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Amber and the Cretaceous Resinous Interval

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ABSTRACT

Amber is fossilized resin that preserves biological remains in exceptional detail, study of which has revolutionized understanding of past terrestrial organisms and habitats from the Early Cretaceous to the present day. Cretaceous amber outcrops are more abundant in the Northern Hemisphere and during an interval of about 54 million years, from the Barremian to the Campanian. The extensive resin production that generated this remarkable amber record may be attributed to the biology of coniferous resin producers, the growth of resiniferous forests in proximity to transitional sedimentary environments, and the dynamics of climate during the Cretaceous. Here we discuss the set of interrelated abiotic and biotic factors potentially involved in resin production during that time. We name this period of mass resin production by conifers during the late Mesozoic, fundamental as an archive of terrestrial life, the 'Cretaceous Resinous Interval' (CREI).

1. Introduction

Resins are secondary metabolites synthesized by specialized cells of "gymnosperm" and angiosperm plants, whose composition consists of amorphous mixtures of carboxylic acids, essential oils and isoprene-based hydrocarbons (Langenheim, 2003). Resin production is conditioned by temperature, solar radiation, evapotranspiration, and soil water deficit (Allen et al., 2010; Rodríguez-García et al., 2015). The primary functions of resins relate to defense against herbivores and pathogens, and as a healing mechanism, sealing wounds and vulnerable parts after damage caused by physical or biological agents (Langenheim, 2003; Seyfullah et al., 2018).

Resins can remain sticky from just hours to several months after being secreted, which can ensnare organisms or parts of them —known as bioinclusions— found mostly in the same ecosystem as the resin-producing plant (Solórzano Kraemer et al., 2018). The crosslinking of resin takes place over millions of years, resulting in gradual hardening, decrease in thermal denaturation, and loss of free methyl groups, all of which lead to a relatively inert, hardened form called amber (Langenheim, 1990; Anderson et al., 1992; McCoy et al., 2017; Solórzano-Kraemer et al., 2020). Only a few types of resins can fossilize based on their chemical composition (Anderson and Crelling, 1995; Langenheim, 2003).

Most amber deposits have yielded few or no bioinclusions. The reasons for this scarcity of bioinclusions are variable, but usually relate to the paucity of resin production during some periods of time (this paper), where the resin was produced (under aerial or underground conditions; Álvarez-Parra et al., 2021), and/or how long the resin retained its stickiness (Solórzano Kraemer et al., 2018). Amber-bearing outcrops that preserve bioinclusions are a type of Konservat-Lagerstätte. Indeed, the preservation of organisms in amber is exceptional and differs from other organic or inorganic mechanisms that retain organismic detail for millions of years (Martínez-Delclòs et al., 2004; Ross, 2009; Grimaldi and Ross, 2017). Despite taphonomic biases inherent in resin entrapment (Solórzano Kraemer et al., 2018), amber can provide exceptional external and internal anatomical detail of the bioinclusions and evidence of past animal behaviors (Labandeira, 2014a; Grimaldi, 2019). Amber deposits are typically parautochthonous-allochthonous, in which resin was dislodged by gravity, transported and concentrated by water, and accumulated in a primary or secondary location (Martínez-Delclòs et al., 2004). However, a few autochthonous-parautochthonous deposits are known, in which resin experienced minimal to virtually no transport (Schmidt et al., 2012; Seyfullah et al., 2018; Álvarez-Parra et al., 2021).

Resin crosslinking, which begins once the resin is exuded by the plant, continues after burial in sealed, anoxic sediments (e.g., within or under layers of clay) that have little interaction with meteoric water (Martínez-Delclòs et al., 2004). Resin has almost the same density as freshwater but is buoyant in sea water or in freshwater with sediments in suspension and is therefore easily transported by flotation and concentrated by currents. For these reasons, transitional settings with large accumulations of continental organic matter, such as deltas, estuaries, swamps or oxbow lakes, are the most favorable sedimentary environments for resin fossilization (Grimaldi et al., 2000b; Martínez-Delclòs et al., 2004; Iturralde-Vinent and MacPhee, 2019). Resiniferous trees are often located on emergent topography within these transitional environments (Álvarez-Parra et al., 2021) or close to areas where resin primarily accumulated by low-energy transport, indicated by the preservation of fragile resin structures (Grimaldi et al., 2000b; Perrichot, 2005; Rust et al., 2010; Veltz et al., 2013). The association of amber-bearing deposits with coal (lignite) or other rocks rich in organic matter suggests episodes of inland environments flooded by marine transgression (Najarro et al., 2009; Rodríguez-López et al., 2020).

Although resin is exuded by different tissues and organs of plants, amber deposits —at least those from the Cretaceous and whose taphonomy has been addressed— were formed primarily by resin produced by root tissues that generally lack bioinclusions (root resin) and, more minorly, by the trunk, branches, or above-soil plant parts (aerial resin) (Langenheim, 1995; Álvarez-Parra et al., 2021), the latter of which has the potential to contain abundant bioinclusions. Although the oldest fossil resin dates from the late Carboniferous (Bray and Anderson, 2009), oldest amber with bioinclusions dates from the Late Triassic, which preserves a few minute arthropods (Schmidt et al., 2012; Sidorchuk et al., 2015). Jurassic amber is scarce and may be associated with the tropical-equatorial zone, since it has been found primarily in Thailand, Italy, and Lebanon; no macroscopic bioinclusions have been hitherto reported from this amber (Nohra et al., 2013; Neri et al., 2016). The oldest amber deposits rich in bioinclusions are Barremian in age (Early Cretaceous) (Maksoud et al., 2017).

The Cretaceous (~145.0–66.0 Ma) represents a time of rapid evolutionary turnover and diversification of organisms. From a macroecological perspective, it was a key period in Earth history in which the Angiosperm Terrestrial Revolution (ca. 100 to 50 Ma), inclusive of the formerly defined Cretaceous Terrestrial Revolution (Lloyd et al., 2008; Benton et al., 2022), occurred. During this time, the Mesophytic paleobiome dominated by "gymnosperms" was replaced by a Cenophytic paleobiome dominated by angiosperms (Labandeira, 2014b; McElwain, 2018; Birks, 2020; Condamine et al., 2020). This turnover altered the base of trophic networks within continental ecosystems (Labandeira, 2014b), substantially modifying communities of herbivores (Labandeira, 2007; Kergoat et al., 2014) and, therefore, affecting the composition and evolution of continental biotas (Meredith et al., 2011; McKenna et al., 2015; Peris et al., 2017; Benson et al., 2021; Peris and Condamine, 2023).

The climate of the Cretaceous was warmer and more humid than that of today, probably due to very active, sustained volcanism associated with unusually extensive seafloor spreading that elevated atmospheric CO_2 and O_2 values (Royer et al., 2004; Poulsen and Zhou, 2013). During most of the Cretaceous, polar regions were virtually devoid of ice (Scotese, 2021) and continental land masses were largely occupied by forests dominated by conifers (Hay and Floegel, 2012; Peralta-Medina and Falcon-Lang, 2012), thereby significantly reducing albedo. The

decrease in latitudinal desert belts during the Early Cretaceous and long-lasting humid conditions during the Late Cretaceous were driven by the breakup of Pangea (Chaboureau et al., 2014; Landwehrs et al., 2021).

Cretaceous amber-bearing deposits, at least those currently documented, have a limited temporal and geographical distribution (Martínez-Delclòs et al., 2004; Labandeira, 2014a). They are known from the Valanginian to the Maastrichtian, but they are particularly abundant and significant from the Barremian to the Campanian (these ages ranging from 125.77 to ~72.1 Ma at present), and, although numerous and widely distributed, occur predominately in the Northern Hemisphere, which may reflect present-day sampling biases (Fig. 1A). Several Cretaceous amber-bearing deposits yield abundant amber and bioinclusions (Martínez-Delclòs et al., 2004; Penney, 2010; Seyfullah et al., 2018). The most studied fossiliferous amber-bearing outcrops from the Cretaceous are found in Lebanon (Barremian), Congo (Aptian), Spain (Albian), France (Cenomanian), Myanmar (Cenomanian), New Jersey in the USA (Turonian), Taimyr in Russia (Santonian) and western Canada (Campanian). In addition to these localities, amber (with or without bioinclusions) has been reported from Cretaceous deposits in many other regions worldwide (Fig. 2; Supplementary data A).

Molecularly analyzed amber, Pleistocene and Holocene copals, and Defaunation resin (produced after the beginning of the Industrial Revolution, see Solórzano-Kraemer et al., 2020) are valuable tools for interpreting the botanical origin of amber (McCoy et al., 2017, 2021). However, the identity of Cretaceous resin-producing plants remains unknown in most cases. The taxonomic affinities of Cretaceous trees that produced abundant resin remain elusive for a variety of reasons, which include extensive chemical variation observed in the composition of Cretaceous amber samples (Menor-Salván et al., 2016; McCoy et al., 2021), molecular convergence (Bray and Anderson, 2009), and the usually scarce record of plant remains in amber as bioinclusions (Kvaček et al., 2018; Moreau et al., 2020). Nevertheless, geochemical studies have ruled out angiosperms as resin-producing plants during the Cretaceous (Anderson et al., 1992; Lambert et al., 1996; Menor-Salván et al., 2016), with a few minor exceptions (Grimaldi et al., 2000a). Most likely, angiosperms did not acquire the ability to produce resin in sufficient quantities to form amber-bearing deposits until the Early Eocene (Jossang et al., 2008). As for "gymnosperms", the coniferous tree families of Araucariaceae, Cheirolepidiaceae†, Cupressaceae s.l., Podocarpaceae, and Pinaceae were widely distributed during the Cretaceous (Peralta-Medina and Falcon-Lang, 2012) (Fig. 2) and have been identified as likely resin sources of Cretaceous amber deposits (Azar et al., 2010; Peñalver and Delclòs, 2010; Perrichot et al., 2010; Nohra et al., 2014; Menor-Salván et al., 2016; McCoy et al., 2021) (Supplementary data B). The Erdtmanithecales†, a group of non-coniferous "gymnosperms" related to the Gnetales or the Bennettitales†, and namely known for their pollen, have been suggested as possible producers of resin that generated amber deposits in the Aptian of Brazil (Seyfullah et al., 2020).

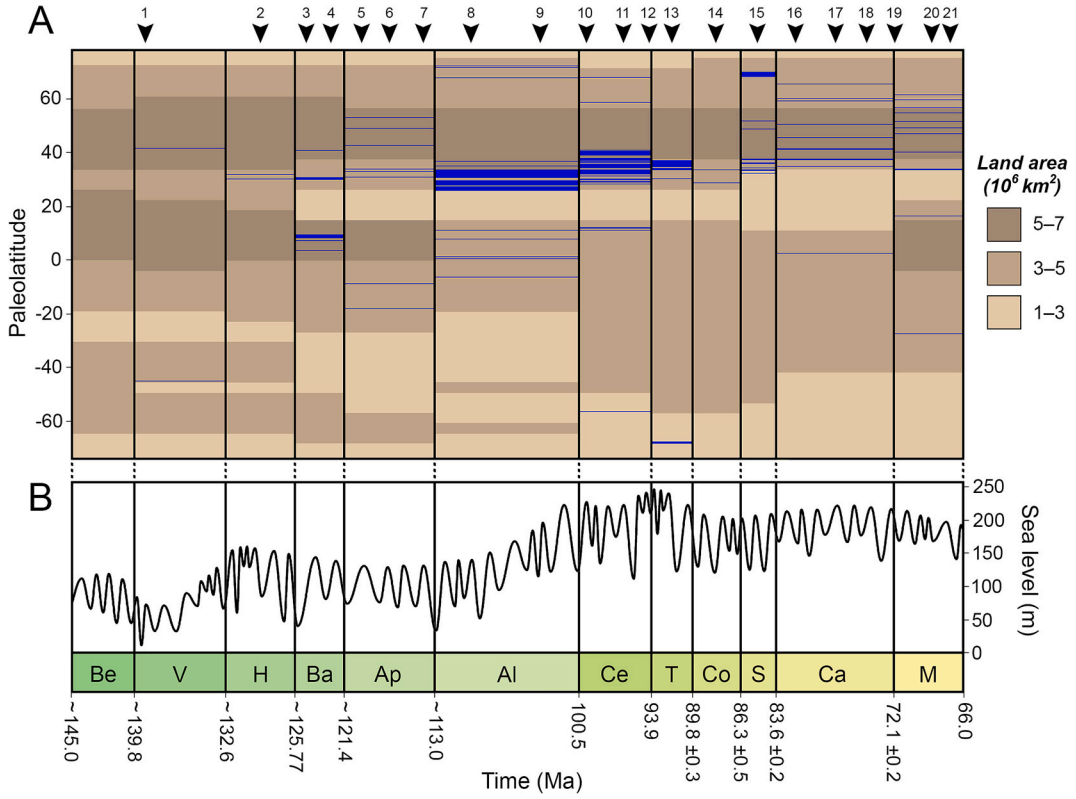

Fig. 1. Paleolatitudinal distribution of 239 Cretaceous amber-bearing deposits, grouped by geological age (A) and sea level changes (B) throughout the Cretaceous. Amber-bearing deposit data are provided in Supplementary data A. Amber deposits represented by thin blue stripes of the same thickness; deposits within the same age box and close in paleolatitude appear as stripes of greater thickness due to superposition. Proportion of area occupied by land indicated in shades of brown (modified from Landwehrs et al., 2021: Fig. 3). Representative amber deposits: 1- Hastings (UK); 2- Golling (Austria); 3- Isle of Wight (UK); 4- Twenty-nine localities in Lebanon, Zarzar Lake (Syria); 5- Chōshi (Japan); 6- Doumanga (Congo); 7- Araripe (Brazil); 8- Ariño (Spain), Hkamti (Myanmar), Estoril (Portugal), Archidona (Ecuador); 9- Eleven localities in Spain, Salignac-Eyvigues (France), Wadi Zerqa (Jordan); 10- Six localities in France, Kachin (Myanmar); 11- Nizhnyaya Agapa (Russia), Agdzhakend (Azerbaijan); 12- Chatham Island (New Zealand); 13- Sayreville in New Jersey (USA), La Garnache (France); 14- Shavarshavan (Armenia); 15- Five localities in Taymyr (Russia), Kuji (Japan), Piolenc (France); 16-Ajka (Hungary), Eutaw Fm. in Alabama (USA), Tuna-1 (Australia); 17- Cedar Lake, Grassy Lake (and other localities, Canada); 18- Tilin amber (Myanmar); 19- Arctic Coastal Plain in Alaska (USA); 20- Hanna Basin in Wyoming (USA); 21- Hell Creek Fm. in South Dakota (USA). Eustatic sea-level changes modified from Ray et al. (2019) and after Haq (2014). Geological Timetable based in the International Commission on Stratigraphy (v 2023/06), https://stratigraphy.org/chart. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

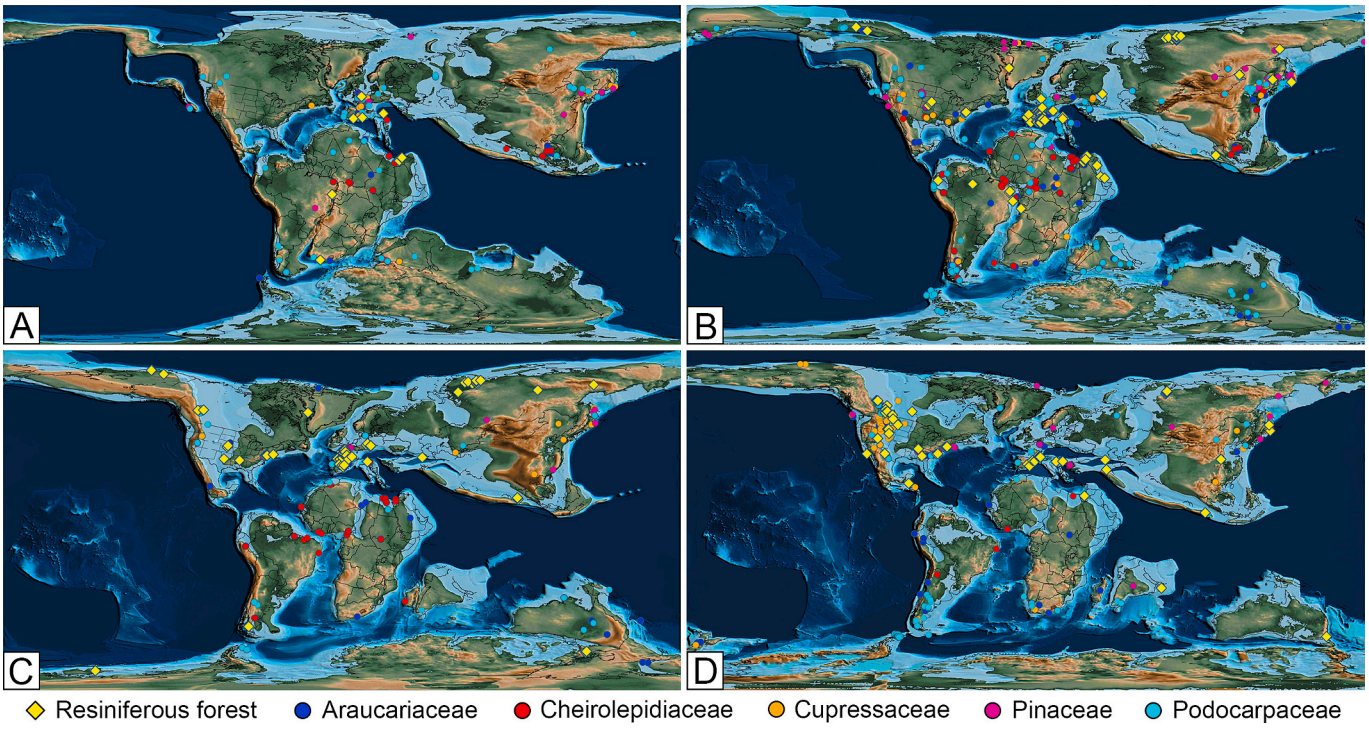

Fig. 2. Distribution of resiniferous forests based on known amber-bearing localities and known occurrences of potential coniferous resin-producing tree families throughout the Cretaceous: Araucariaceae, Cheirolepidiaceae†, Cupressaceae, Pinaceae, and Podocarpaceae. The dataset/sources related to the paleobotanical groups used to construct this figure is formed by Supplementary data B (data from Peralta-Medina and Falcon-Lang (2012) and our own bibliographic search) and data downloaded from Paleobiology Database (https://paleobiodb.org). A) Berriasian–Hauterivian; B) Barremian–Albian; C) Cenomanian–Turonian; D) Coniacian–Maastrichtian. Paleogeographic maps obtained from Scotese et al. (2021). The present-day spatial coordinates and ages from a total of 299 Cretaceous amber outcrops and 1252 paleobotanical records were obtained from a bibliographic survey (Supplementary data A and B, respectively). Present coordinates of amber outcrops and paleobotanic occurrences were rotated to paleocoordinates using R v.4.0.4 and GPlates v.2.2.0. Map visualization and imaging was made using QGIS v.3.22.3 software. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Actuotaphonomic studies (Peñalver et al., 2018), plant bioinclusions (Kvaček et al., 2018; Moreau et al., 2020) (Fig. 3A–B), and examination of wood logs and cone scales with embedded amber in amber-rich levels (Perrichot, 2005; Mays et al., 2019) provide important evidence for determining specific conifer taxa involved in resin mass production during the Cretaceous. Although modern Pinaceae resin is poorly crosslinked due to its molecular composition, a few moderate-size amber deposits resulting from this resin have been found (Bray and Anderson, 2008; Menor-Salván et al., 2016). Cretaceous Cupressaceae produced resin but generally in small amounts (e.g. Otto et al., 2000). Cheirolepidiaceae† conifers lack resiniferous structures, except for some taxa presenting traumatic resin canals (Bodnar et al., 2013; Rombola et al., 2022).

In this contribution, we define and outline the Cretaceous Resinous Interval (CREI) by integrating diverse lines of evidence and analyzing the set of interrelated abiotic and biotic factors that characterized this interval. The data presented herein was compiled from the literature and our own fieldwork in Cretaceous amber localities from Lebanon, Jordan, Congo, Ecuador, Spain, France, Myanmar, USA, and New Zealand; Cenozoic amber localities from France, Mexico, Dominican Republic, New Zealand, India, China, and Ethiopia; and copal and Defaunation resin deposits from Colombia, Dominican Republic, New Caledonia, New Zealand, and Madagascar. In the latter three regions, our fieldwork focused on actuotaphonomic processes aimed at understanding the conditions of production and conservation of Defaunation resin and the formation of copal deposits.

The materials figured in this work are housed at the El Soplao Cave amber collection, Spain (Figs. 3A, E, 5C), the University of Barcelona, Spain (Figs. 3B, 5D), the Nanjing Institute of Geology and Palaeontology, China (Fig. 5A), and the Museu de Ciències Naturals de Barcelona, Spain (Fig. 5B). Photographs and data used in the figures are our own when not specified in the captions.

2. Definition of the Cretaceous Resinous Interval

We define the Cretaceous Resinous Interval (CREI) as *global mass resin production and burial interval that occurred from the Barremian to the Campanian stages of the Cretaceous Period*. We posit that, during a relatively continuous time interval of about 54 million years, a suite of factors led to the formation of rich amber deposits with similar characteristics and of wide geographic distribution (Figs. 1, 2). This time-delimited interval is based on the known geological record, which provides evidence of numerous amber-bearing deposits (Supplementary data A) from the Barremian (Early Cretaceous), namely those from Lebanon (Maksoud et al., 2022), to the Campanian (Late Cretaceous), particularly Canadian (McKellar et al., 2008) and Tilin in Myanmar (Zheng et al., 2018) ambers. Most of these amber deposits occur in the Northern Hemisphere, between 5° and 75° N paleolatitude, and are especially abundant in low to mid latitudes from the Barremian to Coniacian and in mid to high latitudes from the Santonian to the Campanian (Fig. 1A). Some Cretaceous amber-bearing deposits are found in the Southern Hemisphere between the Aptian–Turonian, but they are scarce (Fig. 1A). Cenozoic amber deposits first appear during the Mid Paleocene of Wyoming, USA (~61 Ma) and Late Paleocene of Alaska, USA (~57 Ma) (Grimaldi et al., 2000a, 2018), and the Eocene of Oise, France (~53 Ma), Fushun, China (53–50 Ma) and Cambay, India (~52–50 Ma) (Jossang et al., 2008; Rust et al., 2010; Wang et al., 2014a).

There are five primary shared characteristics among amber deposits formed during the CREI. First, resin production was restricted to conifers

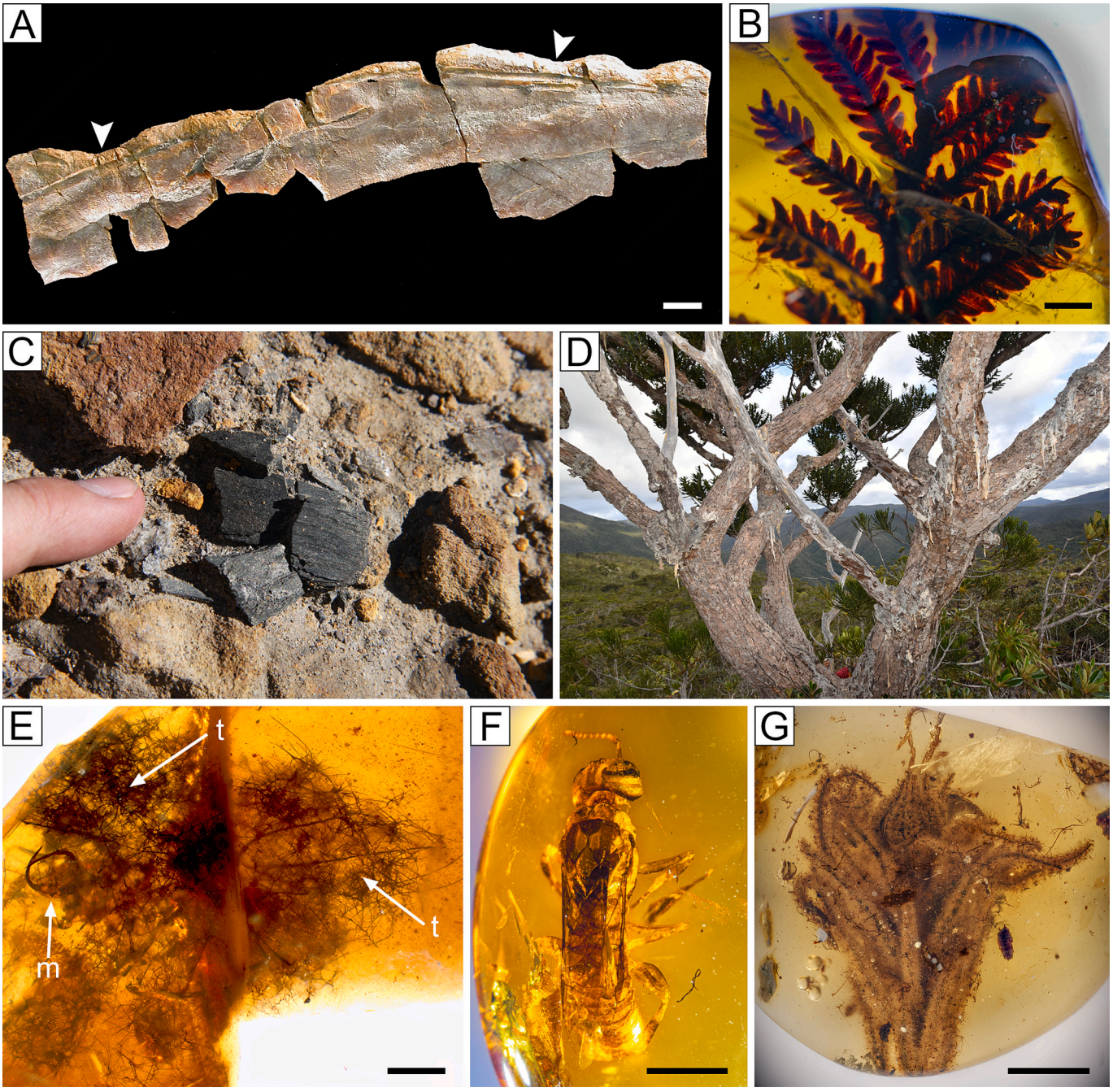

Fig. 3. Mass resin tree producers and development of fires during the Cretaceous. A) Aerial amber piece with surface imprints and bioinclusions of *Frenelopsis* (Cheirolepidiaceae†) axes, from the Albian of El Soplao (Spain); based on taphonomic studies, the largest number of plant bioinclusions corresponds to this resin-producing tree (Peñalver et al., 2018); B) One of the most abundant plant remains in the Cenomanian amber of Kachin (Myanmar) are axes with leaves of araucariaceans (Poinar et al., 2007) (University of Barcelona); C) Charcoal from the Albian amber-bearing outcrop of San Just, level SJ2 (Spain), commonly found in amber-bearing levels (Peñalver and Delclòs, 2010); D) *Agathis ovata* from Col de Yaté, New Caledonia, producing copious quantities of resin in an area burned several years ago; E) The immature insect related to green lacewings, *Hallucinochrysa diogenesi* (Neuroptera: Chrysopoidea), from the Albian amber of El Soplao (Spain), preserved with a debris-carrying packet of trichomes with gleicheniaceous affinity; today, gleicheniacean ferns opportunistically colonize burned areas (Pérez-de la Fuente et al., 2012); F) *Orthosyntexys elegans*, a wasp from the relict family Anaxyelidae (Hymenoptera: Symphyta) from the Cenomanian amber of Kachin, Myanmar; the living representatives of this family lay eggs in the sapwood of conifers, preferring recently burned wood (Gao et al., 2021), photograph courtesy of T. Gao; G) *Eophylica priscastellata*, an angiosperm flower of the family Rhamnaceae from the Cenomanian amber of Kachin (Myanmar) showing morphological specializations identical to those of modern relatives adapted to recurrent wildfires (Shi et al., 2022); photograph courtesy of C. Shi and R. Spicer. Abbreviations: m = mandibulo-maxillary stylets (feeding structures), t = trichomes. Scale bars = 2 mm (B, F), 1 mm (E, G), 0.5 mm (A). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

(Araucariaceae, Cheirolepidiaceae†, Cupressaceae s.l., Podocarpaceae, and Pinaceae) (Langenheim, 2003; Menor-Salván et al., 2010; Seyfullah et al., 2018). Second, charcoal, resulting from plant material charred by wildfires, is commonly found in the same stratigraphic level as amber, particularly in the Northern Hemisphere (Brown et al., 2012; Tappert et al., 2013; Supplementary data C) (Fig. 3C). Third, when bioinclusions are preserved, they correspond to similar fauna and flora under comparable biases (Penney, 2010; Solórzano Kraemer et al., 2018), although

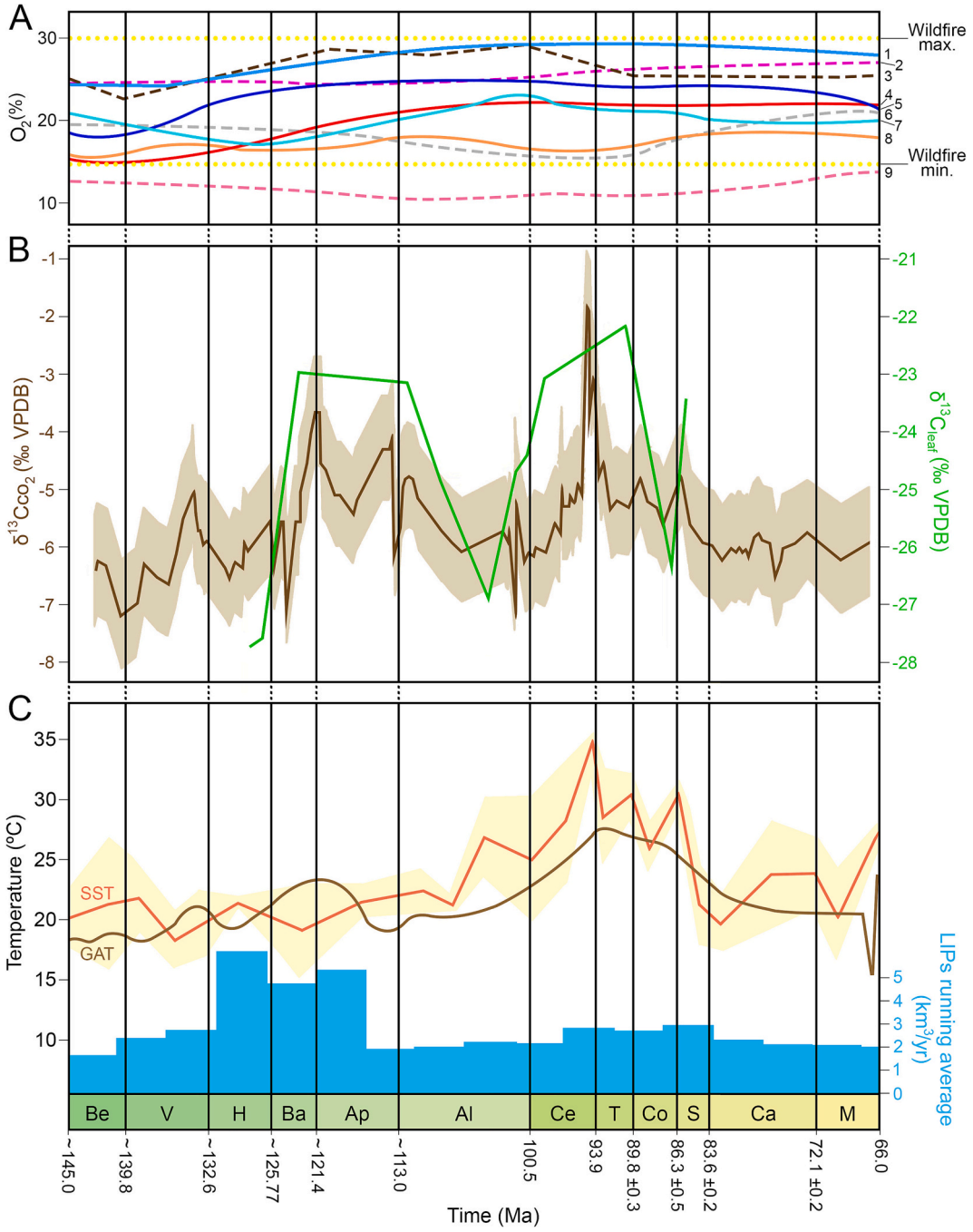

Fig. 4. Oxygen (O_2) and carbon dioxide (CO_2) atmospheric composition, temperature, and Large Igneous Province (LIP) activity throughout the Cretaceous. A) Reconstruction for Cretaceous atmospheric O_2 mixing ratio (from Mills et al., 2016). Forward models of O_2 based on nutrient/weathering (1, 5, 7), including isotope mass balance models (4, 8) and "proxy inversion" methods that estimate atmospheric oxygen by reference to geochemical data, assuming relationships between O_2 concentration and either fossil charcoal abundance (3), carbon-to-phosphorus ratios in sediments (6), carbon isotope composition of plant resins (9), or combined estimates for sedimentation rate and abundance of organic carbon and pyrite in rock samples (2). Also represented: wildfire minimum (for ignition) and maximum (in the Phanerozoic, Carboniferous–Permian). References used: 1- Bergman et al. (2004), 2- Berner and Canfield (1989), 3- Glasspool and Scott (2010), 4- Berner (2009), 5- Arvidson et al. (2013), 6- Algeo and Ingall (2007), 7- Hansen and Wallman (2003), 8- Falkowski et al. (2005), 9- Tappert et al. (2013); B) Comparison of the carbon isotope composition of leaves of the Cheirolepidiaceae† conifer *Frenelopsis* ($\delta^{13}C_{leaf,}$ in green) with the evolution of the carbon isotope composition of atmospheric CO_2 ($\delta^{13}C_{CO2,}$ in brown), from Barral et al. (2017). The *Frenelopsis* samples from the upper Barremian–lower Santonian interval come from amber outcrops; C) Reconstructed Cretaceous Sea Surface Temperature (SST) (from Martin et al., 2014 in Barral et al., 2017), Global Average Temperature (GAT) (from Scotese et al., 2021) and LIP running average every 5 Ma (from Eldholm and Coffin, 2000). Geological Timetable based in the International Commission on Stratigraphy (v 2023/06), https://stratigraphy.org/chart. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

often bioinclusions are absent likely due to taphonomic reasons. Fourth, resin accumulation occurred in transitional sedimentary environments under subtropical and temperate paleoclimates. And fifth, resin accumulation coincides with the maximum regressive surface (or transgressive surface) (Bowen and Jux, 1987; Villagómez et al., 1996; Najarro et al., 2009) (Fig. 1B). Spatially, the CREI appears to be global in nature, since amber-bearing outcrops are distributed worldwide throughout the Cretaceous, although they are particularly concentrated in Laurasia and the northern margin of Gondwana (Figs. 1, 2). In any case, we use the term 'global' in its broader sense as we posit that the CREI did not necessarily take place in both hemispheres simultaneously throughout the entire interval.

3. Conditional factors on resin production and preservation

Two basic conditions need to co-occur in time and space to generate an accumulation of resin with the potential to become an amber-bearing deposit. First, there needs to exist resin-producing plants with the capacity to secrete large amounts of resin. Second, there needs to be a suitable sedimentary setting, namely a transitional environment that buries resin under anoxic conditions. Known Cretaceous amber-bearing deposits are restricted geographically despite the worldwide distribution of resin-producing conifers during various Cretaceous stages (Fig. 2). Consequently, potential lack of suitable depositional environments for the accumulation and preservation of resin may have limited the distribution of amber-bearing deposits. However, transitional sedimentary environments during major marine transgressions were equally probable anywhere on Earth's surface, and have occurred cyclically throughout time (Haq, 2014). Thus, the two conditions noted above may not fully explain the observed distribution of Cretaceous amber-bearing deposits, such that other abiotic or biotic factors, and the confluence of several factors, likely promoted the production of resin by trees and/or its subsequent accumulation and preservation. These factors could be global or more localized in spatial scale and are not necessarily mutually exclusive.

3.1. Abiotic factors

Multiple abiotic factors were potentially related to the mass production and/or accumulation of resin during the CREI. Although these factors are interrelated and feedback on each other, we group them here to facilitate discussion: (1) atmospheric gas composition, temperature, and wildfires; (2) volcanism and changes in sea level; and (3) oceanic physicochemical properties and hurricanes. An overview of the global climate throughout the CREI is provided at the end of this section.

3.1.1. Atmospheric gas composition, temperature, and wildfires

Atmospheric gas composition (Fig. 4A–B) has a major effect on climate. Atmospheric greenhouse gases such as carbon dioxide (CO_2) and methane (CH_4), as well as oxygen (O_2) may have directly or indirectly impacted global resin production. Estimates of atmospheric CO_2 concentration during the Cretaceous vary according to the authors and proxies used (Tappert et al., 2013; Landwehrs et al., 2021) but generally is considered to have been more than twice that of preindustrial values, between 560 and 1680 ppm (Barral et al., 2017).

High CO_2 levels are due to extensive volcanic emissions during the Cretaceous from Large Igneous Provinces (LIPs, Fig. 4C) and seafloor formation (Condie et al., 2021). Wildfires, changes in ocean chemistry, biotic respiration, and organic matter decomposition also released significant amounts of CO_2 to the atmosphere during the Cretaceous (Hu et al., 2012; Wang et al., 2014b; Scott, 2018). Methane has a greater greenhouse potential than CO_2, and is likely to have notably increased during the Cretaceous (Jahren et al., 2001; Chang et al., 2022). Higher CH_4 levels were related to the liberation of methane hydrate from the seafloor by rising water temperatures (Wagner et al., 2007) and from seafloor spreading. Global temperatures fluctuated during the Cretaceous (Holz, 2015; Landwehrs et al., 2021) (Fig. 4C), with generally elevated temperatures and reduced latitudinal temperature gradients between the equator and the poles of $\leq$35 °C mean annual temperature (MAT) in both hemispheres (O'Brien et al., 2017; Huber et al., 2018) compared with current values. The Northern Hemisphere thermal gradient showed a ca. 5 °C decrease from the Late Jurassic into the Late Cretaceous due to increased CO_2 and associated warming, while in the Southern Hemisphere the temperature gradient increased during this time due to the migration of Antarctica towards the South Pole (Landwehrs et al., 2021). Higher temperatures also brought more extreme atmospheric precipitation regimes and the establishment of more extensive regions under arid or monsoonal climates (Hasegawa et al., 2012), although the latter would have been influenced more by palaeogeography than by atmospheric gas concentration (Farnsworth et al., 2019).

Continental precipitation during the mid-Cretaceous was roughly mirrored between the Northern and Southern Hemispheres according to coupled ocean-atmosphere general circulation simulations, with maximum precipitation at the equator that decreased steeply to a minimum around 30° paleolatitude, which then increased again to a peak at around 50° paleolatitude (Zhou et al., 2012). This pattern situates the bulk of Cretaceous amber deposits with bioinclusions (particularly during the mid-Cretaceous) (Fig. 1A) in areas of moderate to relatively low average rainfall. Remarkably, the occurrence of the first significant Triassic amber deposits with inclusions in northern Italy coincides with the Carnian Pluvial Episode, associated with an important evolutionary radiation of "gymnosperms" (Roghi et al., 2022).

The increase in atmospheric CO_2 below the RuBisCo (the enzyme ribulose-1,5-bisphosphate carboxylase/oxygenase, involved in the first major step of carbon fixation) saturation limit accelerates plant photosynthesis and growth under present conditions (Dalling et al., 2016; Olivoto et al., 2017). In principle, such acceleration would suggest that increasing atmospheric CO_2 could result in higher metabolic rates and thus increased production of secondary metabolites, such as resin (Trapp and Croteau, 2001; Novick et al., 2012). However, related plant species may show opposite responses to CO_2 changes due to differences in physiological plasticity (Berini et al., 2018; Kurepin et al., 2018), thereby limiting the ability to infer resin production by fossil plant species based on CO_2 concentration alone. Even so, CO_2 and O_2 values might be indirectly linked with resin production, as elevated levels would be expected to impact the physiological features of plants that, in turn, could increase the herbivorous, wood-boring or pathogenic activity of other organisms such as arthropods or fungi (Lake and Wade, 2009; Labandeira, 2013; Couture et al., 2015; see section 3.2 below).

Numerous proxies suggest that atmospheric O_2 increased continuously from the Barremian to the late Cenomanian (Fig. 4A) to about 29%–31% (Berner, 2006; Glasspool and Scott, 2010; Brown et al., 2012), but decreased from the Turonian to the end of the Paleocene to the current value of 21% (Wade et al., 2019). The high O_2 content in the atmosphere during the Cretaceous favored recurrent wildfires in coniferous forests (Belcher and McElwain, 2008), which were also promoted by increased electrical storms and intensive volcanism (Scott, 2018). Charcoal is indicative of paleowildfires (Brown et al., 2012; Scott, 2018) and is abundant in most Cretaceous amber-bearing deposits (Peñalver and Delclòs, 2010; Shi et al., 2012; De Lima et al., 2019) (Fig. 3C), but mainly in the Northern Hemisphere deposits (Supplementary data C), including the presence of charcoalified remains within amber (Grimaldi et al., 2000b; Najarro et al., 2010). Partially burned amber pieces have been found occasionally together with charcoalified plant material (Grimaldi et al., 2000b).

Extant trees increase resin exudation if injured by fire (Fig. 3D) as a physiological response that prevents pathogenic activity or arthropod invasion (Langenheim, 2003; Della Prasetya et al., 2017). Fire has played a key role in reshaping ecosystems, particularly after the accumulation of flammable biomass arising from increased productivity of terrestrial ecosystems linked to the predominance of angiosperms (Bond

and Scott, 2010) and from the altered ignitability and flammability of angiospermous plant matter (Belcher and Hudspith, 2017). Different groups of Cretaceous conifers exhibit pyrophilous modifications linked to recurrent wildfires (He et al., 2016), in lifestyles such as serotiny that has endured into the present (Pausas, 2018). Moreover, there are diverse instances of organisms associated with fire that are preserved in Cretaceous ambers (Ortega-Blanco et al., 2008; Pérez-de la Fuente et al., 2012; Shi et al., 2022) (Fig. 3E–G).

The above lines of evidence suggest wildfires played a role in the genesis of resin deposits during the CREI, at least in some deposits, by favoring resin exudation but also subsequent accumulation, since deforested soils experienced increased erosion. However, based on the global occurrence of wildfires (Brown et al., 2012; Scott, 2018; Supplementary data C) and the broad distribution of potential resiniferous plants during the CREI (Fig. 2; Supplementary data B), a global distribution of Cretaceous amber deposits would be expected, for which there is currently no evidence (Fig. 2). Wildfires were globally distributed but seems only involved in local and regional resin production and accumulation during the CREI (e.g., the Raritan Fm. amber in New Jersey, USA or Spanish and French ambers), but appear not to be a definitive cause of resin production on a global scale.

3.1.2. Volcanism and changes in sea level

The abundant record of volcanic rocks associated directly or laterally with Cretaceous amber-bearing deposits such as those in Lebanon (Veltz et al., 2013), Myanmar (Shi et al., 2012), Ecuador (Balseca et al., 1993), and Canada (Eberth, 2005) is evidence that resin mass production took place in environments amid local volcanic influence, with this factor intimately related to wildfires (see above). Aside from increasing atmospheric O_2 concentrations that promoted wildfires, large amounts of volcanic emissions over a long period of time in LIPs could have affected global climate in other ways (Johansson et al., 2018; Macdonald et al., 2018). The maximum development of LIPs during the last 2500 million years occurred during the Cretaceous (Eldholm and Coffin, 2000; Condie et al., 2021). This peak of LIP development (Fig. 4C) altered atmospheric composition and circulation patterns and changed the geometry of sedimentary basins and sea level. The formation of LIPs and seafloor spreading, in combination with increased global MATs, led to the melting of polar ice caps (Zhou et al., 2008; Hay, 2017) and to significant reductions in the Earth's albedo (Kent and Muttoni, 2022) during the Cretaceous. These changes produced a global marine transgression trend (Fig. 1C) from the Valanginian to the Turonian (Wagreich et al., 2020). This global transgression was only interrupted by a regression at the Aptian–Albian boundary, after global MATs (Haq, 2014) fell to 12 °C (Hay, 2017). Maximum transgression was reached in the Turonian and sea level remained at high stands into the Campanian (Olde et al., 2015). All resin-bearing deposits were developed in periods of maximum regression, onlapped by the second-order marine transgressive strata (Grimaldi et al., 2000b; Perrichot, 2005; Najarro et al., 2009) (Fig. 1C).

The globally-high sea level during the CREI increased insularization, changing the extent and distribution of land masses and epicontinental seas such as the Late Cretaceous European archipelago, and the Mid-continental Seaway of North America. Extensive regions were flooded, which produced the remobilization of abundant resin stored in the soils due to erosion resulting from the transgressions, establishing new areas of shallow deposition, reducing terrestrial biotopes, and increasing flooding stress (Erwin, 2009). Marine transgressions have been associated with higher global temperature and paleogeographic changes, both of which caused more emergent land masses at mid to high latitudes in the Northern Hemisphere (Landwehrs et al., 2021), which potentially allowed for more colonization by plants and distribution of coniferous forest (Klages et al., 2020). This pattern contrasts with what occurred in the Southern Hemisphere during the Cretaceous, wherein the proportion of emerged land masses at mid to high latitudes remained low, similar in extent to that of the present day (Figs. 1, 2).

3.1.3. Oceanic physicochemical properties and hurricanes

Amber-bearing deposits are frequently associated with transitional sea-to-land environments. Thus, the properties of ocean waters, namely salinity and sea surface temperature (SST), and paleocirculation patterns may have affected the formation of resin deposit. Salinity may have controlled the formation of resin deposits because resin has a lower density than seawater, rendering it buoyant and making its burial and preservation in environments with high salinity difficult. High salinity conditions did occur in regions where amber-bearing deposits are found in the Northern Hemisphere, such as Myanmar and New Jersey of the USA (Poulsen et al., 1998; Ladant et al., 2020; Topper et al., 2011), and Brazil and the Congo in the Southern Hemisphere (Pérez-Diaz and Eagles, 2017). However, the formation of resin deposits in high salinity zones suggest only temporary marine influence. The record of frequent, yet rarely diverse, marine protists and invertebrates, such as oysters or crinoids, and plant macroremains in amber deposits (Néraudeau et al., 2008; Barrón et al., 2015; Peyrot et al., 2019) supports a transitional depositional setting with occasional marine influence.

Global average SST during the mid-Cretaceous was >6 °C higher than that of today (Hay, 2009; Torsvik and Cocks, 2016), but disparate data exist regarding SSTs throughout the entire Cretaceous (Hay and Floegel, 2012) (Fig. 4C). Global ocean circulation changed significantly during the Cretaceous due to progressive opening of the South Atlantic Ocean and the Tethyan Circumglobal Current, providing east to west flow around the globe at low latitudes of the Northern Hemisphere. In addition, the transfer of heat from the hydrosphere to the atmosphere from water vapor played an important role in cooling the tropics and in warming at high latitudes, establishing the diminished latitudinal gradient of temperature noted earlier. These factors conditioned global temperature and climate during the CREI (Hay, 2009; Wohlwend et al., 2015), and thus may have indirectly impacted resin formation and/or accumulation.

Linked to high average SST during the Cretaceous (O'Brien et al., 2017), heavy rainfall and winds, such as those during hurricanes, have been proposed as an abiotic cause of resin production. High winds can cause severe damage to trees, which is sealed by resin to minimize opportunistic insect attacks or pathogenic infections (Langenheim, 1994; Seyfullah et al., 2018). Climate models based on marine and continental distribution and topography suggest winds were generally weaker during the Cretaceous than at present (Cousin-Rittemard et al., 2002; Hay, 2009), but the consistently high annual SST could have promoted the development of hurricanes in low to mid latitudes. The absence of high topographic relief (Hay et al., 2019) would have allowed the wind to circulate without diverting its zonal flow (Scotese et al., 2021).

3.1.4. Climatic overview throughout the CREI

Based on paleoclimate data and maps (Chumakov et al., 1995), most Cretaceous amber-bearing deposits originated in the northern mid-latitude warm humid belt. Nevertheless, during the Albian and Santonian, some amber-bearing localities were present well within the northern high-latitude temperate humid belt, and during the Albian and Cenomanian other amber-bearing localities were present within the equatorial humid belt and northern hot arid belt, respectively. Based on global circulation models, the depositional environments that gave rise to amber-bearing deposits in Lebanon (Barremian) were located within the tropical climate belt (Sewall et al., 2007; Ohba and Ueda, 2010). During the lower to middle Aptian, the climate cooled globally (Mutterlose et al., 2010), which coincides with a reduction in currently known amber deposits, although this cold interval was recently questioned (Huber and O'Brien, 2020).

At the Aptian–Albian boundary, warm greenhouse conditions were re-established due to intense volcanism, coinciding with amber deposits in Brazil, Ecuador, and the Congo at low latitudes in the Southern Hemisphere (Pereira et al., 2009; Cadena et al., 2018; Bouju and Perrichot, 2020). During the Albian, an extensive subtropical arid belt

developed in the equatorial zone, which subsequently migrated poleward (Scotese, 2021). Abundant resin accumulations were common in tropical mid latitude areas, such as Iberia, leading to the present-day Spanish amber deposits (Peñalver and Delclòs, 2010).

During the Cenomanian–Turonian, climate zones began to organize latitudinally (Sewall et al., 2007), although still under hothouse conditions (Kidder and Worsley, 2010; Mills et al., 2017), enabling the tropical biota to migrate poleward of 40°N latitude. Although currently there are important forests of conifers in very high latitudes (Fig. 2), resin deposits were formed at that time mostly between 30° and 40°N latitude, with some exceptions at higher latitudes (Fig. 1), corresponding to a MAT of around 30 °C (Hay and Floegel, 2012); these conditions may have produced the resin corresponding to amber-bearing deposits from the lower Cenomanian of France (Perrichot et al., 2010), Myanmar (Ross et al., 2010), and from the Turonian of New Jersey in the USA (Grimaldi and Nascimbene, 2010).

During the upper Turonian–Maastrichtian, climate changed considerably (Tabor et al., 2016). Simulated global mean surface air temperatures (GMST) show temperatures of 21.2 °C–19.5 °C during the Campanian. These cooling trends are associated with changes in the fraction of Earth's surface occupied by land (Fig. 1B), which has a higher average albedo than that of the ocean, caused by lower sea levels that resulted in greater exposure of continental areas (Landwehrs et al., 2021). Although average global temperatures decreased during the Turonian–Maastrichtian, most resin deposits formed at high latitudes, namely of the Northern Hemisphere, and were rare at mid to low latitudes (Fig. 1B). From this interval are known the amber deposits of the Santonian from the Taymyr region in Russia (Perkovsky and Vasilenko, 2019), from the Campanian of Cedar Lake and Grassy Lake in Canada (McKellar et al., 2008), and from the Campanian–Maastrichtian of the Arctic Coastal Plain in Alaska (Langenheim et al., 1960).

3.2. Biotic factors

The mass production of resin during the CREI may have been promoted by biotic factors acting at a regional scale (Martínez-Delclòs et al., 2004; Seyfullah et al., 2018). These factors include arthropod damage, pathogenic activity, and the emission of volatile compounds by the resins to attract pollinators and other insects (Langenheim, 1994; Pichersky and Gershenzon, 2020; Peris et al., 2021).

Terrestrial arthropods (insects, mites) can cause severe damage to plants through feeding- or development-related activity. Different wood-boring insects, namely beetles (Coleoptera), but also some wasps such as wood wasps (Hymenoptera: Siricidae) and moths such as cossid millers or clearwing moths (Lepidoptera: Cossidae and Sesiidae), bore into wood for nest building and offspring development, at times cultivating fungi as a food source in galleries within woody tissues (Hulcr and Stelinski, 2017; Peris et al., 2021). The diseased tree reacts against invasive agents by developing secondary defensive compounds such as terpene-rich oleoresins in conifers, which flood the area to physically repel the invasion, while different toxins and volatiles act as a chemical defense (Raffa, 2014; Krokene, 2015). The influence of massive attacks of wood-boring beetles on resiniferous ancient forests has been widely cited in the literature based on their abundance in Cenozoic ambers, Pleistocene and Holocene copals, and Defaunation resins (Martínez-Delclòs et al., 2004; Labandeira, 2014a; Seyfullah et al., 2018; Peris, 2020). However, there is no significant direct evidence of beetle infestations in Cretaceous ambers yet found, although scarce wood boring beetles such as auger beetles (Bostrichidae), spider beetles (Ptinidae), ship timber beetles (Lymexylidae) and weevils (Curculionidae) are found occasionally (Chen and Zhang, 2020; Peris, 2020; Peris and Rust, 2020) (Fig. 5A–B). Herbivorous insect groups such as true bugs (Hemiptera), thrips (Thysanoptera) (Fig. 5D), grasshoppers and crickets (Orthoptera), and termites (Isoptera) have been found in major Cretaceous amber deposits, including taxa that currently cause significant damage to plants. However little evidence exists of intense arthropod herbivory during the CREI in rock deposits (Labandeira, 1998, 2014b; Xiao et al., 2022a, 2022b), and there has been no assessment of the herbivory in amber due to the scarcity of damaged leaves and other photosynthetic structures (such as cheirolepidiacean axes) as bioinclusions.

Pathogenic organisms can invade plant tissues directly or through a vector. Aside from their ability to cause direct harm, some extant species from insect groups transmit pathogens to their plant hosts, including viruses, bacteria, fungi, oomycetes, and nematodes (Labandeira and Prevec, 2014).

The development of insect-borne pathogens depends on population dynamics, dispersal ability, host selection behavior, and the feeding behavior of the insect vectors (Labandeira and Prevec, 2014; Eigenbrode et al., 2018). Bacteria and fungi are chiefly spread by adhering to the insect's body, so their vector relationship is not as specific as that which occurs in the transmission of viral diseases (Jones, 2005). Oomycetes are remarkable plant pathogens, because infection by these fungus-like microorganisms can induce copious resin exudation, as observed in the genus *Agathis* in New Zealand (Fig. 5E–G), which produces a particular variation in the color of large resin exudates (Weir et al., 2015). Unfortunately, this type of resin would be difficult to recognize once transformed into amber; future studies may be able to distinguish this resin isotopically or by the presence of oomycete spores as bioinclusions.

Plants are known to emit volatile compounds to attract or repel insects (Raffa, 2014; Pichersky and Gershenzon, 2020). However, many insect species are attracted to volatile plant mixtures that indicate stress, as this signaling can allow insects to enter tissues free of defense and, potentially, competition (Hulcr and Dunn, 2011). Angiosperm resin terpenoids attract insect pollinators (Armbruster, 1984; Boncan et al., 2020). Highly specialized pollination relationships between some groups of insects and "gymnosperms" have been discovered in amber since the Albian (Fig. 5C), in some instances lacking extant representatives of such pollination interactions (Peñalver et al., 2012, 2015; Peris et al., 2017, 2020; Peña-Kairath et al., 2023). Resin exudation by conifers during the CREI could be related to the attraction of certain groups of insects to assist in pollination. This idea was proposed for Cenozoic ambers produced by angiosperms (Armbruster, 1993). The hypothesis is challenging to test at present, and the absence of Cretaceous insects with attached coniferous pollen (Peris et al., 2020) renders it unlikely. Nevertheless, cheirolepidiaceous pollen has been found on the mouthparts of insects in compression–impression deposits from non-amber producing environments of the Middle Jurassic to the Early Cretaceous (Labandeira et al., 2016), indicating insect pollination of at least one reproductively specialized cheirolepidiaceous conifer was an exception (Labandeira et al., 2007).

4. Present limitations and future directions

We propose that the CREI represented a distinct mass resin production that occurred over a continuous time interval from the Barremian to the Campanian, despite differences in the known record of amber-bearing deposits between Cretaceous geochronologic stages (Fig. 1A). The causal mechanisms underlying such fluctuations are not well understood, although they may relate to circumstances that are best studied on a case-by-case basis by integrating multiple approaches.

Although we hypothesize that the same set of general processes that promoted resin mass production and accumulation acted for the entirety of the CREI, we posit that these were under the influence of possible local or regional controls that determined the intensity of the effect. The relative importance of the abiotic and biotic factors influencing resin production and accumulation during the CREI at regional geographical scales, among other variables, will need to be rigorously tested in future studies.

We established the CREI with a stage/age hierarchy (apud IUGS Chronochart - Gradstein et al., 2021). Finer temporal resolution would

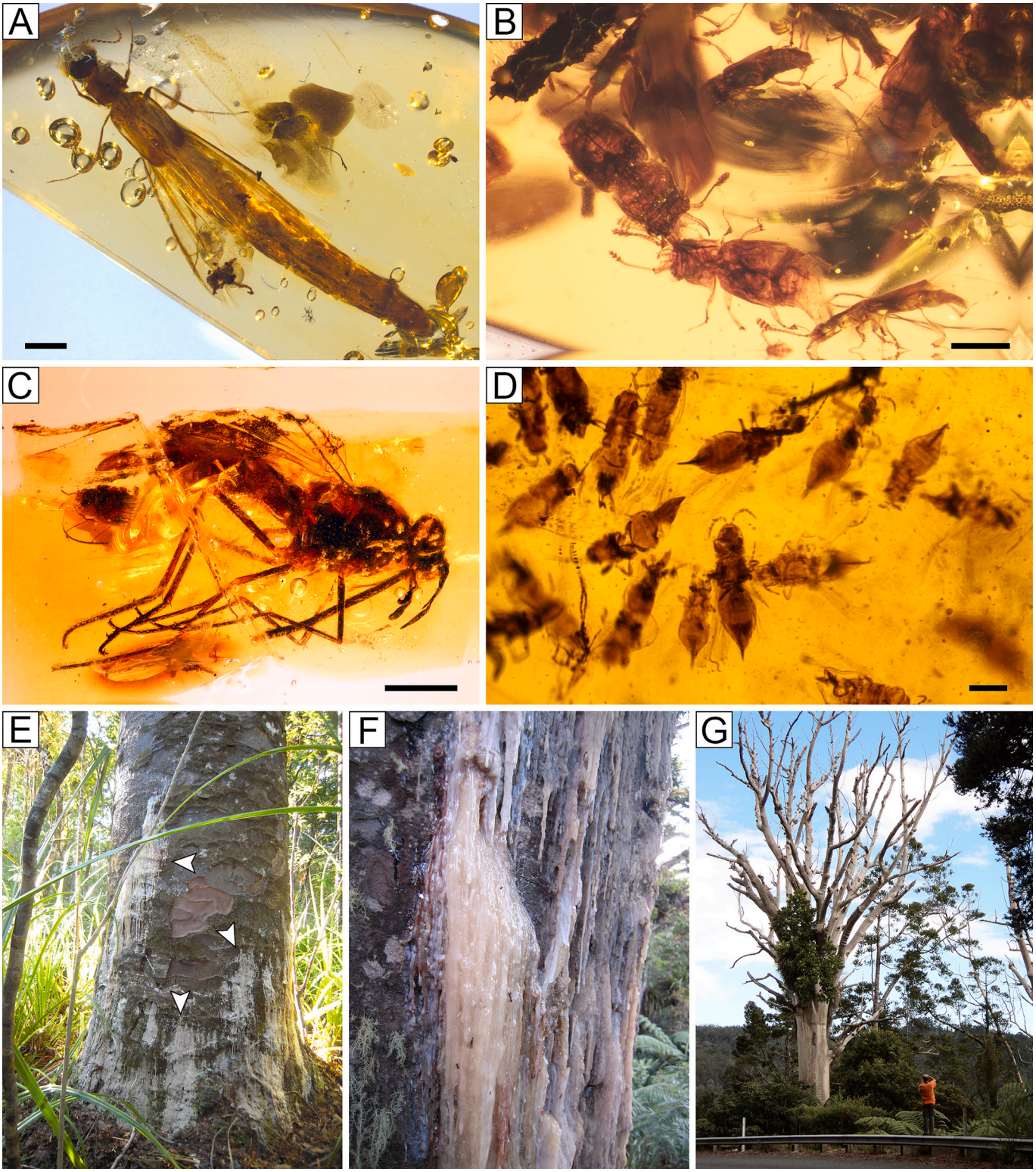

Fig. 5. Biotic factors that could have promoted resin mass production during the Cretaceous: wood-boring insects, pollination, and pathogens. A) A lymexylid beetle; larvae of this group of beetles today penetrate living and decaying wood, consuming fungus in a symbiotic association; unpublished specimen from the Nanjing Institute of Geology and Palaeontology, China Academy of Sciences; B) Bostrichid beetles *Cretaretes minimus*, from Kachin amber (Peris and Jelínek, 2020); these beetles could have been among the first wood-boring beetles and transmitters of pathogens; C) The zhangsolvid fly *Buccinatormyia magnifica*, from El Soplao amber (Peñalver et al., 2015); the oldest instances of "gymnosperm" pollinators in amber are found in the Albian of Spain; D) Thrips (Thysanoptera) swarm from Kachin amber with attached pollen grains (unstudied, UB); thrips were "gymnosperm" pollinators, but this group could have also been the cause of massive attacks on resinous trees; E–G) *Agathis australis* (Araucariaceae) attacked by the oomycete *Phytophthora agathidicida* (Oomycota) in Waipoua Forest, New Zealand, causing copious resin production (E, F) and the eventual death of the tree (G). Scale bars = 1 mm (A), 0.5 mm (B), 2 mm (C), 0.2 mm (D). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

reduce considerable noise to the analyses at present, as many amber deposits and conventional paleobotanical deposits are characterized by significant temporal uncertainty.

Further work to improve temporal resolution will involve more accurate dating of the deposits, more detailed identification of changes in atmospheric gas composition, more precise evaluations of meso- and macroplant remains from amber deposits, and other studies within each Cretaceous stage. These studies may provide further insight into the causal mechanisms for enhanced resin production and accumulation during the CREI. A higher-resolution temporal framework might also allow identification of distinct subintervals or even events within the Cretaceous Resinous Interval.

Although sampling bias may be an explanation for the apparently skewed presence of amber deposits towards the Northern Hemisphere during CREI (Figs. 1, 2), paleogeographical circumstances may contribute to explain the pattern. First, a greater proportion of land had emerged in the Northern Hemisphere (Landwehrs et al., 2021) during the Cretaceous, and was thus sustaining potentially greater extensions of resin-producing forests. Second, different resiniferous species distributed among both hemispheres could have had different capacities to produce resin even under comparable environmental conditions and, thus, a different potential to produce amber deposits; this has been observed at present even between closely related species (Langenheim, 1995; Seyfullah et al., 2018). It will be necessary to substantially increase reconnaissance efforts in the Southern Hemisphere to shed light on this matter.

Taphonomic knowledge on the known Cretaceous amber deposits is scarce, fundamentally limiting understanding of the CREI. It is imperative to improve efforts studying amber deposits (both the amber itself and the associated stratal context) from a detailed taphonomic standpoint. Such studies would aim to elucidate the paleoenvironmental, paleoecological, and geological circumstances surrounding the production and accumulation of resin and the formation of amber. A particular emphasis should be on improving paleobotanical analyses of meso- and macro-remains, including fossilized wood. A focus on actuotaphonomic experiments, both in the field and the laboratory, will further complement our view on the subject.

5. Conclusions

The Cretaceous distribution of amber-bearing deposits is clustered around an interval of roughly 54 Ma, from the Barremian to the Campanian, and reflects global, massive resin production during the late Mesozoic. Prior to this interval, amber is remarkably scarce, appears in small quantities and, save from some Triassic amber, has not hitherto yielded macroscopic bioinclusions. We place the end of the interval in the Campanian, provided that during the Maastrichtian amber is latitudinally well distributed but appears in small quantities and is scarcely fossiliferous. Shortly before the K-Pg boundary lignite deposits exist but with the absence of amber that extends into the Paleocene, establishing a gap of several million years without amber and obviously bioinclusions.

In the Cenozoic the resin producers were no longer exclusively conifers, but rather the first deposits of angiosperm resins appeared. Shared characteristics of Cretaceous amber deposits are herein used to formally establish the Cretaceous Resinous Interval, or CREI, and are distinct from those shown by Cenozoic amber deposits. The resin that generated the amber during the CREI was produced by conifers and accumulated in transitional sedimentary environments from subtropical and temperate regions, commonly associated with charcoal and coinciding with the maximum regressive surface. Moreover, the fauna and flora preserved within the CREI share comparable group compositional characteristics, possibly due to similar original paleoenvironment, and suffered comparable taphonomic biases (Martínez-Delclòs et al., 2004; Solórzano Kraemer et al., 2018; Seyfullah et al., 2018).

The potential causal factors for the CREI are complex and interrelated. Abiotic conditions potentially related to massive resin production and accumulation during the CREI include: (1) increased global average temperatures, including SST, with the consequent reduction in albedo due to the absence of icy poles, (2) reduced latitudinal temperature gradients, which allowed the development of forests at high latitudes, (3) higher levels of greenhouse atmospheric gases (carbon dioxide, methane) and oxygen, which promoted changes in the growth and development of the biota, (4) increased volcanic activity, which promoted an increase in temperature and changes in the composition of atmospheric gases, (5) moderate or relatively high average rainfall that could favor the development of large forests and the production of resin, (6) enhanced wildfire activity due to volcanism and high O_2 levels, (7) transgressive sea level periods and overall trend, which reduced terrestrial land area but led to the filling of large areas of lowlands and formation of resin deposits, and (8) increased storm and hurricane activity that could have promoted wildfires and/or destruction of large areas of forest, and consequently resin production. Biotic factors partially explaining the CREI at a more localized scale could include arthropod damage, pathogenic activity due to high temperatures and humidity, and the emission of insect-attracting compounds by resins. Future studies on the CREI will need to focus on elucidating the relative importance of each of these abiotic and biotic factors, enhancing the spatial and temporal resolution of the succession of paleoevents, increasing prospective efforts −particularly in the Southern Hemisphere−, and improving taphonomic understanding of Cretaceous amber deposits.

Our multidisciplinary approach will hopefully stimulate future research efforts aimed at elucidating past dynamics between the geosphere and the biosphere. Increased knowledge of when, how and why the CREI occurred will shed light on its global impact for Cretaceous terrestrial ecology and the establishment of modern terrestrial ecosystems. The exceptionally preserved record trapped in resin during the Cretaceous Resinous Interval is crucial to unravel the evolutionary history of many key terrestrial lineages, including plants, arthropods, and vertebrates, and for understanding life in a moment of critical change for terrestrial ecosystems at the transition from the Mesozoic to the Cenozoic.

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Author contributions

Study conception and design, contributed equally: X.D. and E.P.
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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

All data is available as supplementary files. Part of the dataset of plants plotted in the paleomaps in Fig. 2 was downloaded from Paleobiology Database (https://paleobiodb.org) on 17 September 2022.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.earscirev.2023.104486.

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Supplementary data A. Database of the Cretaceous amber-bearing outcrops worldwide

Outcrop name	Longitude	Latitude	Stage/s	Stage/s	Maps	Quantity amber (0=Scarce/mention; 1=Abundant)	Bioinclusions (0=No; 1= Yes)	References	Other references
Bath (Saint Thomas, Jamaica)	-76,354919	17,953601	Maastrichtian–Paleocene	12	4	0	0	Iturralde-Vinent (2001)	
Danek Bonebed Quarry 1 (Alberta, Canada)	-113,545832	53,436108	Maastrichtian	12	4	0	0	https://doi.org/10.1139/cjes-2014-0057	
Danek Bonebed Quarry 2 (Alberta, Canada)	-113,544974	53,436293	Maastrichtian	12	4	0	0	https://doi.org/10.1139/cjes-2014-0057	
Edmonton River Valley (Alberta, Canada)	-113,490833	53,527222	Maastrichtian	12	4	0	0	https://doi.org/10.1139/E08-049	
Morrin Bridge in Drumheller (Alberta, Canada)	-112,908556	51,647306	Maastrichtian	12	4	0	0	https://doi.org/10.1139/E08-049	
Horsethief Canyon (Alberta, Canada)	-112,868556	51,539417	Maastrichtian	12	4	0	0	https://doi.org/10.1139/E08-049	
Royal Tyrrell Museum in Drumheller (Alberta, Canada)	-112,788889	51,478056	Maastrichtian	12	4	0	0	https://doi.org/10.1139/E08-049	
Tyrannosaurus Bonebed (Saskatchewan, Canada)	-108,499106	49,402238	Maastrichtian	12	4	0	0	https://doi.org/10.1016/j.cretres.2006.12.005	
Vansandt Site (Saskatchewan, Canada)	-108,257445	49,486959	Maastrichtian	12	4	0	0	Boulding (2019)	
Garfield County (Montana, USA)	-106,901625	47,615675	Maastrichtian	12	4	0	0	Wilson (2006)	
Ferris Fm. 1 (Wyoming, USA)	-106,880933	41,931502	Maastrichtian	12	4	0	0	https://doi.org/10.2113/35.2.163	
Medicine Bow Fm. (Wyoming, USA)	-106,669145	42,058093	Maastrichtian	12	4	0	0	https://doi.org/10.2113/35.2.163	
Ferris Fm. 2 (Wyoming, USA)	-106,592069	42,065867	Maastrichtian	12	4	0	0	https://doi.org/10.2113/35.2.163	
Boulder (Colorado, USA)	-105,243843	39,910218	Maastrichtian	12	4	0	0	Cockerell (1909)	
Hell Creek Fm. (South Dakota, USA)	-103,196625	45,236546	Maastrichtian	12	4	1	1	DePalma et al. (2010)	
Sewell (New Jersey, USA)	-75,143417	39,772944	Maastrichtian	12	4	0	0	Grimaldi et al. (1989)	
Serraduy (Huesca, Spain)	0,516363	42,350048	Maastrichtian	12	4	0	0	https://doi.org/10.1016/j.cretres.2018.02.016	
Figols (Barcelona, Spain)	1,839807	42,178607	Maastrichtian	12	4	0	0	Own data	
La Nou de Berguedà (Barcelona, Spain)	1,882722	42,168175	Maastrichtian	12	4	1	0	Own data	
Mina Esperanza (Barcelona, Spain)	1,945893	42,154305	Maastrichtian	12	4	0	0	Own data	
Mishor Rotem (Southern District, Israel)	35,128863	31,040633	Maastrichtian	12	4	0	0	https://doi.org/10.2113/176.1.37	
Therria (Meghalaya, India)	91,764444	25,18775	Maastrichtian	12	4	0	0	https://doi.org/10.1016/j.coal.2010.09.006	
Marlboro (New Jersey, USA)	-74,280025	40,358029	Campanian–Maastrichtian	11–12	4	0	0	Grimaldi et al. (1989)	
Lo Hueco (Cuenca, Spain)	-2,053211	39,96494	Campanian–Maastrichtian	11–12	4	0	0	https://doi.org/10.1111/j.1502-3931.2012.00331.x	
La Solana (Valencia, Spain)	-0,586799	39,202529	Campanian–Maastrichtian	11–12	4	0	0	Own data	
Red Willow River *Hadrosaurus* Skeleton (Alberta, Canada)	-119,520786	55,080688	Campanian	11	4	0	0	Tanke (2004)	
Wapiti River/Pipestone Creek Bonebed (Alberta, Canada)	-119,107382	55,051616	Campanian	11	4	0	0	Tanke (2004)	
Pipestone Creek *Pachyrhinosaurus* Bonebed (Alberta, Canada)	-119,102391	55,062508	Campanian	11	4	1	1	https://doi.org/10.1016/j.gr.2019.12.005	
Spring Creek Bonebed (Alberta, Canada)	-118,924046	55,075784	Campanian	11	4	0	0	https://doi.org/10.7717/peerj.11290	
Punta Baja (Baja California, Mexico)	-115,807023	29,957801	Campanian	11	4	0	0	https://doi.org/10.5962/p.168367	
Grassy Lake (Alberta, Canada)	-111,949575	49,896776	Campanian	11	4	1	1	McKellar and Wolfe (2010)	
Dinosaur Provincial Park (Alberta, Canada)	-111,484237	50,758061	Campanian	11	4	1	1	https://doi.org/10.1038/s41598-019-54400-x	
San Juan Basin (New Mexico, USA)	-108,1932	36,284962	Campanian	11	4	0	0	https://doi.org/10.1017/s2475262200009655	
Allen Ridge Fm. (Wyoming, USA)	-106,385368	41,989152	Campanian	11	4	0	0	https://doi.org/10.2113/35.2.163	
Brewster County (Texas, USA)	-103,568819	29,203749	Campanian	11	4	0	0	https://doi.org/10.1306/8626CE33-173B-11D7-8645000102C1865D	
Cedar Lake (Manitoba, Canada)	-100,970456	53,438313	Campanian	11	4	1	1	McKellar and Wolfe (2010)	
Neuse River (North Carolina, USA)	-78,04321	35,363653	Campanian	11	4	0	0	https://doi.org/10.1016/j.cretres.2017.10.011	
Tar River (North Carolina, USA)	-77,480933	35,679194	Campanian	11	4	0	0	Berry (1907)	
Ellisdale (New Jersey, USA)	-74,585604	40,130104	Campanian	11	4	0	0	Grimaldi et al. (1989)	
Cheesequake (New Jersey, USA)	-74,287069	40,422098	Campanian	11	4	0	0	Grimaldi et al. (1989)	
Martigues north (Provence-Alpes-Côte d'Azur, France)	5,038903	43,424552	Campanian	11	4	0	0	https://doi.org/10.1051/bsgf/2020048	
Tilin (Mangway, Myanmar)	94,083333	21,683333	Campanian	11	4	1	1	https://doi.org/10.1038/s41467-018-05650-2	
Tuna-1 (Victoria, Australia)	148,419348	-38,173452	Santonian–Campanian	10–11	4	1	0	https://doi.org/10.1038/s41598-020-62252-z	
Ajka (Bakony Mts, Hungary)	17,586446	47,088728	Santonian	10	4	1	1	Borkent (1997)	https://doi.org/10.1016/j.cretres.2022.105314
Coffee Bluff (Tennessee, USA)	-88,249204	35,282826	Santonian	10	4	0	0	Wade (1920)	
Parsons (Tennessee, USA)	-88,172014	35,641774	Santonian	10	4	0	0	Wade (1920)	
Ingersoll shale (Alabama, USA)	-84,996031	32,44106	Santonian	10	4	0	0	https://doi.org/10.1016/j.cretres.2009.09.008	
Kinkora (New Jersey, USA)	-74,750999	40,118816	Santonian	10	4	0	0	Grimaldi et al. (1989)	
Cliffwood (New Jersey, USA)	-74,221207	40,442886	Santonian	10	4	0	0	Grimaldi et al. (1989)	
Piolenc 2 (Provence-Alpes-Côte d'Azur, France)	4,762482	44,182905	Santonian	10	4	1	1	https://doi.org/10.1051/bsgf/2020048	
Piolenc 1 (Provence-Alpes-Côte d'Azur, France)	4,765538	44,184572	Santonian	10	4	1	1	https://doi.org/10.1016/S1631-0683(03)00041-1	https://doi.org/10.1051/bsgf/2020048
Martigues-La Mède (Provence-Alpes-Côte d'Azur, France)	5,073071	43,398163	Santonian	10	4	0	0	https://doi.org/10.1016/j.crpv.2006.05.005	https://doi.org/10.1051/bsgf/2020048
Ensuès-la-Redonne 1 (Provence-Alpes-Côte d'Azur, France)	5,202521	43,330107	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	
Ensuès-la-Redonne 2 (Provence-Alpes-Côte d'Azur, France)	5,20641	43,329551	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	
Belcodène (Provence-Alpes-Côte d'Azur, France)	5,578364	43,408449	Santonian	10	4	0	1	https://doi.org/10.1016/j.annpal.2013.03.001	https://doi.org/10.1051/bsgf/2020048
Plan d'Aups/La Brasque (Provence-Alpes-Côte d'Azur, France)	5,705315	43,322615	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	https://doi.org/10.1051/bsgf/2021005
Glacières de Pivaut (Provence-Alpes-Côte d'Azur, France)	5,852818	43,35234	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	https://doi.org/10.1051/bsgf/2021005
Plan d'Aups/Dowtown (Provence-Alpes-Côte d'Azur, France)	5,853374	43,350673	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	
Equireuil Quarry (Provence-Alpes-Côte d'Azur, France)	5,955599	43,359842	Santonian	10	4	0	0	https://doi.org/10.1051/bsgf/2020048	https://doi.org/10.1051/bsgf/2021005
Romanikha (Krasnoyarsk Krai, Russian Federation)	98,641111	70,929167	Santonian	10	4	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Yantardakh (Krasnoyarsk Krai, Russian Federation)	99,562778	71,307222	Santonian	10	4	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Tumulda (Krasnoyarsk Krai, Russian Federation)	100,452133	71,807268	Santonian	10	4	0	0	https://doi.org/10.1134/S0031030119100149	
Isaevsky (Krasnoyarsk Krai, Russian Federation)	100,479599	71,719598	Santonian	10	4	0	0	https://doi.org/10.1134/S0031030119100149	
Bulun (Krasnoyarsk Krai, Russian Federation)	100,966111	71,627778	Santonian	10	4	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Sokolovsky (Krasnoyarsk Krai, Russian Federation)	101,204697	71,776372	Santonian	10	4	0	0	https://doi.org/10.1134/S0031030119100149	
Ugolyak (Krasnoyarsk Krai, Russian Federation)	101,33	72,029722	Santonian	10	4	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Iwaki (Fukushima, Japan)	140,954317	37,141889	Santonian	10	4	1	1	https://doi.org/10.9784/LEB3(4)Lambert.01	
Kuji (Iwate, Japan)	141,743732	40,150427	Santonian	10	4	1	1	https://doi.org/10.3897/zookeys.802.28754	
Xixia (Henan, China)	111,4821	33,309394	Coniacian–Campanian	9–11	4	0	0	https://doi.org/10.1371/journal.pone.0111303	
Vernasso (Friuli-Venezia Giulia, Italy)	13,47091	46,126866	Coniacian–Santonian	9–10	4	0	0	Gomez et al. (2018)	
Shavarshavan (Tavush, Armenia)	45,125	41,135556	Coniacian	9	4	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Mamalichay River (Lachin District, Azerbaijan)	46,243157	39,707583	Coniacian	9	4	0	0	Zherickin and Escov (1999)	
Paden (Mississippi, USA)	-88,271414	34,658152	Turonian	8	3	0	0	https://doi.org/10.1016/0034-6667(94)90094-9	
Harrisonville (New Jersey, USA)	-75,274416	39,687247	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Roebling (New Jersey, USA)	-74,782843	40,11683	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Bordentown (New Jersey, USA)	-74,679588	40,146902	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Pemberton (New Jersey, USA)	-74,678601	39,977076	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Sayreville (New Jersey, USA)	-74,346957	40,445943	Turonian	8	3	1	1	Grimaldi et al. (1989)	
Parlin (New Jersey, USA)	-74,324192	40,461217	Turonian	8	3	0	0	Grimaldi et al. (1989)	
South Amboy (New Jersey, USA)	-74,291667	40,491667	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Charleston (New York, USA)	-74,227046	40,533703	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Squankum (New Jersey, USA)	-74,152629	40,171254	Turonian	8	3	0	0	Grimaldi et al. (1989)	
Martha's Vineyard (Massachusetts, USA)	-70,818369	41,346534	Turonian	8	3	0	0	Hollick (1905)	
Soto del Real (Madrid, Spain)	-3,796509	40,763656	Turonian	8	3	0	0	Guidi et al. (2005)	
La Garnache (Pays de la Loire, France)	-1,857921	46,882048	Turonian	8	3	1	1	https://doi.org/10.1016/j.cretres.2016.10.001	
Sainte-Mondane (Nouvelle-Aquitaine, France)	1,31507	44,841254	Turonian	8	3	0	0	https://doi.org/10.1344/GeologicaActa2016.14.1.5	

Saint-Marcel-de-Careiret (Provence-Alpes-Côte d'Azur, France)	4,483409	44,150055	Turonian	8	3	0	0	Perrichot et al. (2007)	
THA01 (Victoria, Australia)	142,90215	-39,237336	Turonian	8	3	0	0	https://doi.org/10.1371/journal.pone.0121307	
Thylacine-1 (Victoria, Australia)	142,913649	-39,239509	Turonian	8	3	0	0	https://doi.org/10.1371/journal.pone.0121307	
Minerva-1 (Victoria, Australia)	142,954795	-38,701905	Turonian	8	3	0	0	https://doi.org/10.1371/journal.pone.0121307	
Minerva-2a (Victoria, Australia)	142,957147	-38,716434	Turonian	8	3	0	0	https://doi.org/10.1371/journal.pone.0121307	
Iona-4 (Victoria, Australia)	142,974889	-38,605287	Turonian	8	3	0	0	https://doi.org/10.1371/journal.pone.0121307	
Chatham Islands (New Zealand)	-176,223832	-44,245421	Cenomanian–Turonian	7–8	3	1	0	https://doi.org/10.1038/s41598-020-62252-z	
Quality Creek (British Columbia, Canada)	-120,954293	55,167777	Cenomanian–Turonian	7–8	3	0	0	Quinney (2015)	
Timmerdyakh-Khaya (Sakha Republic (Yakutia), Russian Federation)	123,569722	64,054444	Cenomanian–Turonian	7–8	3	1	1	http://dx.doi.org/10.1016/j.cretres.2015.12.025	
Tal-Yuryakh (Magadan Oblast, Russian Federation)	146,664805	63,294907	Cenomanian–Turonian	7–8	3	0	0	Zherickin and Escov (1999)	
Dunvegan (Alberta, Canada)	-118,571736	55,931305	Cenomanian	7	3	0	0	Quinney (2015)	
Grayson County (Texas, USA)	-96,710549	33,65432	Cenomanian	7	3	0	0	https://doi.org/10.9784/LEB5(3)Friedman.01	
Woodbridge (New Jersey, USA)	-74,271099	40,555977	Cenomanian	7	3	0	0	Grimaldi et al. (1989)	
Mata Amarilla Fm. (Santa Cruz, Argentina)	-71,484137	-49,526933	Cenomanian	7	3	0	0	Petrulevičius and Iglesias (2018)	
Alto de El Caleyu (Asturias, Spain)	-5,874667	43,323627	Cenomanian	7	3	0	0	Own data	
Pruvia (Asturias, Spain)	-5,767591	43,452634	Cenomanian	7	3	0	0	Own data	
Torrelaguna (Madrid, Spain)	-3,542636	40,842191	Cenomanian	7	3	0	0	Own data	
Hoz Seca (Guadalajara, Spain)	-1,871413	40,5328	Cenomanian	7	3	0	0	https://doi.org/10.3989/tp.2012.12098	
Aix Island (Nouvelle-Aquitaine, France)	-1,15607	46,019394	Cenomanian	7	3	1	1	Néraudeau et al. (2009)	
Enet Island (Nouvelle-Aquitaine, France)	-1,143324	46,003307	Cenomanian	7	3	0	0	Perrichot et al. (2007)	
Fouras/Bois-Vert (Nouvelle-Aquitaine, France)	-1,100376	45,992477	Cenomanian	7	3	0	0	Perrichot et al. (2007)	
Saint-Lon (Nouvelle-Aquitaine, France)	-1,099688	43,611196	Cenomanian	7	3	0	0	Perrichot et al. (2007)	
Fouras (Nouvelle-Aquitaine, France)	-1,079191	45,974085	Cenomanian	7	3	0	1	https://doi.org/10.1016/S1631-0683(03)00032-0	
Cadeuil (Nouvelle-Aquitaine, France)	-0,939347	45,767241	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.cretres.2008.05.009	
Losa del Obispo (Valencia, Spain)	-0,879237	39,71653	Cenomanian	7	3	0	0	Own data	
Les Renardières (Nouvelle-Aquitaine, France)	-0,829285	45,965954	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.cretres.2018.10.011	
Briollay (Pays de la Loire, France)	-0,513936	47,555998	Cenomanian	7	3	0	0	Perrichot et al. (2007)	
Hucheloup (Pays de la Loire, France)	-0,502208	47,533926	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.annpal.2013.10.001	
Le Brouillard (Pays de la Loire, France)	-0,492037	47,53565	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.annpal.2013.10.001	
Neau (Pays de la Loire, France)	-0,459807	48,159989	Cenomanian	7	3	1	1	https://doi.org/10.1051/bsgf/2020039	
Précigné (Pays de la Loire, France)	-0,325368	47,772811	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Durtal (Pays de la Loire, France)	-0,281249	47,683508	Cenomanian	7	3	1	1	https://doi.org/10.1021/acs.jnatprod.5b00093	
La Brousse (Pays de la Loire, France)	-0,054578	47,776108	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Saint-Jean-du-Bois (Pays de la Loire, France)	-0,03422	47,868666	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Mézeray (Pays de la Loire, France)	-0,025052	47,825517	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
La-Suze-sur-Sarthe (Pays de la Loire, France)	0,014017	47,898511	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Röezé-sur-Sarthe (Pays de la Loire, France)	0,071942	47,902842	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
La Bazoge (Pays de la Loire, France)	0,127984	48,099435	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Fessard (Pays de la Loire, France)	0,136578	47,82726	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Mansigné (Pays de la Loire, France)	0,144061	47,751894	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
Moncé-en-Belin (Pays de la Loire, France)	0,185164	47,889764	Cenomanian	7	3	0	0	https://doi.org/10.1344/105.000001873	
La Buzinie (Nouvelle-Aquitaine, France)	0,19365	45,705148	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.cretres.2018.10.011	
Écommoy (Pays de la Loire, France)	0,259718	47,810306	Cenomanian	7	3	1	1	https://doi.org/10.1344/105.000001873	
Scorbé-Clairvaux-La Bergeonneau (Nouvelle-Aquitaine, France)	0,387262	46,800977	Cenomanian	7	3	0	0	https://doi.org/10.1051/bsgf/2020034	
Châtellerault-La Désirée (Nouvelle-Aquitaine, France)	0,540599	46,831536	Cenomanian	7	3	0	0	https://doi.org/10.1051/bsgf/2020034	
Saint-Cyprien (Nouvelle-Aquitaine, France)	1,07674	44,874946	Cenomanian	7	3	0	0	Perrichot et al. (2007)	
Veyrines (Nouvelle-Aquitaine, France)	1,079551	44,802915	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.annpal.2013.07.001	
Simeyrols (Nouvelle-Aquitaine, France)	1,338992	44,923328	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.annpal.2013.07.001	
Fourtou (Occitanie, France)	2,429223	42,902994	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.annpal.2013.06.002	
Schliersee (Bavaria, Germany)	11,877551	47,717066	Cenomanian	7	3	0	0	https://doi.org/10.1006/cres.2001.0267	
Nové Strašecí (Central Bohemian Region, Czech Republic)	13,910101	50,132583	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.jenvrad.2016.04.004	
Křižany (Liberec, Czech Republic)	14,855637	50,708399	Cenomanian	7	3	0	0	https://doi.org/10.1016/j.jenvrad.2016.04.004	
Nová Ves (South Moravian, Czech Republic)	16,310337	49,113592	Cenomanian	7	3	0	0	https://doi.org/10.1135/cccc19763138	
Valchov (South Moravian, Czech Republic)	16,712453	49,482615	Cenomanian	7	3	0	0	https://doi.org/10.1135/cccc19763138	
Agdzhakend (Goranboy District, Azerbaijan)	46,493611	40,404167	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Nizhnyaya Agapa (Krasnoyarsk Krai, Russia Federation)	86,817831	70,165067	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	https://doi.org/10.1134/S0031030119100149
Nam Sakhaw (Sagaing, Myanmar)	95,91554	25,671563	Cenomanian	7	3	1	1	https://doi.org/10.1016/S1367-9120(02)00044-5	
Lajamaw (Kachin, Myanmar)	96,466667	26,249444	Cenomanian	7	3	1	1	Chhibber (1934)	
Ladummaw (Kachin, Myanmar)	96,467778	26,188611	Cenomanian	7	3	1	1	Chhibber (1934)	
Noije Bum (Kachin, Myanmar)	96,550833	26,250278	Cenomanian	7	3	1	1	https://doi.org/10.1016/S1367-9120(02)00044-5	
Khanjamaw (Kachin, Myanmar)	96,560278	26,263889	Cenomanian	7	3	1	1	Chhibber (1934)	
Angbamo (Kachin, Myanmar)	96,593876	26,266628	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.palaeo.2020.109960	
Xipiugong (Kachin, Myanmar)	96,679664	26,321647	Cenomanian	7	3	1	1	https://doi.org/10.1016/j.palaeo.2020.109960	
Omalik River (Alaska, USA)	-159,808086	70,308762	Albian–Cenomanian	6–7	3	0	0	Poinar (1992)	
Kuk/Kaolak River (Alaska, USA)	-159,616345	70,121333	Albian–Cenomanian	6–7	3	0	1	https://doi.org/10.1130/0016-7606(1960)71[1345:CAFTAC]2.0.CO;2	https://doi.org/10.1016/j.revpalbo.2011.04.002
Killik Bend (Alaska, USA)	-153,249248	69,147133	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1130/0016-7606(1960)71[1345:CAFTAC]2.0.CO;2	
Jefferson County (Nebraska, USA)	-97,174042	40,029714	Albian–Cenomanian	6–7	3	0	0	Rice (2006)	
Seward County (Nebraska, USA)	-96,964229	40,789766	Albian–Cenomanian	6–7	3	0	0	Rice (2006)	
Qeqertarsuatsiaq/Hare Island (Greenland)	-54,879139	70,421907	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1111/j.1475-4754.1996.tb00780.x	https://doi.org/10.1126/science.163.3872.1157
San Claudio (Asturias, Spain)	-5,914707	43,352554	Albian–Cenomanian	6–7	3	0	0	Own data	
La Manjoya (Asturias, Spain)	-5,860553	43,341174	Albian–Cenomanian	6–7	3	0	0	Own data	
Fonfría (Cantabria, Spain)	-4,265705	43,391447	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1016/j.orggeochem.2015.12.010	
Oreña (Cantabria, Spain)	-4,138525	43,392009	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1016/j.orggeochem.2015.12.010	
Cuchía (Cantabria, Spain)	-4,016127	43,445557	Albian–Cenomanian	6–7	3	0	0	Own data	
Somocueva (Cantabria, Spain)	-3,945295	43,469855	Albian–Cenomanian	6–7	3	1	1	Own data	
Archingeay-Les Nouillers (Nouvelle-Aquitaine, France)	-0,696843	45,93744	Albian–Cenomanian	6–7	3	1	1	https://doi.org/10.1016/S0016-6995(02)00024-4	
Estercuel (Teruel, Spain)	-0,640288	40,855012	Albian–Cenomanian	6–7	3	1	0	Own data	
Logata (Krasnoyarsk Krai, Russia)	99,098412	73,781097	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Novaya (Krasnoyarsk Krai, Russian Federation)	101,045395	72,576578	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Baikura (Krasnoyarsk Krai, Russian Federation)	101,426389	73,833056	Albian–Cenomanian	6–7	3	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	https://doi.org/10.1134/S0031030119100149
Gubina Gora (Krasnoyarsk Krai, Russian Federation)	102,59996	71,976294	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Moroskop (Krasnoyarsk Krai, Russia)	103,489853	72,492496	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Nikon-Yuryakh (Krasnoyarsk Krai, Russia)	105,132309	73,168606	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Bediey (Krasnoyarsk Krai, Russia)	106,324326	73,597126	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Syndassko in Khatangskaya Guba (Krasnoyarsk Krai, Russian Federation)	108,235947	73,280064	Albian–Cenomanian	6–7	3	0	0	https://doi.org/10.1134/S0031030119100149	
Omalik River (Alaska, USA)	-159,808086	70,308762	Albian–Cenomanian	6–7	2	0	0	Poinar (1992)	
Kuk/Kaolak River (Alaska, USA)	-159,616345	70,121333	Albian–Cenomanian	6–7	2	0	1	https://doi.org/10.1130/0016-7606(1960)71[1345:CAFTAC]2.0.CO;2	https://doi.org/10.1016/j.revpalbo.2011.04.002
Killik Bend (Alaska, USA)	-153,249248	69,147133	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1130/0016-7606(1960)71[1345:CAFTAC]2.0.CO;2	
Jefferson County (Nebraska, USA)	-97,174042	40,029714	Albian–Cenomanian	6–7	2	0	0	Rice (2006)	
Seward County (Nebraska, USA)	-96,964229	40,789766	Albian–Cenomanian	6–7	2	0	0	Rice (2006)	

Qeqertarsuatsiaq/Hare Island (Greenland)	-54,879139	70,421907	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1111/j.1475-4754.1996.tb00780.x	https://www.science.org/doi/10.1126/science.163.3872.1157
San Claudio (Asturias, Spain)	-5,914707	43,352554	Albian–Cenomanian	6–7	2	0	0	Own data	
La Manjoya (Asturias, Spain)	-5,860553	43,341174	Albian–Cenomanian	6–7	2	0	0	Own data	
Fonfría (Cantabria, Spain)	-4,265705	43,391447	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1016/j.orggeochem.2015.12.010	
Oreña (Cantabria, Spain)	-4,138525	43,392009	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1016/j.orggeochem.2015.12.010	
Cuchía (Cantabria, Spain)	-4,016127	43,445557	Albian–Cenomanian	6–7	2	0	0	Own data	
Somocueva (Cantabria, Spain)	-3,945295	43,469855	Albian–Cenomanian	6–7	2	1	1	Own data	
Archingeay-Les Nouillers (Nouvelle-Aquitaine, France)	-0,696843	45,93744	Albian–Cenomanian	6–7	2	1	1	https://doi.org/10.1016/S0016-6995(02)00024-4	
Estercuel (Teruel, Spain)	-0,640288	40,855012	Albian–Cenomanian	6–7	2	1	0	Own data	
Logata (Krasnoyarsk Krai, Russia)	99,098412	73,781097	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Novaya (Krasnoyarsk Krai, Russian Federation)	101,045395	72,576578	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Baikura (Krasnoyarsk Krai, Russian Federation)	101,426389	73,833056	Albian–Cenomanian	6–7	2	1	1	https://doi.org/10.1016/j.cretres.2015.12.025	https://doi.org/10.1134/S0031030119100149
Gubina Gora (Krasnoyarsk Krai, Russian Federation)	102,59996	71,976294	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Moroskop (Krasnoyarsk Krai, Russia)	103,489853	72,492496	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Nikon-Yuryakh (Krasnoyarsk Krai, Russia)	105,132309	73,168606	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Bediey (Krasnoyarsk Krai, Russia)	106,324326	73,597126	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Syndassko in Khatangskaya Guba (Krasnoyarsk Krai, Russian Federation)	108,235947	73,280064	Albian–Cenomanian	6–7	2	0	0	https://doi.org/10.1134/S0031030119100149	
Ellsworth County (Kansas, USA)	-98,03351	38,658596	Albian	6	2	0	0	Ward Aber and Kosmowska-Ceramowicz (2001)	
Pungarayacu (Napo, Ecuador)	-77,741328	-0,706706	Albian	6	2	0	0	https://doi.org/10.1016/j.jsames.2018.02.004	Own data
Washington D.C. (District of Columbia, USA)	-76,96074	38,872161	Albian	6	2	0	0	Lanhengeim and Beck (1968)	
Cape Sable (Maryland, USA)	-76,501509	39,083242	Albian	6	2	0	0	https://doi.org/10.1126/science.3.68.582	https://doi.org/10.26879/847
Magoito (Lisboa, Portugal)	-9,449777	38,865081	Albian	6	2	0	0	Barrón et al. (2001)	Peñalver et al. (2018a)
Corte Caleyu (Asturias, Spain)	-5,873173	43,323392	Albian	6	2	0	0	Peñalver et al. (2018b)	
El Caleyu (Asturias, Spain)	-5,870998	43,322488	Albian	6	2	1	1	Peñalver and Delclòs (2010)	
La Rodada (Asturias, Spain)	-5,862788	43,331092	Albian	6	2	0	1	Peñalver et al. (2018b)	
Pola de Siero (Asturias, Spain)	-5,653265	43,383003	Albian	6	2	0	1	Peñalver and Delclòs (2010)	
Puerto del Boyar (Cádiz, Spain)	-5,418143	36,749342	Albian	6	2	0	0	Own data	
Trambarria (Asturias, Spain)	-5,39535	43,365272	Albian	6	2	0	0	Own data	
El Soplao (Cantabria, Spain)	-4,447222	43,305556	Albian	6	2	1	1	https://doi.org/10.1344/105.000001443	
San Vicente de la Barquera (Cantabria, Spain)	-4,398027	43,37878	Albian	6	2	0	0	Own data	
Basconcillos del Tozo-Aguilar de Campoo (Burgos, Spain)	-4,075919	42,753345	Albian	6	2	0	0	Own data	
Olleros (Palencia, Spain)	-4,023417	42,784019	Albian	6	2	0	0	Own data	
Ensenada del Camello (Cantabria, Spain)	-3,776067	43,470615	Albian	6	2	0	1	Own data	
Pancorbo (Burgos, Spain)	-3,109928	42,645703	Albian	6	2	0	0	Own data	
Salinillas de Buradón (Álava, Spain)	-2,856625	42,638969	Albian	6	2	1	1	https://doi.org/10.11158/saa.13.3.13	
San Felices (La Rioja, Spain)	-2,84788	42,625397	Albian	6	2	0	0	Own data	
Peñacerrada II (Álava, Spain)	-2,724882	42,620316	Albian	6	2	1	1	https://doi.org/10.1007/s12371-010-0030-9	
Peñacerrada I (Burgos, Spain)	-2,714722	42,678611	Albian	6	2	1	1	https://doi.org/10.1666/0022-3360(2000)0742.0.CO;2	
Zubielki (Navarra, Spain)	-2,065931	42,680208	Albian	6	2	0	0	Own data	
Moratalla (Murcia, Spain)	-1,995206	38,232161	Albian	6	2	0	0	Peñalver et al. (2013)	
Villel (Teruel, Spain)	-1,178101	40,239746	Albian	6	2	0	0	Own data	
Puy-Puy (Nouvelle-Aquitaine, France)	-0,880909	45,963866	Albian	6	2	1	1	https://doi.org/10.1016/j.cretres.2019.03.022	
San Just (Teruel, Spain)	-0,834283	40,777977	Albian	6	2	1	1	https://doi.org/10.1016/j.cretres.2006.12.004	
Palomar de Arroyos (Teruel, Spain)	-0,744598	40,766372	Albian	6	2	0	0	Own data	
Alcaine-Oliete (Teruel, Spain)	-0,67808	40,96797	Albian	6	2	0	0	Own data	
Quesa (Valencia, Spain)	-0,672706	39,082456	Albian	6	2	0	0	Own data	
Arroyo de la Pascueta Teruel, Spain)	-0,604085	40,214037	Albian	6	2	1	1	Peñalver and Delclòs (2010)	
San Vicente del Raspeig (Alicante, Spain)	-0,574628	38,363295	Albian	6	2	0	0	Own data	
Ariño (Teruel, Spain)	-0,558794	41,031691	Albian	6	2	1	1	https://doi.org/10.7554/eLife.72477	
Molino de Arriba (Castellón, Spain)	-0,549492	40,149465	Albian	6	2	0	0	Own data	
La Hoya (Castellón, Spain)	-0,52761	40,198551	Albian	6	2	1	1	Peñalver and Delclòs (2010)	
Valle de Andorra (Teruel, Spain)	-0,47221	40,992126	Albian	6	2	0	0	Own data	
Mina Tremedal (Teruel, Spain)	-0,429879	40,9302	Albian	6	2	0	0	Own data	
Serra Gelada (Alicante, Spain)	-0,061944	38,554207	Albian	6	2	0	0	Own data	
Son Vida (Mallorca, Spain)	2,591447	39,599691	Albian	6	2	0	0	Own data	
Bédoin (Provence-Alpes-Côte d'Azur, France)	5,191942	44,125688	Albian	6	2	0	0	https://doi.org/10.1051/bsgf/2020048	
Aubignosc (Provence-Alpes-Côte d'Azur, France)	5,963911	44,115422	Albian	6	2	0	0	https://doi.org/10.1051/bsgf/2020048	
Salignac 2 (Provence-Alpes-Côte d'Azur, France)	5,990576	44,175147	Albian	6	2	1	1	https://doi.org/10.1051/bsgf/2020048	
Ra Stua (Veneto, Italy)	12,095667	46,62953	Albian	6	2	0	0	Trevisani and Ragatzzi (2013)	
Wadi Zerka (Jerash, Jordan)	35,857673	32,207822	Albian	6	2	1	1	https://doi.org/10.1016/0899-5362(92)90106-M	
Khafji Oil Field (Eastern Province, Saudi Arabia)	48,837182	28,423319	Albian	6	2	0	0	https://doi.org/10.2113/geoarabia0203239	https://doi.org/10.1111/j.1747-5457.2004.tb00054.x
Persian Gulf (Iran)	51,469268	28,233255	Albian	6	2	0	0	Savkevich et al. (1990)	
Hkamti (Sagaing, Myanmar)	95,765897	25,6901	Albian	6	2	1	1	https://doi.org/10.1016/j.palaeo.2020.109960	
Kresty (Krasnoyarsk Krai, Russian Federation)	102,159722	71,874722	Albian	6	2	0	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Zhdanikha 2 (Krasnoyarsk Krai, Russian Federation)	102,861667	72,179444	Albian	6	2	0	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Zhdanikha 1 (Krasnoyarsk Krai, Russian Federation)	102,870278	72,164722	Albian	6	2	0	1	https://doi.org/10.1016/j.cretres.2015.12.025	
Khetana River (Khabarovsk Krai, Russian Federation)	140,218835	59,469675	Albian	6	2	1	1	Zherikhin and Escov (1999)	
Alter do Chão Fm. (Amazonas, Brazil)	-59,475501	-2,767645	Aptian–Albian	5–6	2	0	0	https://doi.org/10.1016/j.orggeochem.2009.05.002	https://doi.org/10.1016/j.jsames.2019.102413
Ipubi Fm. (Pernambuco, Brazil)	-40,233053	-7,711794	Aptian–Albian	5–6	2	0	0	https://doi.org/10.1016/j.jsames.2019.102413	
Estoril-Cascais (Lisboa, Portugal)	-9,394955	38,702009	Aptian–Albian	5–6	2	0	1	Peñalver et al. (2018a)	
Catefica (Lisboa, Portugal)	-9,244513	39,062614	Aptian–Albian	5–6	2	0	0	https://doi.org/10.2478/if-2018-0019	Peñalver et al. (2018a)
Sesimbra (Setúbal, Portugal)	-9,092729	38,44631	Aptian–Albian	5–6	2	0	0	Peñalver et al. (2018a)	
Figueira da Foz (Coimbra, Portugal)	-8,865125	40,169245	Aptian–Albian	5–6	2	0	0	Peñalver et al. (2018a)	
Langer Köchel (Bavaria, Germany)	11,150015	47,630808	Aptian–Albian	5–6	2	0	0	https://doi.org/10.1007/s00015-010-0003-7	
Suyfun Coal Basin (Primorsky Krai, Russian Federation)	132,071099	44,071184	Aptian–Albian	5–6	2	0	0	Khanchuk et al. (1996)	Zherikhin and Escov (1999)
Crato Fm. (Ceará, Brazil)	-39,82805	-7,127919	Aptian	5	2	0	0	https://doi.org/10.1111/j.1475-4983.2005.00517.x	https://doi.org/10.1016/j.orggeochem.2009.05.002
Bafureira Beach (Lisboa, Portugal)	-9,36659	38,692422	Aptian	5	2	0	0	Silvério and Madeira (2018)	
Reocín (Cantabria, Spain)	-4,083988	43,344413	Aptian	5	2	1	1	Own data	
Salignac 1 (Provence-Alpes-Côte d'Azur, France)	5,987242	44,176813	Aptian	5	2	0	0	https://doi.org/10.1051/bsgf/2020048	
Doumanga (Kouilou, Congo)	12,235825	-4,800837	Aptian	5	2	1	1	https://doi.org/10.1051/bsgf/2020018	
Stary Oskol (Belgorod Oblast, Russian Federation)	37,676911	51,268682	Aptian	5	2	0	0	Zherikhin and Escov (1999)	
Lingquan Coal Mine (Inner Mongolia, China)	117,740556	49,448056	Aptian	5	2	0	0	https://doi.org/10.11646/palaeoentomology.2.4.8	
Choshi (Chiba, Japan)	140,848755	35,720153	Aptian	5	2	1	1	Bausch (2012)	
Las Hoyas (Cuenca, Spain)	-1,896971	40,089591	Barremian	4	2	0	0	Own data	
Chilton Chine (Isle of Wight, England)	-1,422733	50,637862	Barremian	4	2	1	1	https://doi.org/10.1017/S0016756800023207	https://doi.org/10.1344/105.000000257
Galve (Teruel, Spain)	-0,882341	40,646109	Barremian	4	2	0	0	Own data	
Aliaga (Teruel, Spain)	-0,710381	40,670075	Barremian	4	2	0	0	Own data	
Mas de la Parreta Quarry (Castellón, Spain)	-0,137444	40,59338	Barremian	4	2	1	0	https://doi.org/10.1080/08912963.2013.874422	
Herbés (Castellón, Spain)	-0,011142	40,710901	Barremian	4	2	0	0	https://doi.org/10.1007/s10347-022-00651-6	
Sarhmoul (Mount Lebanon, Lebanon)	35,536314	33,772926	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	

Maknouniyeh (South, Lebanon)	35,539527	33,528022	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Roum-Aazour Homsiyeh (South, Lebanon)	35,560668	33,552665	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Rihane (South, Lebanon)	35,561993	33,448601	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Jezzine (South, Lebanon)	35,572052	33,547825	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Wadi Jezzine (South, Lebanon)	35,57909	33,552797	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Daychouniyyeh (Mount Lebanon, Lebanon)	35,582019	33,85171	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Ain Zhalta (Mount Lebanon, Lebanon)	35,687719	33,731856	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Hammana-Mdeyrij (Mount Lebanon, Lebanon)	35,731235	33,806256	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Ain Dara 2 (Mount Lebanon, Lebanon)	35,731536	33,794078	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	https://doi.org/10.11646/palaeoentomology.4.1.4
Ain Dara 1 (Mount Lebanon, Lebanon)	35,735827	33,794399	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	https://doi.org/10.11646/palaeoentomology.4.1.4
Falougha (Mount Lebanon, Lebanon)	35,75707	33,838379	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Ouata El-Jaouz (Mount Lebanon, Lebanon)	35,759023	34,021883	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Kfar Selouan (Mount Lebanon, Lebanon)	35,779858	33,848538	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Dahr Qloum Hachem (Mount Lebanon, Lebanon)	35,789799	33,997378	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.3.4.14	
Baskinta (Mount Lebanon, Lebanon)	35,791466	33,942932	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.3.6.7	
Red Rock/Mazraat Kfardibiane (Mount Lebanon, Lebanon)	35,797855	33,978488	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.4.14	https://doi.org/10.11646/palaeoentomology.4.1.4
Jabal Er Roueis (Mount Lebanon, Lebanon)	35,815911	34,008211	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.3.4.14	
Bouarij (Beqaa, Lebanon)	35,82478	33,821506	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Tannourine (North, Lebanon)	35,897961	34,169385	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Aita El-Foukhar (Beqaa, Lebanon)	35,925207	33,629598	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Hadath El-Joubbeh (North, Lebanon)	35,938645	34,247394	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Beqaa Kafra (North, Lebanon)	36,020013	34,234764	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Bcharreh (North, Lebanon)	36,035634	34,250374	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Zarzar Lake (Rif Dimashq, Syria)	36,043994	33,618295	Barremian	4	2	1	1	https://doi.org/10.1016/j.cretres.2014.12.006	
Nimrin/El-Dabsheh (North, Lebanon)	36,061641	34,380956	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Hrar (Akkar, Lebanon)	36,145641	34,462113	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.2.4.6	
Brissa (North, Lebanon)	36,169015	34,401566	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
Mechmech/El-Rassif (Akkar, Lebanon)	36,182864	34,46378	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.2.4.6	
Mechmech/Aaqabet Raqiya (Akkar, Lebanon)	36,195365	34,451836	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.2.4.6	
Jord Hrar (North, Lebanon)	36,200643	34,386834	Barremian	4	2	0	0	https://doi.org/10.11646/palaeoentomology.3.6.7	
Mechmech/Ain El-Khyar (Akkar, Lebanon)	36,215643	34,438224	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.2.4.6	https://doi.org/10.11646/palaeoentomology.4.1.4
Esh-Sheaybeh (Baalbek-Hermel, Lebanon)	36,244363	33,927009	Barremian	4	2	1	1	https://doi.org/10.11646/palaeoentomology.3.2.2	
East Baghdad Oilfield (Iraq)	44,527626	33,304931	Barremian	4	2	0	0	https://doi.org/10.2113/geoarabia0203239	https://doi.org/10.1111/j.1747-5457.1993.tb00344.x
Orcera (Jaén, Spain)	-2,640384	38,320313	Hauterivian–Barremian	3–4	2	0	0	Own data	
Maracangalha Fm. (Bahia, Brazil)	-38,455995	-12,359701	Berriasian–Barremian	1–4	2	0	0	https://doi.org/10.1016/j.orggeochem.2009.05.002	
Orcera (Jaén, Spain)	-2,640384	38,320313	Hauterivian–Barremian	3–4	1	0	0	Own data	
Alaró (Mallorca, Spain)	2,842847	39,716434	Hauterivian	3	1	0	0	Own data	
Golling (Salzburg, Austria)	13,176145	47,574799	Hauterivian	3	1	1	1	Borkent et al. (1997)	
Baboor (Southern District, Israel)	35,114071	31,134232	Valanginian–Hauterivian	2–3	1	0	0	https://doi.org/10.1016/0899-5362(92)90106-M	
Kokhov (Southern District, Israel)	34,657849	31,64491	Valanginian–Hauterivian	2–3	1	0	0	https://doi.org/10.1016/0899-5362(92)90106-M	
Qiryat Shermona (Northern District, Israel)	35,558083	33,218157	Valanginian–Hauterivian	2–3	1	0	0	https://doi.org/10.1016/0899-5362(92)90106-M	
Mount Hermon (Northern District, Israel)	35,751543	33,267612	Valanginian–Hauterivian	2–3	1	0	0	https://doi.org/10.1016/0899-5362(92)90106-M	
Bexhill (East Sussex, England)	0,440242	50,860536	Valanginian	2	1	0	0	https://doi.org/10.1144/0016-76492008-158	
Kirkwood (Eastern Cape, South Africa)	25,47847	-33,413099	Valanginian	2	1	0	0	https://doi.org/10.1016/S1631-0683(02)00014-3	https://doi.org/10.1111/j.1502-3931.2002.tb00090.x
Hastings (East Sussex, England)	0,51837	50,843742	Berriasian–Valanginian	1–2	1	0	1	https://doi.org/10.1144/0016-76492008-158	
Maracangalha Fm. (Bahia, Brazil)	-38,455995	-12,359701	Berriasian–Barremian	1–4	1	0	0	https://doi.org/10.1016/j.orggeochem.2009.05.002	

Country	Longitude	Latitude	Wood Taxon	Family	Stage/s	Stages	Maps	Geological and geographical info	DOI or authors
Antarctica	-60	-62	*Agathoxylon chapmannae*	Araucariaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1 Peralta-Medina & Falcon-Lang (2012)
Antarctica	-60	-62	*Agathoxylon floresii*	Araucariaceae	Cenomanian–Campanian	7–11	4	Williams Point, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Araucariopitys antarcticus*	Araucariaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Agathoxylon pseudoparenchymatosum*	Araucariaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Agathoxylon*	Araucariaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Araucariopytis*	Araucariaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-58	-62	*Dadoxylon*	Araucariaceae	Maastrichtian	12	4	Barton Peninsula, King George Island	https://doi.org/10.1130/G32733.1
Antarctica	-57,918325	-63,862606	*Agathoxylon antarcticus*	Araucariaceae	Santonian–Lower Campanian	10–11	4	Santa Marta Fm., Brandy Bay, James Ross Island	https://doi.org/10.1016/j.cretres.2017.04.016
Antarctica	-57,918325	-63,862606	*Agathoxylon pseudoparenchymatosum*	Araucariaceae	Santonian–Lower Campanian	10–11	4	Santa Marta Fm., Brandy Bay, James Ross Island	https://doi.org/10.1016/j.cretres.2017.04.016
Antarctica	-57,918325	-63,862606	*Agathoxylon kellerense*	Araucariaceae	Santonian–Lower Campanian	10–11	4	Santa Marta Fm., Brandy Bay, James Ross Island	https://doi.org/10.1016/j.cretres.2017.04.016
Argentina	-69	-45	*Agathoxylon* sp.	Araucariaceae	Cenomanian–Coniacian	7–9	4	Bajo Barreal Fm., Puesto Confluencia, Chubut	https://doi.org/10.1130/G32733.1
Argentina	-67,80152801	-43,3483566	*Agathoxylon antarcticum*	Araucariaceae	Campanian–Maastrichtian	11–12	4	Puntudo Chico Fm., El Mirasol, Chubut	https://doi.org/10.1016/j.cretres.2019.01.022
Belgium	5	50	*Dammaroxylon aachense*	Araucariaceae	Santonian	10	4	Aachen Fm., Kaskorb quarry, La Calamine	https://doi.org/10.1130/G32733.1
Belgium	6	50	*Dadoxylon*	Araucariaceae	Santonian	10	4	Kelmis, literature, Kunzmann	https://doi.org/10.1130/G32733.1
Chile	-70	-30	*Agathoxylon pichasquensis*	Araucariaceae	Campanian–Maastrichtian	11–12	4	Pichasca, Ovalle, literature, Torres	https://doi.org/10.1130/G32733.1
Chile	-70	-30	*Agathoxylon pichasensis*	Araucariaceae	Campanian–Maastrichtian	11–12	4	Pichasca	https://doi.org/10.1130/G32733.1
Chile	-73,05133955	-36,6170815	*Agathoxylon pluriresinosum*	Araucariaceae	Maastrichtian	12	4	Quiriquina Fm., bahía de las Tablas, Isla Quiriquina	Torres & Biro-Bagoczky (1986)
Chile	-73,05133955	-36,6170815	*Agathoxylon resinosum*	Araucariaceae	Maastrichtian	12	4	Quiriquina Fm., bahía de las Tablas, Isla Quiriquina	Torres & Biro-Bagoczky (1986)
Germany	8	49	*Agathoxylon subhercynicum*	Araucariaceae	Coniacian	9	4	Heidelberg Fm.	https://doi.org/10.1130/G32733.1
Hungary	17	47	*Agathoxylon angetonnant*	Araucariaceae	Santonian	10	4	Ajka, literature, Greguss	https://doi.org/10.1130/G32733.1
Japan	142	42	*Agathoxylon tankoensis*	Araucariaceae	Cenomanian–Santonian	7–10	4	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	141,6385382	40,3833263	*Agathoxylon*	Araucariaceae	Santonian–Campanian	10–11	4	Honshu, Iwate Prefecture, Taneichi (Outer Zone), Taneichi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Korea	122	34	*Agathoxylon byeongpungense*	Araucariaceae	Campanian?	11	4	Byeongpung Island, southern extremity of Jindo County, South Jeolla Province	https://doi.org/10.1130/G32733.1
Madagascar	47	-19	*Agathoxylon madagascariense*	Araucariaceae	Turonian–Maastrichtian	8–12	4	literature, Fliche	https://doi.org/10.1130/G32733.1
Mexico	-101	27	*Agathoxylon sp.*	Araucariaceae	Maastrichtian	12	4	Olmos Fm., Barroteran, Coahuila	https://doi.org/10.1130/G32733.1
Mexico	-101	27	*Dadoxylon*	Araucariaceae	Maastrichtian	12	4	Olmos Fm., Coahuila	https://doi.org/10.1130/G32733.1
New Caledonia	165	-21	*Agathoxylon pancheri*	Araucariaceae	Turonian–Maastrichtian	8–12	4	Main island, literature	https://doi.org/10.1130/G32733.1
New Zealand	172	-42	*Araucariopitys hectorii*	Araucariaceae	Campanian–Maastrichtian	11–12	4	Amuri Bluffs, literature, NHStopes	https://doi.org/10.1130/G32733.1
New Zealand	172	-42	*Agathoxylon novaezealandii*	Araucariaceae	Campanian–Maastrichtian	11–12	4	Amuri Bluffs, literature, NHStopes	https://doi.org/10.1130/G32733.1
New Zealand	172	-42	*Agathoxylon ettingshauseni* ?	Araucariaceae	Campanian–Maastrichtian	11–12	4	Amuri Bluffs, literature, NHStopes	https://doi.org/10.1130/G32733.1
New Zealand	172	-42	*Agathoxylon*	Araucariaceae	Campanian?	11	4	Bull's Point and Batley, Kaipara Harbour	https://doi.org/10.1130/G32733.1
New Zealand	173	-42	*Agathoxylon kaiparaense*	Araucariaceae	Campanian?	11	4	Bull's Point and Batley, Kaipara Harbour	https://doi.org/10.1130/G32733.1
Peru	-75	-9	*Agathoxylon*	Araucariaceae	Campanian–Maastrichtian	11–12	4	O.LT.4	https://doi.org/10.1130/G32733.1
Peru	-80	-5	*Agathoxylon*	Araucariaceae	Campanian	11	4	La Mesa	https://doi.org/10.1130/G32733.1
Romania	23	46	*Agathoxylon formosum*	Araucariaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts.	https://doi.org/10.1130/G32733.1
Romania	23	46	*Agathoxylon ultimus*	Araucariaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts,	https://doi.org/10.1130/G32733.1
Romania	23	46	*Agathoxylon* sp.	Araucariaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts,	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Agathoxylon pseudochoshiense*	Araucariaceae	Turonian–Santonian	8–10	4	South Saghalien, Miho River	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Planoxylon inaii*	Araucariaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Right valley of	https://doi.org/10.1130/G32733.1
Russia/Japan	142	42	*Dadoxylon* cf. *tankoense*	Araucariaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, The Minami Rokusenzawa, Namikawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Agathoxylon kiiense*	Araucariaceae	Turonian–Santonian	8–10	4	Miho Group, South Sakhalin, Miho River	https://doi.org/10.1130/G32733.1
South Africa	27	-33	*Agathoxylon umzambense*	Araucariaceae	Turonian–Maastrichtian	8–12	4	East Pondoland	https://doi.org/10.1130/G32733.1
South Africa	27	-33	*Agathoxylon africanum*	Araucariaceae	Turonian–Maastrichtian	8–12	4	East Pondoland	https://doi.org/10.1130/G32733.1
South Africa	30,18222486	-31,1019584	*Agathoxylon*	Araucariaceae	Santonian	10	4	Mzamba Fm., Mzamba (=Umzamba) River Estuary, south of Port Edward, Pondoland region	https://doi.org/10.1016/j.gr.2022.04.008
USA	-103	29	Undetermined wood	Araucariaceae	Maastrichtian	11	4	Javelina Fm., Texas, literature	https://doi.org/10.1130/G32733.1
USA	-103	29	*Agathoxylon*	Araucariaceae	Maastrichtian	12	4	Javelina Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-103	29	*Araucarioid wood type 2*	Araucariaceae	Maastrichtian	12	4	Javelina Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-103	29	Undetermined wood	Araucariaceae	Campanian	11	4	Aguja Fm., Texas, literature	https://doi.org/10.1130/G32733.1
USA	-103	29	*Araucarioid wood type 2*	Araucariaceae	Campanian	11	4	Aguja Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-103	29	*Araucarioid wood type 3*	Araucariaceae	Campanian	11	4	Aguja Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-75	39	*Agathoxylon noveboracense*	Araucariaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-110	43	*Agathoxylon sp.*	Araucariaceae	Cenomanian–Coniacian	7–9	4	Frontier Fm., Wyoming, Teton County, Mt. Leidy	https://doi.org/10.1130/G32733.1
USA	-70	41	*Agathoxylon sp.*	Araucariaceae	Campanian	11	4	Gay's Head, Martha's Vineyard	https://doi.org/10.1130/G32733.1
Argentina	-67,80152801	-43,3483566	*Brachyoxylon* sp. cf. *B. currumilii*	Cheirolepidiaceae	Campanian–Maastrichtian	11–12	4	Puntudo Chico Fm., El Mirasol, Chubut	https://doi.org/10.1016/j.cretres.2019.01.022
Argentina	-72,11728006	-49,8298087	*Brachyoxylon patagonicum*	Cheirolepidiaceae	Campanian	11	4	Cerro Fortaleza Fm., Los Hornos Hill, Santa Cruz Province	https://doi.org/10.1016/j.cretres.2021.105065
Russia/Japan	142	47	*Brachyoxylon* sp. *notabile* ?	Cheirolepidiaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
USA	-75	39	*Brachyoxylon notabile*	Cheirolepidiaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-74,19073055	40,3859884	*Brachyoxylon* sp.	Cheirolepidiaceae	Santonian	10	4	Cliffwood lignites, Magothy Fm., New Jersey	https://doi.org/10.1130/G32733.1
USA	-74	40	*Brachyoxylon*	Cheirolepidiaceae	Turonian–Santonian	8–10	4	Kreischerville, Staten Island	https://doi.org/10.1130/G32733.1
Alaska	-155	69	Undetermined wood Taxon C	Cupressaceae	Campanian–Maastrichtian	11–12	4	Prince Creek Fm., Kogosukruk, Tongue, 0.53	https://doi.org/10.1130/G32733.1
Alaska	-155	69	Undetermined wood Taxon B	Cupressaceae	Campanian–Maastrichtian	11–12	4	Prince Creek Fm., Kogosukruk, Tongue, 0.53	https://doi.org/10.1130/G32733.1
Alaska	-155	69	Undetermined wood Taxon D	Cupressaceae	Campanian–Maastrichtian	11–12	4	Prince Creek Fm., Kogosukruk, Tongue, 0.82	https://doi.org/10.1130/G32733.1
Alaska	-155	69	Undetermined wood Taxon A	Cupressaceae	Campanian–Maastrichtian	11–12	4	Prince Creek Fm., Kogosukruk, Tongue, 0.82	https://doi.org/10.1130/G32733.1
Antarctica	-57,918325	-63,862606	*Cupressinoxylon hallei / rotundum*	Cupressaceae	Santonian–Lower Campanian	10–11	4	Santa Marta Fm., Brandy Bay, James Ross Island	https://doi.org/10.1016/j.cretres.2017.04.016
Argentina	-69	-49	*Cupressinoxylon*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Mata Amarilla Fm., Tres Lagos	https://doi.org/10.1130/G32733.1
Belgium	5	50	*Taxodioxylon gypsaceum*	Cupressaceae	Santonian	10	4	Aachen Fm., Kaskorb quarry, La Calamine	https://doi.org/10.1130/G32733.1
Belgium	5	50	*Taxodioxylon* cf. *albertense*	Cupressaceae	Santonian	10	4	Aachen Fm., Rouscheweide quarry, Montzen	https://doi.org/10.1130/G32733.1
Canada	-112	51	*Taxodioxylon gypsaceum*	Cupressaceae	Maastrichtian	12	4	Edmonton Fm., 4 miles SE of Rosedale	https://doi.org/10.1130/G32733.1
Canada	-112	51	*Taxodioxylon drumhellerense*	Cupressaceae	Maastrichtian	12	4	Edmonton Fm., 4 miles SE of Rosedale	https://doi.org/10.1130/G32733.1
Canada	-112	51	*Taxodioxylon taxodii*	Cupressaceae	Maastrichtian	12	4	Edmonton Fm., Rosedale and Little, Church coal	https://doi.org/10.1130/G32733.1
Canada	-112	51	*Taxodioxylon multiseriatum*	Cupressaceae	Maastrichtian	12	4	Edmonton Fm., Rosedale coal mine area, Alberta	https://doi.org/10.1130/G32733.1
Canada	-103,2463889	29,2441667	*Taxodioxylon antiquum*	Cupressaceae	Maastrichtian	12	4	Javelina Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
Canada	-111	57	*Cupressinoxylon macrocarpoides*	Cupressaceae	Campanian	11	4	Oldman Fm.?, Medicine Hat, Alberta	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Taxodioxylon gypsaceum*	Cupressaceae	Campanian	11	4	Oldman Fm., near Medicine Hat, in southern Alberta	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Platyspiroxylon parenchymatosum*	Cupressaceae	Campanian	11	4	Oldman Fm., Denhart area, in the Red	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Taxodioxylon multiseriatum*	Cupressaceae	Campanian	11	4	Oldman Fm., 8 mi W of Redcliff	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Taxodioxylon cryptomerioides*	Cupressaceae	Campanian	11	4	Oldman Fm., 8 mi W of Redcliff	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Taxodioxylon multiseriatum*	Cupressaceae	Campanian	11	4	Oldman Fm., 8 mi W of Redcliff	https://doi.org/10.1130/G32733.1
Canada	-113	53	*Taxodioxylon cryptomerioides*	Cupressaceae	Campanian	11	4	Oldman Fm., 8 mi W of Redcliff	https://doi.org/10.1130/G32733.1
Canada	-111,4741667	50,7488889	*Cupressinoxylon*	Cupressaceae	Campanian	11	4	Oldman Fm., Alberta	https://doi.org/10.1016/j.palaeo.2005.05.014
Canada	-111,4741667	50,7488889	*Taxodioxylon* (2 spp.)	Cupressaceae	Campanian	11	4	Oldman Fm., Alberta	https://doi.org/10.1016/j.palaeo.2005.05.014
Canada	-76	82	*Taxodioxylon albertense*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Expedition Fm., Emma Fiord deposits, Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada	-112	51	*Mesocyparis umbonata*	Cupressaceae	Maastrichtian	12	4	Horseshoe Canyon Fm., about 7 km southwest of	https://doi.org/10.1130/G32733.1
China	103	25	*Taxodioxylon*	Cupressaceae	Turonian–Santonian?	8–10	4	Chuxiong, Yunnan	https://doi.org/10.1130/G32733.1
Japan	141	43	*Oguraxylon yubariense*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Hokkaido, Yubari City, Hakobuchi	https://doi.org/10.1130/G32733.1
Japan	140	37	Undetermined wood type C	Cupressaceae	Turonian–Maastrichtian?	8–12	4	Urakawa Series, Upper HuDogihara, Ohisamura, Hutaba	https://doi.org/10.1130/G32733.1
Japan	140	37	*Taxodioxylon albertense*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, The south bank of the	https://doi.org/10.1130/G32733.1
Japan	141	39	*Mesembrioxylon (Taxodioxylon)*	Cupressaceae	Santonian–Campanian	10–11	4	Taneichi Fm., Honshu, Iwate Prefecture, Taneichi (Outer	https://doi.org/10.1130/G32733.1
Japan	141	44	*Cupressoxylon ucranicum*	Cupressaceae	Coniacian–Santonian	9–10	4	Hokkaido, Teshio, literature	https://doi.org/10.1130/G32733.1
Japan	141	44	*Cupressoxylon* cf. *glasgowi*	Cupressaceae	Coniacian–Santonian	9–10	4	Hokkaido, Teshio, literature	https://doi.org/10.1130/G32733.1
Japan	140	38	*Cupressinoxylon*	Cupressaceae	Coniacian-Campanian	9–11	4	Honshu, Fukushima Prefecture (Outer Zone), Urakawa Series	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141	40	*Cupressinoxylon*	Cupressaceae	Santonian–Campanian	10–11	4	Honshu, Iwate Prefecture, Taneichi (Outer Zone), Taneichi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Korea	126	34	*Taxodioxylon albertense*	Cupressaceae	Campanian	11	4	Uhangri Fm., islands of Gwanmae and Byeongpung, Jeollanam-do	https://doi.org/10.1130/G32733.1
Korea	126	34	*Cupressinoxylon uhangriense*	Cupressaceae	Campanian	11	4	Uhangri Fm., near Haenam-eup, Jeollanam-do	https://doi.org/10.1130/G32733.1
Korea	126	34	*Taxodioxylon nihongii*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Uhangri Fm., near Haenam-eup, Jeollanam-do	https://doi.org/10.1130/G32733.1
Korea	128	35	*Taxodioxylon nihongii*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Unclassified Fm., Sado and Nang-do Islands, South Jeolla	https://doi.org/10.1130/G32733.1
Mexico	-101	27	*Taxodioxylon*	Cupressaceae	Maastrichtian	12	4	Olmos Fm., Barroteran, Coahuila	https://doi.org/10.1130/G32733.1
Mexico	-101	27	*Cupressinoxylon*	Cupressaceae	Maastrichtian	12	4	Olmos Fm., Coahuila	https://doi.org/10.1016/j.jsames.2020.102756
Mexico	-109,5338849	30,8803774	*Cupressinoxylon manuelii*	Cupressaceae	Campanian	11	4	Cabullona Group, Fronteras town, Sonora	https://doi.org/10.1016/j.jsames.2020.102756
Mexico	-109,5338849	30,8803774	*Taxodioxylon cabullensis*	Cupressaceae	Campanian–early Maastrichtian	11–12	4	Cabullona Group, Fronteras town, Sonora	https://doi.org/10.1016/j.jsames.2020.102756
New Zealand	171	-43	Undetermined wood	Cupressaceae	Santonian–Maastrichtian	10–12	4	Taratu Fm., Waianakarua District, Otago	https://doi.org/10.1130/G32733.1
Romania	23	46	*Prototaxodioxylon marisii*	Cupressaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts,	https://doi.org/10.1130/G32733.1
Russia	148	44	*Cupressinoxylon microbiotoides*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Lesser, Kuril Islands	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Paracupressinoxylon solmsi*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* sp. *sachalinense* ?	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	Undetermined wood type A	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* ? sp.	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* sp. *sachalinense* ?	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Miho, Bykov, Ochiai	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Paracupressinoxylon cryptomeriopsoid*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon vectense*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon sachalinense*	Cupressaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	143	51	Undetermined wood type B	Cupressaceae	Turonian–Maastrichtian?	8–12	4	Gyliak Series, North Saghalien	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon nihongii*	Cupressaceae	Turonian–Santonian	8–10	4	South Saghalien, Chishima River	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxaceoxylon saghalienense*	Cupressaceae	Turonian–Santonian	8–10	4	South Saghalien, Jyuhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon pseudoablertense*	Cupressaceae	Turonian–Santonian	8–10	4	South Saghalien, Jyuhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon albertense*	Cupressaceae	Turonian–Santonian	8–10	4	Miho Group, South Sakhalin Island, Juhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon vectense*	Cupressaceae	Turonian–Maastrichtian	8–12	4	South Saghalien, Englandawakami, Toyokita-mura, Toyohara-gun, Karahut	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon cryptomerioides*	Cupressaceae	Turonian–Santonian	8–10	4	Miho Group, South Sakhalin Island, Juhachirinpan-zawa affluent of Nayba	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Protocupressinoxylon purbeckensis*	Cupressaceae	Coniacian	9	4	Namaqualand, literature, Bamford	https://doi.org/10.1130/G32733.1
South Africa	20,84416667	-32,4719444	*Cupressinoxylon widdringtonioides*	Cupressaceae	Campanian–Maastrichtian	11–12	4	Abrahamskraal Fm., Salpeterkop volcano, Sutherland, Northern Cape Province	https://doi.org/10.25131/sajg.124.0028
USA	-104	38	*Cupressinoxylon* sp.	Cupressaceae	Maastrichtian	12	4	Vermejo Fm., Colorado, literature	https://doi.org/10.1130/G32733.1
USA	-105,1808333	38,4772222	*Cupressinoxylon vermejoense*	Cupressaceae	Maastrichtian	12	4	Vermejo Fm., Canon City, Colorado	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-105,1808333	38,4772222	*Cupressinoxylon coloradoense*	Cupressaceae	Maastrichtian	12	4	Vermejo Fm., Canon City, Colorado	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-104,4797222	37,1863889	*Cupressinoxylon vermejoense*	Cupressaceae	Maastrichtian	12	4	Vermejo Fm., Trinidad fields, Colorado	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-104,4797222	37,1863889	*Cupressinoxylon coloradoense*	Cupressaceae	Maastrichtian	12	4	Vermejo Fm., Trinidad fields, Colorado	https://doi.org/10.1016/j.palaeo.2005.05.014
USA	-103	29	*Cupressinoxylon*	Cupressaceae	Campanian	11	4	Aguja Fm., Texas, literature	https://doi.org/10.1130/G32733.1
USA	-75	39	*Widdringtonioxylon borealis*	Cupressaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-107	47	Cupressaceae ?	Cupressaceae	Maastrichtian	12	4	Hell Creek Fm., eastern Montana	https://doi.org/10.1130/G32733.1
USA	-112	47	*Cupressinoxylon / Taxodioxylon*	Cupressaceae	Campanian	11	4	Two Medicine Fm., Montana, near Choteu,	https://doi.org/10.1130/G32733.1
USA	-108	36	*Cupressinoxylon* sp.	Cupressaceae	Maastrichtian	12	4	Kirtland Fm., FFRNA, San Juan Basin, New	https://doi.org/10.1130/G32733.1
USA	-108	40	*Cupressinoxylon*	Cupressaceae	Campanian	11	4	Mesaverde Group, Colorado, Moffat County, Lily	https://doi.org/10.1130/G32733.1
USA	-110,9833333	48,7541667	*Cupressinoxylon*	Cupressaceae	Campanian	11	4	Two Medicine Fm., Montana	https://doi.org/10.1016/j.palaeo.2005.05.014
China	124,0213889	45,9319444	*Sequoioxylon zhangii*	Cupressaceae	Maastrichtian	12	4	Mingshui Fm., Keshan County of Heilongjiang Province	https://doi.org/10.1130/G32733.1
Russia	142,6888889	50,0413889	*Taxaceoxylon saghalinense*	Cupressaceae	Turonian–Coniacian	8–9	4	Sakhalin, Russia	http://dx.doi.org/10.1016/j.revpalbo.2013.01.013
USA	-78,19666667	35,4602778	*Taxoxylon antiquum*	Cupressaceae	Campanian	10	4	Black Creek Fm., North Carolina	https://doi.org/10.1130/G32733.1
Alaska	-156	69	*Parataxodium wigginsii*	Cupressaceae	Maastrichtian	12	4	Prince Creek Fm.	https://doi.org/10.1016/j.palaeo.2010.02.025
Japan	142	42	*Cryptomeriopsis antiqua*	Cupressaceae	Cenomanian–Santonian	7–10	4	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	142	42	*Cryptomeriopsis mesozoica*	Cupressaceae	Cenomanian–Santonian	7–10	4	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	140,2336111	37,5125	*Taxodioxylon*	Cupressaceae	Coniacian-Campanian	9–11	4	Honshu, Fukushima Prefecture (Outer Zone), Urakawa Series	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141,6361111	40,3852778	*Taxodioxylon*	Cupressaceae	Santonian–Campanian	10–11	4	Honshu, Iwate Prefecture, Taneichi (Outer Zone), Taneichi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Canada	-76	82	*Piceoxylon*	Pinaceae	Campanian–Maastrichtian	11–12	4	Expedition Fm., Emma Fiord deposits, Ellesmere Island	https://doi.org/10.1130/G32733.1
Japan	141	44	*Pityoxylon* ? sp.	Pinaceae	Coniacian–Santonian	9–10	4	Hokkaido, Teshio, literature	https://doi.org/10.1130/G32733.1
Japan	141	44	*Protocedroxylon inaequale*	Pinaceae	Coniacian–Santonian	9–10	4	Hokkaido, Teshio, literature	https://doi.org/10.1130/G32733.1
Japan	142	42	*Protocedroxylon yendoii*	Pinaceae	Cenomanian–Santonian	7–10	4	Hokkaido, Yubari, literature, NHStopes	https://doi.org/10.1130/G32733.1
Japan	142	42	*Protocedroxylon matsumurii*	Pinaceae	Cenomanian–Santonian	7–10	4	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	141	43	*Piceoxylon takahashii*	Pinaceae	Coniacian–Santonian	9–10	4	Hokkaido, Manjizawa, tributary of Yubari River	https://doi.org/10.1130/G32733.1
Japan	141	43	*Protocedroxylon* sp.	Pinaceae	Turonian–Maastrichtian	8–12	4	Hokkaido, Kikumenzawa, Mikasayamamura, Soratigun	https://doi.org/10.1130/G32733.1
Japan	142	42	*Piceoxylon transiens*	Pinaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, Hokkaido, The left valley of	https://doi.org/10.1130/G32733.1
Japan	134,7791667	34,2080556	*Piceoxylon*	Pinaceae	early Maastrichtian	12	4	Shimonada Fm., Izumi Group, Nadachino, Minamiawaji City in the Awaji Island, Hyogo Prefecture	Terada & Handa (2014)
Japan	141,6361111	40,3852778	*Protocedroxylon*	Pinaceae	Santonian–Campanian	10–11	4	Honshu, Iwate Prefecture, Taneichi (Outer Zone), Taneichi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141,6361111	40,3852778	*Piceoxylon*	Pinaceae	Santonian–Campanian	10–11	4	Honshu, Iwate Prefecture, Taneichi (Outer Zone), Taneichi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Romania	23	46	*Protopinuxylon*	Pinaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts,	https://doi.org/10.1130/G32733.1
Romania	23	46	*Pinuxylon*	Pinaceae	Campanian–Maastrichtian	11–12	4	South Apuseni Mts,	https://doi.org/10.1130/G32733.1
Russia	88,94527778	53,8177778	*Keteleerioxylon kamtschatkiense*	Pinaceae	Turonian–Coniacian	8–9	4	Penzhina Fm., leftbank of the lower course of the Talovka River	https://doi.org/10.1134/S0031030106060104
Russia/Japan	142	47	*Piceoxylon scleromedullosum*	Pinaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Piceoxylon* sp. *antiquius* ?	Pinaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Protocedroxylon* cf. *yendoii*	Pinaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1

Russia/Japan	142	47	*Protocedroxylon shimakurae*	Pinaceae	Turonian–Santonian	8–10	4	Miho Group, South Sakhalin Island, Juhachirinpan-zawa affluent of Nayba	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Pinuxylon transiens*	Pinaceae	Turonian–Santonian	8–10	4	South Saghalien, Kawakami Coal mine, Englanduryu	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Pinuxylon dakotense*	Pinaceae	Turonian–Santonian	8–10	4	South Saghalien, Kawakami Coal mine, Englanduryu	https://doi.org/10.1130/G32733.1
Russia/Japan	143	50	*Pinoxylon*	Pinaceae	Turonian–Santonian	8–10	4	Saghalien, literature	https://doi.org/10.1130/G32733.1
Sweden	13	59	*Pityoxylon*	Pinaceae	Campanian	11	4	Asen, literature, Conwentz	https://doi.org/10.1130/G32733.1
USA	-76	39	*Pityoxylon*	Pinaceae	Turonian–Santonian	8–10	4	Maryland, literature, Berry	https://doi.org/10.1130/G32733.1
USA	-75	39	*Pinoxylon* sp.	Pinaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-75	39	*Piceoxylon cretacea*	Pinaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-75	39	*Protocedroxylon traumaticum*	Pinaceae	Turonian–Santonian	8–10	4	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-88	34	*Pinuxylon*	Pinaceae	Coniacian–Santonian	9–10	4	Eutaw Fm., Prentiss County, Mississippi	https://doi.org/10.1130/G32733.1
USA	-74	40	*Pityoxylon*	Pinaceae	Campanian	11	4	Marshalltown Fm., Morgans, New Jersey	https://doi.org/10.1130/G32733.1
USA	-70	41	*Pityoxylon*	Pinaceae	Campanian	11	4	Gay's Head, Martha's Vineyard	https://doi.org/10.1130/G32733.1
USA	-76	39	*Pityoxylon*	Pinaceae	Turonian–Santonian	8–10	4	Maryland, literature, Berry	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon chapmanae*	Podocarpaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon communis*	Podocarpaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon verticalis*	Podocarpaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon* sp.	Podocarpaceae	Cenomanian–Campanian	7–11	4	Williams Point Beds, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Podocarpoxylon* sp. 2	Podocarpaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Podocarpoxylon* sp. 1	Podocarpaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Protopodocarpoxylon antarcticum*	Podocarpaceae	Maastrichtian?	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-56	-64	*Podocarpoxylon aparenchymatosum*	Podocarpaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Seymour Island	https://doi.org/10.1130/G32733.1
Antarctica	-57	-63	*Podocarpoxylon* sp.	Podocarpaceae	Maastrichtian	12	4	Lopez de Bertodano Fm., Cape Lamb, Vega Island	https://doi.org/10.1130/G32733.1
Antarctica	-57,918325	-63,862606	*Phyllocladoxylon antarcticum*	Podocarpaceae	Santonian–Lower Campanian	10–11	4	Santa Marta Fm., Brandy Bay, James Ross Island	https://doi.org/10.1016/j.cretres.2017.04.016
Argentina	-67	-40	*Podocarpoxylon garciae*	Podocarpaceae	Campanian–Maastrichtian	11–12	4	Allen Fm., Rio Negro Province	https://doi.org/10.1130/G32733.1
Argentina	-67	-40	*Circoporoxylon gregussii*	Podocarpaceae	Campanian–Maastrichtian	11–12	4	Allen Fm., Rio Negro Province	https://doi.org/10.1130/G32733.2
Argentina	-69	-49	*Podocarpoxylon* sp.	Podocarpaceae	Campanian–Maastrichtian	11–12	4	Mata Amarilla Fm., Tres Lagos	https://doi.org/10.1130/G32733.3
Argentina	-67,80152801	-43,3483566	*Podocarpoxylon mazzonii*	Podocarpaceae	Campanian–Maastrichtian	11–12	4	Puntudo Chico Fm., El Mirasol, Chubut	https://doi.org/10.1016/j.cretres.2019.01.022
Canada	-113	53	*Podocarpoxylon ajkaense*	Podocarpaceae	Campanian	11	4	Oldman Fm., Denhart area, in the Red	https://doi.org/10.1130/G32733.1
Canada	-111,4748967	50,7458503	*Podocarpoxylon*	Podocarpaceae	Campanian	11	4	Oldman Fm., Alberta	https://doi.org/10.1016/j.palaeo.2005.05.014
France	4	44	*Podocarpoxylon ajkaense*	Podocarpaceae	Santonian	10	4	Piolenc	https://doi.org/10.1130/G32733.1
France	0	46	*Protopodocarpoxylon*	Podocarpaceae	Santonian	10	4	La Garnache, Vendee	https://doi.org/10.1130/G32733.1
Hungary	17	47	*Podocarpoxylon ajkaense*	Podocarpaceae	Santonian	10	4	Ajka, literature, Greguss	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon*	Podocarpaceae	Maastrichtian	12	4	Kallamedu Fm., Tamil, Nadu, Cauvery Basin	https://doi.org/10.1130/G32733.1
Korea	128	35	*Circoporoxylon*	Podocarpaceae	Campanian	11	4	Dadaepo Fm., Dadaepo, southern part of Saha-gu, Busan	https://doi.org/10.1130/G32733.1
Mexico	-101	27	*Podocarpoxylon*	Podocarpaceae	Maastrichtian	12	4	Olmos Fm., Barroteran, Coahuila	https://doi.org/10.1130/G32733.1
Morocco	-7	32	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian–Campanian	7–11	4	literature, Duperon & Laudoueneix	https://doi.org/10.1130/G32733.1
Portugal	-8	40	*Protopodocarpoxylon aveiroense*	Podocarpaceae	Turonian–Maastrichtian	8–12	4	Esgueira near Aveiro	https://doi.org/10.1130/G32733.1
Russia	147	44	*Podocarpoxylon jurii*	Podocarpaceae	Campanian–Maastrichtian	11–12	4	Lesser, Kuril Islands	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Podocarpoxylon* sp. *dakotense* ?	Podocarpaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, The Kisegawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Podocarpoxylon* sp.	Podocarpaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Phyllocladoxylon gothanii*	Podocarpaceae	Turonian–Maastrichtian	8–12	4	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon woburnense*	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon umzambense* ?	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon stokesii*	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon* sp.	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon sahii*	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	14	-27	*Podocarpoxylon jago*	Podocarpaceae	Coniacian	9	4	Namaqualand, South Africa-Namibia	https://doi.org/10.1130/G32733.1
South Africa	19	-31	*Podocarpoxylon umzambense*	Podocarpaceae	Coniacian	9	4	Namaqualand, literature, Bamford	https://doi.org/10.1130/G32733.1
South Africa	30,18222486	-31,1019584	*Podocarpoxylon*	Podocarpaceae	Santonian	10	4	Mzamba Fm., Mzamba (=Umzamba) River Estuary, south of Port Edward, Pondoland region	https://doi.org/10.1016/j.gr.2022.04.008
SouthAfrica	18,46217255	-29,6139414	*Podocarpoxylon umzambense*	Podocarpaceae	Coniacian	9	4	Umzamba beds, Namaqualand continental shelf	https://doi.org/10.1130/G32733.1
USA	-103	29	Undetermined wood	Podocarpaceae	Campanian	11	4	Aguja Fm., Texas, literature	https://doi.org/10.1130/G32733.1
USA	-103	29	*Podocarpoid wood type*	Podocarpaceae	Campanian	11	4	Aguja Fm., Big Bend National Park, Texas	https://doi.org/10.1016/j.palaeo.2005.05.014
Antarctica	-60	-62	*Agathoxylon chapmannae*	Araucariaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Agathoxylon floresii*	Araucariaceae	Cenomanian–Campanian	7–11	3	Williams Point, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Araucariopitys antarcticus*	Araucariaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Argentina	-69	-45	*Agathoxylon* sp.	Araucariaceae	Cenomanian–Coniacian	7–9	3	Bajo Barreal Fm., Puesto Confluencia, Chubut	https://doi.org/10.1130/G32733.1
Argentina	-69	-45	*Agathoxylon antarcticus*	Araucariaceae	Lower Cenomanian–Upper Turonian	7–8	3	Bajo Barreral Fm., Codo del Senguerr anticline, Sarmiento, Chubut	https://doi.org/10.1016/j.cretres.2022.105229
Chile	-71	-46	*Agathoxylon* sp.	Araucariaceae	Hauterivian–Albian	3–6	3	Apeleg and Katterfeld Fm.s, Puerto Ibañez	https://doi.org/10.1130/G32733.1
Denmark	14	55	*Dadoxylon*	Araucariaceae	Cenomanian	7	3	Arnager	https://doi.org/10.1130/G32733.1
Egypt	30,60050922	25,44392	*Agathoxylon*	Araucariaceae	Turonian	8	3	Taref Fm., Ain Umm El-Dabadi, El-Kharga	https://doi.org/10.1016/j.cretres.2021.104901
France	1	46	*Agathoxylon gardoniense*	Araucariaceae	Cenomanian	7	3	Ile d'Aix, Dept. Charente-Marithime	https://doi.org/10.1130/G32733.1
France	-1	46	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Ile d'Aix, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon gardoniense*	Araucariaceae	Cenomanian	7	3	Archingeay, Rochefort	https://doi.org/10.1130/G32733.1
France	0	45	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Archingeay, Rochefort	https://doi.org/10.1130/G32733.1
France	0	45	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Archingeay, Rochefort, literature, Perrichot	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Archingeay, Rochefort	https://doi.org/10.1130/G32733.1
France	2	47	*Agathoxylon*	Araucariaceae	Cenomanian	6	3	Les Renardieres, Charante-Marithime	https://doi.org/10.1130/G32733.1
France	-1	45	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Madame Island	https://doi.org/10.1130/G32733.1
France	2	42	*Agathoxylon gardoniense*	Araucariaceae	Cenomanian	7	3	Fourtou, Aude	https://doi.org/10.1130/G32733.1
France	2	42	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Fourtou, Aude	https://doi.org/10.1130/G32733.1
France	5	43	*Agathoxylon* ?	Araucariaceae	Turonian	8	3	Revest des Brousses	https://doi.org/10.1130/G32733.1
France	5	44	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Drome	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Puy Puy, Charente, Rochefort	https://doi.org/10.1130/G32733.1
France	0	44	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Saint Georges, literature, unpublished	https://doi.org/10.1130/G32733.1
France	-1	45	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Grand-Saint-Georges, Vendee, near La Rochelle	https://doi.org/10.1130/G32733.1
France	2	49	*Agathoxylon divesence*	Araucariaceae	Cenomanian	7	3	Dives, literature, Be, Lignier	https://doi.org/10.1130/G32733.1
France	2	43	*Agathoxylon*	Araucariaceae	Cenomanian	7	3	Cubrieres-sur-Cinobre, literature, unpublished	https://doi.org/10.1130/G32733.1
France	0	43	*Agathoxylon gardoniense*	Araucariaceae	Cenomanian	7	3	Montagut	https://doi.org/10.1130/G32733.1
France	0	45	*Agathoxylon* sp.	Araucariaceae	Cenomanian	7	3	Angouleme Region	https://doi.org/10.1130/G32733.1
Japan	142	42	*Agathoxylon tankoensis*	Araucariaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Korea	126,322879	34,730318	*Agathoxylon sp.*	Araucariaceae	Albian–Cenomanian	6–7	3	Hwawon Fm. at Hwawon-myeon in Jeollanam-do	http://dx.doi.org/10.1016/j.cretres.2013.02.003
Libya	12	32	*Agathoxylon zuffardii*	Araucariaceae	Albian	6	3	Tripolitania, near Fessato	https://doi.org/10.1130/G32733.1
Libya	17	27	*Agathoxylon aegyptiacum*	Araucariaceae	Cenomanian–Turonian?	7–8	3	Schenk	https://doi.org/10.1130/G32733.1
Libya	15	25	*Agathoxylon aegyptiacum*	Araucariaceae	Cenomanian–Turonian?	7–8	3	Murz, literature, Principi	https://doi.org/10.1130/G32733.1
Madagascar	47	-19	*Agathoxylon madagascariense*	Araucariaceae	Turonian–Maastrichtian	8–12	3	literature, Fliche	https://doi.org/10.1130/G32733.1
Mexico	-100	18	*Agathoxylon sp.*	Araucariaceae	Albian–Cenomanian	6–7	3	Mal Paso Fm., Huetamo, Michoacan	https://doi.org/10.1130/G32733.1
New Caledonia	165	-21	*Agathoxylon pancheri*	Araucariaceae	Turonian–Maastrichtian	8–12	3	Main island, literature	https://doi.org/10.1130/G32733.1
New Zealand	173	-42	*Agathoxylon novaezeelandiae*	Araucariaceae	Cenomanian	7	3	Clarence Valley, literature	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Agathoxylon pseudochoshiense*	Araucariaceae	Turonian–Santonian	8–10	3	South Saghalien, Miho River	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Planoxylon inaii*	Araucariaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Right valley of	https://doi.org/10.1130/G32733.1
Russia/Japan	142	42	*Dadoxylon* cf. *tankoense*	Araucariaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, The Minami Rokusenzawa, Namikawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Agathoxylon kiiense*	Araucariaceae	Turonian–Santonian	8–10	3	Miho Group, South Sakhalin, Miho River	https://doi.org/10.1130/G32733.1
Saudi_Arabia	46	25	*Tracheidoxylon/Agathoxylon*	Araucariaceae	Cenomanian–Turonian	7–8	3	56 km ENE of Riyadh	https://doi.org/10.1130/G32733.1
South Africa	27	-33	*Agathoxylon umzambense*	Araucariaceae	Turonian–Maastrichtian	8–12	3	East Pondoland	https://doi.org/10.1130/G32733.1
South Africa	27	-33	*Agathoxylon africanum*	Araucariaceae	Turonian–Maastrichtian	8–12	3	East Pondoland	https://doi.org/10.1130/G32733.1
USA	-74	40	*Agathoxylon sp.*	Araucariaceae	Turonian	8	3	Raritan Fm., Cliffwood, New Jersey	https://doi.org/10.1130/G32733.1
USA	-75	39	*Agathoxylon noveboracense*	Araucariaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-110	43	*Agathoxylon sp.*	Araucariaceae	Cenomanian–Coniacian	7–9	3	Frontier Fm., Wyoming, Teton County, Mt. Leidy	https://doi.org/10.1130/G32733.1
USA	-111	39	*Agathoxylon lemonii*	Araucariaceae	Cenomanian	7	3	Dakota Fm., Ferron, eastern Utah	https://doi.org/10.1130/G32733.1
USA	-103	43	*Agathoxylon hoppertonae*	Araucariaceae	Albian–early Cenomanian	6–7	3	Dakota Group, Two miles southwest of Minnekalata	https://doi.org/10.1130/G32733.1
Argentina	-69	-45	*Brachyoxylon patagonicum*	Cheirolepidiaceae	Lower Cenomanian–Upper Turonian	7–8	3	Bajo Barreral Fm., Codo del Senguerr anticline, Sarmiento, Chubut	https://doi.org/10.1016/j.cretres.2022.105229
France	1	46	*Brachyoxylon obietinien*	Cheirolepidiaceae	Cenomanian	7	3	Ile d'Aix, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	-1	46	*Brachyoxylon*	Cheirolepidiaceae	Cenomanian	7	3	Ile d'Aix, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	-1,04830588	45,9731458	*Brachyoxylon* sp.	Cheirolepidiaceae	Cenomanian	7	3	Fouras, Charentes	https://doi.org/10.1130/G32733.1
Morocco	-6	31	*Brachyoxylon dantzii*	Cheirolepidiaceae	Cenomanian–Turonian	7–8	3	Attims	https://doi.org/10.1130/G32733.1
Morocco	-6	31	*Brachyoxylon dantzii*	Cheirolepidiaceae	Cenomanian–Turonian	7–8	3	Atlas, Cremier	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Brachyoxylon* sp. *notabile* ?	Cheirolepidiaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
USA	-75	39	*Brachyoxylon notabile*	Cheirolepidiaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-74	40	*Brachyoxylon*	Cheirolepidiaceae	Turonian–Santonian	8–10	3	Kreischerville, Staten Island	https://doi.org/10.1130/G32733.1
China	103	25	*Taxodioxylon*	Cupressaceae	Turonian–Santonian?	8–10	3	Chuxiong, Yunnan	https://doi.org/10.1130/G32733.1
Czech Republic	14	50	*Cupressinoxylon*	Cupressaceae	Cenomanian	7	3	Peruc-Korycany Fm., Pecinov Quarry, 4	https://doi.org/10.1130/G32733.1
Czech Republic	14	50	*Protocupressinoxylon*	Cupressaceae	Cenomanian	7	3	Peruc-Korycany Fm., Pecinov Quarry, 5	https://doi.org/10.1130/G32733.1
France	-1	45	*Taxodioxylon*	Cupressaceae	Cenomanian	7	3	Fouras, Vendee	https://doi.org/10.1130/G32733.1
France	4	49	*Cupressinoxylon*	Cupressaceae	Cenomanian	7	3	Argonne, literature, Fliche	https://doi.org/10.1130/G32733.1
France	0	46	*Elatides (pagiophyllum) clavelii*	Cupressaceae	Turonian	8	3	Grand-Pressigny, literature, Koeniguer	https://doi.org/10.1130/G32733.1
France	0	46	*Cupressinoxylon yvardensis*	Cupressaceae	Turonian	8	3	Grand-Pressigny, literature, Koeniguer	https://doi.org/10.1130/G32733.1
France	0	47	*Cupressinoxylon yvardensis*	Cupressaceae	Turonian	8	3	Rochebou, Paris, Koeniguer	https://doi.org/10.1130/G32733.1
France	0	47	*Cupressinoxylon yvardensis*	Cupressaceae	Turonian	8	3	Vouvray, Paris, Koeniguer	https://doi.org/10.1130/G32733.1
France	1	47	*Cupressinoxylon yvardensis*	Cupressaceae	Turonian	8	3	Orbigny, Paris, Koeniguer	https://doi.org/10.1130/G32733.1
France	5	43	*Taxodioxylon*	Cupressaceae	Turonian	8	3	La Mede, Ety	https://doi.org/10.1130/G32733.1
France	1	47	*Cupressinoxylon yvardensis*	Cupressaceae	Turonian	8	3	Orbigny, Paris, Koeniguer	https://doi.org/10.1130/G32733.1
France	5	43	*Taxodioxylon*	Cupressaceae	Turonian	8	3	La Mede, Ety	https://doi.org/10.1130/G32733.1
France	5	43	*Taxodioxylon*	Cupressaceae	Turonian	8	3	Allauch	https://doi.org/10.1130/G32733.1
Japan	141	43	*Oguraxylon yubariense*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Hokkaido, Yubari City, Hakobuchi	https://doi.org/10.1130/G32733.1
Japan	140	37	Undetermined wood type C	Cupressaceae	Turonian–Maastrichtian?	8–12	3	Urakawa Series, Upper HuDogihara, Ohisamura, Hutaba	https://doi.org/10.1130/G32733.1
Japan	140	37	*Taxodioxylon albertense*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, The south bank of the	https://doi.org/10.1130/G32733.1
Kazakstan	71	43	*Taxodioxylon*	Cupressaceae	Turonian	8	3	Central Kyzylkum, literature	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Paracupressinoxylon solmsi*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* sp. *sachalinense* ?	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	Undetermined wood type A	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* ? sp.	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon* sp. *sachalinense* ?	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Miho, Bykov, Ochiai	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Paracupressinoxylon cryptomeriopsoid*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon vectense*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon sachalinense*	Cupressaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	143	51	Undetermined wood type B	Cupressaceae	Turonian–Maastrichtian?	8–12	3	Gyliak Series, North Saghalien	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon nihongii*	Cupressaceae	Turonian–Santonian	8–10	3	South Saghalien, Chishima River	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxaceoxylon saghalienense*	Cupressaceae	Turonian–Santonian	8–10	3	South Saghalien, Jyuhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon pseudoablertense*	Cupressaceae	Turonian–Santonian	8–10	3	South Saghalien, Jyuhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Taxodioxylon albertense*	Cupressaceae	Turonian–Santonian	8–10	3	Miho Group, South Sakhalin Island, Juhachirinpan-zawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon vectense*	Cupressaceae	Turonian–Maastrichtian	8–12	3	South Saghalien, Englandawakami, Toyokita-mura, Toyohara-gun, Karahut	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Cupressinoxylon cryptomerioides*	Cupressaceae	Turonian–Santonian	8–10	3	Miho Group, South Sakhalin Island, Juhachirinpan-zawa affluent of Nayba	https://doi.org/10.1130/G32733.1
USA	-74	40	*Paracupressinoxylon*	Cupressaceae	Turonian	8	3	Raritan Fm., Cliffwood, New Jersey	https://doi.org/10.1130/G32733.1
USA	-75	39	*Widdringtonioxylon borealis*	Cupressaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-111	43	Undetermined wood	Cupressaceae	Cenomanian	7	3	Aspen Fm., Idaho, Teton County	https://doi.org/10.1130/G32733.1
USA	-110	43	*Cupressinoxylon*	Cupressaceae	Cenomanian	7	3	Aspen Fm., Wyoming, Teton County, Hoback, Quad	https://doi.org/10.1130/G32733.1
China	124,3644444	45,5152778	*Sequoioxylon zhangii*	Cupressaceae	Cenomanian	7	3	Quantou Fm. to Mingshui Fm., Keshan County of Heilongjiang Province	https://doi.org/10.1016/j.revpalbo.2018.07.008
Russia	142,6888889	50,0413889	*Taxaceoxylon saghalinense*	Cupressaceae	Turonian–Coniacian	8–9	3	Sakhalin, Russia	https://doi.org/10.1016/j.revpalbo.2013.01.013
Japan	142	42	*Cryptomeriopsis antiqua*	Cupressaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	142	42	*Cryptomeriopsis mesozoica*	Cupressaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Korea	126,322879	34,730318	*Taxodioxylon sp.*	Cupressaceae	Albian–Cenomanian	6–7	3	Hwawon Fm., Gurim-ri, Hwawon-myeon, Haenam-gun, Jeollanam-do	https://doi.org/10.1016/j.revpalbo.2013.01.013
China	113	23	*Piceoxylon dongguanensis*	Pinaceae	Turonian	8	3	Donguan, Guangdong	https://doi.org/10.1130/G32733.1
Czech Republic	14	50	*Pinoxylon*	Pinaceae	Cenomanian	7	3	Peruc-Korycany Fm., Pecinov Quarry, 3	https://doi.org/10.1130/G32733.1
France	4	49	*Protocedroxylon*	Pinaceae	Cenomanian	7	3	Argonne, literature, Fliche	https://doi.org/10.1130/G32733.1
France	1	49	*Pityoxylon*	Pinaceae	Cenomanian	7	3	Fresville, literature, Lemoigne	https://doi.org/10.1130/G32733.1
Japan	142	42	*Protocedroxylon yendoii*	Pinaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature, NHStopes	https://doi.org/10.1130/G32733.1
Japan	142	42	*Protocedroxylon matsumurii*	Pinaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	141	43	*Pinuxylon transiens*	Pinaceae	Turonian	7	3	Hokkaido, Omakizawa, tributary of Yubari River	https://doi.org/10.1130/G32733.1

Japan	141	43	*Piceoxylon macroporosum*	Pinaceae	Turonian	8	3	Hokkaido, Omakizawa, tributary of Yubari River	https://doi.org/10.1130/G32733.1
Japan	141	43	*Pinuxylon microporosum*	Pinaceae	Turonian	8	3	Hokkaido, Dam site of Yubari	https://doi.org/10.1130/G32733.1
Japan	141	43	*Piceoxylon scleromedullosum*	Pinaceae	Cenomanian	7	3	Hokkaido, Dam site of Yubari	https://doi.org/10.1130/G32733.1
Japan	141	43	*Protocedroxylon* sp.	Pinaceae	Turonian–Maastrichtian	8–12	3	Hokkaido, Kikumenzawa, Mikasayamamura, Soratigun	https://doi.org/10.1130/G32733.1
Japan	142	42	*Piceoxylon transiens*	Pinaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, Hokkaido, The left valley of	https://doi.org/10.1130/G32733.1
Japan	141	43	*Pinoxylon dakotense*	Pinaceae	Hauterivian–Albian?	3–6	3	Honkeiko Beds, Hokkaido, Pen-hsi-hu, Fengtien Province	https://doi.org/10.1130/G32733.1
Russia	165	62	*Piceoxylon talovskiense*	Pinaceae	Coniacian	9	3	Penzhina, Fm., northwestern Kamchatka, eastern coast of	https://doi.org/10.1134/S0031030106060104
Russia	88,94527778	53,8177778	*Keteleerioxylon kamtschatkiense*	Pinaceae	Turonian–Coniacian	8–9	3	Penzhina Fm., leftbank of the lower course of the Talovka River	https://doi.org/10.1134/S0031030106060104
Russia/Japan	142	47	*Piceoxylon scleromedullosum*	Pinaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, The Santangawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Piceoxylon* sp. *antiquius* ?	Pinaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Minami Hassenzawa, Namikawa, Toyohara	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Protocedroxylon* cf. *yendoii*	Pinaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Protocedroxylon shimakurae*	Pinaceae	Turonian–Santonian	8–10	3	Miho Group, South Sakhalin Island, Juhachirinpan-zawa affluent of Nayba	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Pinuxylon transiens*	Pinaceae	Turonian–Santonian	8–10	3	South Saghalien, Kawakami Coal mine, Englanduryu	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Pinuxylon dakotense*	Pinaceae	Turonian–Santonian	8–10	3	South Saghalien, Kawakami Coal mine, Englanduryu	https://doi.org/10.1130/G32733.1
Russia/Japan	142	49	*Pinuxylon microporosum*	Pinaceae	Turonian	8	3	Saghalien, Aikawa River and tributary streams	https://doi.org/10.1130/G32733.1
Russia/Japan	142	49	*Piceoxylon scleromedullosum*	Pinaceae	Cenomanian	7	3	Saghalien, Aikawa River and tributary streams	https://doi.org/10.1130/G32733.1
Russia/Japan	143	50	*Pinoxylon*	Pinaceae	Turonian–Santonian	8–10	3	Saghalien, literature	https://doi.org/10.1130/G32733.1
USA	-74	40	*Pityoxylon protoscleropitys*	Pinaceae	Turonian	8	3	Raritan Fm., Cliffwood, New Jersey	https://doi.org/10.1130/G32733.1
USA	-74	40	*Pityoxylon foliosum*	Pinaceae	Turonian	8	3	Raritan Fm., Cliffwood, New Jersey	https://doi.org/10.1130/G32733.1
USA	-74	40	*Pityoxylon anomalum*	Pinaceae	Turonian	8	3	Raritan Fm., Cliffwood, New Jersey	https://doi.org/10.1130/G32733.1
USA	-75	39	*Pinoxylon* sp.	Pinaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-75	39	*Piceoxylon cretacea*	Pinaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
USA	-75	39	*Protocedroxylon traumaticum*	Pinaceae	Turonian–Santonian	8–10	3	Magothy Fm., Summit Bridge, Magothy, Delaware	https://doi.org/10.1130/G32733.1
Japan	142	42	*Abiocaulis yesoensis*	Pinaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Japan	142	42	*Abiocaulis yesoensis*	Pinaceae	Cenomanian–Santonian	7–10	3	Hokkaido, Yubari, literature	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon chapmanae*	Podocarpaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon communis*	Podocarpaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon verticalis*	Podocarpaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Dragon Cove, Williams Point	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Podocarpoxylon* sp.	Podocarpaceae	Cenomanian–Campanian	7–11	3	Williams Point Beds, Williams Point	https://doi.org/10.1130/G32733.1
Argentina	-68	-38	*Circoporoxylon krauseli*	Podocarpaceae	Cenomanian	7	3	Huincul Fm., Cerros Colorados, Neuquen	Martínez & Lutz (2007)
Australia	142,620865	-21,924336	*Protophyllocladoxylon owensii*	Podocarpaceae	Cenomanian–Turonian boundary	7–8	3	Winton Fm., Eromanga Basin, N Winton, central-western Queensland	https://doi.org/10.1016/j.revpalbo.2014.05.004
Czech Republic	14	50	*Podocarpoxylon* sp.	Podocarpaceae	Cenomanian	7	3	Peruc-Korycany Fm., Bohemian Cretaceous Basin	https://doi.org/10.1016/j.revpalbo.2020.104311
Denmark	14	55	*Circoporoxylon*	Podocarpaceae	Cenomanian	7	3	Arnager	https://doi.org/10.1130/G32733.1
Egypt	30,5991477	25,4446691	*Metapodocarpoxylon leuchsii*	Podocarpaceae	Turonian	8	3	Taref Fm., Ain Umm, El-Dabadi, El-Kharga	https://doi.org/10.1016/j.cretres.2021.104901
France	-1	46	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Ile d'Aix, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	4	44	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Saint Andre d'Olerargues	https://doi.org/10.1130/G32733.1
France	-1	45	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Fouras, Vendee	https://doi.org/10.1130/G32733.1
France	-1	45	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Fouras, Vendee	https://doi.org/10.1130/G32733.1
France	-1	45	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Fouras, Vendee	https://doi.org/10.1130/G32733.1
France	0	49	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Mont Saint Laurent	https://doi.org/10.1130/G32733.1
France	0	49	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Mont Saint Laurent	https://doi.org/10.1130/G32733.1
France	4	44	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Puy Puy, Charente, Rochefort	https://doi.org/10.1130/G32733.1
France	4	44	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Puy Puy, Charente, Rochefort	https://doi.org/10.1130/G32733.1
France	4	44	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Saint Laurent, La Vernede, literature, unpublished	https://doi.org/10.1130/G32733.1
France	5	43	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Vacheres, literature, unpublished	https://doi.org/10.1130/G32733.1
France	0	45	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Montigne, literature, Boureau	https://doi.org/10.1130/G32733.1
India	79,01325023	10,8737947	*Podocarpoxylon kulakkalnaitamensis*	Podocarpaceae	Turonian	8	3	Garudamangalam Fm., Cauvery Basin, Kulakkamnattam Sandstone, Sattanur Village	https://doi.org/10.54991/jop.2004.201
Kazakstan	71	43	*Podocarpoxylon*	Podocarpaceae	Cenomanian	7	3	Central Kyzylkum, literature	https://doi.org/10.1130/G32733.1
Kazakstan	71	43	*Phyllocladoxylon*	Podocarpaceae	Cenomanian	7	3	Central Kyzylkum, literature	https://doi.org/10.1130/G32733.1
Morocco	-7	32	*Protopodocarpoxylon*	Podocarpaceae	Cenomanian–Campanian	7–11	3	literature, Duperon & Laudoueneix	https://doi.org/10.1130/G32733.1
Portugal	-8	40	*Protopodocarpoxylon aveiroense*	Podocarpaceae	Turonian–Maastrichtian	8–12	3	Esgueira near Aveiro	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Podocarpoxylon* sp. *dakotense* ?	Podocarpaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, The Kisegawa	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Podocarpoxylon* sp.	Podocarpaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Russia/Japan	142	47	*Phyllocladoxylon gothanii*	Podocarpaceae	Turonian–Maastrichtian	8–12	3	Urakawa Series, South Saghalien, Kawakami Coal mine, Kawakami	https://doi.org/10.1130/G32733.1
Alaska	-155	69	*Agathoxylon ?*	Araucariaceae	Albian	6	2	Nanushuk Group, North slope, Colville River	https://doi.org/10.1130/G32733.1
Algeria	2	28	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	Hoggar, literature, Philippe	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon floresii*	Araucariaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon* sp. A	Araucariaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon arayaii*	Araucariaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon*	Araucariaceae	Aptian	5	2	President Head, Snow Island, site E	https://doi.org/10.1130/G32733.1
Antarctica	-60	-62	*Agathoxylon arayaii*	Araucariaceae	Aptian	5	2	Cerro Negro Fm., Byers Peninsula, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon*	Araucariaceae	Aptian	5	2	Cerro Negro Fm., Byers Peninsula, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	Cerro Negro Fm., Byers Peninsula, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon*	Araucariaceae	Aptian	5	2	Snow Island, beach site	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Agathoxylon*	Araucariaceae	Aptian	5	2	Snow Island, Hall Peninsula, Site M	https://doi.org/10.1130/G32733.1
Antarctica	-57	-64	*Agathoxylon* sp. A	Araucariaceae	Aptian	5	2	Kotick Point Fm., James Ross Island	https://doi.org/10.1130/G32733.1
Antarctica	-68	-71	*Araucariopitys* sp.	Araucariaceae	Albian	6	2	Neptune Glacier Fm., Coal Nunatak, Alexander Island	https://doi.org/10.1130/G32733.1
Antarctica	-68	-71	*Agathoxylon* sp.	Araucariaceae	Albian	6	2	Neptune Glacier Fm., Coal Nunatak, Alexander Island	https://doi.org/10.1130/G32733.1
Argentina	-68	-54	*Agathoxylon pseudoparenchymatosus*	Araucariaceae	Aptian–Albian	5–6	2	Tierra del Fuego	https://doi.org/10.1130/G32733.1
Argentina	-68	-54	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Tierra del Fuego	https://doi.org/10.1130/G32733.1
Argentina	-69	-45	*Agathoxylon grandifolia*	Araucariaceae	Albian	6	2	Patagonia, literature, Del	https://doi.org/10.1130/G32733.1
Argentina	-68,75599646	-43,3610364	*Agathoxylon antarcticus*	Araucariaceae	Albian	6	2	Arroyo del Pajarito Member, Los Adobes Fm., Cañadón La Orientala, Chubut	https://doi.org/10.1016/j.jsames.2020.102562
Australia	141	-26	Undetermined wood A	Araucariaceae	Aptian–Albian	5–6	2	Bulldog shale, Eromanga Basin, 2.23	https://doi.org/10.1130/G32733.1
Australia	141	-26	Undetermined wood B	Araucariaceae	Aptian–Albian	5–6	2	Bulldog shale, Eromanga Basin, 0.63	https://doi.org/10.1130/G32733.1
Australia	116	-33	*Agathoxylon* sp.	Araucariaceae	Barremian–Aptian	4–5	2	Collie, literature, Blackhouse	https://doi.org/10.1130/G32733.1
Australia	145	-39	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	Archie's Creek	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 5	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 4	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 3	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 2	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 3	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Agathoxylon* sp. 2	Araucariaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-37	Undetermined wood	Araucariaceae	Barremian–Albian	4–6	2	Otway and Gippsland basins	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Agathoxylon*	Araucariaceae	Hauterivian	3	2	Bassin de Mons,	https://doi.org/10.1130/G32733.1
Brazil	-50,20504108	-13,0908031	*Agathoxylon camponovensis*	Araucariaceae	Aptian	5	2	Matto Grosso, literature	de Oliveira (1936)
Brazil	-36	-10	*Agathoxylon benderi*	Araucariaceae	Aptian	5	2	Botucatu Fm., Minas Gerais, Borborema dome, Malhada dos Bois, Sergipe	https://doi.org/10.1130/G32733.1
Brazil	-39,70041034	-7,084563	*Agathoxylon santanensis*	Araucariaceae	Aptian	5	2	Crato fossil Lagerstätte, Santana Fm., Araripe Basin	https://doi.org/10.1016/j.jsames.2021.103633
Bulgary	28,621742	43,563939	*Agathoxylon sp.*	Araucariaceae	Barremian	4	2	Oborichte, Varna Dpt.	https://doi.org/10.1016/j.revpalbo.2006.05.003
Cameroon	12	5	*Agathoxylon lagonense*	Araucariaceae	Aptian	5	2	Garoua, Hama-Koussou Basin	https://doi.org/10.1130/G32733.1
Canada	-65	45	*Agathoxylon* cf. *Pseudoparenchymat*	Araucariaceae	Albian	6	2	Vinegar Hill, New Brunswick	https://doi.org/10.1130/G32733.1
Chad	23	18	*Agathoxylon distichum* aff.	Araucariaceae	Berriasian–Barremian	1–4	2	Continental Intercalaire, Erdi, literature	https://doi.org/10.1130/G32733.1
Chad	23	18	*Agathoxylon distichum*	Araucariaceae	Berriasian–Barremian	1–4	2	Continental Intercalaire, Erdi, literature	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon dallonii*	Araucariaceae	Berriasian–Barremian	1–4	2	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	23	18	*Agathoxylon lugriense* aff.	Araucariaceae	Berriasian–Barremian	1–4	2	Bartoszewska	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon brachyphylloides*	Araucariaceae	Berriasian–Barremian	1–4	2	Literature, Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon lagonense*	Araucariaceae	Berriasian–Barremian	1–4	2	Literature, Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	18	11	*Dadoxylon*	Araucariaceae	Barremian	4	2	Oumrad Gravels, Gourara region	https://doi.org/10.1130/G32733.1
Chile	-71	-46	*Agathoxylon* sp.	Araucariaceae	Hauterivian–Albian	3–6	2	Apeleg and Katterfeld Fm.s, Puerto Ibañez	https://doi.org/10.1130/G32733.1
Chile	-72	-46	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Apeleg Fm., La Buitrera, El Blanco, Aisen	https://doi.org/10.1130/G32733.1
China	121	41	*Agathoxylon batuense*	Araucariaceae	Aptian	5	2	Shahai Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	41	*Agathoxylon sidugawense*	Araucariaceae	Barremian–Aptian	4–5	2	Yixian Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	120	29	*Agathoxylon xinchangense*	Araucariaceae	Aptian	5	2	Guantou Fm., Xinchang, Zhejiang	https://doi.org/10.1130/G32733.1
China	120	36	*Agathoxylon jimoense*	Araucariaceae	Aptian	5	2	Guantou Fm., Jimo, Shandong	https://doi.org/10.1130/G32733.1
Ecuador	-80	-3	*Agathoxylon* sp.	Araucariaceae	Albian	6	2	Ciano Fm., Puyango, Oro and Loja Provinces	https://doi.org/10.1130/G32733.1
Egypt	30	25	*Agathoxylon lifiyii*	Araucariaceae	Albian	6	2	Kharga Oasis	https://doi.org/10.1130/G32733.1
Egypt	30	25	*Agathoxylon* sp.	Araucariaceae	Albian	6	2	Kharga Oasis	https://doi.org/10.1130/G32733.1
England	-1	50	*Agathoxylon webbii*	Araucariaceae	Barremian	4	2	Waelden, Hanover Point, Isle of Wight	https://doi.org/10.1130/G32733.1
England	-1	50	*Agathoxylon*	Araucariaceae	Barremian	4	2	Isle of Wight	https://doi.org/10.1130/G32733.1
England	-1,46878748	50,6549733	*Agathoxylon*	Araucariaceae	Hauterivian–Barremian	3–4	2	Wessex Fm., Hanover Point Assemblage, Isle of Wight	Collinson et al. (2000)
England	-3	50	*Agathoxylon sp.*	Araucariaceae	Albian	6	2	Upper Greensand, Warminster	https://doi.org/10.1130/G32733.1
Ethiopia	39	9	*Agathoxylon mugherensis*	Araucariaceae	Barremian	4	2	Wealden, Mugher River, in between Addis-Abeba	https://doi.org/10.1130/G32733.1
Ethiopia	37	9	*Agathoxylon amboensis*	Araucariaceae	Barremian	4	2	Wealdean, Ambo	https://doi.org/10.1130/G32733.1
France	5	48	*Agathoxylon*	Araucariaceae	Barremian	4	2	Haute-Marne, literature, Fliche	https://doi.org/10.1130/G32733.1
France	5	48	*Agathoxylon barremianum*	Araucariaceae	Barremian	4	2	Haute-Marne, literature, Fliche	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon tranchantii*	Araucariaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	5	44	*Agathoxylon*	Araucariaceae	Aptian	5	2	Col de la Vallouse	https://doi.org/10.1130/G32733.1
France	4	50	*Araucariopitys (Protocedroxylon)*	Araucariaceae	Hauterivian–Barremian	1–3	2	Feron-Glageon, literature, Alvarez-Ramis	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon crasseradiatum*	Araucariaceae	Aptian–Albian	5–6	2	Lisieux, literature, Lignier	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon breveradiatum*	Araucariaceae	Aptian–Albian	5–6	2	Moutier-en-Cinglais, literature, Lignier	https://doi.org/10.1130/G32733.1
France	0,08254	49,367988	*Agathoxylon crasseradiatum*	Araucariaceae	Late Aptian–Albian	5–6	2	Trouville, Calvados	https://doi.org/10.1016/j.revpalbo.2018.02.001
France	1	50	*Agathoxylon*	Araucariaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	1	50	*Agathoxylon gesoriacense*	Araucariaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	5	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Ile de la Bleone, Digne	https://doi.org/10.1130/G32733.1
France	4	49	*Araucariopitys (Protocedroxylon)*	Araucariaceae	Albian	6	2	Ardennes, literature-Na, unpublished	https://doi.org/10.1130/G32733.1
France	5	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Saint Andre de Rosans	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Archingeay, Rochefort	https://doi.org/10.1130/G32733.1
France	0	45	*Agathoxylon*	Araucariaceae	Albian	6	2	Cadeuil, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon*	Araucariaceae	Albian	6	2	Cauville	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon tranchantii*	Araucariaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon*	Araucariaceae	Albian	6	2	Cap de la Heve	https://doi.org/10.1130/G32733.1
France	6	43	*Agathoxylon*	Araucariaceae	Albian	6	2	Escragnolles	https://doi.org/10.1130/G32733.1
France	4	48	*Agathoxylon albianum*	Araucariaceae	Albian	6	2	Aube, literature, Fliche	https://doi.org/10.1130/G32733.1
France	6	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Blieux, literature, unpublished	https://doi.org/10.1130/G32733.1
France	6	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Clumanc, Chateau Blieux, Alps	https://doi.org/10.1130/G32733.1
France	6	43	*Agathoxylon*	Araucariaceae	Albian	6	2	Hyeges, literature, Cotillon	https://doi.org/10.1130/G32733.1
France	5	43	*Agathoxylon*	Araucariaceae	Albian	6	2	Revest des Brousses	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Salazac, Gard, literature	https://doi.org/10.1130/G32733.1
France	4	44	*Agathoxylon* ?	Araucariaceae	Albian	6	2	Salazac, Gard, literature	https://doi.org/10.1130/G32733.1
France	0	45	*Agathoxylon*	Araucariaceae	Albian	6	2	Le Logis du Pin, Dept. du Var	https://doi.org/10.1130/G32733.1
France	6	43	*Agathoxylon brachyphylloides*	Araucariaceae	Albian	6	2	Departement du Var	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon crasseradiatum*	Araucariaceae	Aptian–Albian	5–6	2	Lisieux, literature, Lignier	https://doi.org/10.1130/G32733.1
France	0	49	*Agathoxylon breveradiatum*	Araucariaceae	Aptian–Albian	5–6	2	Moutier-en-Cinglais, literature, Lignier	https://doi.org/10.1130/G32733.1
France	6	43	*Agathoxylon*	Araucariaceae	Albian	6	2	Prads, Haute Bleone,	https://doi.org/10.1130/G32733.1
France	5	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Bevons, literature	https://doi.org/10.1130/G32733.1
France	6	43	*Agathoxylon*	Araucariaceae	Albian	6	2	Brenon, Alps	https://doi.org/10.1130/G32733.1
France	6	44	*Agathoxylon*	Araucariaceae	Albian	6	2	Chateau-Arnoux, Alps	https://doi.org/10.1130/G32733.1
France	0,08254	49,367988	*Agathoxylon crasseradiatum*	Araucariaceae	Late Aptian–Albian	5–6	2	Trouville, Calvados	https://doi.org/10.1016/j.revpalbo.2018.02.001
Hungary	18	47	*Agathoxylon pannonicum*	Araucariaceae	Aptian–Albian	5–6	2	Labatlan Fm., Labatlan	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon hungaricum* ?	Araucariaceae	Aptian–Albian	5–6	2	Labatlan, literature, Greguss	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Labatlan	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon*	Araucariaceae	Aptian	5	2	Tata, Kaluaria	https://doi.org/10.1130/G32733.1
Hungary	17	47	*Agathoxylon*	Araucariaceae	Barremian–Aptian	4–5	2	Kalvaria Hill	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon pannonicum*	Araucariaceae	Aptian–Albian	5–6	2	Labatlan Fm., Labatlan	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon hungaricum* ?	Araucariaceae	Aptian–Albian	5–6	2	Labatlan, literature, Greguss	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Agathoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Labatlan	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon mandroense*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Mandro	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon santalense*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Mandro	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon bindrabunense*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Bindraban	https://doi.org/10.1130/G32733.1

India	85	23	*Agathoxylon amraparense*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Amrapara	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon rajmahalense*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Banchapa	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon agathoides*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Mandro	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon jurassicum*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Amarjola	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon benderi*	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	87,74656757	25,0832251	*Agathoxylon cf. rajmahalense*	Araucariaceae	Aptian	5	2	Rajmahal Fm., Bartala and Banchapa, Rajmahal Hills, Jharkhand	https://doi.org/10.1016/j.palwor.2017.12.004
India	81	16	*Agathoxylon amraparense*	Araucariaceae	Barremian–Aptian	4–5	2	Gangapur Fm., Pranhita-Godavari valley, Adilabad District, Andhra Pradesh	https://doi.org/10.1130/G32733.1
India	79,43467758	19,2654655	*Agathoxylon parenchymatosum*	Araucariaceae	Barremian–Aptian	4–5	2	Gangapur Fm., Near village Gangapur, Adilabad, Telangana	https://doi.org/10.1016/j.palwor.2017.12.004
Italy	12	43	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	« marne a fucoidi » dell'Appennino Umbro-Marchigiano	https://doi.org/10.1080/00837792.1980.10670204
Italy	12	43	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Apennini, Biondi	https://doi.org/10.1130/G32733.1
Italy	12	43	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	« marne a fucoidi » dell'Appennino Umbro-Marchigiano	https://doi.org/10.1080/00837792.1980.10670204
Italy	11,81569801	46,5825384	*Agathoxylon*	Araucariaceae	Albian	6	2	Puez-Marl Member, Puez Fm., Puez-Geisler Nature Park in the Dolomites	https://doi.org/10.1080/00837792.1980.10670204
Italy	12	43	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Apennini, Biondi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Agathoxylon inuboense*	Araucariaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Agathoxylon choshiense*	Araucariaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	139	35	*Agathoxylon japonicum*	Araucariaceae	Barremian–Aptian	4–5	2	Sebayashi Fm., Kwanto, Mountains of central Honshu	https://doi.org/10.1130/G32733.1
Japan	139	35	*Agathoxylon kiiense*	Araucariaceae	Barremian–Aptian	4–5	2	Sebayashi Fm., Kwanto, Mountains of central Honshu	https://doi.org/10.1130/G32733.1
Japan	139	35	*Agathoxylon pseudohujinamiense*	Araucariaceae	Barremian–Aptian	4–5	2	Kwanto Mountains of central Honshu	https://doi.org/10.1130/G32733.1
Japan	141	39	*Agathoxylon sidugawaense*	Araucariaceae	Aptian–Albian	5–6	2	Hiraiga, sandstone of the MKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	141	39	*Agathoxylon japonicum*	Araucariaceae	Aptian–Albian	5–6	2	Hiraiga, sandstone of the MKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	141	39	*Dadoxylon* sp. *japonicum* ?	Araucariaceae	Hauterivian–Barremian	3–4	2	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	140,8636684	35,7005442	*Agathoxylon*	Araucariaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula, Toriakeura (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	138,8072989	36,0808626	*Agathoxylon*	Araucariaceae	Barremian–Aptian	4–5	2	Honshu, Gunma Prefecture, Kwanto Mountains (Outer Zone), Sanchu Group, Sebayashi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	136,6773087	36,2147933	*Brachyoxylon*	Araucariaceae	upper Barremian–lower Aptian	4–5	2	Honshu, Ishikawa Prefecture, Do-no-mori (Inner Zone), Upper Tetori Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141	39	*Agathoxylon sidugawaense*	Araucariaceae	Aptian–Albian	5–6	2	Hiraiga, sandstone of the MKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	141	39	*Agathoxylon japonicum*	Araucariaceae	Aptian–Albian	5–6	2	Hiraiga, sandstone of the MKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Jordan	37	31	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Zerqa River, Inside	https://doi.org/10.1130/G32733.1
Korea	128	36	*Agathoxylon byeongpungense*	Araucariaceae	Aptian–Albian	5–6	2	Donghwachi Fm., in Andong City, Gyeongsang Basin	https://doi.org/10.1130/G32733.1
Korea	127	35	*Agathoxylon togeumense*	Araucariaceae	Albian	6	2	Togeum Fm., Togeum, Gurye County, Jeollanam Province	https://doi.org/10.1130/G32733.1
Korea	127	35	*Agathoxylon kiiense*	Araucariaceae	Albian	6	2	Togeum Fm., Togeum, Gurye County, Jeollanam Province	https://doi.org/10.1130/G32733.1
Korea	128	34	*Agathoxylon*	Araucariaceae	Albian	6	2	Haman Fm., GunbEngland District, Haman County, South Gyeongsang Prov.	https://doi.org/10.1130/G32733.1
Korea	128	36	*Brachioxylon* sp.	Araucariaceae	Albian	5	2	Dogyedong Fm., Gamcheon, Yeongyang County, Gyeongsang Basin	https://doi.org/10.1130/G32733.1
Korea	128	36	*Agathoxylon byeongpungense*	Araucariaceae	Aptian–Albian	5–6	2	Donghwachi Fm., in Andong City, Gyeongsang Basin	https://doi.org/10.1130/G32733.1
Korea	126,322879	34,730318	*Agathoxylon sp.*	Araucariaceae	Albian–Cenomanian	6–7	2	Hwawon Fm. at Hwawon-myeon in Jeollanam-do	https://doi.org/10.1016/j.cretres.2013.02.003
Lebanon	35	33	*Agathoxylon* sp.	Araucariaceae	Valanginian–Barremian	2–4	2	Beskintaa, Barale	https://doi.org/10.1130/G32733.1
Mali	-2,71597816	18,6651714	*Agathoxylon septatum*	Araucariaceae	Berriasian–Albian	1–6	2	Ti-n-Essako, western side of the Adrar des Iforas, Continental Intercalaire rocks	https://doi.org/10.1016/S0031-0182(02)00447-9
Mexico	-100	18	*Agathoxylon sp.*	Araucariaceae	Albian–Cenomanian	6–7	2	Mal Paso Fm., Huetamo, Michoacan	https://doi.org/10.1130/G32733.1
Norge	16	78	*Araucariopitys*	Araucariaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Araucariopitys* (*Protocedroxylon*)	Araucariaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27603679	78,0222052	*Araucariopitys*	Araucariaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Poland	19	51	*Agathoxylon*	Araucariaceae	Barremian	4	2	Stempiny, literature, Philippe	https://doi.org/10.1130/G32733.1
Portugal	-9,22782811	39,0184673	*Dadoxylon teixeirae*	Araucariaceae	upper Barremian–lower Aptian	4–5	2	Torres Vedras, near Serra do Socorro, Cadriceira	https://doi.org/10.1130/G32733.1
Slovakia	22	48	*Agathoxylon*	Araucariaceae	Aptian	5	2	Benatina, literature, unpublished	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Algoa Basin	https://doi.org/10.1130/G32733.1
South Africa	26	-33	*Agathoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Woodbury farm, Amakhala	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Agathoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Kirkwood	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Agathoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Bezuidenhouts River	https://doi.org/10.1130/G32733.1
Spain	-2,42823205	42,2872133	*Agathoxylon riojense*	Araucariaceae	Aptian–Albian	5–6	2	Enciso Group, Soto de Cameros	https://doi.org/10.1130/G32733.1
Spain	-0,39788415	40,7399583	*Agathoxylon sp.*	Araucariaceae	Berriasian–Barremian	1–4	2	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-3,25714213	41,9885889	*Agathoxylon* sp.	Araucariaceae	Barremian–Aptian	4	2	Castrillo de la Reina, Hacinas	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-2,47517713	42,2319343	*Dadoxylon riojense*	Araucariaceae	Aptian	5	2	San Roman de Cameros	https://doi.org/10.1130/G32733.1
Spain	-2,47517713	42,2319343	*Agathoxylon riojense*	Araucariaceae	Aptian	5	2	San Roman de Cameros	https://doi.org/10.1130/G32733.1
Spain	-2,03349736	42,1927671	*Agathoxylon*	Araucariaceae	Albian	5	2	Escucha Fm., Rubielos de Mora, Teruel	https://doi.org/10.1130/G32733.1
Spain	0,604085	40,214037	*Agathoxylon* sp.	Araucariaceae	Upper Albian	6	2	Grupo Utrillas, Arroyo de la Pascueta, Rubielos de Mora, Teruel	https://doi.org/10.1016/j.crpv.2006.09.003
Sudan	24	13	*Agathoxylon aegyptiacum*	Araucariaceae	Albian?	6	2	Nubian Sandstone, Jebel Dirra, 75 Km E	https://doi.org/10.1130/G32733.1
Thailand	102	14	*Agathoxylon sp.*	Araucariaceae	Valanginian–Barremian	2–4	2	Nakhon, Ratchasima, literature	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Upper Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., SE anticlinal	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Golden Rock, Waterfall, Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon*	Araucariaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Golden Rock, Waterfall, Phu	https://doi.org/10.1130/G32733.1
Thailand	99	15	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	2	Phu River	https://doi.org/10.1130/G32733.1
Thailand	102	17	*Agathoxylon aravaniensis* ?	Araucariaceae	Barremian	4	2	Sao Khua Fm., Phu Kum Khao	https://doi.org/10.1130/G32733.1
Thailand	103	15	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	2	Isaan	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Agathoxylon* sp.	Araucariaceae	Aptian	5	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Agathoxylon furonii*	Araucariaceae	Berriasian–Albian	1–6	2	Continental Intercalaire, South Tunisia,	https://doi.org/10.1130/G32733.1
Tunisia	10	33	*Agathoxylon brachyphylloides*	Araucariaceae	Berriasian–Albian	1–6	2	Continental Intercalaire, Haddada,	https://doi.org/10.1130/G32733.1
USA	-109	32	*Agathoxylon sp.*	Araucariaceae	Barremian–Aptian	4–5	2	Bisbee Fm., Cochise County, Arizona, Portal, Quad	https://doi.org/10.1130/G32733.1
USA	-109	32	*Agathoxylon sp.*	Araucariaceae	Aptian	5	2	Morita Fm., Cochise County, Arizona, Bisbee Group	https://doi.org/10.1130/G32733.1
USA	-99	37	*Agathoxylon prosseri*	Araucariaceae	Barremian	4	2	Cheyenne sandstone, Belvidere, Kansas	https://doi.org/10.1130/G32733.1
USA	-97	32	*Telephragmoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Weatherford,Texas, literature, Torrey	https://doi.org/10.1130/G32733.1
USA	-82	37	*Agathoxylon virginianum*	Araucariaceae	Albian	6	2	Potomac Fm., Taylorsville, West Virgina	https://doi.org/10.1130/G32733.1
USA	-77	38	*Agathoxylon sp.*	Araucariaceae	Albian	6	2	Patapsco Fm., Washington D.C.	https://doi.org/10.1130/G32733.1
USA	-109	32	*Agathoxylon sp.*	Araucariaceae	Middle Albian	6	2	Cintura Fm., Cochise County, Arizona, Bisbee Group	https://doi.org/10.1130/G32733.1
USA	-103	43	*Agathoxylon hoppertonae*	Araucariaceae	Albian–early Cenomanian	6–7	2	Dakota Group, Two miles southwest of Minnekalata	https://doi.org/10.1130/G32733.1
USA	-97	32	*Telephragmoxylon*	Araucariaceae	Aptian–Albian	5–6	2	Weatherford,Texas, literature, Torrey	https://doi.org/10.1130/G32733.1
China	121	42	*Agathoxylon* sp.	Araucariaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
Japan	140	35	*Agathoxylon* ? *hujinamiense*	Araucariaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Brachyoxylon hervei*	Cheirolepidiaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Brachyoxylon* sp. B	Cheirolepidiaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Argentina	-69,77630406	-45,4577204	*Brachyoxylon*	Cheirolepidiaceae	Aptian	5	2	Matasiete Fm., Sierra Nevada, Chubut Province	https://doi.org/10.1130/G32733.1
Argentina	-59,41031796	-48,5044902	*Brachyoxylon baqueroensis*	Cheirolepidiaceae	Barremian–Aptian	4–5	2	Anfiteatro de Ticó Fm., Baqueró Group	https://doi.org/10.1130/G32733.1
Argentina	-69,4118431	-44,8671845	*Brachyoxylon raritanense*	Cheirolepidiaceae	Albian	6	2	Castillo Fm., Colorado de Galvéniz Hill and Puerta del Diablo Canyon, St. Bernardo Range, Chubut	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Brachyoxylon*	Cheirolepidiaceae	Barremian	4	2	Hautrage Clays Fm., Bernissart	https://doi.org/10.1130/G32733.1
Chad	15	9	*Brachyoxylon rochii* aff.	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	15	9	*Brachyoxylon dantzii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	14	9	*Brachyoxylon rochii*	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Lagon, along the road from Pala	https://doi.org/10.1130/G32733.1
Chad	15	9	*Brachyoxylon subdantzii*	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	literature, Gazeau	https://doi.org/10.1130/G32733.1
China	91	29	*Brachyoxylon orientale*	Cheirolepidiaceae	Hauterivian–Aptian	3–5	2	Lhunzhub, Lhassa Group?, Tibet	https://doi.org/10.1130/G32733.1
China	120,0520875	28,898407	*Brachyoxylon lalongense*	Cheirolepidiaceae	Albian	6	2	Lalong Village, Duoni Fm., Bangoin County, northern part of the Lhasa Block, Tibet	https://doi.org/10.1016/j.cretres.2021.105064
England	0	51	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	-1,408066	50,634268	*Pseudofrenelopsis parceramosa*	Cheirolepidiaceae	Barremian	4	2	Wessex Fm., Wealden group, 'Neovenetar' site, close to Grange Chine, west coast of the Isle of Wigh	https://doi.org/10.1016/j.cretres.2006.02.001
England	0	51	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
France	0	49	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	1	50	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	5	44	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Ile de la Bleone, Digne	https://doi.org/10.1130/G32733.1
France	4	49	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Ardennes, literature-Na, unpublished	https://doi.org/10.1130/G32733.1
France	4	44	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Archingeay, Rochefort	https://doi.org/10.1130/G32733.1
France	0	45	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Archingeay, Rochefort, literature, Perrichot	https://doi.org/10.1130/G32733.1
France	2	47	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Les Renardieres, Charante-Marithime	https://doi.org/10.1130/G32733.1
France	0	45	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Cadeuil, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	0	49	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	6	43	*Brachyoxylon* sp.	Cheirolepidiaceae	Albian	6	2	Departement du Var	https://doi.org/10.1130/G32733.1
France	6	43	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	St.-Anne-d'Evenos, literature, Machhour	https://doi.org/10.1130/G32733.1
France	5	44	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Sisteron, Alps	https://doi.org/10.1130/G32733.1
France	5,83560006	43,2015016	*Brachyoxylon brachyphylloides*	Cheirolepidiaceae	Albian	6	2	Synclinal Le Beaussed, Var	https://doi.org/10.1130/G32733.1
Japan	140	35	*Brachyoxylon*	Cheirolepidiaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	141	39	*Brachyoxylon* aff. *woodworthianum*	Cheirolepidiaceae	Hauterivian–Barremian	3–4	2	Mosi sandstone of the MoMosi, Omoto-mura, Simo-Hei-gun,	https://doi.org/10.1130/G32733.1
Japan	140,8636684	35,7005442	*Brachyoxylon*	Cheirolepidiaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula, Toriakeura (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	136	36	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Upper Tetori Group, Honshu, Ishikawa Prefecture	https://doi.org/10.1130/G32733.1
Mexico	-109	29	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Unidad Nogal, Lampazos, Sonora	https://doi.org/10.1130/G32733.1
Romania	28	44	*Brachyoxylon*	Cheirolepidiaceae	Aptian	5	2	Medgidia, literature, Iamandei	https://doi.org/10.1130/G32733.1
Romania	28,283333	44,25	*Brachyoxylon avramii*	Cheirolepidiaceae	Aptian	5	2	Gherghina Fm., South Dobroudja, Medgidia	https://doi.org/10.1130/G32733.1
Romania	28	44	*Brachyoxylon*	Cheirolepidiaceae	Aptian	5	2	Gherghina Fm., South Dobrogea	https://doi.org/10.1016/j.revpalbo.2006.05.003
South Africa	25	-33	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Shamwari, Game Reserve	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Brachyoxylon*	Cheirolepidiaceae	Aptian–Albian	5–6	2	Kirkwood Fm., Kirkwood	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Brachyoxylon* sp.	Cheirolepidiaceae	Aptian–Albian	5–6	2	Kirkwood Fm., literature	https://doi.org/10.1130/G32733.1
Tanzania	39	-10	*Brachyoxylon* sp.	Cheirolepidiaceae	Aptian?	5	2	Tendaguru, Inside, Wood	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Upper Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Upper Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon boweanii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon boweanii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm.	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu Kradung Fm.	https://doi.org/10.1130/G32733.1
Thailand	99	15	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Phu River	https://doi.org/10.1130/G32733.1
Thailand	103	15	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	2	Isaan	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Brachyoxylon* sp.	Cheirolepidiaceae	Aptian	5	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Brachyoxylon teixeirae*	Cheirolepidiaceae	Barremian	4	2	Wealden, Djebel Baoula, Mateur	https://doi.org/10.1130/G32733.1
Ukraine	31	49	*Brachyoxylon*	Cheirolepidiaceae	Albian	6	2	Kanev, literature, Barale	https://doi.org/10.1130/G32733.1
Ukraine	-31,44417503	49,7278725	*Brachyoxylon* sp.	Cheirolepidiaceae	Albian	6	2	Kanev, Englandraine	https://doi.org/10.1016/j.revpalbo.2006.05.003
https://doi.org/10	-97,8083826	32,2523816	*Frenelopsis ramosissima*	Cheirolepidiaceae	Aptian	5	2	trunk in connexion, Jones Ranch sauropod dinosaur quarry site, Twin Mountains Fm., Glen Rose, Tex	https://doi.org/10.1086/427202
Antarctica	-61	-62	*Brachyoxylon* sp.	Cheirolepidiaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-68	-71	*Taxodioxylon* sp.	Cupressaceae	Albian	6	2	Neptune Glacier Fm., Hyperion, Nunataks, Alexander Island	https://doi.org/10.1130/G32733.1
Argentina	-68,087025	-43,964901	*Austrocupressinoxylon barcinense*	Cupressaceae	Albian	6	2	Cerro Castaño Member, Cerro Barcino Fm.,"La Flecha" ranch, Los Altares, Chubut	https://doi.org/10.1016/j.cretres.2019.02.013
Belgium	3	50	*Sequoioxylon*	Cupressaceae	Barremian	4	2	Hautrage Clays Fm., Hautrage, literature	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Thujoxylon*	Cupressaceae	Barremian	4	2	Hautrage Clays Fm., Hautrage, literature	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Cupressinoxylon*	Cupressaceae	Barremian	4	2	Hautrage Clays Fm., Bernissart	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Taxodioxylon*	Cupressaceae	Barremian	4	2	Hautrage Clays Fm., Bernissart	https://doi.org/10.1130/G32733.1
Canada	-85,93305556	79,9997222	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1130/G32733.1
Canada	-85,93305556	79,9997222	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1130/G32733.1
China	121	41	*Taxoxylon liaoxiense*	Cupressaceae	Aptian	5	2	Shahai Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	41	*Cupressinoxylon*	Cupressaceae	Aptian	6	2	Shahai Fm., Liaoning, Baitazigou	https://doi.org/10.1130/G32733.1
China	123,4047222	42,2847222	*Protocupressinoxylon*	Cupressaceae	Aptian	6	2	Shahai Fm. in northern Liaoning	https://doi.org/10.13686/j.cnki.dzyzy.2022.01.002
China	137,7961587	59,0570268	*Taxodioxylon heichengziense*	Cupressaceae	Barremian–Aptian	4–5	2	Yixian Fm., Shejinbeigou Village, Heichengzi Basin, Beipiao of western Liaoning	https://doi.org/10.1016/j.cretres.2015.12.011
China	137,7961587	59,0570268	*Thujoxylon beipiaoense*	Cupressaceae	Barremian–Aptian	4–5	2	Yixian Fm., Shejinbeigou Village, Heichengzi Basin, Beipiao of western Liaoning	https://doi.org/10.1016/j.cretres.2015.12.011
China	130	45	*Taxodioxylon szei*	Cupressaceae	Barremian–Aptian	4–5	2	Muling Fm., Jixi, Heilongjiang	https://doi.org/10.1130/G32733.1
China	117	48	*Taxoxylon pulchrum*	Cupressaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	117	48	*Protoglyptostroboxylon yiminense*	Cupressaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner	https://doi.org/10.1130/G32733.1
China	117	48	*Protoglyptostroboxylon giganteum*	Cupressaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner	https://doi.org/10.1130/G32733.1
China	121	42	*Taxoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	128,8947222	42,6755556	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	2	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	125,3444444	43,6766667	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	2	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
China	130	43	*Pseudofrenelopsis dalatzensi*	Cupressaceae	Aptian–Albian	5–6	2	Dalazi Fm., Zhixing, Xiang, Yanji county, Jilin	https://doi.org/10.1130/G32733.1
China	131	45	*Protocupressinoxylon mishanense*	Cupressaceae	Barremian	4	2	Chengzihe Fm., Mishan, Heilongjiang	https://doi.org/10.1130/G32733.1
China	132	46	*Cupressinoxylon baomiqiaoense*	Cupressaceae	Barremian–Albian	4–6	2	Yunshan Fm., Baoqing, Heilongjiang	https://doi.org/10.1130/G32733.1
China	121	42	*Elatides harrisu*	Cupressaceae	Aptian–Albian	5–6	2	Halzhou Fm., Fuxin coal mine, Liaoning	https://doi.org/10.1130/G32733.1

China	129	42	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	2	Liaoyuan Basin, Jilin	https://doi.org/10.1130/G32733.1
China	131,0991667	45,5352778	*Protocupressinoxylon*	Cupressaceae	Barremian	4	2	Heilongjiang, Mishan, Chengzihe Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
China	121	42	*Taxoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	130	43	*Pseudofrenelopsis dalatzensi*	Cupressaceae	Aptian–Albian	5–6	2	Dalazi Fm., Zhixing, Xiang, Yanji county, Jilin	https://doi.org/10.1130/G32733.1
China	132	46	*Cupressinoxylon baomiqiaoense*	Cupressaceae	Barremian–Albian	4–6	2	Yunshan Fm., Baoqing, Heilongjiang	https://doi.org/10.1130/G32733.1
China	121	42	*Elatides harrisu*	Cupressaceae	Aptian–Albian	5–6	2	Halzhou Fm., Fuxin coal mine, Liaoning	https://doi.org/10.1130/G32733.1
England	0	52	*Pseudofrenelopsis* ?	Cupressaceae	Valanginian–Barremian	2–4	2	Wessex Fm., Hanover Point, Sudmoor Point	https://doi.org/10.1130/G32733.1
England	0	51	*Cupressinoxylon*	Cupressaceae	Aptian	5	2	Lower Greensand, Folkestone Beds near Ightham, Kent	https://doi.org/10.1130/G32733.1
England	-1	50	*Sequoia aquisgranensis*	Cupressaceae	Aptian	5	2	Lower Greensand, Luccomb Chine, Isle of Wight	https://doi.org/10.1130/G32733.1
England	-1	50	*Cupressinoxylon luccombense*	Cupressaceae	Aptian	5	2	Lower Greensand, Luccomb Chine, Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	51	*Cupressinoxylon cryptomerioides*	Cupressaceae	Aptian	5	2	Lower Greensand, Kentish Rag, Iguanodon Quarry	https://doi.org/10.1130/G32733.1
England	0	52	*Taxoxylon anglicum*	Cupressaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Taxoxylon anglicum*	Cupressaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Cupressinoxylon* sp.	Cupressaceae	Aptian	5	2	Lower Greensand, Woburn Sands, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Taxoxylon anglicum*	Cupressaceae	Aptian	5	2	Lower Greensand, Woburn Sands, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Cupressinoxylon hortii*	Cupressaceae	Aptian	5	2	Lower Greensand, Fuller's Earth, Woburn Sands, Bedfordshire	https://doi.org/10.1130/G32733.1
England	-1	50	*Cupressinoxylon vectense*	Cupressaceae	Aptian	5	2	Lower Greensand, Shanklin, Isle of Wight	https://doi.org/10.1130/G32733.1
England	1	50	*Protocupressinoxylon vectense*	Cupressaceae	Aptian	5	2	Lower Greensand, Dunnose Point	https://doi.org/10.1130/G32733.1
England	-1	50	*Cupressinoxylon*	Cupressaceae	Aptian	5	2	Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	51	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	-1	50	*Cupressinoxylon vectense*	Cupressaceae	Aptian	5	2	Lower Crioseras bed, Sandown, Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	52	*Pseudofrenelopsis*	Cupressaceae	Barremian	4	2	Wealden Group	https://doi.org/10.1130/G32733.1
England	-1	50	*Pseudofrenelopsis parceramosa*	Cupressaceae	Aptian	5	2	Lower Greensand, Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	52	*Pseudofrenelopsis*	Cupressaceae	Barremian	4	2	Brook Fm., Shippard's Compton	https://doi.org/10.1130/G32733.1
England	-3	50	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Upper Greensand, Exeter	https://doi.org/10.1130/G32733.1
England	-3	50	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Upper Greensand, Semley, Wittshire	https://doi.org/10.1130/G32733.1
England	0	51	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
France	4	50	*Cupressinoxylon*	Cupressaceae	Hauterivian–Barremian	1–3	2	Feron-Glageon, literature, Lemoigne	https://doi.org/10.1130/G32733.1
France	0	49	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	5	44	*Taxodioxylon*	Cupressaceae	Aptian	5	2	Col de la Vallouse	https://doi.org/10.1130/G32733.1
France	4	48	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Louvemont, literature, Bertrand	https://doi.org/10.1130/G32733.1
France	0	48	Undetermined wood	Cupressaceae	Albian	6	2	Gault, Gault	https://doi.org/10.1130/G32733.1
France	1	50	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	1	50	*Tetraclinoxylon amedroi*	Cupressaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	1	50	*Widdringtonioxylon borealis*	Cupressaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	4	49	*Taxodioxylon*	Cupressaceae	Albian	6	2	Ardennes, literature-Na, unpublished	https://doi.org/10.1130/G32733.1
France	4	49	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Ardennes, literature-Na, unpublished	https://doi.org/10.1130/G32733.1
France	0	49	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	0	49	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Cap de la Heve	https://doi.org/10.1130/G32733.1
France	4	48	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Aube, literature, Fliche	https://doi.org/10.1130/G32733.1
France	4	48	*Cupressinoxylon*	Cupressaceae	Albian	6	2	Aube, literature, Pons	https://doi.org/10.1130/G32733.1
France	6	44	*Taxodioxylon*	Cupressaceae	Albian	6	2	Chabrieres, literature, Cotillon	https://doi.org/10.1130/G32733.1
France	5	44	*Taxodioxylon*	Cupressaceae	Albian	6	2	Drome	https://doi.org/10.1130/G32733.1
France	4	44	*Taxodioxylon*	Cupressaceae	Albian	6	2	Bevons, literature	https://doi.org/10.1130/G32733.1
France	4	48	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Louvemont, literature, Bertrand	https://doi.org/10.1130/G32733.1
India	85	23	*Taxaceoxylon rajmahalense*	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Taxaceoxylon indicum*	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Amarjola	https://doi.org/10.1130/G32733.1
India	85	23	*Taxaceoxylon*	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Taxodioxylon* sp.	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Cupressinoxylon rajmahalense*	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Amarjola	https://doi.org/10.1130/G32733.1
India	85	23	*Protocupressinoxylon rajmahalense*	Cupressaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
Japan	136	36	*Taxodioxylon*	Cupressaceae	Valanginian–Barremian	2–4	2	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	136	36	*Cupressinoxylon*	Cupressaceae	Valanginian–Barremian	2–4	2	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	141	39	*Paracupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	2	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	142	44	*Cupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	2	Trigonia sandstone, Hokkaido, Top to eusinai, Ponmosiri, Asibetu-mura, Isikari	https://doi.org/10.1130/G32733.1
Japan	140	35	*Taxodioxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Taxaceoxylon japonomesozoicum*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Mesembryoxylon* (*Taxodioxylon*)	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Cupressinoxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Paracupressinoxylon shimakurae*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Metacupressinoxylon tylosissimum*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Cupressinoxylon* cf. *hortii*	Cupressaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140,8413889	35,7219444	*Cupressinoxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	140,8413889	35,7219444	*Metacupressinoxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141	39	*Paracupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	2	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	142	44	*Cupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	2	Trigonia sandstone, Hokkaido, Top to eusinai, Ponmosiri, Asibetu-mura, Isikari	https://doi.org/10.1130/G32733.1
Norge	-28	78	*Cupressinoxylon* cf. *mcgeei*	Cupressaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Taxodioxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Juniperoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Taxodioxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Juniperoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Juniperoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,40111111	78,0266667	*Taxaceoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Starknausen Peak, Svalbard	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Juniperoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,40111111	78,0266667	*Taxaceoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Starknausen Peak, Svalbard	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,40111111	78,0266667	*Taxaceoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Starknausen Peak, Svalbard	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Cupressinoxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Portugal	-8,68476828	39,6820981	*Protocupressinoxylon*	Cupressaceae	upper Aptian–lower Albian	5–6	2	Figueira da Foz Fm., Casal do Estortiga, near Santa Catarina da Serra	https://doi.org/10.1016/j.cretres.2014.06.004
Portugal	-8,68476828	39,6820981	*Protocupressinoxylon*	Cupressaceae	upper Aptian–lower Albian	5–6	2	Figueira da Foz Fm., Casal do Estortiga, near Santa Catarina da Serra	https://doi.org/10.1016/j.cretres.2014.06.004
Romania	26	48	*Protocupressinoxylon*	Cupressaceae	Aptian	5	2	Cuza Voda, literature	https://doi.org/10.1130/G32733.1
Romania	28	44	*Protocupressinoxylon*	Cupressaceae	Aptian	5	2	Gherghina Fm., South Dobroudja, Cernavoda	https://doi.org/10.1130/G32733.1
Romania	28	44	*Protocupressinoxylon dragastanii*	Cupressaceae	Aptian	5	2	Gherghina Fm., South Dobroudja, Cernavoda	https://doi.org/10.1016/j.revpalbo.2006.05.003
Romania	28	44	*Protocupressinoxylon dragastanii*	Cupressaceae	Aptian	5	2	Tibrinu, literature, Iamandei	https://doi.org/10.1130/G32733.1
Romania	28	44	*Chamaecyparixylon*	Cupressaceae	Aptian	5	2	Tibrinu, literature, Iamandei	https://doi.org/10.1130/G32733.1
Romania	28	44	*Chamaecyparixylon*	Cupressaceae	Aptian	5	2	South Dobrogea, literature	https://doi.org/10.1130/G32733.1
Romania	28	44	*Chamaecyparixylon privegillii*	Cupressaceae	Aptian	5	2	Gherghina Fm., South Dobrogea	https://doi.org/10.1016/j.revpalbo.2006.05.003
Romania	28	44	*Protocupressinoxylon*	Cupressaceae	Albian	6	2	Cochirleni Fm., South Dobrogea	https://doi.org/10.1130/G32733.1
Spain	-0,316666667	40,8005556	*Protaxodioxylon turolense*	Cupressaceae	Aptian	5	2	Utrillas Fm., Castellote, Teruel	https://doi.org/10.1130/G32733.1
Spain	-0,396666667	40,7411111	*Cupressinoxylon hortii*	Cupressaceae	Berriasian–Barremian	1–4	2	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-0,396666667	40,7411111	*Cupressinoxylon sp.*	Cupressaceae	Berriasian–Barremian	1–4	2	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-0,343333333	40,8141667	*Cupressinoxylon* sp.	Cupressaceae	Berriasian–Barremian	1–4	2	Seno, literature, Lemoigne	https://doi.org/10.1130/G32733.1
Spain	-0,650277778	40,9977778	*Cupressinoxylon hortii*	Cupressaceae	Berriasian–Barremian	1–4	2	Oliete, literature, Lemoigne	https://doi.org/10.1130/G32733.1
Sudan	25	15	*Pseudofrenelopsis parceramosa*	Cupressaceae	Albian?	6	2	Nubian Sandstone, Jebel Dirra, 75 Km E	https://doi.org/10.1130/G32733.1
Sudan	25	15	*Frenelopsis silfloana*	Cupressaceae	Albian?	6	2	Nubian Sandstone, Jebel Dirra, 75 Km E	https://doi.org/10.1130/G32733.1
Tanzania	39	-10	*Cupressinoxylon* sp.	Cupressaceae	Aptian?	5	2	Tendaguru, literature, Kahlert	https://doi.org/10.1130/G32733.1
Ukraine	31	49	*Taxodioxylon*	Cupressaceae	Albian	6	2	Kanev, literature, Philippe	https://doi.org/10.1130/G32733.1
Ukraine	31	49	*Frenelopsis kaneviensis*	Cupressaceae	Albian	6	2	Kanev, literature, Philippe	https://doi.org/10.1130/G32733.1
Ukraine	31,44444444	49,7283333	*Taxodioxylon* sp.	Cupressaceae	Albian	6	2	Kanev, Englandraine	https://doi.org/10.1016/j.revpalbo.2006.05.003
USA	-94	34	*Pseudofrenelopsis varians*	Cupressaceae	Aptian–Albian	5–6	2	Holly Creek Fm., James Hardie, Gypsum quarry	https://doi.org/10.1130/G32733.1
USA	-97	32	*Pseudofrenelopsis ramosissima*	Cupressaceae	Aptian–Albian	5–6	2	Twin Mountains Fm., Jones Ranch, sauropod dinosaur quarry	https://doi.org/10.1130/G32733.1
USA	-77	38	*Cupressinoxylon*	Cupressaceae	Aptian	5	2	Patuxent Fm., Maryland, literature	https://doi.org/10.1130/G32733.1
USA	-78	35	*Torreya antiqua*	Cupressaceae	Albian	6	2	Potomac Fm., North Carolina	https://doi.org/10.1130/G32733.1
USA	-98	38	*Cupressinoxylon cheyennense*	Cupressaceae	Albian?	6	2	Cheyenne Fm., Kansas?, literature	https://doi.org/10.1130/G32733.1
USA	-94	34	*Pseudofrenelopsis varians*	Cupressaceae	Aptian–Albian	5–6	2	Holly Creek Fm., James Hardie, Gypsum quarry	https://doi.org/10.1130/G32733.1
USA	-111	42	*Cupressinoxylon* sp.	Cupressaceae	Albian	6	2	Wayan Fm., Idaho, literature	https://doi.org/10.1130/G32733.1
USA	-97	32	*Pseudofrenelopsis ramosissima*	Cupressaceae	Aptian–Albian	5–6	2	Twin Mountains Fm., Jones Ranch, sauropod dinosaur quarry	https://doi.org/10.1130/G32733.1
USA	-77	37	*Pseudofrenelopsis ramosissima*	Cupressaceae	Albian	6	2	Potomac Group, Puddledock, locality, Virgina	https://doi.org/10.1130/G32733.1
USA	-111	39	*Mesembryoxylon* sp.	Cupressaceae	Albian	6	2	Utah, Tidwell	https://doi.org/10.1130/G32733.1
China	137,7961587	59,0570268	*Sciadopityoxylon liaoningense*	Cupressaceae	Barremian–Aptian	4–5	2	Yixian Fm., Shejinbeigou Village, Heichengzi Basin, Beipiao of western Liaoning	https://doi.org/10.1016/j.cretres.2015.12.011
China	121	41	*Protosciadopityoxylon liaoningense*	Cupressaceae	Aptian	5	2	Shahai Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	42	*Protosciadopityoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	121	42	*Protosciadopityoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
Russia	165,142068	62,193743	*Taxaceoxylon sp.*	Cupressaceae	Albian	6	2	Kamchatka Peninsula (Russia Far East), Melkaya River, Talovka River Basin, eastern coast of Penzhina	https://doi.org/10.1016/j.cretres.2014.04.002
China	121	42	*Sciadopityoxylon liaoningense*	Cupressaceae	Aptian	5	2	Fuxin Fm., Fuxin, Liaoning	https://doi.org/10.1130/G32733.1
China	130	45	*Glyptostroboxylon xidapoense*	Cupressaceae	Barremian–Aptian	4–5	2	Muling Fm., Jixi, Heilongjiang	https://doi.org/10.1130/G32733.2
China	121	42	*Sciadopityoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.3
China	131,0733333	45,2972222	*Glyptostroboxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Heilongjiang, Jixi, Muling Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
China	121	42	*Sciadopityoxylon*	Cupressaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
England	-1	50	*Vectia luccombensis*	Cupressaceae	Aptian	5	2	Lower Greensand, Luccomb Chine, Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	49	*Vectia luccombensis*	Cupressaceae	Aptian	5	2	Isle of Wight	https://doi.org/10.1130/G32733.1
Japan	140,8613889	35,7025	*Taxodioxylon*	Cupressaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula, Toriakeura (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Norge	17,27972222	78,0213889	*Taxodioxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Taxodioxylon*	Cupressaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Canada	-95	78	*Piceoxylon christopheri*	Pinaceae	Albian	6	2	Christopher Fm., southeast Amund, Ringnes Island	https://doi.org/10.1130/G32733.1
Canada	-82	76	*Protocedroxylon disjunctum*	Pinaceae	Albian	6	2	Christopher Fm., 9 mi. cast of the	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-76,78472222	81,4038889	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-76,78472222	81,4038889	*Protopiceoxylon (= Cedroxylon)*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-76,78472222	81,4038889	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-87,72166667	79,465	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1016/j.revpalbo.2006.07.005
Canada (Alaska)	-87,72166667	79,465	*Palaepiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1016/j.revpalbo.2006.07.005
Canada (Alaska)	-76,78472222	81,4038889	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-76,78472222	81,4038889	*Protopiceoxylon (= Cedroxylon)*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-76,78472222	81,4038889	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Ellesmere Island	https://doi.org/10.1130/G32733.1
Canada (Alaska)	-87,72166667	79,465	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1016/j.revpalbo.2006.07.005
Canada (Alaska)	-87,72166667	79,465	*Palaepiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Axel Heiberg islands (Canadian Arctic Archipelago)	https://doi.org/10.1016/j.revpalbo.2006.07.005
China	121	41	*Protopiceoxylon chaoyangense*	Pinaceae	Aptian	5	2	Shahai Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	41	*Protopiceoxylon yizhouense*	Pinaceae	Aptian	5	2	Shahai Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121,3425	42,1463889	*Protopiceoxylon*	Pinaceae	Aptian	6	2	Shahai Fm. in northern Liaoning	https://doi.org/10.13686/j.cnki.dzyzy.2022.01.002
China	121	41	*Piceoxylon zaocishanense*	Pinaceae	Barremian–Aptian	4–5	2	Yixian Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	137,7961587	59,0570268	*Protocedroxylon shengjinbeigouense*	Pinaceae	Barremian–Aptian	4–5	2	Yixian Fm., Shejinbeigou Village, Heichengzi Basin, Beipiao of western Liaoning	https://doi.org/10.1016/j.cretres.2015.12.011
China	117	48	*Piceoxylon priscum*	Pinaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	117	48	*Protocedroxylon jinshaense*	Pinaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	42	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	121	42	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	125,3444444	43,6766667	*Protocedroxylon*	Pinaceae	Hauterivian–Aptian	3–5	2	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
China	128,8947222	42,6755556	*Protocedroxylon*	Pinaceae	Hauterivian–Aptian	3–5	2	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	122	52	*Protopiceoxylon mohense*	Pinaceae	Aptian	5	2	Jiufengshan Fm., Mohe, Heilongjiang	https://doi.org/10.1130/G32733.1
China	125	42	*Protocedroxylon*	Pinaceae	Berriasian–Barremian	1–4	2	Liaoyuan Basin, Jilin	https://doi.org/10.1130/G32733.1
China	129,4752778	42,8877778	*Protocedroxylon*	Pinaceae	Aptian	5	2	Yanji Basin, Jilin	https://doi.org/10.1130/G32733.1
China	123	41	*Protopiceoxylon dakotense*	Pinaceae	Aptian	5	2	Benxi, Liaoning,	https://doi.org/10.1130/G32733.1
China	121	42	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	121	42	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	130	45	*Piceoxylon manchuricum*	Pinaceae	Albian	6	2	Huashan Group, Jixi, Heilongjiang	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon sewardi*	Pinaceae	Aptian	5	2	Lower Greensand near Ightham, Kent	https://doi.org/10.1130/G32733.1

England	0	51	*Pityoxylon*	Pinaceae	Aptian	5	2	Lower Greensand, Folkestone Beds near Ightham, Kent	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon* sp.	Pinaceae	Aptian	5	2	Lower Greensand, near Maidstone, Kent	https://doi.org/10.1130/G32733.1
England	0	51	*Protocedroxylon maidstonensis*	Pinaceae	Aptian	5	2	Lower Greensand, Kentish Rag, Iguanodon Quarry	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon benstedi*	Pinaceae	Aptian	5	2	Lower Greensand, Kentish Rag, near Maidstone, Kent	https://doi.org/10.1130/G32733.1
England	0	52	*Pityoxylon woodwardi*	Pinaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Protocedroxylon pottoniense*	Pinaceae	Aptian	5	2	Lower Greensand, Bedfordshire, Potton	https://doi.org/10.1130/G32733.1
England	0	51	*Protopiceoxylon edwardsi*	Pinaceae	Aptian	5	2	Lower Greensand, Berwick Green, Sussex	https://doi.org/10.1130/G32733.1
England	0	51	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	-3	50	*Protocedroxylon*	Pinaceae	Albian	6	2	Upper Greensand, Exeter	https://doi.org/10.1130/G32733.1
England	0	51	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Pityoxylon*	Pinaceae	Albian	6	2	Gillingham, Kent	https://doi.org/10.1130/G32733.1
France	0	49	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	1	50	*Pityoxylon*	Pinaceae	Aptian	5	2	Boulogne, literature, Carpentier	https://doi.org/10.1130/G32733.1
France	0	48	*Pityoxylon*	Pinaceae	Albian	6	2	Gault, Gault	https://doi.org/10.1130/G32733.1
France	1	50	*Piceoxylon boureaui*	Pinaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	0	49	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Normandie	https://doi.org/10.1130/G32733.1
France	0	49	*Protocedroxylon*	Pinaceae	Albian	6	2	Gault de Bleville, Normandie	https://doi.org/10.1130/G32733.1
France	4	48	*Pityoxylon*	Pinaceae	Albian	6	2	Aube, literature, Fliche	https://doi.org/10.1130/G32733.1
France	4	48	*Pinuxylon*	Pinaceae	Albian	6	2	Aube, literature, Pons	https://doi.org/10.1130/G32733.1
France	0	47	*Protocedroxylon*	Pinaceae	Albian	6	2	Aube, literature, Fliche	https://doi.org/10.1130/G32733.1
France	1	50	*Pinuxylon bononiense*	Pinaceae	Albian	6	2	literature, Pons	https://doi.org/10.1130/G32733.1
France	2	49	*Pityoxylon*	Pinaceae	Albian	6	2	Villers-St.-Barthelemy, literature, Koeniguer	https://doi.org/10.1130/G32733.1
Japan	140	35	*Protocedroxylon*	Pinaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Protocedroxylon pseudoaraucarioides*	Pinaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Protocedroxylon vectense*	Pinaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	141	39	*Protocedroxylon yoshidai*	Pinaceae	Aptian	5	2	Miyako Series, Miyako, Iwate Prefecture	https://doi.org/10.1130/G32733.1
Japan	141	43	*Pinoxylon dakotense*	Pinaceae	Hauterivian–Albian?	3–6	2	Honkeiko Beds, Hokkaido, Pen-hsi-hu, Fengtien Province	https://doi.org/10.1130/G32733.1
Japan	140,8413889	35,7219444	*Protocedroxylon*	Pinaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	141,8902778	39,5741667	*Protocedroxylon*	Pinaceae	Aptian?	5	2	Honshu, Iwate Prefecture (Outer Zone), Miyako Series	https://doi.org/10.1016/j.jseaes.2010.11.010
Kazakstan	71	43	*Piceoxylon*	Pinaceae	Albian	6	2	Central Kyzylkum, literature	https://doi.org/10.1130/G32733.1
Libya	13	32	*Protocedroxylon paronai*	Pinaceae	Albian?	6	2	Tripolitania, Negri	https://doi.org/10.1130/G32733.1
Norge	28	78	*Protopiceoxylon exstinctum*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Protocedroxylon* (*Anomaloxylon*)	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Piceoxylon exstinctum*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Protocedroxylon transiens*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Piceoxylon exstinctum*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Protocedroxylon transiens*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	28	78	*Protocedroxylon cedroides*	Pinaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Laricioxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Piceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Laricioxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Protopiceoxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	17,27972222	78,0213889	*Protocedroxylon*	Pinaceae	Aptian–Albian	5–6	2	Lundstromdalen, Svalbard, Spitsbergen	https://doi.org/10.1130/G32733.1
Russia	135	45	*Protocedroxylon primoryense*	Pinaceae	Aptian–Albian	5–6	2	Lipovtsy Fm., Firsov Cape, Muravyov-Amursky Peninsula, Russia Far East, southern Primorye	https://doi.org/10.1016/j.cretres.2014.04.002
Russia	165,142068	62,193743	*Protocedroxylon gregussii*	Pinaceae	Albian	6	2	Kamchatka Peninsula (Russia Far East), Melkaya River, Talovka River Basin, eastern coast of Penzhina	https://doi.org/10.1016/j.cretres.2014.04.002
Russia	165,142068	62,193743	*Cedrus penzhinaensis*	Pinaceae	Albian	6	2	Kamchatka Peninsula (Russia Far East), Melkaya River, Talovka River Basin, eastern coast of Penzhina	https://doi.org/10.1016/j.cretres.2014.04.002
Russia	158	58	*Keteleerioxylon kamtschatkiense*	Pinaceae	Albian	6	2	Kedrovka Fm., Penzhina Bay, northwestern Kamchatka Peninsula	https://doi.org/10.1134/S0031030106060104
Russia	135	45	*Protocedroxylon primoryense*	Pinaceae	Aptian–Albian	5–6	2	Lipovtsy Fm., Firsov Cape, Muravyov-Amursky Peninsula, Russia Far East, southern Primorye	https://doi.org/10.1016/j.cretres.2014.04.002
Russia	166	61	*Protocedroxylon*	Pinaceae	Albian	6	2	Kamchatka, literature, Blokhina	https://doi.org/10.1130/G32733.1
Spain	-2,426944444	42,2883333	*Pinoxylon riojanus*	Pinaceae	Aptian	5	2	Soto de Cameros, La Rioja	https://doi.org/10.1130/G32733.1
USA	-122,609074	40,4610391	*Protocedroxylon*	Pinaceae	Barremian–early Aptian	4–5	2	Lower Chickabally Member, Budden Canyon Fm., town of Ono, California	https://www.ameghiniana.org.ar/index.php/ameghiniana/article/view/2973
USA	-103	44	*Piceoxylon*	Pinaceae	Barremian	4	2	Dakota, literature, Scott	https://doi.org/10.1130/G32733.1
USA	-103	44	*Pinuxylon dakotense*	Pinaceae	Barremian	4	2	Black Hills, Dakota	https://doi.org/10.1130/G32733.1
USA	-103,5661111	44,1386111	*Pinoxylon dakotense*	Pinaceae	Barremian–Aptian	4–5	2	Lakota sandstone of the Black Hills, South Dakota	https://doi.org/10.1130/G32733.1
USA	-122	37	*Protocedroxylon* ?	Pinaceae	Albian	6	2	Budden Canyon Fm., California, San Francisco, 0.3, 12	https://doi.org/10.1130/G32733.1
USA	-111	39	*Pityoxylon* sp.	Pinaceae	Albian	6	2	Utah, Tidwell	https://doi.org/10.1130/G32733.1
USA	-111	39	*Protocedroxylon* sp.	Pinaceae	Albian	6	2	Utah, Tidwell	https://doi.org/10.1130/G32733.1
Norge	16	78	*Laricioxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Norge	16	78	*Laricioxylon*	Pinaceae	Aptian–Albian	5–6	2	Carolinefjellet Fm., Lundstromdalen, N Adventfjorden, Spitsbergen	https://doi.org/10.1130/G32733.1
Algeria	2	28	*Metapodocarpoxylon*	Podocarpaceae	Aptian	5	2	Hoggar, Tamanghasset	https://doi.org/10.1130/G32733.1
Algeria	2	28	*Metapodocarpoxylon madamaense*	Podocarpaceae	Berriasian–Barremian	1–4	2	Madama, literature, Boureau	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Podocarpoxylon* sp. 1	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Podocarpoxylon* sp. 2	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protopodocarpoxylon* sp.	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protocircoporoxylon* sp.	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Circoporoxylon* sp.	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Podocarpoxylon fuenzalidai*	Podocarpaceae	Aptian	5	2	South Shetland	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protopodocarpoxylon* sp. E	Podocarpaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protocircoporoxylon* sp. D	Podocarpaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Circoporoxylon* sp. C	Podocarpaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protocircoporoxylon* sp. D	Podocarpaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Circoporoxylon* sp. C	Podocarpaceae	Aptian	5	2	President Head, Snow Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protopodocarpoxylon*	Podocarpaceae	Aptian	5	2	President Head, Snow Island, site A	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Podocarpoxylon* sp. 2	Podocarpaceae	Aptian	5	2	Cerro Negro Fm., Byers Peninsula, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Podocarpoxylon* sp. 1	Podocarpaceae	Aptian	5	2	Cerro Negro Fm., Byers Peninsula, Livingston Island	https://doi.org/10.1130/G32733.1
Antarctica	-61	-62	*Protocircocarpoxylon*	Podocarpaceae	Aptian	5	2	Byers Peninsula, Livingstone Island	https://doi.org/10.1130/G32733.1
Antarctica	-68	-71	*Podocarpoxylon* sp. 2	Podocarpaceae	Albian	6	2	Neptune Glacier Fm., Triton Point, Citadel, Bastion, Coal	https://doi.org/10.1130/G32733.1
Antarctica	-68	-71	*Podocarpoxylon* sp. 1	Podocarpaceae	Albian	6	2	Neptune Glacier Fm., Triton Point, Pagoda Ridge, Citadel	https://doi.org/10.1130/G32733.1
Antarctica	69	-49	*Podocarpoxylon* sp.	Podocarpaceae	Albian	6	2	Kerguelen Islands, drilling, Kerguelen, Plateau	https://doi.org/10.1130/G32733.1
Antarctica	69	-49	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Kerguelen Islands, Raggatt Basin, Southern Kerguelen Plateau	https://doi.org/10.2973/odp.proc.sr.120.195.1992
Argentina	-68	-54	*Protopodocarpoxylon antarcticum*	Podocarpaceae	Aptian–Albian	5–6	2	Tierra del Fuego	https://doi.org/10.1130/G32733.1
Australia	146	-38	*Podocarpoxylon* sp.	Podocarpaceae	Valanginian–Barremian	2–4	2	Rintoul Creek Fm., Gippsland Basin, Rintoul Creek	https://doi.org/10.1130/G32733.1
Australia	115	-30	*Podocarpoxylon* sp.	Podocarpaceae	Barremian–Aptian	5–6	2	Dandaragan, Western Australia	https://doi.org/10.1130/G32733.1
Australia	113	-24	*Circoporoxylon* sp.	Podocarpaceae	Hauterivian–Barremian	3–4	2	Cardabia, Perth area	https://doi.org/10.1130/G32733.1
Australia	137	-29	*Podocarpoxylon* ?	Podocarpaceae	Aptian–Albian	5–6	2	Curdimurka, northern South Australia	https://doi.org/10.1130/G32733.1
Australia	114	-22	*Podocarpoxylon, Phyllocladoxylon* ?	Podocarpaceae	Valanginian–Aptian	2–5	2	Birdrong Sandstone, Carnarvon Basin	https://doi.org/10.1130/G32733.1
Australia	144	-22	*Protocircoporoxylon*	Podocarpaceae	Albian	6	2	Queensland, literature, Peters	https://doi.org/10.1130/G32733.1
Australia	144	-37	Undetermined wood	Podocarpaceae	Barremian–Albian	4–6	2	Otway and Gippsland basins	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Protopodocarpoxylon*	Podocarpaceae	Barremian	4	2	Hautrage Clays Fm., Bernissart	https://doi.org/10.1130/G32733.1
Belgium	3	50	*Podocarpoxylon*	Podocarpaceae	Barremian	4	2	Hautrage Clays Fm., Bernissart	https://doi.org/10.1130/G32733.1
Cameroon	12	5	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian	5	2	Garoua, Hama-Koussou Basin	https://doi.org/10.1130/G32733.1
Canada	-111	57	*Phyllocladoxylon*	Podocarpaceae	Aptian	5	2	Northern Alberta, Tar Sands	https://doi.org/10.1130/G32733.1
Chile	-71	-46	*Podocarpoxylon* sp.	Podocarpaceae	Hauterivian–Albian	3–6	2	Apeleg and Katterfeld Fm.s, Puerto Ibañez	https://doi.org/10.1130/G32733.1
China	121	41	*Protophyllocladoxylon franicum*	Podocarpaceae	Barremian–Aptian	4–5	2	Yixian Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	41	*Protopodocarpoxylon jingangshanense*	Podocarpaceae	Barremian–Aptian	4–5	2	Yixian Fm., Yixian, Liaoning	https://doi.org/10.1130/G32733.1
China	121	42	*Phyllocladoxylon xinqiuensis*	Podocarpaceae	Aptian	5	2	Fuxin Fm., Fuxin, Liaoning	https://doi.org/10.1130/G32733.1
China	121	42	*Protophyllocladoxylon haizhouense*	Podocarpaceae	Aptian	5	2	Fuxin Fm., Fuxin, Liaoning	https://doi.org/10.1130/G32733.1
China	117	48	*Phyllocladoxylon hialaerense*	Podocarpaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	117	48	*Phyllocladoxylon heizyoense*	Podocarpaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	117	48	*Phyllocladoxylon densum*	Podocarpaceae	Barremian–Aptian	4–5	2	Yimin Fm., Ewenki, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	42	*Protopodocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	121	42	*Protophyllocladoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	128,8972467	42,6738997	*Phyllocladoxylon*	Podocarpaceae	Hauterivian–Aptian	3–5	2	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	125,346992	43,6751024	*Phyllocladoxylon*	Podocarpaceae	Hauterivian–Aptian	3–5	2	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
China	121	42	*Protopodocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	West Liaoning, NE China	https://doi.org/10.1130/G32733.1
China	91	29	*Protopodocarpoxylon lalongense*	Podocarpaceae	Albian	6	2	Duoni Fm., Bangoin County, Lalong, Tibet	https://doi.org/10.1130/G32733.1
China	131	45	*Protopodocarpoxylon arnatum*	Podocarpaceae	Albian	6	2	Huashan Group, Mishan, Heilongjiang	https://doi.org/10.1130/G32733.1
Colombia	-74	10	*Metapodocarpoxylon rosablancaense*	Podocarpaceae	Aptian	5	2	Magdalena	https://doi.org/10.1130/G32733.1
Colombia	-73	3	*Metapodocarpoxylon curitiense*	Podocarpaceae	Barremian–Aptian	4–5	2	Paja Fm.	https://doi.org/10.1130/G32733.1
Colombia	-73	3	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian	5	2	Granada-Guamal area	https://doi.org/10.1130/G32733.1
Ecuador	-80,04738557	-3,9780441	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Middle Albian	6	2	Puyango Petrifiest Forest	https://doi.org/10.1130/G32733.1
Ecuador	-80	-3	*Metapodocarpoxylon* sp.	Podocarpaceae	Albian	6	2	Ciano Fm., Puyango	https://doi.org/10.1130/G32733.1
England	-1	50	*Podocarpoxylon solmsi*	Podocarpaceae	Aptian	5	2	Lower Greensand, Luccomb Chine, Isle of Wight	https://doi.org/10.1130/G32733.1
England	-1	50	*Podocarpoxylon gothami*	Podocarpaceae	Aptian	5	2	Lower Greensand, Luccomb Chine, Isle of Wight	https://doi.org/10.1130/G32733.1
England	0	52	*Podocarpoxylon bedfordense*	Podocarpaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Podocarpoxylon woburnense*	Podocarpaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	52	*Podocarpoxylon woburiense*	Podocarpaceae	Aptian	5	2	Lower Greensand, Woburn, Bedfordshire	https://doi.org/10.1130/G32733.1
England	0	51	*Protopodocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Podocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	0	51	*Phyllocladoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Greensand, literature, Stopes	https://doi.org/10.1130/G32733.1
England	-3	50	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Upper Greensand, Exeter, near Seaton	https://doi.org/10.1130/G32733.1
England	0	51	*Protopodocarpoxylon*	Podocarpaceae	Albian	6	2	Lower Greensand, Folkestone Beds	https://doi.org/10.1130/G32733.1
France	5	48	*Podocarpoxylon*	Podocarpaceae	Aptian	5	2	Haute-Marne, literature, Bertrand	https://doi.org/10.1130/G32733.1
France	1	49	*Circoporoxylon*	Podocarpaceae	Berriasian	1	2	Sully	https://doi.org/10.1130/G32733.1
France	4	48	*Podocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Sauvage-Magny, literature, Bertrand	https://doi.org/10.1130/G32733.1
France	1	50	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Wissant, Dept. du Pas-de-Calais	https://doi.org/10.1130/G32733.1
France	0	45	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Archingeay, Rochefort, literature, Perrichot	https://doi.org/10.1130/G32733.1
France	2	47	*Protopodocarpoxylon*	Podocarpaceae	Albian	6	2	Les Renardieres, Charante-Marithime	https://doi.org/10.1130/G32733.1
France	2	47	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Les Renardieres, Charante-Marithime	https://doi.org/10.1130/G32733.1
France	0	45	*Protopodocarpoxylon*	Podocarpaceae	Albian	6	2	Cadeuil, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	0	45	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Cadeuil, Charente-Marithime	https://doi.org/10.1130/G32733.1
France	0	49	*Podocarpoxylon* ?	Podocarpaceae	Albian	6	2	Cauville	https://doi.org/10.1130/G32733.1
France	0	49	*Podocarpoxylon* ?	Podocarpaceae	Albian	6	2	Cauville	https://doi.org/10.1130/G32733.1
France	0	49	*Protopodocarpoxylon*	Podocarpaceae	Albian	6	2	Gault de Bleville, Normandie	https://doi.org/10.1130/G32733.1
France	0	49	*Protopodocarpoxylon*	Podocarpaceae	Albian	6	2	Cap de la Heve	https://doi.org/10.1130/G32733.1
France	6	43	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Escragnolles	https://doi.org/10.1130/G32733.1
France	6	44	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Blieux, literature, unpublished	https://doi.org/10.1130/G32733.1
France	6	44	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Chabrieres, literature, Cotillon	https://doi.org/10.1130/G32733.1
France	6	43	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Hyeges, literature, unpublished	https://doi.org/10.1130/G32733.1
France	1	50	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Wimart Beach, Calais	https://doi.org/10.1130/G32733.1
France	4	48	*Podocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Sauvage-Magny, literature, Bertrand	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Podocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Labatlan, literature, Barale	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Podocarpoxylon*	Podocarpaceae	Aptian–Albian	5–6	2	Labatlan	https://doi.org/10.1130/G32733.1
Hungary	18	47	*Protopodocarpoxylon*	Podocarpaceae	Aptian	5	2	Tata, literature, Philippe	https://doi.org/10.1130/G32733.1
India	85	23	*Podocarpoxylon spiroxylon*	Podocarpaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Protopodocarpoxylon amraparense*	Podocarpaceae	Aptian	5	2	Rajmahal hills, Jharkhand	https://doi.org/10.1130/G32733.1
India	85	23	*Podocarpoxylon rajmahalense*	Podocarpaceae	Aptian	5	2	Rajmahal hills, Jharkhand, Amarjola	https://doi.org/10.1130/G32733.1
India	87,74656757	25,0832251	*Circoporoxylon amarjolense*	Podocarpaceae	Aptian	5	2	Rajmahal Fm., Amarjola, Rajmahal Hills, Jharkhand	https://doi.org/10.1016/j.palwor.2017.12.004
India	81	16	*Podocarpoxylon parthasarathyi*	Podocarpaceae	Barremian–Aptian	4–5	2	Gangapur Fm., Pranhita-Godavari valley, Adilabad District, Andhra Pradesh	https://doi.org/10.1130/G32733.1

India	79,43467758	19,2654655	*Podocarpoxylon rajmahalense*	Podocarpaceae	Barremian–Aptian	4–5	2	Gangapur Fm., Near village Gangapur, Adilabad, Telangana	https://doi.org/10.1016/j.palwor.2017.12.004
India	77	28	*Podocarpoxylon* sp.	Podocarpaceae	Early–Middle Albian	6	2	Pariwar Fm., Hapur, 45 km NW of	https://doi.org/10.1130/G32733.1
Italy	12	43	*Metapodocarpoxylon subdiphtericum*	Podocarpaceae	Aptian–Albian	5–6	2	« marne a fucoidi » dell'Appennino Umbro-Marchigiano	https://doi.org/10.1080/00837792.1980.10670204
Italy	11	46	*Protopodocarpoxylon pedrottii*	Podocarpaceae	Albian	6	2	Vervo, Trento, Alps,	https://doi.org/10.1130/G32733.1
Japan	140	35	*Circoporoxylon*	Podocarpaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Phyllocladoxylon gothanii*	Podocarpaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Mesembrioxylon niheitakagii*	Podocarpaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Mesembrioxylon woburnense*	Podocarpaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	140	35	*Mesembrioxylon pseudobedfordense*	Podocarpaceae	Barremian–Aptian	4–5	2	Choshi Group, Honshu, Chiba Prefecture, Choshi	https://doi.org/10.1130/G32733.1
Japan	139	35	*Circoporoxylon*	Podocarpaceae	Barremian–Aptian	4–5	2	Sebayashi Fm., Kwanto, Mountains of central Honshu	https://doi.org/10.1130/G32733.1
Japan	135	34	*Podocarpoxylon woburnense*	Podocarpaceae	Barremian?	4	2	Minaziri Bed? of the Mon Wakayama-Ken, Minaziri, Huzinamimura	https://doi.org/10.1130/G32733.1
Japan	140,843669	35,719989	*Circoporoxylon*	Podocarpaceae	Barremian–Aptian	4–5	2	Honshu, Chiba Prefecture, Choshi Peninsula (Outer Zone), Choshi Group	https://doi.org/10.1016/j.jseaes.2010.11.010
Japan	138,8072989	36,0808626	*Circoporoxylon*	Podocarpaceae	Barremian–Aptian	4–5	2	Honshu, Gunma Prefecture, Kwanto Mountains (Outer Zone), Sanchu Group, Sebayashi Fm.	https://doi.org/10.1016/j.jseaes.2010.11.010
Kazakstan	71	43	*Podocarpoxylon*	Podocarpaceae	Albian	6	2	Central Kyzylkum, literature	https://doi.org/10.1130/G32733.1
Kerguelen Island	69	-49	*Podocarpoxylon* sp.	Podocarpaceae	Albian	6	2	Drilling, Kerguelen Plateau	https://doi.org/10.1130/G32733.1
Lebanon	35	33	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Valanginian–Barremian	2–4	2	Beskintaa, Philippe	https://doi.org/10.1130/G32733.1
Libya	12	32	*Metapodocarpoxylon* sp.	Podocarpaceae	Albian	6	2	Tripolitania, near Fessato	https://doi.org/10.1130/G32733.1
Mali	-2,71597816	18,6651714	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Berriasian–Albian	1–6	2	Ti-n-Essako, western side of the Adrar des Iforas, Continental Intercalaire rocks	https://doi.org/10.1016/S0031-0182(02)00447-9
Nigeria	6,47108916	16,4351986	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian–Albian	5–6	2	Road Agadez-Tahoua	https://doi.org/10.1130/G32733.1
Nigeria	8	16	*Metapodocarpoxylon* sp.	Podocarpaceae	Aptian–Albian	5–6	2	km 167, Agadez-Tahoua	https://doi.org/10.1130/G32733.1
Nigeria	11	10	*Metapodocarpoxylon* sp.	Podocarpaceae	Aptian–Albian	5–6	2	Gombe	https://doi.org/10.1130/G32733.1
Norge	-28	78	*Phyllocladoxylon* sp.	Podocarpaceae	Barremian	4	2	Harfagrehaugen, SandstonKing, Charles Land, Svalbard, Spitzbergen	https://doi.org/10.1130/G32733.1
Peru	-80	-5	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Early Albian	6	2	Lancones, 99 km of the border	https://doi.org/10.1130/G32733.1
Romania	28	44	*Protopodocarpoxylon*	Podocarpaceae	Aptian	5	2	Medgidia, literature, Iamandei	https://doi.org/10.1130/G32733.1
Romania	26	48	*Protopodocarpoxylon*	Podocarpaceae	Aptian	5	2	Cuza Voda, literature	https://doi.org/10.1130/G32733.1
Spain	-3,25714213	41,9885889	*Protopodocarpoxylon haciniensis*	Podocarpaceae	Barremian–Aptian	4	2	Castrillo de la Reina, Hacinas	https://doi.org/10.1016/j.geobios.2005.09.003
Tunisia	10,60096702	33,0657389	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian–Albian	5–6	2	Bir Miteur	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Protocircoporoxylon* sp.	Podocarpaceae	Aptian	5	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian	5	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian–Albian	5–6	2	base of secuence, Gued, Zefar	https://doi.org/10.1130/G32733.1
Tunisia	9	34	*Metapodocarpoxylon*	Podocarpaceae	Aptian	5	2	Bie, Ocem, Ali	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Hauterivian–Barremian	3–4	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	9	37	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian–Albian	5–6	2	Bir, Miteur, literature, Philippe	https://doi.org/10.1130/G32733.1
Tunisia	10,60096702	33,0657389	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Aptian–Albian	5–6	2	Bir Miteur	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Protocircoporoxylon* sp.	Podocarpaceae	Albian	6	2	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1
Tunisia	9	34	*Metapodocarpoxylon*	Podocarpaceae	Albian	6	2	Jabal, Segdal	https://doi.org/10.1130/G32733.1
Romania	28,283333	44,25	*Protopodocarpoxylon dobrogiacus*	Podocarpaceae	Aptian	5	2	Gherghina Fm., South Dobroudja, Medgidia	https://doi.org/10.1130/G32733.1
Romania	28	44	*Protopodocarpoxylon* sp.	Podocarpaceae	Aptian	5	2	Gherghina Fm., South Dobroudja, Cernavoda	https://doi.org/10.1016/j.revpalbo.2006.05.003
Argentina	-70,78933577	-44,8674409	*Agathoxylon*	Araucariaceae	Valanginian	2	1	Tres Lagunas Fm., southern Fontana Lake, north of Alto Rio Senguer town, Chubut	https://doi.org/10.1016/j.cretres.2019.104322
Chad	23	18	*Agathoxylon distichum* aff.	Araucariaceae	Berriasian–Barremian	1–4	1	Continental Intercalaire, Erdi, literature	https://doi.org/10.1130/G32733.1
Chad	23	18	*Agathoxylon distichum*	Araucariaceae	Berriasian–Barremian	1–4	1	Continental Intercalaire, Erdi, literature	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon dallonii*	Araucariaceae	Berriasian–Barremian	1–4	1	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	23	18	*Agathoxylon lugriense* aff.	Araucariaceae	Berriasian–Barremian	1–4	1	Bartoszewska	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon brachyphylloides*	Araucariaceae	Berriasian–Barremian	1–4	1	Literature, Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	15	9	*Agathoxylon lagonense*	Araucariaceae	Berriasian–Barremian	1–4	1	Literature, Laudoueneix	https://doi.org/10.1130/G32733.1
Chile	-71	-46	*Agathoxylon* sp.	Araucariaceae	Hauterivian–Albian	3–6	1	Apeleg and Katterfeld Fm.s, Puerto Ibañez	https://doi.org/10.1130/G32733.1
China	119	45	*Araucariopitys (Protocedroxylon) orien*	Araucariaceae	Hauterivian	5	1	Huolinhe Fm., Jarud, Inner Mongolia	https://doi.org/10.1130/G32733.1
England	-2	50	*Agathoxylon*	Araucariaceae	Late Jurassic–Berriasian	1	1	Purbeck Fm., Dorset, Purbeck	https://doi.org/10.1130/G32733.1
England	-2	50	*Agathoxylon antediluvianum*	Araucariaceae	Tithonian–Berriasian	1	1	Purbeck Fm., literature	https://doi.org/10.1130/G32733.1
England	-2	50	*Agathoxylon wallacei*	Araucariaceae	Tithonian–Berriasian	1	1	Purbeck Fm., Isle of Portland	https://doi.org/10.1130/G32733.1
England	-2	50	*Agathoxylon*	Araucariaceae	Berriasian	1	1	Dorset, Isle of Portland	https://doi.org/10.1130/G32733.1
England	-1,46878748	50,6549733	*Agathoxylon*	Araucariaceae	Hauterivian–Barremian	3–4	1	Wessex Fm., Hanover Point Assemblage, Isle of Wight	Collinson et al. (2000)
France	-1	45	*Agathoxylon*	Araucariaceae	Late Jurassic–Berriasian	1	1	Ile d'Oleron	https://doi.org/10.1130/G32733.1
France	1	50	*Agathoxylon*	Araucariaceae	Late Jurassic–Berriasian	1	1	Pointes aux Oies, Normandie	https://doi.org/10.1130/G32733.1
France	4	50	*Araucariopitys (Protocedroxylon)*	Araucariaceae	Hauterivian–Barremian	1–3	1	Feron-Glageon, literature, Alvarez-Ramis	https://doi.org/10.1130/G32733.1
France	1	50	*Agathoxylon*	Araucariaceae	Berriasian	4	1	Wimereux, literature, Philippe	https://doi.org/10.1130/G32733.1
France	0	46	*Agathoxylon* sp.	Araucariaceae	Berriasian	4	1	Cherves de Cognac	https://doi.org/10.1130/G32733.1
France	1	45	*Agathoxylon gardoniense*	Araucariaceae	Berriasian	1	1	Chaminon, pont, ile de Gleion, Oleron	https://doi.org/10.1130/G32733.1
India	78	11	*Agathoxylon giftii*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vallakottai, Kancheepuram, East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Agathoxylon mosurense*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	79,93994141	12,9648993	*Agathoxylon aptiana*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vallakottai, Kancheepuram, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	79,93994141	12,9648993	*Agathoxylon gondwanensis*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vallakottai, Kancheepuram, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	79,93994141	12,9648993	*Agathoxylon rajivii*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vallakottai, Kancheepuram, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	79,97966446	12,9648993	*Agathoxylon rajmahalense*	Araucariaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vellum, near Sriperumbudur, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	78	11	*Agathoxylon* sp.	Araucariaceae	Berriasian–Valanginian	1–2	1	Uttatur, Tiruchirapalli, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Agathoxylon rajivii*	Araucariaceae	Berriasian–Valanginian	1–2	1	East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	81,33331992	17,1490618	*Agathoxylon agathioides*	Araucariaceae	Berriasian–Hauterivian	1–3	1	Raghavapuram Fm., Near Ramanuja Puram, west Godavari, Andhra Pradesh	https://doi.org/10.1016/j.palwor.2017.12.004
Japan	141	39	*Dadoxylon* sp. *japonicum* ?	Araucariaceae	Hauterivian–Barremian	3–4	1	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	133,6419672	33,8070676	*Agathoxylon*	Araucariaceae	Hauterivian	3	1	Honshu, Kochi Prefecture (Outer Zone), Shikoku, Monobegawa Series	https://doi.org/10.1016/j.jseaes.2010.11.010
Lebanon	35	33	*Agathoxylon* sp.	Araucariaceae	Valanginian–Barremian	2–4	1	Beskintaa, Barale	https://doi.org/10.1130/G32733.1
Mali	-2,71597816	18,6651714	*Agathoxylon septatum*	Araucariaceae	Berriasian–Albian	1–6	1	Ti-n-Essako, western side of the Adrar des Iforas, Continental Intercalaire rocks	https://doi.org/10.1016/S0031-0182(02)00447-9
Russia	49	58	*Araucariopitys (Protocedroxylon)*	Araucariaceae	Valanginian	2	1	Kirovsk Region, literature, Shilkina	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Agathoxylon*	Araucariaceae	Valanginian	2	1	Sundays River Fm., Coega Brick Pits, Algoa Basin, Gqeberha, Eastern Cape	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Agathoxylon*	Araucariaceae	Valanginian–Hauterivian	2–3	1	Sundays River Fm., Algoa Basin, Eastern Cape	https://doi.org/10.1130/G32733.1
Spain	-2,03350024	42,0497078	*Agathoxylon riojense*	Araucariaceae	Valanginian–Hauterivian	2–3	1	Enciso Group, Igea, La Rioja	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-0,39788415	40,7399583	*Agathoxylon sp.*	Araucariaceae	Berriasian–Barremian	1–4	1	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Thailand	102	14	*Agathoxylon sp.*	Araucariaceae	Valanginian–Barremian	2–4	1	Nakhon, Ratchasima, literature	https://doi.org/10.1130/G32733.1
Thailand	103	18	*Agathoxylon sp.*	Araucariaceae	Late Jurassic–Berriasian	1	1	Khorat Group, Khorat Plateau, Northeast	https://doi.org/10.1130/G32733.1
Thailand	103	18	*Araucariopitys* ?	Araucariaceae	Late Jurassic–Berriasian	1	1	Khorat Group, Khorat Plateau, Northeast	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Upper Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., SE anticlinal	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Golden Rock, Waterfall, Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Agathoxylon*	Araucariaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Golden Rock, Waterfall, Phu	https://doi.org/10.1130/G32733.1
Thailand	99	15	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	1	Phu River	https://doi.org/10.1130/G32733.1
Thailand	103	15	*Agathoxylon aravaniensis* ?	Araucariaceae	Berriasian–Barremian	1–4	1	Isaan	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Agathoxylon furonii*	Araucariaceae	Berriasian–Albian	1–6	1	Continental Intercalaire, South Tunisia,	https://doi.org/10.1130/G32733.1
Tunisia	10	33	*Agathoxylon brachyphylloides*	Araucariaceae	Berriasian–Albian	1–6	1	Continental Intercalaire, Haddada,	https://doi.org/10.1130/G32733.1
Japan	136	36	*Agathoxylon* sp.	Araucariaceae	Valanginian–Barremian	2–4	1	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Argentina	-70,78933577	-44,8674409	*Brachyoxylon*	Cheirolepidiaceae	Valanginian	2	1	Tres Lagunas Fm., southern Fontana Lake, north of Alto Rio Senguer town, Chubut	https://doi.org/10.1016/j.cretres.2019.104322
Chad	15	9	*Brachyoxylon rochii* aff.	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	15	9	*Brachyoxylon dantzii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Literature, Duperon and Laudoueneix	https://doi.org/10.1130/G32733.1
Chad	14	9	*Brachyoxylon rochii*	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Lagon, along the road from Pala	https://doi.org/10.1130/G32733.1
Chad	15	9	*Brachyoxylon subdantzii*	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	literature, Gazeau	https://doi.org/10.1130/G32733.1
China	91	29	*Brachyoxylon orientale*	Cheirolepidiaceae	Hauterivian–Aptian	3–5	1	Lhunzhub, Lhassa Group?, Tibet	https://doi.org/10.1130/G32733.1
Hungary	17	46	*Brachyoxylon*	Cheirolepidiaceae	Valanginian	2	1	Sumeg, literature, Philippe	https://doi.org/10.1130/G32733.1
India	79	12	*Brachyoxylon parthasarathyi*	Cheirolepidiaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
Japan	141	39	*Brachyoxylon* aff. *woodworthianum*	Cheirolepidiaceae	Hauterivian–Barremian	3–4	1	Mosi sandstone of the MoMosi, Omoto-mura, Simo-Hei-gun,	https://doi.org/10.1130/G32733.1
Japan	133,6419672	33,8070676	*Brachyoxylon*	Cheirolepidiaceae	Hauterivian	3	1	Honshu, Kochi Prefecture (Outer Zone), Shikoku, Monobegawa Series	https://doi.org/10.1016/j.jseaes.2010.11.010
South Africa	25	-33	*Brachyoxylon*	Cheirolepidiaceae	Valanginian	2	1	Sundays River Fm., Coega Brick Pits, Algoa Basin, Gqeberha, Eastern Cape	https://doi.org/10.1130/G32733.1
South Africa	25	-33	*Brachyoxylon* sp.	Cheirolepidiaceae	Valanginian–Hauterivian	2–3	1	Sundays River Fm., Algoa Basin, Eastern Cape	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Upper Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon boweanii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm., Phu	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon boweanii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm.	https://doi.org/10.1130/G32733.1
Thailand	101	16	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu Kradung Fm.	https://doi.org/10.1130/G32733.1
Thailand	99	15	*Brachyoxylon orientale*	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Phu River	https://doi.org/10.1130/G32733.1
Thailand	103	15	*Brachyoxylon senaii* ?	Cheirolepidiaceae	Berriasian–Barremian	1–4	1	Isaan	https://doi.org/10.1130/G32733.1
Argentina	-70,78933577	-44,8674409	*Cupressinoxylon* ?	Cupressaceae	Valanginian	2	1	Tres Lagunas Fm., southern Fontana Lake, north of Alto Rio Senguer town, Chubut	https://doi.org/10.1016/j.cretres.2019.104322
Canada	-64	45	*Taxodioxylon* sp.	Cupressaceae	Valanginian–Hauterivian	2–3	1	Chaswood Fm., Windsor, Nova Scotia	https://doi.org/10.1130/G32733.1
Canada	-64	45	*Cupressinoxylon* sp.	Cupressaceae	Valanginian–Hauterivian	2–3	1	Chaswood Fm., Windsor, Nova Scotia	https://doi.org/10.1130/G32733.1
China	128,8947222	42,6755556	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	1	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	125,3444444	43,6766667	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	1	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
China	129	42	*Taxodioxylon*	Cupressaceae	Hauterivian–Aptian	3–5	1	Liaoyuan Basin, Jilin	https://doi.org/10.1130/G32733.1
Denmark	14	55	*Cupressinoxylon*	Cupressaceae	Berriasian–Valanginian	1–2	1	Bornholm	https://doi.org/10.1130/G32733.1
England	-2	50	*Protocupressinoxylon purbeckensis*	Cupressaceae	Late Jurassic–Berriasian	1	1	Purbeck Fm., Dorset, Portland	https://doi.org/10.1130/G32733.1
England	-2	50	*Protocupressinoxylon*	Cupressaceae	Late Jurassic–Berriasian	1	1	Purbeck Fm., Dorset, Purbeck	https://doi.org/10.1130/G32733.1
England	0	52	*Pseudofrenelopsis* ?	Cupressaceae	Valanginian–Barremian	2–4	1	Wessex Fm., Hanover Point, Sudmoor Point	https://doi.org/10.1130/G32733.1
France	-1	45	*Protocupressinoxylon*	Cupressaceae	Late Jurassic–Berriasian	1	1	Ile d'Oleron	https://doi.org/10.1130/G32733.1
France	1	50	*Protocupressinoxylon* sp.	Cupressaceae	Late Jurassic–Berriasian	1	1	Pointes aux oies, Normandie	https://doi.org/10.1130/G32733.1
France	-1	45	*Protocupressinoxylon*	Cupressaceae	Late Jurassic–Berriasian	1	1	Ile d'Oleron	https://doi.org/10.1130/G32733.1
France	1	50	*Protocupressinoxylon* sp.	Cupressaceae	Late Jurassic–Berriasian	1	1	Pointes aux oies, Normandie	https://doi.org/10.1130/G32733.1
France	4	50	*Cupressinoxylon*	Cupressaceae	Hauterivian–Barremian	1–3	1	Feron-Glageon, literature, Lemoigne	https://doi.org/10.1130/G32733.1
India	79,97833333	12,9661111	*Cupressinoxylon coromandelinum*	Cupressaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., near Sriperumbudur, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	79,93861111	12,9216667	*Cupressinoxylon gondwanensis*	Cupressaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., Vallakottai, Kancheepuram, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	78	11	*Protocupressinoxylon coromandelinum*	Cupressaceae	Berriasian–Valanginian	1–2	1	East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	81,33194444	17,1502778	*Cupressinoxylon alternans*	Cupressaceae	Berriasian–Hauterivian	1–3	1	Raghavapuram Fm., Near Ramanuja Puram, west Godavari, Andhra Pradesh	https://doi.org/10.1016/j.palwor.2017.12.004
Japan	136	36	*Taxodioxylon*	Cupressaceae	Valanginian–Barremian	2–4	1	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	136	36	*Cupressinoxylon*	Cupressaceae	Valanginian–Barremian	2–4	1	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	141	39	*Paracupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	1	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	142	44	*Cupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	1	Trigonia sandstone, Hokkaido, Top to eusinai, Ponmosiri, Asibetu-mura, Isikari	https://doi.org/10.1130/G32733.1
Japan	141	39	*Paracupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	1	Mosi sandstone of the MoKoikorobe, Tanohata-mura, Simo	https://doi.org/10.1130/G32733.1
Japan	142	44	*Cupressinoxylon* sp.	Cupressaceae	Hauterivian–Albian	3–6	1	Trigonia sandstone, Hokkaido, Top to eusinai, Ponmosiri, Asibetu-mura, Isikari	https://doi.org/10.1130/G32733.1
Russia	49	58	*Taxaceoxylon*	Cupressaceae	Valanginian	2	1	Kirovsk Region, literature, Shilkina	https://doi.org/10.1130/G32733.1
Russia	49	58	*Cupressinoxylon*	Cupressaceae	Valanginian	2	1	Kirovsk Region, literature, Shilkina	https://doi.org/10.1130/G32733.1
Russia	49,37611111	59,0108333	*Cupressinoxylon kiroviense*	Cupressaceae	Valanginian	2	1	Kirov, Russia	https://doi.org/10.1016/j.revpalbo.2006.05.003
Russia	49,37611111	59,0108333	*Taxaceoxylon jarmolenkoi*	Cupressaceae	Valanginian	2	1	Kirov, Russia	https://doi.org/10.1016/j.revpalbo.2006.05.003
Spain	-0,396666667	40,7411111	*Cupressinoxylon hortii*	Cupressaceae	Berriasian–Barremian	1–4	1	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-0,396666667	40,7411111	*Cupressinoxylon sp.*	Cupressaceae	Berriasian–Barremian	1–4	1	Ladruñán, Seno and Oliete, Maestrazgo Basin, Teruel	https://doi.org/10.1016/j.geobios.2005.09.003
Spain	-0,343333333	40,8141667	*Cupressinoxylon* sp.	Cupressaceae	Berriasian–Barremian	1–4	1	Seno, literature, Lemoigne	https://doi.org/10.1130/G32733.1
Spain	-0,650277778	40,9977778	*Cupressinoxylon hortii*	Cupressaceae	Berriasian–Barremian	1–4	1	Oliete, literature, Lemoigne	https://doi.org/10.1130/G32733.1
China	125,3444444	43,6766667	*Protocedroxylon*	Pinaceae	Hauterivian–Aptian	3–5	1	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
China	128,8947222	42,6755556	*Protocedroxylon*	Pinaceae	Hauterivian–Aptian	3–5	1	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	115	31	*Piceoxylon*	Pinaceae	Valanginian	2	1	Chengpeng Fm., Henan Province	https://doi.org/10.1130/G32733.1
China	125	42	*Protocedroxylon*	Pinaceae	Berriasian–Barremian	1–4	1	Liaoyuan Basin, Jilin	https://doi.org/10.1130/G32733.1
England	0	52	*Piceoxylon*	Pinaceae	Berriasian–Valanginian	1–2	1	Sandringham Sands, Norfolk, Fordham (2 miles E.N.E.)	https://doi.org/10.1130/G32733.1
England	0	52	*Protocedroxylon*	Pinaceae	Berriasian–Valanginian	1–2	1	Sandringham Sands, Norfolk, Fordham (2 miles E.N.E.)	https://doi.org/10.1130/G32733.1
France	5	48	*Protocedroxylon*	Pinaceae	Hauterivian	3	1	Haute-Marne, literature, Fliche	https://doi.org/10.1130/G32733.1
France	0	49	*Protocedroxylon*	Pinaceae	Berriasian–Hauterivian	1–3	1	La Risle, literature	https://doi.org/10.1130/G32733.1
Japan	136	36	*Piceoxylon*	Pinaceae	Valanginian–Barremian	2–4	1	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	136	36	*Protocedroxylon*	Pinaceae	Valanginian–Barremian	2–4	1	Akaiwa Subgroup, Honshu, Ishikawa Prefecture, Shiramine (Inner	https://doi.org/10.1130/G32733.1
Japan	141	43	*Pinoxylon dakotense*	Pinaceae	Hauterivian–Albian?	3–6	1	Honkeiko Beds, Hokkaido, Pen-hsi-hu, Fengtien Province	https://doi.org/10.1130/G32733.1
Russia	54	80	*Keteleerioxylon arcticum*	Pinaceae	Berriasian–Valanginian	1–2	1	Franz Josef Land	https://doi.org/10.1130/G32733.1
Russia	49	58	*Keteleerioxylon fokinii*	Pinaceae	Valanginian	2	1	Kirovsk Region, literature, Shilkina	https://doi.org/10.1016/j.revpalbo.2006.05.003
Russia	49,37611111	59,0108333	*Protocedroxylon magnoradiatum*	Pinaceae	Valanginian	2	1	Kirov, Russia	https://doi.org/10.1016/j.revpalbo.2006.05.003
Russia	49,37611111	59,0108333	*Protocedroxylon kryshtofovichii*	Pinaceae	Valanginian	2	1	Kirov, Russia	https://doi.org/10.1016/j.revpalbo.2006.05.003
Algeria	2	28	*Metapodocarpoxylon madamaense*	Podocarpaceae	Berriasian–Barremian	1–4	1	Madama, literature, Boureau	https://doi.org/10.1130/G32733.1
Argentina	-70,237483	-38,458754	*Podocarpoxylon prumnopityoides*	Podocarpaceae	Valanginian	2	1	Mulichinco Fm., Arroyo Pilmatué, northeast Las Lajas, Neuquén Basin	https://doi.org/10.1016/j.cretres.2017.06.014

Australia	146	-38	*Podocarpoxylon* sp.	Podocarpaceae	Valanginian–Barremian	2–4	1	Rintoul Creek Fm., Gippsland Basin, Rintoul Creek	https://doi.org/10.1130/G32733.1
Australia	113	-24	*Circoporoxylon* sp.	Podocarpaceae	Hauterivian–Barremian	3–4	1	Cardabia, Perth area	https://doi.org/10.1130/G32733.1
Australia	114	-22	*Podocarpoxylon, Phyllocladoxylon* ?	Podocarpaceae	Valanginian–Aptian	2–5	1	Birdrong Sandstone, Carnarvon Basin	https://doi.org/10.1130/G32733.1
Cambodia	104	11	*Protophyllocladoxylon xenoxiloides*	Podocarpaceae	Valanginian	2	1	Phnom, Ker	https://doi.org/10.1130/G32733.1
Chile	-71	-46	*Podocarpoxylon* sp.	Podocarpaceae	Hauterivian–Albian	3–6	1	Apeleg and Katterfeld Fm.s, Puerto Ibañez	https://doi.org/10.1130/G32733.1
China	119	45	*Phyllocladoxylon eboracense*	Podocarpaceae	Hauterivian	5	1	Huolinhe Fm., Jarud, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	44	*Podocarpoxylon* sp.	Podocarpaceae	Hauterivian	5	1	Huolinhe Fm., Huolinhe, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	44	*Phyllocladoxylon* sp. 2	Podocarpaceae	Hauterivian	5	1	Huolinhe Fm., Huolinhe, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	44	*Phyllocladoxylon* sp. 1	Podocarpaceae	Hauterivian	5	1	Huolinhe Fm., Huolinhe, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	121	44	*Podocarpoxylon dacrydioides*	Podocarpaceae	Hauterivian	5	1	Huolinhe Fm., Huolinhe, Inner Mongolia	https://doi.org/10.1130/G32733.1
China	128,8972467	42,6738997	*Phyllocladoxylon*	Podocarpaceae	Hauterivian–Aptian	3–5	1	Helong, Jilin Basin	https://doi.org/10.1130/G32733.1
China	125,346992	43,6751024	*Phyllocladoxylon*	Podocarpaceae	Hauterivian–Aptian	3–5	1	Changchun, Jilin Basin	https://doi.org/10.1130/G32733.1
Colombia	-73	4	*Metapodocarpoxylon rosablancaense*	Podocarpaceae	Hauterivian	3	1	Ubalà	https://doi.org/10.1130/G32733.1
Egypt	26	22	*Metapodocarpoxylon saadawi*	Podocarpaceae	Berriasian–Hauterivian	1–3	1	Gebel Kâmil	https://doi.org/10.1130/G32733.1
England	-2	50	*Circoporoxylon*	Podocarpaceae	Late Jurassic–Berriasian	1	1	Purbeck Fm., Dorset, Purbeck	https://doi.org/10.1130/G32733.1
France	0	43	*Podocarpoxylon*	Podocarpaceae	Hauterivian	3	1	Oyonnax, Martignat, literature, unpublished	https://doi.org/10.1130/G32733.1
France	5	46	*Podocarpoxylon*	Podocarpaceae	Hauterivian	3	1	Martignat, literature, unpublished	https://doi.org/10.1130/G32733.1
Germany	11	52	*Protocircoporoxylon*	Podocarpaceae	Hauterivian	3	1	Harzvorland, literature, Vogellehner	https://doi.org/10.1130/G32733.1
India	150,9801133	12,9643511	*Podocarpoxylon parthasarathyi*	Podocarpaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., near Sriperumbudur, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	150,9801133	12,9643511	*Podocarpoxylon tirumangalense*	Podocarpaceae	Berriasian–Valanginian	1–2	1	Sriperumbudur Fm., near Sriperumbudur, Tamil Nadu	https://doi.org/10.1016/j.palwor.2017.12.004
India	78	11	*Podocarpoxylon trichipoliense*	Podocarpaceae	Berriasian–Valanginian	1–2	1	Uttatur, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon sarmai*	Podocarpaceae	Berriasian–Valanginian	1–2	1	Uttatur, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon* sp.	Podocarpaceae	Berriasian–Valanginian	1–2	1	East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon parthasarathyi*	Podocarpaceae	Berriasian–Valanginian	1–2	1	East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon tirumangalense*	Podocarpaceae	Berriasian–Valanginian	1–2	1	East Coast, Tamil Nadu	https://doi.org/10.1130/G32733.1
India	78	11	*Podocarpoxylon trichinopoliense*	Podocarpaceae	Berriasian–Valanginian	1–2	1	Garudamagalam, East Coast,	https://doi.org/10.1130/G32733.1
India	80,79584527	23,5063177	*Podocarpoxylon bansaense*	Podocarpaceae	Berriasian–Hauterivian	1–3	1	Jabalpur Fm., Marwar Ghat, Umaria, Madhya Pradesh	https://doi.org/10.1016/j.palwor.2017.12.004
Japan	133,6419672	33,8070676	*Podocarpoxylon*	Podocarpaceae	Hauterivian	3	1	Honshu, Kochi Prefecture (Outer Zone), Shikoku, Monobegawa Series	https://doi.org/10.1016/j.jseaes.2010.11.010
Lebanon	35	33	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Valanginian–Barremian	2–4	1	Beskintaa, Philippe	https://doi.org/10.1130/G32733.1
Mali	-2,71597816	18,6651714	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Berriasian–Albian	1–6	1	Ti-n-Essako, western side of the Adrar des Iforas, Continental Intercalaire rocks	https://doi.org/10.1016/S0031-0182(02)00447-9
Portugal	-9	39	*Protopodocarpoxylon* ? *teixeirae*	Podocarpaceae	Berriasian–Hauterivian	1–3	1	Cadriceira, South of Torres Vedras	https://doi.org/10.1130/G32733.1
Russia	49	58	*Phyllocladoxylon*	Podocarpaceae	Valanginian	2	1	Kirovsk Region, literature, Shilkina	https://doi.org/10.1130/G32733.1
Russia	49,37664484	59,0108516	*Phyllocladoxylon dorofeevii*	Podocarpaceae	Valanginian	2	1	Kirov, Russia	https://doi.org/10.1016/j.revpalbo.2006.05.003
South Africa	25	-33	*Protocircocarpoxylon capense*	Podocarpaceae	Valanginian–Hauterivian	2–3	1	Sundays River Fm., Algoa Basin, Eastern Cape	https://doi.org/10.1130/G32733.1
Tunisia	10	32	*Metapodocarpoxylon libanoticum*	Podocarpaceae	Hauterivian–Barremian	3–4	1	Tataouine area, South Tunisia	https://doi.org/10.1130/G32733.1

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Supplementary data C. Database of the charcoal/fusain record in Cretaceous rocks worldwide

NORTH HEMISPHERE

Country	Location	Longitude	Latitude	Stage/s	Maps	Charcoal - Plants	Comments in the paper	References	Other references
Alaska (USA)	Cantwell Fm., Colville River, Wrangell-St. Elias National Park & Preserve	-141,4323056	61,17875742	Campanian–Maastrichtian	4	charcoal-horsetails, ferns and gymnosperm wood	retalted to volcanism	https://doi.org/10.1016/j.cretres.2012.04.013	
Austria	Gosau Fm.	13,53267464	47,56704293	Campanian	4	inertinite - charcoal		https://doi.org/10.1038/ngeo923	
Austria	Sievering Fm., Viena Flish	16,30136841	48,26293926	Campanian–Maastrichtian	4	charcoal		Knobloch and Mai (1991)	
Canada	Comox Fm., Vancouver Island	-125,0323566	49,69382378	Turonian–Santonian	4	charcoal-inertinite		https://doi.org/10.1038/ngeo923	
Canada	Oldman Fm., Dinosaur Provincial Park, Alberta	-111,5723924	50,73112712	Campanian	4	charcoalified gymnosperms		https://doi.org/10.1016/j.cretres.2012.02.008	https://doi.org/10.1007/s12549-013-0123-y
Canada	Dinosaur Park Fm., Dinosaur Provincial Park, Alberta	-111,5023958	50,75835023	Campanian	4	charcoalified gymnosperms		https://doi.org/10.1016/j.cretres.2012.02.008	
Canada	Hasen Point Volcanic Unit, unnamed peninsular between Emma Fiord & Audhild Bay, NW Ellesmere Isla	-89,19143286	79,88630353	Campanian–Maastrichtian	4	charcoal-taxodiaceous dominated	related to volcanism	https://doi.org/10.1016/j.palaeo.2004.05.016	
Canada	Kanguk Fm., Sverdrup Basin,	-91,77074909	79,27122202	latest Cenomanian–Campanian	4	charcoal-inertinite	HALIP related volcanism	https://doi.org/10.1016/j.gloplacha.2021.103515	
Canada	Frenchman Fm., Saskatchewan	-109,2897744	53,44479665	late Maastrichtian	4	charcoal		https://doi.org/10.1016/j.palaeo.2014.02.020	
Canada	Rock Creek East, Saskatchewan	-106,8859008	50,03366055	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	https://doi.org/10.1144/0016-764904-104	
Canada	Wood Mountain Creek, Saskatchewan	-106,3467431	49,51282664	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	https://doi.org/10.1144/0016-764904-104	
Canada	Eden Main, Vancouver Island, British Columbia	-123,1263253	49,2521587	Coniacian	4	charcoal-Bennettitales		https://doi.org/10.1086/655963	
China	Qingshankou Fm., Changling Sag, southern Songliao Basin	123,311467	44,7518322	early Cenomanian–early Coniacian	4	charcoal		https://doi.org/10.1016/S1876-3804(21)60049-6	
Croatia	Islands of Hvar and Šćedro	16,68679045	43,13303726	Senonian	4	charcoal		https://doi.org/10.1016/j.cretres.2017.02.003	
Cuba	Monos Fm., south of the Presa Damuji's spillway, Rodas, Cienfuegos Province	-80,54889487	22,27828129	upper Campanian–lower Maastrichtian	4	charcoalified Cupressaceae		https://doi.org/10.1016/j.cretres.2021.105067	
Czech Republic	Slezské Pavlovice borehole, Silesia	17,7119187	50,30581565	Upper Turonian–Lower Coniacian	4	charcoal		Knobloch and Mai (1991)	
Czech Republic	Klikov Fm., Klikov, South Bohemia	14,9329645	48,89211245	Turonian–Santonian	4	charcoalified angiosperms		https://doi.org/10.3140/bull.geosci.1100	
Czech Rupublic	Flysch, Moravian-Silesian Bezkydy Mts.	18,56002952	49,58274139	Campanian–Maastrichtian	4	charcoal		Knobloch and Mai (1991)	
Egypt	Quseir Fm., Baris Oasis, south Western Desert	30,5941538	24,6560454	Campanian	4	charcoalified gymnosperms	evidences that wildfire are still scarce in Gondwana	https://doi.org/10.1016/j.cretres.2015.09.012	
Egypt	Quseir/Qusier Fm., Dakhla oasis	28,95770952	25,49910327	lower–middle Campanian	4	charcoal		https://doi.org/10.1016/j.cretres.2021.104783	
Egypt	Quseir/Qusier Fm., Kharga oasis	30,59553655	25,43716894	lower–middle Campanian	4	charcoal		https://doi.org/10.1016/j.cretres.2021.104783	
France	NW Bagnoles-sur-Cèze, Département Gard, Vocontian Basin	4,62720176	44,14762452	Late Turonian–Coniacian	4	charcoal		https://doi.org/10.1016/j.cretres.2008.05.029	
France	Tercis les Bains	-1,11598625	43,6783741	Campanian–Maastrichtian	4	fusain		https://doi.org/10.1016/S0920-5446(01)80018-2	
Germany	Aachen Fm., Aachen	6,35702173	50,87122974	late Santonian–early Campanian	4	charcolified diverse angiosperms		Knobloch and Mai (1991)	
Germany	Walbeck	11,49468195	51,66411969	Maastrichtian	4	charcolified diverse angiosperms		Knobloch and Mai (1991)	
Germany	Eisleben	11,51774363	51,52689216	Maastrichtian	4	charcolified diverse angiosperms		Knobloch and Mai (1991)	
Germany	Gosau Fm, Kossen Niederdorf, Hartmannsdorf	12,77198266	50,87938394	Maastrichtian	4	charcoalified Magnoliophyta, Theraceae, Cyrillaceae		Knobloch and Mai (1991)	
Greenland	Nanok-1 borehole, Østersletten Fm., Hold with Hope, NE Greenland	-19,74574156	74,44094441	middle Coniacian–lower Campanian	4	charcoal/fusain		https://doi.org/10.1016/j.marpetgeo.2020.104414	
Holland	Aachen Fm., South Limburg	-5,84198454	50,85573038	late Santonian–early Campanian	4	charcolified diverse angiosperms		Knobloch and Mai (1991)	
Hungary	Ajka Fm., Bakony Mtns	17,81173102	47,25291961	late Santonian–early Campanian	4	charcolified Magnoliophyta		Knobloch and Mai (1991)	
Hungary	Csehbánya Fm., Németbánya and Bakonyjákó, Iharkút, Bakony Mts	17,65255894	47,23069462	Santonian	4	charcoal		https://doi.org/10.1016/j.cretres.2013.08.001	
India	Mandleshwar Fm., Malwa Group of the Deccan trap, Bagh valley of Madhya Pradesh, Karam river east o	75,52071334	22,41994772	early Maastrichtian	4	charcoal	associated to volcanism	https://doi.org/10.18520/cs/v114/i07/1540-1544	
Japan	Ashizawa Fm., Asamigawa Mbr, Kamikitaba, Fukushima Pref., NE Honshu	140,963436	37,22693444	early Santonian	4	charcoalified Taxodiaceae and diverse angiosperms		https://doi.org/10.1007/pl00013872	
Mexico	Olmos Fm., Fuentes - Rio Escondido coal basin boreholes (ED-131, VF-12, GN-7), Coahuila region	-100,5357751	28,62186546	Maastrichtian	4	fusain		https://doi.org/10.1038/ngeo923	
Mexico	Arroyo el Mimbral, San Miguel de Ubaldo, Tamaulipas	-99,72491885	23,32282778	Maastrichtian–Danian boundary	4	charcoal/fusain	related with Chicxulub crater in Yucatán	https://doi.org/10.1016/0016-7037(94)90394-8	
Mexico	Chicxulub crater. Borehole site M0077	-89,9176151	21,74737993	Maastrichtian–Danian boundary	4	charcoal		https://doi.org/10.1073/pnas.2004596117	https://doi.org/10.1038/s41598-022-15566-z
Nigeria	Agwu Fm., Middle Benue Trough	7,45675922	6,08242285	Coniacian	4	inertinite		https://doi.org/10.1038/ngeo923	
Nigeria	Mamu Fm., Benue Trough Basin	3,93806206	7,12294842	Maastrichtian	4	inertinite		https://doi.org/10.1038/ngeo923	
Nigeria	Mamu Fm., Benue Trough Basin	3,93806206	7,12294842	Campanian–Maastrichtian	4	fusain		https://doi.org/10.1007/s40789-020-00303-6	
Nigeria	Awgu Fm., Benue Trough Basin	7,45675922	6,08242285	Turonian–Santonian	4	fusain		https://doi.org/10.1007/s40789-020-00303-6	
Nigeria	Lamja Sandstone Fm., Upper Benue Trough Basin	12,21212302	9,30023228	Santonian	4	fusain		https://doi.org/10.1007/s40789-020-00303-6	
Pacific Ocean	Shatsky Rise, Pacific Ocean	160,0151206	35,0082387	Maastrichtian–Danian boundary	4	charcoal		https://doi.org/10.1016/j.epsl.2020.116476	
Portugal	"Arenitos e argilas de Aveiro", Esgueira, north-east Aveiro	-8,61950823	40,6610118	Coniacian–Maastrichtian	4	charcoalified gymnosperms and angiosperms		https://doi.org/10.1016/0034-6667(91)90004-M	
Portugal	"Agilas de Vagos" and "Conglomerado de Mira", Mira, south of Aviero	-8,74700644	40,42628289	Campanian–Maastrichtian	4	charcoalified flowers of Fagales		https://doi.org/10.1007/s006060170066	
Romania	Bozeș Fm., Petreşti-Arini near Sebeş, Hateg Island, Transylvanian Basin	23,62448333	45,93599045	Campanian	4	charcoal		https://doi.org/10.1016/j.cretres.2014.02.002	
Turkmenistan	Nye Kløv, Sumbar river	56,2402169	38,47114928	Maastrichtian–Danian boundary	4	charcoal-fusain		https://doi.org/10.1016/0016-7037(90)90444-P	http://meetingorganizer.copernicus.org/EGU2012/EGU2012-11298-1.pdf
Spain	Saldes coal, Bergadà, Barcelona Prov., Catalonia	-1,74515644	42,22971413	Maastrichtian	4	inertinite	in association with amber	https://doi.org/10.1038/ngeo923	
Sweden	Höganäs AB's kaolin quarry at Åsen, north-east Scania	14,50711985	56,15796929	upper Santonian–lower Campanian	4	charcoal		https://doi.org/10.1038/291484a0	
USA	Mancos Shale, Ferron Sandstone Mbr., Emery Coalfield, Utah	-111,2505666	38,87693181	Turonian–Coniacian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Crevasse Canyon Fm., New San Juan River Coalfield, southern San Juan Basin	-108,3217372	35,57559153	Turonian–Santonian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Christensen Coal Zone, Kaiparowits Plateau Coalfield, Utah	-111,6869274	37,42416298	Coniacian–Santonian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Fort Crittenden Fm., Santa Rita Mountains, Arizona	-110,7982985	31,71535576	Campanian	4	charcoal		https://doi.org/10.3133/b1274C	
USA	Eutaw Fm., Upatoi Creek, south Columbus, Georgia	-84,95812302	32,37112694	Santonian	4	charcoalified angiosperms		https://doi.org/10.1016/0034-6667(95)00090-9	https://doi.org/10.1016/j.revpalbo.2012.03.016
USA	Gaillard Fm, Buffalo Creek Mbr., Allon, Crawford County, Georgia	-83,97620284	32,6408587	late Santonian	4	charcoal		https://doi.org/10.1016/S0031-0182(00)00168-1	
USA	Fort Crittenden Fm., Santa Rita Mountains, SE Arizona	-110,7932987	31,73479989	Campanian	4	fusain/vitrinite		https://doi.org/10.1111/j.1365-3091.2005.00712.x	
USA	Adaville Fm., Hams Fork Coal Field, Rocky Mountain Province, Wyoming	-110,5342372	42,00497884	Santonian–early Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Magothy Fm., Cliffs of Gay Head, Matha's Vineyard island, Massachusetts	-70,82192688	41,34105398	Campanian	4	charcoal		https://doi.org/10.1038/265136a0	
USA	Nelson Fm., Thomson, Sego Coalfield, Grand county, eastern Utah	-109,5792344	39,07555248	Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Menefee Fm., nothern San Juan Basin, Hogback-Toadlena, New Mexico	-109,0853341	36,50307664	Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Rock Springs Fm., Rock Springs coalfield, Green River basin, Wyoming	-108,7779048	41,73943654	early–middle Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Fruitland Fm., Fruitland, New San Juan Basin, New Mexico	-108,4267463	36,79752255	late Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Blackhawk Fm., Blackhawk, Wastach Plateau, Carbon County, Utah	-111,1564066	39,23054121	Campanian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Laramie Fm., Denver Coalfield, Marshall, Colorado	-105,2079967	39,9525258	Maastrichtian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Ripley Fm., McNairy sand Mb. or Fm., Montgomery, Alabama	-86,29975934	32,19555709	Maastrichtian	4	inertinite		https://doi.org/10.1038/ngeo923	
USA	Sugarite Coal Camp, Raton, New Mexico	-104,3343722	36,94699593	Maastrichtian	4	inertinite, fusain, charcoal		https://doi.org/10.1016/S0031-0182(00)00182-6	
USA	Hell Creek Fm., NW Marmath, SW North Dakota	-104,1148124	46,40115528	Maastrichtian	4	charcoalified Pinaceae and Taxodiaceae		https://doi.org/10.1016/j.cretres.2013.08.010	
USA	Hell Creek Fm., Jordan, Montana	-106,8811232	47,48585828	uppermost Maastrichtian	4	charcoal		https://doi.org/10.1016/j.cretres.2015.07.007	
USA	Lance Fm., Niobrara County, southern Schneider Creek area, Wyoming	-105,534	42,9667	latest Maastrichtian	4	charcoal		https://doi.org/10.1127/zdgg/2021/0275	
USA	Hell Creek Fm., Montana	-106,8914031	47,60585912	latest Maastrichtian	4	charcoal		https://doi.org/10.1127/zdgg/2021/0275	
USA	Kaiparowits Fm., Rainbows and Unicorns Quarry, Grand Staircase-Escalante National Monument, Kanab	-112,5630066	37,00471765	late Campanian	4	charcoal		https://doi.org/10.7717/peerj.11013	
USA	Vermejo Fm., Madrid East South, Las Animas, Colorado	-104,6243658	37,12282548	Maastrichtian	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Raton Fm. (lower coal zone), Starkville North site, 5 km south of Trinidad, Colorado	-104,5199244	37,11588193	Maastrichtian–Danian boundary	4	fusain	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Clear Creek North, Colorado	-107,1437421	37,84030045	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Berwind Canyon, Colorado	-104,6088131	37,31504628	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Teapot Dome, Wyoming	-106,3118994	43,23028939	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Rick's Place, Montana	-107	47,5167	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Mud Buttes, North Dakota	-103,7787052	46,02671193	Maastrichtian–Danian boundary	4	charcoal	K-Pg impact	http://doi.org/10.1144/0016-764904-104	
USA	Gaillard Fm., Buffalo Creek Mb., south pit ("Allon" quarry) of the Atlanta Sand and Supply Compan, Craw	-83,98731349	32,6269698	late Santonian	4	charcoal		https://doi.org/10.2307/2666182	https://doi.org/10.2307/2446221
USA	Fort Crittenden Fm., south-eastern Arizona	-110,7999681	32,15090373	Campanian	4	fusain		https://doi.org/10.1111/j.1365-3091.2005.00712.x	
USA	Sugarite coal sequence, Raton Basin, New Mexico	-104,3824263	36,94782887	Maastrichtian–Danian boundary	4	fusain	K-Pg impact	https://doi.org/10.1016/S0031-0182(00)00182-6	
Alaska (USA)	Corwin Fm., Kukpowruk River, Howard Syncline,	-162,5615467	69,32531896	Albian–earliest Cenomanian	3	charcoal-*Podozamites*		https://doi.org/10.1006/cres.2000.0238	
Canada	Kaskapau Fm., Bullmoose Creek, British Columbia	-121,1362009	55,19613259	late Cenomanian–middle Turonian	3	charcoal-inertinite		https://doi.org/10.1086/337838	
Canada	Comox Fm., Vancouver Island	-125,0323566	49,69382378	Turonian–Santonian	3	charcoal-inertinite		https://doi.org/10.1038/ngeo923	
Canada	Kanguk Fm., Sverdrup Basin,	-91,77074909	79,27122202	latest Cenomanian–Campanian	3	charcoal-inertinite	HALIP related volcanism	https://doi.org/10.1016/j.gloplacha.2021.103515	
China	Qingshankou Fm., Changling Sag, southern Songliao Basin	123,311467	44,7518322	early Cenomanian–early Coniacian	3	charcoal		https://doi.org/10.1016/S1876-3804(21)60049-6	
Czech Republic	Peruc-Korycany Fm., Pecínov Quarry, Bohemian Basin, NW Prague	13,95010961	50,12881465	early late Cenomanian	3	charcoalified angiosperm wood		https://doi.org/10.1086/378824	
Czech Republic	Peruc-Korycany Fm., Peruc Mbr, Bohemian Basin, Hloubětín-Hutě, Prague	13,95010961	50,12881465	Cenomanian	3	charcoalified angiosperm wood		https://doi.org/10.1086/378824	
Czech Republic	Peruc-Korycany Fm., Peruc Mbr, Bohemian Basin, Moravia	13,95010961	50,12881465	Cenomanian	3	charcoal		Knobloch and Mai (1991)	
Czech Republic	Slezské Pavlovice borehole, Silesia	17,7119187	50,30581565	Upper Turonian–Lower Coniacian	3	charcoal		Knobloch and Mai (1991)	
Czech Republic	Klikov Fm., Klikov, South Bohemia	14,9329645	48,89211245	Turonian–Santonian	3	charcoalified angiosperms		https://doi.org/10.3140/bull.geosci.1100	
Czech Republic	Pecínov quarry, Peruc-Korycany Fm., Bohemian Basin	13,95010961	50,12881465	mid Cenomanian	3	charcoalified angiosperms and gynkgoaceans		https://doi.org/10.1016/j.revpalbo.2020.104311	https://doi.org/10.1016/j.revpalbo.2008.10.006
Egypt	Bahariya Fm., Salam Oil Field, north Western Desert,	26,97315585	30,68724171	Cenomanian	3	charcoal		https://doi.org/10.1016/j.cretres.2013.06.004	
Egypt	Bahariya Fm., Gabal El Dist, north of the Bahariya Oasis, Western Desert	28,91796035	28,41832138	early Cenomanian	3	charcoal		https://doi.org/10.1186/s42501-019-0042-6	
France	NW Bagnoles-sur-Cèze, Département Gard, Vocontian Basin	4,62720176	44,14762452	Late Turonian–Coniacian	3	charcoal		https://doi.org/10.1016/j.cretres.2008.05.029	
France	Western Vocontian basin, 40 km northeast of Nîmes, Gard	4,62720176	44,14762452	lower-middle Cenomanian	3	charcoalified angiosperms		https://doi.org/10.7203/sjp.27.1.18093	
France	40 km northeast of the city Nîmes, Sabran, Gard	4,46636345	44,14956649	Lower–Middle Cenomanian	3	charcoalified angiosperms		https://doi.org/10.7203/sjp.27.1.18093	
Germany	Prangenhaus quarry (locality 'Karstspalte') near Wülfrath	7,03619522	51,30209136	late Albian–early Cenomanian	3	charcoal		https://doi.org/10.1098/rsbl.2011.0696	
Morocco	Tarfaya bore hole (OAE3)	-12,81142583	27,96032374	late Turonian	3	charcoal		https://doi.org/10.1016/j.cretres.2014.10.005	
Myanmar	Kachin	97,36620579	25,88508484	Cenomanian	3	charcoal	in association with amber	https://doi.org/10.1016/j.cretres.2022.105244	
Myanmar	Kachin	97,36620579	25,88508484	Cenomanian	3	angiosperm flower as bioinclusion	in association with amber; plant adaptation to wildfires	https://doi.org/10.1038/s41477-021-01091-w	
Nigeria	Awgu Fm., Benue Trough Basin	7,45675922	6,08242285	Turonian–Santonian	3	fusain		https://doi.org/10.1007/s40789-020-00303-6	
Nigeria	Numanha shale, Upper Benue Trough Basin	12,25045286	9,85717723	late Cenomanian–Turonian	3	fusain		https://doi.org/10.1007/s40789-020-00303-6	
USA	Dakota Fm., Courtland Clay Pit , South Central Minnesota	-94,38813625	44,27181092	late Albian–lowermost Cenomanian	3	charcoalified ferns		https://doi.org/10.1086/501235	
USA	Potomac Gp, Elk Neck Beds, Maudlin Mountain, Elk Neck Peninsula, Maryland	-75,9956	39,4875	early Cenomanian	3	charcoal		https://doi.org/10.1086/337838	
USA	Raritan Fm., Sayreville, New Jersey	-74,32073081	40,47181993	Turonian	3	charcoalified angiosperms		https://doi.org/10.2307/2446638	

USA	Raritan Fm., Staten Island, Charleston (Kreishcherville), New York	-74,23601189	40,53348837	Turonian	3	charcoalified conifers			Hollick and Jeffrey (1909)	
USA	Raritan Fm., Cape Sable, Magothy River, Ann-Arundel Country, Maryland	-76,49037411	39,04177817	Turonian	3	charcoal	in association with amber		Troost (1821)	
USA	Raritan Fm., Fire Clay Mbr., South Amboy, Crossman, New Jersey	-74,27767586	40,46682064	middle–late Turonian	3	charcoalified angiosperms			https://doi.org/10.1016/0034-6667(95)00090-9	
USA	Mancos Shale, Ferron Sandstone Mbr., Emery Coalfield, Utah	-111,2505666	38,87693181	Turonian–Coniacian	3	inertinite			https://doi.org/10.1038/ngeo923	
USA	Crevasse Canyon Fm., New San Juan River Coalfield, southern San Juan Basin	-108,3217372	35,57559153	Turonian–Santonian	3	inertinite			https://doi.org/10.1038/ngeo923	
USA	Woodbine Fm., Arlington Archosaur Site, N Texas	-97,081	32,811	Cenomanian	3	charcoal			https://doi.org/10.1016/j.palaeo.2019.109491	
USA	Naturita Fm., Cottonwood Canyon, Utah	-111,8927528	37,28277423	latest Cenomanian	3	charcoal			https://doi.org/10.1130/B35097.1	
USA	Naturita Fm., Wahweap Wash, Arizona	-111,5238723	36,89416898	latest Cenomanian	3	charcoal			https://doi.org/10.1130/B35097.1	
USA	Naturita Fm., Big Hill and Kanarra Mountains localities, western Markagunt Plateau, Utah	-113,1541029	37,51970953	Cenomanian	3	charcoal			https://doi.org/10.1130/B35097.1	
USA	Moreno Hill Fm. (low. mem.), southern Zuni Basin, Balloon Hoodoo, west-central New Mexico	-108,7058821	34,48949127	Turonian	3	charcoal			https://doi.org/10.1016/j.coal.2009.04.001	
USA	Dakota Fm., Rose Creek Pit, south of Fairbury on Highway 15, Nebraska	-97,17601867	40,05538158	Albian–Cenomanian boundary	3	charcoal			https://doi.org/10.1130/G21998.1	
Alaska (USA)	Corwin Fm., Kukpowruk River, Howard Syncline,	-162,5615467	69,32531896	Albian–earliest Cenomanian	2	charcoal-*Podozamites*			https://doi.org/10.1006/cres.2000.0238	
Bahamas	Site 534, Deep Sea Drilling Project, Blake-Bahama Basin, western North Atlantic	-75,38433297	28,34684716	Aptian–Albian	2	charcoal			https://doi.org/10.2973/dsdp.proc.76.116.1983	
Belgium	Hautrage Fm., Mons Basin, Danube-Bouchon Quarry	3,77441003	50,48706553	early Barremian–early late Barremian	2	fusain-*Weichselia*			Gomez et al. (2018)	https://doi.org/10.1016/j.palaeo.2015.11.026
Belgium	Clay pit of Danube-Bouchon's, Hautrage quarry, Mons Basin	3,7741696	50,48762112	Barremian-Aptian	2	fusain-*Frenelopsis* and Taxodiaceae cf. *Sphenolepis*			Gomez et al. (2008)	
Belgium	Bernissart, Mons Basin,	3,68222262	50,47311375	middle Barremian–earliest Aptian	2	charcoal-Matoniaceae and Dicksoniaceae			https://doi.org/10.1016/j.cretres.2021.104814	
Belgium	Ste. Barbe, Bernissart	3,64138744	50,48394681	Barremian	2	charcoal-*Weichselia*			https://doi.org/10.1111/pala.12627	
Brazil	Serra do Tucano Fm., Morro da Sereia, Takutu Basin, Roraima	-60,18227432	3,27589301	Aptian–Albian	2	charcoalified gymnosperms			https://doi.org/10.1016/j.cretres.2015.08.003	
Canada	Gething Fm., Alberta and British Columbia	-120,0212709	56,13559984	Aptian	2	charcoal-inertinite			https://doi.org/10.1038/ngeo923	
Canada	Boulder Creek Fm., Peace River, British Columbia	-133,3847406	59,6531444	Albian	2	charcoal-inertinite			https://doi.org/10.1038/ngeo923	
Canada	Mannvile Gp.	-111,2869089	53,4639458	Albian	2	charcoal-inertinite			https://doi.org/10.1038/ngeo923	
Canada	Suncor Millennium Mine, Clearwater Fm., northern Alberta	-111,4331256	57,57541283	early Albian	2	charcoal-Polypodiidae ferns, cycad–cycadophyte, and trace conifer foliage			https://doi.org/10.1098/rsos.200305	
Canada	Drillholes, southeast Moose River Basin, James Bay Lowlands, Cochrane Distric, northern Ontario	-82,51151318	51,50152852	middle–late Albian	2	fusain			https://doi.org/10.1139/e87-100	
Canada	Gates Fm., Honeymoon pit, Monkman, south of the Peace River, North East Coal Block, British Columbia	-121,5531191	54,76945664	early Albian	2	fusain			https://doi.org/10.1139/e87-100	
Canada	Gates Fm., Rocky Mountain Foothills, northeastern British Columbia	-123,0583422	56,39531343	early–middle Albian	2	inertinite			https://doi.org/10.1016/0031-0182(95)00043-7	https://doi.org/10.1038/ngeo923
China	Yimin Fm., Jiuqiao Sag, Hailar Basin	119,2618542	48,00671381	Albian	2	fusain/inertinite			https://doi.org/10.1016/j.cretres.2021.104815	
China	Yimin Fm., Hailar Basin, Yimin coal mine, Inner Mongolia	119,1871497	48,38478042	Albian	2	fusain/inertinite			https://doi.org/10.1016/j.cretres.2020.104674	
China	Chijinbao Fm., Jiuxi Basin, Hanxia Section, Gansu Province	97,22618137	39,81971505	Barremian	2	charcoal			https://doi.org/10.1016/j.petrol.2021.109968	
China	Xiagou Fm., Yujingzi Basin, Gansu Prov., northwest China	98,5008	39,9289	Aptian	2	charcoal			https://doi.org/10.1080/02724634.2018.1510412	
China	Huolinhe Fm., Huolinhe coal-mining area, eastern Inner Mongolia	119,5845205	45,49026002	late Barremian–earliest Aptian	2	fusain	associated to volcanism		Susannah et al. (2003)	
China	Zhonggou Fm., Yujingzi Basin, Gansu Prov., northwest China	98,5008	39,9289	Albian	2	charcoal			https://doi.org/10.1080/02724634.2018.1510412	
China	Xinchang Petrified Wood National Geopark, Guantou Fm., Zhejiang province	120,7882116	29,30534015	Aptian	2	charcoalified *Araucarioxylon*	associted to volcanism		https://doi.org/10.2110/palo.2013.130	
China	Shahezi shale, Changleing Fault Depression, Songliao Basin	124,1774219	40,50674466	middle Aptian–early Albian	2	fusain			https://doi.org/10.1177/01445987211044831	
China	Seam #16, Yimin Fm., Hailar Basin, Inner Mongolia	119,2393753	48,44172515	Albian	2	charcoal			https://doi.org/10.1016/j.palaeo.2022.111050	
China	Saihantala Fm., Jiergalangtu Sag, Erlian Basin, NE China	116,2608143	44,08474384	Albian	2	fusain-inertinite			https://doi.org/10.1186/s42501-019-0035-5	
China	Yimin Fm., Yimin sag, Hailar Basin, NE China	118,7746998	49,46315078	Albian	2	fusain-inertinite			https://doi.org/10.1186/s42501-019-0035-5	
China	Chengzihe Fm., Jixi mine, Sanjiang Basin, NE China	130,9370898	45,41445529	Barremian	2	fusain-inertinite			https://doi.org/10.1186/s42501-019-0035-5	
England	Wessex Fm., Hanover Point Assemblage, Isle of Wight	-1,46795406	50,65358432	Hauterivian–Barremian	2	charcoalified Araucariaceae and Podocarpaceae			Collinson et al. (2000)	
England	Vectis Fm., Sheperds Chine Mbr, Sheperds Chine Assemblage, Isle of Wight	-1,37239379	50,61636245	Hauterivian–Barremian	2	fusainized *Weichselia*			Alvin (1974)	
England	Upper Weald Clay Fm., Smokejacks clay pit, Ockly, Surrey	-0,41683124	51,12501084	Barremian	2	charcoalified *Weichselia*	lightning-induced fire		https://doi.org/10.1006/cres.1998.0116	
England	Wessex Fm., Wealden Marls, Chilton Chine, Isle of Wight	-1,42461858	50,63664003	Barremian	2	charcoalified ferns	amber globules, possibly Taxodiaceous		https://doi.org/10.1017/S0016756800023207	
England	3m below the Gault Fm., Munday's Hill Quarry near Leighton Buzzard, Bedfordshire	-0,641044	51,94142767	early Albian	2	charcoalified gymnosperms			https://doi.org/10.1086/297609	
England	Upper Soft Cockle beds, Lulworth Fm., Durlston Bay, Swanage, Dorset	-1,95324462	50,60218442	lower Berriasian	2	charcoal			https://doi.org/10.1016/j.cretres.2011.10.001	
England	Purbeck Limestone Group, Durlston Bay, Dorset	-1,93657782	50,61051838	middle Berriasian	2	charcoal			https://doi.org/10.1016/j.pgeola.2021.03.001	
England	"Silty Beds" of Bedfordshire. Munday's Hill Quarry near Leighton Buzzard	-0,65160039	51,95142788	early Albian	2	fusain Weichselia and Gleichenites	not related to volcanism		https://doi.org/10.1086/297609	
England	Wessex Fm., Shepperd's Chine, Isle of Wight	-1,36739348	50,61302908	Barremian	2	fusain	not related to volcanism		https://doi.org/10.1006/cres.1996.0002	
England	"Pseudofrenelopsis bed" in the Isle of Wight, Wessex Fm., Hanover Point, Wessex Sub-Basin	-1,46906538	50,65747334	Barremian	2	charcoal	not related to volcanism		https://doi.org/10.1006/cres.1996.0002	
England	"Weichselia bed', Vectis Fm., Hanover Point, Isle of Wight	-1,46906538	50,65747334	lowermost Albian	2	charcoal	not related to volcanism		https://doi.org/10.1006/cres.1996.0002	
England	"Pine Raft" bed, in the Isle of Wight, Hanover Point	-1,46906538	50,65747334	Barremian	2	charcoal	not related to volcanism		https://doi.org/10.1006/cres.1996.0002	
France	Beauvais	2,12777099	49,39610123	Barremian	2	charcoal			https://doi.org/10.1111/pala.12627	
Germany	Balve, fissure fillings, Sauerland	8,01178468	51,3479422	late Barremian–Aptian	2	charcoal			https://doi.org/10.1016/j.cretres.2020.104606	
Germany	Prangenhaus quarry (locality 'Karstspalte') near Wülfrath	7,03619522	51,30209136	late Albian–early Cenomanian	2	charcoal			https://doi.org/10.1098/rsbl.2011.0696	
India	Than Formation, Saurashtra Basin, Gujarat	71,01754281	21,82301567	Barremian–Aptian	2	charcoal			https://doi.org/10.18520/cs/v122/i2/205-210	https://doi.org/10.1144/SP436.9
Italy	Cusano Mutri, Benevento Prov., southern Apennines, Campania	14,53481431	41,29406243	late Aptian	2	fusain, charcoal			https://doi.org/10.1016/j.cretres.2011.09.006	
Jordan	Kurnub Group, Ramel Formation, near King Talal Dam	35,80147996	32,19177829	Barremian	2	charcoal-*Weichselia reticulata*			https://doi.org/10.1016/j.cretres.2016.06.001	
Jordan	Jerash Fm., Kurnub Group, Jarash	35,89342709	32,23511312	Aptian–Albian	2	charcoalified Weichselia, Araucariaceae and Platanaceae			https://doi.org/10.54991/jop.2016.296	
South Korea	Jinju Fm., Sindong Group, Gyeongsang Basin, Gangjin-Jangheung	126,8294784	34,64302888	lower Albian	2	charcoal			https://doi.org/10.1016/j.palaeo.2012.12.016	
Lebanon	Maknouniyeh, Caza Department, Jezzine	35,54840595	33,52597559	Barremian	2	lot of carbonized vegetal inclusions			https://doi.org/10.3897/zookeys.130.1453	
Norge	Svalbard o Spitsbergen	21,88307282	77,80614365	Aptian	2	charcoal	Artic with fires and Antarctica without or less fires during the I		https://doi.org/10.1111/j.1365-2486.2005.001068.x	
Portugal	Almargen Fm. (base), Torres Vedras, aprox. 1 km northeast of Forte de Forca on the road toward Sarge.	-9,24782994	39,10235798	late Barremian–early Aptian	2	charcoal			https://doi.org/10.1073/pnas.0407174101	
Portugal	Catefica, western margin of Runa Basin	-9,24310689	39,0570792	late Barremian–early Aptian	2	charcoalified angiosperms			https://doi.org/10.2307/2666179	
Portugal	Famalicão Mbr, Figueria de Foz Fm., Vale de Agua, and about 5 km southwest of Batalha	-8,85977229	39,61959526	late Aptian–early Albian	2	charcoalified angiosperms			https://doi.org/10.2307/2666179	
Portugal	Famalicão, about 5 km SSE of Leiria	-8,77143787	39,70320905	late Aptian	2	charcoalified angiosperms			https://doi.org/10.2307/2666179	
Portugal	"Arenitos de Carrascal" complex, Vila Verde, Figueira da Foz	-8,80366918	40,1490531	late Aptian–early Albian	2	charcoalified angiosperms			https://doi.org/10.1016/j.palaeo.2005.07.006	
Portugal	"Arenitos de Carrascal" complex, Buarcos, north of Figueira da Foz	-8,87117138	40,16377511	late Aptian–early Albian	2	charcoalified angiosperms			https://doi.org/10.2307/2666179	
Portugal	Famalicão, Famalicão Mb., Figueira da Foz Fm., Lusitanian Basin	-8,90143968	39,59376099	Aptian–Early Albian	2	charcoal-Bennetittales-Erdtmanithecales-Gnetales (BEG)			https://doi.org/10.1080/00173134.2014.915980	https://doi.org/10.1038/nature06278
Spain	Las Peñosas Fm., El Soplao, Santander	-4,4480289	43,30391566	early Albian	2	charcoal	in association with amber		https://doi.org/10.1111/j.1755-6724.2010.00258.x	
Spain	Escucha Fm., San Just, Utrillas, Teruel Prov.	-0,83539719	40,77662381	upper Albian	2	charcoal	in association with amber		https://doi.org/10.1016/j.cretres.2006.12.004	
Spain	Escucha Fm., Ariño, Teruel Prov.	-0,560947	41,03107695	early Albian	2	charcoal	in association with amber		https://doi.org/10.1016/j.palaeo.2016.02.036	
Spain	La Orden Mbr., Escucha Fm., Oliete Sub-basin, Valle del Río Martín	-0,4795575	41,12302382	Albian	2	charcoal			https://doi.org/10.1016/j.cretres.2005.06.003	
Spain	Las Hoyas, La Huérguina Fm., Cuenca Prov.	-1,96431133	40,10743108	late Barremian	2	charcoalified *Weichselia reticulata*			https://doi.org/10.1016/j.palaeo.2017.11.009	https://doi.org/10.1111/pala.12627
Spain	Buenache de la Sierra, the Rambla de Las Cruces I, Huérguina Fm.	-1,99070077	40,12882024	late Barremian	2	charcoal			https://doi.org/10.1016/j.cretres.2008.02.004	
Spain	'Carretera-1' fossil site, Escucha,Teruel Province	-0,77095084	40,78440227	Middle–Late Albian	2	charcoal			https://doi.org/10.1017/S1755691018000543	
Spain	Escucha Fm., Utrillas, Teruel Province	-0,82484141	40,79440214	Albian	2	charcoal			https://doi.org/10.1080/08912963.2014.895827	
Spain	Serra del Montsec, Lleida Prov.	-0,94263291	42,00832364	upper Barremian	2	charcoal			https://doi.org/10.1111/pala.12627	
Sudan	Jebel Dirra	24,26295467	12,95505277	Albian	2	charcoal			https://doi.org/10.1111/pala.12627	
Thailand	Sao Khua Formation, Ko Kut Island, Ao Kalang, Trad Province	102,5833713	11,5803617	Barremian–Aptian	2	charcoal			https://doi.org/10.1016/j.cretres.2010.05.007	
Ukraine	50 km north of Kherson in the Khersons'ka Oblast, Mykolaiv region, South Ukrainian Monocline, N Black	32,62454712	46,8880461	Aptian–Albian	2	charcoal			https://doi.org/10.1016/j.cretres.2020.104649	
USA	Potomac Group, Drewry's Bluff, southeast of Richmond, Virginia	-77,40170507	37,42398406	Barremian–Aptian	2	charcoalified Erdtmanithecales			https://doi.org/10.1080/00173139309429991	https://doi.org/10.1016/0034-6667(95)00090-9
USA	Patuxent Fm., Potomac Gp., Dutch Gap, southeast of Richmond, Virginia	-77,40475935	37,37398402	Barremian–Aptian	2	charcoalified Erdtmanithecales			https://doi.org/10.1080/00173139309429991	https://doi.org/10.1016/0034-6667(95)00090-9
USA	Twin Mountains Fm., Hood County, Texas	-97,95088094	32,41348925	Aptian–Albian	2	fusain-Cheirolepidiaceae			Axsmith and Jacobs (2005)	
USA	Holly Creek Fm., James Hardie Gypsum quarry, Nashville, Howard County, Arkansas	-93,8472	34,0822	Aptian–Albian	2	fusain-Cheirolepidiaceae			https://doi.org/10.1016/j.cretres.2005.07.001	
USA	Potomac Group, Puddledock in Prince County, Virginia	-77,36336855	37,26454025	early–middle Albian	2	charcoal			https://doi.org/10.1016/0034-6667(95)00090-9	
USA	Potomac Group, Quantico, Virginia	-77,33256721	38,52148584	early–middle Albian	2	charcoal			https://doi.org/10.1016/0034-6667(95)00090-9	
USA	Patapsco Fm., West Brothers, Prince Georges County, Maryland	-76,91119615	38,90704883	latest Albian	2	charcoal			https://doi.org/10.2307/2445239	
USA	Dakota Fm., Black Wolf, Ellsworth, Kansas	-98,37123872	38,72815067	late Albian	2	charcoal			https://doi.org/10.1016/j.tice.2004.06.002	
USA	Dakota Fm., Courtland Clay Pit , South Central Minnesota	-94,38813625	44,27181092	late Albian–lowermost Cenomanian	2	charcoalified ferns			https://doi.org/10.1086/501235	
USA	Bull Mtn., North Maryland	-77,33256721	38,52148584	latest Albian	2	charcoalified angiosperms			https://doi.org/10.1016/0034-6667(95)00090-9	
USA	Cedar Mountain Fm., Sevier foredeep, Price River section, north Green River, Utah	-110,2964352	39,25526882	late Albian	2	charcoal			https://doi.org/10.1016/j.cretres.2014.11.008	
USA	Puddledock, Prince George County, Potomac Group, Virginia	-77,37086835	37,26176236	early–middle Albian	2	charcoalified Bennetittales, Erdtmanithecales and Gnetales			https://doi.org/10.1080/00173134.2014.915980	
USA	Dakota Fm., Rose Creek Pit, south of Fairbury on Highway 15, Nebraska	-97,17601867	40,05538158	Albian–Cenomanian boundary	2	charcoal			https://doi.org/10.1130/G21998.1	
Bahamas	Site 534, Deep Sea Drilling Project, Blake-Bahama Basin, western North Atlantic	-75,38433297	28,34684716	Valanginian	1	charcoal			https://doi.org/10.2973/dsdp.proc.76.116.1983	
Canada	Chaswood Fm., Shaw Pit, Shubenacadie Basin, Nova Scotia	-63,5296628	45,00457023	Valanginian–Hauterivian	1	charcoalified conifers, ginkgos, and bennettites			https://doi.org/10.1139/E06-119	
Canada	Chaswood Fm., Bailey Quarry, Shubenacadie Basin, Nova Scotia	-64,15854453	45,02261313	Valanginian–Hauterivian	1	Taxodiaceae-Cupressaceae			https://doi.org/10.1139/E06-119	
Canada	Bickford Fm., British Columbia	-122,2761508	55,69446997	Valanginian	1	charcoal-inertinite			https://doi.org/10.1038/ngeo923	
Canada	Minnes Gp., Gorman Creek Fm., British Columbia	-119,8598604	54,23556678	Valanginian	1	charcoal-inertinite			https://doi.org/10.1038/ngeo923	
Canada	Chaswood Fm., Nova Scotia	-64,14660086	45,03789138	Valanginian	1	charcoal with resin ducts	Few resin		https://doi.org/10.1130/G37526.1	https://doi.org/10.1139/E10-078
China	Hanxia Section, Chijinbao Fm., Jiuxi Basin, northwest China	97,26090316	39,77276909	Berriasian–Valanginian	1	charcoal			https://doi.org/10.1016/j.petrol.2021.109968	https://doi.org/10.1016/j.revpalbo.2020.104259
England	Lower Purbeck Fm., Great Dirt Bed, Isle of Portland, Dorset	-2,44936844	50,5452285	Jurassic–Cretaceous boundary	1	inertinite			https://wessexcoastgeology.soton.ac.uk/purbfac.htm	
England	Wessex Fm., Hanover Point Assemblage, Isle of Wight	-1,46795406	50,65358432	Hauterivian–Barremian	1	charcoalified Araucariaceae and Podocarpaceae			Collinson et al. (2000)	
England	Vectis Fm., Sheperds Chine Mbr, Sheperds Chine Assemblage, Isle of Wight	-1,37239379	50,61636245	Hauterivian–Barremian	1	fusainized *Weichselia*			Alvin (1974)	
England	Lower Weald Clay Fm., Clock Pit south of Capel, Surrey	-1,3207496	51,13555008	Hauterivian	1	charcoalified *Weichselia*			https://doi.org/10.1006/cres.1998.0116	
England	Clockhouse brickworks, Weald Clay Fm., English county, Surrey	-1,3207496	51,13555008	Hauterivian	1	charcoal			https://doi.org/10.1016/j.cretres.2020.104429	
England	Upper Ashdown Fm., Cliff End, Hastings cliff section, East Sussex	0,67599328	50,88029899	lower Valanginian	1	charcoal (fusain)	associated with trichoptera cases and amber		https://doi.org/10.1016/j.cretres.2015.12.021	
England	"Fairlight Clay'" of the Hastings Beds	0,64821516	50,86779801	Berriasian	1	fusain	not related to volcanism		https://doi.org/10.1006/cres.1996.0002	
England	Ashdown Fm., Hastings, Sussex	0,43931983	50,85918279	Berriasian–Valanginian	1	charcoal	amber with spider webs and microbial inclusions		https://doi.org/10.1144/0016-76492008-158	
Iraq	Balambo Fm., Azmir anticline, Sulaimaniya area, Kurdistan	45,48428735	35,48578629	Valanginian–Cenomanian	1	fusain			https://doi.org/10.1007/s12517-020-06260-3	
Ukraine	Crimean Peninsula, Kacha River, Rezanaya Mt., outskirts of Verkhorichchia	33,98490839	44,70102905	early Valanginian	1	charcoal			https://doi.org/10.1016/j.epsl.2005.09.001	

Ukraine	Crimean Peninsula, southern slope of Belaya Mt., northwestern Verkhorichchia	33,96935221	44,70186231	Hauterivian	1	charcoal		https://doi.org/10.1016/j.epsl.2005.09.001	
SOUTH HEMISPHERE									
Country	**Location**	**Longitude**	**Latitude**	**Stage/s**	**Maps**	**charcoal - Plants**	**Comments**	**Reference**	**Other references**
Antarctica	Table Nunatak Fm., Kenyon Peninsula, Eastern side of Antarctic Peninsular	-62,72825759	-68,45837467	late Santonian	4	charcoalified Siparunaceae, Winteraceae and Myrtaceae		https://doi.org/10.1016/S0034-6667(03)00120-9	
Antarctica	Rip Point, Nelson Island, South Shetland Islands	-59,00723133	-62,24265536	Campanian	4	charcoal	related to volcanism	https://doi.org/10.1016/j.cretres.2022.105185	
Antarctica	Santa Marta Fm., James Ross Island	-57,93155388	-63,90405371	Campanian	4	charcoal		https://doi.org/10.33265/polar.v40.5487	
Antarctica	Rip Point outcrop, Nelson Island, South Shetland Islands	-59,00112037	-62,24459991	Campanian	4	charcoal	related to volcanism	https://doi.org/10.1016/j.palaeo.2014.11.012	
Antarctica	Table Nunatak Fm., Kenyon Peninsula	-62,72825759	-68,45837467	late Santonian	4	charcoal		https://doi.org/10.1016/j.cretres.2003.11.004	
Argentina	Lago Colhué Huapi Fm., Golfo San Jorge Basin,	-68,52353605	-45,57718174	Campanian–Maastrichtian	4	charcoal		https://doi.org/10.1016/j.cretres.2022.105229	
Atlantic Ocean	Walvis Ridge, South Atlantic Ocean	3,04427529	-27,99534835	Maastrichtian–Danian boundary	4	charcoal		https://doi.org/10.1016/j.epsl.2020.116476	
Australia	Bundey Basin, which hosts the corehole HUC11 sediments, 140 km northeast of Alice Springs	135,2529188	-22,65739273	late Campanian–Maastrichtian	4	charcoalified Proteaceae	not related to volcanism	https://doi.org/10.3732/ajb.1500343	
Brazil	São Carlos Fm., Ibaté Bed, Bauru Group, Paraná Basin	-47,98812806	-21,99526784	Upper Santonian	4	charcoalified Olacaceae		https://doi.org/10.1016/j.cretres.2017.11.014	
Brazil	Sea boreholes in Santos Basin (Rio de Janeiro)	-43,08422067	-23,07637728	Santonian	4	fusain	related to volcanism	Arai et al. (2005-6)	
Brazil	Sea boreholes in Campos Basin (Sao Paulo) -	-41,68643192	-22,83139144	Santonian	4	fusain	related to volcanism	Arai et al. (2005-6)	
France	Kerguelen Plateau	69,43778182	-49,45049769	Maastrichtian–Danian boundary	4	charcoal		https://doi.org/10.1016/j.epsl.2020.116476	
New Zealand	Members 3 & 4, Pike River Coalfield, Paparoa Range	171,483946	-42,20535205	Campanian–Maastrichtian	4	charcoal		https://doi.org/10.1038/ngeo923	
New Zealand	Rewanui Coal Measures, Pike River Coalfield	171,4792239	-42,20729647	Campanian to Maastrichtian	4	charcoal		https://doi.org/10.1038/ngeo923	
New Zealand	Taratu Fm., Kaitangata Coalfield, Kai Point Mine, South of Dunedin	169,8798777	-46,2710694	latest Maastrichtian	4	charcoalified Podocarpaceae and Lauraceae		https://doi.org/10.1016/j.cretres.2010.11.006	
New Zealand	Maungataniwha Sandstone Mb., Tahora Fm., Urewera Ranges, Mangahouanga Stream, northern Hawke	176,7996132	-38,93766059	late Campanian–early Maastrichtian	4	charcoal		https://doi.org/10.1080/03115518.2010.486642	
Argentina	Kachaike Fm., Austral Basin, Santa Cruz Prov., Bajo Comisión, north of San Martín Lake, Patagonia	-72,98723583	-48,85398127	Albian–Cenomanian	3	charcoal		https://doi.org/10.1016/j.cretres.2006.12.006	
Australia	Winton Fm., Eromanga-1 bore hole, Eromanga Basin, Queensland	143,2656642	-26,64942888	late Albian–Cenomanian	3	charcoal		https://doi.org/10.1006/cres.1999.0164	
Australia	Mackunda Fm., Blackall-1 bore hole, Eromanga Basin, Queensland	145,4514595	-24,37949808	late Albian–Cenomanian	3	charcoal		https://doi.org/10.1006/cres.1999.0164	
Australia	Allaru Fm., Tickalara-1 bore hole, Eromanga Basin, Queensland	142,2151361	-28,64214514	late Albian–Cenomanian	3	charcoal		https://doi.org/10.1006/cres.1999.0164	
New Zealand	Tupuangi Fm., Pitt Island, Waihere Bay, Chatham Islands	176,2394002	-44,26414328	Cenomanian	3	charcoalified Cupressaceae	in resin-rich beds	https://doi.org/10.1080/03115518.2017.1417478	https://doi.org/10.1016/j.revpalbo.2018.08.004
Antarctica	Alexander Island	-70,25874054	-71,27514752	latest Aptian–uppermost Albian	2	charcoal		https://doi.org/10.1144/jgs.158.4.709	https://doi.org/10.1111/j.1365-2486.2005.001068.x
Antarctica	President Beaches Fm., Byers Peninsula, Livingston Island, South Shetland Islands	-69,83196745	-62,5129935	Berriasian	2	charcoalified Podocarpaceae and Araucariaceae	volcanic arc volcanism	https://doi.org/10.1016/j.coal.2022.103940	
Antarctica	Cerro Negro Fm., Byers Peninsula, Livingston Island, South Shetland Islands	-69,83196745	-62,5129935	early Aptian	2	charcoal		https://doi.org/10.1016/j.coal.2022.103940	
Antarctica	Lith. Unit IV, Site 750, Raggatt Basin, Kerguelen Plateau	-81,2606532	-57,6089367	early Albian	2	charcoalified Podocarpaceae	related to volcanism	https://doi.org/10.2973/odp.proc.sr.120.195.1992	
Antarctica	Triton Point Fm., Alexander Island	-68,22550864	-71,69185617	late Albian	2	charcoalified Podocar and taxodioid conifers	related to volcanism	https://doi.org/10.1144/jgs.158.4.709	
Argentina	Kachaike Fm., Austral Basin, Santa Cruz Prov., Bajo Comisión, north of San Martín Lake, Patagonia	-72,98723583	-48,85398127	Albian–Cenomanian	2	charcoal		https://doi.org/10.1016/j.cretres.2006.12.006	
Australia	Burgowan Coal, Queensland	152,6322127	-25,3322035	Albian	2	inertinite		https://doi.org/10.1038/ngeo923	
Australia	Winton Fm., Eromanga-1 bore hole, Eromanga Basin, Queensland	143,2656642	-26,64942888	late Albian–Cenomanian	2	charcoal		https://doi.org/10.1006/cres.1999.0164	
Australia	Mackunda Fm., Blackall-1 bore hole, Eromanga Basin, Queensland	145,4514595	-24,37949808	late Albian–Cenomanian	2	charcoal		https://doi.org/10.1006/cres.1999.0164	
Australia	Allaru Fm., Tickalara-1 bore hole, Eromanga Basin, Queensland	142,2151361	-28,64214514	late Albian–Cenomanian	2	charcoal		https://doi.org/10.1006/cres.1999.0164	
Australia	Eumeralla Fm., Otway Basin	142,1808186	-38,28629117	middle–late Albian	2	charcoalified Araucariaceae		https://doi.org/10.1016/j.palaeo.2018.01.017	
Brazil	Romualdo Mb., Santana Fm., Porteiras, Chapada do Araripe	-39,13499035	-7,50624186	Aptian–Albian	2	charcoal		https://doi.org/10.1007/s12549-018-0359-7	
Brazil	Ipubi Fm., Upubi, Chapada do Araripe	-40,15694115	-7,61818475	Aptian	2	charcoal		https://doi.org/10.1007/s12549-018-0359-7	
Brazil	Crato Fm., Nova Olinda, Chapada do Araripe	-39,6977723	-7,11541922	Aptian	2	charcoal, fusain		https://doi.org/10.1007/s12549-018-0359-7	
Brazil	Romualdo Mb., Santana Fm., Araripe Basin	-39,15554599	-7,54540756	late Aptian-uppermost Albian	2	charcoal		http://dx.doi.org/10.1016/j.cretres.2011.10.011	
Antarctica	Chester Cone Fm., Byers Peninsula, Livingston Island, South Shetland Islands	-69,83196745	-62,5129935	latest Berriasian-mid Valanginian	1	charcoal		https://doi.org/10.1016/j.coal.2022.103940	
Argentina	Springhill Fm., Tierra de Fuego, Santa Cruz Province, Patagonia	-68,07498874	-53,92286001	Berriasian–Valanginian	1	fusain - Bennettitales	related to volcanism	https://doi.org/10.1006/cres.2001.0266	
Australia	Orallo Fm., Surat Basin	148,5894947	-26,59689842	Valanginian	1	inertinite	related to volcanism	https://doi.org/10.1080/08120099.2020.1781690	
Madagascar	Manja, Menabe district	44,31588439	-21,43194728	Hauterivian	1	charcoalified ferns, fusain		Appert (2010)	
South Africa	Kirkwood Fm., Algoa Basin, Sundays River, Mfuleni farm	25,36626428	-33,35057371	middle–upper Valanginian	1	fusain	in association with amber	https://doi.org/10.1111/j.1502-3931.2002.tb00090.x	
South Africa	Kirkwood Fm., Algoa Basin, Bezuidenhouts River locality	25,50460203	-33,47696167	Valanginian	1	fusain	in association with amber	http://dx.doi.org/10.1016/j.cretres.2015.04.005	