

**PHYSICAL RESEARCH LABORATORY RADIOCARBON  
DATE LIST I**

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As the Radiocarbon Lab of the Tata Institute, Bombay, has now been shifted to the Physical Research Laboratory (PRL), Ahmedabad, our new date lists will be termed as above and the samples will be given PRL numbers instead of the former TF. All the pending TF samples were given new PRL numbers.

Presented below are dates from some important archaeological sites. All dates are based on  $\tau_{1/2} = 5568$  yr; to convert them to AD/BC scale, 1950 has been used as the base year.

Samples were converted to methane for measuring  $^{14}\text{C}$  activity in gas proportional counters. Detailed techniques were described earlier (R, 1971, v 13, p 442-449).

*General Comment:* a number of  $^{14}\text{C}$  dates (PRL-81, -83, -67, -68) now confirm that the Painted Grey Ware culture extended up to the 3rd century BC. Some dates from the so-called Chalcolithic sites from Barkhera (PRL-113), Bhimbetka (PRL-17), and Koldihawa (PRL-100, -101) are too old. This may indicate some hitherto unknown basal cultures in these regions.  $^{14}\text{C}$  dates on *in situ* Megalithic material do not seem to go back beyond 200 BC (PRL-134, -135).

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SAMPLE DESCRIPTIONS

ARCHAEOLOGIC SAMPLES

**Allahapur series, Uttar Pradesh**

Allahapur, Dist Meerut, subm by Dir Gen, Archaeol, New Delhi, from Painted Grey Ware (PGW) and Northern Black Polished Ware (NBP) levels. Samples date early Iron age.

**PRL-81. PGW deposits**

Charcoal, Loc Tr A1, Qd 1, Layer 11, depth 2.3m, Field ALP/2/70-71. NaOH pretreatment.

**2270 ± 90**

**320 BC**

**PRL-83. PGW-NBP overlap**

Charcoal, Loc Tr A1, Qd 4, Layer 5, depth 1.1m, Field ALP/4/70-71. NaOH pretreatment.

**2160 ± 105**

**210 BC**

**PRL-66. Ambamata, India, old copper working area** **830 ± 100**  
**AD 1120**

Timber from Bore Hole 100 at depth 62m near Ambamata (24° 20' N, 72° 52' E), Dist Banaskantha. Coll July 1971 by N C Shekar; subm by Dir, Geol Survey India, Ahmedabad. NaOH pretreatment.

**Barkhera series, Madhya Pradesh**

Barkhera (22° 9' N, 77° 7' E), Dist Raisen, subm by K D Bajpai, Sagar Univ, Sagar.

**PRL-111. Chalcolithic culture** **3170 ± 105**  
**1220 BC**

Charcoal, Layers II and III, depth .1 to .2m, Field C-26. NaOH pretreatment.

**PRL-113. Chalcolithic culture** **7250 ± 135**  
**5300 BC**

Seeds, Layers II and III, depth .1 to .2m, Field C-26. NaOH pretreatment. *Comment*: obviously these are older, perhaps wild seeds and have no relevance to Chalcolithic levels.

**PRL-15. Bharatpur, India, Chalcolithic-Neolithic culture** **3290 ± 135**  
**1340 BC**

Charcoal from Bharatpur (23° 24' N, 87° 27' E), Dist Burdwan, Loc Tr G5-H5, Layer 5, depth 1m; subm by Dir Gen, Archaeol, New Delhi. NaOH pretreatment.

**Bhimbetka series, Madhya Pradesh**

Bhimbetka (22° 57' N, 77° 37' E), Dist Raisen; subm by V S Wakankar, Vikram Univ, Ujjain. *Comment*: dates show wide scatter; younger dates probably represent later disturbances at the site.

**PRL-49. Burial 1** **Modern**

Charcoal from lower part of skeleton, Loc Tr III F-16, Field 5. Rootlets removed, NaOH pretreatment.

**PRL-50. Burial 3** **5860 ± 110**  
**3910 BC**

Charcoal from pit, Loc Tr III F-13, depth .03 to .1m, Field 6. Rootlets removed, NaOH pretreatment.

**PRL-51. Burial 2** **2050 ± 110**  
**100 BC**

Charcoal from pit, Loc Tr III F-13, Field 7. Rootlets removed, NaOH pretreatment.

**PRL-17. Pit deposit** **7570 ± 210**  
**5620 BC**

Charcoal, Pit 3, depth .6m, NaOH pretreatment.

- PRL-18. Pit deposit** **2650 ± 125**  
Charcoal, Pit 11, depth 2.76m. **700 BC**
- PRL-108. Henagahapugala, Ceylon, Coastal deposit** **2960 ± 160**  
Shells from emerged beach lagoon, indirectly assoc with Mesolithic artifacts near Henagahapugala (6° 4' 55" N, 80° 55' 50" E), Dist Hambantota, Loc G2, Layer II, depth 8m; subm by Dir Archaeol, Ceylon. **1010 BC**
- Inamgaon series Maharashtra**  
Inamgaon (18° 25' N, 74° 32' E), Dist Poona, a Chalcolithic site with a sequence from Malwa to Late Jorwe cultures; subm by Dir, Deccan College, Poona.
- PRL-57. Chalcolithic culture** **3050 ± 105**  
Charcoal, Loc INM-I, Tr D8, Layer 3, depth .75m, Field INM-I/884. NaOH pretreatment. **1100 BC**
- PRL-59. Chalcolithic culture** **3210 ± 110**  
Charcoal, Loc INM-I, Tr H8, Layer 16, depth 4.2m, Field INM-I/1328. NaOH pretreatment. **1260 BC**
- PRL-77. Chalcolithic culture** **3310 ± 110**  
Charcoal, Loc H8, Layer 15, depth 3.2m, Field 1324. NaOH pretreatment. **1360 BC**
- PRL-76. Chalcolithic culture** **3220 ± 110**  
Charcoal, Loc G8, Layer 7, depth .75m, Field 1094. NaOH pretreatment. **1270 BC**
- PRL-133. Chalcolithic culture** **3230 ± 105**  
Charcoal, Loc INM-II, Layer 3, depth .3m, Field INM-II/1330. NaOH pretreatment. **1280 BC**
- PRL-78. Chalcolithic culture** **2740 ± 115**  
Charcoal, Loc H9-19, House 38, sealed by Layer 7, depth .75m, Field 1197. NaOH pretreatment. **790 BC**
- PRL-93. Chalcolithic culture** **3020 ± 105**  
Charcoal, Loc D7, House 36, Layer 4, Field 972. NaOH pretreatment. **1070 BC**
- PRL-94. Chalcolithic culture** **3020 ± 115**  
Charcoal, Loc D8, Layer 4, Field 926. Rootlets removed, NaOH pretreatment. **1070 BC**

- 2360 ± 120**
- PRL-22. Kanchipuram, India, early historic deposits 410 BC**  
Charcoal from Kanchipuram (12° 50' N, 79° 42' E), Dist Chingleput, Loc O-II', Layer 18, depth 6.16m, Field KCM-1; subm by T V Mahalingam, Madras Univ, Madras.
- Khalaua series, Uttar Pradesh**  
Khalaua (27° 6' N, 77° 52' E), Dist Agra; subm by Dir Gen, Archaeol, New Delhi from PGW and Black and Red Ware (BRW) phase of early Iron age.
- 2450 ± 155**
- PRL-67. PGW and BRW deposits 500 BC**  
Charcoal, Loc KHL-I, II and IV, Layer 7, depth 2.15m, Field Khalaua T2/66. Rootlets removed, NaOH pretreatment.
- 2370 ± 170**
- PRL-68. PGW and BRW deposits 420 BC**  
Charcoal, Loc KHL-I, II and IV, Layer 8, depth 2.35 to 2.48m, Field Khalaua-T3/66. NaOH pretreatment.
- PRL-142. Khangkhui, India, cave deposits Modern**  
Charcoal from Khangkhui (25° 4' N, 94° 25' E), Dist Manipur East, Tr 1, Layer 1, depth .2m, Field KHK/C1; subm by O K Singh, D M College, Imphal. NaOH pretreatment. *Comment:* date probably represents modern disturbance.
- Koldihawa series, Uttar Pradesh**  
Koldihawa (24° 54' 30" N, 82° 2' 30" E), Dist Allahabad; subm by G R Sharma, Allahabad Univ, Allahabad.
- 820 ± 100**
- PRL-56. Chalcolithic culture (?) AD 1130**  
Charcoal, Loc KDW-1, A1(a), Reference pit (c) sealed by Layer 1, depth .96m, Field AU/ALD/KDW/72/9. Rootlets removed.
- 1990 ± 150**
- PRL-98. Chalcolithic culture (?) 40 BC**  
Charcoal, Loc KDW-1, A1(b) III-VII, Layer 2, depth .23m, Field AU/ALD/KDW/72/11. Rootlets removed.
- 2900 ± 150**
- PRL-99. Chalcolithic culture 950 BC**  
Charcoal, Loc KDW-1, A1(a) O-III, Layer 4, depth .60m, Field AU/ALD/KDW/72/12. Rootlets removed.
- 7180 ± 230**
- PRL-100. Chalcolithic culture (?) 5230 BC**  
Charcoal, Loc KDW-1, A1(a) O-III, Layer 5, depth .80m, Field AU/ALD/KDW/72/13. Rootlets removed.

- 6300 ± 180**
- PRL-101. Chalcolithic culture (?)** **4350 BC**  
Charcoal, Loc KDW-1, A1(a), O-III, Layer 6, depth 1.1m, Field AU/ALD/KDW/72/14. Rootlets removed, NaOH pretreatment.
- 2380 ± 105**
- PRL-102. Chalcolithic culture** **430 BC**  
Charcoal, Loc KDW-1, A1(b), Ref Pit B sealed by Layer 1, depth .42m, Field AU/ALD/KDW/72/6. NaOH pretreatment.  
*General Comment:* wide scatter shows undetected disturbances at site.
- PRL-46. Pallavamedu, India, Early historic deposit (?)** **17,480 ± 500**  
**15,530 BC**  
Charcoal from Pallavamedu (12° 50' N, 79° 75' E), Dist Chingleput, Loc IV-V-IV'-V', Layer 5, depth 4m, Field PVM-1, subm by Dir Archaeol, Madras. NaOH pretreatment. *Comment:* sample probably mixed with lignite at site and has no relevance to cultural levels.
- 4500 ± 170**
- PRL-107. Patirajawela, Ceylon, coastal deposit** **2550 BC**  
Shells assoc with Mesolithic artifacts from Patirajawela (6° 10' 20" N, 81° 13' 30" E), Dist Hambantota, Loc D5, Layer II, depth .4m; subm by Dir Archaeol, Ceylon. Rootlets removed.
- Prabhas Patan series, Gujarat**  
Prabhas Patan (20° 53' N, 70° 24' E), Dist Junagadh; subm by Dir, Deccan College, Poona.
- 3100 ± 160**
- PRL-19. Chalcolithic culture** **1150 BC**  
Charcoal, Loc PP-I Tr B6, Layer 9, depth 2.95m. NaOH pretreatment.
- 3340 ± 105**
- PRL-20. Chalcolithic culture** **1390 BC**  
Charcoal, Loc PP-I Tr C6, Layer 7, depth 2.12m. NaOH pretreatment.
- 4240 ± 110**
- PRL-90. Flood deposit** **2290 BC**  
Charcoal from a flood deposit, Loc D6, Layer 16, depth 6.5m, Field 506. NaOH pretreatment.
- 3860 ± 165**
- PRL-91. Chalcolithic culture** **1910 BC**  
Charcoal from House 9, Loc C4, Layer 10, depth 3.3m, Field 421. NaOH pretreatment.
- 3830 ± 95**
- PRL-92. Chalcolithic culture** **1880 BC**  
Charcoal from Tr D6-7, Layer 14, depth 4.85m, Field 495. NaOH pretreatment.

**PRL-97. Purana Qila, Delhi, early historic deposits** **2000 ± 140**  
**50 BC**

Charcoal from Purana Qila, Delhi, Loc PQL-N6 Qd 2, Layer 48, depth 10.35m, subm by Dir Gen, Archaeol, New Delhi. Rootlets removed.

**Sohgaura series, Uttar Pradesh**

Sohgaura (26° 23' N, 83° 30' E), Dist Gorakhpur; subm by S N Chaturvedi, Gorakhpur Univ, Gorakhpur. PRL-182 dates Iron age and PRL-179, -178 date Chalcolithic layers.

**PRL-182a. NBP deposits** **2130 ± 90**  
**180 BC**

Charcoal, Tr ZB2, Layer 9, depth 1.85m, sender's Sample 6a and b. NaOH pretreatment.

**PRL-179. BRW deposits** **3090 ± 130**  
**1140 BC**

Charcoal, Tr ZB2, Layer 11, depth 3.02m, sender's Sample 3. NaOH pretreatment.

**PRL-178. BRW deposits** **3190 ± 110**  
**1240 BC**

Charcoal, Tr ZB2, Layer 12, depth 3.15m, sender's Sample 2. NaOH pretreatment.

**PRL-85. Surkotada, India, Harappa culture** **4140 ± 130**  
**2190 BC**

Charcoal from Surkotada (23° 37' N, 70° 50' E), Dist Kutch, Loc ZF1, Qd 2, Layers 13 and 14, depth 4.85m, Field 21; subm by Dir Gen, Archaeol, New Delhi.

**Takiaper series, Uttar Pradesh**

Takiaper, Dist Varanasi; subm by T N Roy, Banaras Hindu Univ, Varanasi.

**PRL-184. NBP deposits** **2070 ± 100**  
**120 BC**

Charcoal, from burnt layer between deposits of Periods I and II, Layer 4, Field TKP-1. NaOH pretreatment.

**PRL-47. NBP deposits (?)** **4600 ± 120**  
**2650 BC**

Charcoal, Loc Ao 2.58 × .70, Layer 5, depth 1.2m. Rootlets removed, NaOH pretreatment. *Comment:* sample represents an earlier tree stump burnt at site.

**PRL-61. Tilpat, India, wood of *Adansonia digitata*** **Modern**

Wood pieces from Tilpat (28° 30' N, 77° 20' E), Dist Gurgaon. Coll by K M Vaid; subm by Vishnu Mittre, Birbal Sahni Inst Palaeobot,

Lucknow. NaOH pretreatment. *Comment:* dated to validate reputed antiquity of wood.

**Togarappalli series, Tamil Nadu**

Togarappalli (12° 25' N, 78° 22' E), Dist Dharmapuri. Coll by B Narasimhaiah; subm by M K Dhavalikar, Deccan College, Poona.

**PRL-134. Megalithic culture** **2180 ± 100**  
**230 BC**

Charcoal, Loc TGP-3, Layer 5, depth 1.05m, Field TGP-3. NaOH pretreatment.

**PRL-135. Megalithic culture** **2150 ± 110**  
**200 BC**

Charcoal, Loc TGP-3, Layer 5, depth 1.15m, Field TGP-3. NaOH pretreatment.

REFERENCES

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