

These data support a manuscript by G.J. Retallack entitled "A 300-million-year record of atmospheric carbon dioxide from fossil plant cuticles", for *Nature*. They are measurements of stomatal index from fossil and living plants. Part 1 has reliable data, and Part 2 has data deemed statistically inadequate from a rarefaction analysis. Abbreviations include SI (stomatal index), Nf (number of fragments counted), Ns (number of stomates counted), Ne (number of epidermal cells counted), and Ma (millions of years ago).

| Taxon   | Locality           | Country      | Age          | Ma    | Ne   | Ns  | Nf | SI      | Reference   |
|---|--------------------|--------------|--------------|-------|------|-----|----|---------|---|
| <b>PART 1</b>                                       |                    |              |              |       |      |     |    |         |   |
| <b>Good <i>Rhachipyllum</i></b>                     |                    |              |              |       |      |     |    |         |   |
| <i>"Autunia" conferta</i> <sub>1</sub>              | Crock              | Germany      | Autunian     | 295±3 | 1020 | 96  | 17 | 8.3±1.2 | Barthel & Haubold 1980, Kerp & Barthel 1993, Kerp 1990,1996       |
| <i>"Autunia" conferta</i> <sub>1</sub>              | Sobernheim         | German       | Artinskian   | 280±3 | 718  | 74  | 2  | 9.4±0.3 | Kerp 1988,1990,1996   |
| <i>"Callipteris" ? sadovnikovii</i> <sub>1</sub>    | Peschansk          | Russia       | Tatarian     | 268±5 | 1244 | 88  | 5  | 5.9±1.1 | Meyen & Migdisova 1969  |
| <i>"Callipteris" ? aequabilis</i> <sub>1</sub>      | Pechora River      | Russia       | Tatarian     | 267±5 | 1341 | 119 | 7  | 7.3±1.4 | Meyen & Migdisova 1969  |
| <i>"Callipteris" ? sp. indet.</i> <sub>1</sub>      | Pechora River      | Russia       | Tatarian     | 266±5 | 2210 | 209 | 6  | 6.4±1.7 | Meyen & Migdisova 1969  |
| <i>"Callipteris" ? lepidopteroides</i> <sub>1</sub> | Kosio River        | Russia       | Tatarian     | 265±5 | 596  | 46  | 5  | 6.6±1.3 | Meyen & Migdisova 1969  |
| <b>Good <i>Lepidopteris</i></b>                     |                    |              |              |       |      |     |    |         |   |
| <i>"Peltaspermum" retensorium</i> <sub>2</sub>      | Chekarda           | Russia       | Kungurian    | 275±3 | 807  | 83  | 4  | 9.8±0.9 | Naugolnykh & Kerp 1996; Naugolnykh 1996; Markov & Naugolnykh 1998 |
| <i>Peltaspermum martinsii</i>                       | Aldino             | Italy        | Dzulfian     | 256±2 | 568  | 34  | 14 | 5.7±1.1 | Kerp 1990, Poort & Kerp 1990                                      |
| <i>"Dicroidium" callipteroides</i> <sub>3</sub>     | Oakdale            | Australia    | Griesbachian | 249±2 | 1748 | 89  | 11 | 4.9±0.8 | Here  |
| <i>Lepidopteris</i> sp. indet.                      | Tubed              | India        | Griesbachian | 247±3 | 622  | 32  | 5  | 4.9±0.9 | Bose & Banerji 1976   |
| <i>Lepidopteris haizeri</i>                         | Dzhenischke River  | Russia       | Ladinian     | 231±5 | 671  | 46  | 2  | 6.4±0.4 | Dobruskina 1980   |
| <i>Lepidopteris haizeri</i>                         | Khosedakhard       | Russia       | Ladinian     | 230±5 | 960  | 79  | 3  | 7.6±0.1 | Dobruskina 1980   |
| <i>Lepidopteris remota</i>                          | Dzhenischke River  | Russia       | Ladinian     | 230±5 | 850  | 65  | 5  | 6.3±1.3 | Dobruskina 1980   |
| <i>Lepidopteris haizeri</i>                         | Ust-Usa            | Russia       | Camian       | 229±5 | 782  | 42  | 3  | 5.9±1.5 | Dobruskina 1980   |
| <i>"Lepidopteris stormbergensis"</i> <sub>4</sub>   | Little Switzerland | South Africa | Camian       | 229±3 | 4477 | 292 | 28 | 5.9±1.2 | Anderson & Anderson 1989  |

| Taxon   | Locality           | Country      | Age      | Ma    | Ne   | Ns  | Nf | SI      | Reference                     |
|---|--------------------|--------------|----------|-------|------|-----|----|---------|-------------------------------|
| <i>"Lepidopteris" africana</i> <sub>5</sub>       | Little Switzerland | South Africa | Camian   | 229±3 | 2458 | 170 | 18 | 6.5±1.7 | Anderson & Anderson 1989      |
| <i>"Lepidopteris stormbergensis"</i> <sub>4</sub> | Upper Umkomaas     | South Africa | Camian   | 228±3 | >500 | -   | 22 | 7.3±2.2 | Townrow 1956, 1960            |
| <i>"Lepidopteris africana"</i> <sub>5</sub>       | Upper Umkomaas     | South Africa | Camian   | 228±3 | >500 | -   | 20 | 6.6±2.1 | Townrow 1956, 1960            |
| <i>Lepidopteris microcellularis</i>               | Blagoveschenka     | Russia       | Camian   | 227±5 | 1142 | 108 | 3  | 8.4±0.4 | Dobruskina 1980               |
| <i>Lepidopteris heterolateralis</i>               | Blagoveschenka     | Russia       | Camian   | 227±5 | 1842 | 148 | 9  | 7.1±1.0 | Dobruskina 1980               |
| <i>"Lepidopteris stormbergensis"</i> <sub>4</sub> | Giar               | India        | Norian   | 221±5 | 2212 | 128 | 13 | 5.5±1.3 | Pal 1984                      |
| <i>"Lepidopteris stormbergensis"</i> <sub>4</sub> | Cacheuta           | Argentina    | Camian   | 224±3 | 597  | 45  | 5  | 7.0±2.2 | Baldoni 1972                  |
| cf. <i>"Lepidopteris ottonis"</i> <sub>9</sub>    | Suiskiou           | China        | Rhaetian | 204±4 | 1521 | 112 | 3  | 7.0±0.3 | Sze 1953                      |
| <i>"Lepidopteris ottonis"</i> <sub>9</sub>        | Astarte River      | Greenland    | Rhaetian | 202±2 | 1001 | 62  | 6  | 6.9±2.1 | Townrow 1960; Dobruskina 1980 |
| <i>"Lepidopteris ottonis"</i> <sub>9</sub>        | Bjuv               | Sweden       | Rhaetian | 202±2 | 651  | 53  | 4  | 7.5±1.0 | Dobruskina 1980               |
| <b>Good Tatarina</b>                              |                    |              |          |       |      |     |    |         |                               |
| <i>Tatarina olferievi</i>                         | Vokma River        | Russia       | Tatarian | 252±1 | 1583 | 133 | 4  | 7.4±1.7 | Meyen 1969                    |
| <i>Tatarina</i> sp. indet.                        | Vokma River        | Russia       | Tatarian | 252±1 | 1531 | 139 | 7  | 7.3±1.4 | Meyen 1969                    |
| <i>Tatarina mira</i>                              | Mulino             | Russia       | Tatarian | 252±1 | 1722 | 124 | 4  | 6.7±0.4 | Gomankov & Meyen 1986         |
| <i>"Tatarina" conspicua</i> <sub>8</sub>          | Aristovo           | Russia       | Tatarian | 251±1 | 2545 | 169 | 10 | 6.5±1.0 | Gomankov & Meyen, 1980, 1986  |
| <i>Tatarina pinnata</i>                           | Aristovo           | Russia       | Tatarian | 251±1 | 1387 | 88  | 6  | 6.2±0.9 | Gomankov & Meyen 1980, 1986   |
| <i>Tatarina olferievii</i>                        | Luptyug            | Russia       | Tatarian | 251±1 | 579  | 37  | 3  | 7.2±2.0 | Gomankov & Meyen 1986         |
| <i>"Tatarina conspicua"</i> <sub>8</sub>          | Luptyug            | Russia       | Tatarian | 251±1 | 744  | 46  | 4  | 5.3±2.4 | Gomankov & Meyen 1986         |
| <b>Good Ginkgo</b>                                |                    |              |          |       |      |     |    |         |                               |
| <i>Ginkgo matatiensis</i>                         | Little Switzerland | South Africa | Camian   | 229±3 | 2047 | 193 | 12 | 8.2±1.5 | Anderson & Anderson 1989      |
| <i>Ginkgo telemachus</i>                          | Little Switzerland | South Africa | Camian   | 229±3 | 2005 | 175 | 6  | 7.6±1.4 | Anderson & Anderson 1989      |
| <i>"Ginkgo" antarctica</i> <sub>10</sub>          | Little Switzerland | South Africa | Camian   | 229±3 | 2524 | 140 | 13 | 5.3±0.9 | Anderson & Anderson 1989      |

| Taxon   | Locality     | Country     | Age                    | Ma    | Ne   | Ns  | Nf | SI      | Reference                    |
|---|--------------|-------------|------------------------|-------|------|-----|----|---------|------------------------------|
| <i>Ginkgo</i> sp. indet.                                  | Neue Welt    | Switzerland | Camian                 | 228±2 | 510  | 43  | 1  | 7.7     | Kräusel 1923                 |
| " <i>Ginkgoites</i> "<br><i>lunzensis</i> <sub>11</sub>   | Lunz         | Austria     | Camian                 | 225±5 | 1202 | 106 | 5  | 6.7±1.4 | Kräusel 1943                 |
| <i>Ginkgo ferganensis</i>                                 | Yagnob       | Uzbekistan  | Rhaetian               | 205±5 | 959  | 75  | 2  | 7.6±0.6 | Khudaiberdyev et al. 1971    |
| " <i>Ginkgoites</i> "<br><i>obovatus</i> <sub>11</sub>    | Bjuv         | Sweden      | Rhaetian               | 203±5 | 532  | 52  | 1  | 8.9     | Florin 1937                  |
| " <i>Ginkgoies</i> "<br><i>troedssonii</i> <sub>11</sub>  | Billesholm   | Sweden      | Rhaetian               | 203±2 | 1051 | 66  | 5  | 6.0±0.6 | Lundblad 1959                |
| " <i>Ginkgoites</i> "<br><i>troedssonii</i> <sub>11</sub> | NW Scania    | Sweden      | Rhaetian               | 203±2 | >500 | ?   | 25 | 5.9±0.2 | Beerling et al. 1998         |
| " <i>Ginkgoites</i> "<br><i>marginata</i> <sub>11</sub>   | NW Scania    | Sweden      | Rhaetian               | 203±2 | >500 | ?   | 25 | 6.5±0.4 | Beerling et al. 1998         |
| " <i>Ginkgoites</i> "<br><i>obovatus</i> <sub>11</sub>    | Jameson Land | Greenland   | Rhaetian               | 202±2 | >500 | ?   | ?  | 4.7±0.3 | McElwain et al. 1999         |
| " <i>Ginkgoites</i> "<br><i>obovatus</i> <sub>11</sub>    | Jameson Land | Greenland   | Rhaetian               | 201±2 | >500 | ?   | 6  | 6.8±0.7 | McElwain et al. 1999         |
| " <i>Ginkgoites</i> "<br><i>acosmia</i> <sub>11</sub>     | Jameson Land | Greenland   | Rhaetian               | 200±2 | >500 | ?   | 18 | 8.5±0.6 | McElwain et al. 1999         |
| " <i>Ginkgoites</i> "<br><i>marginata</i> <sub>11</sub>   | NW Scania    | Sweden      | Hettangian             | 199±2 | >500 | ?   | 25 | 5.7±0.3 | Beerling et al. 1998         |
| <i>Ginkgo taeniata</i>                                    | Bayreuth     | Germany     | Hettangian             | 198±2 | 687  | 65  | 2  | 7.2±0.5 | Collinson et al. 1998        |
| <i>Ginkgo huttoni</i>                                     | Yorkshire    | England     | Aalenian               | 177±5 | >500 | ?   | 25 | 5.6±0.2 | Beerling et al. 1998         |
| <i>Ginkgo sibirica</i>                                    | Schurab      | Uzbekistan  | Bajocian-Bathonian     | 175±8 | 1056 | 50  | 2  | 4.5±1.7 | Khudaiberdyev et al. 1971    |
| <i>Ginkgo huttoni</i>                                     | Schurab      | Uzbekistan  | Bajocian-Bathonian     | 175±8 | 1256 | 67  | 3  | 5.1±0.7 | Khudaiberdyev et al. 1971    |
| <i>Ginkgo suluktensis</i>                                 | Sulyakta     | Uzbekistan  | Bathonian              | 165±8 | 645  | 44  | 4  | 7.1±0.7 | Khudaiberdyev et al. 1971    |
| <i>Ginkgo asiatica</i>                                    | Angren       | Uzbekistan  | Bathonian              | 165±5 | 509  | 33  | 3  | 6.2±0.7 | Nosova 1998                  |
| <i>Ginkgo huttoni</i>                                     | Helmsdale    | Scotland    | Kimmeridgian           | 153±5 | 1110 | 85  | 4  | 6.7±1.1 | Florin 1937, Tralau 1968     |
| <i>Ginkgo manchurica</i> <sub>12</sub>                    | Huoshiling   | China       | Kimmeridgian-Tithonian | 152±5 | 3138 | 251 | 5  | 7.4±0.6 | Oishi 1933; Zhao et al. 1993 |
| <i>Ginkgo manchurica</i> <sub>12</sub>                    | Xilutian     | China       | Tithonian              | 146±5 | 832  | 76  | 3  | 8.0±0.5 | Zhao et al. 1993             |

| Taxon   | Locality            | Country           | Age                     | Ma    | Ne   | Ns  | Nf | SI      | Reference                                |
|---|---------------------|-------------------|-------------------------|-------|------|-----|----|---------|--|
| <i>Ginkgo manchurica</i> <sub>12</sub>                  | Shahezi             | China             | Berriasian              | 142±5 | 2272 | 123 | 5  | 5.0±0.4 | Oishi 1933, Zhao et al. 1993             |
| <i>Ginkgo pluripartita</i>                              | Hannover            | Germany           | Berriasian              | 142±2 | 628  | 57  | 3  | 7.0±1.2 | Florin 1937, Tralau 1968                 |
| " <i>Ginkgoites</i> "<br><i>dissectus</i> <sub>11</sub> | Adnikan             | Primorie          | Berriasian              | 138±4 | 740  | 42  | 3  | 6.3±1.1 | Krassilov 1972                           |
| <i>Ginkgo coriacea</i>                                  | Huolinhe            | China             | Valanginian-Hauterivian | 132±5 | 1485 | 92  | 6  | 6.2±0.6 | Sun 1993                                 |
| <i>Ginkgo coriacea</i>                                  | Cape Stephen        | Franz Joseph Land | Barremian               | 122±5 | 1022 | 67  | 2  | 6.2±0.1 | Florin 1937, Tralau 1968                 |
| <i>Ginkgo polaris</i>                                   | Cape Flora          | Franz Joseph Land | Barremian               | 122±5 | 1131 | 87  | 5  | 6.7±0.8 | Florin 1937, Tralau 1968                 |
| " <i>Ginkgoites</i> "<br><i>tigrensis</i> <sub>11</sub> | Estancia Bajo Tigre | Argentina         | Aptian                  | 120±5 | 595  | 38  | 4  | 6.0±0.6 | Archangelsky 1965, Villar de Seoane 1997 |
| " <i>Ginkgoites</i> "<br><i>ticoensis</i> <sub>11</sub> | Ticó Amphitheatre   | Argentina         | Aptian                  | 120±5 | 688  | 46  | 3  | 6.0±0.7 | Archangelsky 1965                        |
| " <i>Ginkgoites</i> "<br><i>australis</i> <sub>11</sub> | Eagle's Nest        | Australia         | Aptian                  | 119±5 | 761  | 40  | 2  | 4.4±0.6 | Douglas 1969                             |
| <i>Ginkgo paradiantoides</i>                            | Zyrianka River      | Siberia           | Albian                  | 108±4 | 537  | 41  | 3  | 7.0±0.4 | Samylina 1967b                           |
| <i>Ginkgo delicata</i>                                  | Zyrianka River      | Siberia           | Albian                  | 108±4 | 896  | 86  | 3  | 8.2±1.2 | Samylina 1967b                           |
| <i>Ginkgo pilifera</i>                                  | Lindi River         | Siberia           | Cenomanian-Senonian     | 90±5  | 549  | 22  | 2  | 3.5±0.5 | Samylina 1967a                           |
| <i>Ginkgo aff. pilifera</i>                             | Sim River           | Siberia           | Turonian                | 89±2  | 592  | 27  | 1  | 4.4     | Samylina 1967a                           |
| <i>Ginkgo pilifera</i>                                  | Elistratova         | Siberia           | Turonian-Coniacian      | 88±5  | 527  | 37  | 2  | 6.5±0.1 | Samylina 1967a                           |
| <i>Ginkgo adiantoides</i>                               | North Dakota        | U.S.A.            | Maastrichtian           | 66±2  | 552  | 43  | 2  | 8.1±0.7 | Mösle et al. 1998                        |
| <i>Ginkgo tzagajanica</i>                               | Bureya River        | Primorie          | Maastrichtian           | 66±5  | 1081 | 87  | 3  | 6.9±0.6 | Samylina 1967a                           |
| <i>Ginkgo wyomingensis</i>                              | Wyoming             | U.S.A.            | Paleocene               | 64±2  | 517  | 23  | 2  | 4.1±0.2 | Manum 1966                               |
| <i>Ginkgo adiantoides</i>                               | Johnson Co.         | Wyoming           | Paleocene               | 63±2  | 723  | 50  | 2  | 6.7±0.4 | Collinson et al. 1998                    |

| Taxon  | Locality         | Country       | Age                  | Ma     | Ne   | Ns  | Nf | SI      | Reference  |
|--|------------------|---------------|----------------------|--------|------|-----|----|---------|--|
| <i>Ginkgo spitsbergensis</i>                                   | Mt Basilika      | Spitsbergen   | Paleocene            | 60±5   | 950  | 65  | 5  | 65±0.9  | Manum 1966   |
| <i>Ginkgo gardneri</i>   | Ardtun           | Isle of Mull  | Paleocene<br>-Eocene | 54±2   | 799  | 39  | 4  | 4.1±0.8 | Florin 1937, Tralau 1968,<br>Boulter & Kvaček 1989 |
| <i>Ginkgo tzagajanica</i>                                      | Noda             | Japan         | Eocene               | 50±5   | 792  | 50  | 6  | 6.0±1.2 | Horiuchi & Kimura 1986                             |
| <i>Ginkgo orientalis</i>                                       | Tavrishanka      | Primorie      | Eocene               | 36±3   | 1341 | 114 | 3  | 6.7±1.3 | Polyschuk 1975                                     |
| <i>Ginkgo orientalis</i>                                       | Krilion          | Sakhalin      | Eocene               | 35±5   | 1628 | 134 | 5  | 7.3±0.8 | Samylina 1967a                                     |
| " <i>Ginkgoites</i> "<br><i>samylinae</i> <sub>11</sub>        | Zagorsk          | Sakhalin      | Eocene               | 34±2   | 1639 | 148 | 6  | 8.1±1.1 | Medyulyanov 1969                                   |
| " <i>Ginkgoites</i> " cfr.<br><i>adiantoides</i> <sub>11</sub> | Kuzi             | Japan         | Oligocene            | 30±3   | 980  | 105 | 4  | 8.6±1.3 | Oishi 1938   |
| <i>Ginkgo occidentalis</i>                                     | Zakamatskie      | Russia        | Miocene              | 14±4   | 674  | 43  | 4  | 5.9±0.7 | Samylina 1967a                                     |
| <i>Ginkgo adiantoides</i>                                      | Klaj             | Poland        | Miocene              | ca.7.8 | 880  | 93  | 2  | 8.2±1.5 | Lancucka-Środoniova<br>1966                        |
| <i>Ginkgo adiantoides</i>                                      | Stare<br>Gliwice | Poland        | Miocene              | ca.6.3 | 782  | 91  | 2  | 9.6±0.8 | Szafer 1961  |
| <i>Ginkgo adiantoides</i>                                      | Klärbecken       | Germany       | Pliocene             | 4.0±2  | 937  | 98  | 4  | 8.1±1.9 | Florin 1937, Tralau 1968                           |
| <i>Ginkgo biloba</i> (292) <sub>13</sub>                       | East Lansing     | Michigan      | AD 1888              | -      | 6413 | 655 | 26 | 9.3±0.6 | here   |
| <i>Ginkgo biloba</i> (293) <sub>13</sub>                       | Cambridge        | Massachusetts | AD 1896              | -      | 6449 | 678 | 26 | 9.5±0.6 | here   |
| <i>Ginkgo biloba</i> (297) <sub>13</sub>                       | Corvallis        | Oregon        | AD 1915              | -      | 6369 | 681 | 26 | 9.7±0.6 | here   |
| <i>Ginkgo biloba</i> (307) <sub>13</sub>                       | Eugene           | Oregon        | AD 1937              | -      | 7031 | 714 | 26 | 9.2±0.4 | here   |
| <i>Ginkgo biloba</i> (307) <sub>13</sub>                       | Stockholm        | Sweden        | AD 1937              | -      | 766  | 83  | 3  | 9.9±0.3 | Florin 1937, Tralau 1968                           |
| <i>Ginkgo biloba</i> (350) <sub>13</sub>                       | Sheffield        | England       | AD 1998              | -      | >500 | ?   | 25 | 9.7±0.2 | Beerling et al. 1998                               |
| <i>Ginkgo biloba</i> (560) <sub>13</sub>                       | Sheffield        | England       | AD 1998              | -      | >500 | ?   | 25 | 8.0±0.2 | Beerling et al. 1998                               |
| <i>Ginkgo biloba</i> ♂ (372) <sub>13</sub>                     | Eugene           | Oregon        | AD 2000              | -      | 6757 | 631 | 26 | 8.6±0.5 | here   |
| <i>Ginkgo biloba</i> ♀ (372) <sub>13</sub>                     | Eugene           | Oregon        | AD 2000              | -      | 6484 | 607 | 26 | 8.6±0.5 | here   |

## PART 2

Poor *Rhachiphyllum*

|   |                 |         |                          |       |     |    |   |         |                                   |
|---|-----------------|---------|--------------------------|-------|-----|----|---|---------|-----------------------------------|
| " <i>Autunia</i> " <i>conferta</i> <sub>1</sub> | Saxony          | Germany | Asselian                 | 288±5 | 339 | 30 | 1 | 8.1     | Kerp 1990                         |
| " <i>Autunia</i> " <i>conferta</i> <sub>1</sub> | Lebach          | Germany | Sakmarian                | 285±3 | 79  | 6  | 1 | 7.1     | Kerp 1988                         |
| " <i>Autunia</i> " <i>conferta</i> <sub>1</sub> | Rümmel-<br>bach | Germany | Sakmarian<br>-Artinskian | 283±3 | 178 | 13 | 3 | 7.2±1.5 | Kerp 1988, Kerp & Barthel<br>1993 |

| Taxon  | Locality     | Country    | Age          | Ma    | Ne  | Ns | Nf | SI      | Reference                                      |
|--|--------------|------------|--------------|-------|-----|----|----|---------|--|
| <b>Poor <i>Lepidopteris</i></b>                |              |            |              |       |     |    |    |         |  |
| <i>"Lepidopteris" martinsi</i> <sub>2</sub>    | Middridge    | England    | Tatarian     | 258±2 | 379 | 18 | 4  | 4.8±1.4 | Stoneley 1958, Townrow 1960, Poort & Kerp 1990 |
| <i>"Callipteris" martinsi</i> <sub>2</sub>     | Kimberly     | England    | Tatarian     | 258±2 | 178 | 8  | 2  | 4.8±1.1 | Stoneley 1958                                  |
| <i>"Callipteris" martinsi</i> <sub>2</sub>     | Cinderhill   | England    | Tatarian     | 258±2 | 120 | 7  | 1  | 5.5     | Stoneley 1958                                  |
| <i>Peltaspermum martinsi</i> <sub>2</sub>      | Geismar      | Germany    | Tatarian     | 256±2 | 73  | 4  | 2  | 5.5±0.4 | Poort & Kerp 1990                              |
| <i>"Callipteris" martinsi</i> <sub>2</sub>     | Frankenberg  | Germany    | Tatarian     | 253±2 | 342 | 26 | 1  | 7.1     | Barthel & Haubold 1980                         |
| <i>Lepidopteris</i> sp. indet.                 | Baizovka     | Russia     | Tatarian     | 252±1 | 347 | 25 | 2  | 6.3±0.9 | Gomankov & Meyen 1986                          |
| <i>Lepidopteris</i> sp. indet.                 | Ledho Nala   | India      | Tatarian     | 251±2 | 375 | 26 | 3  | 6.6±1.2 | Bose et al. 1975                               |
| <i>"Rewaphyllum nidpurensis"</i> <sub>7</sub>  | Nidpur       | India      | Tatarian     | 250±2 | 183 | 11 | 2  | 5.0±0.8 | Srivastava 1984                                |
| <i>Lepidopteris</i> sp. indet.                 | Kumarpur     | India      | Griesbachian | 247±3 | 109 | 6  | 1  | 5.2     | Banerji & Bose 1977                            |
| <i>Lepidopteris</i> sp. indet.                 | Beaver Lake  | Antarctica | Smithian     | 245±2 | 88  | 5  | 1  | 5.4     | McLoughlin et al. 1997                         |
| <i>Lepidopteris madagascariensis</i>           | Narrabeen    | Australia  | Spathian     | 243±3 | 370 | 15 | 5  | 4.2±1.2 | Townrow 1966, herein                           |
| <i>Lepidopteris madagascariensis</i>           | Harai        | India      | Anisian      | 239±6 | 260 | 17 | 2  | 5.5±1.3 | Pal 1984                                       |
| <i>Lepidopteris microcellularis</i>            | Lyasov farm  | Russia     | Ladinian     | 231±5 | 229 | 21 | 3  | 8.4±0.3 | Dobruskina 1980                                |
| <i>"Pachypteris crassa"</i> <sub>6</sub>       | Langloh      | Australia  | Norian       | 220±5 | 367 | 22 | 2  | 4.9±1.6 | Townrow 1965                                   |
| <i>"Lepidopteris ottonis"</i> <sub>9</sub>     | Gostyń       | Poland     | Norian       | 217±5 | 54  | 4  | 2  | 6.9±0.2 | Marcinkiewicz & Orłowska-Zwolińska 1994        |
| <i>Lepidopteris</i> sp. indet.                 | Heilgersdorf | Germany    | Rhaetian     | 204±4 | 410 | 30 | 1  | 6.8     | Kelber & van Konijnenberg-van Cittert 1997     |
| cf. <i>"Lepidopteris" ottonis</i> <sub>9</sub> | Höllviken    | Sweden     | Rhaetian     | 202±2 | 373 | 30 | 3  | 6.3±1.9 | Lundblad 1949                                  |
| <i>"Lepidopteris" ottonis</i> <sub>9</sub>     | Bosarp       | Sweden     | Rhaetian     | 202±2 | 20  | 19 | 1  | 8.7     | Lundblad 1949                                  |
| <i>"Lepidopteris" ottonis</i> <sub>9</sub>     | Rawicz       | Poland     | Rhaetian     | 202±2 | 361 | 33 | 2  | 8.1±0.4 | Piwocki 1970                                   |
| <b>Poor <i>Tatarina</i></b>                    |              |            |              |       |     |    |    |         |  |
| <i>Tatarina offerievii</i>                     | Baizovka     | Russia     | Tatarian     | 252±1 | 400 | 67 | 2  | 7.9±2.7 | Gomankov & Meyen 1986                          |
| <i>Tatarina conspicua</i> <sub>8</sub>         | Baizovka     | Russia     | Tatarian     | 252±1 | 466 | 27 | 2  | 5.5±1.1 | Gomankov & Meyen 1986                          |
| <i>Tatarina conspicua</i> <sub>8</sub>         | Titovo       | Russia     | Tatarian     | 251±1 | 270 | 16 | 2  | 5.6±0.1 | Gomankov & Meyen 1986                          |

| Taxon                                       | Locality      | Country    | Age                   | Ma    | Ne  | Ns | Nf | SI      | Reference                  |
|---|---------------|------------|-----------------------|-------|-----|----|----|---------|----------------------------|
| <b>Poor <i>Ginkgo</i></b>                   |               |            |                       |       |     |    |    |         |                            |
| <i>"Ginkgoites" obovatus</i> <sub>11</sub>  | Astarte River | Greenland  | Rhaetian              | 202±2 | 499 | 46 | 1  | 8.4     | Harris 1935                |
| <i>"Ginkgoites" acosmia</i> <sub>11</sub>   | Astarte River | Greenland  | Rhaetian              | 202±2 | 260 | 15 | 1  | 5.5     | Harris 1935                |
| <i>"Ginkgoites" fimbriata</i> <sub>11</sub> | Astarte River | Greenland  | Rhaetian              | 202±2 | 331 | 29 | 1  | 8.1     | Harris 1935                |
| <i>"Ginkgoites" marginata</i> <sub>11</sub> | Stabbarp      | Sweden     | Rhaetian              | 202±2 | 165 | 13 | 1  | 7.3     | Lundblad 1959              |
| <i>"Ginkgoites" taeniata</i> <sub>11</sub>  | Cape Stewart  | Greenland  | Liassic               | 198±2 | 290 | 11 | 1  | 3.7     | Harris 1935                |
| <i>"Ginkgoites" hermelini</i> <sub>11</sub> | Vardekløft    | Greenland  | Liassic               | 198±2 | 273 | 12 | 1  | 4.2     | Harris 1935                |
| <i>Ginkgo marginata</i>                     | Anina         | Romania    | Hettangian-Sinemurian | 194±4 | 69  | 4  | 1  | 5.6     | Czier 1998                 |
| <i>Ginkgo skottsbergi</i>                   | Anina         | Romania    | Hettangian-Sinemurian | 194±4 | 272 | 20 | 5  | 6.6±1.6 | Czier 1998                 |
| <i>"Ginkgoites" marginata</i> <sub>11</sub> | Hälsingborg   | Sweden     | Pliensb.-Toarcian     | 190±4 | 207 | 15 | 3  | 6.1±1.3 | Lundblad 1959              |
| <i>Ginkgo huttoni</i>                       | Pennyholm     | England    | Aalenian              | 177±5 | 172 | 5  | 1  | 2.8     | Harris et al. 1974         |
| <i>Ginkgo whitbiensis</i>                   | Whitby        | England    | Aalenian              | 177±5 | 139 | 7  | 1  | 4.8     | Harris et al. 1974         |
| <i>Ginkgo huttoni</i>                       | Derwent River | England    | Aalenian              | 176±5 | 40  | 3  | 1  | 6.9     | McElwain & Chaloner 1996   |
| <i>Ginkgo cordilobata</i>                   | Ishpushta     | Afganistan | Bajocian-Bathonian    | 175±5 | 115 | 4  | 1  | 3.4     | Schweitzer & Kirchner 1995 |
| <i>Ginkgo furcinervis</i>                   | Schurab       | Uzbekistan | Bajocian-Bathonian    | 175±8 | 66  | 3  | 1  | 4.5     | Khudaiberdyev et al. 1971  |
| <i>Ginkgo digitata</i>                      | Cayton Bay    | England    | Bajocian              | 174±5 | 196 | 13 | 2  | 6.2±0.3 | Harris et al. 1974         |
| <i>Ginkgo longifolius</i>                   | Cayton Bay    | England    | Bajocian              | 174±5 | 99  | 4  | 1  | 4.0     | Harris et al. 1974         |
| <i>Ginkgo kokinensis</i>                    | Sulyakta      | Uzbekistan | Bathonian             | 165±8 | 378 | 28 | 2  | 6.7±0.9 | Khudaiberdyev et al. 197   |
| <i>Ginkgo gromykoii</i>                     | Angren        | Uzbekistan | Bathonian             | 165±5 | 439 | 25 | 1  | 6.6±1.6 | Nosova 1998                |
| <i>Ginkgo huttoni</i>                       | White Nab     | England    | Bathonian             | 165±5 | 194 | 13 | 1  | 6.3     | Harris et al. 1974         |
| <i>Ginkgo huttoni</i>                       | Scalby Ness   | England    | Bathonian             | 165±5 | 92  | 6  | 1  | 6.1     | Harris et al. 1974         |
| <i>Ginkgo digitata</i>                      | Brora         | Scotland   | Bathonian             | 164±5 | 33  | 3  | 1  | 9.1     | Stopes 1907                |

| Taxon  | Locality           | Country   | Age                | Ma    | Ne  | Ns | Nf | SI      | Reference                      |
|--|--------------------|-----------|--------------------|-------|-----|----|----|---------|--------------------------------|
| <i>"Ginkgoites" regnelli</i> <sub>11</sub>       | Eriksdal           | Sweden    | Bathonian          | 163±5 | 285 | 20 | 2  | 7.3±0.8 | Tralau 1966                    |
| <i>Ginkgo huttoni</i>                            | Aldan River        | Siberia   | Tithonian          | 148±5 | 177 | 13 | 1  | 6.8     | Samylina 1963                  |
| <i>"Ginkgoites" sphenophyllus</i> <sub>11</sub>  | Urgal              | Primorie  | Berriasian         | 140±4 | 244 | 13 | 5  | 5.0±0.3 | Krassilov 1972                 |
| <i>"Ginkgoites" longipilosus</i> <sub>11</sub>   | Adnikan            | Primorie  | Berriasian         | 138±4 | 320 | 26 | 3  | 6.7±1.4 | Krassilov 1972                 |
| <i>"Ginkgoites" jampolensis</i> <sub>11</sub>    | Urgal              | Primorie  | Valanginian        | 134±2 | 326 | 24 | 2  | 6.6±1.0 | Krassilov 1972                 |
| <i>"Ginkgoites" australis</i> <sub>11</sub>      | Woolamai           | Australia | Aptian             | 120±5 | 59  | 4  | 1  | 6.3     | Douglas 1969                   |
| <i>"Ginkgoites" australis</i> <sub>11</sub>      | Point Lydia        | Australia | Aptian             | 117±5 | 417 | 38 | 2  | 7.3±1.3 | Douglas 1969                   |
| <i>"Ginkgoites" australis</i> <sub>11</sub>      | Trafalgar          | Australia | Aptian             | 115±5 | 45  | 3  | 1  | 6.3     | Douglas 1969                   |
| <i>Ginkgo altanensis</i>                         | Altan              | Siberia   | Albian             | 110±5 | 342 | 26 | 3  | 7.3±0.8 | Srebrodolskaya & Samylina 1984 |
| <i>Ginkgo singularis</i>                         | Zyrianka River     | Siberia   | Albian             | 108±4 | 304 | 25 | 2  | 6.9±0.9 | Samylina 1967b                 |
| <i>Ginkgo polaris</i>                            | Zyrianka River     | Siberia   | Albian             | 108±4 | 295 | 20 | 2  | 6.0±0.5 | Samylina 1967b                 |
| <i>Ginkgo paradiantoides</i>                     | Lepiska River      | Siberia   | Albian             | 105±5 | 45  | 3  | 1  | 6.3     | Samylina 1967a                 |
| <i>Ginkgo ex gr. sibirica</i>                    | Gryaznii           | Siberia   | Cenomanian         | 96±4  | 117 | 6  | 2  | 5.0±0.7 | Samylina 1988                  |
| <i>"Ginkgoites" antarctica</i> <sub>11</sub>     | Atanekerdluk       | Greenland | Cenomanian         | 95±3  | 432 | 21 | 4  | 5.4±1.3 | Florin 1937                    |
| <i>Ginkgo tatjanae</i>                           | Tal-Juryakh        | Siberia   | Cenomanian         | 94±4  | 119 | 5  | 1  | 4.0     | Samylina 1988                  |
| <i>Ginkgo diminuta</i>                           | Tanitoge           | Japan     | Turonian           | 90±2  | 50  | 2  | 1  | 3.8     | Ohana & Kimura 1986            |
| <i>Ginkgo sp. indet.</i>                         | Kap Konglomeratovi | Siberia   | Turonian-Coniacian | 88±5  | 124 | 7  | 1  | 5.3     | Samylina 1967a                 |
| <i>"Ginkgoites" transsenonicus</i> <sub>11</sub> | Mgachi             | Sakhalin  | Coniacian          | 87±2  | 143 | 11 | 2  | 6.5±1.5 | Krassilov 1979                 |
| <i>Ginkgo spitsbergensis</i>                     | Darmakana          | Primorie  | Paleocene          | 62±2  | 212 | 18 | 2  | 7.1±1.2 | Krassilov 1976                 |
| <i>Ginkgo kamschatica</i>                        | Anadyr River       | Kamchatka | Paleocene          | 55±2  | 120 | 5  | 1  | 4.0     | Budantsev 1983                 |

| Taxon  | Locality               | Country    | Age      | Ma     | Ne  | Ns | Nf | SI      | Reference                          |
|--|------------------------|------------|----------|--------|-----|----|----|---------|------------------------------------|
| <i>Ginkgo tzagajanica</i>                    | Hanzaki                | Japan      | Eocene   | 50±5   | 83  | 5  | 1  | 5.7     | Uemura 1997                        |
| <i>Ginkgo tajanae</i>                        | Podkagem-<br>aya River | Siberia    | Eocene   | 35±2   | 379 | 20 | 3  | 5.6±1.6 | Samylina & Chelebayeva<br>1986     |
| " <i>Ginkgoites</i> " <sub>11</sub> sp. ind. | Zagorsk                | Sakhalin   | Eocene   | 34±2   | 36  | 3  | 2  | 7.7     | Medyulyanov 1969                   |
| <i>Ginkgo adiantoides</i>                    | Pit River              | California | Miocene  | 13±3   | 68  | 5  | 2  | 7.2±0.9 | La Motte 1936                      |
| <i>Ginkgo adiantoides</i>                    | Pierzchow              | Poland     | Miocene  | ca.7.2 | 389 | 42 | 1  | 9.7     | Lancucka-Środoniowa<br>1966        |
| <i>Ginkgo biloba</i>                         | Gotse<br>Delchev       | Bulgaria   | Pliocene | 3.0±2  | 49  | 2  | 1  | 3.8     | Jordanov & Kitanov 1963            |
| <i>Ginkgo biloba</i>                         | Hoshiwara              | Japan      | Pliocene | 3.0±2  | 54  | 5  | 1  | 9.3     | Iwao 1978                          |
| <i>Ginkgo biloba</i>                         | Daiwa                  | Japan      | Pliocene | ca.2.6 | 67  | 5  | 1  | 6.8     | Uemura 1997                        |
| <i>Ginkgo biloba</i>                         | London                 | England    | AD 1907  | -      | 43  | 4  | 1  | 9.3     | Stopes 1907                        |
| <i>Ginkgo biloba</i>                         | Berkeley               | U.S.A.     | AD 1936  | -      | 68  | 5  | 2  | 7.2±0.9 | La Motte 1936                      |
| <i>Ginkgo biloba</i>                         | Sofia                  | Bulgaria   | AD 1963  | -      | 46  | 3  | 1  | 6.1     | Jordanov & Kitanov 1963            |
| <i>Ginkgo biloba</i>                         | Vladivostok            | Primorie   | AD 1969  | -      | 468 | 52 | 3  | 10.1±.3 | Medyulyanov 1969                   |
| <i>Ginkgo biloba</i>                         | ?                      | Japan      | AD 1986  | -      | 221 | 25 | 1  | 10.1    | Horiuchi & Kimura 1986             |
| <i>Ginkgo biloba</i>                         | Köln                   | Germany    | AD 1990  | -      | 154 | 16 | 1  | 9.4     | Gulz et al. 1992                   |
| <i>Ginkgo biloba</i>                         | Kwanju                 | Korea      | AD 1990  | -      | 252 | 21 | 4  | 7.5±0.7 | Kim & Lee 1990, Kim et<br>al. 1997 |
| <i>Ginkgo biloba</i>                         | Buenos<br>Aires        | Argentina  | AD 1997  | -      | 490 | 39 | 2  | 7.2±0.4 | Villar de Seoane 1997              |

#### TAXONOMIC AND OTHER FOOTNOTES

No taxonomic revisions were attempted. All specimens are referred to the specific name used in the original publication of epidermal cell structure. Parts of names in doubt or wrongly assigned are indicated by quotation marks and explained in the following footnotes.

1. *Autunia* is an ovulate reproductive organ, used as a whole plant generic name for the fossil plant with leaves formerly referred to "*Callipteris*" but now better assigned to *Rhachiphyllum* (Kerp 1988; Poort & Kerp 1990).
2. Foliage form-species "*Callipteris*" *martinsi* and "*Lepidopteris*" *martinsi* have been transferred to *Peltaspermum martinsi* by Poort & Kerp (1990).
3. "*Dicroidium*" *callipteroides* is probably a species of *Lepidopteris* (Retallack 2000).
4. Foliage form-species *Lepidopteris stormbergensis* has been transferred to the whole plant species *Meyenopteris natalensis* by Poort & Kerp (1990).

5. *Lepidopteris africana* may be better transferred to *Scytophyllum* (Dobruskina 1969)
6. "*Pachypteris crassa*" of Townrow (1965) was transferred to *Lepidopteris langlohsensis* by Anderson & Anderson (1989).
7. "*Rewaphyllum nidpurensis*" was transferred to *Lepidopteris* by Pal (1985), but *Lepidopteris indica* from the same locality may be a senior synonym (Srivastava 1974).
8. Foliage form species *Tatarina conspicua* has been transferred to the whole-plant species *Peltaspermopsis buevichae* (Poort & Kerp 1990).
9. Foliage form-species *Lepidopteris ottonis* has been transferred to the whole-plant species *Peltaspermum ottonis* by Poort & Kerp (1990).
10. "*Ginkgo*" *antarctica* from Little Switzerland in South Africa lacks papillate subsidiary cells (Anderson & Anderson 1989), unlike all other species of *Ginkgo*. It may belong to a different genus and was not included in the time series.
11. The definition of *Ginkgoites* has long been unsatisfactory, and this genus is now regarded as a junior synonym of *Ginkgo* (Czier 1998).
12. Several different species of Oishi (1933) have been included within *Ginkgo manchurica* by Zhao *et al.* (1993).
13. These figures are ppmV CO<sub>2</sub> in the atmosphere, either experimentally measured (**boldface**) or estimated from secular trends and ice core records (normal font).

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