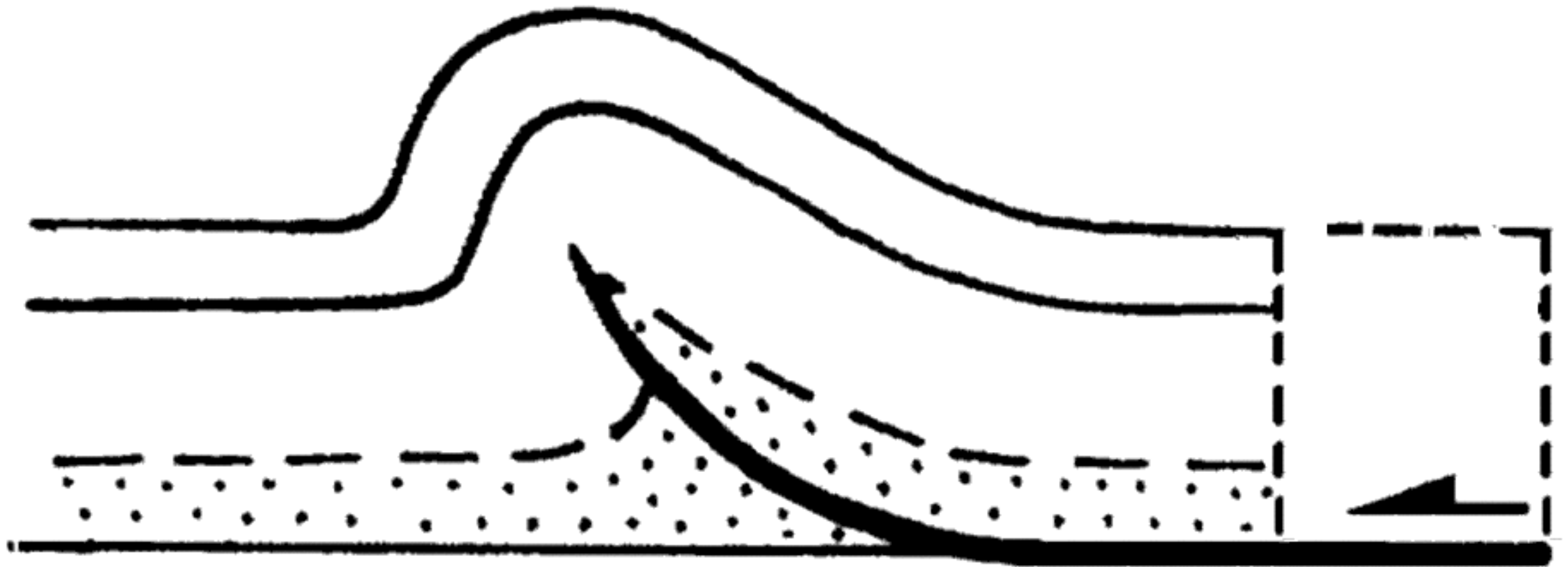
c.Sa



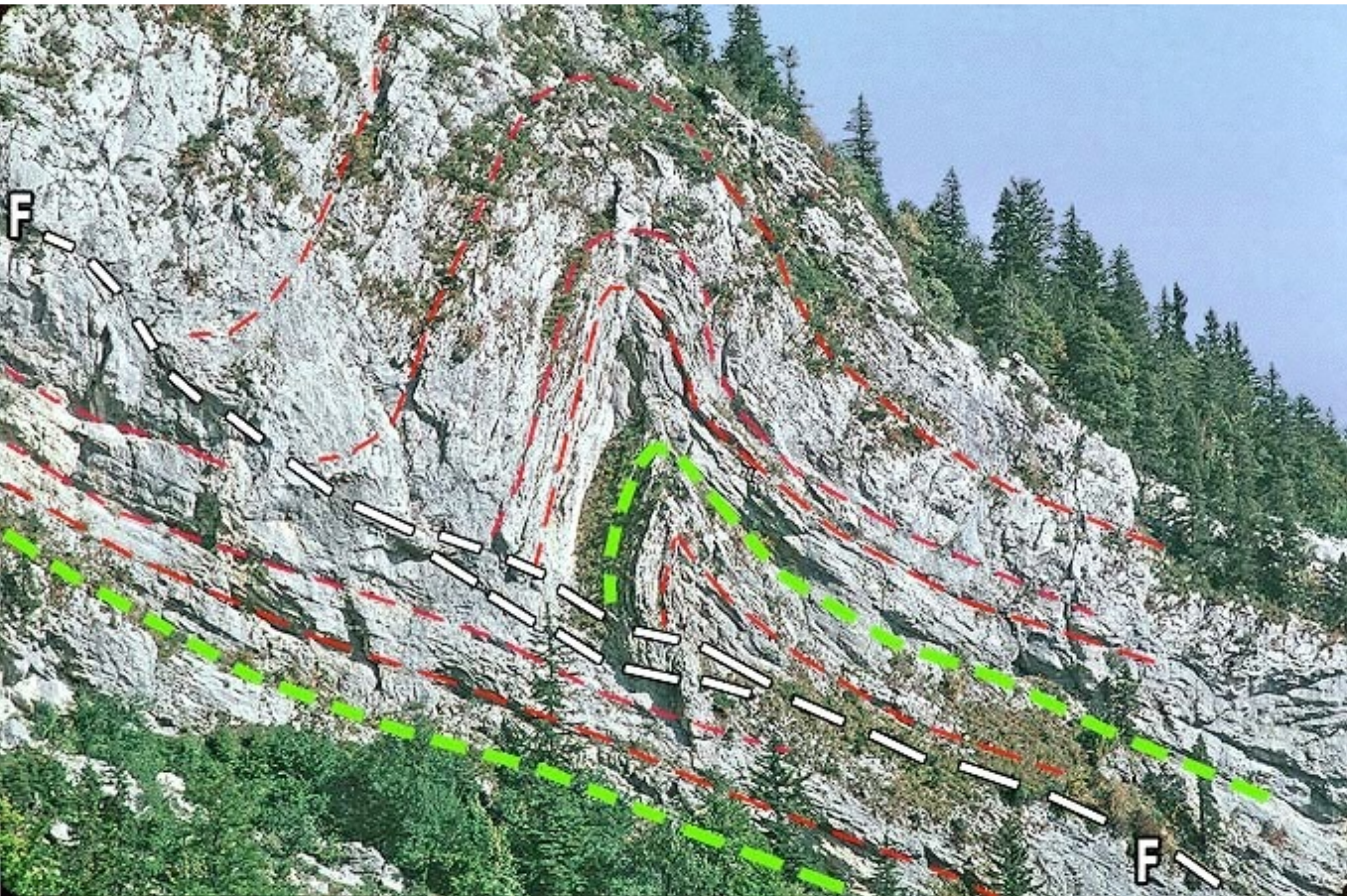


Pli rompu par faille inverse (coupe du Guiers Mort aval)

Pli de progression





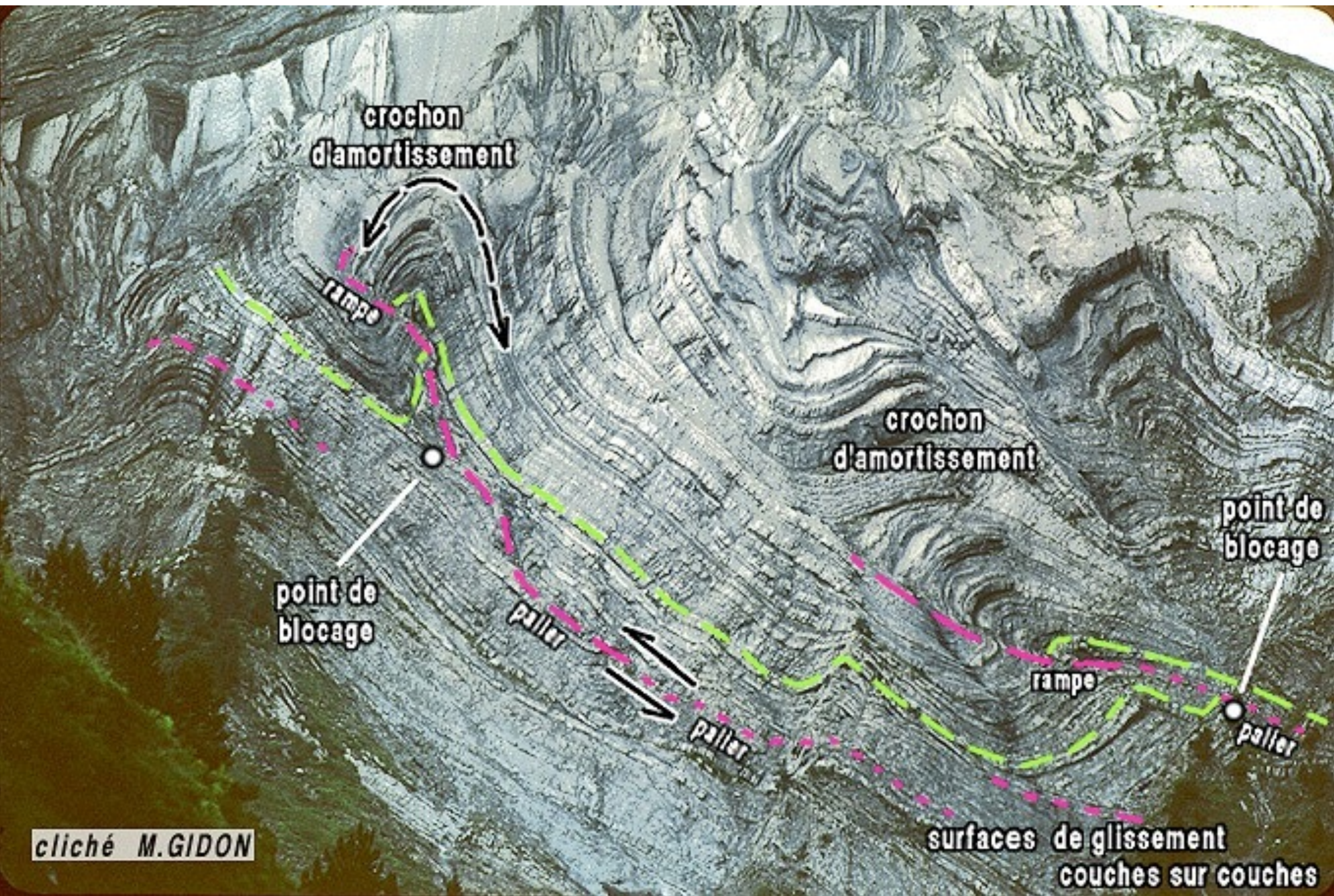


F

F



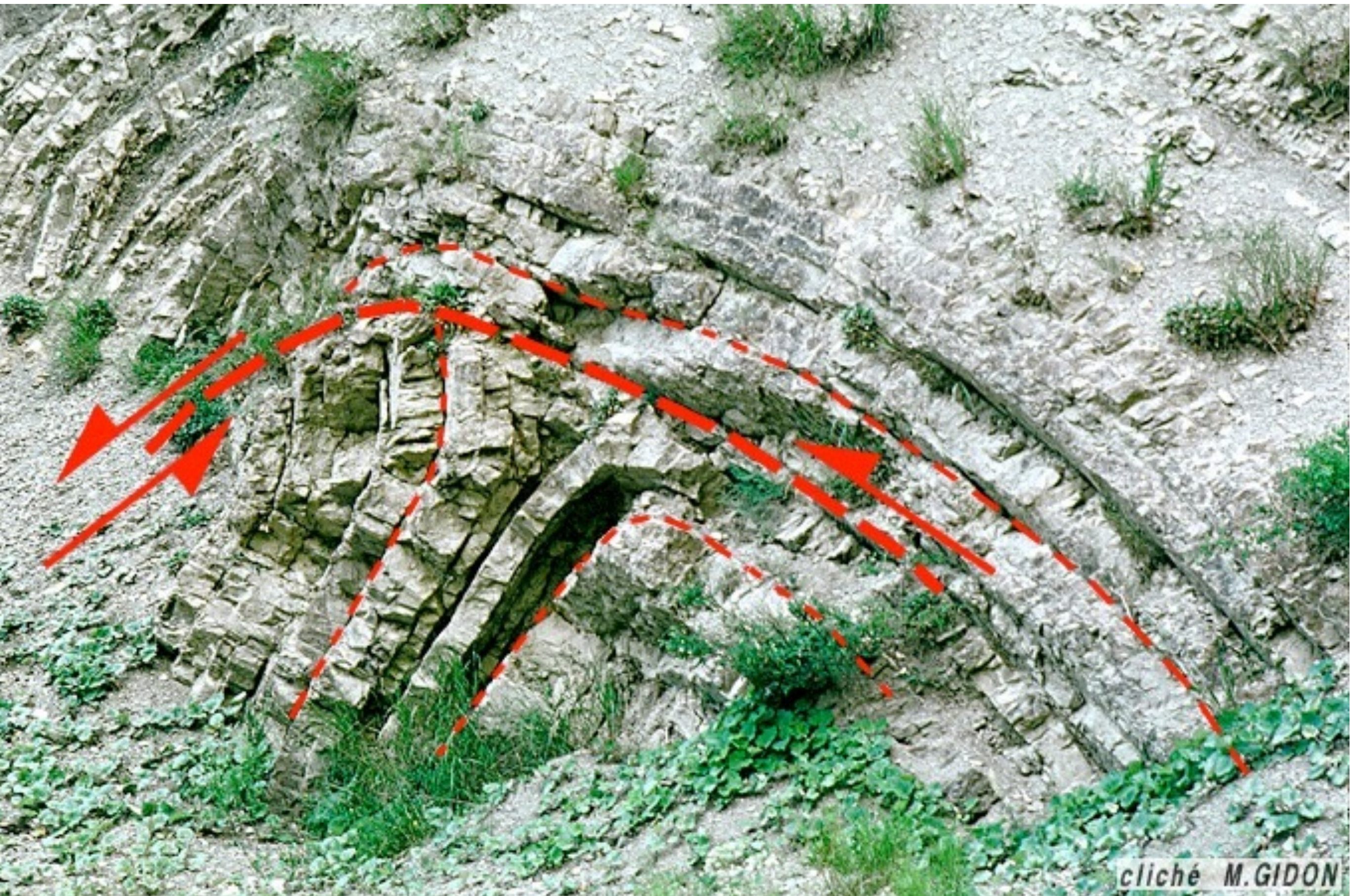
cliché M.GIDON



***rupture à la
charnière***

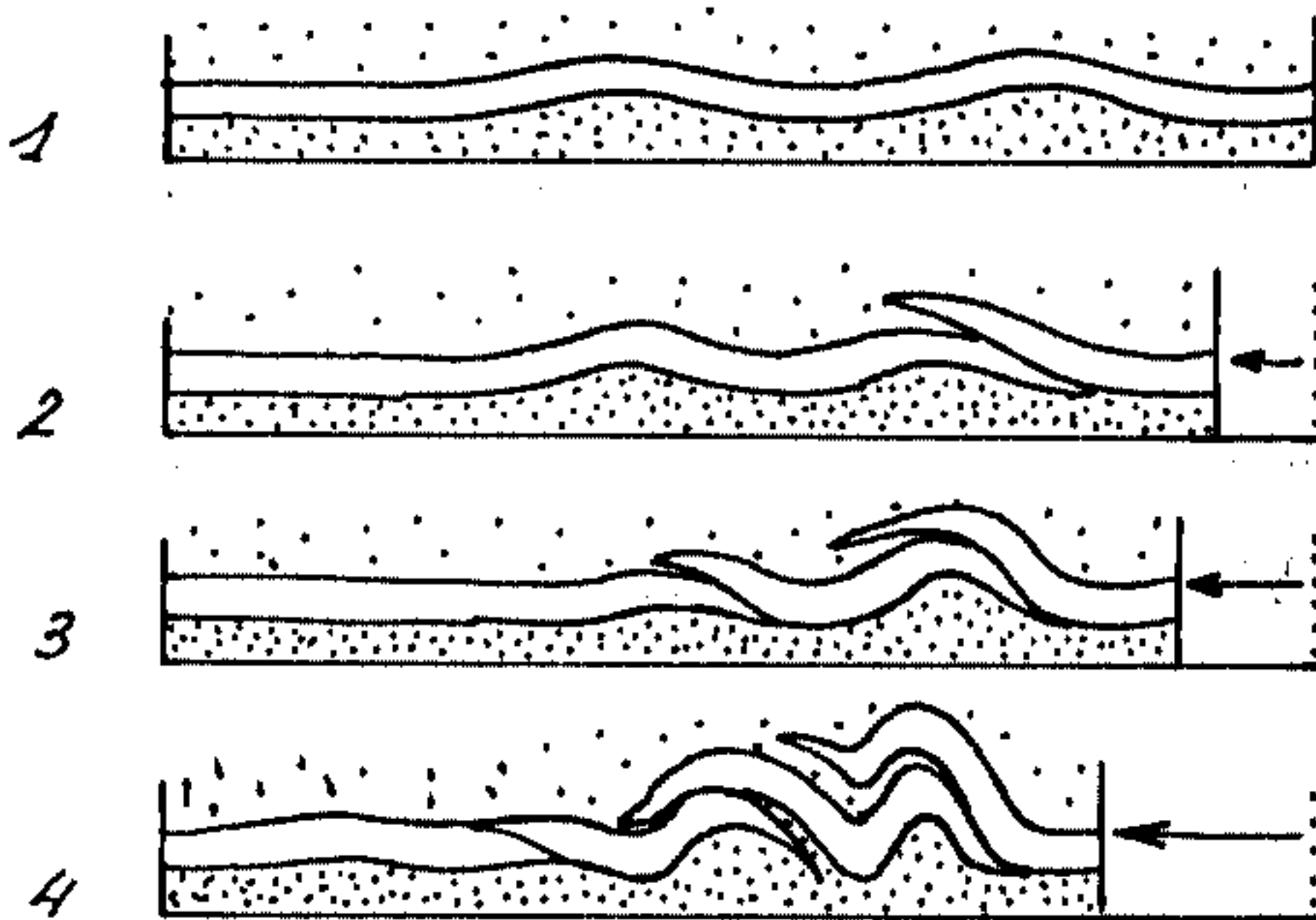






cliché M.GIDON

Plis et failles développés
concurrément





O.

Ecoutoux

St Eynard

Kimmeridgien
Séquanien
Argovien
Terres Noires

E.

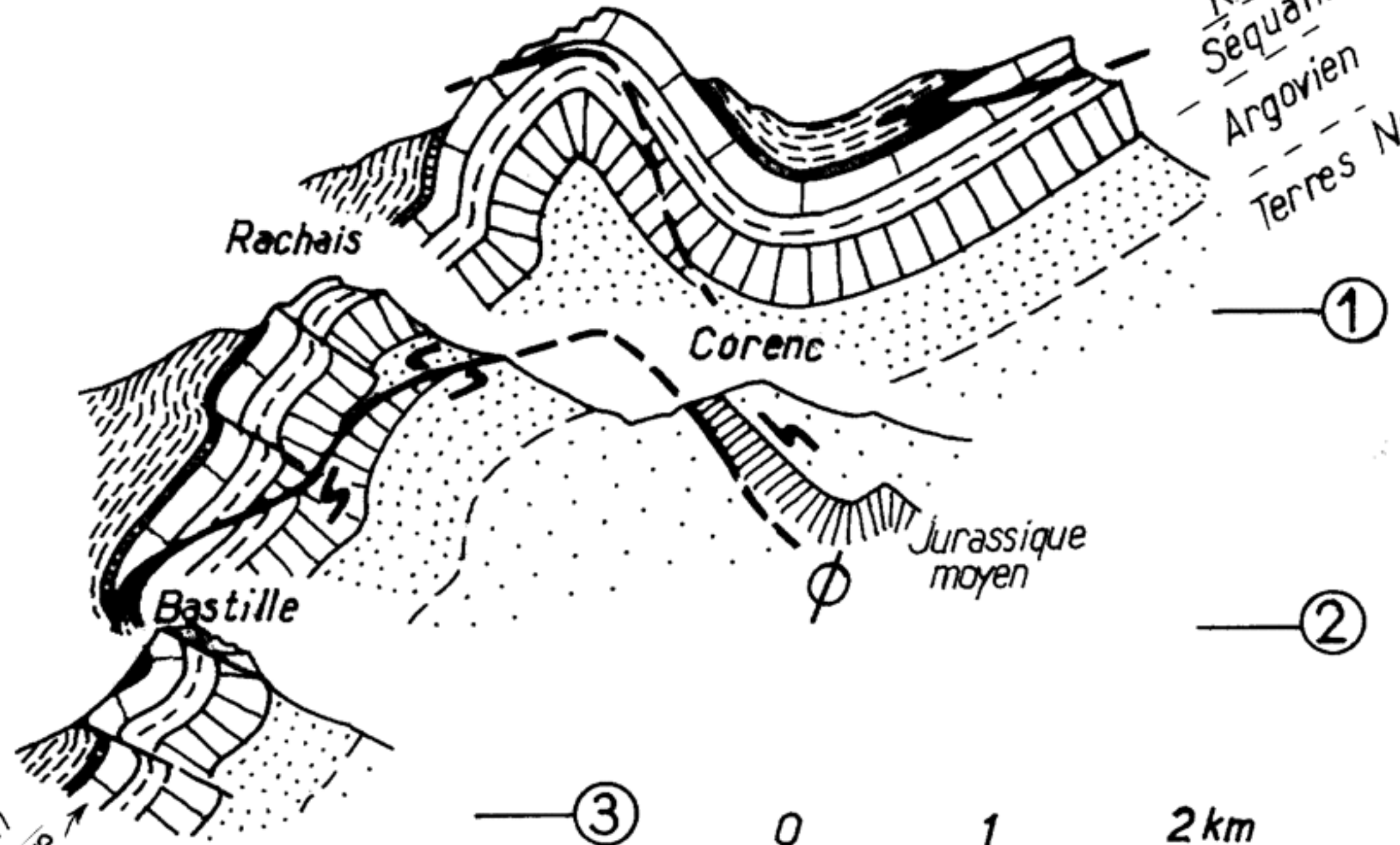
Rachais

Corenc

Jurassique
moyen

Bastille

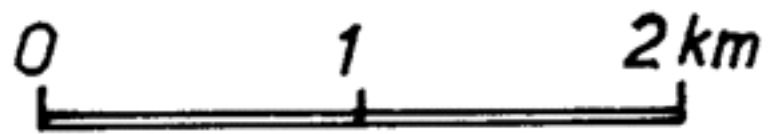
Berriasien
Tithonique

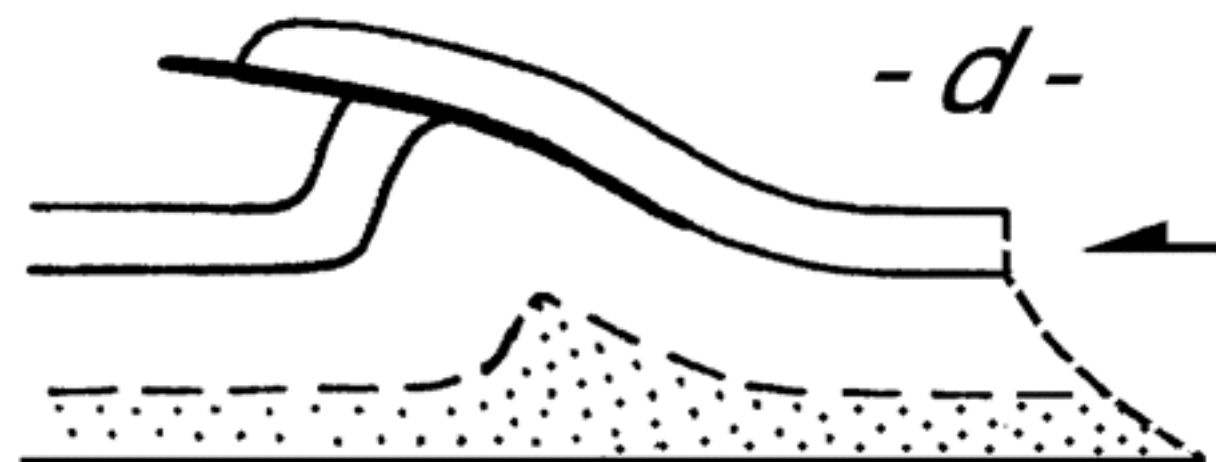
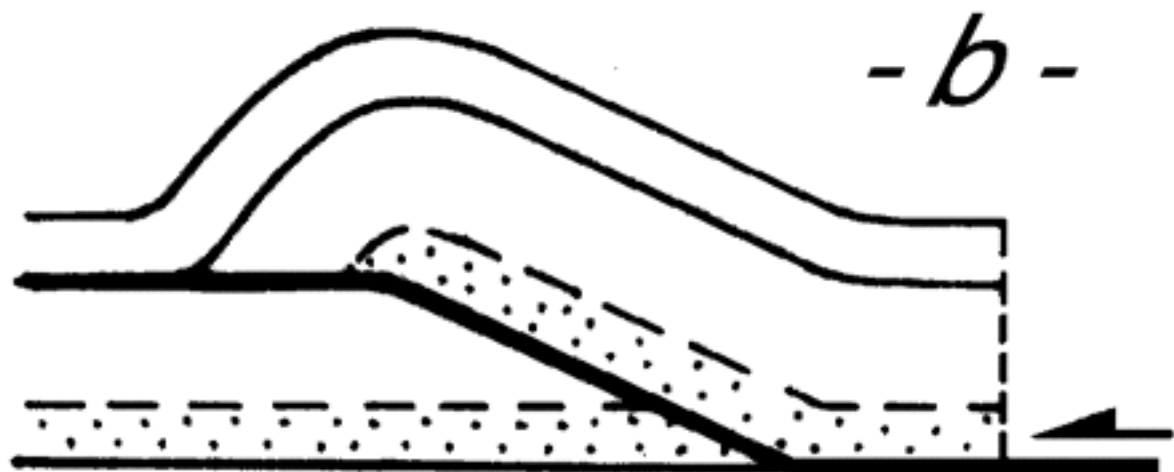
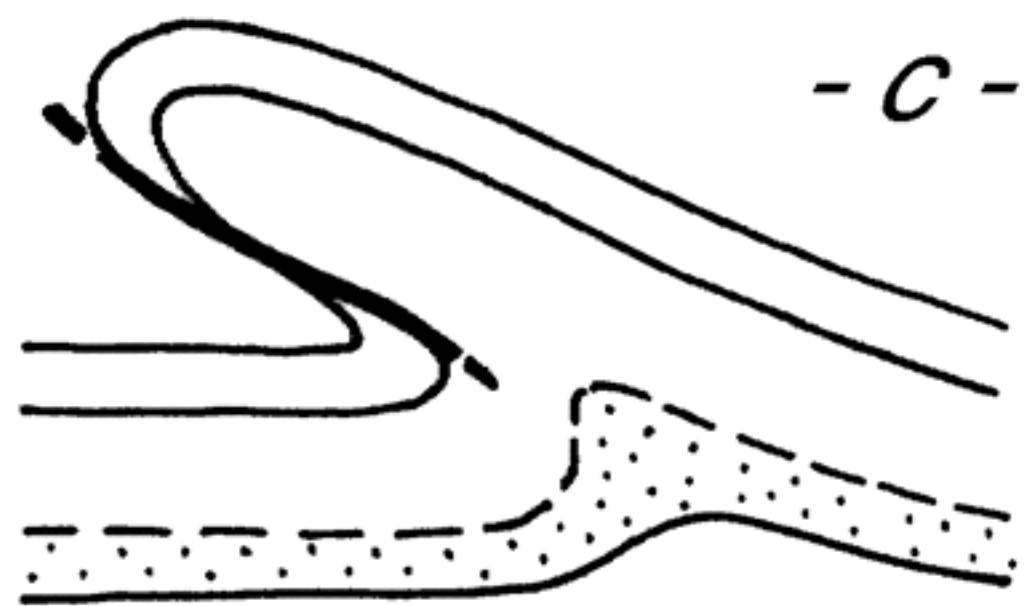
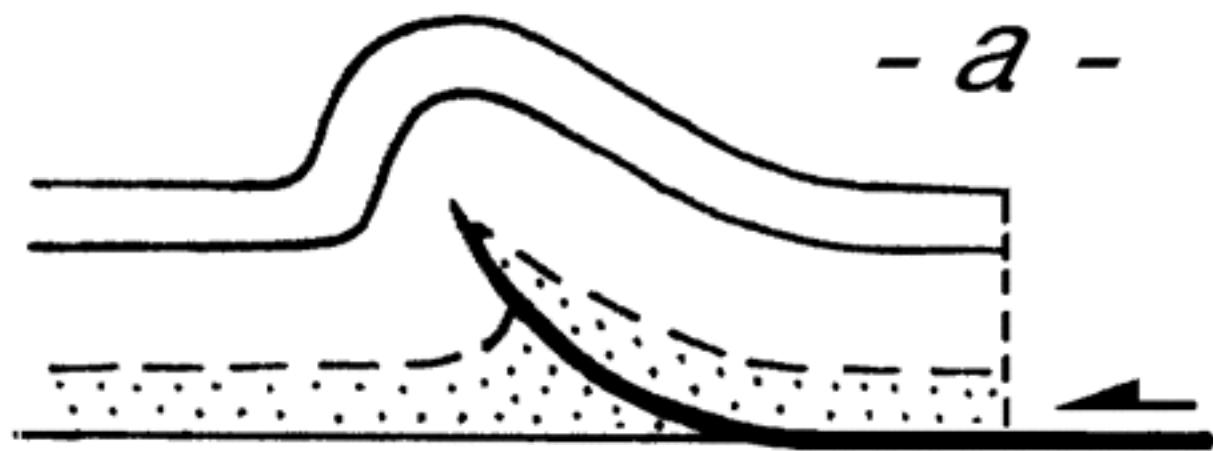


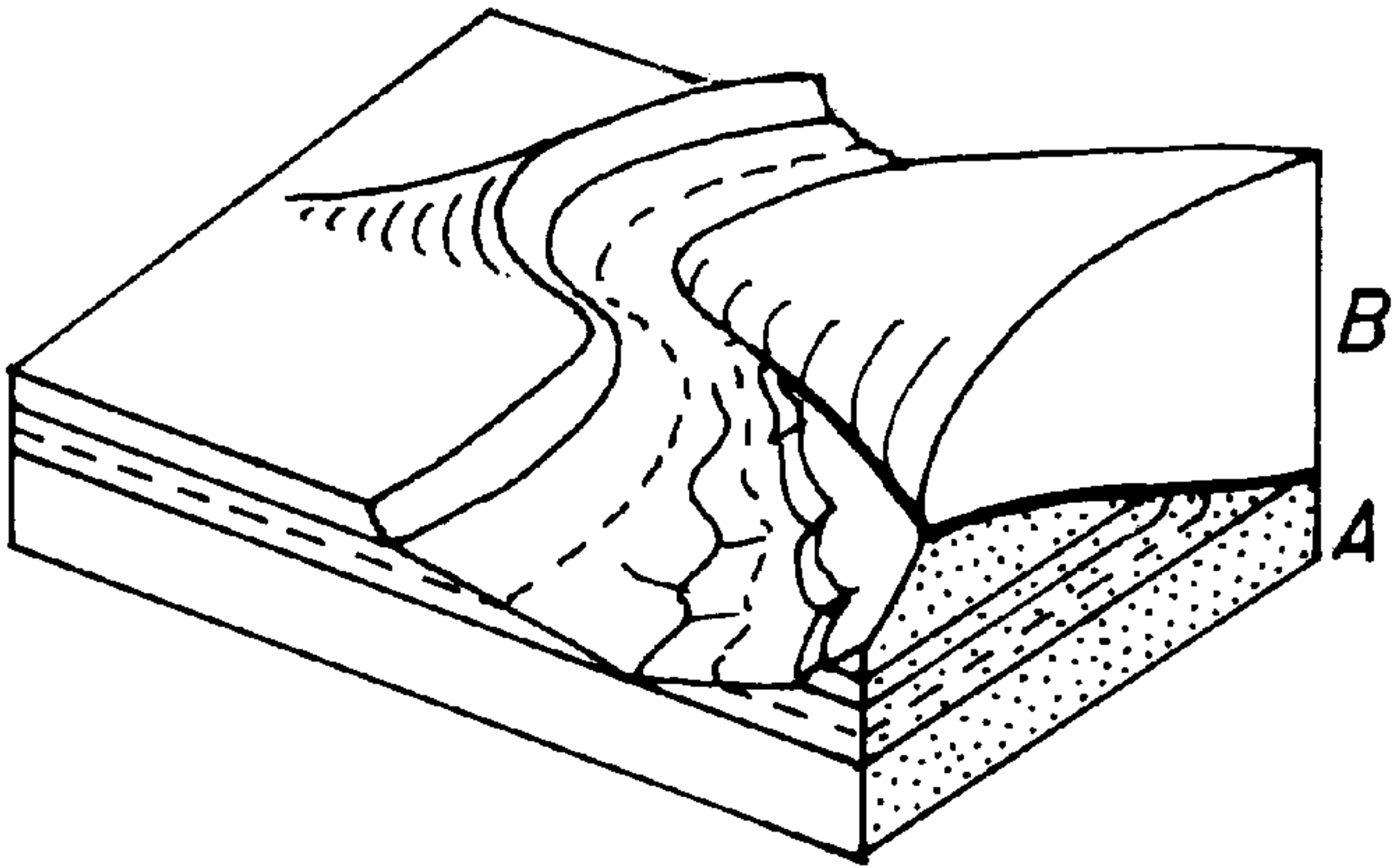
1

2

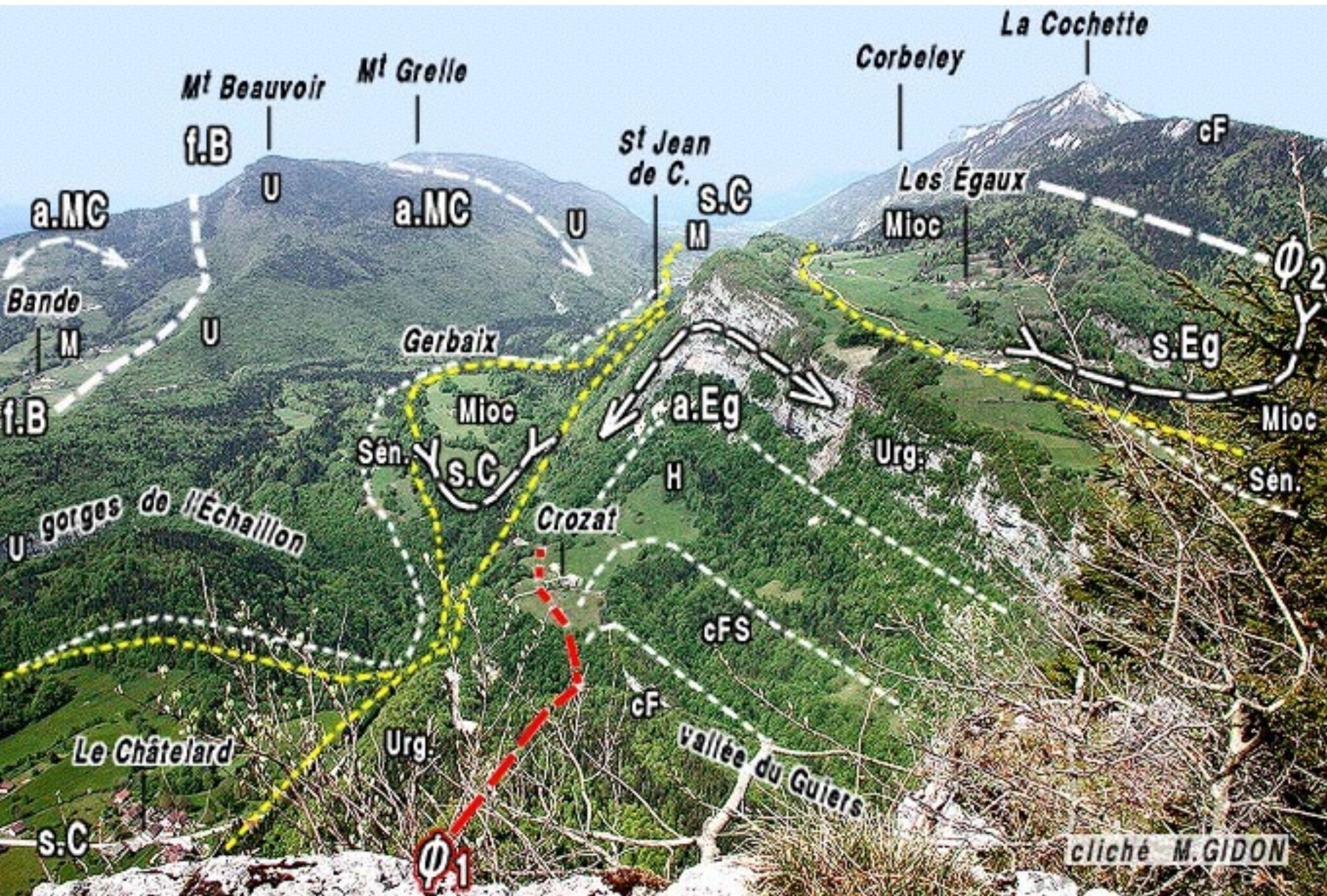
3











cliché M. GIDON

Les Plis :

Rapports entre plis et failles

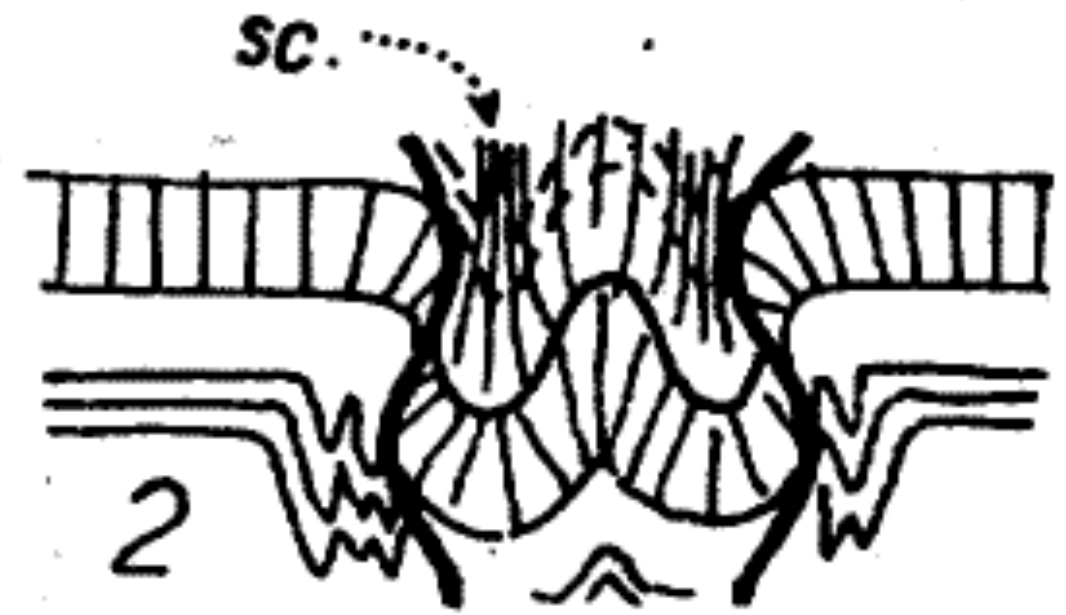
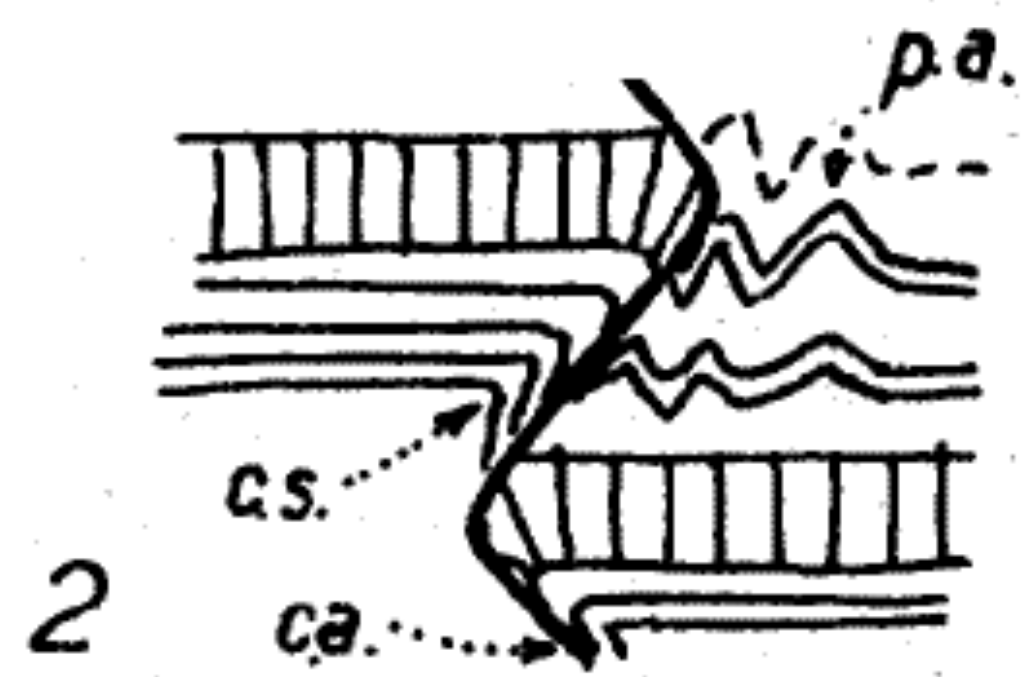
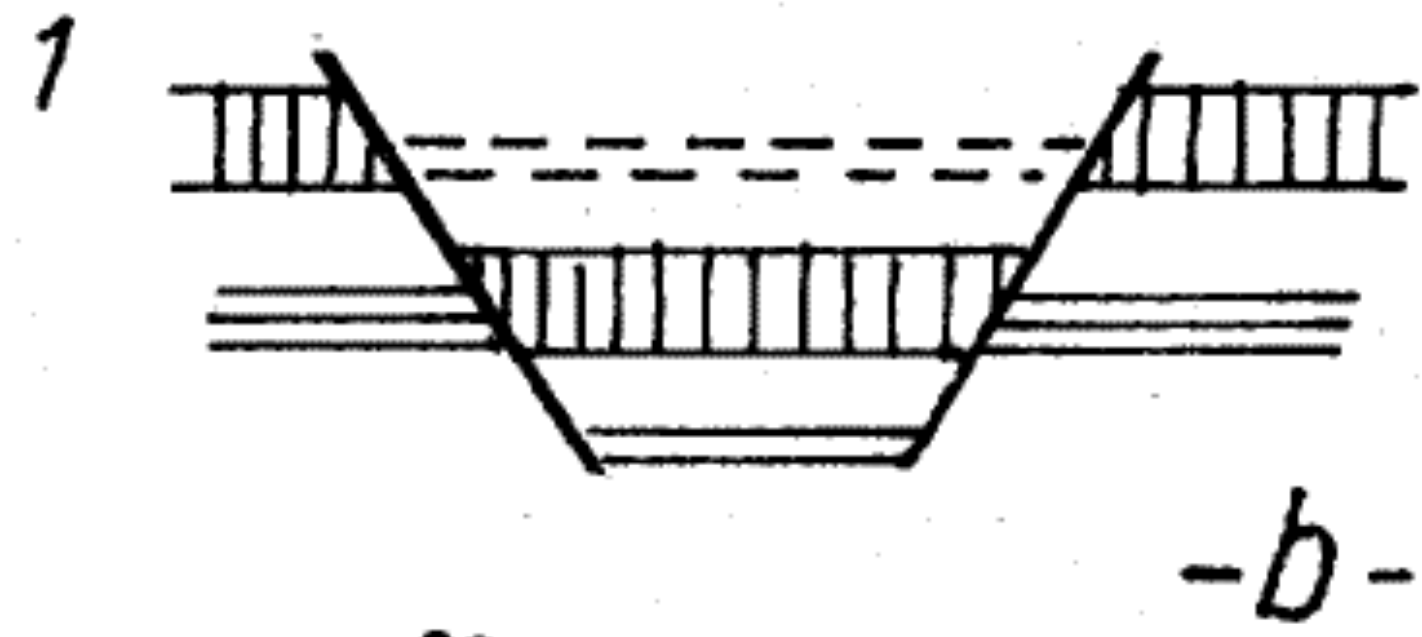
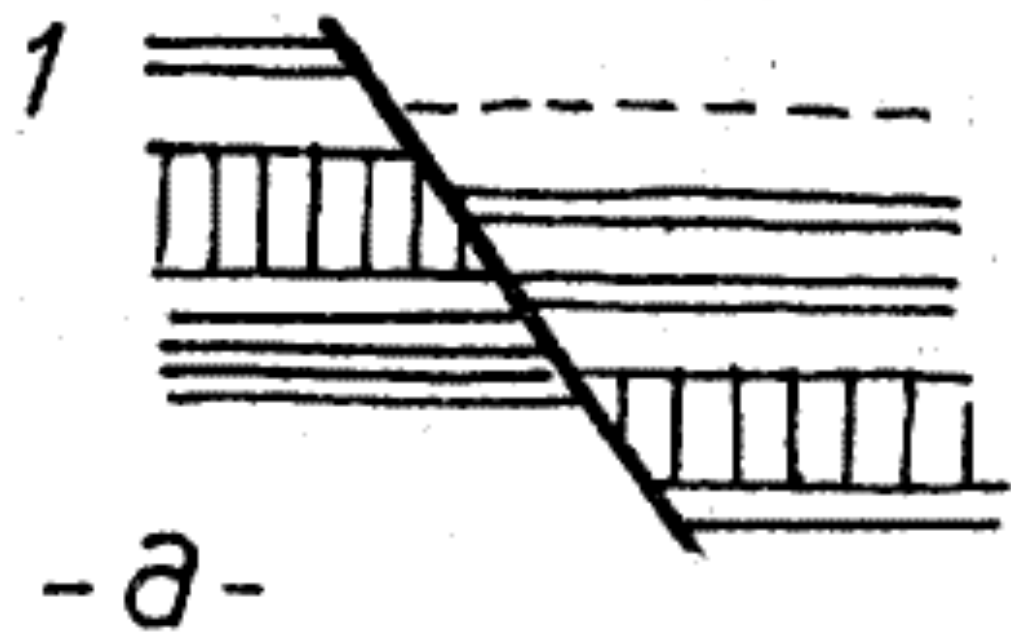
***Plis
d'ancrage sur
failles déformées***



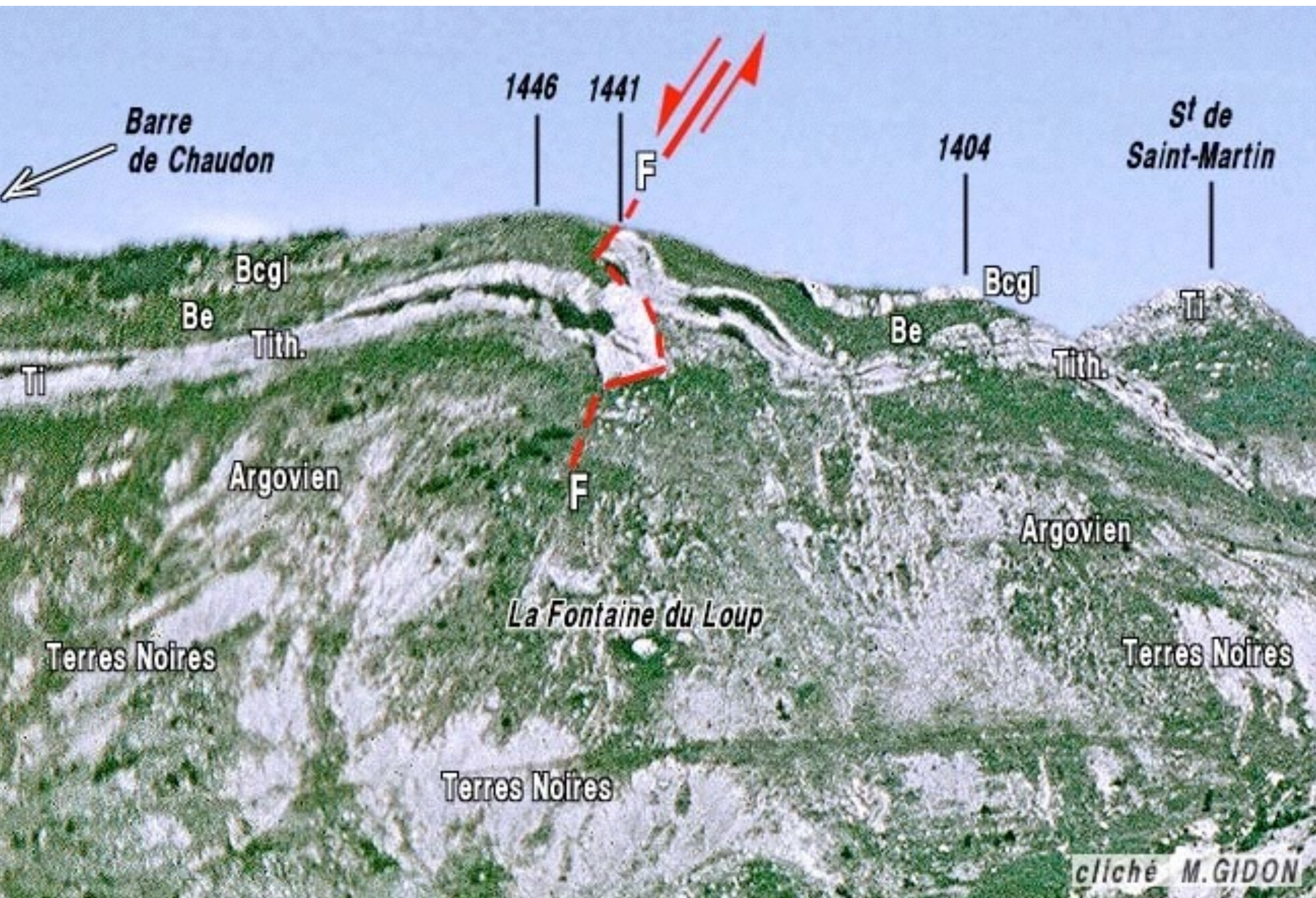


Plis "ancrés" sur des failles

1) par serrage







Barre de Chaudon

1446

1441

F

1404

St de Saint-Martin

Bcgl

Bcgl

Be

Be

Tith.

Tith.

Ti

Ti

Argovien

F

Argovien

La Fontaine du Loup

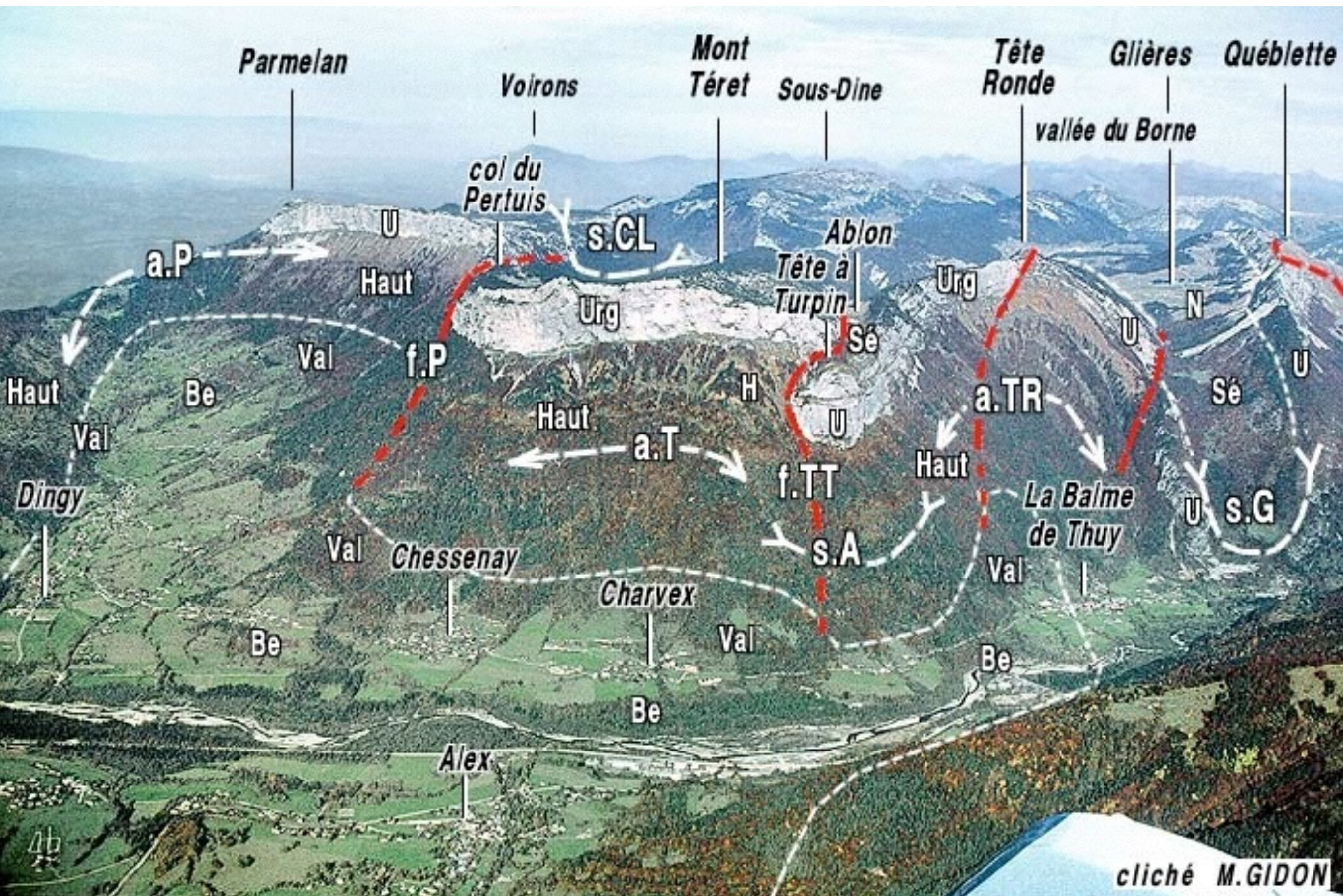
Terres Noires

Terres Noires

Terres Noires

cliché M. GIDON





Parmelan

Voiron

Mont Téret

Sous-Dine

Tête Ronde

Glières

Québlette

col du Pertuis

s.CL

Ablon

vallée du Borne

Tête à Turpin

a.P

U

Haut

Urg

Urg

U

N

Val

f.P

H

Sé

Sé

U

Haut

Be

Haut

a.T

a.TR

Val

f.TT

Haut

La Balme de Thuy

U

s.G

Dingy

Val

Chessenay

Charvex

Val

Val

Be

Be

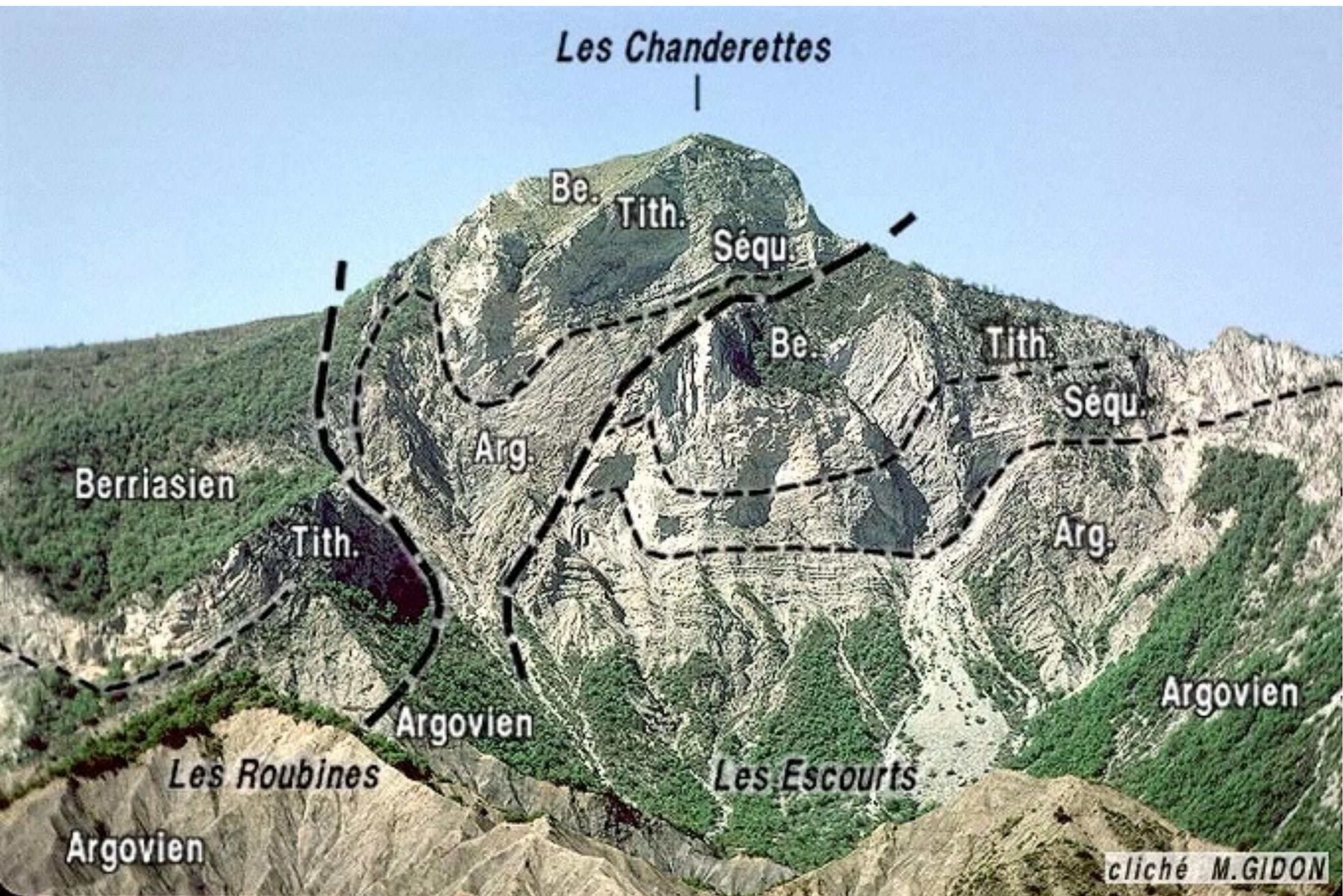
Be

Alex

4b

cliché M.GIDON





Les Chandernettes

Be.

Tith.

Séqu.

Be.

Tith.

Séqu.

Arg.

Arg.

Berriasien

Tith.

Argovien

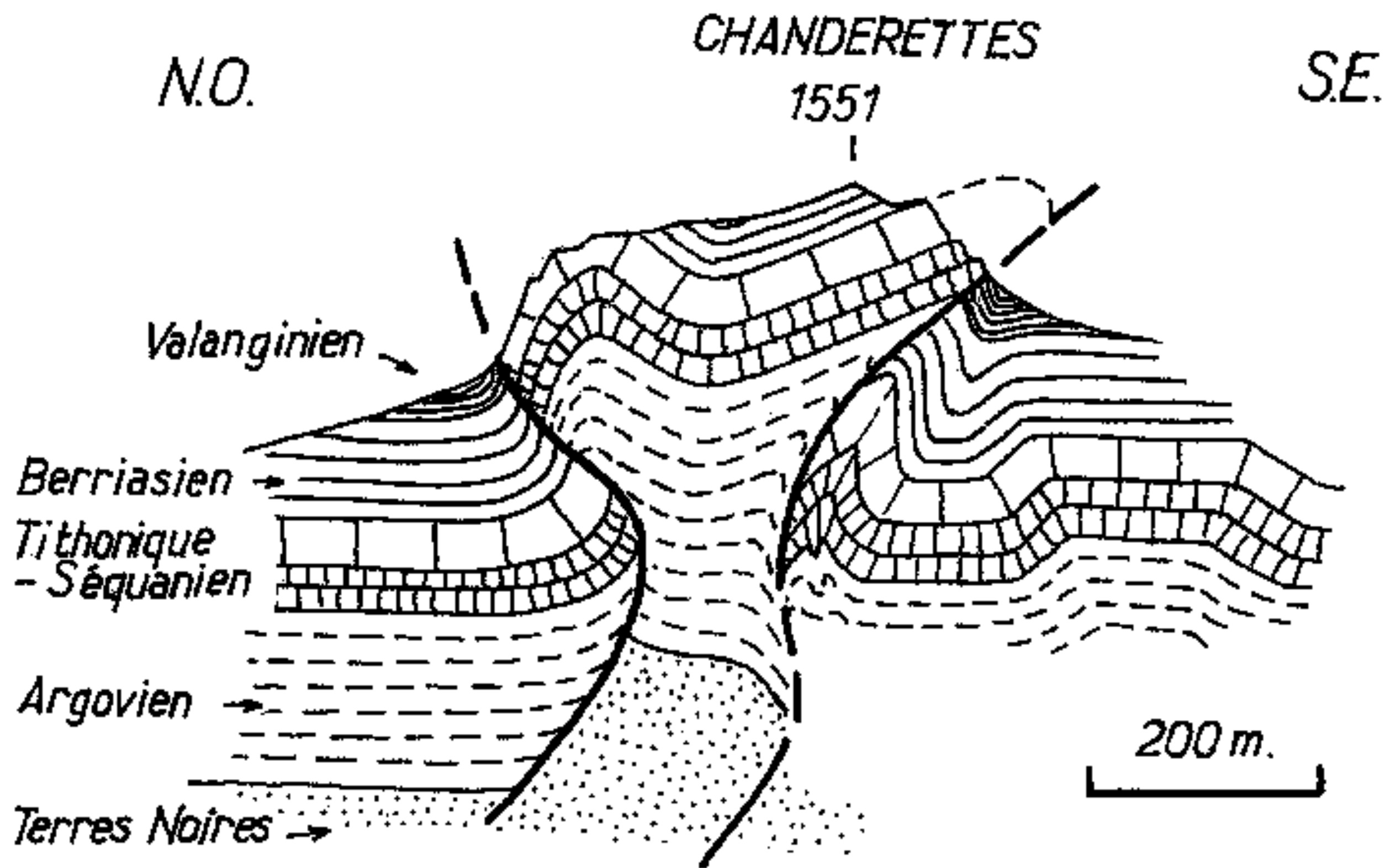
Argovien

Les Roubines

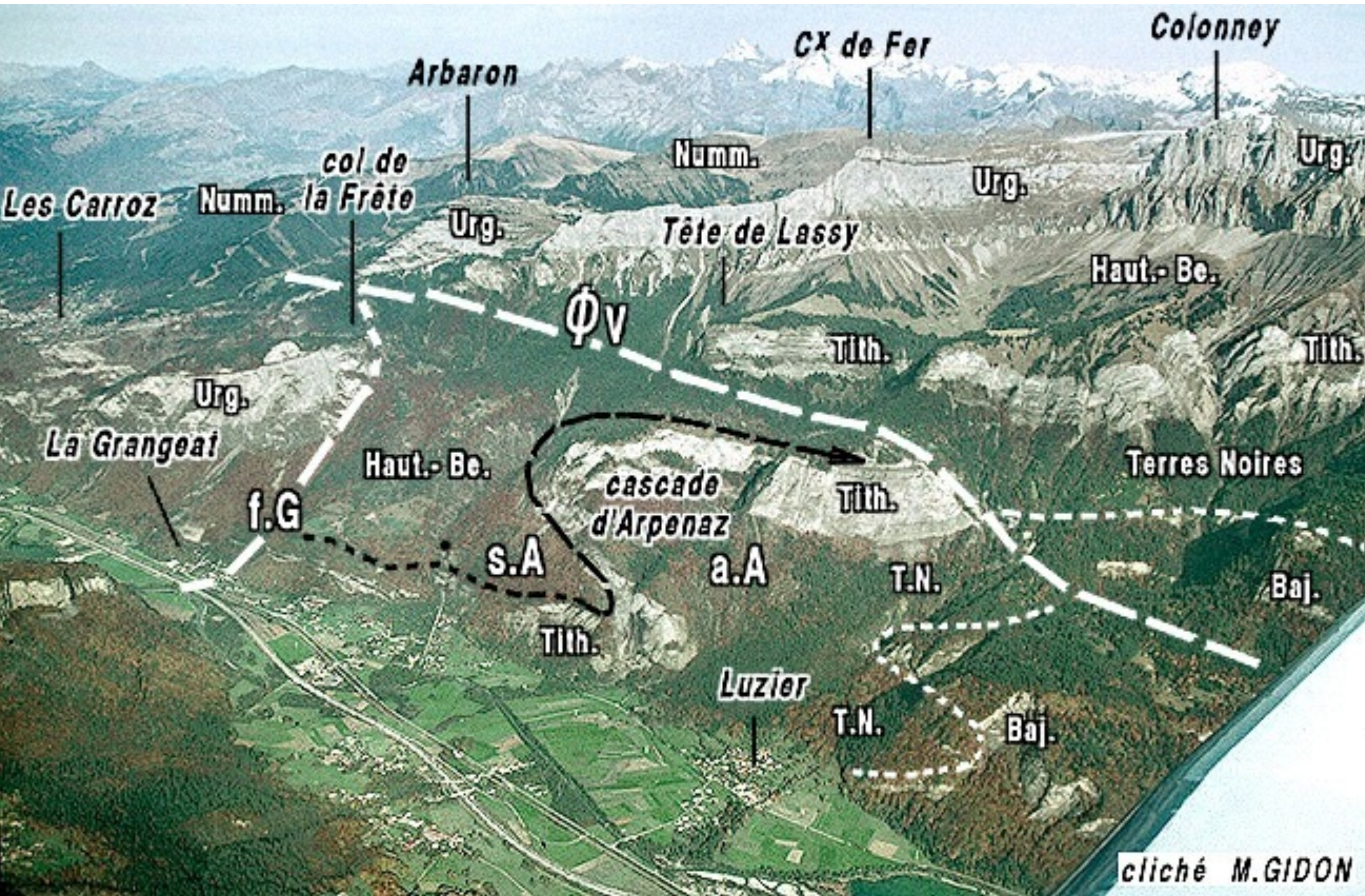
Les Escourts

Argovien

cliché M.GIDON







cliché M.GIDON

Plis "ancrés" sur des failles

2) par cisaillement

