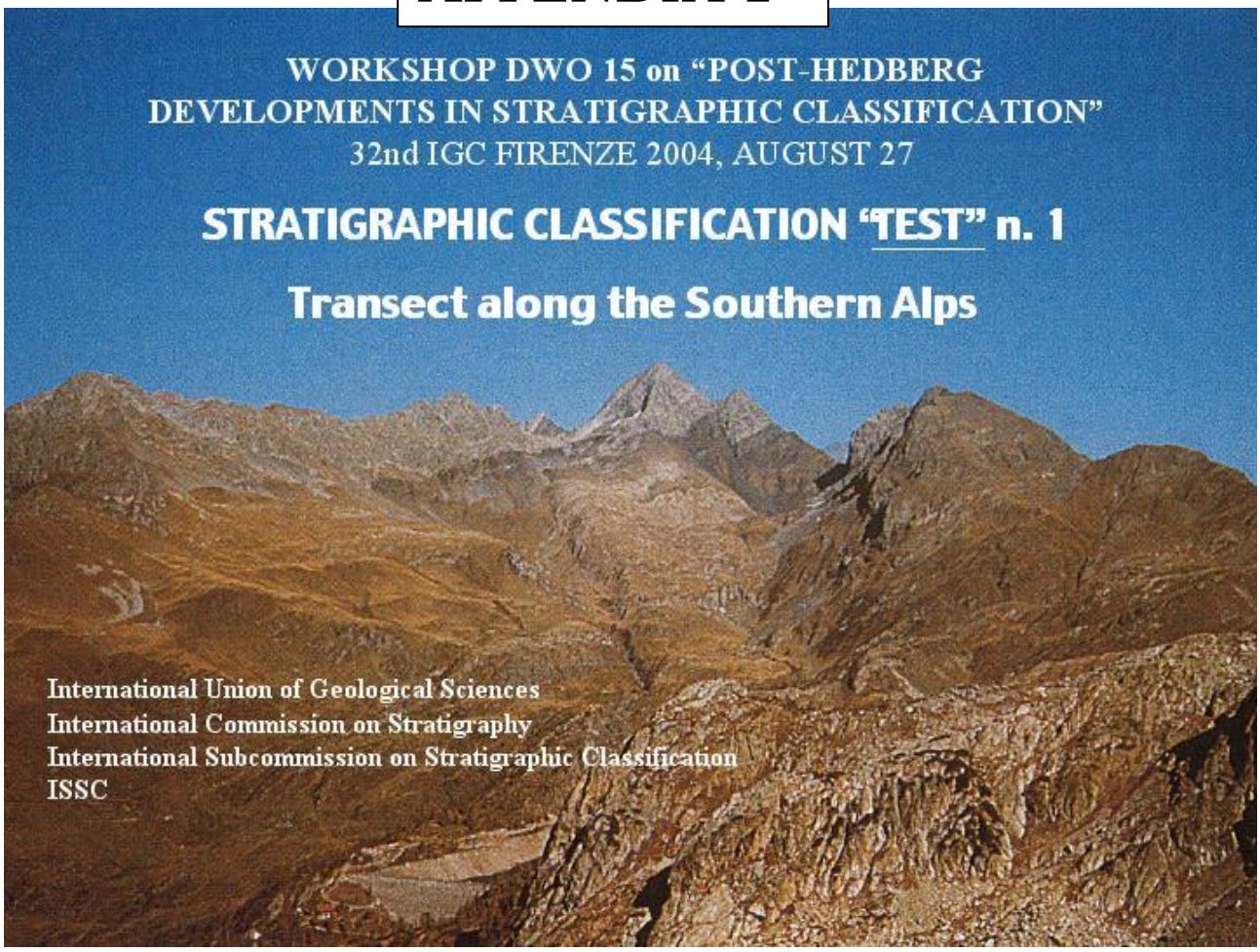
APPENDIX 1



In NEWSLETTER N. 2 (Circular n. 103) May 2003 Maria Bianca Cita

ISSC Chairman wrote:

A NEW APPROACH (BOTTOM-UP) TO FORMAL STRATIGRAPHIC CLASSIFICATION

The main responsibility of ISSC is to set up clearly defined rules for stratigraphic classification, to publicize and make them worldwide used, and to periodically update them, in accordance with new methodologies applied, and scientific progress.

Before starting with the difficult project to write new chapters or to revise and update existing chapters of the International Guide, I want to make a series of a few (3 or 4 are sufficient) tests of stratigraphic classification among old and new ISSC members.

Purpose of this experiment is to check and evaluate the degree of coherence and consistence in the application of the existing rules to real situations

..... I asked to my colleagues who work on the stratigraphy of the Southern Alps under the umbrella of the Italian Geological Survey and of the Italian Commission on Stratigraphy to present the framework of the Permian stratigraphy, well known and studied for over 150 years, and warmly thank them for their appreciated efforts, especially Fabrizio Berra and Dario Sciunnach, who prepared the test (see FIG. 1 and FIG. 2)

At least 20 answers are required to make a statistical evaluation by comparing the answers to the simple questions posed. ... ...

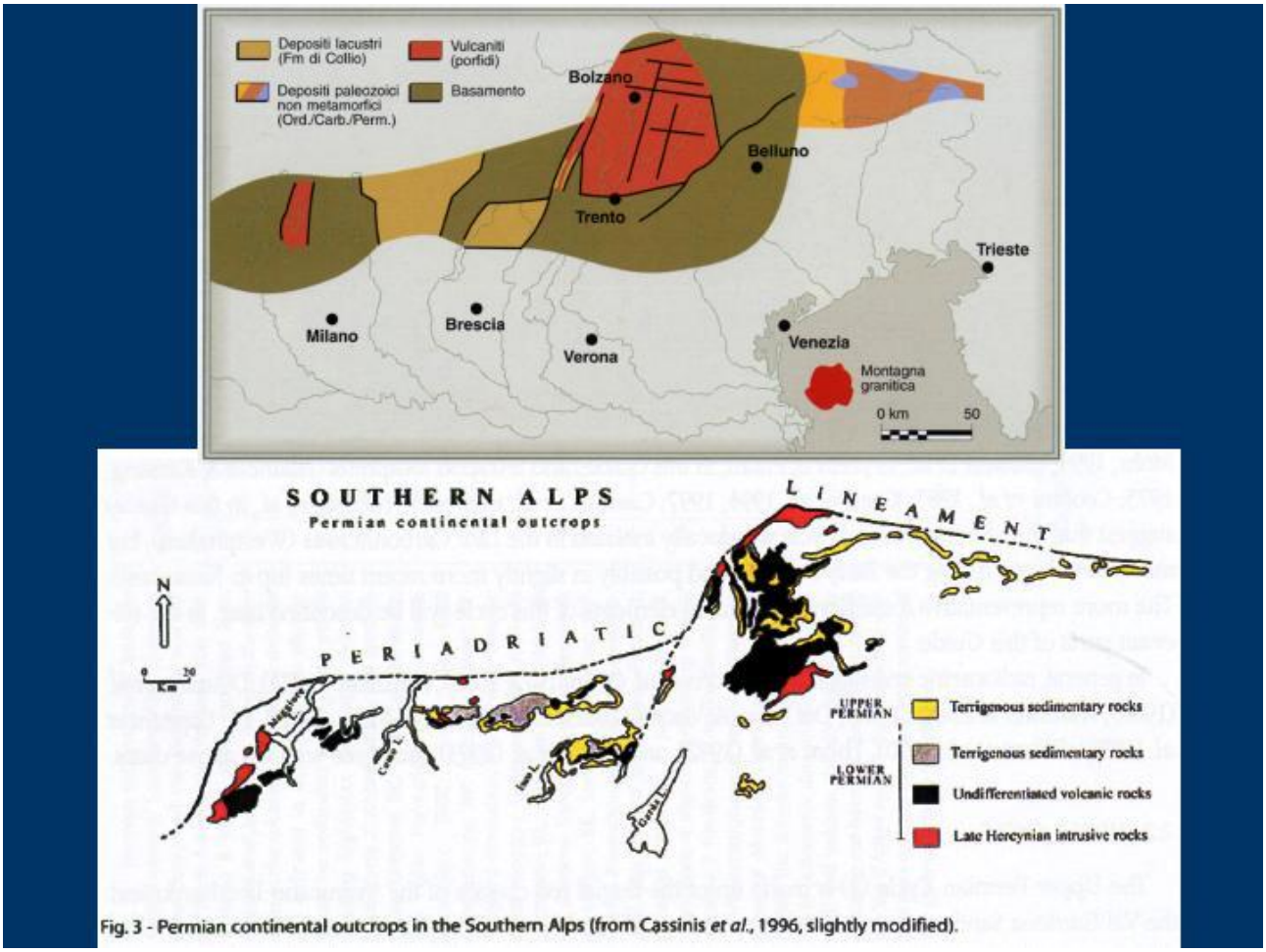


Fig. 3 - Permian continental outcrops in the Southern Alps (from Cassinis *et al.*, 1996, slightly modified).

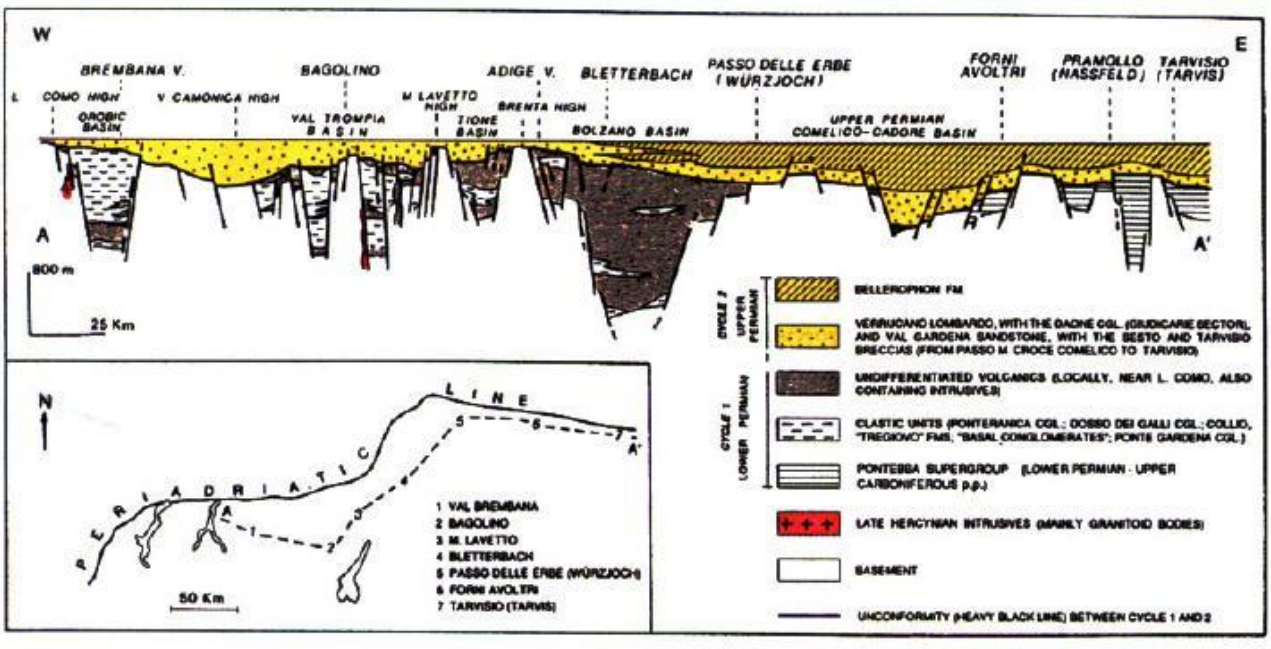
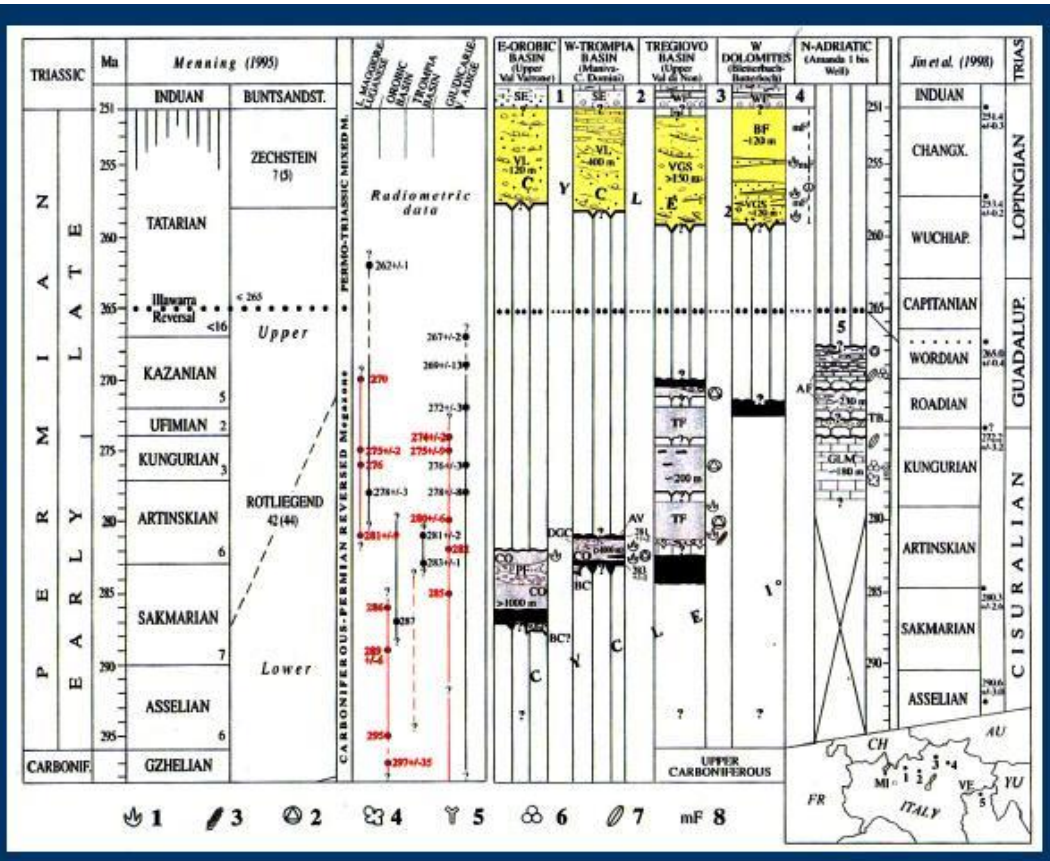


Fig. 4 - Schematic non-palinspastic cross-section (see *trace* on the *inset* map) through the Permian of the central-eastern Southern Alps, before deposition of the overlying Lower Triassic Servino or Werfen Fms (after Italian IGCP Group, 1986; Cassinis *et al.*, 1988).

The lower cycle consists of calc-alkaline acid to intermediate volcanics and alluvial-lacustrine continental deposits infilling intramontane fault-bounded, subsiding basins isolated each other by metamorphic and igneous structural highs



In the columns the volcanic deposits are indicate in black, and the alluvial-lacustrine sediments in grey. The yellow shading highlights the Upper Permian cycle 2

Early Permian succession (deposited during an important extensional tectonic stage)

Orobic Basin

D: Ponteranica Conglomerate: alluvial fan conglomerates with scarce basement-derived clasts

E: Orobic Collio Formation: sandstones, siltstones and shales of alluvial-lacustrine environment, generally mapped individually

F: "Volcanic orobic complex": prevailing volcanic flows

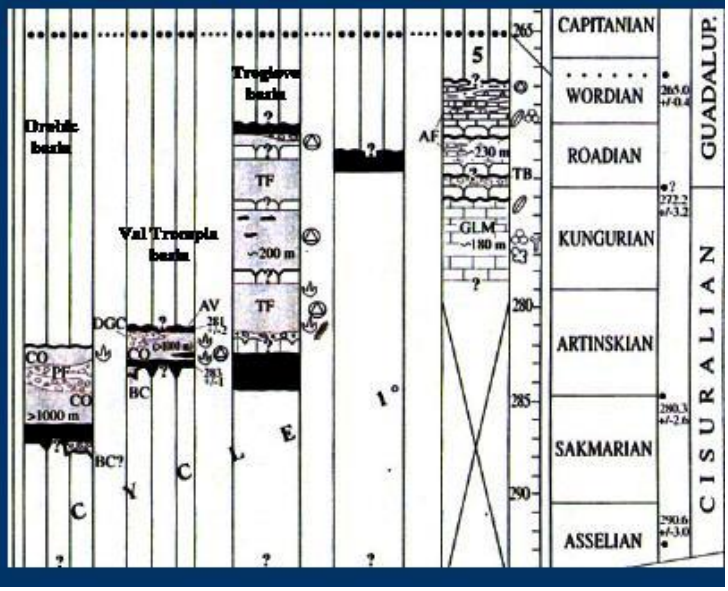
G: "Basal Conglomerate": fluvial conglomerate with no volcanic clasts.

Val Trompia Basin

H: Trumpline Collio Formation: sandstones, siltstones and shales of alluvial-lacustrine environment, generally mapped individually, with intercalation of ignimbritic layers

I: Dosso dei Galli Conglomerate: alluvial fan conglomerates with scarce basement-derived clasts

J: Auccia Volcanics: ignimbritic layer capping the Lower Permian succession



Tione Basin

Prevailing volcanics with two intercalations of continental sediments

Athesian Volcanic District

Z: Metamorphic basement

STRATIGRAPHIC CLASSIFICATION TEST n.1

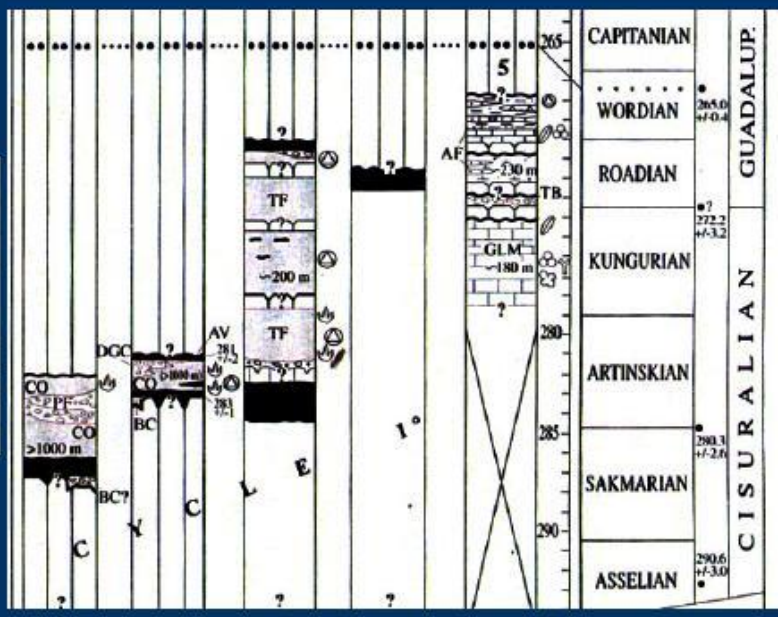
Question 1 – The Dosso dei Galli (I) and Ponteranica (D) formations have been formally defined in a strictly hedbergian style; they have the same stratigraphical position and paleogeographic significance, a somewhat different lithological composition, no lateral continuity: the two depositional basins have always been separated. Do you judge them:

a) a single lithostratigraphic unit?

•b) two discrete lithostratigraphic unit?

•c) an UBSU?

The Dosso dei Galli Conglomerate of Mt. Colombino: A,B C 3 CU sequences of alluvial fan deposits



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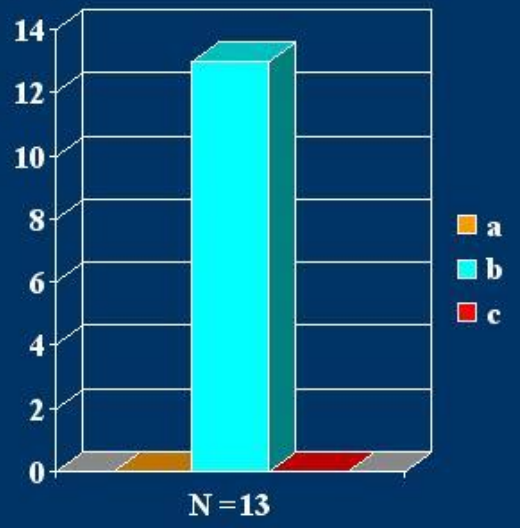
•a) a single lithostratigraphic unit?

•b) two discrete lithostratigraphic unit?

•c) an UBSU?

•Because they were deposited in two separate basins

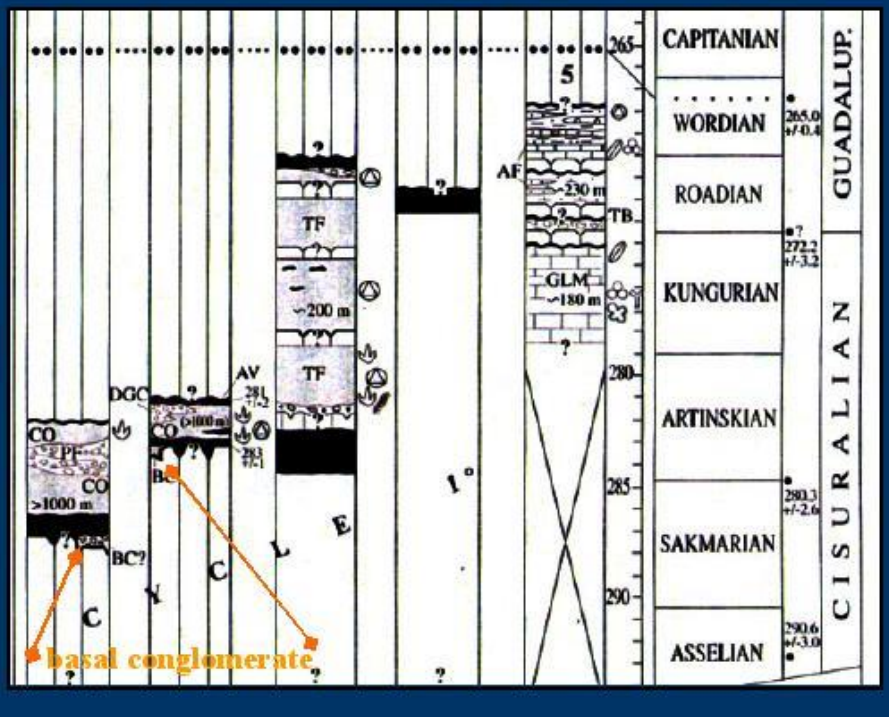
•They cannot constitute an UBSU because they are not bounded below by an unconformity



STRATIGRAPHIC CLASSIFICATION TEST n.1

Question 2 – "basal conglomerate": never formalized so far; discontinuous in nature, and not always mappable, with a transitional upper boundary and separated by the metamorphosed variscan basement by a major unconformity. Is it:

- *a) a formation?*
- *b) an UBSU?*
- *C) other?*

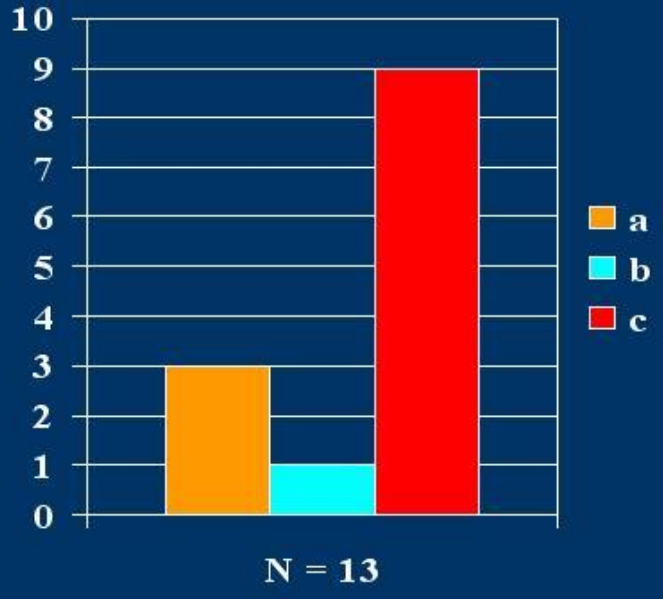


STRATIGRAPHIC CLASSIFICATION TEST n.1

Question 2 – "basal conglomerate" (G): never formalized so far; discontinuous in nature, and not always mappable, with a transitional upper boundary and separated by the metamorphosed variscan basement by a major unconformity. Is it:

- *a) a formation?*
- *b) an UBSU?*
- *C) other?*

• a formation? Yes if the unit is mappable in most areas
•It cannot constitute an UBSU because its upper boundary is not an unconformity
• the main suggestion is to define the "basal conglomerate" as a member of the overlying unit

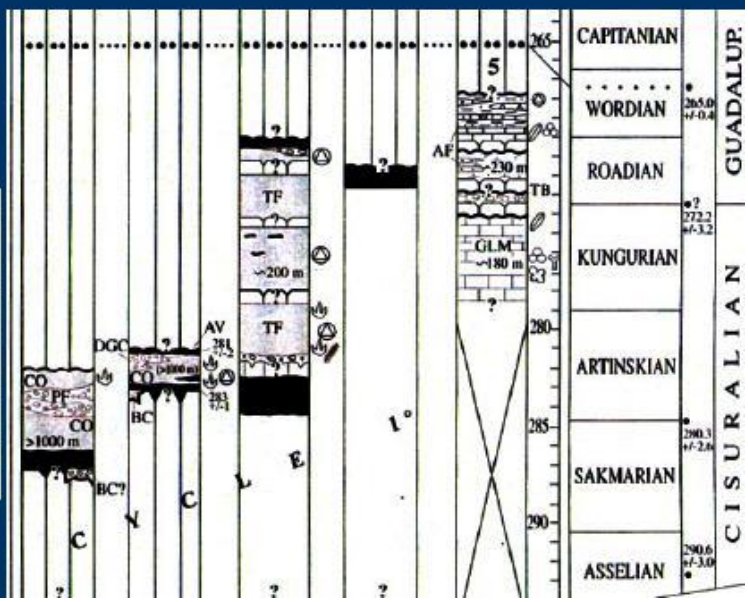


STRATIGRAPHIC CLASSIFICATION TEST n.1

Question 3 – How would you classify the classical historical Collio unit?

- *a) a formation?*
- *b) a group?*
- *c) a synthem?*
- *d) a complex*

A) Pass Maniva. c = Lower Collio black shale, d=



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- *a) a formation?*
- *b) a group?*
- *c) a synthem?*
- *d) a complex*

• a formation? Yes but in that case some perplexity relate to the two distinct stratigraphic position
•A group? A good agreement for this choice, but inside a redefinition of the subunit as formations
•some suggestion to a formally defined complex ("Volcanic Orobic Complex") but we must remember that the volcanites are mainly igninbrites and related tuffs