

## UDINE RADIOCARBON LABORATORY DATE LIST I

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### INTRODUCTION

The radiocarbon laboratory of the Center of Applied Research and Documentation of Udine (CRAD), became operative early in 1977 and uses a benzene liquid scintillation counting method. Benzene is prepared as outlined by Legers and Tamers (1963), Noakes, Kim, and Akers (1967), Belluomini *et al* (1978). The procedure of chemical synthesis is detailed in CRAD (1977).

The main features of the physical detection system are described by Calligaris and Ciuti (1978) and by Barbina, Calligaris, and Ciuti (1979) and here. Counting vials are low potassium glass cylinders of 5cm<sup>3</sup> volume. An NE 216 liquid scintillator is used, with typical mixing ratio of 3.5cm<sup>3</sup> of benzene in 1.0cm<sup>3</sup> of scintillator. Radiocarbon decay is detected by two 56 DVP photomultipliers in coincidence. A shielding iron-tunnel and a system of plastic scintillators with four anticoincidence photomultipliers are used for minimizing background.

Typical performance figures for a measurement time of 24 hours are:

Background	<b>B</b> : (1.70 ± 0.03) cpm,
Modern sample net	<b>G</b> : (23.0 ± 0.1) cpm,
Detection efficiency	: 60%,
Figure of merit	: $G/\sqrt{B} = 18$ ,
Age limit	: 46,900 y (2 $\sigma$ criterion).

Dates are reported in conventional radiocarbon years, assuming year 1950 as reference standard and Libby's half-life of  $5570 \pm 30$  years (Libby, 1955). Our modern standard has been obtained from the 1950 core of an *Abies picea* trunk. It has not been calibrated against National Bureau of Standard's oxalic acid. The counting rate is not corrected for isotopic fractionation, because a mass-spectrometer is not available at present.

### SAMPLE DESCRIPTIONS

The results reported here are part of a study of the paleography of the lagoon of Venice. The list contains dates of different samples selected from the same core at different depths in the stratigraphic sequence, in order to verify the sedimentation rate. Also, some dates of samples from other cores are reported, which may give some information on local stratigraphic sequence.

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In all cases, samples have been prepared from the most suitable materials, *ie*, wood and peat or, if these were not available, mollusk shells.

## GEOLOGIC SAMPLES

*Laguna di Venezia***Terre Perse series**

Peat from lagoon of Venice, Terre Perse, Italy (45° 22' N, 12° 20' 56" E). Coll 1973 by P Da Roit, Lab Geol Appl CNR, Univ Padova, and subm by P Gatto, Ist Studio Dinamica Grandi Masse, CNR, Venice.

**UD-3.** **21,000 ± 800**

Peat from drilling 7 at depth 17.2m.

**UD-4.** **23,000 ± 1000**

Peat from drilling 7 at depth 25.60m.

**UD-5.** **16,400 ± 500**

Peat from drilling 7 at depth 14.85m.

**Ca' Bianca series**

Peat and shells from Lagoon of Venice, Ca' Bianca (45° 23' 33" N, 12° 21' 18" E). Coll 1973 by P Da Roit and subm by P Gatto.

**UD-6.** **28,000 ± 1700**

Peat from drilling 8 at depth 29.6m.

**UD-7.** **22,000 ± 900**

Peat from drilling 8 at depth 25m.

**UD-21.** **4700 ± 150**

Shells from drilling 8 at depth 9.6m.

**Malamocco series**

Peat and carbonate (mollusk shells) from lagoon of Venice, Malamocco (45° 21' 53" N, 12° 20' 14"). Coll 1974 by P Da Roit and subm by P Gatto.

**UD-9.** **25,000 ± 1500**

Peat from drilling 6 at depth 26m.

**UD-14.** **21,000 ± 1000**

Peat from drilling 6 at depth 18.3m.

**UD-20.** **5300 ± 200**

Carbonate (mollusk shells) from drilling 6 at depth 8.9m.

**UD-23.** **5250 ± 200**

Carbonate (mollusk shells) from drilling 6 at depth 11.6m.

**S Pietro in Volta series**

Carbonate from S Pietro in Volta (45° 21' 53" N, 12° 19' 01" E).  
1976 by P Da Roit and subm by P Gatto.

**UD-22.** **7150 ± 200**

Carbonate (mollusk shells) from drilling 1 at depth 11.6m.

**Pellestrina series**

Carbonate from Pellestrina (45° 15' 58" N, 12° 18' 04" E). Coll  
1976 by P Da Roit and subm by P Gatto.

**UD-18.** **11,000 ± 200**

Carbonate (mollusk shells) from drilling 4 at depth 17.35m.

**Alberoni series**

Carbonate from Alberoni (45° 20' 48" N, 12° 19' 33" E). Coll 1976  
by P Da Roit and subm by P Gatto.

**UD-19.** **4300 ± 200**

Carbonate (mollusk shells) from drilling 5 at depth 6.9m.

**Forte di S Andrea series**

Peat from Forte di S Andrea (45° 26' 01" N, 12° 22' 53" E). Coll  
1974 by P Da Roit and subm by P Gatto.

**UD-15.** **22,000 ± 1000**

Peat from drilling 9 at depth 27.9m.

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