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MARIO MIRANDA

La riforma universitaria e gli studi scientifici. La matematica e la fisica nel biennio propedeutico.

The reduction in scientific studies in the basic three years of university, as recommended by the Berlinguer Reform for awarding the 'short' degree, is thought to hinder the success of subsequent studies in mathematics, physics and engineering; the training of research doctors will actually be impossible. The specialist degree shatters the classes, which have always had as much responsibility in the universities as the teaching staff. If the new course is not quickly and profoundly altered, it will certainly lead to an impoverishment of the wealth produced by our country. Such claims are supported by the opinions of Ennio De Giorgi, the most famous Italian mathematician of the second half of the last century, Alessandro Faedo, mathematician, former rector of Pisa University, chairman of the CNR and senator of the Republic, and Salvatore Settis, art historian and current head of the Scuola Normale Superiore of Pisa.

IGINO DIENI – DANILO GIORDANO – FRANCESCO P. SASSI

This paper describes the first unquestionable occurrence of graptolites within the Southalpine Metamorphic Basement of Agordo. The rocks bearing these fossils are weakly metamorphic black mudstones of various composition, often rich in fluorapatite, and make up numerous small boudins within a shear zone characterised by ductile deformation and low-grade metamorphic recrystallisation. Larger boudins also occur in the same shear zone: they consist of greyish black to black metalimestones which are very rich of colonial *Rugosa* corals. The graptolite boudins also bear, among the microfossils, very abundant *Muellerisphaerida*, to whom the high phosphorous content of the rocks is related.

The very good preservation of the graptolites allowed a well defined chronostratigraphic assignment to be made: they indicate an Early Silurian, more precisely early Aeronian (middle Llandovery), age. A precise age determination of the coral metalimestones could not be possible. However, comparisons with the Palaeozoic stratigraphic succession of the close Carnic Alps suggest that these rocks are Middle Devonian in age.

KEY WORDS: Southalpine Metamorphic Basement, Eastern Alp, Agosrdo, shear zone, boudinage, graptolites, *Rugosa* corals, *Muellerisphaerida*, Silurian, Devonian.

DAVIDE MARCUGLIA - ALESSANDRO ALZETTA – CARLO G. SOMEDA – FEDERICO BERNARDI – DANIELE TREVISIOL

Propagazione elettromagnetica anomala per cause meteorologiche e conseguenze sul servizio di telefonia mobile

A very large data base was available, concerning radio bad quality phenomena (sometimes on a daily scale, but mostly on a seasonal scale) in the Vodafone Italia mobile telephone network, in a belt along the northern Adriatic Sea. We studied their statistical correlation with meteorological data, and developed electromagnetic propagation models which exploit such data, aiming at a satisfactory explanation of interference caused by remote radio base stations. Our results show that the «atmospheric duct effect» is in fact responsible for the observed bad quality. Circumstances yielding bad quality can now be predicted with a confidence level (>80%) much higher than before. This entails significant improvements in network design and management strategy.

GIAN ANTONIO DANIELI

Le reti della complessità

This review reports on current research aiming at resolving biological complexity. Main research fields are briefly outlined, from biological network modelling to identification of bio-bricks for building artificial micro-organisms. Short-time perspectives of the so-called «Synthetic Biology» are delineated.

PAOLO ALBERI AUBER

L'orologio solare orizzontale del Circo di Aquileia (II sec. d.C.). "Il Plintio di Euporus". Seconda parte

The exclusively gnomonic study of the 'Plinthium of Euporus' (Book IX of 'De Architectura') having been completed in the first part, a close analysis is here made of Book I, again by Vitruvius.

Vitruvius' town planning procedure, based on the sixteenth part of the round angle and quite different from that followed by the surveyors (cardo-decumano), is confirmed in the essential orientation of the 'Plinthium of Euporus'. Furthermore this part of the noted text allows more general considerations to be made: the same orientation is clearly evident also in the urban grid of Roman Aquileia.

An accurate comparison between Vitruvius' Diagram of the Winds and that of Euporus shows that the 'Aquila' wind' was angularly moved 90°: this singular dyscrasia is explained by a precise hypothesis related to Aquileia's commercial links with the Greek world. It is also conjectured that the name of Aquileia itself may derive from the name of this wind as it was quite precisely involved in the procedure suggested by Vitruvius for the foundation of new towns.

GIGI PENNACCHI – LUIGI BENEDETTI

Osservazioni eseguite nell'Osservatorio meteorologico dell'Istituto Cavanis di Venezia nel 2005

The minimum average daily temperature recorded in 2005 was -1.3°C on 1 March, while the maximum average daily temperature was 28.8°C on 30 July.

There was an average annual humidity of 71.7 %, less than the average for the 1959-2004 period, which was 72.7 %.

Total precipitation for the year 2004 was 788.6 mm.