rilievo viene dato alla descrizione di alcuni macerali di recente scoperta presenti in tutti i carboni esaminati, la cui rilevazione è stata possibile unicamente mediante l'osservazione microscopica in fluorescenza.

Concludono la memoria alcune considerazioni sulla genesi e sull'importanza che rivestono questi nuovi macerali nell'interpretazione dello stadio di diagenesi raggiunto dai carboni considerati.

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Il lavoro originale verrà stampato su « Resoconti della Associazione Mineraria Sarda », LXXXIX, n. 2, 1984.

ANSELMI B.*, BRONDI A.*, FALCHI G.*, FERRETTI O.*, MORONI F.** - *Studio della distribuzione dei minerali pesanti nelle formazioni Plio-pleistoceniche argillose italiane.*

L'ENEA ha condotto ricerche sistematiche su formazioni plio-pleistoceniche argillose italiane con il fine di caratterizzare i bacini dal punto di vista paleogeografico e di correlare la natura delle formazioni alimentatrici e i caratteri strutturali degli stessi.

Dalla prima fase di ricerca, che è stata indirizzata all'esame della composizione fondamentale e della frazione argillosa dei sedimenti, è emerso quanto segue:

— esiste una buona correlazione fra associazioni di minerali argillosi e composizione litologica dei bacini alimentatori; le associazioni dei minerali fondamentali e di quelli argillosi caratterizzano differenti province mineralogiche.

In questa fase è stato preso in esame il complesso dei minerali pesanti; l'elaborazione di questi dati, condotta attraverso l'analisi fattoriale, ha permesso di individuare, anche per il complesso dei minerali pesanti, una correlazione fra formazioni alimentatrici e associazioni tipiche di tali minerali.

La distribuzione dei minerali pesanti è risultata la più adatta nello studio di caratterizzazione e paleogeografico di un bacino sedimentario in quanto tali minerali sono più chiaramente legati alle formazioni alimentatrici e non subiscono modificazioni sensibili da parte dell'ambiente di sedimentazione.

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Il lavoro originale verrà stampato su « Rapporti tecnici ENEA - Serie Ambiente ».

BARBIERI M.*, MASI U.*, TOLOMEO L.* - *Strontium geochemical evidence for the origin of the barite deposits from Sardinia (Italy).*

The Sr content of 137 samples of barite, along with 81 samples of fluorite and 74 samples of calcite, from 26 karst and hydrothermal deposits of Post-Cambrian age from Sardinia have been measured. Sr isotope composition of selected samples of barite have also been determined. Karst calcites have a Sr average content of 26 ppm quite similar to that of the hydrothermal ones ($x = 47$ ppm). Hydrothermal fluorites show a Sr average content of 56 ppm.

Karst barites have a Sr average content of 6,767 ppm and are at 1 σ level distinguishable from hydrothermal barites, which have Sr average content of 10,212 ppm.

The Sr isotope composition of the Cambrian stratiform barites (0,70867 ± 0,00003) is similar to that of the Cambrian sea water, suggesting that the bulk of Sr was provided by this source.

The Sr isotope ratios of the karst barites (average $^{87}Sr/^{86}Sr = 0,70947 \pm 0,0001$) indicate that Sr was not only derived by recycling of the stratiform barites, but was also provided by the non-carbonate fraction of the Cambrian wall rocks.

Finally the Sr isotope composition of the hydrothermal barites ranges from 0,70990 ± 0,00004 to 0,71837 ± 0,00004, suggesting that Sr was provided mainly by a mixing process between the sea water and a high $^{87}Sr/^{86}Sr$ ratio source, likely represented by the Lower Palaeozoic marine shales.

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Il lavoro originale verrà stampato su « Economic Geology ».

BARRESE E.*, GIAMPAOLO C.*, GRUBESSI O.*, MOTTANA A.* - *Ranceite (Ba) nei tufi di Mazzano Romano (Viterbo).*

Si segnala la presenza di ranceite $(Ca,Mn^{2+},Ba)\,Mn_4O_9 \cdot n\,H_2O$ in una frattura beante nel « tufo rosso a scorie nere » in un affioramento nei pressi di Mazzano Romano (Viterbo), località M.te Gelato, e si riportano i dati sulle rocce circostanti.

Il minerale diffrattometricamente ha struttura simile alla ranceite ma se ne discosta chimicamente per l'alto contenuto in bario variabile tra 1,50 e 3,40 %; tale anomalia non viene segnalata in letteratura.

La giacitura del minerale di manganese e l'associazione di Ba e Mn in questa zona, inducono ad attribuire tale mineralizzazione in frattura a percolazione di acqua a temperatura ambiente attraverso un deposito singenetico di Mn.

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Il lavoro originale verrà stampato su « Mineralogical Magazine ».

BECCALUVA L.*, MACCIOTTA G.**, MANETTI P.***, PECCERILLO A.***, POLI G.*** *Pliocene-Quaternary alkaline to subalkaline volcanism in Sardinia.*

Within-continental plate fissural volcanism, connected to a preexisting fracture system of the basement, occurred in Sardinia starting from the

lowermost Pliocene, in concomitance with tensional tectonics which also involved the adjoining Tyrrhenian area. A complete spectrum of alkaline to subalkaline basic lavas extruded on the Island essentially in the same time period (5 to < 0.2 m.y.), but the climax of the subalkaline activity took place sligthly earlier (3.5-3.0 m.y. BP) than the alkaline one. Alkaline, transitional and subalkaline differentiation series have been studied in detail in three representative volcanic complexes: alkalibasalt and basanite to phonolite at Montiferro; transitional basalt to trachyte at Capo Ferrato; subalkaline basalt to rhyolite at Monte Arci. Major and trace element variations and mineral chemistry suggest that differentiation in the various series may be essentially interpreted in terms of distinctive fractional crystallization processes of major silicate phases and oxides, but magma mixing could better account for some of the intermediate lavas at Monte Arci. Removal of minor phases appears the most important factor in controlling the contrasting behaviour of incompatible element distribution in the different fractionation series. The geochemical characteristics of the various parental basalts are compatible with their derivation by variable degree of partial fusion of a relatively homogeneous mantle source which was enriched in elements incompatible with garnet lherbolite relative to « primordial mantle ». The common lherzolite-harzburgite nodules included in the alkaline basalts represent fragments of a mantle generally more depleted than the inferred source of the Sardinia basalts.

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Il lavoro originale verrà stampato su « J. Petrology ».

BECCALUVA L.*, GABBIANELLI G.**, LUCCHINI F.***, ROSSI P. L.***, SAVELLI C.**** - *Petrology and K/Ar ages of volcanics dredged from the Eolian seamounts: implications for the geodynamic evolution of the southern tyrrhenian area.*

Systematic marine investigations carried out in the last decade indicate that the Eolian orogenic volcanism extend to the seamounts located to the western (Glauco, Sisifo, Enarete, Eolo Smts.) and to the northeastern (Alcione, Lametini Smts.) sides of the emerged arc, as well as to the upper part of Palinuro and Marsili Smts.

Basalt to rhyolite lava samples dredged from these occurrences mostly belong to calcalkaline/shoshonite associations and are strictly comparable, both in petrographical and geochemical characteristics, to subaerial products outcropping on the Islands. Moreover a few tholeiitic basalts with island arc affinity have been recovered at North Lamentino and Sisifo Smts.

The calcalkaline magmatic activity appears to date as back as 1.3-0.9 ± 0.2 m.y. to the west (Sisifo Smt.), and probably postdates (or is synchronons with) the tholeiitic episodes, whereas the oldest shoshonitic volcanism so far found at Eolo and Enarete Smts. has an age range of 0.85-0.64 ± 0.06 m.y.

The available geochronological data indicate a general tendency of within serial rejuvenation of the volcanism moving counterclockwise from the Sisifo area, as well as a clear chronological zonation characterized by a transition with time to gradually more abundant shoshonitic/leucite tephritic products at any given limited sector of the structure. Model calculations based on a large spectrum of incompatible elements indicate that the parental melts of the various magma series (tholeiitic, calcalkaline, high-K_2O calcalkaline, shoshonitic, leucite-tephritic) could be derived by different partial melting degrees of mantle sources heterogeneously enriched through the influx of distinct metasomatizing fluids driven off subduction zone.

Subduction reactivation appears to be diachronous with respect to the oceanic spreading in the tyrrhenian marginal basin and characteristically analogous, in timing, to the tectono-magmatic evolution of the Western Pacific island arc/back-arc basin system, where an earlier opening of the marginal basin is followed by a later arc volcanism on the rifted-off migrating plate.

The chronological zonation, the ring-like distribution, the counterclockwise rejuvenation and the widespread age overlapping of volcanism of different serial affinity, could be related to deformation (via torsion, segmentation and lateral stretching) and, perhaps, progressive steepening of the subducted slab resulting in the present concavity of the Benioff zone which corresponds to a maximal oroclinal distortion of the Apenninic-Magrebian chain.

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Il lavoro originale verrà stampato su « EPSL ».

BECCALUVA L.*, DOSTAL J.**, SERRI G.*** - *Geochemical characteristics of sub-oceanic mantle sources inferred from the geochemistry of basaltic lavas dredged from the island arc and oceanic walls of Mariana and Yap Trenches.*

Volcanic rocks dredged from the inner and outer walls of the Mariana and Yap Trenches show different petrogenetic affinities related to different original tectonic settings. From the Pacific side of the trenches, either ocean floor tholeiites, generated at diverging plate margins, or ocean island tholeiites and alkali basalts, probably related to off-ridge volcanism, have been recovered. Dredge hauls from Yap near-shore trench wall yelded volcanic rocks belonging to island arc tholeiite series. From the near-shore slope of the Mariana Trench, in addition to island arc magmatic products (boninites, andesites, tholeiites), tholeiitic and transitional basalts possibly generated during interarc spreading were also found.