NYMPHAEA Folia naturae Bihariae	XLIII	13 - 66	Oradea, 2016

European Paleofloristic Affinities of the Romanian Jurassic Macroflora

Zoltán Czier

Criş County Museum, B-dul Dacia 1–3, 410464 Oradea, Romania
E-mail: drcziergeol@freemail.hu

Abstract. Based on the floristical affinity method, this study is the first paleofloristic approach to the entire Jurassic macroflora of Romania. A complete list of the European Jurassic plant macrofossil species is provided. The Jurassic macroflora from Romania is the second most diverse in Europe, after that of the United Kingdom. However, the affinity of Romanian flora to the United Kingdom flora is only the fourth, after its affinities to the Hungarian, Polish, and Norwegian floras. The Polish flora is the second by the number of common species shared with the Romanian flora, and the Hungarian flora is the third. However, the floristic comparison shows that the flora from Romania has the highest affinity to the flora from Hungary. The island paleogeography of the Southern margin of the European Jurassic carbonate platform is the principal cause of this outstanding floristic affinity. The Jurassic macrofloras from Denmark, Italy, and Germany, have less common species with Romanian flora, but are at least as diverse as the flora from Hungary; the estimations show that the affinities to these floras of the Romanian flora are lower. Reported to their rather small number of species, the Jurassic macrofloras from Norway and Serbia have relatively big number of common species with the flora from Romania, thus the affinities to their floras of the Romanian flora are higher than even the affinities to the Danish, German, Italian, and French floras, which are much more diverse. There is no floristic affinity of Romanian to Swiss Jurassic macroflora, because these floras do not share any common species.

Keywords. Europe, Floristical Affinity Method, Jurassic, Macroflora, Romania.

Introduction

A paleofloristic comparison of the Lower Jurassic macroflora from Romania with the Lower Jurassic macrofloras of a number of European states was given by Czier (1997a). However, more recent data provided by Givulescu (1998), Czier (2000; 2011; 2014), Barbacka *et al.* (2014), Popa (2014), allow more detailed comparisons with some European macrofloras. The present paper is the first paleofloristic approach to the entire Jurassic macroflora from Romania, in the European context. The comparisons nowadays are limited to those countries from which the most complete data are available (Fig. 1).

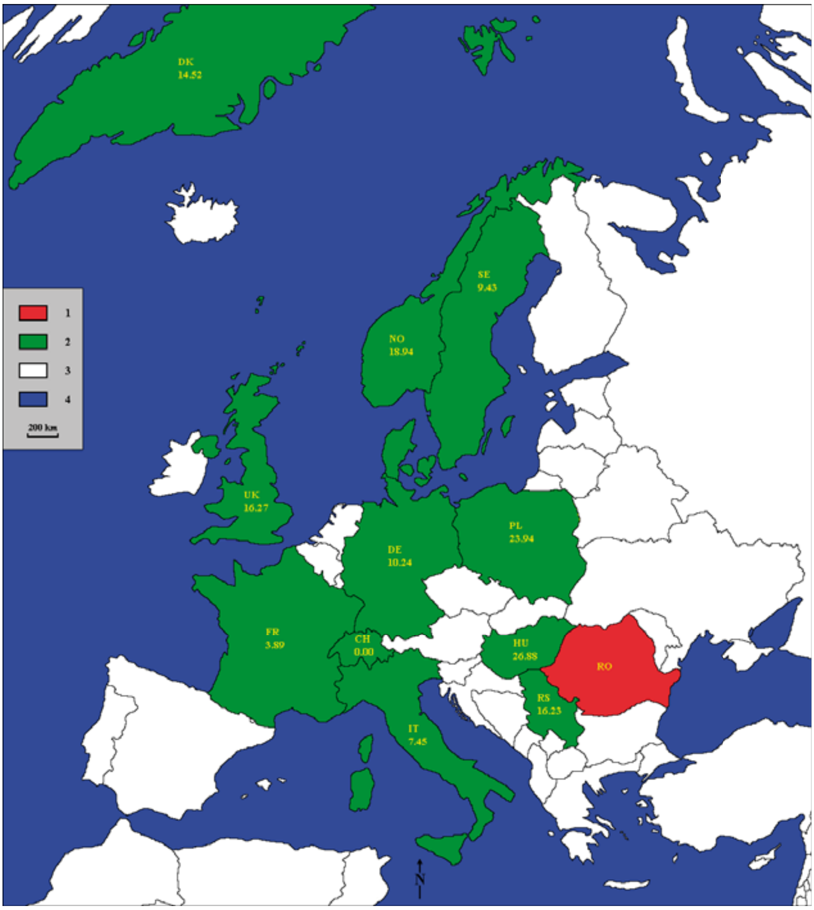

Figure 1. Geographical position of Romania involving other European states with Jurassic macrofloras. 1 – state with the reference flora: Romania (RO); 2 – states with the compared floras: Switzerland (CH), Germany (DE), Denmark (DK), France (FR), Hungary (HU), Italy (IT), Norway (NO), Poland (PL), Serbia (RS), Sweden (SE), United Kingdom (UK); 3 – regions with incomplete yet not compared data; 4 – ocean and seas; Numbers – floristic affinities (%).

The Floristical Affinity Method

The statistic method used for the proposed paleofloristic comparison is the Floristical Affinity Method (FAM) defined by Czier (2002). The main advantage of the method is the possibility to compare the floras based on their floristic affinity, which is a botanical concept, not an abstract statistic term. This method is not only a statistic method, but also a botanical (paleobotanical) method, based on a real botanical concept. Therefore, it is adequate for any floristic (paleofloristic) comparison, and is recommendable for all the similar comparative studies.

The extensive description of the method is not repeated here. The calculation formulas of the three defined affinities are:

- The reference affinity: $$Ar = \frac{Nrc}{Nr} \times 100$$

- The comparison affinity: $$Ac = \frac{Nrc}{Nc} \times 100$$

- The floristic affinity: $$Af = \frac{Nrc \times (Nc + Nr)}{Nr \times Nc} \times 50$$

The complexity of the problem (n = 11) needs usage of the general variant of the method. Therefore, the abbreviations are the following. Ur = reference unit, Uc_{1-11} = comparison units, Nr = number of species in the reference unit, Nc_{1-11} = number of species in each comparison unit, Nrc_{1-11} = number of common species in the reference unit and each comparison unit, Ar = reference affinity, Ac = comparison affinity, Af = floristic affinity.

Before doing any calculus and interpretation based on FAM, it is of crucial importance to understand that the floristic affinity is not equal with the number of common species, nor with the number of total species. A big or small number of common species and a high or low affinity is not the same. Two localities sharing the biggest number of common species may be or not the localities with the highest floristic affinity. The calculi decide clearly such dilemmas, simply, by ordering the floras in decreasing order of their floristic affinities.

The floristic affinity is in direct proportional dependence with the number of the common species, but inversely with the total species number. Although the number of common species of two floras directly influences the floristic affinity, their total number of species is inversely determinative. Therefore, it is a normal situation, when the results of the calculi show that a flora with many common species and many total species has lower affinity than another flora with few common species and few total species. Also normal is when the calculi show higher affinity, even in a resemblant case. The most important thing is just to not make mistakes when calculating the affinities, and then to accept the results with no hesitation, because arithmetic calculi are objective. They do not depend on any inclination of anybody; they do not favourite and do not ignore anything. The method was elaborated expressly to make possible much more precise comparisons between the floras than simple or maybe subjective comparisons of their taxonomical lists.

Paleofloristic composition of the European Jurassic macroflora

The floristic affinity should base on the most possible complete list of the published species, in the current case evidently on the list of those species that are present in the Jurassic macroflora of Europe.

This study is based on the list of taxa of the European Jurassic macrofloras published by Barbacka *et al*. (2014). In this study, the list has been completed by including other taxa described by Dragastan, Bărbulescu (1980), Czier (1994; 1995a; 1995b; 1995c; 1996; 1997b; 1998a; 1998b; 2000; 2001a; 2001b; 2004; 2005; 2006; 2008; 2009; 2010; 2011; 2014), and Popa (2014).

- Addition to the floristical composition of Romania of *Abietites praelinkii* Givulescu, *Aninopteris formosa* Givulescu, *Anomozamites inconstans* (Göppert) Schimper, *Arctopteris inexpectata* Givulescu, *Banatozamites calvus* Czier, *Banatozamites chlamydostomus* Czier, *Banatozamites remotus* Czier, *Brachyphyllum aureliae* Dragastan, *Bucklandia aninaensis* Czier, *Carpolithes liasinus* Andrae, *Cheirolepidium muensteri* (Schenk) Takhtadjan, *Cladophlebis browniana* (Dunker) Seward, *Cladophlebis haiburnensis* Lindley *et* Hutton, *Cladophlebis insignis* (Lindley *et* Hutton) Raciborski, *Cladophlebis naliokini* Thomas, *Cladophlebis roesserti* (Schenk) Saporta, *Cladophlebis rumana* Semaka, *Cladophlebis semakai* Czier, *Cladophlebis silvaeregis* Czier, *Cladophlebis whitbiensis* (Brongniart) Brongniart, *Coniopteris hymenophylloides* (Brongniart) Seward, *Ctenis grandifolia* Fontaine, *Ctenis hungarica* Staub, *Cycadocarpidium swabii* Nathorst, *Czekanowskia hartzi* Harris, *Czekanowskia rigida* Heer, *Dictyophyllum acutilobum* (Braun) Schenk, *Dictyophyllum muensteri* Saporta, *Eboracia lobifolia* (Philips) Thomas, *Equisetites arenaceus* (Jaeger) Schenk, *Equisetites columnaris* Brongniart, *Equisetites muensteri* (Sternberg) Harris, *Equisetites ungeri* Ettingshausen, *Equisetites veronensis* Zigno, *Equisetum laterale* Phillips *em*. Harris, *Ginkgo baieraeformis* (Kilpper) Czier, *Ginkgo digitata* (Brongniart) Heer, *Ginkgo ettingshausenii* (Krasser) Czier, *Ginkgo marginata* (Nathorst) Czier, *Ginkgo minima* (Yabe *et* Oishi) Czier, *Ginkgo parvifolia* Tuzson, *Ginkgo polymorpha* (Samylina) Czier, *Ginkgo skottsbergii* (Lundblad) Czier, *Klukia exilis* (Phillips) Raciborski, *Leptostrobus laxiflora* Heer, *Marattiopsis hoerensis* (Schimper) Thomas, *Matonidium goepperti* (Ettingshausen) Schenk, *Nellostrobus inconstans* Semaka, *Nellostrobus quadraticus* Semaka, *Neocalamites carcinoides* Harris, *Nilssonia inaequalis* Givulescu, *Nilssonia schaumburgensis* (Dunker) Nathorst, *Nilssoniopteris tenuinervis* (Brongniart) Florin, *Nilssoniopteris vittata* Brongniart, *Palissya braunii* Endlicher, *Phlebopteris braunii* (Göppert) Hirmer et Hörhammer, *Phlebopteris dunkeri* Schenk, *Phlebopteris polypodioides* Brongniart, *Phoenicopsis angustifolia* Heer, *Pityophyllum follini* (Nathorst) Möller, *Podozamites lanceolatus* (Lindley *et* Hutton) Braun, *Podozamites mucronatus* Harris, *Protorhipis buchii* Andrae, *Pseudocycas dunkeriana* (Goeppert) Florin, *Pseudotorellia nordenskjoldi* (Nathorst) Florin, *Pterophyllum cuspidatum* Ettingshausen, *Pterophyllum inconforme* Givulescu, *Pterophyllum magoti* Semaka, *Pterophyllum marginata* (Braun) Unger, *Pterophyllum pectinatum* (Jaeger) Csaki *et* Ulrichs *em*. Czier, *Ptilophyllum aninaensis* Czier, *Ptilophyllum caucasicum* Doludenko *et* Svanidze, *Ptilophyllum minor* Dragastan *in* Dragastan *et* Bărbulescu, *Receaphyllum grandis* Czier, *Sagenopteris nilssoniana* (Brongniart) Ward, *Sagenopteris phillipsii* Brongniart, *Schizolepis follinii* Nathorst, *Selenocarpus muensterianus* (Presl *in* Sternberg) Schenk, *Sphenobaiera colchica* (Prynada) Delle, *Sphenobaiera crassa* Givulescu, *Sphenobaiera rarefurcata* Semaka, *Sphenopteris hoeninghausi* Brongniart, *Sphenopteris obtusifolia* Andrae, *Taeniopteris multinervis* Weiss, *Taeniopteris münsteri* Göppert, *Taeniopteris tenuinervis* Brauns, *Todites denticulatus* Brongniart, *Todites haiburnensis* (Lindley et Hutton) Kilpper, *Todites princeps* Presl, *Williamsonia aninaensis* Czier, *Williamsonia danubii* Dragastan *in* Dragastan *et* Bărbulescu, *Williamsonia pecten* Phillips, *Zamites vachrameevii* Doludenko;

- Addition to the floristical composition of Hungary of *Cladophlebis baueri* Czier, *Cladophlebis mecsekensis* Czier, *Pachypteris rhomboidalis* (Ettingshausen) Nathorst, *Palissya sphenolepis* (Braun) Brongniart, *Phlebopteris muensteri* (Schenk) Hirmer *et* Hörhammer.

Table 1 contains the new floristic enumeration, mentioning also the presence (1) or absence (0) of each species in the Jurassic floras of the states.

The floristical list resulted by centralizing the occurrences of the species in each locality of the states: Switzerland (Basel), Germany (Franken, Solnhofen, Nussplingen, Brunn), Denmark (Scoresby), France (Vendée, Causses, Mamers, Jura), Hungary (Mecsek), Italy (Veneto, Sardegna), Norway (Brent, Andoya), Poland (Holy Cross, Grojec, Wólka), Romania (Banat, Braşov, King Forest, Dobrogea), Serbia (Stara Planina), Sweden (Scania), United Kingdom (Bearreraig, Sutherland, Stonesfield, Yorkshire).

No new determinations are added on this occasion, nor unpublished own revisions. Only some nomenclatural changes are proposed in the case of the Romanian and Hungarian floras, where such issues stringently need corrections. To be in maximal though acceptable concordance with the style of the old list, specimens that are not revised in the published literature are let with their original determinations.

The FAM stipulates that full-determined and valid species constitute basis of the calculi. Only these can lead to relevant comparisons and conclusions. Unpublished species, *nomina nuda*, invalid species, uncertainly determined species, species with zero presence in all the listed floras, and genera containing no one species in no one flora, are not subject of this paper. Consequently, paleobotanists, biostratigraphers, paleophytogeographers, paleoclimatologists, and other scientists may trust equally in the obtained results.

Comparing the new list to the old list, basically, the determinations of the maintained species are unchanged. Varieties, if present, are not rejected, just omitted, being not required by the method. Therefore, in no case the same species is written several times, in distinct rows. Anyway, such writings may cause errant sums at counting, though they do not increase the real number of the species. The already mentioned necessary nomenclatural proposals are concretised as follows.

- Major changes based on the priority principle, in accordance with Art. 11 of the International Code of Nomenclature for algae, fungi, and plants (McNeill *et al*. 2012), namely that the later homonyms are illegitimate and must be rejected, and the valid names should be used: *Pachypteris rhomboidalis* (Ettingshausen) Nathorst instead of *Pachypteris rhomboidalis* (Ettingshausen) Doludenko; *Weltrichia alfredi* (Krasser) Harris instead of *Weltrichia alfredii* (Krasser) Popa – moreover twice appeared in the old list; *Weltrichia banatica* (Krasser) Givulescu instead of *Weltrichia banatica* (Krasser) Popa; *Williamsonia banatica* Krasser instead of *Williamsonia banatica* (Krasser) Popa, which in fact is not a real combination, but only an illegitimate later writing; *Williamsonia latecostata* Semaka instead of *Williamsonia latecostata* (Semaka) Popa, which also is false, because Semaka described the species *Williamsonia latecostata* as new one, so combining it in the same genus is superfluous, and in fact impossible;

- Minor changes are done to write completely and correctly some combinations: *Clathropteris meniscioides* (Brongniart) Brongniart instead of *Clathropteris meniscioides* Brongniart; *Dictyophyllum nervulosum* (Sternberg) Kilpper instead of *Dictyophyllum nervulosum* Kilpper; *Ginkgo skottsbergii* (Lundblad) Czier instead of *Ginkgo scottsbergii* Lundblad; *Otozamites gracilis* (Kurr) Miquel instead of *Otozamites gracilis*; *Podozamites distans* (Presl) Braun instead of *Podozamites distans* (Braun) Presl.

Calculi and results

The first calculi are simple additions of the presences of the species in each flora. These permit to mention the states in order of their species number: United Kingdom with 263 species, Romania with 157 species, France with 109 species, Sweden with 107 species, Poland with 83 species, Denmark with 77 species, Italy with 67 species, Germany with 52 species, Hungary with 52 species, Norway with 28 species, Serbia with 25 species, Switzerland with 7 species.

The flora from Romania has 32 common species with the flora from the United Kingdom, 26 common species with the flora from Poland, 21 common species with the flora from Hungary, 15 common species with the flora from Denmark, 12 common species with the flora from Sweden, 9 common species with the flora from Norway, 8 common species with the flora from Germany, 7 common species with the flora from Italy, 7 common species with the flora from Serbia, 5 common species with the flora from France, and no one common species with the flora from Switzerland.

Subsequently operations are calculi of the affinities, using the method's formulas. Table 2 contains the calculi in this respect. The results are written in the table, besides the enumeration of the species, in conformity with the method.

The Jurassic macroflora from Romania has various floristic affinities to the Jurassic macrofloras of the European states, in this order: Hungary (26.88), Poland (23.94), Norway (18.94), United Kingdom (16.27), Serbia (16.23), Denmark (14.52), Germany (10.24), Sweden (9.43), Italy (7.45), France (3.89), and Switzerland (0.00). The results clearly show that the flora from Romania has the highest affinity to the flora from Hungary. Although this at first sight seems to be contradictory with the mentioned fact that Romania and the United Kingdom have 32 species in common in contrast to 21 species in common with Hungary, there is no real contradiction, if we look at the mathematical definition and formula of the floristic affinity (Czier 2002, p. 14).

Comparisons and interpretations

The Romanian Jurassic macroflora appears to be the second most diverse in Europe, after that of the United Kingdom. However, this does not mean automatically that the Romanian flora has the highest affinity to the United Kingdom flora, because their common species also must take into consideration, and the calculi of the floristic affinities indeed show that it has not! The affinity of the Romanian flora to the United Kingdom flora is only the fourth, after its affinities to the Hungarian, Polish, and Norwegian floras.

Even if the United Kingdom and the Romanian floras are the richest in species in Europe, the big number of their common species is more likely a consequence of their paleogeographic positions than of their big number of total species. The number of their common species much probably would be smaller if Gondwanian elements also were present in one of them like in the Italian flora (Scanu *et al*. 2012), and perhaps even could tend to zero, if one of these floras were completely Gondwanian. Of course, they are European floras; therefore, it is easy to understand that they may have even a big number of common species. However, the big number of their common species is not only a consequence of their high diversity, because there are other states with less diverse floras, but with several common species with the flora from Romania.

The number of the common species between the Jurassic flora from Romania and that from the United Kingdom is, therefore, only partly explainable by the number of their species, and this generally appears true in the case of the rest of the floras. The result of the common species counting in the case of the Romanian and the Polish floras is about what were expectable only because of the number of the species. However, France and Sweden have fewer common species with the flora from Romania, than what could be expected just because of their species number.

Hungary, with about half number of species than France or Sweden, has much more common species with the flora from Romania. This result is at least partly explainable by the confirmed supposition that Mecsek and the King Forest in Jurassic were parts of the same island, situated along the Southern margin of the European carbonate platform, belonging to the Tisza Superunit (Kovács *et al*. 1987; Gawlick *et al*. 1999; Márton 2000; Vörös 2001; Czier 2001c, 2006).

The FAM confirms the resemblance of the Romanian and Hungarian floras, otherwise somewhat supposable owing to their geographical positions. Evidently, the same insular origin of a part of their floras is not the only explanation of this outstanding affinity. The Romanian flora has considerable affinities to other floras too, for example to those from Poland and Norway, although they paleogeographically more or less were isolated from each other. Therefore, other causes, like resemblant ecosystems, or the general spread of some species in the European province of the Euro-Sinian region, and even beyond, also are enough important to be considered. Such species, present not only in the floras of these two neighbour states, but in at least five European states are *Cladophlebis denticulata* (Brongniart) Fontaine (5 states), *Cladophlebis haiburnensis* Lindley *et* Hutton (7 states), *Clathropteris meniscioides* (Brongniart) Brongniart (6 states), *Coniopteris hymenophylloides* (Brongniart) Seward (6 states), *Dictyophyllum nilssonii* (Brongniart) Göppert (5 states), *Ginkgo marginata* (Nathorst) Czier (5 states), *Pachypteris rhomboidalis* (Ettingshausen) Nathorst (5 states), *Phlebopteris angustiloba* (Presl) Hirmer *et* Hörhammer (6 states), *Phlebopteris muensteri* (Schenk) Hirmer *et* Hörhammer (5 states), *Sagenopteris nilssoniana* (Brongniart) Ward (7 states), *Thaumatopteris brauniana* Popp (6 states), *Todites princeps* Presl (7 states).

Denmark, Italy, and Germany, have in their Jurassic floras at least so many species as Hungary, and all of them have much fewer common species with Romania, therefore the affinities of their floras are smaller than the affinity of the Hungarian flora. Reported to their rather small number of species, Norway and Serbia have relatively big number of common species with Romania, hence it is not a surprise if the calculi show that the affinities of their floras are higher than the affinities of the Danish, German, Swiss, Italian, and French floras. Switzerland and Romania have no common Jurassic macroflora species, the floristic affinity in this case being zero.

Correlation and future prospects

A correlation between the total numbers of the species, the common species numbers, and the floristic affinities of the Romanian Jurassic macroflora to other European Jurassic macrofloras, outcome from the calculi and the results given in Table 3. The graphic representation may help identify the relations between these elements (Fig. 2).

The floristic affinities of the Romanian flora to the other floras are lower than 27 percentages, so they do not exceed the first third on the vertical axis. These reasonably appear as low to middle affinities. However, a general classification of the floristic affinities will be possible only after applying the FAM in several cases, by comparing also other floras between them.

Comparisons might be later extended to the countries for the moment white on the map. Until then, the results of the present study can be used as they are, or as starting points for diverse researches on Jurassic macrofloras. In a larger context, they hopefully will be utile for paleofloristic researches within the Factor 1 (Permian – Early Cretaceous) established by Cleal, Cascales-Miñana (2014, p. 7), which "is dominated by Pinopsida conifers, Ginkgoopsida and Pteropsida ferns, with some significant contribution from Bennettitopsida, and is essentially equivalent to the Mesophytic Flora of Gothan (1912)".

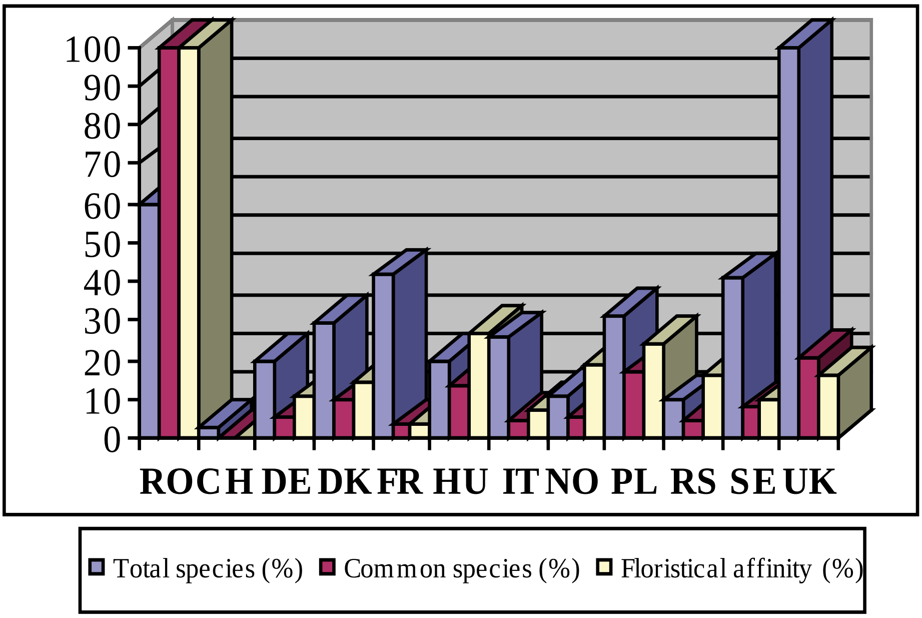

Figure 2. Correlation chart of the total number of species ($Nr – Nc_{1-11}$), number of common species ($Nrc_r – Nrc_{1-11}$), and floristic affinities of the Jurassic macroflora from Romania (RO) to the Jurassic macrofloras of Switzerland (CH), Germany (DE), Denmark (DK), France (FR), Hungary (HU), Italy (IT), Norway (NO), Poland (PL), Serbia (RS), Sweden (SE), United Kingdom (UK).

Conclusions

Because of the total number of species, the Jurassic macroflora from Romania is the second diverse in Europe, after the United Kingdom Jurassic macroflora.

The practical application of the FAM shows that the Jurassic macroflora from Romania has the highest affinity to the Jurassic macroflora from Hungary.

The outstanding affinity between the Romanian and Hungarian Jurassic macrofloras mainly appears as consequence of the island paleogeography of the Southern margin of the European carbonate platform.

Acknowledgements

Author expresses many thanks to Dr. Philippe Moisan (Institute of Geology and Palaeontology, Westphalian Wilhelms-University of Münster, Germany), Dr. Sergei V. Vikulin (Komarov Botanical Institute, Russian Academy of Sciences, Saint Petersburg, Russia), and to Prof. Dr. Patrick S. Herendeen (Systematics and Evolutionary Biology, Chicago Botanic Garden, USA) for all their useful comments. The late Dr. Sándor Kovács (Academic Research Group, Department of Geology, Eötvös Loránd University of Sciences, Budapest, Hungary) also provided valuable help with earlier comments and documentation.

References

Barbacka, M., Bodor, E., Jarzynka, A., Kustatscher, E., Pacyna, G., Popa, M.E., Scanu, G.G., Thévenard, F., Ziaja, J. 2014. – European Jurassic floras: statistics and palaeoenvironmental proxies. – *Acta Palaeobotanica* 54: 173–195.

Cleal, C.J., Cascales-Miñana, B. 2014. – Composition and dynamics of the great Phanerozoic Evolutionary Floras. – *Lethaia* 47: 469–484.

Czier, Z. 1994. – On a new record of *Selenocarpus muensterianus* (Presl) Schenk from the Fireclay Formation of Şuncuiuş (Romania) and the Lower Liassic age of the Flora. – *Review of Palaeobotany and Palynology* 82: 351–363.

Czier, Z. 1995a. – Two new species of *Cladophlebis* (Plantae, Filicales) from the Lower Liassic of Romania. – *Neues Jahrbuch für Geologie und Paläontologie, Monatshefte* 1: 39–50.

Czier, Z. 1995b. – Two new fossil plant species from the Lower Liassic of Anina, Romania: *Ptilophyllum aninaensis* n. sp. and *Williamsonia aninaensis* n. sp. – *Neues Jahrbuch für Geologie und Paläontologie, Monatshefte* 12: 747–755.

Czier, Z. 1995c. – The bibliography of the Liassic flora from Romania. – *Studia Universitatis Babeş-Bolyai, Geologia* 40: 105–111.

Czier, Z. 1996. – *Banatozamites* Czier, gen. nov. (Cycadeoidales) from the lower Liassic of Romania. – *Review of Palaeobotany and Palynology* 94: 345–356.

Czier, Z. 1997a. – On the palaeofloristic and palaeophytogeographic significance of the Lower Liassic macroflora from the Pădurea Craiului Mountains (Romania). – *Nymphaea, Folia naturae Bihariae* 23–25: 29–34.

Czier, Z. 1997b. – Revision of the Lower Liassic macroflora from the Pădurea Craiului Mountains (Romania). – *Nymphaea, Folia naturae Bihariae* 23–25: 17–28.

Czier, Z. 1998a. – The nomenclatural revision and the taxonomy of the fossil plants kept in the palaeobotanical collection of the Banatului Museum Timişoara. – *Analele Banatului, Ştiinţele Naturii* 4: 15–40.

Czier, Z. 1998b. – *Ginkgo* foliage from the Jurassic of the Carpathian Basin. – *Palaeontology* 41: 349–381.

Czier, Z. 2000. – *Macroflora liasică din România, cu privire specială asupra Pădurii Craiului*. – (Editura Imprimeriei de Vest) Oradea, 260 p.

Czier, Z. 2001a. – Determination of the fossil plants kept in Banatului Museum Timişoara. – *Analele Banatului, Ştiinţele Naturii* 5: 37–54.

Czier, Z. 2001b. – Încadrarea paleoclimatică şi paleofitogeografică a macroflorei Jurasicului inferior din România. Locul florei în context european. – *Acta Musei Porolissensis* 23: 823–834.

Czier, Z. 2001c. – A kárpáti-pannón térség ősnövényföldrajza az alsó-jurában. – *Tisicum, a Jász-Nagykun-Szolnok Megyei Múzeumok Évkönyve* 12: 17–25.

Czier, Z. 2002. – The Floristical Affinity Method – a new comparative method. – *Nymphaea, Folia naturae Bihariae* 29: 11–17.

Czier, Z. 2004. – Új ősnövények a vasasi (Mecsek hegység) alsó-jurából. – *Tisicum, a Jász-Nagykun-Szolnok Megyei Múzeumok Évkönyve* 13: 29–46.

Czier, Z. 2005. – *Receaphyllum grandis* Czier g. et sp. nov. from the Lower Jurassic of Romania. – *Nymphaea, Folia naturae Bihariae* 32: 5–22.

Czier, Z. 2006. – *Cladophlebis mecsekensis* Czier sp. nov. and *Cladophlebis baueri* Czier sp. nov. from the Lower Jurassic of the Carpathian-Pannonian region. – *Nymphaea, Folia naturae Bihariae* 33: 5–24.

Czier, Z. 2008. – *Banatozamites remotus* Czier sp. nov. (Cycadeoidales) from the Lower Jurassic of Anina, Romania. – *Nymphaea, Folia naturae Bihariae* 35: 5–26.

Czier, Z. 2009. – *Banatozamites calvus* Czier sp. nov. and *Bucklandia aninaensis* Czier sp. nov. from the Lower Jurassic of Anina, Romania. – *Nymphaea, Folia naturae Bihariae* 36: 5–26.

Czier, Z. 2010. – The presence of the genus *Ptilophyllum* in the Lower Jurassic flora of Romania. – *Nymphaea, Folia naturae Bihariae* 37: 5–38.

Czier, Z. 2011. – Revision of *Ptilophyllum*-like leaves from the Lower Jurassic of Romania. – *Nymphaea, Folia naturae Bihariae* 38: 5–16.

Czier, Z. 2014. – Taxonomic attribution of the species *Pterophyllum pectinatum* (Jaeger) Csaki and Ulrichs, em. Czier (Bennettitales) based on cuticular analysis, and its presence in the Euro-Sinian palaeofloristic region. – *Brukenthal. Acta Musei* 9: 567–586.

Dragastan, O., Bărbulescu, A. 1980. – La Flore médio-Jurassique de la Dobrogea centrale. – *Dări de Seamă ale Şedinţelor Institutului de Geologie şi Geofizică* 65: 77–98.

Gawlick, H.-J., Frisch, W., Vecsei, A., Steiger, T., Böhm, F. 1999. – The change from rifting to thrusting in the Northern Calcareous Alps as recorded in Jurassic sediments. *Geologischen Rundschau* 87: 644–657.

Givulescu, R. 1998. – *Flora fosilă a Jurasicului inferior de la Anina*. – (Editura Academiei Române), Bucureşti, 90 p.

Gothan, W. 1912. – Paläobotanik. In: Korschelt, E., Linck, G., Oltmanns, F., Schaum, K., Simon, H.T., Verworn, M., Teichmann, E.: *Handwörterbuch der Naturwissenschaften* 7: 408–460, Jena.

Kovács, S., Császár, G., Galácz, A., Haas, J., Nagy, E., Vörös, A. 1987. – The Tisza superunit was originally part of the North Tethyan (European) margin. – *Mémoires de la Société Géologique de France* 154: 81–100.

Márton, E. 2000. – The Tisza Megatectonic Unit in the light of paleomagnetic data. – *Acta Geologica Hungarica* 43: 329–343.

McNeill, J., Turland, N., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'Homme Van Reine, W., Smith, G.F., Wiersema, J. 2012. – *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011.* – (Gantner Verlag), Koenigstein, 240 p.

Popa, M.E. 2014. – Early Jurassic bennettitalean reproductive structures of Romania. – *Palaeobiodiversity and Palaeoenvironments* 94: 327–362.

Scanu, G.G., Kustatscher, E., Pittau, P. 2012. – The Jurassic plant fossils of the Lovisato Collection: preliminary notes. – *Bollettino della Societa Paleontologica Italiana* 51: 71–84.

Vörös, A. 2001. – Paleobiogeographical analysis: a tool for the reconstruction of Mesozoic Tethyan and Penninic basins. – *Acta Geologica Hungarica* 44: 145–158.

Table 1. Affinities of the Jurassic macroflora from Romania in the European context, based on a new list of species. State abbreviations: RO = Romania, CH = Switzerland, DE = Germany, DK = Denmark, FR = France, HU = Hungary, IT = Italy, NO = Norway, PL = Poland, RS = Serbia, SE = Sweden, UK = United Kingdom. FAM abbreviations see in the main text.

STATE	RO	CH	DE	DK	FR	HU	IT	NO	PL	RS	SE	UK
SPECIES	Ur	Uc_1	Uc_2	Uc_3	Uc_4	Uc_5	Uc_6	Uc_7	Uc_8	Uc_9	Uc_{10}	Uc_{11}
Abietites praelinkii Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Algacites truncatus Schlotheim	0	0	1	0	0	0	0	0	0	0	0	0
Allicospermum ellipticum Harris	1	0	0	0	0	0	0	0	0	0	0	0
Allicospermum ooides Harris	0	0	0	1	0	0	0	0	0	0	0	0
Allicospermum xystum Harris	0	0	0	1	0	0	0	0	0	0	0	0
Amphorispermum major Harris	0	0	0	1	0	0	0	0	0	0	0	0
Amphorispermum pullum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus balmei Hill	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus major Van Konijnenburg-van Cittert	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus manis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus prisma Thomas *et* Harris	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus szei Harris	0	0	0	0	0	0	0	0	0	0	0	1
Androstrobus wonnacotti Harris	0	0	0	0	0	0	0	0	0	0	0	1
Angiopteris blackii Van Konijnenburg-van Cittert	0	0	0	0	0	0	0	0	0	0	0	1
Aninopteris formosa Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Annulariopsis simpsoni Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Anomozamites affinis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Anomozamites hartzi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Anomozamites inconstans (Göppert) Schimper	1	0	0	0	0	0	0	0	0	0	0	0
Anomozamites marginatus (Unger) Nathorst	0	0	0	1	0	1	0	0	0	0	1	0

Tabel 1. Continued

Anomozamites minor Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Anomozamites nilssoni Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Anomozamites thomasi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Anthrophyopsis crassinervis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Anthrophyopsis nilssoni Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Anthrophyopsis tenuinervis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Apoldia latifolia (Schimper) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Araucarites brodiei Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Araucarites falsanii (Saporta) Barale	0	0	1	0	1	0	0	0	0	0	0	0
Araucarites microphylla (Saporta) Seward	0	0	0	0	1	0	0	0	0	0	0	0
Araucarites moreauana (Saporta) Seward	0	1	0	0	1	0	0	0	0	0	0	0
Araucarites phillipsii Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Araucarites pictaviensis (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Arctopteris inexpectata Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Arthrotaxites baliostichus Sternberg	0	0	1	0	0	0	0	0	0	0	0	0
Arthrotaxites frischmanni Unger	0	0	1	0	0	0	0	0	0	0	0	0
Aspidites thomasi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Asplenium rigidum Vassilevskaja	0	0	0	0	0	0	0	0	0	0	0	1
Baiera brauniana Dunk	0	0	0	0	0	0	0	0	0	0	0	1
Baiera curvata Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Baiera furcata (Lindley *et* Hutton) Braun	0	0	0	0	0	1	0	0	0	0	0	1

Tabel 1. Continued

Baiera gracilis Bunbury	0	0	0	0	0	0	0	1	0	0	0	0
Baiera lindleyana Schimper	0	0	0	0	0	0	0	0	0	0	0	1
Baiera longifolia Pomel	0	0	1	0	0	0	0	0	0	1	0	0
Baiera muensteriana (Presl) Heer	0	0	1	0	0	0	0	0	0	1	0	0
Baiera paucipartita Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Baiera verrucosa Barale	0	0	1	0	1	0	0	0	0	0	0	0
Banatozamites calvus Czier	1	0	0	0	0	0	0	0	0	0	0	0
Banatozamites chlamydostomus Czier	1	0	0	0	0	0	0	0	0	0	0	0
Banatozamites remotus Czier	1	0	0	0	0	0	0	0	0	0	0	0
Beania carruthersi Nathorst	0	0	0	0	0	0	0	0	0	0	0	1
Beania gracilis Carruthers	0	0	0	0	0	0	0	1	0	0	0	1
Beania kochi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Beania mamayi Thomas *et* Harris	0	0	0	0	0	0	0	0	0	0	0	1
Bennetticarpus diodon Harris	0	0	0	0	0	0	0	0	0	0	0	1
Bennetticarpus exiguus Harris	0	0	0	0	0	0	0	0	0	0	1	0
Bennetticarpus fragum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Bennetticarpus litchi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Bennetticarpus tylotus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Bennettistemon bursigerum Harris	0	0	0	0	0	0	0	0	0	0	1	0
Bennettites peachianus Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Bernettia inopinata Gothan	0	0	1	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Bernettia phialophora Harris	0	0	0	1	0	0	0	0	0	0	0	0
Bilsdalea dura Harris	0	0	0	0	0	0	0	0	1	0	0	1
Bjuvia simplex Florin	0	0	0	0	0	1	0	0	0	0	0	0
Brachyphyllum appropinquatum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Brachyphyllum ardenicum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Brachyphyllum aureliae Dragastan *in* Dragastan *et* Bărbulescu	1	0	0	0	0	0	0	0	0	0	0	0
Brachyphyllum crucis Kendall	0	0	0	0	0	1	0	0	1	0	0	1
Brachyphyllum cyclophorum Reymanówna	0	0	0	0	0	0	0	0	1	0	0	0
Brachyphyllum desnoyersii (Brongniart) Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Brachyphyllum elegans (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Brachyphyllum expansum (Sternberg) Seward	1	0	0	0	1	0	1	0	0	0	0	1
Brachyphyllum flexile Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Brachyphyllum frischmanni Unger	0	0	1	0	0	0	0	0	0	0	0	0
Brachyphyllum graciliforme Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Brachyphyllum hettangense Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Brachyphyllum kendallianum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Brachyphyllum mamillare (Braun) Lindley *et* Hutton	0	0	0	0	0	1	0	0	0	0	0	1
Brachyphyllum nepos Saporta	0	0	1	0	0	0	0	0	0	0	0	0
Brachyphyllum nordenskioeldii Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Brachyphyllum papareli Saporta	0	0	0	0	1	1	0	0	0	0	0	0
Brachyphyllum praetermissum Wesley	0	0	0	0	0	0	1	0	0	0	0	0

Tabel 1. Continued

Brachyphyllum speciosa (Pomel) Saporta	0	0	1	0	1	0	0	0	0	0	0	0
Brachyphyllum thuioides (Pomel) Barale	0	1	1	0	1	0	0	0	0	0	0	0
Brachyphyllum trautii Barale *et* Contini	0	0	0	0	1	0	0	0	0	0	0	0
Brachyphyllum tropidimorphum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Bucklandia aninaensis Czier	1	0	0	0	0	0	0	0	0	0	0	0
Bucklandia gigas Seward	0	0	0	0	0	0	0	0	0	0	0	1
Bucklandia milleriana Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Bysmatospermum macrotrachelum Harris	0	0	0	1	0	0	0	0	0	0	0	0
Calamites rotifer Harris	0	0	0	0	0	0	0	0	0	0	0	1
Callipitys leptoderma Harris	0	0	0	1	0	0	0	0	0	0	0	0
Camptopteris incisa Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Camptopteris serrata Kurr	0	0	0	0	0	0	0	0	0	0	1	0
Camptopteris spiralis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Carpolithes cepa Harris	0	0	0	0	0	0	0	0	0	0	0	1
Carpolithes diospyriformis Sternberg	0	0	0	0	0	0	0	0	0	0	0	1
Carpolithes liasinus Andrae	1	0	0	0	0	0	0	0	0	0	0	0
Caytonanthus arberi (Thomas) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Caytonanthus kochi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Caytonanthus oncodes Harris	0	0	0	0	0	0	0	0	0	0	0	1
Caytonia kendalli Harris	0	0	0	0	0	0	0	0	0	0	0	1
Caytonia nathorsti Thomas	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Caytonia sewardii Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Caytonia thomasi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Cedroxylon hornei Seward	0	0	0	0	0	0	0	0	0	0	0	1
Changarniera benstedtii (Seward) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera colymbeaeforme (Flishe) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera cupressiniforme (Flishe) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera dubia Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera inquirenda Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera latisulcatum (Sah) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera locardii (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Changarniera rajmahalense (Gupta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cheirolepidium muensteri (Schenk) Takhtadjan	1	0	0	0	0	0	0	0	0	0	0	0
Chlamydolepis lautneri (Boersma) Van Konijnenburg-van Cittert	0	0	1	0	0	0	0	0	0	0	0	0
Cladophlebis aktashensis Turutanova-Ketova	0	0	0	0	0	0	0	0	0	0	0	1
Cladophlebis aurita Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Cladophlebis baueri Czier	0	0	0	0	0	1	0	0	0	0	0	0
Cladophlebis browniana (Dunker) Seward	1	0	0	0	0	0	0	0	0	0	0	0
Cladophlebis denticulata (Brongniart) Fontaine	1	0	0	0	0	1	0	0	1	1	0	1
Cladophlebis distans Heer	0	0	0	0	0	0	0	0	0	0	0	1
Cladophlebis haiburnensis Lindley et Hutton	1	0	0	1	0	1	0	1	1	1	0	1
Cladophlebis insignis (Lindley et Hutton) Raciborski	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Cladophlebis mecsekensis Czier	0	0	0	0	0	1	0	0	0	0	0	0
Cladophlebis naliokini Thomas	1	0	0	0	0	0	0	0	0	0	0	0
Cladophlebis nebbensis (Brongniart) Nathorst	1	0	0	0	0	0	0	0	0	0	1	0
Cladophlebis roesserti (Schenk) Saporta	1	0	0	0	0	1	0	0	1	0	0	0
Cladophlebis rumana Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Cladophlebis scoresbyensis Harris	0	0	0	0	0	0	0	0	0	0	1	0
Cladophlebis semakai Czier	1	0	0	0	0	0	0	0	0	0	0	0
Cladophlebis silvaeregis Czier	1	0	0	0	0	0	0	0	0	0	0	0
Cladophlebis svedbergii Johansson	0	0	0	1	0	0	0	0	0	0	1	0
Cladophlebis whitbiensis (Brongniart) Brongniart	1	0	0	0	0	0	0	0	0	0	0	0
Classostrobus lozerianus Thévenard	0	0	0	0	1	0	0	0	0	0	0	0
Classostrobus rishra (Barnard) Alvin	0	0	0	0	1	0	0	0	0	0	0	0
Clathropteris meniscioides (Brongniart) Brongniart	1	0	1	1	0	1	0	0	1	0	1	0
Clathropteris obovata Oishi	0	0	0	0	0	0	0	0	0	0	0	1
Clathropteris platyphylla Gothan	0	0	0	0	0	0	0	0	0	0	1	0
Condylites brongniartii (Saporta) Barale	0	0	1	0	1	0	0	0	0	0	0	0
Coniferocaulon colymbaeforme Fliche	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris arguta Lindley et Hutton	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris bella Harris	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris burejensis Zalessky	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris hymenophylloides (Brongniart) Seward	1	0	0	0	0	1	1	1	1	0	0	1
Coniopteris margaretae Harris	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Coniopteris murrayana Brongniart	1	0	0	0	0	0	0	0	1	0	0	1
Coniopteris quinqueloba Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris setacea Vakhrameev	0	0	0	0	0	0	0	0	0	0	0	1
Coniopteris simplex Lindley *et* Hutton	0	0	0	0	0	0	1	1	1	0	0	1
Conites bucklandii (Sternberg) Cleal *et* Rees	0	0	0	0	0	0	0	0	0	0	0	1
Conites pontisgirardi Lignier	0	0	0	0	1	0	0	0	0	0	0	0
Conites juddi Seward	0	0	0	0	0	0	0	0	0	0	0	1
Ctenis exilis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Ctenis grandifolia Fontaine	1	0	0	0	0	0	0	0	0	0	0	0
Ctenis hungarica Staub	1	0	0	0	0	0	0	0	0	0	0	0
Ctenis kaneharai Yokoyama	0	0	0	0	0	0	0	0	0	0	0	1
Ctenis nilssonii (Nathorst) Harris	0	0	0	0	0	0	0	0	1	0	0	0
Ctenis potockii Stur	0	0	0	0	0	0	0	0	1	0	0	0
Ctenis reedi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Ctenis stewartiana Harris	0	0	0	1	0	0	0	0	0	0	0	0
Ctenis sulcicaulis (Phillips) Ward	0	0	0	0	0	0	0	0	0	1	0	1
Ctenis yamanarii Kawasaki	1	0	0	0	0	0	0	0	0	0	0	0
Ctenopteris falcata Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ctenozamites cycadea Berger	1	0	0	0	1	1	0	0	0	0	0	1
Ctenozamites leckenbyi (Leckenby) Nathorst	0	0	0	0	0	0	0	0	0	0	0	1
Ctenozamites megalostoma Harris	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Cupressinocladus itieri (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cupressinocladus strobilifer (Schimper) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cyatheites decurrens Roemer	1	0	0	0	0	0	0	0	0	0	0	0
Cycadeomyleon hettangense Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Cycadeospermum lovisatoi Krasser	0	0	0	0	0	0	1	0	0	0	0	0
Cycadites delessei Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Cycadites gramineus Heer	0	0	0	0	0	0	0	0	1	0	0	0
Cycadites longifolius Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadites lortetii Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Cycadites rectangularis Brauns	0	0	0	0	1	0	0	0	0	0	0	0
Cycadocarpidium erdtmanii Nathorst	0	0	0	0	0	0	0	0	1	0	0	0
Cycadocarpidium swabii Nathorst	1	0	0	0	0	0	0	0	0	0	0	0
Cycadolepis eriphorus Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis gracilis Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadolepis hallei Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis harrisianus Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadolepis hypene Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis infundibulum Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadolepis johannae Barbacka	0	0	0	0	0	1	0	0	0	0	0	0
Cycadolepis nitens Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis pelecus Harris	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Cycadolepis pellegrii Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadolepis rotundatus Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadolepis rugosa Harris	0	0	0	1	0	1	0	0	0	0	0	0
Cycadolepis spheniscus Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis stenopus Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis thysanota Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cycadolepis villosa Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Cycadopteris brauniana (Zigno) Barale	0	0	0	0	0	0	1	0	0	0	0	0
Cycadopteris heterophylla Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Cycadopteris jurensis (Kurr) Schenk	0	0	1	0	1	0	0	0	0	0	0	0
Cycadopteris moretiana (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cycadopteris obtusifolia (Andrae) Popa	1	0	0	0	0	0	0	0	0	0	0	0
Cycadospadix attenuatus Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadospadix hennoquei (Pomel) Schimper	0	0	0	0	1	0	0	0	0	0	0	0
Cycadospadix integrus Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadospadix pasinianus Zigno	0	0	0	0	0	0	0	0	0	0	0	1
Cycadospermum impresum Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadospermum laevigatum Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadospermum pungens Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycadospermum striolatum Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Cycalacis saportae Barale	0	0	0	0	1	0	0	0	0	0	0	0

Tabel 1. Continued

Cyclopteris minor Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Cyparisidium blachii Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cyparisidium falsanii (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Cyparisidium rudlandicum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Cyperites tuberosus Brongniart	0	0	1	0	0	0	0	0	0	0	0	0
Czekanowskia blackii Harris	0	0	0	0	0	0	0	0	0	0	0	1
Czekanowskia furcata Harris *et* Miller	0	0	0	0	0	0	1	1	0	0	0	1
Czekanowskia hartzi Harris	1	0	0	1	0	0	0	0	1	0	0	0
Czekanowskia longissima Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Czekanowskia microphylla Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Czekanowskia nathorstii Harris	0	0	0	1	0	0	0	0	0	0	1	0
Czekanowskia murrayana Lindley *et* Hutton	0	0	0	0	0	0	0	0	0	0	0	1
Czekanowskia rigida Heer	1	0	0	0	0	0	0	0	1	0	0	1
Czekanowskia setacea Brongniart	0	0	0	0	0	0	0	0	1	0	0	0
Czekanowskia thomasii Harris	0	0	0	0	0	0	0	0	0	0	0	1
Dactylethrophyllum pesostictum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Danaeopsis fecunda Halle	0	0	0	0	0	0	0	0	0	0	1	0
Danaeopsis marantacea Heer	0	0	0	0	1	0	0	0	0	0	0	0
Deltolepis calyptera Harris	0	0	0	0	0	0	0	0	0	0	0	1
Deltolepis crepidota Harris	0	0	0	0	0	0	0	0	0	0	0	1
Deltolepis mitra Harris	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Desmiophyllum cyclostomum Lundblad	0	0	0	0	0	0	0	0	0	0	1	0
Desmiophyllum gothani Florin	0	0	1	0	0	0	0	0	0	0	0	0
Desmiophyllum gramineum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Desmiophyllum rigidum (Zigno) Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Desmiophyllum zeillerianum (Zigno) Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Dichopteris pomelii Saporta	0	0	0	0	0	0	0	0	0	0	0	1
Dichopteris visianica Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Dicksonia kendalli Harris	1	0	0	0	0	0	0	0	0	0	0	1
Dicksonia mariopteris Wilson *et* Yates	0	0	0	0	0	0	0	0	0	0	0	1
Dictyophyllum acutilobum (Braun) Schenk	1	0	1	0	0	0	0	0	1	0	0	0
Dictyophyllum carlsoni Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Dictyophyllum dunkeri Nathorst	0	0	0	0	0	0	0	0	1	0	0	0
Dictyophyllum irregularis Givulescu *et* Popa	1	0	0	0	0	0	0	0	0	0	0	0
Dictyophyllum muensteri Saporta	1	0	0	1	1	0	0	0	0	0	0	0
Dictyophyllum nervulosum (Sternberg) Kilpper	1	0	0	0	0	0	0	0	0	0	0	0
Dictyophyllum nilssonii (Brongniart) Göppert	1	0	0	1	0	1	0	0	1	1	0	0
Dictyophyllum obsoletum Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Dictyophyllum obtusilobum Braun	0	0	0	0	0	0	0	0	0	0	1	0
Dictyophyllum rugosum Lindley *et* Hutton	0	0	0	0	0	1	0	0	1	0	0	1
Dictyozamites hawelli Seward	0	0	0	0	0	0	0	0	0	0	0	1
Dioonites dunkerianus Göppert	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Doratophyllum astartensis Harris	0	0	0	0	0	0	0	0	0	0	1	0
Doratophyllum nathorstii Florin	0	0	0	0	0	0	0	0	0	0	1	0
Doratophyllum scanicum Lundblad	0	0	0	0	0	0	0	0	0	0	1	0
Eboracia lobifolia (Philips) Thomas	1	0	0	0	0	0	0	0	0	0	0	1
Elatides curvifolia Dunker	0	0	0	0	0	0	0	0	0	0	0	1
Elatides sternbergiana Schenk	0	0	0	0	0	0	0	0	0	0	0	1
Elatides thomassi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Elatides williamsonii (Lindley *et* Hutton) Nathorst	0	0	0	0	1	0	0	0	0	0	0	1
Elatocladus amblus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Elatocladus laxus Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Elatocladus microphyllus (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Elatocladus oligostomus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Elatocladus pachyteichus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Elatocladus patens Harris	0	0	0	1	0	0	0	0	0	0	0	0
Elatocladus ramosus (Florin) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Elatocladus setosus (Phillips) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Elatocladus sideriticus Bose	0	0	0	0	0	0	0	0	0	0	0	1
Elatocladus tuberculatus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Elatocladus veronensis Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Elatocladus zamioides (Leckenby) Seward	0	0	0	0	0	0	0	0	0	0	0	1
Elatocladus zignoi Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Equisetites arenaceus (Jaeger) Schenk	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Equisetites beani Bunbury	0	0	0	0	0	0	0	0	0	0	0	1
Equisetites blandum (Raciborski) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Equisetites broraensis Stopes	0	0	0	0	0	0	0	0	0	0	0	1
Equisetites bunburyanus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Equisetites columnaris Brongniart	1	0	0	0	0	0	1	0	1	1	0	1
Equisetites gracilis (Nathorst) Halle	0	0	0	0	0	0	0	0	0	0	1	0
Equisetites laevis Halle	0	0	0	1	0	0	0	0	0	0	1	0
Equisetites lateralis (Phillips) Gould	0	0	0	0	0	0	0	0	1	0	0	1
Equisetites muensteri (Sternberg) Harris	1	0	0	1	0	1	0	0	0	0	0	0
Equisetites oblongus Grandori	0	0	0	0	0	0	1	0	0	0	0	0
Equisetites sarrani (Zeiler) Harris	0	0	0	1	0	0	0	0	0	0	0	0
Equisetites ungeri Ettingshausen	1	0	0	0	0	0	0	0	0	0	0	0
Equisetites veronensis Zigno	1	0	0	0	0	0	0	0	0	0	0	0
Equisetum beani Bunbury	0	0	0	0	0	0	0	0	0	0	0	1
Equisetum columnare Brongniart	0	0	0	0	0	1	0	0	0	0	0	1
Equisetum duvalii Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Equisetum fluviatile Linnae	0	0	0	0	1	0	0	0	0	0	0	0
Equisetum hommeyi Lignier	0	0	0	0	1	0	0	0	0	0	0	0
Equisetum laterale Phillips *em.* Harris	1	0	0	0	0	0	0	0	0	0	0	0
Equisetum mamertinus Linnae	0	0	0	0	1	0	0	0	0	0	0	0
Equisetum sarthensis Linnae	0	0	0	0	1	0	0	0	0	0	0	0

Tabel 1. Continued

Eretmophyllum caussenese Thévenard	0	0	0	0	1	0	0	0	0	0	0	0
Eretmophyllum pubescens Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Eretmophyllum whitbiense Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Geinitzia divaricata (Bunbury) Harris	0	0	0	0	0	0	1	0	0	0	0	1
Geinitzia rigida (Phillips) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Ginkgo baieraeformis (Kilpper) Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo dahllii Manum *et* Bose	0	0	0	0	0	0	0	1	0	0	0	0
Ginkgo digitata (Brongniart) Heer	1	0	0	0	0	0	0	0	1	0	0	1
Ginkgo ettingshausenii (Krasser) Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo flabellatus Unger	0	0	1	0	0	0	0	0	0	0	0	0
Ginkgo huttoni (Sternberg) Heer	0	0	0	0	0	0	0	1	0	0	0	1
Ginkgo longifolius (Phillips) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Ginkgo marginata (Nathorst) Czier	1	0	0	1	0	1	0	0	1	0	1	0
Ginkgo minima (Yabe *et* Oishi) Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo parasingularis Kilpper	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo parvifolia Tuzson	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo polymorpha (Samylina) Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo rarefurcata Linneus	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo sibirica Heer	0	0	0	0	0	0	0	0	1	0	0	1
Ginkgo skottsbergii (Lundblad) Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ginkgo whitbiensis Harris	0	0	0	0	0	0	0	0	1	0	0	1

Tabel 1. Continued

Ginkgoites hermelini (Hartz) Harris	0	0	0	1	0	0	0	0	0	0	0	0
Ginkgoites marginatus (Nathorst) Florin	0	0	0	0	0	1	0	0	1	0	1	0
Ginkgoites minuta (Nathorst) Harris	0	0	0	1	0	1	0	0	0	0	1	0
Ginkgoites taeniatus (Braun) Harris	0	0	0	1	0	0	0	0	0	0	0	0
Ginkgospermum globulare Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Gleichenia rostafinskii Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Gleichenites elegans Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Gleichenites nitida Harris	0	0	0	1	0	0	0	0	0	0	0	0
Glyptostrobites affinis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Glyptostrobites nilssonianus Brongniart	0	0	0	0	0	0	0	0	0	0	1	0
Goeppertella microlobus (Schenk) Oishi et Yamasita	0	0	0	0	0	0	0	0	1	0	0	0
Gonatosorus nathorstii Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Gutbiera angustiloba Presl	0	0	0	0	0	0	1	0	0	1	0	0
Hastyostrobus muirii Van Konijnenburg-van Cittert	0	0	0	0	0	0	0	0	0	0	0	1
Hausmannia asarifolia Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Hausmannia buchii (Andrae) Seward	1	0	0	0	0	0	0	0	0	0	0	1
Hausmannia cracoviensis (Raciborski) Richter	0	0	0	0	0	0	0	0	1	0	0	0
Hausmannia crenata Nathorst	0	0	0	0	0	0	0	0	1	0	0	0
Hausmannia dichotoma Dunk	0	0	0	0	0	0	0	0	0	0	0	1
Hausmannia forchhameri Bartholin	0	0	0	0	0	0	0	0	1	0	0	0
Hausmannia richteri Seward	0	0	0	0	0	0	0	0	0	0	0	1
Hausmannia ussuriensis Kryshtofovich	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Hepaticites amaurus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Hepaticites arcuatus Lindley *et* Hutton	1	0	0	0	0	0	0	0	0	0	0	1
Hepaticites globosus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Hepaticites haiburnensis Harris	0	0	0	1	0	0	0	0	0	0	0	1
Hepaticites hymenoptera Harris	0	0	0	0	0	0	0	0	0	0	0	1
Hepaticites laevis Harris	0	0	0	1	0	0	0	0	0	0	0	0
Hepaticites rosenkranzi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Hepaticites wonnacotti Harris	0	0	0	0	0	0	0	0	0	0	0	1
Hirmeriella airelensis Muir *et* Van Cittert	0	0	0	0	1	1	0	0	0	0	0	0
Hirmeriella estonensis (Kendall) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Hirmeriella kendaliae Harris	0	0	0	0	0	0	0	0	0	0	0	1
Hirmeriella maculosum (Kendall) Van Konijnenburg-van Cittert	0	0	0	0	1	0	0	0	0	0	0	1
Hirmeriella muensteri (Schenk) Jung	0	0	1	0	1	1	0	0	1	0	1	0
Hirmeriella peregrinum Thévenard	0	0	0	0	1	0	0	0	0	0	0	0
Hydropterangium hyllingensis Lundblad	0	0	0	0	0	0	0	0	0	0	1	0
Hydropterangium marsilioides Halle	0	0	0	0	0	0	0	0	0	0	1	0
Isoetes cruciformis Unger	0	0	1	0	0	0	0	0	0	0	0	0
Ixostrobus groenlandicus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Ixostrobus siemieradzkii Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Ixostrobus whitbiensis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Karkenia huptmannii Hauptmann *et* Van Konijnenburg-van Cittert	0	0	1	0	0	0	0	0	0	0	0	0
Klukia exilis (Phillips) Raciborski	1	0	0	0	0	0	0	0	1	0	0	1

Tabel 1. Continued

Komlopteris nordenskioeldii (Nathorst) Barbacka	1	0	0	0	0	1	0	0	0	0	1	1
Komlopteris speciosa (Ettingshausen) Cleal *et* Rees	0	0	0	0	0	0	0	0	0	0	0	1
Kylikipteris arguta Lindley *et* Hutton	1	0	0	0	0	0	0	0	0	0	0	1
Laccopteris dunkeri Schenk	0	0	0	0	0	0	0	0	0	0	0	1
Laccopteris rotzoana Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Lepacyclotes kirchneri Bauer, Kustatscher, Dütsch, Schmeißner, Krings *et* Van Konijnenburg-van Cittert	0	0	1	0	0	0	0	0	0	0	0	0
Lepidopteris ottonis (Göppert) Schimper	0	0	0	0	0	0	0	0	1	0	1	0
Leptostrobus cancer Harris	0	0	0	0	0	0	0	0	0	0	0	1
Leptostrobus laxiflora Heer	1	0	0	0	0	0	0	0	0	0	0	0
Leptostrobus longus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Lindleycladus lanceolatus (Lindley *et* Hutton) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Lomatopteris jurensis (Kurr) Schimper	0	0	1	0	0	0	1	0	0	0	0	0
Lomatopteris schimperi Schenk	0	0	0	0	0	0	0	0	0	1	0	0
Lycopodites scanicus Nathorst *ex* Halle	0	0	0	0	0	0	0	0	0	0	1	0
Lycostrobus scotti Nathorst	0	0	0	1	0	0	0	0	0	0	0	0
Marattia anglica Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Marattia intermedia (Münster) Kilpper	1	0	0	0	0	0	0	0	0	0	0	0
Marattia muensteri (Göppert) Schimper	0	0	0	0	0	0	0	0	1	1	0	0
Marattiopsis boweri Seward	0	0	0	0	0	0	0	0	0	0	0	1
Marattiopsis crenulatus Lundblad	0	0	0	0	0	0	0	0	0	0	1	0

Tabel 1. Continued

Marattiopsis hoerensis (Schimper) Thomas	1	0	0	1	0	1	0	0	0	0	0	0
Marskea jurassica (Florin) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Marskea laticosta Reymanówna	0	0	0	0	0	0	0	0	1	0	0	0
Masculostrobus dorchensis Barale	0	0	1	0	1	0	0	0	0	0	0	0
Masculostrobus graiterensis Allenbach *et* Van Konijnenburg-van Cittert	0	1	0	0	0	0	0	0	0	0	0	0
Masculostrobus zeilleri Seward	0	0	0	0	0	0	0	0	0	0	0	1
Matonia braunii (Göppert) Harris	1	0	0	0	0	0	0	0	0	0	0	1
Matonidium goepperti (Ettingshausen) Schenk	1	0	0	0	0	0	0	1	1	0	0	1
Mirovia lagerheimii (Johansson) Bose *et* Manum	0	0	0	0	0	0	0	1	0	0	0	0
Mirovia persulcata (Johansson) Bose *et* Manum	0	0	0	0	0	0	0	1	0	0	0	0
Nageiopsis longifolia Fontaine	0	0	0	0	0	0	0	0	0	1	0	0
Nellostrobus inconstans Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Nellostrobus quadraticus Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Neocalamites carcinoides Harris	1	0	0	0	0	1	0	0	0	0	0	0
Neocalamites carrerei (Zeiler) Halle	0	0	0	1	0	0	0	0	0	0	0	0
Neocalamites hoerensis Schimper	0	0	0	0	0	1	0	0	1	0	1	1
Neocalamites lehmannianus (Göppert) Weber	0	0	1	0	0	0	0	0	1	0	0	0
Neocalamites minutus Gee, Meyer *et* Van	0	1	1	0	0	0	0	0	0	0	0	0
Neocalamites nathorsti Erdtman	0	0	0	0	0	0	0	1	0	0	0	1
Nilssonia acuminata (Presl) Göppert	0	0	1	0	0	0	0	0	1	1	1	0
Nilssonia banatica Semaka	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Nilssonia brevis Brogniart	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia compta (Phillips) Brogniart	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia culgowerensis Van Konijnenburg-van Cittert *et* Van der Burgh	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia inaequalis Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Nilssonia incisoserrata Harris	0	0	0	1	0	0	0	0	0	0	0	0
Nilssonia inouyeni Yokoyama	0	0	0	0	0	0	0	0	1	0	0	0
Nilssonia kendalli Harris	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia mediana Leckenby	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia minima Gothan	0	0	0	0	0	0	0	0	0	1	0	0
Nilssonia morayensis Van Konijnenburg-van Cittert *et* Van der Burgh	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia obtusa (Nathorst) Harris	0	0	0	1	0	1	0	0	0	0	0	0
Nilssonia orientalis Heer	1	0	0	0	0	0	0	0	1	1	0	1
Nilssonia polymorpha Schenk	0	0	1	1	1	1	0	0	0	0	1	0
Nilssonia pterophylloides Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Nilssonia revoluta Harris	0	0	0	0	0	1	0	0	0	0	0	1
Nilssonia schaumburgensis (Dunker) Nathorst	1	0	0	0	0	0	0	0	0	0	0	0
Nilssonia simplex Nathorst	0	0	0	0	0	0	0	0	1	0	0	0
Nilssonia syllis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia tenuicaulis (Philips) Fox-Straggways	0	0	0	0	0	0	0	0	0	0	0	1
Nilssonia tenuinervis Seward	0	0	0	0	0	0	0	0	1	0	0	1

Tabel 1. Continued

Nilssonia undulata Harris	1	0	0	1	0	0	0	0	0	0	0	0
Nilssoniopteris aiorpokensis Harris	0	0	0	1	0	0	0	0	0	0	0	0
Nilssoniopteris major Lindley *et* Hutton	0	0	0	0	0	0	0	1	0	0	0	1
Nilssoniopteris norvegicus Manum *et* Bose	0	0	0	0	0	0	0	1	0	0	0	0
Nilssoniopteris pristis Harris	0	0	0	0	0	0	0	1	0	0	0	1
Nilssoniopteris tenuinervis (Brongniart) Florin	1	0	0	0	0	0	0	0	0	0	0	0
Nilssoniopteris vittata Brongniart	1	0	0	0	0	0	0	1	0	0	0	1
Odrolepis liassica Barbacka *et* Ziaja	0	0	0	0	0	0	0	0	1	0	0	0
Osmundopsis hillii Van Konijnenburg-van Cittert	0	0	0	0	0	0	0	0	0	0	0	1
Osmundopsis plectrophora Harris	0	0	0	1	0	0	0	0	0	0	0	0
Osmundopsis sturi (Raciborski) Harris	1	0	0	0	0	0	0	0	1	0	0	1
Oswaldheeria macrophylla (Florin) Bose *et* Manum	0	0	0	0	0	0	0	1	0	0	0	0
Otozamites anglica Seward	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites beani (Brongniart) Lindley *et* Hutton	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites brevifolius Braun	0	0	0	0	1	0	0	0	1	0	0	0
Otozamites bucklandii Brongniart	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites bunburyanus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Otozamites falcatus Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Otozamites falsus Harris	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites feistmantelii Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Otozamites gracilis (Kurr) Miquel	0	0	0	0	0	0	0	0	0	1	0	0

Tabel 1. Continued

Otozamites gramineus (Brongniart) Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites graphicus (Brongniart) Leckenby	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites lagotis Brongniart	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites leckenbyi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites major Schimper	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites mandeslohi Kurr	1	0	0	0	0	0	0	0	0	0	0	0
Otozamites marginatus Saporta	0	0	0	0	1	0	0	0	0	0	0	1
Otozamites massalongianus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Otozamites mattiellianus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Otozamites mimetes Harris	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites molinianus Zigno	1	0	0	0	0	0	1	0	0	0	0	0
Otozamites mortonii Dower, Bateman et Stevenson	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites nathorstii Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Otozamites parallelus Philips	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites penna Harris	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites pterophylloides Brongniart	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites rechini Lignier	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites reglei Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites simpsoni Harris	0	0	0	0	0	0	1	0	0	0	0	1
Otozamites tenuatus Leckenby	0	0	0	0	0	0	0	1	0	0	0	1
Otozamites terquemi Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Otozamites thomasi Harris	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Otozamites venosus Harris	0	0	0	0	0	0	0	0	0	0	0	1
Otozamites vicetinus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Ourostrobus nathorsti Harris	0	0	0	1	0	0	0	0	0	0	0	0
Pachypteris banatica (Humml) Doludenko	1	0	0	0	0	1	0	0	0	0	0	0
Pachypteris dagincourtii Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Pachypteris desmomera (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Pachypteris gradinauri Popa	1	0	0	0	0	0	0	0	0	0	0	0
Pachypteris hallei Frenguelli	0	0	0	0	1	0	0	0	0	0	0	0
Pachypteris lanceolata Brongniart	0	0	0	0	0	0	0	1	1	0	0	1
Pachypteris macrophylla Cleal *et* Rees	0	0	0	0	0	0	0	0	0	0	0	1
Pachypteris papillosa (Thomas *et* Bose) Harris	0	0	0	0	0	0	0	0	1	0	0	1
Pachypteris paroliana (Zigno) Schimper	0	0	0	0	1	0	0	0	0	0	0	0
Pachypteris rhomboidalis (Ettingshausen) Nathorst	1	0	0	0	0	1	0	0	1	0	1	1
Pachypteris speciosa (Ettingshausen) Andrae	1	0	0	0	0	0	0	0	0	0	0	0
Pachypteris stelzeana Geinitz	0	0	0	0	1	0	0	0	0	0	0	0
Pagiophyllum araucarinum (Pomel) Saporta	0	1	0	0	1	0	0	0	0	0	0	0
Pagiophyllum cirinicum (Saporta) Heer	0	1	1	0	1	0	0	0	0	0	0	0
Pagiophyllum creysensis (Saporta) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Pagiophyllum fragilis (Bose) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pagiophyllum insigne Kendall	0	0	0	0	0	0	0	0	0	0	0	1
Pagiophyllum kurrii (Schimper) Salfeld	0	0	0	0	1	0	0	0	0	1	0	1

Tabel 1. Continued

Pagiophyllum magnipapillare Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum ordinatum Kendall	0	0	0	0	0	1	0	0	0	0	0	1
Pagiophyllum peregrinum (Lindley *et* Hutton) Schenk	0	0	0	0	0	1	0	0	0	0	0	0
Pagiophyllum revoltinum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum robustum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum rotzoanum (Massalongo) Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum valdassense Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum veronense Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Pagiophyllum vicentinum Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Palaeocyparis elegans Saporta	0	0	1	0	0	0	0	0	0	0	0	0
Palissya braunii Endlicher	1	0	0	0	0	0	0	0	0	0	0	0
Palissya decidua Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Palissya sphenolepis (Braun) Brongniart	0	0	0	0	0	1	0	0	0	0	0	0
Paracycas ctenis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Paracycas minuta Barbacka	0	0	0	0	0	0	0	0	1	0	0	0
Pecopteris simplex Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Pelourdea megaphylla (Phillips) Seward	0	0	0	0	0	0	0	0	0	0	0	1
Peltaspermum rotula Harris	0	0	0	0	0	0	0	0	0	0	1	0
Phialopteris tenera Presl	0	0	1	0	0	0	0	0	0	0	0	0
Phlebopteris affinis Schenk	1	0	0	0	0	0	0	0	0	0	0	0
Phlebopteris angustiloba (Presl) Hirmer *et* Hörhammer	1	0	1	1	0	1	0	0	1	0	1	0

Tabel 1. Continued

Phlebopteris braunii (Göppert) Hirmer *et* Hörhammer	1	0	0	0	0	0	0	0	0	0	0	0
Phlebopteris dunkeri Schenk	1	0	0	0	1	0	0	1	1	0	0	1
Phlebopteris elegans Presl	0	0	0	0	0	0	0	0	1	0	0	0
Phlebopteris formosa Givulescu *et* Popa	1	0	0	0	0	0	0	0	0	0	0	0
Phlebopteris muensteri (Schenk) Hirmer *et* Hörhammer	1	0	1	1	0	1	0	0	1	0	0	0
Phlebopteris polypodioides Brongniart	1	0	0	0	1	0	1	0	0	0	1	1
Phlebopteris woodwardi Leckenby	1	0	0	0	0	0	0	1	0	0	0	1
Phoenicopsis angustifolia Heer	1	0	0	0	0	0	0	0	0	0	0	0
Phoenicopsis gunni Seward	0	0	0	0	0	0	0	0	0	0	0	1
Phoenicopsis potoniei Krasser	1	0	0	0	0	0	0	0	0	0	0	0
Phoenicopsis primaeva Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Phyllopteris plumula Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Phylloteca brongniartiana Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Phyllothallus latifrons Rothpletz	0	0	1	0	0	0	0	0	0	0	0	0
Pinites eiggensis Lindley *et* Hutton	0	0	0	0	0	0	0	0	0	0	0	1
Piroconites kuespertii Gothan	0	0	1	0	0	0	0	0	0	0	0	0
Pityanthus scalbergensis Van Konijnenburg-van Cittert	0	0	0	0	0	0	0	0	0	0	0	1
Pityocladus scarburgensis Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pityophyllum angustifolium Nathorst	0	0	0	0	0	0	0	0	1	0	0	0
Pityophyllum follini (Nathorst) Möller	1	0	0	0	0	0	0	0	0	0	0	0
Pityophyllum longifolium Nathorst	0	0	0	0	0	0	0	0	1	1	0	0

Tabel 1. Continued

Platylepis impressa Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Podozamites angustifolius Eichenberg	0	0	0	0	0	0	0	0	1	0	0	0
Podozamites distans (Presl) Braun	1	0	0	0	0	0	0	0	0	0	0	0
Podozamites ensis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Podozamites gramineus Heer	0	0	0	0	0	0	0	0	1	0	1	0
Podozamites lanceolatus (Lindley *et* Hutton) Braun	1	0	1	0	0	1	0	0	0	0	1	0
Podozamites mucronatus Harris	1	0	0	0	0	0	0	0	0	0	0	0
Podozamites paucinervis Boersma *et* Van Konijnenburg-van Cittert	1	0	0	0	0	0	0	0	0	0	0	0
Podozamites poaeformis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Podozamites punctatus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Podozamites schenki (Heer) Harris	0	0	0	0	0	1	0	0	1	0	0	0
Podozamites stobieckii Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Polypodites angelini Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Poteridion hallei Harris	0	0	0	0	0	0	0	0	0	0	0	1
Protorhipis buchii Andrae	1	0	0	0	0	0	0	0	0	0	1	0
Pseudoctenis crassinervis Seward	0	0	0	0	0	0	0	0	0	0	0	1
Pseudoctenis creysensis Barale	0	0	0	0	1	0	0	0	0	0	0	0
Pseudoctenis depressa Harris	0	0	0	1	0	0	0	0	0	0	0	0
Pseudoctenis eathiensis (Richards) Seward	0	0	0	0	0	0	0	0	0	0	0	1
Pseudoctenis florinii Lundblad	0	0	0	0	0	0	0	0	0	0	1	0

Tabel 1. Continued

Pseudoctenis herriesi Harris	0	0	0	0	0	0	0	1	0	0	0	1
Pseudoctenis lanei Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Pseudoctenis locusta Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pseudoctenis oleosa Harris	1	0	0	0	0	0	0	0	0	0	0	1
Pseudoctenis spectabilis Harris	0	0	0	1	0	0	0	0	0	0	0	0
Pseudocycas dunkeriana (Goeppert) Florin	1	0	0	0	0	0	0	0	0	0	0	0
Pseudosagenopteris angustifolia (Zigno) Grandori	0	0	0	0	0	0	1	0	0	0	0	0
Pseudotorellia ephela (Harris) Florin	0	0	0	1	0	0	0	0	0	0	0	0
Pseudotorellia grojecensis Reymanówna	0	0	0	0	0	0	0	1	1	0	0	0
Pseudotorellia nordenskjoldi (Nathorst) Florin	1	0	0	0	0	0	0	0	0	0	0	0
Pseudotorellia tibia Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pteroma thomasi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pterophyllum aequale Brongniart	0	0	0	0	0	0	0	0	0	0	1	0
Pterophyllum alinae Barbacka	0	0	0	0	0	0	0	0	1	0	0	0
Pterophyllum angustum Braun	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum brevipenne Kurr	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum compressum Lundblad	0	0	0	0	0	0	0	0	0	0	1	0
Pterophyllum cuspidatum Ettingshausen	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum cycadites Harris *et* Rest	0	0	0	0	0	0	0	0	0	0	0	1
Pterophyllum fossum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Pterophyllum inconforme Givulescu	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Pterophyllum kochi Harris	0	0	0	0	0	0	0	0	0	0	1	0
Pterophyllum longifolium Brongniart	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum magoti Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum marginata (Braun) Unger	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum nathorstii Schenk	0	0	0	0	0	0	0	0	1	0	0	1
Pterophyllum pectinatum (Jaeger) Csaki *et* Ulrichs *em.* Czier	1	0	0	0	0	0	0	0	0	0	0	0
Pterophyllum platyrrachis Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Pterophyllum propinquum Göppert	0	0	0	0	0	0	0	0	0	1	0	0
Pterophyllum ptilum Harris	0	0	0	0	0	0	0	0	0	0	1	0
Pterophyllum rectangulare Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Pterophyllum subaequale (Hartz) Harris	0	0	0	1	0	1	0	0	1	0	0	0
Pterophyllum thomasii Harris	0	0	0	0	0	0	1	0	0	0	0	1
Pterophyllum zinkenianum Germar	0	0	0	0	0	0	0	0	0	0	1	0
Pterygopteris angelini (Nathorst) Johansson	0	0	0	0	0	0	0	0	0	0	1	0
Ptilophyllum aninaensis Czier	1	0	0	0	0	0	0	0	0	0	0	0
Ptilophyllum cariae Scanu, Kustatscher *et* Pittau	0	0	0	0	0	0	1	0	0	0	0	0
Ptilophyllum caucasicum Doludenko *et* Svanidze	1	0	0	0	0	0	0	0	0	0	0	0
Ptilophyllum grandifolium Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Ptilophyllum hirsutum Thomas *et* Bancroft	0	0	0	0	0	0	0	0	0	0	0	1
Ptilophyllum maculatum Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Ptilophyllum minor Dragastan *in* Dragastan *et* Bărbulescu	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Ptilophyllum pecten Phillips	0	0	0	0	0	0	0	0	0	0	0	1
Ptilophyllum pectinoides Phillips	0	0	0	0	0	0	1	0	0	1	0	1
Ptilophyllum triangolare Wesley	0	0	0	0	0	0	1	0	0	0	0	0
Ptilozamites blasii Braun	0	0	0	0	0	0	1	0	0	0	1	0
Ptilozamites carlsoni Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites falcatus Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites fallax Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites heeri Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites linearis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites nilssonii Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites oldhami Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ptilozamites triangularis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Ramsaia ednyana Manum *et* Bose	0	0	0	0	0	0	0	1	0	0	0	0
Receaphyllum grandis Czier	1	0	0	0	0	0	0	0	0	0	0	0
Rhaphidopteris astartensis (Harris) Barale	0	0	0	0	1	0	0	0	0	0	0	0
Rhaphidopteris dinosaurensis Barale	0	0	0	1	0	0	0	0	0	0	0	0
Rhaphidopteris fragilis Barale	0	0	0	0	1	0	0	0	0	0	0	0
Rhaphidopteris nana (Harris) Barale	0	0	0	0	0	0	0	0	0	0	0	1
Rhaphidopteris williamsonis (Brongniart) Barale	0	0	0	0	0	0	0	0	0	0	0	1
Rhizomopteris major Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Rhizomopteris gunni Seward	0	0	0	0	0	0	0	0	0	0	0	1

Tabel 1. Continued

Sagenopteris colpodes Harris	0	0	0	0	0	0	0	0	1	0	0	1
Sagenopteris dentata Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Sagenopteris goeppertiana Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Sagenopteris hallei Harris	0	0	0	1	0	1	0	0	0	0	0	0
Sagenopteris nilssoniana (Brongniart) Ward	1	0	0	1	0	1	1	0	1	1	1	0
Sagenopteris phillipsii Brongniart	1	0	0	0	0	0	1	0	1	1	0	1
Sagenopteris pilosa Barbacka	0	0	0	0	0	1	0	0	0	0	0	0
Sagenopteris undulata (Nathorst) Halle	0	0	0	0	0	0	0	0	0	0	1	0
Scarburgia hillii Harris	0	0	0	0	0	0	0	0	0	0	0	1
Schizolepis braunii Schenk	0	0	0	0	0	0	0	0	1	0	0	0
Schizolepis follinii Nathorst	1	0	0	0	0	0	0	0	1	0	1	0
Schizolepis liasokeuperiana Braun	0	0	1	0	0	0	0	0	0	0	0	1
Schizolepis moelleri Seward	0	0	0	0	0	0	0	0	1	0	0	0
Schizolepis obtusa Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Schizoneura carcinoides Harris	1	0	0	1	0	0	0	0	0	0	0	0
Schizoneura stenophylla Harris	0	0	0	0	0	0	0	0	0	0	0	1
Schmeissneria microstachys (Presl) Van Konijnenburg-van Cittert	0	0	1	0	0	0	0	0	0	0	0	0
Scoresbya dentata Harris	0	0	0	1	0	0	0	0	0	0	0	0
Selaginellites falcatus (Lindley et Hutton) Schweitzer, Van Konijnenburg-van Cittert *et* Van der Burgh	0	0	0	0	0	0	0	0	0	0	0	1
Selaginellites hallei Lundblad	0	0	0	0	0	0	0	0	0	0	1	0

Tabel 1. Continued

Selenocarpus muensterianus (Presl) Schenk	1	0	1	0	0	0	0	0	0	0	0	0
Selleyopteris morayensis Van Konijnenburg-van Cittert *et* Van der Burgh	0	0	0	0	0	0	0	0	0	0	0	1
Solenites vimineus (Phillips) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Sorosaccus gracilis Harris	0	0	0	1	0	0	0	0	0	0	0	0
Sorosaccus minor Harris	0	0	0	1	0	0	0	0	0	0	0	0
Sphenarion muiriae Harris	0	0	0	0	0	0	0	0	0	0	0	1
Sphenobaiera colchica (Prynada) Delle	1	0	0	0	0	0	0	0	0	0	0	0
Sphenobaiera crassa Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Sphenobaiera dragastanii Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Sphenobaiera grandis Kilpper	1	0	0	0	0	0	0	0	0	0	0	0
Sphenobaiera gyron Harris	0	0	0	0	0	0	0	0	0	0	0	1
Sphenobaiera leptophylla (Harris) Florin	0	0	0	0	0	1	0	0	0	0	0	0
Sphenobaiera longifolia (Pomel) Florin	1	0	0	0	0	1	0	1	0	0	0	1
Sphenobaiera ophioglossum Harris	0	0	0	0	0	0	0	0	0	0	0	1
Sphenobaiera pecten Harris	0	0	0	0	0	0	0	0	0	0	0	1
Sphenobaiera rarefurcata Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Sphenobaiera spectabilis (Nathorst) Florin	0	0	0	1	0	0	0	0	0	0	0	0
Sphenolepidium kurrianum Dunker	0	0	0	0	0	0	0	0	0	0	0	1
Sphenolepis terquemi Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Sphenopteris compacta (Saporta) Barale	0	0	1	0	1	0	0	0	0	0	0	0
Sphenopteris hoeninghausi Brongniart	1	0	0	0	0	0	0	0	0	0	0	0

Tabel 1. Continued

Sphenopteris leckenbyi (Zigno) Halle	0	0	0	0	0	0	1	0	0	0	0	0
Sphenopteris litographica Barale	0	0	0	0	1	0	0	0	0	0	0	0
Sphenopteris metzgerioides Harris	0	0	0	0	0	0	0	1	0	0	0	1
Sphenopteris minutifolia Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Sphenopteris obtusifolia Andrae	1	0	0	0	0	0	0	0	0	0	0	0
Sphenopteris onychiopsoides Seward	0	0	0	0	0	0	0	0	0	0	0	1
Sphenopteris pellatii Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Sphenopteris pulchella Raciborski	0	0	0	0	0	0	0	0	1	0	0	0
Sphenozamites bellii Seward	0	0	0	0	0	0	0	0	0	0	0	1
Sphenozamites brongniartii Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Sphenozamites latifolius (Schimper) Saporta	0	0	1	0	0	0	0	0	0	0	0	0
Sphenozamites rossii Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Stachypteris spicans Pomel	0	0	1	0	1	0	0	0	0	0	0	1
Stenomischus athrous Harris	0	0	0	1	0	0	0	0	0	0	0	0
Stenopteris desmomera Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Stenorrhachis dubius Antevs	0	0	0	1	0	0	0	0	0	0	0	0
Storgaardia spectabilis Harris	0	0	0	1	0	0	0	0	0	0	0	0
Strobilites milleri Seward	0	0	0	0	0	0	0	0	0	0	0	1
Swedenborgia benkerti (Kräusel) Weber	0	0	1	0	0	0	0	0	0	0	0	0
Swedenborgia cryptomerides Nathorst	0	0	1	1	0	0	0	0	1	0	0	0
Swedenborgia major Harris	0	0	1	1	0	0	0	0	0	0	0	0

Tabel 1. Continued

Swedenborgia minor Harris	0	0	0	1	0	0	0	0	0	0	0	0
Taeniopteris gigantea Schenk	0	0	0	0	0	0	0	0	0	0	1	0
Taeniopteris hastata Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Taeniopteris immersa Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Taeniopteris minuta Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Taeniopteris multinervis Weiss	1	0	0	0	0	0	0	0	0	0	0	0
Taeniopteris münsteri Göppert	1	0	0	0	0	0	0	0	0	0	0	0
Taeniopteris obtusa (Nathorst) Harris	0	0	0	0	0	0	0	0	0	0	1	0
Taeniopteris tenuinervis Brauns	1	0	0	0	0	0	0	0	0	0	0	0
Taeniopteris vittata Brongniart	0	0	0	0	0	0	0	0	1	0	0	1
Taxites jeffreyi Seward	0	0	0	0	0	0	0	0	0	0	0	1
Taxodiophyllum scoticum Van Konijnenburg-van Cittert *et* Van der Burgh	0	0	0	0	0	0	0	0	0	0	0	1
Thaumatopteris brauniana Popp	1	0	1	1	0	1	0	0	1	0	1	0
Thaumatopteris exilis Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Thaumatopteris muensteri Göppert	0	0	0	0	0	0	0	0	0	1	0	0
Thinnfeldia arctica Heer	0	0	0	0	0	0	0	0	0	0	0	1
Thinnfeldia de Geeri Nathorst	0	0	0	0	0	0	0	0	0	0	0	1
Thinnfeldia decurrens Schenk	0	0	0	0	0	0	0	0	0	0	1	0
Thinnfeldia rotundata Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Thinnfeldia saligna Schenk	0	0	0	0	0	0	0	0	0	0	1	0
Thinnfeldia schwarzi Gothan	0	0	0	0	0	0	0	0	0	1	0	0

Tabel 1. Continued

Thinnfeldia scotica Seward	0	0	0	0	0	0	0	0	0	0	0	1
Todites denticulatus Brongniart	1	0	0	0	0	0	0	1	0	0	0	1
Todites goeppertianus (Münster) Krasser	0	0	0	0	0	1	0	0	1	0	1	0
Todites haiburnensis (Lindley et Hutton) Kilpper	1	0	0	0	0	0	0	0	0	0	0	0
Todites hartzi Harris	0	0	0	1	0	0	0	0	0	0	0	0
Todites princeps Presl	1	0	1	1	0	1	0	1	1	0	0	1
Todites recurvatus Harris	0	0	0	1	0	0	0	0	0	0	0	0
Todites roesserti (Presl) Saporta	0	0	1	0	0	1	0	0	0	0	0	0
Todites thomasi Harris	0	0	0	0	0	0	0	0	0	0	0	1
Todites williamsoni Brongniart	0	0	0	1	0	1	1	0	1	1	0	1
Torreya gracilis Florin	0	0	0	0	0	0	0	0	0	0	0	1
Torreya valida Florin	0	0	0	0	0	0	0	0	0	0	0	1
Trevisania furcallata De Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Trulla nitens Harris	0	0	0	0	0	0	0	0	0	0	0	1
Watsoniocladus iteri Saporta	0	0	1	0	0	0	0	0	0	0	0	0
Weltrichia alfredi (Krasser) Harris	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia antonii Popa	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia banatica (Krasser) Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia givulescui Popa	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia johannae Popa	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia oolithica Saporta	0	0	0	0	0	0	1	0	0	0	0	0

Tabel 1. Continued

Weltrichia pecten (Leckenby) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Weltrichia setosa (Nathorst) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Weltrichia sol Harris	0	0	0	0	0	0	0	0	0	0	0	1
Weltrichia steierdorfensis Popa	1	0	0	0	0	0	0	0	0	0	0	0
Weltrichia spectabilis Nathorst	0	0	0	0	0	0	0	0	0	0	0	1
Weltrichia whitbiensis (Nathorst) Harris	0	0	0	0	0	0	0	0	0	0	0	1
Wielandiella angustifolia Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Williamsonia aninaensis Czier	1	0	0	0	0	0	0	0	0	0	0	0
Williamsonia banatica Krasser	1	0	0	0	0	0	0	0	0	0	0	0
Williamsonia danubii Dragastan *in* Dragastan *et* Bărbulescu	1	0	0	0	0	0	0	0	0	0	0	0
Williamsonia fabrei Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Williamsonia feneonis Barale	0	0	0	0	1	0	0	0	0	0	0	0
Williamsonia gigas Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Williamsonia haydenii Seward	1	0	0	0	0	0	0	0	0	0	0	0
Williamsonia hildae Harris	0	0	0	0	0	0	1	0	0	0	0	0
Williamsonia himas Harris	0	0	0	0	0	0	0	0	0	0	0	1
Williamsonia italica Saporta	0	0	0	0	0	0	1	0	0	0	0	0
Williamsonia latecostata Semaka	1	0	0	0	0	0	0	0	0	0	0	0
Williamsonia leckenbyi Nathorst	0	0	0	0	0	0	0	0	0	0	0	1
Williamsonia pecten Phillips	1	0	0	0	0	0	0	0	0	0	0	1
Williamsonia pougnieti Saporta	0	0	0	0	1	0	0	0	0	0	0	0

Tabel 1. Continued

Williamsoniella coronata Thomas	0	0	0	0	0	0	0	0	0	0	0	1
Williamsoniella papillosa Cridland	0	0	0	0	0	0	0	0	0	0	0	1
Yatesia crassa Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Yatesia joassiana Carruthers	0	0	0	0	0	0	0	0	0	0	0	1
Yuccites angustiformis Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Yuccites hettangensis Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Yuccites schimperianus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Yuccites vittaeformis Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Zamiostrobus stenorrhachis Nathorst	0	0	0	0	0	0	0	0	0	0	1	0
Zamites andraeanus (Semaka) Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Zamites aninaensis (Semaka) Givulescu	1	0	0	0	0	0	0	0	0	0	0	0
Zamites approximatus Eichwald	0	0	0	0	1	0	0	0	0	0	0	0
Zamites buchianus Ettingshausen	0	0	0	0	0	0	0	0	0	1	0	1
Zamites carpentieri Barale	0	0	0	0	1	0	0	0	0	0	0	0
Zamites carruthersi Seward	0	0	0	0	0	0	0	0	0	0	0	1
Zamites confusus Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Zamites distractus Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Zamites dubisensis Barale	0	0	0	0	1	0	0	0	0	0	0	0
Zamites feneonis (Pomel) Ettingshausen	0	1	1	0	1	0	0	0	0	0	0	0
Zamites gigas Lindley *et* Hutton	1	0	0	0	0	0	0	0	0	0	0	1
Zamites goeppertii Schenk	0	0	0	0	0	1	0	0	0	0	0	0

Tabel 1. Continued

Zamites guptai (Sharma) Dower, Bateman *et* Stevenson	0	0	0	0	0	0	0	0	0	0	0	1
Zamites moreaui Brongniart	0	0	0	0	1	0	0	0	0	0	0	0
Zamites pumilio Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Zamites quiniae Harris	0	0	0	0	0	0	0	0	0	0	0	1
Zamites ribeiroanus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Zamites rotzoanus Zigno	0	0	0	0	0	0	1	0	0	0	0	0
Zamites schmiedelii Presl	1	0	0	0	0	0	0	0	0	0	0	0
Zamites senior Saporta	0	0	0	0	1	0	0	0	0	0	0	0
Zamites vachrameevii Doludenko	1	0	0	0	0	0	0	0	0	0	0	0
Nr	157											
Nc_{1-11}		7	52	77	109	52	67	28	83	25	107	263
Nrc_{1-11}		0	8	15	5	21	7	9	26	7	12	32
Ar (%)		0.00	5.10	9.55	3.18	13.38	4.46	5.73	16.56	4.46	7.64	20.38
Ac (%)		0.00	15.38	19.48	4.59	40.38	10.45	32.14	31.33	28.00	11.21	12.17
Af (%)		0.00	10.24	14.52	3.89	26.88	7.45	18.94	23.94	16.23	9.43	16.27

Table 2. Calculi of the affinities. State abbreviations: RO = Romania, CH = Switzerland, DE = Germany, DK = Denmark, FR = France, HU = Hungary, IT = Italy, NO = Norway, PL = Poland, RS = Serbia, SE = Sweden, UK = United Kingdom. FAM abbreviations see in the main text.

SPECIES NUMBER AND AF-FINITIES	STATE	RO	CH	DE	DK	FR	HU	IT	NO	PL	RS	SE	UK
		Ur	Uc_1	Uc_2	Uc_3	Uc_4	Uc_5	Uc_6	Uc_7	Uc_8	Uc_9	Uc_{10}	Uc_{11}
Nr		157											
Nc_{1-11}			7	52	77	109	52	67	28	83	25	107	263
Nrc_{1-11}			0	8	15	5	21	7	9	26	7	12	32
Ar (%)			0.00	5.10	9.55	3.18	13.38	4.46	5.73	16.56	4.46	7.64	20.38
Ac (%)			0.00	15.38	19.48	4.59	40.38	10.45	32.14	31.33	28.00	11.21	12.17
Af (%)			0.00	10.24	14.52	3.89	26.88	7.45	18.94	23.94	16.23	9.43	16.27

Tabel 2. Continued

CALCULI

1. Ar_1 (%) = 0/157*100 = 0.00
2. Ar_2 (%) = 8/157*100 = 5.10
3. Ar_3 (%) = 15/157*100 = 9.55
4. Ar_4 (%) = 5/157*100 = 3.18
5. Ar_5 (%) = 21/157*100 = 13.38
6. Ar_6 (%) = 7/157*100 = 4.46
7. Ar_7 (%) = 9/157*100 = 5.73
8. Ar_8 (%) = 26/157*100 = 16.56
9. Ar_9 (%) = 7/157*100 = 4.46
10. Ar_{10} (%) = 12/157*100 = 7.64
11. Ar_{11} (%) = 32/157*100 = 20.38
12. Ac_1 (%) = 0/7*100 = 0.00
13. Ac_2 (%) = 8/52*100 = 15.38
14. Ac_3 (%) = 15/77*100 = 19.48
15. Ac_4 (%) = 5/109*100 = 4.59
16. Ac_5 (%) = 21/52*100 = 40.38
17. Ac_6 (%) = 7/67*100 = 10.45
18. Ac_7 (%) = 9/28*100 = 32.14
19. Ac_8 (%) = 26/83*100 = 31.33
20. Ac_9 (%) = 7/25*100 = 28.00
21. Ac_{10} (%) = 12/107*100 = 11.21
22. Ac_{11} (%) = 32/263*100 = 12.17
23. Af_1 (%) = 0*(7+157)*50/(157*7) = 0.00
24. Af_2 (%) = 8*(52+157)*50/(157*52) = 10.24
25. Af_3 (%) = 15*(77+157)*50/(157*77) = 14.52
26. Af_4 (%) = 5*(109+157)*50/(157*109) = 3.89
27. Af_5 (%) = 21*(52+157)*50/(157*52) = 26.88
28. Af_6 (%) = 7*(67+157)*50/(157*67) = 7.45
29. Af_7 (%) = 9*(28+157)*50/(157*28) = 18.94
30. Af_8 (%) = 26*(83+157)*50/(157*83) = 23.94
31. Af_9 (%) = 7*(25+157)*50/(157*25) = 16.23
32. Af_{10} (%) = 12*(107+157)*50/(157*107) = 9.43
33. Af_{11} (%) = 32*(263+157)*50/(157*263) = 16.27

Table 3. Correlation base of the number of species ($Nr – Nc_{1-11}$), number of common species ($Nrc_r – Nrc_{1-11}$), and the floristic affinities of the Jurassic macroflora from Romania to other European Jurassic macrofloras. State abbreviations: RO = Romania, CH = Switzerland, DE = Germany, DK = Denmark, FR = France, HU = Hungary, IT = Italy, NO = Norway, PL = Poland, RS = Serbia, SE = Sweden, UK = United Kingdom. FAM abbreviations see in the main text.

STATE	RO	CH	DE	DK	FR	HU	IT	NO	PL	RS	SE	UK
SPECIES AND FLORISTICAL AFFINITIES	Ur	Uc_1	Uc_2	Uc_3	Uc_4	Uc_5	Uc_6	Uc_7	Uc_8	Uc_9	Uc_{10}	Uc_{11}
$Nr – Nc_{1-11}$ (numbers)	157	7	52	77	109	52	67	28	83	25	107	263
$Nr – Nc_{1-11}$ (%)	59.70	2.66	19.77	29.28	41.44	19.77	25.48	10.65	31.56	9.51	40.68	100.00
$Nrc_r – Nrc_{1-11}$ (numbers)	157	0	8	15	5	21	7	9	26	7	12	32
$Nrc_r – Nrc_{1-11}$ (%)	100.00	0.00	5.10	9.55	3.18	13.38	4.46	5.73	16.56	4.46	7.64	20.38
Af (%)	100.00	0.00	10.24	14.52	3.89	26.88	7.45	18.94	23.94	16.23	9.43	16.27

NOTES

1. The total number of species of the flora from Romania (Nr) evidently is equal with the number of 'common species' (Nrc_r) in the same flora, so all the three 'affinities' in this case are 100 (%).
2. For a clear graphical representation, the total number of species and the number of common species are converted in the table above to percentages. The conversion is made with simple rule of three, considering the highest value of the species number 100 (%).

Tabel 3. Continued

CALCULI

1. Nr (%) = 157/263*100 = 59.70
2. Nc_1 (%) = 7/263*100 = 2.66
3. Nc_2 (%) = 52/263*100 = 19.77
4. Nc_3 (%) = 77/263*100 = 29.28
5. Nc_4 (%) = 109/263*100 = 41.44
6. Nc_5 (%) = 52/263*100 = 19.77
7. Nc_6 (%) = 67/263*100 = 25.48
8. Nc_7 (%) = 28/263*100 = 10.65
9. Nc_8 (%) = 83/263*100 = 31.56
10. Nc_9 (%) = 25/263*100 = 9.51
11. Nc_{10} (%) = 107/263*100 = 40.68
12. Nc_{11} (%) = 263/263*100 = 100.00
13. Nrc_1 (%) = 0/157*100 = 0.00
14. Nrc_2 (%) = 8/157*100 = 5.10
15. Nrc_3 (%) = 15/157*100 = 9.55
16. Nrc_4 (%) = 5/157*100 = 3.18
17. Nrc_5 (%) = 21/157*100 = 13.38
18. Nrc_6 (%) = 7/157*100 = 4.46
19. Nrc_7 (%) = 9/157*100 = 5.73
20. Nrc_8 (%) = 26/157*100 = 16.56
21. Nrc_9 (%) = 7/157*100 = 4.46
22. Nrc_{10} (%) = 12/157*100 = 7.64
23. Nrc_{11} (%) = 32/157*100 = 20.38
24. Nrc_r (%) = 157/157*100 = 100.00