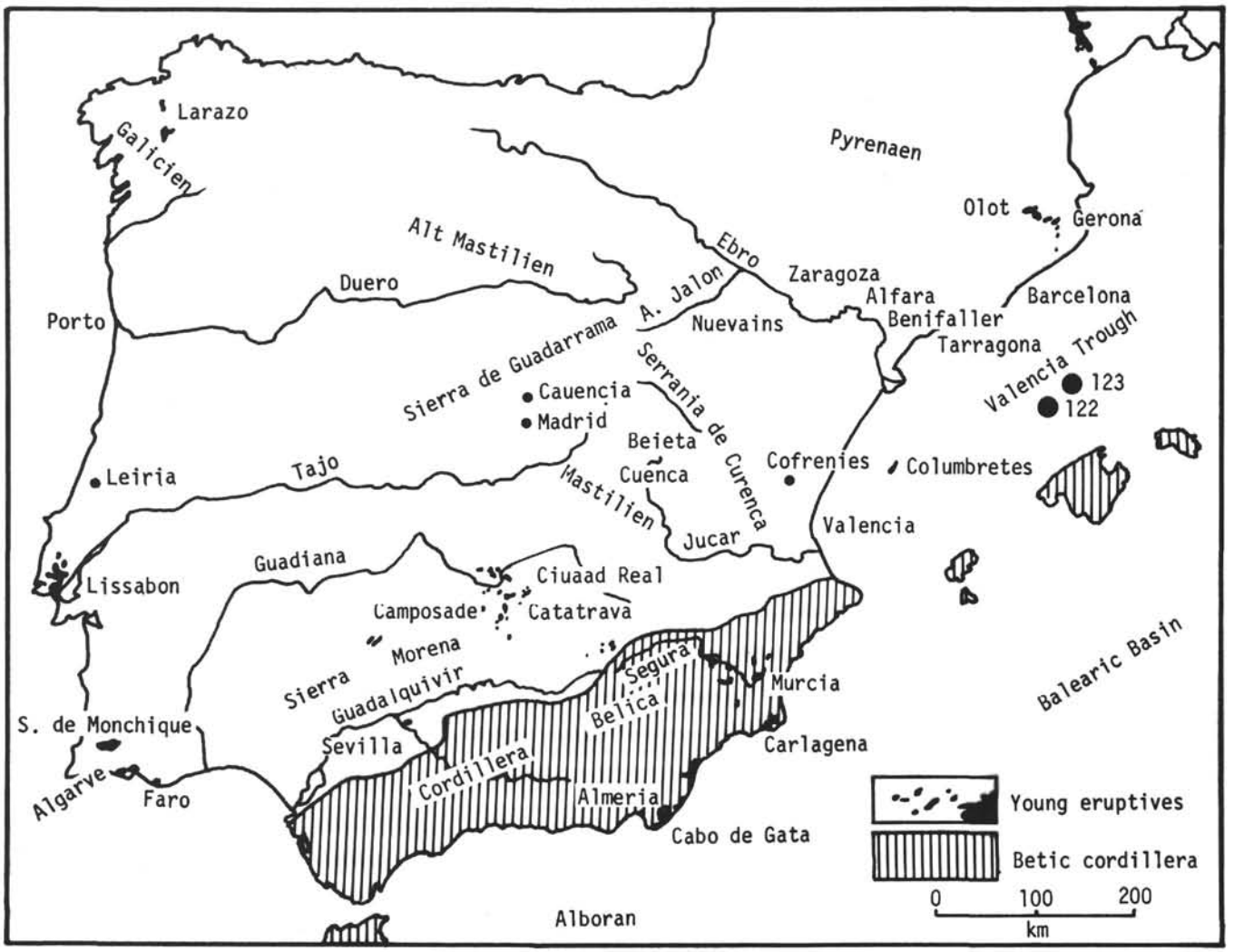

Figure 1. *Distribution of volcanic rocks of Cenozoic age in Spain and Portugal and the locations of Sites 122 and 123 in the Valencia Trough. (After Burri and Parga-Pondal, 1935).*

28.3. TRACE ELEMENTS IN THE VALENCIA TROUGH VOLCANIC ROCKS

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and
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Three samples of the Valencia Trough volcanics were analysed for Rb, Sr, Y, Zr, and Nb. These samples were the pulverized powders from Weibel after his wet-chemical analyses. One of the samples contained too little material to yield any meaningful data. The results of the other two analyses are shown in Table 1.

Sample 13-122-4A-2 shows strong affinities to alkali basalt; our present stage of knowledge does not yet permit us to determine if such an alkali basalt is continental or marine. Sample 13-123-8-CC, being a dacite, cannot yet be typed on the basis of trace-element analysis. Obviously, considerably more investigation will be needed before definitive conclusions can be drawn. Nevertheless, it is noteworthy that neither of the rocks analysed show any affinity in their trace-element composition to the ocean-floor basalts.

TABLE 1
Trace-Element Composition of Two Valencia Trough Volcanic Rocks

	Sample 13-122-4A-2	Sample 13-123-8-CC
Rb	45 ppm	215 ppm
Sr	850 ppm	42 ppm
Y	65 ppm	50 ppm
Zr	300 ppm	215 ppm
Nb	60 ppm	25 ppm

Analyst: J. R. Cann.

28.4. RADIOMETRIC DATING OF THE VALENCIA VOLCANIC ROCKS

G. Ferrara, G. Bigazzi, F. P. Bonadonna and O. Giuliani, Laboratorio per Ricerche RAdiometriche Applicate all Geocronologia e alla Paleoecologia, CNR, Pisa, Italy

A dacite ash from Site 123 in the Valencia Trough was sent to Professor Ferrara, Laboratorio per Ricerche Radiometriche Applicate, Pisa, for radiometric dating. Both whole-rock K/Ar and fission-track methods have been used. The results are as indicated below.

FISSION TRACKS RESULTS

The sample studied consists of very small fragments of glass, either transparent or opaque. The sample was mounted in epoxy and a polished section was made. This allowed us to count the track density on the interior surface alone. In this way it was also possible to minimize uranium contamination.

Two separate portions of the sample were used for the counting of induced and natural fission tracks because the size of the glass fragments does not allow two subsequent polishings on the same section. The track density uniformity favored use of this technique. The samples were etched with hydrofluoric acid (40% by volume) for 1 minute at 20°C.

K-Ar MEASUREMENTS

Ar was extracted and measured using the standard methods routinely employed in this laboratory. A continuous spike system is used. The mass spectrometric measurement was performed by means of a Reynolds type glass mass spectrometer running at static conditions. K was determined by flame photometry using a Perkin-Elmer photometer with Li as internal standard.

Two different fractions of the sample were measured, and the results are shown in Table 2.

TABLE 1

Sample	Natural Tracks Density F	Induced Tracks Density I	Thermal Neutron Dose	Age m.y.
Leg 13 Station 123 Barrel 6 Section CC Sample CT	28×10^3	140×10^3	1.8×10^{15}	22.4 ± 2.2

TABLE 2

Sample Fraction	K%	$\frac{\text{rd } Ar^{40} \text{ ccSTP}}{\text{gr K}}$	% rd Ar^{40}	Age m.y.
0.27 mm	3.12	8.58×10^{-5}	32	21.4 ± 0.6
0.16	2.77	8.13×10^{-5}	11	19.3 ± 0.7

Measurements performed at the Laboratorio per Ricerche RAdiometriche applicate all Geocronologia e alla Paleoecologia, CNR, Pisa (directed by Prof. Giorgio Ferrara) by G. Bigazzi and F. P. Bonadonna (fission tracks) and O. Giuliana (K/Ar).