

Studia Biologica Hungarica

22

**L. HABLY
AND
M. SZAKÁLY**

THE CATALOGUE OF LEAF-FOSSIL TYPES PRESERVED IN HUNGARY



AKADÉMIAI KIADÓ

**PUBLISHING HOUSE OF THE HUNGARIAN ACADEMY OF SCIENCES
BUDAPEST**

STUDIA BIOLOGICA

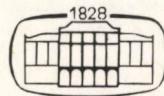
STUDIA BIOLOGICA
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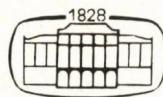


AKADÉMIAI KIADÓ, BUDAPEST 1989

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L. HABLY AND M. SZAKÁLY



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INTRODUCTION

The present work is a pioneer in character since no "Fossilium Catalogue" listing the types of primeval flora of Hungary has ever been published. SZUJKÓ-LACZA (1969) surveys the scientific work of G. ANDRÉÁNSZKY and discusses the new taxa described by him. FÜKÖH (1981) lists the specimens of primeval fauna found in the Dobó István Museum at Eger.

The palaeobotanical collection of the Hungarian Natural History Museum, Budapest possesses the biggest number of originals in Hungary, thus, time is opportune to compile a catalogue of the types. The present catalogue contains 385 types and elaborates only those original specimens that have been found and identified with the help of scientific literature. The same criteria were considered when making up the inventory of some of the types of the Kubinyi Ferenc Museum at Szécsény and the Kuny Domokos Museum at Tata. In these two museums, having no museologists engaged in natural sciences, the palaeobotanical cataloguing and supervision are made by the staff members of the Botanical Department of the Hungarian Natural History Museum. The catalogue also covers the types of remains recovered outside of Hungary but are preserved in our collection. The types of fossil trunks and floral microfossils are excluded from this catalogue.

The 385 types have been described by 19 authors. KOVÁTS (22 types), ANDRÉÁNSZKY (166 types) and RÁSKY (51 types) deserve the title: collection founders. Of special international value in the palaeobotanical collection of the Hungarian Natural History Museum is the Ettingshausen material (55 types) deriving from Czechoslovakia. The rest of the originals have been described by CZIFFERY (9 types), ANDRÉÁNSZKY and Kovács (15 types), Kovács (18 types), PÁLFALVY (12 types), ANDRÉÁNSZKY and Novák (11 types), HABLY (5 types), ANDRÉÁNSZKY and CZIFFERY (4 types), STAUB (4 types), SKOFLEK (3 types), JABLONSZKY (3 types), VARGA (2 types), UDVARHÁZI (2 types) and Novák, BUBÍK, HABLY and CSABA, SKOFLEK and BUDÓ, HORVÁTH, PÁLFALVY and Kovács and KUBÁT one taxon each.

COLLECTION FOUNDERS

Gyula Kováts

He was the first Hungarian palaeobotanist, who, prompted by enthusiasm for and interest in the science of geology, carried out palaeobotanical studies. His interest in botany goes back to his early youth, but—mainly due to family reasons—he studied at several other faculties of the university, too.

He was born in Buda on the 15th of September, 1815, but spent his early years at Marosvásárhely, where his father was a physician. Having finished his studies in the secondary school he spent some years in Buda-Pest, then returned to Marosvásárhely. At this time he was already deeply engaged in botany; made a collection of the flora of Marosvásárhely and laid the foundation of the Botanical Collection there. His studies for the bar, began in Buda-Pest, he carried on in Kolozsvár in the years of 1833–34, but after his father's death he returned to Marosvásárhely and established an exchange of plants with a great number of European botanists. Upon his mother's influence, in 1841 he enrolled at the Medical Faculty of the Vienna University where he made the acquaintance of famous botanists: ENDLICHER, NEILREICH, FRENZEL, KOTSCHY. Later—to express his honour—he named new fossil plants after KOTSCHY. After leaving Vienna he returned to Budapest where he was appointed keeper of the Botanical Collection of the Hungarian National Museum, Budapest in 1850. In the same year he was elected first secretary of the Geological Society. From there on his interest turned mainly to geology, but remained in touch with botany and started research in palaeobotany. He was the first in Hungary to work in the field where botany and geology meet. He toured the Tokaj Mountains with FERENC KUBINYI: he explored the locality of Erdőbénye with him, and later named the species *Castanea kubinyii* after him. To be able to classify the Erdőbénye and Tokaj floras he left for Vienna, since only UNGER's *Chloris protogaea* was found in the library of the Hungarian National Museum. He was a close friend of ETTINGSHAUSEN with whom he toured Tokaj-hegyalja. He worked at the Hungarian National Museum until 1865. For many years he suffered from paralysis and died on the 22nd of June, 1873.

KOVÁTS was also professor of the Botanical Department at the Pázmány Péter University. He became member of the Hungarian Academy of Sciences in 1858.

In the Hungarian National Museum he lay the foundations of the palaeobotanical collection with the floras of Erdőbénye and Tokaj. Though the number of specimens in his collection is not large, it is of great scientific value for it is the first Hungarian material. The two localities were thoroughly explored and a large collection has been built up subsequently mainly by ANDRÉÁNSZKY, CZIFFERY and RÁSKY, which yielded further information for the reconstruction and evaluation of these ancient floras.

Gábor Andreánszky

He is the most outstanding personality of palaeobotany in Hungary to this day. He was 80 years younger than GYULA KOVÁTS, and during the time between KOVÁTS's and his activity palaeobotanical research in Hungary was practically non-existent.

GÁBOR ANDRÉÁNSZKY was born in Alsópetén on the 1st of August, 1895. His father was a landowner baron. In his early years he was educated at home, later was sent to the Cistercian High School of Vác where he received a first-class school-leaving certificate in 1913. He enrolled at the Pázmány Péter University of Budapest to study biology and chemistry. During the First World War he served as a soldier both on the Italian and the Russian frontlines. After a five-year break in university studies he graduated and became an unpaid assistant of Professor JÁNOS TUZSON at the Institute of Botanical Taxonomy of the University. He received his Ph. D. on the 4th of November, 1922 with *summa cum laude* in botanical taxonomy, geology and chemistry. Later he became assistant professor and then senior lecturer. In 1941 he was appointed head of the Botanical Department of the Hungarian Natural History Museum which post he held until November 1945. Then he was appointed professor of the Department of Plant Morphology and Taxonomy in the University, where he was head of the Department until the 28th of July, 1953. Then he became researcher at the Botanical Department of the Hungarian Natural History Museum. In 1955 he retired but continued research with high motivation and great enthusiasm. This was the time when he began his palaeobotanical studies. He published a monograph and numerous articles on ancient plants. The palaeobotanic collection of the Botanical Department grew to be a collection of tens of thousands of fossils gathered by him. His collecting and research work in the beginning covered mainly younger Tertiary floras. He received valuable help in his collecting work from FERENC LEGÁNYI, who had discovered the Tertiary places of occurrence and collected many thousands of specimens for him which are deposited partly in the Hungarian Natural History Museum and partly served the foundation of the palaeobotanical collection of the Dobó István Museum at Eger.

His greatest and most well-known work is *Die Flora der sarmatischen Stufe in Ungarn* (1959b). Then he published a shorter monograph on the Upper Oligocene flora of the Wind brickyard at Eger (1966). His outstanding handbook published in Hungarian: *Ősnövénytan* (Palaeobotany) is still used today.

In acknowledgement of his scientific work he was elected member of the St. Stephen Academy in 1938, which institution was renamed in 1945 as the Hungarian Academy of Sciences.

He published a great number of articles in Hungarian and in foreign periodicals. Before the Second World War he organized and financed collecting tours, and later as a university professor, with a number of his students, he continued this activity. His most significant study trips were in Corsica, the French and the Italian Riviera, and North Africa. He also made tours in the Alps and the Carpathians.

During the years of his university professorship ANDRÉÁNSZKY created a school of palaeobotany. To this circle belonged KLÁRA BÓCSA, ILONA BUBIK, MAGDA

CZÁR, GABRIELLA CZIFFERY, ERNŐ HORVÁTH, GÁBOR JÓZSA, KINGA KUBÁT, ÉVA KOVÁCS, ERZSÉBET NOVÁK, ISTVÁN PÁLFALVY, ISTVÁN VARGA, GYÖRGY VITÁLIS, ILONA VÖRÖS, LIDIA ZELLER and LIDIA ZILAHY. Owing to fatal circumstances, however, when ANDRÉÁNSZKY left the university this school broke up and only a few enthusiastic disciples continued to work in this line. Many botanists in Hungary and abroad working in the field of recent botany are indebted to him for his clear-cut scientific orientation. He was the first in Hungary to arrive at climatological and palaeobotanical conclusions, and the first to give a comprehensive picture of the Tertiary flora of Hungary. ANDRÉÁNSZKY had a good working knowledge of foreign languages thus maintained lively connections with researchers abroad and kept a watchful eye on special literature until the end of his life. He was an elderly man when he learned Russian and got acquainted with the works of KRYSHTOFOVICH and KOLAKOVSKIJ. Thus he could evaluate not only the western but also the eastern connections of the Hungarian palaeoflorae.

He wrote almost one hundred scientific papers and a number of popularizing works. He has described a great number of new species from the fossil flora of Hungary. Subsequent revisions ascertained that some of his taxa are synonyms, but this does not lessen the value of his scientific achievement; and his human attitude remains to be exemplary for many generations to come.

He died in Budapest on the 20th of November, 1967.

Klára Rásky

She was born on the 18th of March, 1908 at Szombathely. She finished high school there, and then studied at the Pázmány Péter University, Budapest. After graduating with a high-school teacher's diploma she worked as a teacher at Kőszeg, Pécs, Szolnok and Mezőtúr. She received her Ph. D. in zoology at the Debrecen University. She worked at the Botanical Department of the Hungarian Natural History Museum from 1938, in its palaeobotanical collection from 1939 until her retirement. In 1952 she was awarded the academic degree: "Candidate of Biological Sciences" by the Hungarian Academy of Sciences.

In 1940 she went on a study tour and worked in the Senkenberg Museum under the direction of Professor R. KRÄUSEL. She published her monograph *Fossile Charophyten-Früchte aus Ungarn* in 1945. Due to her good connections with the geologists of the Hungarian Geological Survey she got access to many bore materials. Of the leaf remains she studied mainly the flora of the Lower Oligocene and the Upper Miocene. Some of these studies have not been completed, the majority of them appeared only in preliminary reports, e.g. about the locality Ipolytarnóc, or they were limited to certain taxonomic groups. With the cooperation of geologists—in the beginning BARTKÓ and TASNÁDY-KUBACSKA—she collected a rich material from Ipolytarnóc, Tályva and the Lower Oligocene localities in Óbuda. She did valuable work by sorting out and making an inventory

of the collection. She described a large number of new species, some of which, according to our present knowledge, are dubious.

She died in Budapest on the 14th of September, 1971 (SZUKÓ-LACZA 1973).

THE ETTINGSHAUSEN COLLECTION

The palaeobotanical collection of ETTINGSHAUSEN, which had been part of the private collection of baron LOBKOWITZ was purchased by the Hungarian National Museum in 1870. Together with the palaeobotanical material a large number of mineral and fossil specimens was received, and was incorporated into the collection of the Mineralogical Department. Subsequently, the palaeobotanical material was transferred to the Botanical Department in 1930, most of them without labels or specific names. It was revealed by the very conscientious and profound study of the two Czech research workers, KVAČEK and BŮŽEK, that the collection contained the types of species described by Ettingshausen. The majority of the specimens derives from the following places of occurrence: Bilin-Kučlin (Middle Oligocene), Žichov (Upper Oligocene).

The collection is over one hundred years old; and fortunately survived the plagues of the two world wars. It is the oldest and the most valuable foreign collection in the Hungarian Natural History Museum.

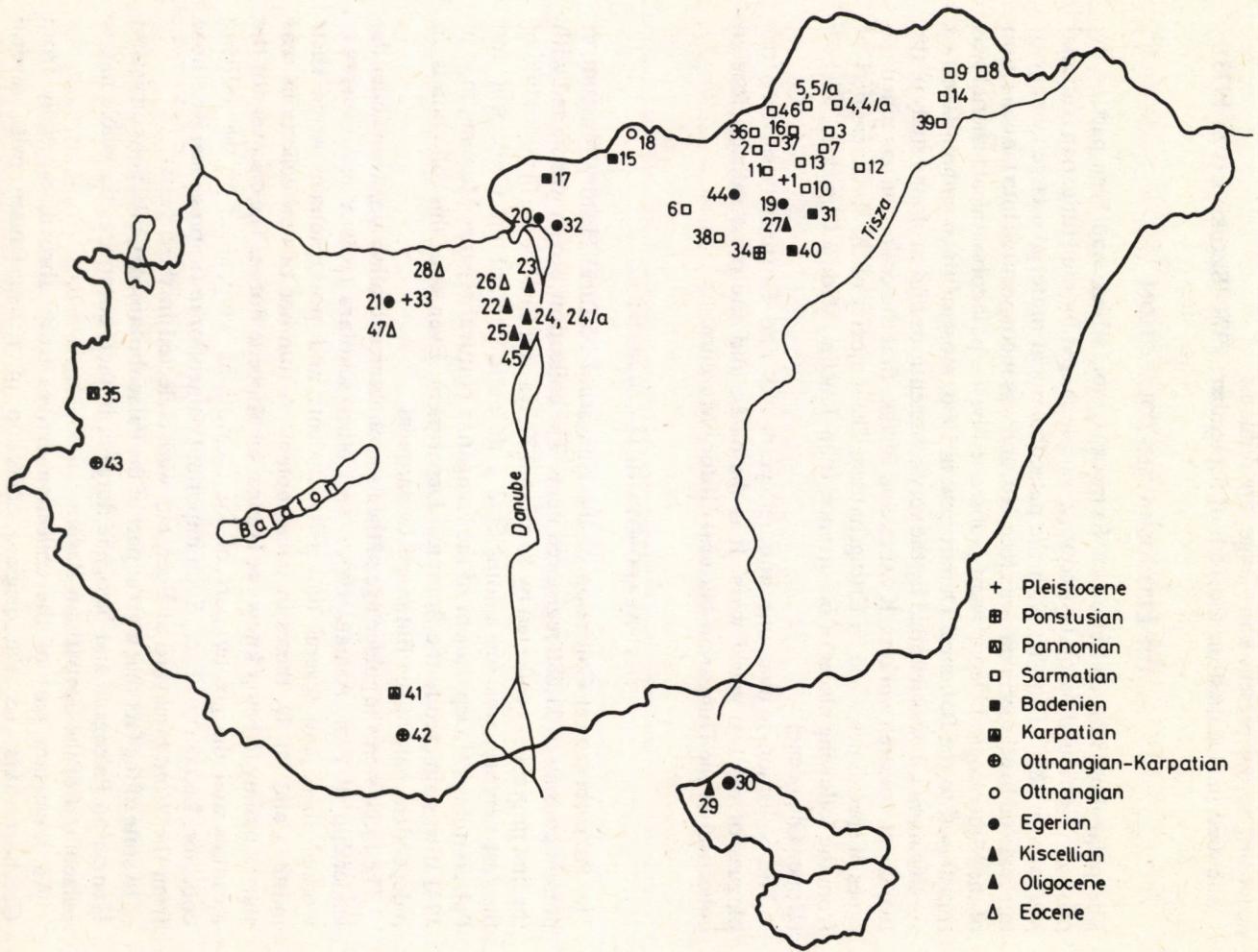
THE PALAEOBOTANICAL COLLECTION

The Palaeobotanical Collection of the Hungarian Natural History Museum at present consists of 21,286 registered items. The collection, which was started with the first impressions collected by KOVÁTS at Tállya and Erdőbénye in the middle of the last century, was for a long time a thematic part of the Geological and Palaeontological Department of the Hungarian Natural History Museum, then in 1941 it was annexed to the Botanical Department. Ever since this collection is an independent part of the Botanical Department.

The 1950s were the golden age of the Palaeobotanical Collection, when under the leadership of Prof. ANDRÉÁNSZKY, two other scholars (RÁSKY and CZIFFERY) worked there and several university students and postgraduates wrote their master's and Ph. D. theses in palaeobotany. A number of new collections was started mainly to better know the Hungarian Miocene floras. The discovery of the localities and the greater part of the excavations were aided by the untiring collector, LEGÁNYI of Eger. Such important palaeoflorae (impressions) like those from the Wind brickyard at Eger, etc. were collected in these years.

In spite of the fact that a great part of the Palaeobotanical Collection consists of Hungarian Paleogene and Neogene floras it, in fact, comprises the whole native palaeoflora of the Carpathian Basin.

An important part of the collection derives from abroad, especially from Czechoslovakia, i.e. the original collection of Ettingshausen (with several holotypes), as well as the impressions collected and determined by PAX and UNGER.



LOCALITIES OF TYPES

The types included in the Catalogue were collected from 49 Hungarian localities*, while two localities are in Czechoslovakia. The sites are presented, with chronological classification, in Map 1. It is apparent that the number of Miocene, first of all Sarmatian localities is high.

<i>Hungary</i>	
Pleistocene	
1 Monosbél	17 Hont–Bábahegy
33 Vérteszöllős	31 Eger–Fertővölgy
Pontian (Upper Miocene)	Karpatian (Middle Miocene)
34 Kerecsend	41 Magyaregregy
Pannonian (Upper Miocene)	Otnangian–Karpatian
35 Sé II.	42 Abaliget
Sarmatian (Upper Miocene)	43 Nádasd
2 Balaton–Dellő	Otnangian (Lower Miocene)
5 Bánfalva–Ortásgödör	18 Ipolytarnóc
5/a Bánfalva–Patakos	Egerian (Upper Oligocene)
4 Bánhováti–Kővágó-tető	32 Csörög–Kígyó-hegy
4/a Bánhováti–Verőbánya	19 Eger, Wind's brick-yard
6 Buják	44 Mátraderecske
36 Bükkmogyorós	20 Verőcemaros
37 Bükkzentmárton–Isten-tető	21 Vérteszöllős–Baromállás
3 Dédestapolcsány–Gulyadéllő	Kiscellian (Lower Oligocene)
8 Erdőbénye–Barnamáj	22 Budapest–Budaújlak
9 Erdőbénye–Kővágó-oldal	45 Budapest –Batthyány square
13 Felsőtárkány II.–Güdörkert	23 Budapest–Csillaghegy
38 Gyöngyöspata	24 Budapest–Óbuda
7 Harica–völgy	25 Budapest–Szépvölgy
39 Mád	24/a Budapest–Óbuda—Nagybátony–Újlak brick-yard
11 Mikófalva–Szőkehely	27 Eger–Kiseged
12 Nagybarca–Kőbánya	Eocene
10 Sály	28 Lábatlan
16 Szelecsyi-völgy (between Nagyvisnyó and Dédestapolcsány)	47 Tatabánya
14 Tályha	26 Tokod
46 Uppony–Szőlőhegy	
Badenian (Upper Miocene)	<i>Czechoslovakia</i>
40 Andornaktályha–Pincevölgy	Egerian (Upper Oligocene)
15 Nógrádzsakál–Páris valley	30 Žichov (Schihow)
	Middle Oligocene
	29 Bilin–Kučlin

* The locality names are given in this list according to the correct, conventional spelling of geographical orthography. However, in the subsequent text, the same locality names are spelt as given in the original description of the author. This practice, of course, leads to some incongruences.

THE STRUCTURE OF THE CATALOGUE

The lists of the type catalogue include the most important data in seven entries. The material of each list is treated according to the large taxonomic units: fungi, ferns, gymnosperms and angiosperms, while the taxa within them are given in alphabetic order.

The context is illustrated with recent photographs of the leaf-prints. The taxa described by ETTINGSHAUSEN, owing to the faded nature of the leaf remains, are shown by reproductions of the original drawings.

The serial number in the catalogue of the species indicate the following data:

1. Name (according to the original description), *describer*, date, plate of photographs.
2. Type species (the holotype if it was designated in the original article, or syntype if no single specimen was isolated), *the place of deposition* in abbreviated form: BP. = the Botanical Department of the Hungarian Natural History Museum, Palaeobotanical Collection, Budapest; Szécsény = Kubinyi Ferenc Museum, Szécsény; Tata = Kuny Domokos Museum, Tata, *inventory number* (if there was an inventory number in the original publication, then it is given in addition to the present inventory number).
3. Age (age determination according to our present knowledge), *rock, formation* (this is given when the place of the formation was determined with certainty).
4. *Type locality* (according to the original publication).
5. *Literature*.
6. The original description (*diagnosis*)
7. *Taxonomic revision* (the valid name of the species today).

TYPES IN THE BOTANICAL DEPARTMENT OF
THE HUNGARIAN NATURAL HISTORY MUSEUM (BUDAPEST)

FUNGUS

1. *Sphaeria kutschlinica* ETTINGSHAUSEN, 1866 (Pl. I, 1)
2. Holotype: BP. 55.2483.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, pp. 8–9, Pl. 1, figs. 27, 28.
6. Sph. peritheciis sparsis, rotundato-ellipticis, convexis, apice ostiolo rotundato pertusis.

LICHEN

1. *Lobaria jablonszkyi* RÁSKY, 1959 (Pl. I, 2)
2. Syntype: BP. 55.592.1, 55.554.1, 55.591.1, 55.549.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959). — J. Paleont. 33 (3), p. 456, Pl. 69, figs. 1, 2.
6. Impressions of various sized pieces of a thallus of lichen of life-like structure, usually jumbled forms. At certain places the impressions have large, lobed borders. The surface of the thallus of lichen is of reticulated structure, having a pitted surface, the diameter of the pits being in the order of 1 to 8 mm. At the lower side, corresponding to the pits the thallus is embossed or gnarled. The gnarls are separated by striae. The pits or gnarls are irregularly circular or ellipsoid, or occasionally angular. The distribution of the smaller or larger pits or gnarls is wholly irregular and without system. There are neither rhizoidae, nor remnants of apothecium on the thalli of lichen.

FERNS

1. *Asplenium csörögiense* ANDREÁNSZKY, 1951 (Pl. LVI, 2)
2. Paratype: BP. 85.441.3.
3. Upper Oligocene, Egerian, Kovačov Formation.

4. Csörög-Kígyó-hegy, Hungary.
5. VITÁLIS, GY.-ZILAHY, L. (1951).—Ann. Biol. Univ. Hung. I, p. 162, Pl. 20, fig. 1.
6. Pinna solum adest, pinnatifida, pinnulis usque ad 2/3–2/4 longitudinis connatis ca. 15 mm longis, 5 mm latis, oblongis, apice rotundatis et integris. Pinnulae nervatio pinnata, nervo principali tenui recto, nervibus secundariis 7-iugis, simplicibus in angulo ca. 30° egredientibus apicem versus arcuatis.
1. **Asplenium egedense** ANDRÉÁNSZKY, 1949 (Pl. II, 2)
2. Holotype: BP. 83.293.1. (3581).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger-Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1949b).—Index Horti bot. Univ. bpest. 7, p. 5, Pl. 10, fig. 5.
6. Folia simpliciter pinnata (? pinnae sejunctae tantum notae). Pinnae valde oblique ovato-lanceolatae, ca. 6,5 mm longae, 2–2,2 cm latae, basi uno latere rotundatae, altero sensim angustatae, petiolulo ca. 2 mm longo (?), apice late acuminato-obtusae. Nervus medianus pinnae basi validus, apicem versus sensim evanescens, debiliter sigmoideus. Nervi secundarii debiles, bis, ter vel quater furcati, ramis inaequalibus. Sori linearis, in latere angustiore pinnae in numero ca. 8–9, in latere latiore ca. 12–13, 7–9 mm longi, 1–1 1/2 mm lati, 3–7 mm distantes, solum secundus et tertius in latere latiore appropinquati, cursum ramorum nervorum secundiorum sequentes, parum arcuati vel sigmoidei. Sporangia annulum verticalem ferentia. Sporae subtetraedro-globosae, ca. 20 μ diam., minute granulatae.
1. **Blechnum ellipticum** Kovács, 1961 (Pl. XII, 2)
2. Holotype: BP. 83.259.1 (L 34/35).
3. Eocene, grey clay.
4. Lábatlan, sand-pit, Hungary.
5. Kovács, É. (1961).—Földtani Intézet évi jelentése az 1957–58. évről, p. 475, Pl. 2, fig. 3.
6. Grösste Breite des Blättchens 12–16 mm; seine Länge ist nicht feststellbar, sie betrug wahrscheinlich 50–80 mm. Lederartiges Blättchen von länglich-elliptischer Form. Blattgrund sich allmählich verschmälernd, zugespitzt, Spitze stumpf. Ausgesprochen ganzrandig. Hauptader stark, Seitennerven viel schwächer, in einem Winkel von 70–75° aus dem Hauptnerv auslaufend, einfach, seltener unmittelbar neben dem Hauptnerv gabelförmig verzweigend. Gabelförmige Verzweigungen kommen auch in der Nähe des Blättchenrandes vor. Die Seitennerven verlaufen in 1 mm Abstand voneinander entfernt parallel, sich leicht nach Oben neigend. Tertiärnervatur kommt nur schwach zum Vorschein.
1. **Chondrites bilinicus** ETTINGSHAUSEN, 1866 (Pl. XVIII, 2)
2. Holotype: BP. 59.1015.1.
3. Egerian, Menilitopale.

4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 5, Pl. 1, fig. 2.
6. Ch. fronde pinnatum ramosa, ramis linearibus aequilatis flexuosis furcatis alternis, ramulis divaricatis, abbreviatis, paullo arcuatis, apicibus obtusis.

1. **Lomariopsis bilinica** ETTINGSHAUSEN, 1866 (Pl. I, 3)
2. Holotype: BP. 55.2489.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 13, Pl. 3, fig. 13.
6. L. fronde pinnata, pinnis lineari-lanceolatis, remote et irregulariter denticulatis acuminatis, denticulis acutis; nervatione Taeniopteridis, nervo primario prominente, recto, excurrente, nervis secundariis sub angulis 70–80° orientibus simplicibus et furcatis, craspedodromis, 1–1,5 millim. inter se remotis.

1. **Osmunda palaeobanksiaeefolia** RÁSKY, 1964 (Pl. II, 1, 3)
2. Syntype: BP. 63.28.1, 63.29.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1964).—Annls hist.-nat. Mus. natn. hung. 56, p. 78, Pl. 7, figs. 10–11.
6. Fern frond fragments. The length of the elongated leaflet is 8 cm, width 0.8 cm. The apex is gradually and finely attenuate. The margin is coarsely toothed; the teeth gradually disappear toward the apex, and the margin becomes undulated. The other specimen is a fragment near the base of the frond; the teeth are blunt and larger on the margins. The length of the fragment is 2.5 cm, width 0.8 cm. The midrib of the pinnules is relatively thick, gradually tapering toward the apex. The lateral veins, arising on both sides from the midrib, are generally arranged into groups of three. The lower and the upper veins bifurcate and pass to the margins. The lower, bifurcating vein arises separately from the midrib, but the upper bifurcate vein originates, near the midrib, from the median and ramifying group. The number of veins of the median ramifying group varies between 6–8 in the lower and median sections of the pinnule, gradually decreasing and simplifying toward the apex, where the dentate margin also smooths out to become almost entire. The three major branches of the lateral veins extend, along the margin, from the small sinus above the teeth to the next sinus.

1. **Pteris budensis** ANDRÉÁNSZKY, 1949 (Pl. III, 1)
2. Holotype: BP. 83.269.1 (9072).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Budaújlak, Hungary.
5. ANDRÉÁNSZKY, G. (1949b).—Index Horti bot. Univ. bpest. 7, p. 4, fig. 9, Pl. 2.

6. Frons bipinnata (vel tripinnata); rhachis frondis (vel pinnae primariae) validus, ca. 1 1/2 mm latus, pinnae (vel pinnae secundariae) rhachi graciliore, 18–20 mm distantes, alternantes, in angulo ca. 70° exentes, usque ad basin pinnulis instructae; pinnulae ultimi ordinis oblongo-linearea, 9–11 mm longae, apice acutae vel obtusiusculae, margine dentato-crenulatae, basi liberae vel minimo tractu connatae. Nervo pinnulae mediano in angulo ca. 60° a rhachide pinnae (pinnae secundariae) exente, parum arcuato, apice pinnulae dichotomo; nervis secundariis circiter in medio furcatis, ramis in dente pinnulae terminantibus. Pinnula infima superior caeteris paulum longior.

1. **Pteris palaeoaurita** Kovács, 1957 (Pl. II, 4)
2. Holotype: BP. 83.273.1 (15350).
3. Miocene, Sarmatian.
4. Felsőtárkány, Hungary.
5. Kovács, É. (1957). Földtani közlöny 87 (4), p. 434, fig. 2.
6. Frons sterilis, bi- (vel tri-?) pinnata, pinnae primi (vel secundi?) ordinis 1.5–2 cm inter se distantes, 5.5–6 cm longae, lineali-lanceolatae, in parte inferiore usque ad rhachidem partitae, pinnulis in parte superiore confluentibus. Pinnulae infimae bene evolutae oblongae, apice paulum prorsum arcuatae, ibidem attenuato-rotundatae, 8–11 mm longae, basi 4–5 mm latae, marigie plerumque integerrimae, raro parum inaequaliter crenulatae (?). Sori ignoti. Nervus principalis pinnulae tenuis, nervos laterales utrinque 3–4, nervo principali aequales alternatim emittens, ad ramificatione infractus et sinuatus. Nervi laterales et apicales quoque semel dichotomi. In apice frondis (vel pinnae primi ordinis?) pinnae subito abbreviatae. Pinnae apicales pinnulis aequales sed angustiores et acutiores.

1. **Rhipidopteris palaeopeltata** ANDREÁNSZKY, 1952 (PL. I, 4)
2. Holotype: BP. 83.268.1 (9205).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Budaújlak, Hungary.
5. ANDREÁNSZKY, G. (1952).—Földtani közlöny 82 10–12), pp. 400–401, Pl. 21:8.
6. Pars folii sterilis adesi. Rh. peltatae valde similis. Frons repetitive in lacinias lineares dichotomice partita. Laciini 3/4 mm latis, in specimne 2 1/2–3 cm longis, apice omnibus emarginatis vel bipartitis uninerviis. Nervis infra bifurcationem laminae 6–7 mm dichotomis.

GYMNOSPERMS

1. **Araucaria hungarica** RÁSKY, 1943 (Pl. III, 3)
2. Holotype: BP. 61.18.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Csillaghegy, Hungary.

5. RÁSKY, K. (1943).—Földtani közlöny 73, pp. 524–525, Pl. 21, figs. 3–4.
6. Die Schuppe ist 1,7 cm lang und 1,5 cm breit, mit einer etwa 4 mm langen Spitz. Die Seitenwand der Schuppe ist gerippt; zu beiden Seiten der Mittellinie können je fünf Furchen gezählt werden, die parallel zum Schuppenrand verlaufen und von der Stelle der grössten Breite der Schuppe gegen ihre Spitze zu konvergieren. An der breitesten Stelle der Schuppe verbreitern sich die Furchen und besitzen dort auch ihre grösste Tiefe; gegen die Basis aber werden sie schmäler und an dieser Stelle können auch schmale Zwischenfurchen zweiter Ordnung beobachtet werden.
7. *Doliostrobus hungaricus* (Rásky) BŮŽEK, HOLÝ & KVAČEK; BŮŽEK, Č. HOLÝ, F. & KVAČEK, Ž. (1968).—Palaeontographica 123 (1–6), pp. 153–172.

1. ***Pinus palaeoponderosa*** CZIFFERY, 1961 (Pl. III, 4)
2. Syntype: BP. 83. 305.1.
3. Miocene, Badenian, tuff.
4. Hont, Bábahegy, Hungary.
5. CZIFFERY–SZILÁGYI, G. (1961).—Annls hist.-nat. Mus. natn. hung. 53, p. 44, figs. 5–6.
6. Conus ca. 12 cm longus et 7–8 cm diam., squamae ca. 18-seriales in apice valde incrassatae. Umbo rhomboidalis, supra parum rotundatus, in medio coni 18 mm latus et 12 mm altus, radiatim rugosus, in medio apophysem bene evolutum ferens. Apophysis basi rhomboidalis, ca. 4 × 2.5 mm metiens, verisimiliter valde prominens sed longitudine ignota.

1. ***Pinus tuzsoni*** Novák, 1950 (Pl. III, 2)
2. Holotype: BP. 83.257.1 (3298).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. NOVÁK, É. (1950).—Specimina orig. in collectione Instit. Bot. System Univ. Budapest, p. 49, Pl. 1.
6. Foliis ternis rigidis crassis, cca 25 cm longis, 1 1/4 mm latis, apice ignoto vaginis non distinctis. In stratis oligocaeni medii in monte Kiseged prope oppidum Eger atque ad oppidum Óbuda, ambis locis in Hungaria media.

ANGIOSPERMS

1. ***Acer andreánszkyi*** CZIFFERY, 1955 (Pl. IV, 1)
2. Holotype: BP. 56.1721.1 (E 681).
3. Miocene, Sarmatian, tuff.
4. Erdőbénye, Kővágó-oldal, Hungary.
5. CZIFFERY–SZILÁGYI, G. (1955).—Annls. Inst. geol. pub. hung. 44 (1), pp. 30–31, 163–164, fig. 6.

6. Folium in ambitu transverse ellipticum, longitudine duplo latius, trilobatum. Lobis valde divergentibus, medio late, lateralibus angustius ovato-triangularibus, cuspidatis, margine paullo undulato intergerimis, aequilongis, a basi folii usque ad apicem loborum ca. 6 cm metentibus. Longitudo laminis ita 6 cm, latitudo ignota, verisimiliter 12 cm. Sinus inter lobos obtusissimus. Nervis palmatis 3, validis, in lobos exeuntibus, lateralibus valde divaricatis; nervis 2 infimis, debilibus, margine inferiore paralellibus et post brevem tractus evanescentibus.

7. *Acer integrilobum* WEB.; RÜFFLE, L. (1963).—Paläont. Abh. I (3), p. 233.

1. *Acer báñhorvátense* ANDREÁNSZKY, 1955 (Pl. IV, 2)

2. Holotype: BP. 55.7.1 (17.949).

3. Miocene, Sarmatian, tuff.

4. Bánhorváti, Kővágó-tető. Hungary.

5. ANDREÁNSZKY, G. (1955).—Annls. Inst. Geol. pub. hung. 44 (1), p. 84, Pl. 26 : 8.

6. Folium in ambito elongato-ovovatum, basi late rotundatum et cuneatum, trilobatum, lobo medio lateralibus fere duplo longiore, totum ca. 8 cm lingum (apex in tractu ca. 8 mm deest). Locus medius oblongus, apice convexe attenuatus, im ambis lateralibus lobulo ca. 5 mm alto instuctus, praeterea parum crenato-serratus, basin versus in linea recta attenuatus, ibique 22 mm, superne cum lobulis 3 cm latus. Lobi laterales breves, conniventes, sinu perangusto a lobo medio separati, intus sub-crenato-serrati, extus lobulati, lobulis acuminatis. A basi folii usque ad apicem loborum lateralium distanca 5.2 cm, latitudo maxima laminae 4.7 cm. Nervus principalis medius rectus, laterales cum co basi angulum ca. 40° formantes, mox arcuato conniventes.

1. *Acer bicorne* ANDREÁNSZKY, 1963 (Pl. IV, 3)

2. Holotype: BP. 83.297.2 (7086).

3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy; Hungary.

5. ANDREÁNSZKY, G. (1963).—Annls hist.-nat. Mus. natn. hung. 55, p. 36, fig. 10.

1. *Acer connivens* ANDREÁNSZKY, 1959 (Pl. IV, 4)

2. Syntype: BP. 59.40.1 (20133).

3. Miocene, Sarmatian, andesitic tuff.

4. Bánhorváti, Verőbánya, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 160–161, fig. 190.

6. Folium in ambitu late obovatum, subprofunde trilobatum et trinervium ca. 7 cm longum et 8 cm latum, basi rotundato-cuneatum. Lamina insertionem nervum cum petiolo non attingens, basis folii solum nervis principalibus lateralibus formata. Lobi laterales in parte superiore conniventes, lobo medio fere aequilongo 6.7 cm in specimene altero 7.5 cm longi, lanceolati, extus usque ad medium subintegri, superne im ambis lateribus dentato-serrati, dentibus prorsumspectinatis, 1–2 mm altis, acuminatis. Locus medium ab insertione

cum petiolo 7 cm (10 cm) longum, lanceolatum, in parte superiore utrinque subbiserrato-dentatum, dentibus acutis. Nervi laterales cum nervo medio angulum acutum ($30-35^\circ$) formantes, postea conniventes, ramos in parte inferiore camptodromus, in parte superiore in dentes exeuntes emittentes.

1. **Acer crenatifolium** ETTINGSHAUSEN, 1869 (Pl. V, 1)
 2. Syntype: BP. 59.846.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. Kais. Akad. d. Wissensch. 29, p. 20, Pl. 45, figs. 1,4.
 6. A. foliis longe petiolatis, ambitu cordato-subrotundis, trilobis vel subquinquelobis, sinubus angulum acutum formantibus, lobis basi lata acuminatis, apice productis margine grosse crenatis; crenis approximatis, inaequalibus, nervis secundariis curvatis.

1. **Acer divaricatum** ANDREÁNSZKY, 1959 (Pl. V, 2)
 2. Holotype: BP. 83.276.1 (15545).
 3. Miocene, Sarmatian, rhyolitic tuff.
 4. Szelecsyi-völgy (between Nagyvisnyó and Dédestapolcsány), Hungary.
 5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 167, Pl. 52: 1,2.
 6. Folium profunde tri- vel subquinquelobum, trunervium, multo latior, quam longum, 7 cm longum et 10 cm latum, asymmetricum, in uno latere usque ad 1.5 cm a basi, in latere altero usque ad 2.5 cm a basi dissectum. Lobus medius obovatus, basin versus contractus, ibique solum 1.5 cm latus, in parte superiore in ambis lateribus lobulis ovalibus instructus, cum lobulis 3.3 cm latus, lobulis et verisimiliter apice ipso acuminatis. Lobi laterales in angulo aperto divergentes, lanceolati, ad basin extus lobulis ovalibus instructi, caeterum crenulati. Nervi lobuli basalis non a basi laminae, sed ca. 2 mm supra a nervo lobi lateralis exeuntes. Nervi laterales principales cum nervo medio angulum 50–55° formantes, lobuli basales divergentes. Sinus inter lobum medium et lateralem obtusum.

1. **Acer hungaricum** ANDREÁNSZKY, 1955 (Pl. V, 4)
 2. Holotype: BP. 83.284.1
 3. Upper Oligocene, Egerian, Eger Formation.
 4. Eger, Wind's brick-yard, Hungary.
 5. ANDREÁNSZKY, G. (1955b).—Annls. Inst. geol. pub. hung. 44 (1), pp. 200–201, Pl. 25, figs. 1,2.
 6. Folia numerosa adsunt. In ambitu ovali-lanceolata, breviter trilobata, lobis mediis perlongis, anguste lanceolatis, longe acuminatis, lobis lateralibus perbrevibus, vel obsoletis, anguste lanceolatis, longe acuminatis, rectis, velparum patentibus. Nervi primarii laterales cum nervo principali angulum acutum ($20-35^\circ$) formantes, basi parum arcuati, demum saepe patentes, in lobos

laterales exeentes. Nervus principalis supra nervos primarios laterales in spatiis valde inaequalibus utrinque ca. nervos 10 laterales emittens. Nervi laterales arcuati. Lamina basi rotundata, vel parum emarginata, margine ipsa basi excepta, inaequaliter grosse et acute serrato-dentata, dentibus patentibus, 1–3 mm altis. Specimen descriptum ca. 15 cm longum, ca. 6 cm latum, lobis lateralibus 1 cm tantum longis. Specimina altera minora sublobata, vel interga, ambitu anguste ovalilanceolata, ca. 8 cm longa et 2 1/2 cm lata.

1. **Acer latissimum** ANDREÁNSZKY, 1959 (Pl. VI, 1)
2. Holotype: BP. 59.40.1 (20133).
3. Miocene, Sarmatian, andesitic tuff.
4. Bánhorváti, Verőbánya, Hungary.
5. ANDREÁNSZKY, G. (1959).—Akadémiai Kiadó, Budapest, p. 161, fig. 191.
6. Folium latissimum, depresso-deltoideum, 11.5 cm latum, 8.5 cm longum, trilobatum basi emarginato-rotundatum. Lobi laterales convexe trianguli-lanceolati, margine, basi excepta, irregulariter et superficialiter dentato-repandi. Lobus medius late triangularis, depresso, margine repando-denticulatus, verisimiliter acutus. Nervatio palmata, nervis basalibus in numero 5. Nervi laterales infimi breves et versus marginem laminae evanescentes. Nervi laterales superiores in lobos laterales exeentes, parum extus arcuati, extus ramos nonnullos fortes arcuatos emittentes. Nervus medius cum nervis lateralibus superioribus angulum ca. 35° formans. Nervi secundarii e nervo medio in angulo magis aperto (ca. 50°) egredientes et in dentibus terminantes.

1. **Acer monooides** SHAP. var. **sályense** ANDREÁNSZKY, 1959 (Pl. VI, 2)
2. Syntype: BP. 60.1700.1 (23646).
3. Miocene, Sarmatian.
4. Sály, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 158, fig. 185.
6. Das Blatt ist fünflappig, die Lappen lanzettlich, der Blattgrund herzförmig, die untersten Seitenlappen kurz, ihre Spitze vom Blattgrund 2 cm entfernt, von der Bucht zwischen den Nachbarlappen nur 8 mm, mit dreieckiger Spitze. Gegen ihren Grund zu sind sie mit je einem groben Zahn bzw. Läppchen versehen, der rechteckig absteht. Die zwei inneren Seitenlappen sind länger, ihre Spitze vom Blattgrund 4.2 cm entfernt, lanzettlich, auf der Aussenseite mit je einem groben Zahn, sonst ganzrandig. Von der Bucht zwischen den Lappen zur Spitze dieser Lappen etwa 2 cm. Die Lappen sind am Grunde 7 mm breit. Der Mittellappen trägt auf beiden Seiten je ein Läppchen, sonst ist er ganzrandig, zugespitzt, vom Grunde des Blattes 5 cm lang. Der Mittellappen und die inneren Seitenlappen bilden einen Winkel 50°. Die Hauptnerven sind gerade, ganz bis zur Spitze der Lappen deutlich sichtbar, stärkere Seitenäste nur in die Seitenläppchen ausswendend. Übrige Aderung sehr fein, kamptodrom.

1. *Acer pseudodecipiens* ANDREÁNSZKY var. *serratum* ANDREÁNSZKY, 1959 (Pl. VI, 3)
2. Holotype: BP. 59.163.1 (23289).
3. Miocene, Sarmatian, andesitic tuff.
4. Bánhorváti, Verőbánya, Hungary.
5. ANDREÁNSZKY, G. (1959).—Akadémiai Kiadó, Budapest, p. 166, Pl. 50: 3, Pl. 51: 3.
6. Figure only.

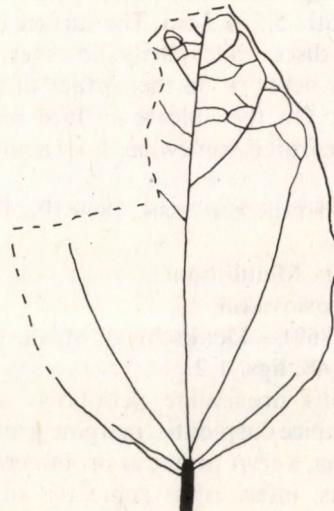
1. *Acer trachyticum* KOVÁTS, 1856 (Pl. V, 3)
2. Syntype: BP. 64.134.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. p. 32, Pl. 7, fig. 1.
6. A. foliis longe petiolatis, 5-lobis, lobis basalibus multo minoribus, omnibus acuminatis integerrimis sub angulo acuto divergentibus.
7. *Acer integrerrimum* (VIVIANI) MASSALANGO; BŮŽEK, Č. (1971).—Rozpravy Ú.ú.g. 36, p. 79.

1. *Actinorhytis eocaenica* (TUZSON) RÁSKY, 1956 (Pl. VII, 1)
2. Lectotype: BP. 56.145.1.
3. Upper Eocene, Buda Marl Formation.
4. Budapest, Mount Martinovics, Hungary.
5. RÁSKY, K. (1956).—Földtani közlöny 86 (2), p. 295, Pl. 42, figs. 1—5.
6. The fruit of the palm is big, spherical; some specimens are somewhat elliptic. Length: 5.5–3.5 cm, breadth: 5.5–4.5 cm. The surface of the endocarp is sulcate. The ridges are partly well discernible, partly, however, already ground off. They form an entirely irregular network on the surface of the endocarp and enclose areas of different forms. On the sulcate surface remains of fibres are also discernible. One end of the fruit is somewhat more acute, the other rather obtuse.

1. *Aesculus palaeocastanum* ETTINGSHAUSEN, 1869 (Pl. IX. 3)
2. Holotype: BP. 59.909.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 29, Pl. 48, figs. 1,2.
6. A. foliis digitatis, foliolis brevissime petiolatis, membranaceis oblonogobovatis, basi attenuatis apice cuspidatis, margine grosse vel duplicato-dentatis, nervatione craspedodroma, nervo primario prominente, nervis secundariis sub angulis 55–65° orientibus, inferioribus subrectis, superioribus arcuatis, ante marginem ramosis; nervis tertiaris tenuissimis, angulo acuto egredientibus, inter se conjunctis superioribus fere transversis.

1. **Agrostistachyophyllum tomharrisi** RÁSKY, 1966 (Pl. LIII, 1)
2. Generotype: BP. 65.26.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1966).—The Palaeobotanist 14(1–3), p. 264, Pl. 1, Fig. 1.
6. Leaf oblong-lanceolate. Apex missing. Measurable length 12.0 cm, maximum width 2.7 cm. Base narrowly decurrent. Margin finely serrate except at the base, with apically directed glandular teeth. Preserved petiole 3.0 mm. Midrib prominent, secondaries 14–15 pairs, subparallel, opposite below, becoming subopposite and alternate above, curved slightly upward. Subsecondaries branched on the under sides rarely. Intersecondaries diverging from the midrib not frequently. Tertiary venation connecting secondaries subvertically. Texture coriaceous.

1. **Aherniaephylloides kraeuseli** RÁSKY, 1960 (Pl. VII, 2, Fig. 1)
2. Holotype: BP. 60.34.2.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1960).—Senckenberg. Lethaea 41(1/6), pp. 427–428, Pl. 1, fig. 3.
6. Etwas längliche, ovale Blätter. Der Blattgrund ist etwas verbreitert oder abgerundet, die Spitze ziemlich unvermittelt zugespitzt. Die Länge der Blätter beträgt 8–9 cm; ihre Breite liegt bei 5 cm. Der Blattgrund ist ganzrandig; die Seitenränder sind gegen die Spitze hin mit locker gestellten, kaum hervortretenden, flachen Zähnen gesäumt. Am Blattgrund oder auf dem Stiele sind



*Fig. 1
Aherniaephylloides kraeuseli* RÁSKY, holotype: BP. 60.34.2

Abdrücke von Drüsen erkennbar. Vom Blattgrund gehen drei kräftigere und zwei dünnere Nerven aus. Das laterale, dünnere Nervenpaar faßt die basalen Sekundärnerven mit Schlingen ein. Weitere 2–3 Paar Sekundärnerven entspringen dem Hauptnerv alternierend oder gegenständig von der Mittellinie der Spreite aufwärts; sie sind camptodrom. Die Sekundärnerven sind miteinander durch im allgemeinen waagerechte, hier und da gebrochene, seltener auch sich verzweigende Tertiärnerven verbunden; zwischen diesen erscheint ein polygonales Nervennetz. Die Blattsbreite mag papierartig gewesen sein.

1. **Alangium hungaricum** ANDREÁNSZKY, 1963 (Pl. VII, 3)
 2. Holotype: BP. 83.254.1 (26356).
 3. Miocene, Sarmatian, tuff.
 4. Dédestapolcsány, Gulyadéllő, Hungary.
 5. ANDREÁNSZKY, G. (1963b).—Annls hist.-nat. Mus. natn. hung. 55, pp. 37–38, fig. 12.
 6. Folium petiolatum, petiolo ingnota longitudine, gracili. Lamina in magnitudine valde variabilis, holotypi 10 cm longa et 9 cm lata, in ambitu orbicularis, apice superficialiter trilobata, lobis acuminato-obtusis, usque ad 1 cm altis, sinibus inter lobos late rotundatis, basi superficialiter vel subprofunde cordata, sinu amplissimo, lobis rotundatis, margine integerrimo, symmetrica vel raro levissime asymmetrica. Nervatio palmata, nervis basilaribus 7–9 (in holotypo 9). Nervus medius arcuatusinus subvalidus, usque ad apicem folii conspicuus, supra medium ramosus, ramis suboppositis (in holotypo 4-paribus), in lobo medio terminans. Nervi basales laterales interiores etiam in lobis terminantes, cum nervo medio angulus 40–45° formantes, parum prorsum mox, apicem versus, extus arcuati, extus ramosi, ramis in holotypo utrinque 5–5, ad marginem folii arcus formantes et cum ramis vicinis anastomosantes. Nervi basales laterales exteriores prorsum arcuati et camptodromi, infimi subtilissimi et brevissimi. Nervatio tertiaria sublaxa, parallela ad nervos principales vel secundarios perpendicularis. Specimina minora apice integra, non lobata.
 7. **Firmina lobata** (UNGER) KNOBLOCH; KNOBLOCH, E. (1969): Tertiary Floren von Mähren, Brno, p. 111.
1. **Alchorneaephylum chandleri** RÁSKY, 1966 (Pl. LIII, 1)
 2. Generotype: BP. 65.28.1.
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Budapest-Óbuda, Hungary.
 5. RÁSKY, K. (1966).—The Palaeobotanist 14(1–3), pp. 264–265, Pl. 1, Fig. 3.
 6. Leaves obovate-oblong, slightly and gradually narrowed at the base. Base curved truncate or subrotundate. Apical portion of the leaf missing. Measurable length 13 cm, width 8.5 cm, broader above the middle. The preserved petiole very stout, length, 3.0 mm. Margin crenate-dentate, except near the base. Midrib stout, secondaries about 6–7 pairs, curved upward; two basal pairs of secondaries opposite, curved upward parallel to the lower lateral margin; other secondaries

diverging from the midrib alternate or subopposite, and curved towards leaf margin. Secondaries subcamptodrome and craspedodrome. From the two basal secondaries subsecondaries arising from the under side and curving upward in broad and regular subcamptodrome arches. Tertiaries percurrent and approximately transverse between the midrib and the secondaries. Irregular quadrate meshes between the tertiaries. Texture coriaceous.

1. **Alchorneaephillum grambasti** (RÁSKY) 1962 RÁSKY, 1965 (Pl. VII, 4)
2. Holotype: BP.65.17.1=65.18.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1965).—Annls hist.-nat. Mus. natn. hung. 57, p. 85–86, Pl. 6, figs. 19–20.
6. Leaf, lower portion with its counterpart, excellently showing characteristical dentation of margin. Besides strong and thick midrib and secondary veins, subsecondaries also robust arching from basal secondaries. Tertiary venation comprising of a series of approximately transverse veins between midrib and secondaries. Texture coriaceous.

1. **Aleuriteophyllum nemejci** RÁSKY, 1965 (Pl. VIII, 1)
2. Holotype: BP. 65.13.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1965).—Annls hist.-nat. Mus. natn. hung. 57, p. 83, Pl. 4, fig. 13.
6. An incomplete leaf specimen. When whole, shape of leaf might have been rhombo-ovate or triangular-ovate. Base slightly rotundate, petiole thick, remaining length 2–2.5 cm. Remaining margin of leaf entire, upper segment eventually 2–3-lobate and repando-dentate. Base with 3 midribs, these ribs almost of equal thickness. Lateral veins emitted from midrib at rather regular distances. Also pseudoprimarys emitting secondaries on both sides (which might imply that the upper portion of the leaf terminated here in a lobe). Tertiary venation of leaf not much visible. Texture probably coriaceous or subcoriaceous.

1. **Alnus laxinervia** ANDREÁNSZKY, 1959 (Pl. VIII, 2)
2. Holotype: BP. 60.1761.1 (21866).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 82, Pl. 19:5.
6. Folium anguste oblongo-lanceolatum, basi breviter cuneatum, petiolo ignoto, apice longius angustatum; maina 5 cm longa, in parte inferiore 2 cm lata, margine basi cuneata excepta, ubi integra, distanter er inaequaliter serrato-dentata, dentibus angustis et acutis. Nervus principalis rectus, usque ad apicem distinctus. Nervi laterales 7-pares, infimi in angulo 60°, supremi in angulo 35° egredientes, paulum arcuati et in dentibus majoribus terminantes.

1. *Alnus nigradensis* VARGA, 1955 (Pl. IX, 2)
2. Syntype: BP. 83.361.1
3. Miocene, Sarmatian, Sandstone.
4. Buják, sand-pit, Hungary.
5. VARGA, I. (1955).—Annls. Inst. geol. pub. hung. 44 (1), p. 39, p. 171, Pl. 9:4.
6. Folia permagna, ultra 11 cm longa et 8 cm lata, in ambitu late ovato-oblonga, basi late rotundata et anguste emarginata, apice breviter acuminata. Margine crenulato-dentata vel serrata et parum undulato-crenata. Nervus principalis validus subrectus, nervi secundarii in angulo 40–55° exeentes, parum arcuati et a margine 1–2 mm subito evanescentes, inter se 12–15 mm distantes, in numero utrinque ca. 8.

1. *Amygdalus tuzsoni* UDVARHÁZI, 1938 (Pl. LV, 2)
2. Paratype: BP. 84.203.2.
3. Miocene, Badenian, tuff.
4. Eger, Fertővölgy, Hungary.
5. UDVARHÁZI, J. (1938).—Földtani Közlöny 68 (7–9), p. 9, Fig. 1, fig. 7, Pl. 1. fig. 7.
6. Drupa coriacea cca. 3–3.4 cm longa, superficie rugosostriata, sutura longitudinali valde prominula, putamine cca. 0.5–0.6 cm crasso; foliis (indidem lectis, basi et apice parentibus) probabiliter 10/cm longis, nervis secundariis e nervo primario angulo cca. 40–42°, inter se spatio circiter 0.5 cm exorientibus, rectis. inter se parallelis in dentem parum prominulum desinentibus, marginibus foliorum parce et leviter dentatis.

1. *Anacolosa protofrutescens* RÁSKY, 1959 (Pl. VIII, 5)
2. Holotype: BP. 58.6.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959).—J. Paleont. 33 (3), p. 456, Pl. 69, fig. 3.
6. Oblong, entire-margined leaves. They have a short attenuated apex, the base being slightly decurrent. In the upper third the leaf expands only slightly. The length of the leaves is 15 cm., their width being 6 cm. The midvein is thick, tapering towards the apex. The secondary veins are relatively thin and curved. There are 6 to 7 pairs of secondaries starting alternately and not very regularly spaced 1.0–1.5–2.0 cm), from the midvein. The first pair of secondaries at the base of the leaf is short, running upwards almost parallel to the margin. From the third or fourth pair of secondaries on the veins run to the margin of the leaf, curving immediately before the margin almost in a right angle, and thereafter continuing alongside the margin to the apex. No other venation or reticulation is visible on the remnants.
7. *Laurophyllum heeri* (ETT.) NEMEJC & KNOBLOCH; HABLY, L. (1985).—Geol. Hung. ser. Pal. 45, p. 99.

1. **Andromeda acherontis** ETTINGHAUSEN, 1868 (Pl. IX, 4)
2. Syntype: BP. 59.856. I.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 49, Pl. 39, figs. 6—7.
6. A. floribus nutantibus racemosis, capsulis rotundo-ellipticis striatis, foliis petiolatis, rigide coriaceis, late lanceolatis, margine revolutis, integerim basi in petiolum sensim attenuatis, nervo primario firmo prominente excurrente, recto, nervis secundariis tenuissimis, angulo acuto exorientibus flexuosis ramosis, nervis tertiaris dictyodromis rete tenerimum formantibus.

1. **Antholithes araliaeformis** RÁSKY, 1959 (Pl. IX, 5)
2. Holotype: BP. 58.15.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959).—J. Paleont. 33 (3), p. 460, Pl. 70, fig. 10.
6. Impressions of flower and bud remains grouped in small spheroid clusters. The flower resembles berries, their diameter varying between 0.5 and 0.8 cm. The flowers are seated on the ends of more or less thick petioles. The petioles are rigid, their length being 1 or 2 cm, their width about 2 mm. Small impressions resembling petals are perceptible on the margins of the berry-like spheroid impressions, while other berries remind one of unblown buds. The spheroid heads occur one by one only. Nothing else may be inferred from the impressions. So far about 12 specimens of the flowers have been found.

1. **Araceites hungaricus** RÁSKY, 1964 (PL. IX, 1)
2. Syntype: BP. 63.923.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1964).—Annls hist.-nat. Mus. natn. hung. 56, pp. 70–71, Pl. 9 : 5.
6. A cylindrical spadix fragment. The measurable length of the incomplete spadix impression is 2.5 cm, width 1.2 cm. The spadix shows 3–4 mm wide, 1–2 mm high, apparently hexagonal impressions, with an oval or angular protuberance in their middle on the negative side. The cicatrices of the fruits (or flowers?) are situated in spiral rows beside each other on the spadix. Aside of the spadix-impression, one might almost discern the weak outlines of a part of the spathe. Neither from the measurements of the spadix fragment nor from the uncertain spathe remains could one infer their original, that is, actual dimensions. There were found some other cylindrical, but compressed spadix fragments, too. The longest impression is 4 cm, their width between 1.2–1.8 cm, according to the rate of compression. The inner of these spadix fragments is filled with the materials of the volcanic tuff, their surface displaying polygonal or rhombic patterns. Some spadix remains exhibit also a short constriction, assumably indicating the border of the pistillate

and staminate flowers. Neither the apex nor the base of the spadix remains were left whole. There is no sign of woody structure.

7. *Pinus* sp. — in this work.

1. ***Arbutus praeunedo*** ANDREÁNSZKY, 1962 (Pl. VIII, 4)

2. Holotype: BP. 83.266.1 (3291).

3. Upper Oligocene, Egerian, Eger Formation.

4. Eger, Wind's brick-yard, Hungary.

5. ANDREÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 235–236, fig. 10.

6. Folium petiolatum, petiolo 1 cm longo, valido, lamina oblanceolata, 8 cm longa, supra medium 2,7 cm lata, basi cuneata, apice acuminata, margine crenulato-serrata. Nervus principalis validus, nervi secundarii debiles, ca. 12-pares, in spatiis inaequalibus et in angulo ca. 50° exeuntes, subrecti, parum sinuosi, marginem laminae versus ramosi, ramis partim cum ramis nervi vicini anastomosantes, partim in dentibus terminantes. Nervatio tertiaria retem irregularem formans.

1. ***Aristolochia nigrádensis*** ANDREÁNSZKY, 1959 (Pl. X, 1)

2. Holotype: Szécsény 59.425.1.

3. Miocene, Upper Badenian, Fertőrákos Lajta Limestone Formation.

4. Nógrádzakál, Páris valley, Hungary.

5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 67, Pl. 14 : 3.

6. Folium petiolatum, lamina in ambitu triangularis, basi late cordata, lobis basilaribus rotundatis, apice longe acuminata, 3,2 cm longa, basi 2,8 cm lata, margine suundulata, caeterum integra. Nervatio palmata, nervis primariis quinis, nervus medius rectus, par interior paulo supra basin laminae ortum, arcuatum et camptodromum, par exterius extus valde ramosum, ramis captodromis. Nervus medius in parte superiore nervos in angulo acuto egredientes, arcuatos et apicem laminae petentes emittens. Nervatio tertiaria nervos validiores conjungens, ad marginem laminae arcos formans.

1. ***Aroites tállyanus*** KOVÁTS, 1856 (Pl. VIII, 3)

2. Holotype: BP. 58.364.1.

3. Miocene, Sarmatian, diatomite.

4. Tállya, Hungary.

5. KOVÁTS, J. (1856b). — Arb. geol. Ges. Ung. pp. 48–49, Pl. 1, fig. 1, 1a.

6. Spadice areis circ. 1.5 millm. in diametro metientibus tecto, marginibus arearum elevatis.

1. ***Aronia prisca*** ETTINGSHAUSEN, 1869 (Pl. X, 3)

2. Syntype: BP. 59.961.1.

3. Upper Oligocene, Egerian, Menilitopale.

4. Žichov (Schihow), Czechoslovakia.

5. ETTINGHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 54, Pl. 53, figs. 18–19, Pl. 54, fig. 8.
 6. A. foliis coriaceis breviter petiolatis, subrotundis, obtusis, serratis, tomentosis (?), nervatione craspedodroma, nervo primario recto, prominente excurrente, nervis secundariis curvatis, utrinque 5–6, superioribus et mediis sub angulis acutis, inferioribus sub angulo recto excurrentibus, nervis tertiaris tenuibus, distyodromis.
1. **Baliospermophyllum kraeuseli** RÁSKY, 1966 (Pl. LIV, 1; Pl. LIII, 2)
2. Generotype: BP. 65.30.1, 65.31.1.
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Budapest–Óbuda, Hungary.
 5. RÁSKY, K. (1966). — The Palaeobotanist 14 (1–3), p. 266, Pl. 2, figs. 4–5.
 6. Leaves oblong-elliptoidal to broadly-oblong. About 13.5 cm in length by 7.0 cm in maximum width. Narrowed below and terminating in a curved truncate or scutate base. Tip of the apical portion of the leaf missing, but on the counterpart apiculate. Margin coarsely crenatodentate except near the base. Venation pinnate, but 3-nerved at the scutate base. Midrib stout especially below. Secondaries irregularly spaced and disposed, subparallel, ascending, 6 to 7 on each side, alternate. The lowest pair of secondaries thinner and opposite, curved upward parallel to the lower lateral margins. Subsecondaries branching from the outer side of the secondaries, becoming subcamptodrome and craspedodrome and terminating in one of the marginal dentations. Tertiary venation thin and comprising series of approximately transverse veins between the midrib, secondaries and subsecondaries, forked and anastomosing, their enclosed areas interwoven by very fine reticulation. Texture coriaceous.
1. **Baloghia miocenica** ETTINGHAUSEN, 1869 (Pl. X, 4)
2. Holotype: BP. 55.2340.1.
 3. Middle Oligocene, “Polirschiefer”.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 45, Pl. 50, fig. 22.
 6. B. foliis coriaceis, lanceolato-oblongis, integerrimis, basi angustatis apice acutis nervatione brochidodroma, nervo primario valido, recto, excurrente, apice prominente, nervis secundariis tenuibus sub angulis 55–65° orientibus, rectis, approximatis apice furcatis, ramis angulo acuto divaricatis, laqueos formantibus.
 7. *Baloghiaphyllum miocenicum* (ETT.) RÁSKY, 1962 (Pl. XI, 2)
Neotype: Bp. 62.62.1.
Lower Oligocene, Kiscellian, Tard Clay Formation.
Budapest–Óbuda, Nagybátony–Újlak brick-yard, Hungary.
RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 32–33, Pl. 1, fig. 1.
Obovate leaves. Length of leaf lamina 10 cm, width 5.0 cm. Leaf entire. Apex mucronate. Leaf gradually tapering but not elongated towards base. Remains of

petiole 0.8 cm long, rather thick. Thick midrib gradually attenuate towards apex. 14–16 lateral veins on both sides of midrib, almost at right angles to it. Lateral veins relatively thick, forking before reaching leaf margin. Furcate secondary veins connected by angular (and not semicircular) arches in front of leaf margin. Wide areas within forkings connected up to secondary veins with further angular loops. Among secondary veins, also other ones originate from midrib, parallel with, but thinner than, laterals. In general, they divide horizontally areas delimited by two secondaries, they fuse into angular loops. Intermediate space between secondary veins interwoven with horizontally elongated large-meshed venation, enclosing also another, polygonal reticulation of smaller interstices. Leaf coriaceous.

1. **Bambusium trachyticum** KOVÁTS, 1856 (Pl. XI, 1)
 2. Holotype: BP. 62.35.1 = 62.36.1.
 3. Miocene, Sarmatian, bluish-grey clay.
 4. Erdőbénye, Barnamáj, Hungary.
 5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. p. 16, Pl. 2, fig. 10.
 6. B. caule circ. 2 centm. lato striato, striis parum conspicuis internodiis modice incrassatis remotis.
 7. *Phragmites oeningensis* AL. BRAUN; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren, Brno, p. 145.
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1. **Belangeria obtusifolia** ETTINGSHAUSEN, 1869 (Pl. X, 2)
 2. Holotype: BP. 59.1062.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 8, Pl. 40, fig. 29.
 6. B. foliis pinnatis, foliolis oblongis, basi inaequalibus, apice rotundato-obtusis, margine dentatis, nervatione camptodroma, nervo primario valido prominente, apicem versus valde attenuato excurrente, nervis secundariis sub angulis 65–75° orientibus, prominentibus, superioribus marginem adscendentibus, nervis externis instructis, nervis tertiaris angulis subacutis egreditibus, flexuosis ramosisque, inter se conjunctis, rete evidenter conspicuo, maculis minimis subrotundis.
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1. **Betula acutangula** ANDREÁNSZKY, 1959 (Pl. XI, 3)
 2. Syntype: BP. 59.22.1 (21827).
 3. Miocene, Sarmatian.
 4. Sály, Hungary.
 5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 77, fig. 40, Pl. 17 : 4, 5.
 6. Folium cuneato-obovatum, vel cuneato-ellipticum, 3,6–5,2 cm longum, in parte superiore 2,2–3,6 cm latum basi cuneatum, apice obtusum vel rotundatum,

petiolo 1,2 cm longo, margine basin versus integrum, superne irregulariter duplicato serratodentatum, dentibus brevibus, triangularibus subacutis. Nervus principalis validus, rectus, nervi lateralis in angulo peracuto (30–35°) egredientes, inferiores suboppositi, omnes recti, craspedodromi, 6–7-pares. Nervatio tertiaria subtilissima, laminam in areolas polygonas minutus dividens.

1. **Betula quadrinervia** ANDRÉÁNSZKY, 1959 (Pl. XII, 4)
2. Holotype: BP. 59.27.2 (23779).
3. Miocene, Sarmatian.
4. Sály, Hungary.
5. ANDRÉÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 78–79, fig. 44.
6. Folium petiolatum, longitudo petioli ignota. Lamina rotundato-elliptica basi parum asymmetrica, cuneata, apice subacuta, margine simpliciter et subaequaliter dentata, dentibus late triangularibus, basi ca. 1,5 mm latis, 0,5 mm altis, obtusis vel acuminatis, margine in quarta parta inferiore integro. Lamina 2,3 cm longa, 2,1 cm lata. Nervus principalis basi validus, apicem versus valde attenuatus, sed distinctus, leviter sigmoideus. Nervi laterales 4-pares, alternantes, in angulo ca. 50° exeuntes, simplices, apicem versus extus paulum ramosi, ramis in dentes exeuntibus. Nervatio tertiaria distincta, creberrima.

1. **Betula triangularis** ANDRÉÁNSZKY, 1959 (Pl. XI, 4)
2. Holotype: BP. 59.292.1 (21717).
3. Miocene, Sarmatian.
4. Sály, Hungary.
5. ANDRÉÁNSZKY, G. (1959B).—Akadémiai Kiadó, Budapest, p. 77, Pl. 16 : 3.
6. Folium rotundato-triangulare, ca. 5 cm longum, 4,2 cm latum, basi abscicum, apice ignotum, verisimiliter acutum vel breviter acuminatum duplicato-serrato-denticulatum, dentibus crebris, obtusis, in parte basali folii irregulariter et acute serratum. Petiolus deest. Nervus principalis in parte inferiore crassus, apicem versus cito attenuatus, parum incurvus. Nervi laterales in uno latere 8, in altero 9, infimi in angulo recto, caeteri in angulo minus aperto, superiores in angulo ca. 45° exeuntes, subrecti, paulum prorsum arcuati, in dentibus principalibus terminantes, distinctissimi, simplices, solum hinc inde ramosi. Nervatio tertiaria indistincta.

1. **Bumelia bohemica** ETTINGSHAUSEN, 1868 (Pl. XII, 1)
2. Holotype: BP. 55.2472.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 44, Pl. 38, fig. 7.
6. B. foliis submembranaceis longe petiolatis, obovato-oblongis, basi acutis, integerrimis, nervatione dictyodroma, nervo primario debili, recto, nervis

secundariis tenuissimis sub angulis 30–40° orientibus, abbreviatis, in rete tenerrimo dissolutis; maculis ellipticis.

1. **Callicoma bohemica** ETTINGHAUSEN, 1869 (Pl. XII, 5)
2. Holotype: BP. 55.2377.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 5, Pl. 40, fig. 23.
6. C. foliis petiolatis coriaceis, lanceolatis, basi angustatis, margine serratis, nervatione craspedodroma, nervo primario valido, nervis secundariis angulo subrecto egredientibus, crebis, arcuatis, nervis tertiaris angulis acutis exeuntibus, inter se conjunctis, maculis tetragonis.

1. **Callicoma egedensis** ANDREÁNSZKY & NOVÁK, 1957 (Pl. XIII, 1)
2. Holotype: BP. 83.256.1 (5181).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G.–NOVÁK, É. (1957).—Annls hist.-nat. Mus. natn. hung. 8, p. 46, Pl. 2 : 3.
6. Folium (breviter ?) petiolatum, linear-lanceolatum, basi cuneatum, apice acuminatum, 9,3 cm longum, 2 cm latum, margine acutissime simpliciter serratum, dentibus breviter cuspidatis, valde prorsum spectantibus, 1,5–2 mm altis, 3–8 mm inter se distantibus. Nervus principalis validus, rectus, nervi secundarii in numero utrinque 17–17, in angulo ca. 45° exeentes, craspedodromi, in dentibus terminantes.

1. **Callistemophyllum hungaricum** CZIFFERY, 1955 (Pl. XII, 3)
2. Holotype: BP. 54.1549.2.
3. Miocene, Sarmatian, tuff.
4. Erdőbénye, Kővágó-oldal, Hungary.
5. CZIFFERY–SZILÁGYI, G. (1955).—Annls. Inst. geol. pub. hung. 44 (1), p. 29, p. 163, fig. 5.
6. Folium unicum adest, 7,5–8 cm longum, in medio 7,5 mm latum, anguste lineare in ambis extremitatibus sensim angustatum, basi et apice ignotis, margine integerrimum et crasse revolutum. Nervo principali recto et valido, nervis secundariis debilibus, in spatiis variis egredientibus, mox prorsum arcuatis, juxta marginem in nervum marginalem anastomosantibus. Folium eo generis Callistemon simillimum.

1. **Canotia tallyana** RÁSKY, 1958 (Pl. XV, 1)
2. Holotype: BP. 58.5.1.
3. Miocene, Sarmatian, diatomite.
4. Tállya, Hungary.

5. RÁSKY, K. (1958).—Paläont. Z. 32 (3–4), p. 183, Pl. 1, fig. 9.
6. Geflügelter Samen; fast eiförmig, 14 mm lang, 5 mm breit, mit nach unten gewandtem, dreieckigem Flügel, dieser längsaderig. Samen- und Flügellänge fast gleich.
1. **Carpinus heerii** ETTINGHAUSEN, 1866 (Pl. XVI, 1)
2. Syntype: BP. 59.948.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 48, Pl. 15, figs. 10, 11.
6. C. foliis ellipticis, ovato-ellipticis et ovato-lanceolatis, argute duplicato-serratis, nervatione craspedodroma, nervo primario distincto, recto, excurrente, nervis secundariis 12–20, strictis, parallelis, infimis paucis nervis externis instructis; nervis tertiaris numerosis, segmenta angusta formantibus.
1. **Carpinus neilreichii** KOVÁTS, 1856 (Pl. XIII, 2, 4)
2. Syntype: BP. 64.128.1 = 64.129.1; 64.125.1 = 64.126.1.
3. Miocene, Sarmatian, bluish-gray clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. pp. 23–24, Pl. 4, fig. 1–4.
6. C. involucro fructifero ovato, inaequaliter serrato, subangulato, indiviso, nervis majoribus sub. 7 validis e puncto baseos radiatim ortis, nervis secundariis transversim reticulatis, nucula ovata. Longit. 1,5–2,5 centim., latit. 1–1,5 centim.; nucul. circ. 4 millim. Foliis ovato-oblongis acutis, membranaceis acute serrulatis, nervis secundariis sub angulo 40–50° ortis simplicibus rectis in marginem exeuntibus. Longit. circ. 4 cent., latit. 2 centm.
1. **Carpolithus alchorneaeformis** RÁSKY, 1966 (Pl. LV, 3)
2. Holotype: BP. 63.1026.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1966).—The Palaeobotanist 14 (1–3), p. 267, Pl. 2, Fig. 7.
6. Fruit elliptic in outline, 11 mm in length by 8.0 mm in maximum width midway between the apex and the base. Apex cuspidate. Measurable and curved peduncle 8.0 mm in length. Fruit-lobes longitudinally grooved. Texture apparently coriaceous.
1. **Carpolithus combretaceoides** RÁSKY, 1960 (Pl. XIII, 5)
2. Holotype: BP. 60.55.2.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1960).—Senckenberg. leth. 41 (1/6), pp. 435–437, Pl. 2, fig. 9.
6. 1 cm hohe, 1,3 cm breite Flügelfrucht, die sich durch einen etwas dunkleren

Mittelteil und vier oder fünf ausgebreitete, ganzrandige, aufeinander gepresste Flügel auszeichnet. Auf den Flügeln ist eine waagerechte Nervatur sichtbar. Der Rest eines 3 mm langen, verhältnismässig dicken Stieles ist vorhanden.

1. **Carya bartkoi** HABLY, 1985 (Pl. LVIII, 1)
2. Holotype: BP. 82.247.1.
3. Lower Miocene, Ottnangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. HABLY, L. (1985).—Geol. Hung. ser. Pal. 44–46, p. 149, Pl. XXVIII. Fig. 6; Pl. XXIX, Fig. 4; Pl. XXXVI, Fig. 1.
6. Leaflets markedly elongated obovate. The greatest length of the lamina is in the upper quarter. The length of the leaves varies between 3.5 and 9.6 cm, their breadth ranging from 1.6 to 3.9 cm. The small-sized leaflets are less numerous. The length of about 9 cm, and breadth of about 3 cm, are more general. The majority of the leaves being of this size. The lamina tapers more markedly towards the base than towards the apex. The apex rises abruptly, cuneate, base markedly attenuate, acute. Lamina more or less symmetrical, base slightly asymmetrical. Leaf margin toothed. Teeth markedly larger near the apex than near the base. Apex of the teeth acute, their apical side concave or straight, basal side mostly concave and, occasionally, convex. Distance between teeth not wholly regular, sinuses between them generally rounded. Teeth make obtuse angles. In the basal part of the leaf, teeth very weakly developed; prickle- or splintlike projections. Venation camptodromous. Distance between secondary veins largest in the median section: 1.0–1.1 cm. From the arched curves of the secondary veins, small vein-section branch off to the teeth. From the midvein arise also hardly visible intermediate veins, between the secondary veins. The tertiary vein network runs at a right angle to the secondary veins. Several remains fossilized near each other, are positioned in such an angle, that it is apparent, that they are the leaflets of a compound leaf. This is indicated also by the asymmetry of the base.

1. **Carya falcata** ANDREÁNSZKY, 1956 (Pl. XIII, 3; Pl. XIV, 4)
2. Syntype: BP. 83.261.2; 83.259.1.
3. Upper oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDREÁNSZKY, G. (1956).—Annls hist.-nat. Mus. natn. hung. 7, pp. 221–222, Pl. 2 : 3, 4.
6. Folium sessile (?), in dimensione valde variabile, 8–16 cm longum, 2,2–4,2 cm latum, linearis-lanceolatum, valde falcato-arcuatum, basi verisimiliter rotundatum, apice longe angustatum, margine serrato-denticulatum, dentibus creberrimis, vel distantibus, acutissimis vel obtusiusculis. Nervus principalis arcuatus, usque ad apicem folioli validus. Nervi secundarii sat numerosi, 3–6 mm inter se distantes, in angulo fere recto exeuntes, camptodromi. Foliolum eis speciei *C. olivaeformis* Nutt. simillimum.

1. **Carya sepulta** KOVÁTS, 1856 (Pl. XIV, 2)
 2. Holotype: BP. 64.109.1.
 3. Miocene, Sarmatian, bluish-grey clay.
 4. Erdőbénye, Barnamáj, Hungary.
 5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. p. 33, Pl. 7, Fig. 6.
 6. C. foliis pinnatis, foliolis sessilibus, lanceolatis, argute serrulatis, basi inaequalibus, nervo primario validiusculo, secundariis sub angulis 60–70° ortis, ramosis. Longit. circ. 4 centm., latit. circ. 12 centm.
-
1. **Caseariaephllum kraeuseli** RÁSKY, 1960 (Pl. XV, 3; Fig. 2)
 2. Holotype: BP. 60.40.1. = 60.41.1.
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Budapest-Óbuda, Nagybáttony-Újlak brick-yard, Hungary.
 5. RÁSKY, K. (1960).—Senckenberg. leth. 41 (1/6), pp. 429–430, Pl. 2, figs. 5–8.
 6. Oval-längliche Blätter, deren Blattgrund verbreitert ist und nur geringe Asymmetrie zeigt. Die Blattsbreite ist vom Blattgrund bis zur Mittellinie gleichförmig breit; dann verschmälert sie sich und endet in einer kurzen Spitze. Das äusserste Ende der Spitze erscheint etwas stumpf und ist vermutlich abgebrochen. Die messbare Länge des Blattes beträgt 11 cm, seine Breite in der Nähe des Grundes 5,5 cm, in der Nähe der Spitze 2,5 cm, unmittelbar an der Basis der Spitze nur noch 1,0 cm. Der Blattrand ist unregelmässig und etwas stumpf gezähnt, in der Nähe der Spitze jedoch hier und da gekerbt. Der Hauptnerv ist

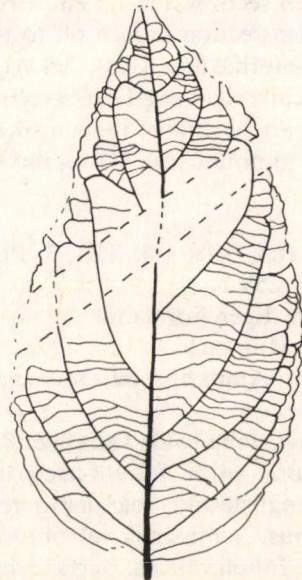


Fig. 2
Caseariaephllum kraeuseli RÁSKY, holotype: BP. 60.40.1

kräftig, wird zum Blattgrund hin dicker und endet in einem 4 mm langen, dicken Stielrest. Dem Hauptnerv entspringen alternierend in unregelmässigen Abständen 6–8 Paar Seitennerven, deren Abstand zwischen 0,5–2,5 cm liegt. Die Sekundärnerven sind in der Nähe des Blattgrundes dichter und bogenläufig und sind mehr auf den Rand der Spreite zu gerichtet. Die beiden unteren Seitennervenpaare entspringen in gegenständiger Anordnung dem Hauptnerv. Der Winkel zwischen den Seitennerven und dem Hauptnerv ist auf dem Blattgrund grösser als 50° und wird zur Mitte der Blattsbreite hin spitzer. Die anderen Sekundärnerven sind alle nach oben gerichtet, bogenläufig und vor dem Blattrand durch allmählich kleiner werdende Schlingen miteinander verbunden. Die Sekundärnerven verlaufen nicht immer parallel zueinander. In die Zähne laufen kleine, von den Schlingen ausgehende Nerven. Die Sekundärnerven sind untereinander durch parallel verlaufende, gewöhnlich gebrochene, seltener auch gabelig verzweigte Tertiärnerven verbunden. Die Tertiärnerven sind waagerecht; zwischen ihnen erscheint ein engmaschiges, feines Nervennetz. Die Blätter sind papierartig. An den *Caseariaeophyllum*-Blättern haben wir keine organische Substanz gefunden; deshalb waren die für die Blätter der meisten *Casearia*-Arten bezeichnenden Harzdrüsen nicht feststellbar.

1. **Cassia weinmanniaeefolia** KOVÁTS, 1856 (Pl. XIII, 6)

2. Holotype: BP. 54.1862.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. p. 34, Pl. 7, Fig. 9.
6. C. foliis impari-pinnatis petiolo communi parum dilatato, foliolis parvis sessilibus obovatis, integerrimis, nervo primario solo conspicuo. Longit. foliol. circ. 6 millm., latit. circ. 3 millm.

1. **Castanea kubinyii** KOVÁTS, 1856 (Pl. XIV, 1)

2. Syntype: BP. 64.98.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a).—Arb. geol. Ges. Ung. p. 25, Pl. 3, fig. 2.
6. C. foliis lanceolatis s. lanceolato-oblongis acutis vel acuminatis membranaceis, basi subrotunda vel parum angustata petiolatis dentatis, inter dentes parum sinuatis, dentibus subtriangularibus acutis elongatis spinescentibus, nervo primario valido, nervis secundariis sub angulo $40\text{--}50^{\circ}$ ortis, rectis simplicibus, nervis tertiaris transversis ad secundarios perpendicularibus, rete tenuissimum formantibus. Longit. 0,5–2 decim., latit 2–5 centm.
7. *Quercus kubinyii* (Kov.) Czecz.; Czeczott, H. (1951).—Acta Geol. Polon. 2, p. 390, fig. 7.

1. **Castanea latissima** ANDREÁNSZKY, 1959 (Pl. XV, 2)

2. Holotype: BP. 59.201.1 (22918).

3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, pp. 98–99, Fig. 84, Pl. 25 : 5.
6. Folium ellipticum, 8,5 cm longum, 5,4 cm latum, apice breviter contractum, obtusum, basi verisimiliter (basis ipsa deest) late cuneatum margine simpliciter dentatum, dentibus cuspidatis et in setam ca. 1 mm longam valde prorsum arcuatam productis. Sinus inter dentes superficialis, subplanus. Nervus principalis validus, nervi laterales creberrimi, validi, 14-pares, unus inter eos dichotomus, omnes alteri simplices, inferiores in angulo subrecto, superiores in angulo ca. 70° exeentes, infimos exceptos prorsum arcuati, omnes in dentes exeentes. Nervatio tertaria creberrima, parallela, nervos laterales conjungens et ad eos perpendicularis.

1. **Catalpa czifferyi** ANDRÉÁNSZKY, 1959 (Pl. XIV, 3)

2. Holotype: BP. 59.35.2 (23840).

3. Miocene, Sarmatian.

4. Sály, Hungary.

5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 179, fig. 228.
6. Folium cordatum, palmatinervium. Petiolus deest. Lamina 9 cm longa, in parte 4/5 inferiore 8 cm lata, basi leviter cordata, apice verisimiliter breviter acuminata, margine integerrima. Nervus principalis basi validus, usque ad apicem distictus. Nervus laterales basales arcuati et usque fere ad dimidium laminae protracti, ibique arcum formantes et anastomosantes, extus ramos nonnullos arcuatos ferentes. Nervi laterales supra basin e nervo principali egredientes, basilaribus paralleli, arcuati, camptodromi. Nervato tertaria distincta, ad nervos laterales perpendicularis, nervillis inter se 3 mm distantibus constructa.

1. **Cedrela macrophylla** ANDRÉÁNSZKY, 1955 (Pl. XVI, 2)

2. Syntype: BP. 54.1511.1.

3. Upper Oligocene, Egerian, Eger Formation.

4. Eger, Wind's brick-yard, Hungary.

5. ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 7, pp. 44–45, fig. 5.

6. Foliolum permagnum, 19 cm longum et 4,5 cm latum (in speciminibus incompletis usque ad 6 cm latum), late lineare, leviter falciforme, apicem versus sensim angustatum et subacutum, basi oblique truncatum vel leviter cordatum, brevissime petiolulatum, undique integerrimum. Nervus principalis validus, nervi secundarii in angulo aperto (75–85°) orti, subrecti, marginem laminae versus prorsum arcuati et camptodromi, inter se haud distantes (5–8 mm), in numero utrinque ca. 30, alternantes. Nervi tertiarrii in angulo recto a nervis secundarris exeentes, nervis subtilissimis inter se conjuncti.

1. **Celastrophylum maytenoides** Kovács, 1957 (Pl. XVII, 1)
2. Holotype: BP. 55.1104.1.
3. Miocene, Sarmatian, tuff.
4. Nagybarca, Hungary.
5. Kovács, É. (1957).—Földtani Közlöny 87, (4) p. 443, fig. 10.
6. Folium 8 cm longum et 3,5 cm latum, ellipticum, basi leviter assymmetricum, margine minute serrato-dentatum, dentibus distantibus et obtusis. Nervus principalis basi pervalidus, apicem versus sensim attenuatus, nervos secundarios utrinque 10-10 emittens. Nervi secundarii in angulo acuto egredientes, sed subito parum patentes et cum nervo principali angulum 45-50° formantes, marginem versus prorsum arcuati, incerti, camptodromi. Nervatio tertaria inaequaliter reticulata, nervillis directionem semper variantibus. Nervatio eae familiae Celastraceae simillimum, folium margine serrato excepto folium speciei recentis *Maytenus grandiflora* Reuss. aemulans.

1. **Celastrophylum mimusops** ETTINGSHAUSEN, 1869 (Pl. XVI, 3)
2. Holotype: BP. 55.2486.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 36, Pl. 49, figs. 2, 2b.
6. C. foliis rigide coriaceis, obovato-cuneatis, integerrimis, nervo primario valido, prominente, nervis secundariis tenuibus, angulo acuto exorientibus, flexuosis ramosis dictyodromis, nervis tertiaris densis, abbreviates dictyodromis, rete evidenter conspicuo.

1. **Celastrus microtropoides** ETTINGSHAUSEN, 1869 (Pl. XVI, 4)
2. Holotype: BP. 55.2419.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 34, Pl. 48, fig. 19.
6. C. foliis petiolatis coriaceis late lanceolatis, utrinque attenuatis, remote denticulatis, nervatione camptodroma, nervo primario valido recto, excurrente, nervis secundariis distinctis sub angulis 40-50° egredientibus, remotis inter se conjunctis, nervis tertiaris tenuissimis transversis.

1. **Celtis vulcanica** KovÁTS, 1856 (Pl. XVII, 2)
2. Holotype: BP. 58.350.1.
3. Miocene, Sarmatian, diatomite.
4. Tályha, Hungary.
5. KovÁTS, J. (1856b).—Arb. geol. Ges. Ung. pp. 49-50, Pl. 1, fig. 9.
6. C. foliis ovatis grosse serrato-dentatis, basi valde inaequalibus, nervo primario valido, secundarriis paucis sub ang. 35-45° ortis, arcuatim ascendentibus apice

anastomosantibus, nervo secundario infimo basilari e parte versus marginem inferiorem ramos validiores sub angulis rectis et obtusis ortos arcuatim ascendentibus emittente, nervis tertiaris rete laxum constituentibus. Longit. circ. 7 centm., latit. 3,5 centm.

1. **Centroplacophyllum palaeoglaucinum** RÁSKY, 1965 (Pl. XVIII, 1)
 2. Holotype: BP. 65.2.1.
 2. Paratype: BP. 65.1.1.
 3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
 4. Ipolytarnóc, Hungary.
 5. RÁSKY, K. (1965).—Annls hist.-nat. Mus. natn. hung. 57, pp. 81–82, Pl. 1, figs. 1–2; Pl. 2, fig. 6; Pl. 3, fig. 7.
 6. Leaves oboval-oblong, or oblong-oval, apex acuminate, base shortly cuneate or subrotundate. Length 8–14 cm, greatest width between 4.5–7.0 cm. Margin entire, locally slightly undulating or remotely crenate near apex. Petiole, if conserved, 5–6 mm long. Midrib prominent, incrassate toward base, slightly arcuate. Number of secondary veins 5–6 pairs, ascendent, arcuate, camptodrome, initially extending along midrib, domatia present in their axils. Secondary veins opposite at base, upward alternating. Also thinner intersecondaries arising from midrib. Tertiary veins rather few on impressions. Texture coriaceous.
 7. *Laurophyllum heeri* (ETT.) NEMEJC & KNOBLOCH; HABLY, L. (1985).—Geol. Hung. ser. Pal. 45, p. 99.
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1. **Ceratopetalum articulatum** ANDREÁNSZKY & Novák, 1957 (Pl. XIX, 2; Fig. 3)
 2. Holotype: BP. 83.302.1 (10954).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDREÁNSZKY, G.–Novák, É. (1957).—Annls hist.-nat. Mus. natn. hung. 8, pp. 46–47, Pl. 2 : 4.
 6. Folium petiolatum, petiolo 2,8 cm longo, 1,5 cm crasso, ad insertionem cum lamina articulato. Lamina ca. 9,5 cm longa, 3 cm lata, oblongo-lanceolata, basi cuneata, margine grosse et remote serrata, dentibus inaequalibus, 1–2 mm altis, obtusissimis. Nervus principalis validus, parum arcuatus, nervi secundarii subtilissima, creberrimi, valde inaequales, inter se subparallelis, in angulo ca. 65° orti, partim in dentibus terminantes, anastomosantes.
-
1. **Cercis harmati** RÁSKY, 1943 (Pl. XVIII, 4)
 2. Holotype: BP. 61.21.1.
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Budapest–Óbuda, Szépvölgy brick-yard, Hungary.
 5. RÁSKY, K. (1943).—Földtani Közlöny 73, pp. 519–520, Pl. 16, fig. 3.
 6. Die Frucht ist 5 cm lang und 1,5 cm breit. Ihr gegen den Fruchtsiel zu gelegener Teil ist verschmäler, der entgegengesetzte Pol aber stumpf abgerundet. Der

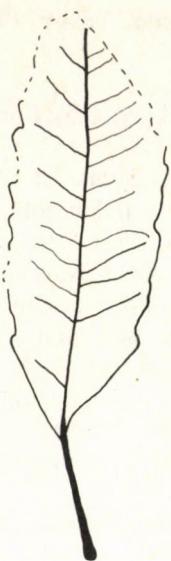


Fig. 3
Ceratopetalum articulatum ANDRÉÁNSZKY, & Novák, holotype: BP. 83.302.1

Rand der Frucht ist schwach wellenförmig gestaltet. Auch die in der Hülse liegenden Körner schwellen gut auf, die im Verhältnis zur Grösse der Hülse als klein bezeichnet werden müssen.

1. *Cercis hungarica* RÁSKY, 1943 (Pl. XIX, 4)
2. Paratype: BP. 61.23.1 (75), 61.24.1 (74).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Csillaghegy, Hungary.
5. RÁSKY, K. (1943). — Földtani Közlöny 73, pp. 528–529, Pl. 24, figs. 2, 4.
6. Es liegen insgesamt zwei grosse, glattrandige, herzförmige Blätter vor, deren Länge 8, bzw. 9 cm, bei einer Breite von 10,4 bzw. 12 cm beträgt. Der verhältnismässig dicke Blattstiel erscheint bei beiden 4 cm lang. Der Blattrand zeigt einen schwach gewellten Verlauf. Nur der Hauptnerv ist stärker zu sehen, die Seitennerven sind schwächer ausgebildet. An der Blattbasis entspringen aus dem Hauptnerven gleichzeitig zwei Nervenpaare zweiter Ordnung, die miteinander einen Winkel von ungefähr 45° einschliessen und schwach gebogen gegen die Blattspitze gerichtet stehen. Vom ersten und zweiten Paar dieser Seitennerven zweigen gegen den Blattrand zu auch Nerven dritter Ordnung ab, die miteinander vor dem Blattrand ausgesprochene Schlingbogen bilden. Gegen die Blattspitze zu entspringen aus dem Hauptnerven noch weitere zwei, bzw. drei Paare von Nerven. Sowohl die Nerven zweiter Ordnung, als auch die dritter Ordnung sind camptodrom. Das Blattnetz ist sehr fein.

1. **Codiaeophyllum palaeovariegatum** RÁSKY, 1966 (Pl. LIV, 2, 3; Pl. LIII, 3)
 2. Generotype: BP. 65.32.1, 65.33.1.
 2. Paratype: BP. 65.34.1.
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Budapest-Óbuda, Hungary.
 5. RÁSKY, K. (1966). — The Palaeobotanist 14 (1–3), p. 266, Pl. 3, Figs. 9–11.
 6. Leaves oblong-ovate and linear-lanceolate. Exceedingly variable in size. Imperfectly preserved. Measurable length of the lanceolate leaf 9.5 cm, width 2.5–3.0 cm. Measurable length of the ovate leaf is 10 cm and the maximum width 4.0 cm. Petiole not preserved. The apex of the oblong-ovate leaf acuminate. Margin entire. Midrib very stout, secondaries spreading from the midrib more or less at right angles, parallel, conspicuously anastomosing before the margin. Subsecondaries also spreading at right angles from the midrib. Midrib and secondaries connected by short veinlets producing a system of elongate or irregularly areolate reticulation. Texture coriaceous.
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1. **Copaifera longestipitata** KOVÁTS, 1856 (Pl. XVII, 3)
 2. Syntype: BP. 58.355.1.
 3. Miocene, Sarmatian, diatomite.
 4. Tályva, Hungary.
 5. KOVÁTS, J. (1856b). — Arb. geol. Ges. Ung. p. 51, Pl. 1, fig. 3.
 6. D. legumine longe stipitato elliptico, compresso plano bivalvi, monospermo, semine elliptico, arillato (?)
 7. Gleditsia knorrii (Herr) Gregor — revision in this work
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1. **Corylus longipetiolata** ANDRÉÁNSZKY, 1959 (Pl. XVIII, 3)
 2. Holotype: BP. 60.1668.1 (22966).
 3. Miocene, Sarmatian, rhyolitic tuff.
 4. Balaton, Dellő, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 93, fig. 76.
 6. Folium longe (2 cm) petiolatum, petiolo tenui. Lamina parva, ca. 7 cm longa (apex ipse deest), ca. 4,5 cm lata, ovata, basi rotundata et levissime emarginata margine duplicito-dentata. Nervus principalis validus, rectus, nervi laterales infimi in angulo recto exeentes, debiles et brevissimi, in lobulo basali terminantes. Nervi caeteri ca. 5-pares, in angulo ca. 50° exeentes, valde alternantes, recti. Par infimum extus ramos plures validos emittens, caeteri solum apice ramosi. Nervatio tertioria cospicua, ad nervos laterales perpendicularis.
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1. **Cryptogrammites hungarica** ANDRÉÁNSZKY, 1951 (Pl. XVII, 5)
 2. Holotype: BP. 83.274.1 (5497).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDRÉÁNSZKY, G. (1951b). — Földtani Közlöny 81 (7–9), pp. 321–322, 326–327.
14. t.a.

6. Pinnulae ultimi ordinis folii fertilis solum adsunt, in no. 6. Folium pinnatim compositum, rhachide filiformi flexuoso. Pinnulae ultimi ordinis petiolulatae, petiolulo 0,7–1 mm longo oblongolineares, basi abrupte contractae vel subcordatae, superne parum angustatae apice obtuso vel rotundato, 4–4,5 mm longae, 1,2–1,5 mm latae, margine crenulatae (?). Sori in seriebus duabus, utrinque in numero 6–10.
1. **Cunonia oligocaenica** ANDREÁNSZKY & Novák, 1957 (Pl. XVII, 4, Fig. 4)
2. Holotype: BP. 83.298.1 (14208).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G.–NOVÁK, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, pp. 47–48, Pl. 2 : 5.
6. Foliolum subsessile, vel usque 1,5 cm longe petiolulatum, lanceolatum vel ovato-lanceolatum, quoad dimensionem valde variabile, 6,5–12 cm longum, 2–5 cm latum basi cuneatum, parum decurrentis, apice acutum vel acuminatum, margine variabiliter serrato-dentatum. Nervatio lateralis asymmetrica. Nervus principialis plerumque paulum arcuatus, usque ad apicem laminae validus. Nervatio secundaria asymmetrica. Nervi secundarii in uno latere laminae in angulo ca. 65°, in altero latere in angulo ca. 50° orti, (in foliolis terminalibus nervatio in ambis lateribus fere aequalis), inter se valde inaequales, utrinque in numero ca. 15–15, ca. 3 mm a margine arcum formantes, campylocentri. Nervatio tertiaria parum distincta, reticulum polygonalem formans.
7. *Platanus neptuni* (ETT.) BŮŽEK, HOLÝ & KVAČEK; HABLY, L. (1979). — Annls hist.-nat. Mus. natn. hung. 71, p. 33.



Fig. 4

Cunonia oligocaenica ANDREÁNSZKY, & NOVÁK, holotype: BP. 83.298.1

1. **Cupania palaeorhodus** ETTINGSHAUSEN, 1869 (Pl. XIX, 3)
2. Holotype: BP. 55.2496.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, pp. 27–28, Pl. 46, fig. 12.
6. C. foliis pinnatis, foliolis submembranaceis, e basi obliqua obtusiuscula ovatis vel oblongis, petiolulatis, apice acutis margine remote dentatis, nervo primario prominente, nervis secundariis angulo subrecto exorientibus, tenuibus brachidromis, nervis tertiaris abbreviatis, dictyodromis.

1. **Dalbergia proserpinæ** ETTINGSHAUSEN, 1869 (Pl. XXII, 2)
2. Holotype: BP. 59.901.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 58, Pl. 55, fig. 15.
6. D. foliolis subcoriaceis, ovatis, apice rotundato subemarginatis, margine integerrimis, nervatione camptodroma nervo primario prominente, recto, excurrente, nervis secundariis tenuibus approximatis, nervis tertiaris sub angulo peracuto orientibus fere transversis, in rete dissolutis.

1. **Debeya hungarica** HABLY, 1982 (PL. XIX, 1)
2. Holotype: BP. 79.5.2.
3. Upper Oligocene, Egerian, Kovačov Formation.
4. Verőcemaros, Hungary.
5. HABLY, L. (1982). — Acta bot. hung. 28 (1–2), pp. 96–97. Pl. 2, figs 8, 10; Pl. 3, figs 1–3, 5–8; Pl. 9, figs 4, 5; Pl. 10, figs 1–4; Pl. 11, figs 1–4; Pl. 12, fig. 1.
6. The leaves consist of three leaflets springing from one centre. They have no individual leaflet-petiole, but they are not mutually intergrown. Almost all the specimens are fragmentary, but their large number allows reconstruction. Their original measurements range from 3 to 15 cm. On the basis of morphological features they are divided into two groups.
 1. Large leaves consisting always of three leaflets, length 12–15 cm, width 2–2.5 cm. The petiole is 1.6–1.7 cm long, generally thick with widening ends. The margin of the leaflets is frequently fragmentary, they are well preserved and whole. The main veins are strong. The camptodrome-brachidodrome character of the secondary venation can be rarely seen on account of poor preservation, so it often appears to be reticulodromous. The base of the leaflets is slightly asymmetrical. The mid-leaflet is not bigger than the two flanking ones.
 2. The other part of the leaves is small. It contains also entire specimens, but none of them has a petiole. Like the previous type, these too, have three leaflets. The leaflets are equal, the middle leaflet is not more developed than the side ones. The venation is camptodromous; in some cases it shows brachidodromous character-

istics, in other cases it looks merely reticulodrome. In my opinion the two types belong to the same species, differences are due to ecological reasons only. The larger leaves are probably shade leaves, while the small ones are sun leaves.

1. **Desmodium sarmaticum** ANDREÁNSZKY, 1959 (Pl. XX, 1)
2. Holotype: BP. 59.315.1 (22906).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 147, fig. 165.
6. Pars folii, magis folioli superior solum adest. Lamina asymmetrica, ovata, vel obovata, ca. 5 cm longa et 3,6 cm lata, margine integra solum ad nervos excurrentes leviter undulata. Nervus principalis levissime arcuatus, validus, usque ad apicem laminae rotundato-acuminatum conspicuus. Nervi laterales verisimiliter 7-pares, in angulo 45–50° orti, sed subito prorsum arcuati ita cum nervo medio angulum 30–35° formantes, in toto tractu parum arcuati et infimis exceptis craspedodromi, extus ramos craspedodromos vel camptodromos emittentes. Nervi laterales infimi arcuato-anastomosantes, camptodromi. Nervi tertiarii sat validi, ad nervos laterales perpendiculares, subparalleli, laxi. Nervatio subtilissima valde irregularis sed distincta.

1. **Dioclea agriensis** ANDREÁNSZKY, 1967 (Pl. XXI, 4)
2. Holotype: BP. 83.290.1 (3884).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G. (1967b). — Egri Múz. évk. V, pp. 24–25, fig. 30.
6. Dreieckig, die endständigen Blättchen nur schwach asymmetrisch, rundlich, rundlich eiförmig, oder rundlich verkehrt-eiförmig, Grund breit keilförmig oder abgerundet bzw. schwach ausgerandet. Spitze an allen Belegen fehlend, so unbekannt, wahrscheinlich abgerundet und in eine stumpfe Spitze kurz zugespitzt. Ganzrandig. Das vollkommenste Blatt, welches wir als Holotypus betrachten (3884) ist 10,5 cm lang, 8 cm breit, rundlich, am Grund abgerundet und schwach ausgerandet, Spitze fehlend. Stiel nur auf 11165 vorhanden 6 mm lang und 1,5 mm dick. Die übrigen endständigen Blättchen von denen nur der Grundteil erhalten ist, waren noch grösser als der Holotypus, etwa 12 cm lang und 10 cm breit. Mittelnerv markant, mitteldick, gegen die Spitze des Blättchens zu stark verjüngend. Aderung rein fiederig. Seitenadern 6 bis 9 Paar, mit einem veränderlichen Ausgangswinkel (45–60°), die untersten der seitendichten Blättchen zuerst zurückgebogen, sonst alle nach vorne gebogen, in der Regel einfach, hier und da dichotomisch verzweigend, die unteren Seitenadern der seitendichten Blättchen auf der breiteren Seite nach unten zu einige starke Zweige aussendend. Alle Adern und Äste anastomosierend. Der Umstand dass die genannten Seitenadern starke Äste aussenden unterscheidet unsere Abdrücke von den Blättchen der *D. umbrina* Elm., deren Seitenadern nur schwache Äste aussenden. Doch glauben wir dass diesem Umstand kein systematischer Wert

zuzuschreiben ist. Die Tertiärnervatur steht auf die Seitenadern senkrecht, ist zick-zackig und mitteldicht. Die ganz feine Nervatur ist verschwommen.

1. **Dioscoreaecarpum marginatum** ANDRÉÁNSZKY, 1959 (Pl. XX. fig. 2)
2. Holotype: BP. 83.267.1 (3234).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1959a). — Acta bot. hung. 5, pp. 21–22, Pl. 4 : 20, 21.
6. Capsula trivalvis, trialata, in ambitu rotundato-obtriangularis, breviter pedunculata, pedunculo 3 mm longo, recurvo, cum alis 1,8 cm longa, in parte superiore, ubi latissima 1,8 cm lata, apice late, basi levissime emarginata, apice dehiscens. Alae margine valde incrassatae, margo incrassatus 0,5 mm latus. Capsula sine alis 5 cm lata, basi angustata, apicem versus sensim dilatata.

1. **Dioscoreites agriensis** ANDRÉÁNSZKY & CZIFFERY, 1959 (Pl. XXI, 1)
2. Holotype: BP. 83.265.1 (3300).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1959a). — Acta bot. hung. 5, p. 21, fig. 10.
6. Folium late triangulari-ivatum, basi subprofunde, vel solum superficialiter cordatum, apice longe acuminatum, vel cuspidatum, longe petiolatum, margine integrum, solum hinc inde undulatum, in specimine descripto (no. 3300) 12 cm longum, 9,3 cm latum. Lamina palmato quinque- vel subseptemnervia. Nervus medius rectus, solum in parte superiore ramosus. Par interius nervorum lateralium basi cum nervo medio angulum apertum ($50-55^\circ$) formans, postea valde arcuatam et apicem laminae petens. Cursus nervorum incertus. Nervi laterales omnes extus ramos nonnullos, in parte inferiore rectos, versus marginem laminae valde arcuatos et cum ramis vicinis anastomosantes emittentes. Nervi laterales exteriore valde remosi, ramus infimus e basi laminae ortus.

1. **Dioscoreites giganteus** ANDRÉÁNSZKY, 1959 (Pl. XX, 4)
2. Syntype: BP. 83.286.1 (5101).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1959a). — Acta bot. hung. 5, pp. 19–20, Pl. 3 : 15, Pl. 4 : 19, fig. 9.
6. Folium magnitudine variabile, specimen maximum incompletum (no. 5101) verisimiliter 20 cm vel ultra longum, 16 cm latum, specimen alterum (no. 3228) 12 cm longum et 9 cm latum, in ambitu triangulari-ovatum, apice late obtusum, basi perprofunde cordatum, sinu inter lobos basales angusto. Nervatio palmata, nervis primariis 9 vel 11. Nervus primarius medius subrectus vel arcuatus, simplex, nervi laterales proximi arcuati et apicem laminae petentes, in specimine maximo extus armos nonnullos validiores emittentes, in speciminibus minoribus

simplices et solum nervatione tertiaria conjuncti. Nervi laterales exteriores valde arcuati, simplices. Nervatio tertiaria fere horizontalis. Petiolus ignotus.

1. **Diospyros bilinica** ETTINGSHAUSEN, 1868 (Pl. XXII, 1)
 2. Syntype: BP. 59.986.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1868). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 45, Pl. 39, figs. 17–18.
 6. D. calyce quadrifido, deciduo minimo patente, laciniis ovatis, longitudinaliter nervoso-striatis, apice acutiusculis basi coarctatis; foliis petiolatis coriaceis oblongo-ellipticis vel lanceolatis integerimis basi rotundatis apice subobtusis, nervo primario basi valido, apicem versus attenuato, nervis secundariis sub angulis acutis orientibus, tenuissimis subremotis arcuatis, nervis tertiariis obsoletis.
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1. **Dodonaea salicoides** ANDREÁNSZKY, 1959 (Pl. XX, 3; Fig. 5)
 2. Holotype: BP. 83.299.2 (10797/10793).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDREÁNSZKY, G. (1959a). — Acta bot. hung. 5, pp. 13–14, fig. 6, Pl. 2 : 8.
 6. Folium petiolatum, linear-oblongum, apice acuminatum, basi longe cuneatum, lamina ipsa 10 cm longa, 2,2 cm lata, margine integerrima. Nervatio valde



Fig. 5
Dodonaea salicoides ANDREÁNSZKY, holotype: BP. 83.299.2

camptodroma. Nervus principalis validus, rectus, solum in parte superiore attenuatus, usque ad apicem laminae conspicuus. Nervi laterales primi ordinis inaequales, validiores cum brevioribus et delibioribus intermixti, validiores 11–12-pares, in angulo ca. 60° exeuntes, marginem versus bifurcati, ramis arcum formantibus. Inter arcos et marginem laminae nervatio in reticulum subtilissimum dissoluta.

1. **Dolichites triangularis** ANDRÉÁNSZKY & Novák, 1957 (Pl. XXI, 2–3; Figs. 6–7)
2. Syntype: BP. 83.289.1, 83.291.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G.–Novák, É. (1957).—Annls hist.-nat. Mus. natn. hung. 8, pp. 48–49, Pl. 3, fig. 4.
6. Foliolum oblique triangulae 7,5 cm longum, in parte 1/5 inferiore latissimum, ibique 4,5 cm latum, basi valde asymmetricum et late rotundatum, margine integrum, hinc inde subundulatum, apicem versus sensim angustatum, in ipso apice anguste rotundatum. Nervus principalis arcuatus, basi pervalidus, apicem versus attenuatus, basi in latere angustiore laminae nervum basalem validiorem unicum, in latere latiore nervos basales validiores duos emittens. In parte superiore nervus principalis nervos secundarios suboppositos vel alternantes emittens. Nervus basalis lateris angustioris margini laminae subparallelus, flexuosus, in parte 2/3 superiore cum nervo secundario infimo anastomosans. Nervus secundarius hoc cum nervo secundario superiore proximo in arco anastomosans etc. Nervus basalis interior lateris valde arcuatus, in parte superiore cum nervis secundariis anastomosans, ramos secundarios solum extus emittens. Nervatio tertiaria in angulo fere recto e nervis secundariis egrediens et reticulum polygonalem formans. Nervi omnes valde camptodromi. Foliolum hoc descriptum foliolum laterale repraesentans. Foliolum medium ca. 7 cm longum, basi ca. 7 cm latum, late rotundato-triangulare, asymmetricum. Nervus

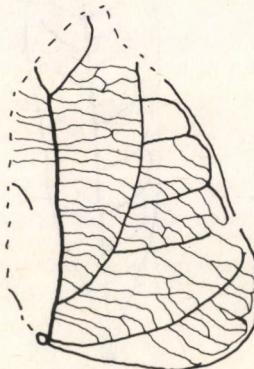


Fig. 6
Dolichites triangularis ANDRÉÁNSZKY, & Novák, syntype: BP. 83.289.1

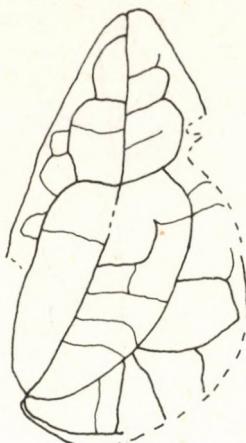


Fig. 7
Dolichites triangularis ANDREÁNSZKY, & Novák, syntype: BP. 83.291.1

principalis basi unum, paulum supra basin alterum par nervos validiores emittens. Nervi laterales basales in angulo recto egredientes, marginem basalem laminae fere sequentes, valde camptodromi, superiores, in angulo ca. 50° prti et prorsum arcuati, nervos validiores solum extus emitentes. Nervi tertiarri cum nervis primariis vel secundariis angulum rectum formantes, submantes, subparalleli, nervis tenuissimis conjuncti.

1. **Donacites erdőbényensis** CZIFFERY, 1955 (PL. XXII, 4)
2. Holotype: BP. 54.1548.1 (E. 360).
3. Miocene, Sarmatian, tuff.
4. Erdőbénye, Kővágó-oldal, Hungary.
5. CZIFFERY-SZILÁGYI, G. (1955). — Annls. Inst. geol. pub. hung. 44 (1); p. 31, p. 164, fig. 7.
6. Pars folii cuiusdam minoris solum adest. Dimensio et forma laminae ignotae. Nervus principalis validus, crassus, nervi secundarii creberrimi, paralleli, sigmoidei, non anastomosantes. Folium folia ordinis Scitaminales aemulans, sed eis multo minor. Characteres generis ei speciei.

1. **Elaeocarpus agriensis** ANDREÁNSZKY, 1965 (Pl. XXII, 3; Fig. 8)
2. Holotype: BP. 83.296.1 (13987).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G. (1965). — Annls hist.-nat. Mus. natn. hung. 57, p. 72, Pl. 6 : 4-6.
6. Petiolus 8 mm longus (an longior?), lamina lanceolata, apicem versus brevius angustata quam basin versus, basi anguste cuneata, in medio 3 cm lata, margine

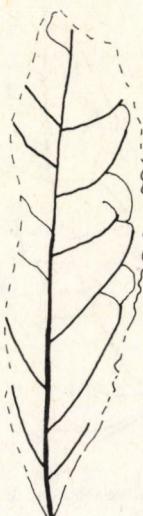


Fig. 8
Elaeocarpus agriensis ANDRÉÁNSZKY, holotype: BP. 83.296.1

crenata, dentibus inaequalibus, parum prorsum spectantibus. Nervi laterales primi ordinis 8-pares, infimi in angulo 40° , superiores in angulo majore, usque ad 70° egredientes, recti. Inter nervos laterales validiores et breviores orti. Nervi inferiores ad marginem laminae prorsum arcuati, superiores furcati, sine arcis anastomosantes. Nervatio subtilissima non bene visibilis.

1. **Elaeodendron oblanceolatum** ANDRÉÁNSZKY & Novák, 1957 (Pl. XXIII, 4; Fig. 9)
2. Holotype: BP. 69.238.1 (11215).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G.-Novák, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, p. 52, Pl. 3 : 12.
6. Folium breviter (1 cm vel parum ultra) petiolatum, oblanceolatum, basin versus longius, apicem versus brevius angustatum, basi ipsa cuneatum, apice acutum, 8,7 cm longum, 3 cm latum, minute serrato-denticulatum. Nervus principalis in parte inferiore pervalidus, rectus, apicem versus attenuatus, nervi laterales sat tenues, sed distincti, utrinque ca. 10 in numero, in angulo acuto exeuntes, mox extus arcuati et cum nervum principalem angulum ca. 45° formantes, valde incerti et sinuosi, plures ramificati. Rami valde camptodromi, iterum arcos formantes. Nervatio tertiaria laminam in areolas minutis polygonas inaequales dividens.
1. **Eriobotrya europaea** ANDRÉÁNSZKY, 1959 (Pl. XXIII, 2)
2. Holotype: BP. 60.1670.1. (20550).

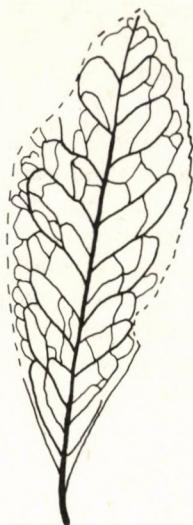


Fig. 9

Elaeodendron ob lanceolatum ANDREÁNSZKY, & Novák, holotype: BP. 69.238.1

3. Miocene, Sarmatian, rhyolitic tuff.
 4. Balaton, Dellő, Hungary.
 5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, pp. 141–142, fig. 149.
 6. Folium lanceolatum, 11 cm longum, in medio 4,2 cm latum, basi cuneatum, apice verisimiliter acutum, margine simpliciter grosse serrato-dentatum, dentibus oblique ovato-triangularibus, ca. 4 cm altis, acutis. Petiolus deest. Nervus principalis validus, rectus, usque ad apicem laminæ conspicuus. Nervi laterales 14-pares, in spatiis subaequalibus et in angulo aperto (ca. 60°) orti, valde arcuati, paralleli, craspedodromi, in dentibus terminantes. Nervatio tertaria inconspicua.
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1. ***Erythrospermophyllum ipolytarnocense* RÁSKY, 1965 (Pl. XXIII, 3)**
 2. Holotype: BP. 65.4.1 = 65.5.1.
 3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
 4. Ipolytarnóc, Hungary.
 5. RÁSKY, K. (1965). — Annls hist.-nat. Mus. natn. hung. 57, pp. 82–83, Pl. 2, fig. 4.
 6. Leaves ovate-oblong or oblong-elliptical. Length 14 cm, width 6 cm. Apex shortly acuminate, cuneate at base. Margin entire or slightly crenate, especially toward apex. Midrib thick, slightly curved, basal secondaries ascendant, others interconnected by great arches. Between secondaries, also shorter, horizontal, intermediate veins arising from midrib. Tertiary veins not discernible on impression. Texture probably coriaceous.

1. **Fagus aperta** ANDRÉÁNSZKY, 1959 (Pl. XXIV, 2)
2. Holotype: BP. 83.287.1 (Nr. 4).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 95, fig. 79.
6. Folium unicum adest, ovato lanceolatum, basi cuneatum, apice longe angustato-acuminatum, ca. 7 cm longum, in parte 2/3 inferiore latissimum, ibi 3 cm latum, margine integerrimum, solum ad finem nervorum lateralium subdenticulatum. Nervi laterales verisimiliter 13–14 pares, infimi in angulo fere recto, sequentes in angulo ca. 65° egredientes rectissimi solum ad ipsum marginem laminae in tractu brevissimo prorsum arcuati. Nervatio tertaria non conspicua. Ad omnibus speciebus generis in angulo aperto nervorum lateralium recedens.
7. *Fagus haidingeri* KOVÁTS; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren, Brno, p. 79.

1. **Fagus latissima** ANDRÉÁNSZKY, 1959 (Pl. XXIV, 1)
2. Holotype: BP. 60.1654.1 (22118).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 96, fig. 80.
6. Folium late ellipticum, ca. 8 cm longum et 5,5 cm latum, margine integro, solum ad nervos laterales excurrentes dentibus triangularibus minusculis instructo. Basis laminae verisimiliter late cuneato-rotundata, apex parum longius contractus. Nervus principalis rectus, versus apicem laminae angustatus. Nervi laterales 9, vel 10-pares, inferiores in angulo 60–65, superiores in angulo ca. 50°, rectissimi, craspedodromi, subparallelē, distinctissimi.

1. **Fagus oblonga** ANDRÉÁNSZKY, 1959 (Pl. XXV, 3)
2. Syntype: BP. 59.413.1 (21812).
3. Miocene, Sarmatian.
4. Sály, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 95. Pl. 25 : 6.
6. Folium asymmetricum, oblongum, apice versus sensim attenuatum, verisimiliter acutum, basi oblique rotundatum, petiolo 4 mm longo, tenui, margine integerrimum, unum 5 cm longum et 2,3 cm latum, altera verisimiliter parum longiora et 3–3,6 cm lata. Nervus principalis subvalidus, rectus, usque ad apicem laminae distinctus. Nervi laterales 9-pares, parallelē, in uno latere in angulo 45–50°, in latere altero in angulo 35–40° exeunt, infimi paulum extus arcuati, sequentes recti, craspedodromi, usque ad marginem laminae distinctissimi, ibique in tractu brevissimo prosum arcuati. Nervatio tertaria distincta, creberrima, nervos laterales primi ordinis conjugens, parallelē, in medio parum refracta.
7. *Fagus haidingeri* KOVÁTS; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren, Brno, p. 79.

1. **Ficus atlantidis** ETTINGHAUSEN, 1866 (Pl. XXIV, 3)
2. Holotype: BP. 55.2475.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 78, Pl. 22, Fig. 6.
6. F. foliis breviter petiolatis, membranaceis ovato-lanceolatis, integerrimis acuminatis, basi acutis, trinerviis, nervo mediano prominente, nervis lateralibus tenuibus, rectis, angulo acutissimo, nervis secundariis angulis 45–55° excurrentibus, brochidodromis, nervis tertiaris tenuissimis dictyodromis.

1. **Ficus goepperti** ETTINGHAUSEN, 1866 (Pl. XXVI, 4)
2. Syntype: BP. 59.905.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 73, Pl. 18, fig. 30, Pl. 19, figs. 1–2.
6. F. foliis coriaceis, magnis oblongis, basi obtusatis, nervo primario valido, secundariis prominentibus angulo acuto orientibus, nervis tertiaris angulo recto egredientibus, dictyodromis.

1. **Ficus hercules** ETTINGHAUSEN, 1866 (Pl. XXIII, 1)
2. Holotype: BP. 55.2327.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 74, Pl. 21, fig. 1.
6. F. foliis longe petiolatis, coriaceis, magnis, lanceolatis, basi attenuata triplinerviis; nervatione camptodroma, nervo primario valido, secundariis prominentibus, inaequilongis, approximatis, basilaribus angulo acutissimo, reliquis sub angulis 50–60° orientibus, nervis tertiaris abbreviatis, sub angulis variis acutis et obtusis egredientibus, dictyodromis.

1. **Ficus kräuseli** RÁSKY, 1943 (Pl. XXV, 1)
2. Holotype: BP. 61.16.1 = 61.17.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest–Óbuda, Szépvölgy brick-yard, Hungary.
5. RÁSKY, K. (1943). — Földtani Közl. 73, p. 516, Pl. 17, fig. 1.
6. Das vorliegende Blatt ist 14 cm lang und auch 14 cm breit. Die Blattfläche zeigt die Gestalt eines grossen Herzens; der Blattrand ist ziemlich stark beschädigt. An seiner Basis ist das Blatt fünfnervig. Von dem aus der Blattbasis entspringenden Hauptnerven ziehen die gut sichtbaren Nebennerven in schwachen Bogen gegen den Blattrand. An manchen Stellen lässt sich auch der camptodrome Charakter der sekundären Nervatur schön beobachten. Von der Hauptrippe kann also

gegen die Blattspitze zu das Entspringen von fünf Paaren sekundärer Nerven festgestellt werden. Von ihrem zweiten Paar geht auch noch eine gut sichtbare tertiäre Nervatur aus. Hauptnerv, sekundäre, sowie tertiäre Nerven sind untereinander durch Anastomosen verbunden. Vom Blattstiel ist nur ein sehr kleines Stückchen zu sehen.

1. **Ficus vulcanica** ETTINGSHAUSEN, 1866 (Pl. XXV, 4)
 2. Holotype: BP. 55.2355.1.
 3. Middle Oligocene, Polirschiefer.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, pp. 74–75, Pl. 21, fig. 11.
 6. F. foliis petiolatis, confertissime punctulatis, membranaceis obovatoellipticis acutis, basi rotundata triplinerviis, margine integrerrimis, nervatione camptodroma, nervo primario crassiusculo recto, apicem versus valde attenuato, nervis secundariis tenuibus sub angulis 80–90° orientibus, basin versus abbreviatis et approximatis, basilaribus sub angulis 40–50° egredientibus, nervis tertiaris vix distinctis, angulo acuto exeuntibus.
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1. **Forsythia hungarica** ANDREÁNSZKY, 1959 (Pl. XXV, 2)
 2. Holotype: Szécsény 59.423.1.
 3. Miocene, Upper Badenian, Fertőrákos Lajta Limestone Formation.
 4. Nógrádzakál, Páris valley, Hungary.
 5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 176, fig. 221.
 6. Folium parvum. Petiolus in tractu brevissimo adest. Lamina lanceolata, 2,6–2,8 cm longa, 9 m lata, basi anguste cuneata, apice ignoto, margine in parte inferiore subinteger, superne parce, in parte apicali crebrius serrato-denticulata. Nervus principalis basi validus, superne attenuatus, nervi laterales 3–4 pares, inferiores suboppositi, superiores alterni, par infimum in angulo peracuto (15–20°), superiores in angulo magis aperto (35–45°) orti, valde prorsum arcuati, camptodromi. Nervatio teriaria distincta, subhorizontalis, ad marginem arcos minutios fermans.
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1. **Fothergilla ungeri** KOVÁTS, 1856 (Pl. XXIV, 4)
 2. Holotype: BP. 59.1.1
 3. Miocene, Sarmatian, diatomie.
 4. Tályha, Hungary.
 5. KOVÁTS, J. (1856b). — Arb. Geol. Ges. Ung. p. 50, Pl. 1, fig. 6.
 6. F. ovatis, petiolatis, parte inferiore integrerrimis, penninerviis, nervo primario sat valido stricto, secundariis validis duobus basalibus, reliquis alternis, remotis, simplicibus, strictis, sub angulo valde acuto circ. 25–30° ortis, nervis tertiaris debilibus rete laxum efformantibus.
 7. "Parrotia" pristina (ETT.) STUR; BŮŽEK, Č. (1971). — Rozpravy Ú.ú.g. 36, p. 52.

1. **Heliotropites reussii** ETTINGSHAUSEN, 1868 (Pl. XXVI, 5)
2. Syntype: BP. 59.975.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 33, Pl. 37, figs. 7–12, 19, 7b, 19b.
6. *H. pyrenis* inaequalibus ovoidibus compressis vel subglobosis, nitidis; foliis coriaceis confertissime granulosis, linearibus, integerrimis; nervatione camptodroma, nervo primario valido prominente recto, secundariis tenuissimis, sub angulis 70–80° orientibus curvatis marginem versus adscendentibus; nervis tertiaris paucis abbreviatis vel vix conspicuis angulo subrecto egredientibus.

1. **Hiraea microcarpa** ANDREÁNSZKY, 1956 (Pl. XXVI, 3)
2. Holotype: BP. 83.264.1 (8535).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Budaújlak, Hungary.
5. ANDREÁNSZKY, G. (1956).—Annls hist.-nat. Mus. Natn. hung. 7, p. 227, Pl. 4 : 14.
6. Samara 1,3 cm lata, 6 cm longa, bialata. Nux late ovoidea, ca. 3 mm lata, apice acuminata, basi cordato-emarginata, semine globoso, 1,5 mm diametente. Alae patentes, orbicularis, radiatim distincte nervosae, nervis utrinque 7–8, ramosis et ad marginem anastomosantibus. Samarae *Hiraeae affinis* Miq. simillima, sed multo minor.
1. **Hydnocarpophyllum kraeuseli** RÁSKY, 1960 (Pl. XXVI, 1; Fig. 10)
2. Holotype: BP. 60.49.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.

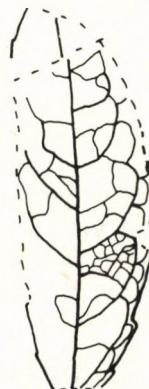


Fig. 10
Hydnocarpophyllum kraeuseli RÁSKY, holotype: BP. 60.49.1

5. RÁSKY, K. (1960).—Senckenberg. leth. 41. (1/6), pp. 430–432, Pl. 3, fig. 14.
6. Längliche Blätter mit kaum abgerundetem Grund. Die gleichförmig breite Spreite verschmälert sich in der Nähe der Spitze. Größte meßbare Länge der Blätter 7,5 cm; die Breite beträgt 2,5–3,0 cm. Die Zähne am Blattrand sind beträchtlich voneinander entfernt, ihr größter Abstand erreicht 2 cm. Dem auffällig dicken Hauptnerv entspringen alternierend bogenförmige Sekundärnerven, die miteinander verhältnismäßig rasch anastomosieren. Der Abstand zwischen den Sekundärnerven beträgt durchschnittlich 1,5 cm jedoch kann er auch größer sein. Auf den bruchstückhaften Resten sind 6 Paar Sekundärnerven erkennbar; die unversehrten Blätter hatten noch mehr. Die camptodromen Sekundärnerven sind miteinander durch kleinere Schlingen verbunden. Der Raum zwischen den Sekundärnerven wird von einem großmaschigen Nervennetz ausgefüllt; innerhalb desselben liegt ein feineres, engmaschigeres Netz. Ein Stielabdruck ist nicht erhalten. Die Blätter sind etwas lederig.

1. **Icacorea primaeva** ETTINGSHAUSEN, 1868 (PL. XXVI, 2)
2. Holotype: BP. 55.2487.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 39, Pl. 37, fig. 15.
6. I. foliis subcoriaceis ellipticis basi acutis, apice angustatis subacuminatis margine undulato-crenatis; nervatione camptodroma, nervo primario distincto, basi prominente, nervis secundariis tenuibus, sub angulis 60–70° orientibus flexuosis anastomosantibus cum brevioribus alternantibus, segmentis secundariis inaequalibus; nervis tertiaris tenuissimis sub angulis acutis exeuntibus.

1. **Kadsura protowightiana** RÁSKY, 1959 (Pl. XXVII, 1)
2. Holotype: BP. 58.7.1.
3. Lower Miocene, Ottnangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959).—J. Paleont. 33 (3), p. 456, Pl. 69, fig. 6.
6. Oval, entire-margined leaves, their length being 8.5 cm, their width 4.5 cm. From the relatively wide leaf the apex rises abruptly, ending in a short acumen. The base is only slightly decurrent. The remnant of the petiole is 1 cm long. The midvein is well visible, while the 7 to 9 parallel secondary veins, slightly turned upwards, are rather faint. The secondary veins are camptodrome, connecting in regular loops at the margin of the leaves. No traces of a tertiary venation or meshwork are visible.

1. **Kydia hungarica** RÁSKY, 1956 (Pl. XXVII, 2)
2. Holotype: BP. 56.28.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1956).—Földtani közlöny 86 (2), p. 176, Pl. 30, figs. 1–2.
6. Remnants of the calyx of a quinquepartite flower with sepals grown together. Bigger calyx 3.5 cm in diameter, length of the single sepals up to where they are grown together: 1.5–1.7 cm. Less calyx 1.5 cm in diameter. The margin of the sepals is entire; in the middle a stouter primary vein and 12 similarly stout lateral veins extend to the obtuse tip. Before reaching the tip, the lateral veins are linked together with the main vein by multiple arches. Between the lateral veins a wedgeshaped space is left open from the spot where the sepals are grown together toward the middle. Sideways on the sepals another less visible pair of veins extends to the tip where it fuses with the widely spaced network of veins covering the surface of the whole sepal. In the middle of the calyx a round spot marks the seat of the detached seed. They resemble the calyx of the modern *Kydia calycina* Roxb.

1. *Kydia palaeocalycina* RÁSKY, 1956 (Pl. XXVII, 3)
2. Holotype: BP. 56.138.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1956).—Földtani közl. 86(2), pp. 176, 178, Pl. 31, figs. 1–2.
6. Big broad leaves with entire margin. Length 10–11 cm, width 13 cm. Length of the less leaves 6 cm, width 7 cm. Axilla rather cordate, apex obtuse. The leaves may be also asymmetrical. From the base 5 veins eradiate which seem to be equivalent. The midrib extends straight to the apex, the others extend toward the margins. From these broad arched lateral veins branch off, forking before reaching the margin. From the base another pair of veins extends to the axilla. The lamina is filled up with a widely spaced network of veins. Measurable length of the petiole 3 cm. The leaves show a resemblance to these of the modern *Kydia calycina* Roxb. distributed over the Himalaya and Burma.

1. *Laurelia glandulifera* ETTINGSHAUSEN, 1869 (Pl. XXVIII, 4)
2. Holotype: BP. 55.2410.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 64, Pl. 55, fig. 20.
6. L. foliis subcoriaceis petiolatis, ovatis, utrinque attenuatis, crenatodentatis, dentibus glanduliferis, nervis secundariis tenuissimis, camptodromis, apice ramosis.

1. *Laurus hungarica* RÁSKY, 1943 (Pl. XXVIII, 3)
2. Holotype: BP. 61.20.1 (MNMPB. 95).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Szépvölgy brick-yard, Hungary.

5. RÁSKY, K. (1943).—Földtani közl. 73, pp. 518–519, Pl. 19, fig. 1.
6. Die Länge des Bruchstückes beträgt 8 cm, doch muss es bedeutend länger gewesen sein, da seine Spitze zum grössten Teil fehlt, die Breite beträgt 3,3 cm. Der Blattstiel ist 1,5 cm lang. Das Blatt ist ganzrandig. Der Hauptnerv erscheint genau so wie auch die Seitennerven kräftig ausgeprägt. An beiden Seiten des Blattes sind je 3–4 Seitennerven zu sehen, die in grossen Bogen nach oben gerichtet sind. Queranastomosen sind nicht zu bemerken. Die Blattbasis verschmälert sich gegen den Blattstiel zu.
1. **Ligustrum priscum** ETTINGSHAUSEN, 1868 (Pl. XXVIII, 1)
2. Holotype: BP. 55.2362.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 24, Pl. 36, fig. 8.
6. L. foliis petiolatis membranaceis, lanceolatis utrinque acuminatis, integerrimis, nervatione brochidodroma, nervop primario distincto tenui, apicem versus tenuissimo, subflexuoso, nervis secundariis tenuissimis arcuatis, sub angulis 45–60° basilaribus sub angulo acutiore orientibus, margines adscendentibus, nervis tertiaris dictyodromis.
1. **Lithocarpus decurrens** ANDRÉÁNSZKY, & KOVÁCS, 1964 (Pl. XXVIII, 2)
2. Holotype: BP. 83.275.1 (5047).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1964b).—Egri Múz. évk. 2, p. 12, fig. 3.
6. Als Typus gilt die Nr. 5047 aus dem Bot. Syst. Inst. Stiel 1,6 cm lang, mittelstark (1,5 mm dick). Spreite 15 cm lang, in der Mitte 2,6 cm breit, schmal lanzettlich, gegen beide Enden gleichmässig verschmälernd, am Grunde herablaufend. Spitze selbst unbekannt. Hauptader mittelstark, gegen die Spitze zu ganz verdünnt. Es gibt 18 Paar Seitennerven, die in einem Winkel von etwa 50° entspringen, sie sind etwas nach vorne gebogen und verlieren sich in der Nähe des Blattrandes. Anastomosenbögen nicht sichtbar. Die übrigen hierher gezählten Blätter sind im Verhältnis zu ihrer Länge etwas breiter. Das grösste Blatt Nr. 13697 nur als Bruchstück vorhanden. Nr. KE 6464 etwa nur 11 cm lang und 2,5 cm breit. Das grösste Blatt beinahe 4 cm breit. In allen Eigenschaften entspricht diese Blattform der rezenten *L. elizabehae* (Tutcher) Recd.
1. **Litsea ipolytarnocense** HABLY, 1985 (Pl. LVII, 1, 3, Pl. LVIII, 2–3)
2. Holotype: BP. 82.296.1.
- Paratype: BP. 82.419.1, 82.302.1; Szécsény: 60.127.1.
3. Lower Miocene, Ottnangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.

5. HABLY, L. (1985).—Geol. Hung. ser. Pal. 44–46, p. 143, Pl. XII, Figs. 1, 4; Pl. XIII, Figs. 1–4.
6. Lamina broad elliptical, suborbiculate, base acute, apex acuminate. The apex rises abruptly, but ends in a relatively short drip-trip. Leaf-argin entire. Venation brachydodromous. In the basal section the venation is completely similar to that of the *Daphnogene* genus. From the thick midvein into both directions basal veins arise well above the base; they run fairly high, while connecting loop-like with the further secondary veins starting from the midvein.

1. **Lonicera lipthayana** ANDREÁNSZKY, 1959 (Pl. XXVIII, 5)

2. Holotype: Szécsény 59.424.1.
3. Miocene, Upper Badenian, Fertőrákos Lajta Limestone Formation.
4. Nógrádszakál, Páris valley, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 178, Pl. 54:6.
 6. Folium (verisimiliter breviter) petiolatum, ovato-lanceolatum, apice longe angustatum, basi subito contractum, sed basi ipsa cuneatum, margine integrum. Lamina 5 cm longa et in tertia parte inferiore 2,4 cm. lata. Nervus principalis validus, apicem versus attenuatus, nervatio lateralis valde irregularis, nervi laterales primi ordini ca. 8-pares, in spatiis et in angulo inaequalibus orti, leviter arcuati et plures arcos irregulares angulosus formantes. Nervatio tertaria laminam in areolas inaequales tri- vel pluriangulares dividens, margie camptodroma.

1. **Macarangaephyllum palaeomoandrum** RÁSKY, 1965 (Pl. XXIX, 1; Fig. 11)

2. Holotype: BP. 62.918.1 = 62.919.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1965).—Annls hist.-nat. Mus. natn. hung. 57, p. 85, Pl. 5, figs. 15–16.
6. Leaves oblong-ovate or broadly ovate. Apex acute or acuminate, base rotundate or cuneate. Margin grossly repando-dentate. Length of leaves 13–15 cm, greatest width 7–9 cm. Midrib thick, incrassate especially basad. Number of lateral veins 7–8 pairs. Laterals ascendant, emitting subsecondaries from inferior sides. Subsecondaries camptodrome or subcamptodrome. Majority of archings emitted from lower side of basal secondaries. Secondaries and subsecondaries also still prominent, and also craspedodrome on upper portion of leaf. Tertiaries — parallel and almost at right angles to secondaries — interconnecting laterales with each other and also with midrib. Texture subcoriaceous, or membranaceous.

1. **Magnoliaestrobus hungaricus** RÁSKY, 1959 (Pl. XXX, 2)

2. Holotype: BP. 58.8.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959).—J. Paleont. 33(3), p. 457, Pl. 70, figs. 7–8.

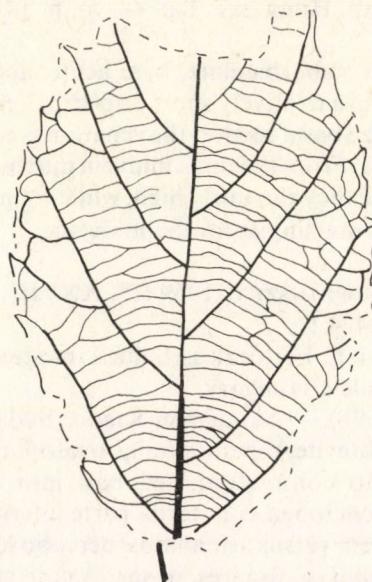


Fig. 11
Macarangaephyllum palaeomoandrum RÁSKY, holotype: BP. 62.918.1

6. The impressions of the fruits are either spheroid or oval. The length of the largest specimen is 3.5 cm, its width being 2.5 cm. The fruit, several carpella scarcely expanding in the middle, is arranged spirocyclically on the spathe. The measurable length of a carpellum being 1 cm, its maximum width 0.6 cm. On the remnants the apices of the carpella are broken off. Along the carpellum there is a scutum. The stamina bearing part of the spathe is relatively long, its length being 3.5 to 4 cm. On the fossils, its width 1 cm. The cicatrices of the stamina also appear to be spirocyclically arranged on the remnants of the spathe. The hardly expanding base of the spathe, the cicatrices of the perianthium, show large, oval or penta-, or hexagonal impressions. As compared with the number of the stamina there are only a few impressions, their arrangement being annular. There is no internodium between gynoecium and stamina on the spathe. The fruits are unripe, the carpella being unopened upwards. Impressions of more than 10 fruits have been found, part of them still retaining the portion of the spathe bearing the stamina.

1. ***Mallotophyllum palaeomiquelianum* RÁSKY, 1965 (Pl. XXIX, 4; Fig. 12)**
2. Holotype: BP. 65.3.1 = 65.16.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Hungary.
5. RÁSKY, K. (1965).—Annls hist.nat. Mus. natn. hung. 57, p. 86, Pl. 6, figs. 17–18.

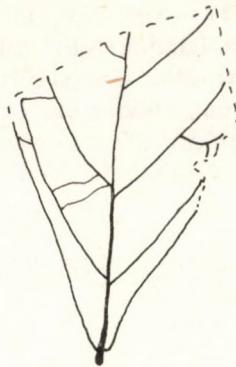


Fig. 12
Mallotophyllum palaeomiquelianum RÁSKY, holotype: BP. 65.3.1

6. Characteristical leaf bases. Measurable lengths 6–7 cm, greatest width 4.0–4.5 cm. Upper portion of leaves injured or missing. Margin entire. Base elongated aequilateral, slightly rotundate but peltate. Length of remaining and measurable petiole 2.0 mm, rather thick. Midrib thick, emitting alternate secondary veins. Secondaries ascendant, subtending about 45° with midrib, and only moderately curved. Lower side of secondaries locally emitting pseudosecondaries. Tertiary veins interconnecting secondaries with each other and midrib. Tertiaries more or less parallel. Further venation irregular, quadrate meshes. Texture probably coriaceous.

1. ***Maoutia hungarica* RÁSKY, 1956 (Pl. XXXI, 4)**

2. Holotype: BP. 56.25.1.

3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Budapest-Óbuda, Hungary.

5. RÁSKY, K. (1956).—Földtani közl. 86 (2), p. 172, Pl. 29, fig. 4.

6. Leaves ovate with 3 primary veins. Their base is somewhat decurrent along the petiole; the apex is acuminate. The margin is everywhere coarsely and densely dentate. The teeth have little acute tips. The 3 primary veins extend toward the apex; near the apex secondaries diverge from the midrib, curving up archedly. From the lateral primaries secondaries are branching off, being linked together by arches, from these arches little veins enter the teeth. The tertiaries veins form a network. The measurable length of the incomplete leaves is 5.5 cm but the whole length of the leaves was greater. Width 3.5 cm. The leaves resemble these of the modern *Maoutia puya* (Hmlt.) Wedd. living in Java.

1. ***Mimusops hungarica* ANDRÉANSZKY, 1951 (Pl. LIII, 4)**

2. Holotype: BP. 83.375.1.

3. Upper Oligocene, Egerien, Kovačov Formation.

4. Csörög, Kígyó-hegy, Hungary.

5. VITÁLIS, GY.-ZILAHY, L. (1951).—Ann. Biol. Univ. Hung. I, p. 167, Pl. 21, fig. 6.
 6. Folium unicum sine basi adest. Lamina ovalis valde et longa acuminata margine integerrima. Nervus prir.ipalis validus, nervi secundarii in spatiis inaequalibus (1–5 mm) et in angulo inaequali quoque (ca. 60–70°) exeuntes, teneri, incerte recti, 1–2 mm a margine ramificati et anastomosantes. Hinc inde iam in parte inferiore retroflexi et anastomosantes. Folium fossile folio speciei vivantis *Mimusops* Kummel valde similis.

1. ***Morus evae* kovács** ANDRÉÁNSZKY, 1959 (Pl. XXXI, 3)
 2. Holotype: BP. 60.1687.1 (21439/a).
 3. Miocene, Sarmatian, tuff.
 4. Harica-völgy, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 127, fig. 124.
 6. Folium unicum adest, ovatum, basi cordatum, sinu aperto, apice sensim angustatum et acuminatum, margine grosse et simpliciter dentato-crenatum dentibus oblique rotundatis vel brevissime acuminatis. Lamina 4,4 cm longa, in parte inferiore 3 cm lata, trinervia. Petiolus in tractu 1 cm adest. Nervus principalis leviter sigmoideus, validus, ramos perpaucos inaequales emittens. Rami validiores utrinque duo adsunt, in angulo acuto egredientes, valde prorsum arcuati et fere usque ad apicem laminae producti, distinctissimi. Nervi laterales debiliores utrinque 3–4 in angulo magis aperto orti, breves et evanescentes. Nervi principales laterales cum nervo medio angulum ca 50° formantes, valde arcuati et usque ad 3/4 laminae producti, ibique anastomosantes, camptodromi, ramos solum extus emittentes. Rami valde arcuati et in dentibus terminantes. Ramus infimus iterum ramosus.

1. ***Musa bilinica*** ETTINGHAUSEN, 1866 (Pl. XXXIII, 4)
 2. Syntype: BP. 55.2363.1.
 3. Middle Oligocene, “Polirschiefer”.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, pp. 28–29, Pl. 7, fig. 4.
 6. M. foliis simplicibus oblongis, nervo primario valido 2–4 millim, crasso, nervis secundariis sub angulis 45–55° orientibus, simplicibus, rectis vel paullatim arcuato-convergentibus parallelis; nervis interstitialibus tenuissimis approximatis parallelis, nervis transversis numerosissimis inter se conjunctis.

1. ***Musophyllum tárkányense*** BUBIK, 1955 (Pl. XXX, 1)
 2. Holotype: BP. 83.301.1 (15651).
 3. Miocene, Sarmatian.
 4. Felsőtárkány, Hungary.
 5. KUBÁT, K.-BUBIK, (1955).—Annls. Inst. geol. pub. hung. 44 (1), p. 177, fig. 19.
 6. Solum partes minores folii magni adsunt. Folium ambitu ignoto sed verisimiliter oblongum vel ovatum, minimo calculo 12 cm latum. Nervo principali valido 7–8

mm lato; nervi lateralibus creberrimis, 1–1,5 mm inter se distantibus, in angulo ca 45° a nervo principali exeuntibus, mox patentibus, demum cum nervo principali angulum 70° formantibus, omnibus simplicibus et non anastomosantibus. Lamina basi late cuneata, apice rotundata, ibique nervis secundariis nervo principali fere parallelis in ipso apice solum patentibus, usque ad marginem integerrimum conspicuis nec ibi anastomosantibus. Folio Musae simillimum.

1. **Myrica bilinica** ETTINGSHAUSEN, 1866 (Pl. XXXII, 3)
2. Paratype: BP. 59.863.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 43, Pl. 14, fig. 3.
6. M. foliis membranaceis anguste oblongo-cuneatis petiolatis, obtusis, vix 10 millim. latis, margine remote denticulatis; nervatione dictyodroma, nervo primario tenui, recto, apicem versus evanescente, nervis secundariis tenuissimis, angulis acutis orientibus.

1. **Myrica macrodonta** ANDREÁNSZKY, 1962 (Pl. XXX, 3)
2. Holotype: BP. 83.300.1 (6551).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDREÁNSZKY, G. (1962).—Acta bot. hung. 8, (3–4), p. 225, fig. 3.
6. Fragmentum folii. Solum pars media laminae adest. Pars conservata 6 cm longa (folium totum verisimiliter 15–20 cm longum) et 4,2 cm lata, in ambitu oblonga (folium verisimiliter oblongo-lanceolatum), margine maximis triangularibus, acutis, usque ad 1 cm altis, inter se valde inaequalibus, divaricatis vel parum prorsum spectantibus, sibimus inter dentes angustis, acutis. Nervus principalis validus, nervi secundarii in spatiis valde inaequalibus (5–12 mm) et in angulo inaequali (60 – 90°) exeuntes, partim in dentibus terminantes, partim in directione sinuum currentibus, prope sinus dichotomi, ramis secus marginem laminae nervulum marginalem mox evanescentem formantibus. Nervatio tertaria distinctissima, laminam in areolas polygonas minutas dividens.

1. **Myrica onocleaefolia** ANDREÁNSZKY, 1955 (Pl. XXX, 4)
2. Holotype: BP. 83.260.1 (2614).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDREÁNSZKY, G. (1955a).—Annls hist.-nat. Mus. natn. hung. 6, p. 40, Pl. 2 : 7.
6. Folium anguste lanceolatum, apice sensim angustatum, basi ignoto, 12–14 cm longum (sine basi absente 9 cm longum), in medio 19 mm latum, (specimen alterum 17 mm latum, valde incompletum, its longitudine ignoto), margine crenato-dentatum, dentibus obtusis vel rotundatis, 1–2 mm altis. Nervus principalis rectus, nervi laterales primi ordinis valde inaequales et inconspicui,

angulo fere recto exeuntes, longiores versus marginem laminae dichotomi et anastomosantes, breviores post brevem tractum evanescentes. Forma laminae et marginis eae pinnae *Onoclea senbilis* L. simillima.

1. **Myrsine heerii** ETTINGSHAUSEN, 1868 (Pl. XXIX, 2)
 2. Holotype: BP. 55.2462.1.
 3. Middle Oligocene, "Polirschiefer".
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, pp. 36–37, Pl. 38, fig. 11.
 6. M. foliis membranaceis obovato-lanceolatis, serratis, basi angustatis, nervo primario tenui basi distincto, apicem versus subevanescente, nervis secundariis tenuissimis rectis angulis acutis exorientibus, numerosis approximatis, nervis tertiaris obsoletis.
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1. **Myrsinites antiquus** ETTINGSHAUSEN, 1868 (Pl. XXIX, 3)
 2. Holotype: BP. 56.1089.1.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 39, Pl. 37, fig. 26.
 6. M. foliis membranaceis ovato-lanceolatis, crenatis, nervis secundariis ramosis, ramis craspedodromis, liberis et inter se conjunctis.
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1. **Nectandra angustissima** ANDREÁNSZKY, 1968 (Pl. XXXII, 1)
 2. Holotype: BP.83.238.1 (4349).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDREÁNSZKY, G. (1968).—Acta bot. hung. 14 (3–4), pp. 224–225, fig. 4.
 6. Schmal lineales ganzrandiges Blatt, welches sich zum Grund hin etwas schneller verschmälert als gegen die Spitze zu. Die Spitze selbst fehlt, sie war spitz oder lang zugespitzt. Grund keilförmig. Stiel in einer Länge von 5 mm erhalten, dürfte 8 mm lang gewesen sein, ist mittelstark. Spreite ergänzt (etwa 1/2 cm fehlt) 10 cm lang und in der Mitte bzw. etwas unter der Mitte 1,3 cm breit. Hauptader sehr stark, jedoch nicht breit. Die Seitenadern erster Ordnung sind sehr dünn, die untersten entspringen in einem sehr spitzen Winkel (etwa 25°), die oberen in einem etwas stumpferen, doch noch immer in einem spitzen Winkel (40–45°). Die beiden untersten laufen ziemlich hoch hinauf (Laurazeenmerkmal), die oberen sind etwas kürzer Tertiärnervatur fein, dicht, die Spreite in winzige fünf- bis sechseckige Felderchen aufteilend. Blatt völlig ganzrandig, jedoch etwas wellig. Von den übrigen bekannten fossilen Laurazeen durch die schmale Form und durch die in spitzem Winkel ausgehenden Seitennerven erster Ordnung abweichend. Der *Oreodaphne gracilis* Sap. ähnlich, doch im Verhältnis zu deren Länge schmäler und mit in spitzerem Winkel ausgehenden Seitennerven. An Seitennerven sind 10 Paar vorhanden.

1. **Notelaea philyrae** ETTINGSHAUSEN, 1868 (Pl. XXXII, 4)
2. Holotype: BP. 55.2370.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denksch. d. Math. Cl. d. kais. Akad. Wissensch. 28, p. 24, Pl. 36, fig. 14.
6. N. foliis coriaceis lanceolatis, integerrimis, nervatione camptodroma, nervo primario valido prominente, recto, nervis secundariis arcuatis, sub angulis 45–55°, inferioribus sub angulis acutioribus orientibus, marginem versus adscendentibus, nervis tertiaris angulis acutis exeuntibus prominentibus, dictyodromis.

1. **Olea olympica** ETTINGSHAUSEN, 1868 (Pl. XXXII, 5)
2. Holotype: BP. 55.247.1.
3. Middle Oligocene, "Polirschiefer."
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 23, Pl. 36, fig. 13.
6. O. foliis petiolatis coriaceis rigidis, obovato-ellipticis basi attenuatis, margine remote dentatis, nervatione brochidodroma, nervo primario valido prominente, recto, nervis secundariis tenuibus approximatis, sub angulis 50°–60° orientibus, segmentis secundariis inaequalibus arcubus laqueorum maculis externis instructis; nervis tertiaris in latere externo angulis acutis, interno angulo subrecto exeuntibus, dictyodromis, maculis prominentibus.

1. **Oreopanax protomulticaulis** (RÁSKY) HABLY, 1983 (Pl. LVII, 2; Pl. LVIII, 4)
2. Neotype: Szécsény 61.96.1; Paratype: BP. 82.420.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. HABLY, L. (1983).—Geol. Hung. ser. Pal. 44–46, p. 155, Pl. XXXIII, Fig. 4; Pl. XXXIV, Figs. 1–3; XXXV, Fig. 4.
6. Leaves are large with a length of 8–13 cm and breadth varying between 3 and 6 cm. They are elongated, slightly obovate or elliptical. Venation brachydromous, base cuneate, apex acute. Along the margin, there are large, obtuse teeth, at great distances from each other. Both the apical and the basal sides of the teeth are convex. Being arranged at great distances from one another, the teeth do not make angles. The midvein is thick and marked, usually reaching 1 mm, and in the basal section of the larger leaves coming near to 2 mm. Secondary veins are thin but very marked. There are 6–8 pairs of veins in the leaves. They arise at angles of 40° in the basal third; 45–50° in the median third; 60–45° in the apical third of the lamina. The distance between the veins varies according to the size of the leaf. With the smaller leaves it is 0.9–1.2 cm in the median third, whereas with the larger, broader leaves, the veins arise at distances between 1.2–1.7 cm. Beside and above the loops, formed by the secondary veins, a small loop network is formed.

Not each secondary vein runs into a tooth, the teeth being sparse. The first pair of secondary veins, nearest the base, arises from the midvein in a characteristic way; these are considerably thinner than the secondary veins starting in the median and in the apical third. At the base they run very near the midvein and parallelly with it. The separate vein bunch is well visible, arising at acute angle, steeper and less abruptly than the secondary veins above it. Above this vein the next pair of secondary veins arise at a very great distance, and thus the vein, looping backwards, borders a considerably larger surface than the rest of the secondary veins. The secondary veins, starting in the median third, show a break or small curve before connecting with the midvein.

1. **Ostrya angustifolia** ANDRÉÁNSZKY, 1959 (Pl. XXXII, 2)
2. Holotype: BP. 59.20.1 (20840)
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 91, fig. 72, Pl. 23, fig. 23:5.
6. Folium oblongo-lineare, apicem versus angustatum, apice acutum, basi verisimiliter (basis abest) sensim angustatum, basi ipsa subito contractum. Lamina ca. 9 cm longa, in medio 3,5 cm lata, margine duplicatodenticulato-serrata, dentibus minutis, acuminatis. Nervus principalis validus, rectus usque ad apicem conspicuus, nervi laterales ca. 11-pares, in angulo 40–50° exeuntes, subrecti craspedodromi, extus ramosi, ramis in dentibus terminantibus.

1. **Oxylobium miocenicum** ETTINGHAUSEN, 1869 (Pl. XXXIII, 2–3)
2. Syntype: BP. 59.957.1, 59.886.1, 59.891.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow). Czechoslovakia.
5. ETTINGHAUSEN, C. f. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 56, Pl. 54, fig. 11; Pl. 55, figs. 3–5.
6. O. foliis rigide coriaceis, breviter petiolatis, lanceolatis vel linear-lanceolatis acuminatis integerrimis, nervatione bronchidodroma, nervo primario recto, basi valido, apicem versus attenuato, nervis secundariis flexuosis approximatis, infimis sub angulis acutis, mediis et superioribus sub angulis obtusioribus egredientibus, nervis tertiaris ramosis dictyodromis.

1. **Parrotia fagifolia** (GOEPP.) HEER var. **retusa** ANDRÉÁNSZKY, 1959 (Pl. XXXV, 3)
2. Holotype: BP. 59.28.1 (20456 MHN).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 74. Pl. 14:6.
6. Endlich gibt es eine Form, die auch aus Balaton typisch vorliegt, wo sich das Blatt am Grunde allmählich in den Blattstiel und an der Spitze ebenfalls

allmählich verschmälert mit seichter welliger Kerbung, so dass das ganze Blatt rhombisch ist, 6,6 cm lang und in der Mitte 3,4 cm breit.

1. **Parrotia fagifolia** (GOEPP.) HEER var. **rhomboidalis** ANDREÁNSZKY, 1959 (Pl. XXXV, 1)
2. Holotype: BP. 56.1374.1.
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 74, fig. 33, Pl. 15.
6. n. var. *Lamina lanceolata*, basi sensim in petiolum angustata, apice longe angustata, ibique undulato-crenata.

1. **Passifloraephyllum kraeuseli** RÁSKY, 1960 (Pl. XXXI, 2)

2. Holotype: BP. 60.33.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1960).—Senckenberg. leth. 41, (1/6), pp. 433–435, Pl. 4, fig. 16.
6. Rundliche Blattform. Das Blatt ist granzrandig. Die Länge der Blätter beträgt etwa 9 cm, ihre Breite etwa 8 cm. Vom Blattgrund gehen drei gleichdicke Hauptnerven aus. Die seitlichen Primärnerven sind kaum gekrümmmt. Die höchstens zwei Paar Sekundärnerven entspringen wechselständig im oberen Drittel des Blattes; sie sind bogenläufig und camptodrom. Die seitlichen Primärnerven sind lateral von tertären camptodromen Nerven eingefaßt. Weitere Tertiärnerven, die ± parallel zueinander verlaufen, verbinden die primären und sekundären Nerven. Die Spreite ist von einem polygonalen Nervennetz ausgefüllt. Die Blätter sind lederig.

1. **Pisonia bilinica** ETTINGSHAUSEN, 1866 (Pl. XXXVI, 5)

2. Syntype: BP. 59.868.1, 59.842.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 89, Pl. 29, figs. 2–4.
6. *P. foliis membranaceis ovato-ellipticis, basi acutis, apice paullatim producto obtusatis, margine integerrimis, nervatione camptodroma, nervo primario prominente, recto, excurrente, nervis secundariis angulis subacutis egreditentibus, remotis, arcuatis, nervis tertiaris tenuissimis brevissimis dictyodromis, maculis apertis.*

1. **Pistacia lentiscoides** ANDREÁNSZKY & CZIFFERY, 1959 (Pl. XXXIV, 2)

2. Holotype: BP. 54.159.1.
3. Miocene, Sarmatian, tuff.
4. Erdőbénye, Kővágó-oldal, Hungary.

5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 154, fig. 179, Pl. 45 : 4.
6. Folium paripennatum, jugis tribus. Petiolus infra jugum infimum 8 mm longus, rhachis supra infimum usque ad jugum supremum 1,2 cm longus, praesertim infra insertionem foliorum alatus, 2 mm latus. Foliola 5 adsunt, coriacea, sessilia, paulum asymmetrica oblanceolato-elliptica, basi cuneata, apice rotundata et leviter emarginata, ca. 1,6 cm longa et 7 mm lata, integerrima. Nervus principalis subvalidus et subrectus, in parte superiore valde attenuatus et ad apicem laminae fere evanescens. Nervi laterales in uno latere laminae in angulo apertiore, ca. 70°, in altero in angulo acutiore (55–60°) orti, ca. 10 pares, tenuissimi, in viciniate marginis laminae dichotomi et anastomosantes, camptodromi. Nervatio tertaria inconspicua.

1. **Pittosporum szántóinum** (UNGER) ANDRÉÁNSZKY, 1959 (Pl. XXXIV, 3)
2. n. comb.: BP. 59.258.1.
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Délő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 138, figs. 140–141, Pl. 3, fig. 4.
6. Die Blätter sind 5,5–10 cm lang und 4,5–5 cm breit, zungenförmig verkehrt eiförmig. Unser kleineres Blatt ist teratologisch, da sich seine Hauptader gabelt. Die Hauptader ist stark und nur gegen die Spitze des Blattes zu dünn. Die Seitenadern sind dünn und sehr stark zickzackig. Sie gehen in einem spitzen Winkel aus und verästeln sich öfters, wobei sich die Äste bogenläufig öfters zurückbiegen und Maschen bilden.

1. **Pleiomerites reticulatus** ETTINGSHAUSEN, 1868 (Pl. XXXIV, 5)
2. Holotype: BP. 55.2392.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, P. 38, Pl. 38, figs. 6–6a.
6. M. foliis petiolatis, coriaceis, obovato-lanceolatis, apice parum attenuato obtusiusculis, basi petiolum angustatis, margine serrulatis, nervatione dictyodroma, nervo primario recto, basi valido, prominente, apicem versus attenuato, nervis subtilissimis vix conspicuis rete tenerrimum formantibus.

1. **Populus balsamoides** GOEPP. var. **obesa** KOVÁCS, 1959 (Pl. XXXI, 1)
2. Holotype: BP. 83.277.1 (NSZ 95).
3. Miocene, Upper Badenian, Fertőrákos Lajta Limestone Formation.
4. Nógrádzakál, Páris valley, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 122, fig. 115, Pl. 35 : 2.
6. Folia rotundato-ovalia, basi latissima, apice longe acuminata. Typus ovato-

triangularis et apice breviter Contractus. Folium varietatis 7,2 cm longum et 6 cm latum. Folia typi latitudine sesquilonga.

1. **Populus insularis** KOVÁTS, 1856 (Pl. XXXIV, 1)
2. Holotype: BP. 64.124.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung. p. 30, Pl. 4, fig. 16.
6. P. foliis petiolatis, ad basim folii biglandulosis, ovatis sinuato-repandis, nervo primario parum flexuoso valido, nervis secundariis 3–4 ad basim folii prorumpentibus crassis, aequo flexuosis, nervos tertiaros sat conspicuos rete laxum efformantes, emitentibus, Longit. sine petiolo (cujus tantum pars adest) circ. 7 centm., latit: 5 centm.

1. **Potamogeton fenzlii** KOVÁTS, 1856 (Pl. XXXV, 2)
2. Holotype: BP. 63.4.1.
3. Miocene, Sarmatian, diatomite.
4. Tállya, Hungary.
5. KOVÁTS, J. (1856b). — Arb. geol. Ges. Ung. p. 48, Pl. 1, fig. 7.
6. P. foliis sessilibus basi rotundatis ovato-oblongis acutis(?) integerrimis membranaceis, multinerviis, nervis ultra 30 aequalibus, aequidistantibus, convergentibus. Longit. ultra 6 centim., latit. circ. 3 centm.

1. **Potamogeton wieseri** KOVÁTS, 1856 (Pl. XXXV, 5)
2. Holotype: BP. 58.361.1 = 58.362.1.
3. Miocene, Sarmatian, diatomite.
4. Tállya, Hungary.
5. KOVÁTS, J. (1856b). — Arb. geol. Ges. Ung. p. 47, Pl. 1, fig. 9.
6. P. foliis sessilibus elongatis linearis lanceolatis cuspidatis integerrimis membranaceis, nervo mediano distincto tenui, nervis reliquis numerosissimis fere parallellis approximatis tenerrimis. Longit. circ. 1 decim., latit. circ. 12 millm.

1. **Prunus olympica** ETTINGSHAUSEN, 1869 (Pl. XXXVI, 1)
2. Holotype: BP. 59.855.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 55, Pl. 53, fig. 21.
6. P. foliis breviter petiolatis, subcoriaceis, ovato-ellipticis, utrinque acutis, serratis, nervatione camptodroma, nervo primario prominente, excurrente, nervis secundariis 5–6, nervis tertiaris ramosis inter se conjunctis.

1. **Ptelea macroptera** KOVÁTS, 1856 (Pl. XXXIII, 1)
2. Holotype: BP. 58.2.1.

3. Miocene, Sarmatian, diatomite.
4. Tályya, Hungary.
5. KOVÁTS, J. (1856b). — Arb. geol. Ges. Ung. p. 51, Pl. 1, fig. 2.
6. P. fructu compresso samaroide, centro turgido, biloculari, ambitu in alam orbicularem s. ocatam membranaceum reticulato-venosam expanso. Semina in loculis solitaria rotunda compressa (?). Fructus diameter circ. 4 centm., seminis diameter circ. 8 millm.
7. *Koelreuteria macroptera* (KOVÁTS) EDWARDS; RÁSKY, K. (1958): in the collection; published in this work.

1. **Pterocelastrus oreonis** ETTINGSHAUSEN, 1869 (Pl. XXXVI, 2)
2. Holotype: BP. 59.841.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 31, Pl. 48, fig. 20.
6. P. foliis rigide coriaceis, obovatis, apice breviter obtuseque cuspidatis, margine integerrimis, nervatione camptodroma, nervo primario basi prominente apicem versus paullatim flexuoso, nervis secundariis paucis tenuibus, curvatis angulo subacuto egredientibus, nervis tertiaris obsoletis.

1. **Pterospermophyllum hornafrantzieni** RÁSKY, 1962 (Pl. XXXIV, 4); Fig. 13
2. Holotype: BP. 62.75.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.



Fig. 13
Pterospermophyllum hornafrantzieni RÁSKY, holotype: BP. 62.75.1

4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1962). — Annls hist.-nat. Mus. natn. hung. 54, pp. 40–41, Pl. 4, fig. 1.
6. An elongated upper leaf part, with dripping tip. Measurable length 10.0 cm, greatest width of fragment 4.4 cm. Length of the dripping tip 2.0 cm (though immediate apex broken), width 0.2 cm. Margin of leaf fragment entire. Midrib raised and curved. Alternating slightly arcuate, locally forking, and camptodrome secondary veins starting from midrib. In the dripping tip, secondary veins border midrib with gradually decreasing loops. Also tertiary veins well observable: thin, more or less perpendicular to secondaries and midrib, parallel with each other, forking and anastomosing. Areas between tertiaries filled with polygonal venation. Leaf probably coriaceous.

1. **Quercus acherontica** ETTINGSHAUSEN, 1866 (Pl. XXXVI, 3)
2. Holotype: BP. 59.1074.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 57, Pl. 16, fig. 10.
6. Q. foliis lanceolatis utrinque attenuatis, argute duplicitoserratis, nervo primario prominente, secundariis arcuatis, furcatis vel ramosis, craspedodromis, sub angulis acutis exeuntibus, nervis tertiaris tenuissimis angulo recto egredientibus.

1. **Quercus alamoides** ETTINGSHAUSEN, 1866 (Pl. XXXVI, 4)
2. Holotype: BP. 59.902.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 59, Pl. 17, fig. 2.
6. Q. foliis subcoriaceis, ovato-oblonais vel ellipticis, apice paullo angustatis margine denticulatis, nervatione craspedodroma, nervo primario valde prominente, recto, secundariis utrinque 7–10, prominentibus, sub angulis 50–60° orientibus arcuatis parallelis, nervis tertiaris distinctis, angulo recto exeuntibus inter se conjunctis.

1. **Quercus budensis** ANDREÁNSZKY & KOVÁCS, 1964 (Pl. XXXVII, 2)
2. Holotype: BP. 83.285.2 (6030).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Budaújlak, Hungary.
5. ANDREÁNSZKY, G. (1964b). — Egri Múz. évk. 2, p. 30, fig. 23.
6. Stiel 8–10 mm lang, mittelstark (1,75 mm). Spreite 10–12 cm lang, 2,5 cm breit, schmal lanzettlich, ganzrandig, am Grunde keilförmig oder sehr schwach herablaufend. Hauptader am Grunde stark sodann rasch verdünnend. Seitenadern 9 bis 10-Paar, sie gehen in einem Winkel von 45–50° aus, sind nicht ganz parallel, sie biegen sich stark nach vorne, die oberen entspringen in einem

grösseren Winkel und anastomosieren vor dem Blattrand in schönen breiten Bögen. Feinere Nervatur verschwommen, nur soviel ist zu entnehmen dass sie nicht parallel ist sondern ein Netzwerk darstellt. Die Konsistenz des Blattes scheint ledering gewesen zu sein.

1. **Quercus (Cyclobalanopsis) egedensis** ANDRÉÁNSZKY & KOVÁCS, 1964 (Pl. XXXIX, 2)
 2. Holotype: BP. 83.282.1 (5123).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDRÉÁNSZKY, G. (1964b). — Egri Múz. évk. 2, p. 27, fig. 18, Pl. 4 : 12.
 6. Blattstiell 3,2 cm lang und dünn (1,2 mm dick), Spreite lanzettlich, ergänzt 15 bis 16 cm lang, in der Mitte 4 cm breit, ganzrandig, am Grunde keilförmig, die Spitze unbekannt. Hauptader infolge der Fossilisation stark gebogen. Seitenadern 15 bis 16-Paar sie gehen auf einer Seite in einem Winkel von 60–70°, auf der anderen in 45–50° aus, welche Asymmetrie auch der Fossilisation zugeschrieben werden kann. In einem gewissen Abstand vom Rande bilden sie schöne Bögen. Die Seitenadern gehen nicht in gleichen Abständen und auch nicht in gleichem Winkel aus, sind daher auch nicht genau parallel.

1. **Quercus enigmatica** ANDRÉÁNSZKY & KOVÁCS, 1964 (Pl. XXXVIII, 3)
 2. Holotype: BP. 83.292.1 (3878).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDRÉÁNSZKY, G. (1964b). — Egri Múz. évk. 2, p. 31, fig. 26.
 6. Blatt lineal mit schmal-keilförmigen Grund, Spitze unbekannt, am Rande gezahnt, mit je 10–11 Zähnen per Seite. Zähne kurz, 1/2 bis 3/4 mm hoch, nach vorne gerichtet und schmal dreieckig, stumpflich. Vom Stiel nur ein Teil, etwa 6 mm erhalten, er ist dünn. Hauptader dünn, aber hervortretend, Seitenadern 11 bis 12 Paar, etwas asymmetrisch ausgehend, auf der einen Seite in einem Winkel von 55–60°, auf der anderen in einem Winkel von etwa 50°, dann nach vorne gebogen und in die Zähne hinauslaufend. Bevor sie aber in die Zähne hinauslaufen, senden sie einem Seitenast nach oben zu aus, der mit dem Blattrand parallel läuft aber bald verschwindet. Blattlänge etwa 8 cm, Breit 15 mm.

1. **Quercus excelsior** ANDRÉÁNSZKY & KOVÁCS, 1964 (Pl. XXXIX, 1)
 2. Holotype: BP. 83.271.2 (4070).
 3. Lower Oligocene, Kiscellian, Tard Clay Formation.
 4. Eger, Kiseged, Hungary.
 5. ANDRÉÁNSZKY, G. (1964b). — Egri Múz. évk. 2, p. 29, fig. 21.
 6. Blatt lanzettlich, 15–19 cm lang, 4–5,5 cm breit, am Grunde keilförmig, an der Spitze ziemlich lang ausgezogen (in dem von der rezenten Art die kurz spitz oder zugespitzt ist etwas abweichend). In dem unteren viertel ganzrandig, oder wellig,

im oberen Teil ungleich gezahnt, die Zähne etwas nach vorne gerichtet, spitz oder stumpf, ganz bis 8–10 mm lang, sie gehen aus breitem Grunde aus, aber im oberen Teil des Blattes von einem schmäleren Grund und sind etwas zurückgebogen. Aderung ziemlich schlecht sichtbar, etwa 20-Paar Seitenadern, die in einem Winkel von 45–50° auslaufen und dann etwas nach vorne gebogen sind, sie sind sämtlich randläufig. Einige Seitennerven senden gegen die Spitze des Blattes zu einem kurzen Ast der aber jenem der *Castanopsis furcinervis* (Rossm.) Kr. et Wld. nicht gleichkommt, der Seitenast entspringt nämlich in einem grösseren Abstand vom Blattrand bzw. vom Zahn und ist schwächer. Ausserdem entspringt manchmal gegen den Blattgrund zu ein Seitenast. Dieser Umstand und dass die Zähne schmäler sind unterscheidet diese Blattform entschieden von *C. furcinervis* (Rossm.) Kr. et Wld., wie auch von *Lithocarpus calathoides* Andr. et Kov. n. sp. Auch ist *Q. excelsior* Andr. et Kov. n. sp. durch ihre rein lanzettliche Form gut trennbar.

1. **Quercus kutschlinica** ETTINGSHAUSEN, 1866 (Pl. XXXVIII, 2)
2. Holotype: BP. 55.2468.1.
3. Middle Oligocene, "Polirschiefer".
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 61, Pl. 17, fig. 11.
6. *Q. foliis coriaceis obovato-ellipticis, basi cuneatis apice breviter cuspidatis, utrinque 2–3 dentatis, basin versus integerrimis, nervatione craspedodroma, nervo primario distincto, prominente, nervis secundariis angulis acutis variis egredientibus, arcuatis vel flexuosis, nervis tertiaris sub angulo recto orientibus dictyodromis.*

1. **Quercus palaeomontana** ANDRÉÁNSZKY, 1959 (Pl. XL, 4)
2. Syntype: BP. 59.152.1 (20468).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 112, figs. 107–108, Pl. 31 : 5.
6. *Folium ellipticum, 7,5–8,5 cm longum, in medio 3,5–4,2 cm latum, apice et basin versus sensim angustatum, apice ipso subacutum, basi cuneatum. (Basis ipsa et petiolus desunt.) Lamina margine repando-dentata, dentibus 1–4 mm altis, rotundatis, sinibus inter dentes late rotundatis, apertis. Nervus principalis validus, rectus, usque ad apicem laminae conspicuus. Nervi laterales 7-pares, in angulo acuto (30–40°) egredientes, in parte inferiore recti, in parte superiore etiam recti vel paulum prorsum arcuati, omnes in dentes exeuntes craspedodromi. Nervi infimi ad marginem laminae evanescentes. Nervi laterales omnes tenues, sed distinctissimi. Folium folio speciei recentis *Qu. montana* Willd. simillimum.*

1. ***Quercus palaeovirens*** ANDRÉÁNSZKY, 1959 (Pl. XXXVIII, 1)
2. Holotype: BP. 60.1527.1 (22791).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, P. 106, fig. 94, Pl. 28 : 1.
6. Folium cartilagineum, petiolatum, petiolo 1 cm vel ultra longo, oblanceolatum, asymmetricum, apice obtusum, basi cuneatum, sine petiolo 7,5 cm longum, in parte tertia superiore 3,2 cm latum, in uno latere dente unico, ca. 12 mm lato et 3 mm alto, rotundato instructum, caeterum margine solum leviter undulatum, integerrimum. Nervus principalis distinctissimus, sed tenuis, apicem versus sensim attenuatus. Nervi laterales in spartiis inaequalibus et in angulo inaequalis orti, arcuati, partim camptodromi, partim craspedodromi, ca. 7-pares, tenues, marginem versus valde attenuati et evanescentes, simplices vel hinc inde ramosi.

1. ***Quercus pseudoilex*** KOVÁTS, 1856 (Pl. XXXVII, 4)
2. Holotype: BP. 62.32.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung., p. 22, Pl. 2, fig. 6.
6. Q. foliis lanceolatis longe petiolatis, coriaceis, remote denticulatis, acutis, nervo primario tenui, nervis secundariis paucis, remotis tenuibus sub angulo circ. 30° ortis, subramosis in marginem arcuatim laxe decurrentibus nervis tertiaris in rete tenuissimum solutis. Longit 4–6 centm., latit. circ. 1–1,5 centm.
7. *Quercus urophylla* UNG.; CZIFFERY-SZILÁGYI, G. (1955). — Annls Inst. geol. pub. hung. 44 (1); p. 24.

1. ***Quercus pseudorobur*** KOVÁTS, 1856 (Pl. XXXVIII, 4)
2. Holotype: BP. 62.20.1 = 62.21.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung., p. 23, Pl. 2, fig. 9.
6. Q. foliis ovatis, sinuato-lobatis, lobis rotundatis, obtusis emucronatis integrerimis, nervo primario valido, secundariis sub angulo circ. 30–40° ortis post ortum paululum sursum versus arcuatis, in apicem lobi stricte excurrentibus, simplicibus. Longit. circuit. 8 centm. latit. 4 centm.
7. *Quercus pseudocastanea* GOEPPERT; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren, Brno, p. 87.

1. ***Quercus pseudoserra*** KOVÁTS, 1856 (Pl. XXXVII, 1)
2. Holotype: BP. 62.22.1 = 62.23.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung., p. 23, Pl. 2, fig. 8.

6. Q. foliis coriaceis, dentatis ovato-oblongis, apice rotundatis crebre serratodentatis, dentibus minutis acuminatis, nervo primario valido, secundariis sub angulo 60–65° ortis, parum conspicuis versus marginem paululum curvatis circ. 8 millm. ab invicem remotis. Longit. —, latit. circ. 4 centm.

1. **Quercus szirmayana** KOVÁTS, 1856 (Pl. XXXVII, 3)

2. Syntype: BP. 62.30.1 = 62.31.1.

3. Miocene, Sarmatian, bluish-grey clay.

4. Erdőbénye, Barnamáj, Hungary.

5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung., p. 21, Pl. 2, fig. 1.

6. Q. foliis ovatis, coriaceis, crassis hinc inde denticulatis, petiolatis, petiolo brevi crasso, nervo primario valido, secundariis sub angulo 40–50° ortis, haud strictis, simplicibus, parum conspicuis. Longit 2,5–4 centm. latitud. 1–2 centm.

7. *Quercus mediterranea* UNG.: CZIFFERY-SZILÁGYI, G. (1955). — Annls Inst. geol. pub. hung. 44 (1), p. 24.

1. **Quercus tenuipetiolata** ANDREÁNSZKY, 1962 (Pl. XXXIX, 3)

2. Holotype: BP. 83.278.2 (26030).

3. Upper Oligocene, Egerian, Eger Formation.

4. Eger, Wind's brick-yard, Hungary.

5. ANDREÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 222–223, fig. 2.

6. Folium petiolatum, petiolo 5 mm longo, tenuissimo. Lamina 4,5 cm longa et 1/3 inferiore 17 mm lata, anguste elliptico-ovata, basi rotundata, apice longe acuminata et subobtusa, margine integerrima. Nervus principalis basi validus, apicem versus sensim attenuatus sed usque ad ipsum apicem bene visibilis. Nervi secundarii 7-pares, in parte inferiore laminae suboppositi, in parte superiore parum alternantes, in angulo 45–50° exentes mox valde arcuati, secus marginem laminae parum protracti sed non anastomosantes, simplicissimi. Nervatio tertioria inconspicua.

1. **Quercus zemplénensis** CZIFFERY, 1955 (Pl. XXXIX, 4; Fig. 14)

2. Holotype: BP. 54.1543.2.

3. Miocene, Sarmatian, tuff.

4. Erdőbénye, Kővágó-oldal, Hungary.



Fig. 14

Quercus zemplénensis CZIFFERY, holotype: BP. 54.1543.2

5. CZIFFERY-SZILÁGY, G. (1955). — Annls Inst. geol. pub. hung. 44 (1), pp. 28, 162, Pl. 6 : 19.
6. Folium elliptico-rhomboideum, 3,5 cm longum et 1,7 cm latum, basin versus cuneatum ad ipsam basin anguste rotundatum, apice subacutum: margine in parte inferiore 1/4 integro, superne undulato-dentato, dentibus subacutis, 2,5–4 mm inter se distantibus, ca. 3/4 mm altis. Nervo principali recto, nervis secundariis superioribus in angulo acuto (ca. 40°), infimis in angulo magis aperto (usque ad 65°) exeuntibus, parum divergentibus, subrectis, craspedodromis, utrinque 9–10. Petiolus modice crassus, 8 mm longus.
1. **Rapanea erdőbényensis** CZIFFERY & ANDREÁNSZKY, 1959 (Pl. XXXV, 4)
2. Holotype: BP. 59.30.1 (E 530).
3. Miocene, Sarmatian, tuff.
4. Erdőbénye, Kővágó-oldal, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 136, Pl. 40 : 6.
6. Folium coriaceum, petiolatum, petiolo 7 mm longo modice crasso, lamina angusta obovali-elliptica, basi cuneata, apice rotundata, margine integerrima subundulata. Nervus principalis rectus, crassus, usque ad apicem laminae validus. Nervi laterales tenuissimi, sed distincti, irregulariter in angulis diversis 50–60° orti, in numero utrinque ca. 12–12, inter se non paralleli et non aequidistantes, infra recti, postea plures ramificati, ramis anastomosantibus. Lamina ipsa 2,6 cm longa, 13 mm lata.
1. **Rhamnus brevifolia** AL. BRAUN var **serrata** ANDREÁNSZKY, 1967 (Pl. XLI, 2)
2. Holotype: BP. 83.258.2.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G. (1967a). — Annls hist.-nat. Mus. natn. hung. 59, p. 37, Pl. 3 : 14.
6. Blatt ebenso asymmetrisch wie der Typus der Art. Stiel 7 mm lang, dünn, Spreite 2,8 cm lang und 1,7 cm breit, schief breit elliptisch. Seitenadern erster Ordnung 5 Paar, sie entspringen der Asymmetrie entsprechend auf den zwei Seiten der Spreite in verschiedenen Winkeln, dann biegen sie nach vorne und verjüngen sehr rasch gegen den Blattrand zu.
1. **Rhamnus palaeofrangula** ANDREÁNSZKY, 1963 (Pl. XL, 1)
2. Holotype: BP. 62.1202.1 (20955).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest, Csillaghegy, Hungary.
5. ANDREÁNSZKY, G. (1963a). — Acta bot. hung. 9 (3–4), p. 249, fig. 18.
6. Folium parvum, petiolatum, petiolo 8 mm longo, subvalido. Lamina ovata, 5 cm longa et in 2/5 inferiore 2,4 cm lata, basi rotundata, apice obtusa, margine subintegra. Nervus principalis basi validus, rectus, apicem versus sensim attenuatus sed usque ad apicem conspicuus. Nervi secundarii 10-pares, in spatiis

subaequalibus et in angulo 40–50° exeuntes, inter se subparalleli, parum arcuati et ad marginem laminae evanescentes.

1. **Rhamnus paucinervis** ETTINGSHAUSEN,, 1869 (Pl. XLI, 4)
2. Holotype: BP. 55.2479.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 43, Pl. 49, figs. 19, 19b.
6. Rh. foliis membranaceis lanceolatis acuminatis integerrimis, nervis secundariis utrinque 4, alternis, angulo peracuto egredientibus, simplicibus camptodromis, nervis tertiaris tenuissimis densis transversis.

1. **Rhododendron haueri** ETTINGSHAUSEN, 1868 (Pl. XLI, 1)
2. Holotype: BP. 55.2457.1.
3. Middle Oligocene, “Polirschiefer”.
4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 50, Pl. 39, fig. 19.
6. R. foliis petiolatis, coriaceis, oblongo-lanceolatis integerrimis, in petiolum attenuatis, nervatione camptodroma, nervo primario pervalido, nervis secundariis tenuibus, crebris sub angulo acuto exorientibus, flexuosis ramosis brochidodromis, nervis tertiaris in latere externo angulis obtusis in latere interno angulis acutis egredientibus, prominentibus, flexuosis, inter se conjunctis, rete macrosynammatum includentibus.

1. **Rhus bükkensis** ANDREÁNSZKY, 1959 (Pl. XL, 3)
2. Holotype: BP. 60.1511.1 (22825).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 152, Pl. 46 : 5.
6. Trifoliata vel pinnatifolia. Foliolum petiolatum adest, petiolulo 2 mm longo, subvalido. Foliolum coriaceum, lanceolatum, leviter asymmetricum, basi cuneatum, apice acutum, 4,2 cm longum, 1,6 cm latum, margine integerrimum. Nervus principalis usque ad apicem validus, nervi laterales omnes tenues, validiores 11-pares, hinc inde debilioribus intermixti, in spatiis inaequalibus, in angulo ca. 50° orti, nonnulli furcati, apice omnes ramosi, ramis craspedodromis vel hinc inde anastomosantibus et arcos formantibus.

1. **Salix dianae** ETTINGSHAUSEN, 1866 (Pl. XLV, 2)
2. Holotype: BP. 59.1059.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.

5. ETTINGHAUSEN, C. F. (1866). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, p. 87, Pl. 29, figs. 20, 21.
 6. S. foliis lanceolatis, utrinque attenuatis, denticulatis, nervatione camptodroma, nervo primario basi prominente, apicem versus tenuissimo, nervis secundariis sub angulis acutis orientibus tenuissimis arcuatis, marginem versus adscendentibus, nervis tertiaris vix distinctis, rete tenerimum formantibus.
1. **Sapindaceaecarpum lunulatum** ANDREÁNSZKY, 1959 (Pl. XLIII, 2)
 2. Holotype: BP. 59.219.1 (22215).
 3. Miocene, Sarmatian, rhyolitic tuff.
 4. Balaton, Dellő, Hungary.
 5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 156, fig. 183, Pl. 47 : 5.
 6. Valva unica fructus samareoideo-capsularis trivalvi adest. Valva semicircularis in uno latere (satura) recta, in altero convexa, 3,8 cm longa et 1,6 cm lata, margine integra, in ambis extremitatibus semirotundata. Pericarpium chartaceum, nervis transversalibus marcantibus, 2–3 mm inter se distantibus regulariter obsita, Sutura ad insertionem seminis incrassata, semen deest. Capsula samareoidea eis generum *Urvillea* et *Cardispermum* familiae Sapindaceae valde similis.
1. **Sapindophyllum acuminatum** ETTINGHAUSEN, 1869 (Pl. XLI, 3)
 2. Holotype: BP. 55.2446.1.
 3. Middle Oligocene, “Polirschiefer”.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.
 5. ETTINGHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 27.
 6. S. foliis pinnatis, foliolis membranaceis, lanceolato-acuminatis, basi obliqua rotundato-obtusis, margine crenulatis, brevissime petiolatis, nervo primario tenui, nervis secundariis vix conspicuis.
1. **Sapindophyllum dubium** ETTINGHAUSEN, 1869 (Pl. XLVIII, 1)
 2. Holotype: BP. 59.900.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGHAUSEN, C. F. (1869). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 27, Pl. 46, fig. 21.
 6. S. foliis pinnatis, foliolis coriaceis, oblique-ovalibus utrinque obtusis, crenatis, petiolulatis, nervo primario valido prominente, nervis secundariis tenuissimis arcuatis.
1. **Sapindophyllum falcatum** ETTINGHAUSEN, 1869 (Pl. XLII, 2)
 2. Holotype: BP. 55.2473.1.
 3. Middle Oligocene, “Polirschiefer”.
 4. Bilin (Bilina), Kutschlin (Kučlin), Czechoslovakia.

5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 27, Pl. 46, fig. 23.
6. S. foliis pinnatis, foliolis coriaceis, falcato-lanceolatis, apice obtusis basi obliquis, margine crenatis, petiolulatis, nervo primario valido, nervis secundariis arcuatis, remotis, fere obsoletis.

1. **Sapindus cupanioides** ETTINGSHAUSEN, 1869 (Pl. XLVII, 4)
2. Holotype: BP. 59.964.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 25, Pl. 47, fig. 3.
6. S. foliis pinnatis, foliolis subcoriaceis, ovato-lanceolatis, integerrimis, basi obliquis, petiolulatis, nervis secundariis tenuibus, arcuatis, subremotis, simplicibus, inferioribus angulo subrecto, superioribus angulis acutis egreditibus, nervis tertiaris vix conspicuis.

1. **Sapindus erdőbényensis** KOVÁTS, 1856 (Pl. XLII, 3)
2. Syntype: BP. 64.116.1.
3. Miocene, Sarmatian, bluish-grey clay.
4. Erdőbénye, Barnamáj, Hungary.
5. KOVÁTS. J. (1856a).—Arb. geol. Ges. Ung. pp. 32–33, Pl. 7, fig. 5.
6. S. foliis pinnatis plurijugis, foliolis lanceolatis subfalcatis, acutis integerrimis, basi angustato-attennatis valde inaequalibus, nervo primario sat valido, secundariis sub angulo 45–55° ortis, tenuibus, ramosis Longit. 5–8 centm., latit. 1,5–2 centm.
7. **Sapindus falcifolius** A. BR.; CZIFFERY-SZILÁGYI, G. (1955).—Annls Inst. geol. pub. hung. 44 (1), p. 24.

1. **Sassafras tenuilobatum** ANDRÉÁNSZKY, 1959 (Pl. XLVI, 1)
2. Holotype: BP. 83.303.1 (16636).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1959a).—Acta bot.hung. 5 (1–2), p. 6, Pl. 1 : 2.
6. Folium petiolatum, petiolo 1,6 cm longo, subvalido. Lamina in ambitu obovata, basi cuneata, ultra medium trifida, lobis integerrimis, anguste lienari-lanceolatis, longe cuspidalis. In specimine optime conservato lamina 10 cm longa, inter apices loborum lateralium 5,5 cm lata, in specimine altero 12 cm longa. Lobus medius anguste linearis-lanceolatus, basin versus brevius, apicem versus longe angustatus, a sinu usque ad apicem 6 cm longus, basi 8 mm, supra basin, ubi latissimus, 11 mm latus. Sinus inter lobos anguste rotundatus. Lobi laterales basi latissimi, ibique 7,5 mm lati, apicem versus sensim angustati, apice acuti. Nervus principalis validus, rectus, usque ad apicem lobi distinctus. Nervi loborum lateralium cum nervo principali quoad crassitudinem aequales, suboppositi,

supra basin laminae 6–7 mm, in angulo acuto, ca. 30°, orti, et usque ad apicem loborum lateralium distincti. Nervatio secundaria subtilis, nervi in angulo 45–60° orti, camptodromi, arcus formantes.

1. **Schefflera gaudini** (SAP.) RÁSKY, (Pl. XLIV, 1)
 2. Holotype: BP. 58.11.2.
 3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
 4. Ipolytarnóc, Hungary.
 5. RÁSKY, K. (1959).—J. Paleont. 33 (3), p. 458, Pl. 70, fig. 9.
 6. Oblong or lanceolate, entire-margined leaves, base and apex missing. The measurable length of leaf on the remnants is 8 to 9 cm (its real length was presumably 15 to 17 cm). The width is about 4 cm. There are no remnants on the petiole. The leaf does not expand, the margin being parallel to the midvein. The midvein is thick, the secondaries thin, yet well visible. The short, parallel secondaries start from the midvein at distances of 1.0 to 1.5 cm. There were presumably 10 to 12 pairs of secondaries on the entire leaf. The secondary veins are furcate and connect in a characteristic acute angle long before the margin. This acute angle is occasionally flattened by a vein running parallel to the margin of the leaf. Besides the acute loops there are other smaller ones connecting the secondaries before the margin of the leaf. The leaf is interwoven by a spacious polygonal meshwork, a finer, less spacious meshwork being visible within the previous one. The leaf is coriaceous (on the entire leaf the base was presumably rounded off, the apex ending in a short acumen).
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1. **Schefflera protolucescens** RÁSKY, 1959 (Pl. XLII, 1)
 2. Holotype: BP. 58.14.1.
 3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
 4. Ipolytarnóc, Hungary.
 5. RÁSKY, K. (1959).—J. Paleont. 33 (3), pp. 459–460, Pl. 70, fig. 9.
 6. Oblong, slightly oval, entire-margined leaves. The middle part of the leaf expands slightly. The leaves have great variation in size and form. The base is decurrent, the apex is broken off (if extant, it ends in a short acumen). The length of the leaves is 8 to 9 cm, their width being about 3 to 4 cm. The extant portion of the petiole has a length of 1.5 cm. A fine corrugation (crosswrinkled) appears at the upper end of the petiole. The midvein is relatively thick and tapers towards the apex. From the midvein 6 to 7 pairs of secondaries start alternately, tending upwards and are by far thinner than the midvein. The secondaries are more or less parallel with one another. At the base two pairs of thinner secondaries start from the top of the petiole. The outer pair runs directly alongside the margin and does not tend upwards. The secondaries are furcate near the margin, and connect in angular or acuminous loops. Between the furcate branchings smaller or larger loops connect or border the secondaries. In the upper half of the leaf, too, the secondaries expressly tend towards the apex. The secondaries do not run in a straight line; they are frequently broken. The tertiary veins compose a well visible

spacious, polygonal meshwork, among which a yet finer, less spacious reticulation is perceptible. Texture coriaceous.

1. **Schefflera protomicrophylla** RÁSKY, 1959 (Pl. XLIII, 3)
2. Holotype: BP. 58.12.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary.
5. RÁSKY, K. (1959).—J. Paleont. 33 (3), pp. 458–459, Pl. 69, fig. 4.
6. Oblong, entire-margined leaves, expanding at the center. The length of the leaves is 3.5 to 4 cm, their width being about 1 cm. The base is decurrent, the apex being long attenuated (often broken off on the impressions). Petioles are not visible. The midvein protrudes, secondary veins start from it alternately and sparsely. The lower secondaries are directed to the apex, there being on the whole 4 or 5 pairs of them. The ascending secondaries are camptodrome, connected with each other. In the upper third of the leaf the secondary veins are more densely arranged. A relatively spacious polygonal meshwork enclosed by prominent, well-distinguishable veins, fills the leaf. Texture coriaceous.

1. **Schinus oligocaenicum** ANDREÁNSZKY, & NOVÁK, 1957 (Pl. XLI, 5–6)
2. Syntype: BP. 83.280.1, 83.272.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G.–NOVÁK, É. (1957).—Annls hist.-nat. Mus. natn. hung. 8, p. 49, Pl. 2: 6, 7; Pl. 3: 9.
6. Foliolum sessile, asymmetricum, anguste lineare, vel linearis-lanceolatum, basi oblique cuneatum, apice longe acuminatum, 3,5–5 cm longum, in parte media 4–7 mm latum, margine minute et sat remote, sed acute dentato-serratum, dentibus prorsum spectantibus, breviter subulatis, muticis, vel obsoletis. Nervus principalis validus, rectus vel paulum sigmoideus, versus apicem foliolii evanescens. Nervatio secundaria indistincta. Foliolum eis speciei recentis *Schinus molle* L. simillimum.
7. *Engelhardtia orsbergensis* (WESS. & WEB.) JÄHN., MAI & WALTHER (1977).—Fedd. Rep. 88 (5–6), pp. 327. *Palaeocarya orsbergensis* (WESS. & WEB.) JÄHN., FRIEDRICH & TAKÁČ (1984).—Tertiary Res. 6(3), pp. 109–134.

1. **Scolopia protoluzonensis** RÁSKY, 1959 (Pl. XLIV, 3)
2. Holotype: BP. 58.10.1.
3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.
4. Ipolytarnóc, Hungary
5. RÁSKY, K. (1959).—J. Paleont. 33(3); pp. 457–458, Pl. 70, fig. 9.
6. Oblong leaves of variable size. The apex being more or less acuminate, the base gradually decurrent. On the margin of the leaf widely spaced obtuse or occasionally acute teeth may be found. The length of the leaves is 8 to 10 cm, their width being about 4 cm. The midvein is strongly expanded towards the base. At

the base two pairs of secondary veins ascend from the midvein. The outer basal pair is thinner and borders the inner thicker pair of basal secondaries with narrow, long loops. The further 4 pairs of secondaries start alternately from the midvein, at distances of about 1.5 cm. These secondaries tend rather to the margin of the leaf, where they connect in large, irregular loops. These secondaries often run in broken, and not in straight lines. The large loops are at the margin of the leaf and are bordered by smaller loops from which short veins start to the teeth. The tertiary veins form a spacious meshwork. Besides the leaf is interwoven by a less spacious fine meshwork of veins. Texture is coriaceous.

7. *Oreopanax protomulticaulis* (RÁSKY), HABLY n.comb.; HABLY, L. (1985).—Geol. Hung. ser. Pal. 45, pp. 116, 155.

1. **Sloaneaecarpum eocenicum** RÁSKY, 1962 (Pl. XLII, 4)

2. Holotype: BP. 62.63.1, 62.64.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 34–35, Pl. 2, figs. 1–3.
6. An ovoid fruit. Length 2.0 cm. width 1.5 cm. Remnant of curved pedicel about 2 cm long. Upper portion of pedicel comparatively thick, its width almost 0.3 cm. Whole surface of fruit covered with comparatively long, thin, very fine and very densely spaced spines. Spines straight, linear, hard, rigid, their tips (apices) nowhere hooked. Greatest measurable length of spines 1.2 cm, but also longer could have existed. Surface of fruit, where spines fell off, broke away, or are missing, covered with small protuberances and emergencies. Fruit probably dry or slightly woody.

1. **Sloaneaephyllum grambasti** RÁSKY, 1962 (Pl. XLIII, 4)

2. Holotype: BP. 62.71.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 36–37, Pl. 3, fig. 1.
6. Leaves ovate-elliptical (ellipsoidal). Leaf-base broad, rounded, apex shortly acuminate. Length of leaf 13 cm, greatest width about 10 cm. Remains of petiole missing from impressions. Leaf margin rarely and irregularly dentate. Teeth small, blunt, and distantly spaced at base and on lower part of leaf, but larger, more densely spaced and wavy-dentate in middle and on upper parts of lamina. Midrib thick, hardly attenuating apically, emitting 6–7 pairs of raised, slightly arched, apically extending, alternating, secondary veins. Distance between secondary veins great, varying between 1.5–3.0 cm. Basal pair of secondary veins usually opposite. On upper part of lamina, secondaries directed apically. Secondary veins of a camptodrome or subcamptodrome type. In vicinity of apex, secondary veins might also be craspedodrome (?). Raised and arcuate tertiary veins branching from secondary veins, camptodrome in lower, subcamptodrome

and also craspedodrome in upper part of leaf. Branched off tertiary veins often connected with broken arches. Smaller veins excurrent also from broken arches into teeth, or tertiary veins directly terminating in teeth. Other tertiary veins, connecting secondary veins more or less perpendicularly, generally parallel, forked, then anastomosing or broken. Areas between tertiary veins filled with very characteristical reticulation of minute interstices. Leaves coriaceous.

7. *Alchorneaephylum grambasti* (RÁSKY) RÁSKY, 1966

Paratype: BP. 62.914.1.

Lower Oligocene, Kiscellian, Tard Clay Formation.

Budapest-Óbuda, Hungary.

RÁSKY, K. (1966).—The Palaeobotanist 14(1–3), pp. 265–266, Pl. 1, Fig. 2.

Leaves broadly ovate in general outline. Maximum width above at the middle 9–10 cm, length about 13 cm. Shortly acuminate at the apex, more or less truncate at the base. Petiole not preserved. Margin serrate, with remote and irregularly spaced larger and smaller teeth. Midrib stouter than the laterals. The basal secondaries, one on each side, diverging from the midrib, ascending about one half or one third length of the lamina, and camptodromely joining with the next secondaries. Subsecondaries arching from the other side of the basal secondaries, thinner and subcamptodrome. Further secondaries diverging somewhat irregularly spaced from the midrib and along them arching subsecondaries in subcamptodrome or craspedodrome manner. Secondary veins on upper half of the leaf might also be craspedodrome. The tertiary venation comprising a series of approximately transverse veins between the midrib and secondaries. Texture coriaceous.

1. *Sloaneaephylum hungaricum* RÁSKY, 1962 (Pl. XLIII, 1; Pl. XLIV, 2)

2. Holotype: BP. 62.74.1 = 62.915.1.

Paratype: BP. 62.916.1 = 62.917.1.

3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.

5. RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 39–40, Pl. 3, fig. 2.

6. Oval, somewhat elongated leaves. Length 12 cm, greatest width 5.5 cm. Lamina terminating in short tip; narrowing basally. Base of leaf weakly auriculate. Length of remaining petiole 1.0 cm. End of petiole characteristically tuberculate at base of leaf. Leaf margin irregularly dentate. No teeth on base; small, blunt, then flatly rounded smaller or larger teeth along margin. Midrib thick, emitting 6–7 pairs of opposite or subopposite, raised lateral branches. Secondaries directed upwards. Still another pair of thin laterals originating at base from midrib, bordering lower pair of secondaries with camptodrome veins. Secondary veins locally bifurcate, emitting tertiaries on lower side. These latter also raised, camptodrome. Secondary veins connected with broken arches, emitting still smaller veins into teeth. Branched-off tertiaries locally excurrent directly into teeth, of a craspedodrome (?) type. Secondary veins connected with parallel

extending, broken, forked and anastomosing tertiaries, their enclosed areas interwoven by very fine reticulation. Leaves coriaceous.

1. *Sloaneaephyllum obudaense* RÁSKY, 1962 (Pl. XLVII, 3)
2. Holotype: BP. 62.77.1 = 62.76.1.
Paratype: BP. 62.918.1, 62.919.1.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 37–39, Pl. 4, figs. 2–3.
6. Leaves ovate-elliptical. Length 13.5 cm, width 6.5 cm. Apex terminating in short tip, base blunt. Margin of lamina dentate, locally slightly undulating. No teeth on leaf base. Teeth small, erect, rarely spaced, irregular. Midrib thick, emitting 6–7 pairs of raised secondary veins, at a great distance from each other. Basal secondary veins opposite, other veins alternate. Basal secondary veins originating considerably above leaf base, generally irregularly disposed. Secondary veins of a camptodrome type, but arches broken. Lower pair of secondaries bordered by arcuately connected tertiary veins. First pair of tertiaries emitted directly from midrib, on one side of lamina immediately beside secondary vein, on other side somewhat below. These alternating tertiaries, originating from midrib and directed towards leaf margin, are very characteristic. On base of leaf and directly beside margin, still another, thinner pair of veins extending upwards, joining tertiaries above. Tertiaries, connecting secondary veins, more or less parallel and broken. Areas between tertiaries filled with fine reticulation of very small interstices. Leaves coriaceous.

1. *Smilax tataensis* HABLY & CSABA, 1977 (Pl. XLV, 1)
2. Holotype: Tata 76.230.1.
Paratype: Tata 76.231.1, 76.232.1.
3. Upper Oligocene, Egerian, Mány Formation.
4. Vértezzőlős, Baromállás, Hungary.
5. HABLY, L.-CSABA, A. (1977).—Annls hist.-nat. Mus. natn. hung. 69, pp. 23–25, figs. 1–8, Pl. 1–2.
6. Folium sine petiolo, forma eius fere ovata, triangularisve, apice acuto, basi cordata. Longitudo maxima folii quam metiri possumus, 14,5 cm latitudoque eius maxima 8,3 cm. Folium in parte superiore tertia 6,2 cm latum, margo eius integerrimus. Nervi septemque ex eodem loco oriuntur. Nervus medius recte usque ad apicem decurrit, duo alii utrinque sub angulo 46° gr. arcuato emissi et medio recurvati in apice se conjungunt, ellipsem regularem conformatentes. Duo nervi marginales sub angulo 106° gr. excurrunt et secum nervis secundariis et internis nervis primariis emissis conjungunt. Solum unus nervus secundarius tenuissimus e nervo medio exoriens videri potest.

1. **Sorbus borsodensis** ANDRÉÁNSZKY, 1959 (Pl. XLIV, 4)
2. Syntype: BP. 59.220.1 (21785).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDRÉÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 140, fig. 144.
6. Solum pars inferior folii nota. Folium petiolatum, petiolo ca. 1 1/4 mm crasso, longitudine ignoto, lamina basi concave et ibique paulum asymmetrica, verisimiliter late elliptica, 7 cm longa, 4,5 cm lata, basi integra, superne biserrata. Nervus principalis validus, rectus, nervi laterales primi ordinis utrinque 7,8, in angulo acuto exeentes sed subito parum extus arcuati, ita cum nervo principali angulum 40–45° formantes, infimi debiles et marginem laminae sequentes, extus ramos 2–3 arcuatus et in dentibus terminantes emittentes, superiores simplices vel apicem versus extus ramosi subrecti validi.

1. **Sorbus palaeo-aria** ETTINGSHAUSEN, 1869 (Pl. XLVII, 2)
2. Syntype: BP. 59.942.1, 59.843.1, 59.877.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, pp. 55, Pl. 53, figs. 24–25.
6. S. foliis petiolatis subcordaceis, oblongo-ovatis vel ellipticis, basi rotundatis, margine serratis, nervatione craspedondroma, nervo primario recto prominente, nervis secundariis sub angulis acutis orientibus, curvatis, cum 1–3 nervis externis, nervis tertiaris tenuissimis approximatis, transversim inter se conjunctis.

1. **Sparganium extinctum** ETTINGSHAUSEN, 1866 (Pl. XLVII, 1)
2. Holotype: BP. 59.930.1 = 59.938.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1866).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, pp. 31, Pl. 7, fig. 8.
6. S. foliis linearibus apicem versus sensim attenuatis, basi vaginantibus confertis, nervis longitudinalibus 5–7, interstitialibus subtilissimis 9–12 valde approximatis, transversis vix distinctis, capitulis femineis ovalibus.

1. **Strychnos europaea** ETTINGSHAUSEN, 1868 (Pl. XLVIII, 2)
2. Holotype: BP. 59.873.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 26, pp. 26, Pl. 36, fig. 4.
6. S. foliis petiolatis subcordaceis ovato-ellipticis, integerrimis, basi rotundatis, quinqueriviis, nervo medio basi prominente, apicem versus attenuato, nervis lateralibus internis tenuibus suprabasilaribus, arcuatis, ramis externis approxi-

matis instructis; nervis lateralibus externis basilaribus abbreviatis, tenuissimis, nervis secundariis paucis tenuissimis, angulo acuto egredientibus.

1. **Styrax vulcanica** ETTINGSHAUSEN, 1868 (Pl. XLVIII, 3)
2. Holotype: BP. 59.862.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 47, Pl. 39, fig. 13.
6. St. foliis subcoriaceis ovato-ellipticis, utrinque attenuatis, integerrimis, nervatione camptodroma, nervo primario prominente, recto, nervis secundariis distinctis, remotis, extrorsum ramosis, inferioribus sub angulis 30–45° superioribus sub angulo obtusiore orientibus, nervis tertiaris angulo subrecto egredientibus, inter se conjunctis et dictyodromis, rete evidenter conspicuo maculis irregulariter polygonis.

1. **Swartzia borealis** ETTINGSHAUSEN, 1869 (Pl. XLVIII, 4)
2. Syntype: BP. 59.914.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 62, Pl. 54, figs. 4–5.
6. S. foliis impari-pinnatis, foliolis coriaceis ovato-oblongis, acuminatis integerrimis breve petiolatis, nervatione brochidodroma, nervo primario basi valido, apicem versus valde attenuato, excurrente, nervis secundariis tenuibus, sub angulo acuto, infimis sub angulo acutissimo egredientibus.

1. **Syringa bükkensis** SKOFLEK, 1968 (Pl. XLVI, 3)
2. Holotype: Tata 83.847.1.
3. Pleistocene, travertin.
4. Monosbél, Hungary.
5. SKOFLEK, I. (1968).—Acta bot. hung. 14 (1–2), p. 139, Pl. 1, figs. 2d, 3d; Pl. 4, figs. 1–2, 4.
6. Fructus 1,6 cm longus, in parte latissima 6 mm lata, a latere et in decussatione formam rombi imitans, apice regulari, non reflexo. Superficies levis, in margine et medio sulcata.

Folium 5–6 cm latum, 8–10 cm longum, ovatum, margine integro, ima pars folii rotunda, apex deest. Nervi in perverso eminent, alternis densius aut rarius ordiuntur. Numerus parium nervorum secundariorum 7–9, sub gradibus 40–55 ordiuntur, coalescent. Latus perversum pilatum, petiolus deest.

1. **Syringa hungarica** SKOFLEK, 1968 (Pl. XLVI, 2)
2. Holotype: Tata 83.846.1.
3. Pleistocene, travertin.

4. Monosbél, Hungary.
5. SKOFLEK, I. (1968).—Acta bot. hung. 14 (1–2), p. 139, Pl. 1, figs. 2b, 3b; Pl. 3, figs. 1–5.
6. Fructus 1,6 cm longa, in media parte latissima capsula, cuius diameter 6 mm longus. Superficies levis, non convexa, forma ex toto regulari, in parte supera parvus apex.

Folium 6–7 cm longum, 3 cm latum, forma praeceptae hastae, marginè integro. Apex regularis, non extensus, infima pars folii in angulo acuto in petiolum angustatur. Nervi eminentes, numerus nervorum secundariorum paria 5–7, sub gradibus 50–60 contrarie aut alternis ordiuntur. Nervi secundarii, prope marginem folii coalescunt, rare furcillato divertuntur. Petiolus brevis, 1,5 cm longus. Summum folium leve.

1. **Talauma egerensis** ANDRÉÁNSZKY, 1955 (Pl. XLIX, 1)
2. Holotype: BP. 83.294.1 (11542).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1955a).—Annls hist.-nat. Mus. natn. hung. 6, p. 38, Pl. 1 : 5.
6. Folium unicum incompletum adest; lamina integra verisimiliter ca. 20 cm longa, in parte 1/3 superiore 9,2 cm lata, elliptico-obovata, apice acuminata, sed obtusa. Nervus principalis validus, rectus. Nervi laterales in parte folii inferiore 10–15, superne 6–10 cm inter se distantes, sat validi, angulo 52–65° exeuntes, recti, prope marginem laminae arcuati ibique cum nervo vicino superiore arcum distinctum formantes; arcus a margine 3–5 mm distantes. Inter nervos laterales validos a nervo principali hinc inde nervi debiliores, nervis lateralibus paralleli, vel angulo magis aperto exeuntes oriuntur et versus marginem laminae cum nervis validioribus anastomosant. In margine folii extus nervi tertiarri arcus minores formant. Tota lamina nervulis debilibus, reticulum formantibus percursa.

1. **Tarrietia hungarica** RÁSKY, 1950 (Pl. XLIX, 3)
2. Holotype: BP. 55.2199.2.
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Budapest-Óbuda, Nagybátony-Újlak brick-yard, Hungary.
5. RÁSKY, K. (1950).—Földtani közlöny 80, p. 192, Pl. 4, fig. 1.
6. Die Frucht erinnert mit ihrer Form ausgesprochen an die Acer-Teilfrucht. Ihre Länge beträgt 6,8 cm. — hievon ist die Länge des Flügels 5,7 cm. —; in der Breite misst sie an der breitesten Stelle des Flügels 2,5 cm. Der Fruchtkörper ist sehr gross, gleichmässig länglich oval und misst in der Länge 1,8 cm, in der Breite 1,5 cm. Der Flügel entspringt bogenförmig der Rückseite des Kernes und ist auf der unteren Seite unregelmässig gewellt. Die Spitze des Fruchtfügels ist stumpf abgerundet; auf dem Flügel gibt es auf beiden Seiten auf dem Teil nach dem Kern kleine Einschnürungen. Der Rand des Flügels ist infolge der Fossilisation beschädigt. Auf der Rückseite des Flügels zieht sich ein sehr starker Ader entlang und parallel mit ihm ziehen sich von der Innenseite des Kernes mehrere kleinere

Adern bogenförmig in der Richtung des unteren Randes. Aus diesen parallel gebogenen Adern entspringen noch mehr dünne kleine Adern, welche die ganze Oberfläche des Flügels netzartig überziehen.

7. *Machaerites hungaricus* (RÁSKY) ANDREÁNSZKY; ANDREÁNSZKY, G. (1965).—Annls hist.-nat. Mus. natn. hung. 57, p. 67.

1. **Tetrapteris bilinica** ETTINGHAUSEN, 1869 (Pl. L, 1)
2. Syntype: BP. 59.971.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 23, Pl. 46, figs. 10–11.
6. T. foliis coriaceis late ovatis integerrimis, basi paullo angustatis, nervatione camptodroma, nervo primario valido, nervis secundariis firmis, impressis flexuoso-arcuatis, marginem versus ramosis, ramis inter se conjunctis; nervis tertiaris e nervo primario sub angulo recto, e secundariis sub angulo acuto orientibus, prominentibus inferioribus in nervos externos transeuntibus, inter se conjunctis. Samaris margine quadriangularis, alis subcoriaceis tenuissime striatis, ellipticis, duabus reliquis majoribus.

1. **Tetrastigmophyllum agriense** ANDREÁNSZKY, 1967 (Pl. L, 3; Fig. 15)
2. Holotype: BP. 83.279.1 (10773).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDREÁNSZKY, G. (1967a).—Annls hist.nat. Mus. natn. hung. 59, p. 38, Pl. 3, fig. 11.
6. Blatt handförmig zusammengesetzt, mit gestielten Blättchen. Obwohl nur detachierte Blättchen vorliegen, gibt es unter diesen wo auch der Blättchenstiel und der damit durch ein Gelenk verknüpfte gemeinsame Blattstiel erhalten sind. Blättchen überaus veränderlich. Auch der Blättstiel ungleich lang, von 1 bis 3,5 cm, der Lage des Blättchens in der Mitte bzw. am Rand des handförmig zusammengesetzten Blattes entsprechend. Auch in der Symmetrie besteht eine Mannigfaltigkeit, da die mittleren Blättchen in der Regel symmetrisch, die randständigen dagegen mehr-weniger asymmetrisch sind. Spreite schmal bis breit lanzettlich, von 6 bis 12 cm lang und von 2,5 bis 4,5 cm breit, Grund schmal abgerundet, Rand unregelmässig gekerbt, oft nur mit eckigen Ausstülpungen. Seitenadern erster Ordnung 6 bis 9 Paar, in einem ziemlich grossen Winkel (50–70°) ausgehend, in Fällen gegen den Blattrand zu einem starken Seitenast ausswendend, dann gegen den Rand zu immer verzweigend. Der eine Zweig läuft in den Zahn bzw. in die Kerbe ein, der andere dem Blattrand parallel gegen die Spitze des Blattes zu um endlich mit einem Tertiärnerven zu anastomosieren. Die Seitennerven stehen in der Regel abwechselnd, doch kommen auch solche Blätter vor wo an der Basis die Seitennerven gegenständig entspringen. Tertiärnervatur sehr deutlich, parallel,



Fig. 15
Tetrastigmophyllum agriense ANDREÁNSZKY, holotype: BP. 83.279.1

in der Mittelzone der Spreite auf den Hauptnerv, gegen den Rand zu eher auf die Seitennerven senkrecht.

1. ***Tilia gigantea*** ETTINGSHAUSEN, 1869 (Pl. L, 4)
 2. Holotype: BP. 59.852.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 16, Pl. 43, fig. 12.
 6. T. foliis magnis submembranaceis, rotundato-ovatis, grosse dentatis, nervatione craspedodroma, nervo primario prominente, nervis secundariis sub angulis 30–40° orientibus, utrinque 5–6, subrectis, basilaribus nervos externos elongatos emittentibus, reliquis simplicibus, nervis tertiaris tenuissimis, e latere externo sub angulo acuto vel subrecto, e latere interno sub angulo recto exeuntibus, inter se conjunctis.

1. ***Tilia lignitum*** ETTINGSHAUSEN, 1869 (Pl. LI, 2)
 2. Syntype: BP. 59.949.1.
 3. Upper Oligocene, Egerian, Menilitopale.
 4. Žichov (Schihow), Czechoslovakia.
 5. ETTINGSHAUSEN, C. F. (1869).—Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 29, p. 15, Pl. 42, figs. 3,6.

6. T. foliis petiolatis, cordatis subobliquis, basi 5-nerviis, apice productis, argine crenato-serratis, nervo primario prominente, nervis secundariis sub angulis 50–60° orientibus, arcuatis craspedodromis, basilaribus nervos externos emittentibus, reliquis subsimplicibus, nervis tertiaris obsoletis; pedunculis bracteis aequantibus, bracteis oblongo-lingulatis breviter petiolatis, basi subcordatis, nervatione dictyodroma, nervo primario valido, apice ramoso, nervis secundariis tenuibus flexuosis ramosis, in reticulum microsynammatum dissolutis.

1. **Tilia subserratifolia** UDVARHÁZI, 1938 (Pl. LV, 1)

2. Holotype: BP. 71.629.1.

3. Miocene, Badenian, tuff.

4. Eger, Fertővölgy, Hungary.

5. UDVARHÁZI, J. (1938).—Földtani közl. 68 (7–9), p. 4, Fig. 1, fig. 1.

6. Folium e basi subcordato, rotundo-ovovatum, basi paullo asymmetricum, parum supra medium latissimum, cca. 5 cm latum. Apex folii ignotus. Nervi laterales principales 7 jugi, subparalleli marginem attingentes parum prorsum arcuati, a nervo medio vinculo 20–60° egredientes. Margo folii tenuiter serratus, dentibus cca. 1 mm altis.

1. **Tricalysia protojavanica** RÁSKY, 1959 (Pl. XLIX, 2)

2. Holotype: BP. 59.1497.2.

3. Lower Miocene, Ottangian, Gyulakeszi Rhyolitic Tuff Formation.

4. Ipolytarnóc, Hungary.

5. RÁSKY, K. (1959).—J. Paleont. 33 (3), p. 460. Pl. 70, fig. 13.

6. Oblong, entire-margined leaves. The apex is more or less elongated, the base gradually decurrent. The length of leaves is 10 to 12 cm, their width being about 4.5 to 5.0 cm. No remnants of a petiole are visible. The midvein is strong; there are 6 to 7 pairs of secondaries starting from the midvein, alternately, or oppositely arranged. The starting points of the secondaries are rather apart and the spacings are not uniform, the maximum being 2 cm. The secondaries being joined in loops of large arcs at the margin followed by gradually decreasing loops. The secondaries are interwoven with a very spacious polygonal meshwork. The leaves are more or less coriaceous.

1. **Trimeriaephylum hungaricum** RÁSKY, 1962 (Pl. LI, 5)

2. Holotype: BP. 62.69.1.

2. Paratype: BP. 62.70.1.

3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Budapest–Óbuda, Nagybátony–Újlak brick-yard, Hungary.

5. RÁSKY, K. (1962).—Annls hist.-nat. Mus. natn. hung. 54, pp. 44–45, Pl. 4, figs. 1–2.

6. Oval round leaves. Base of lamina expanded or weakly rounded. Length of leaves 4.5–5.0 cm, width between 3.5–5.5 cm. Margins crudely dentate, teeth blunt or

rounded. Lamina 3–5 nerved from base, petiole 2.0 and 5.0 mm. Impression of minute glands visible between divergent veins on base of leaf. Four of five (?) further veins, parallel with each other, excurrent on both sides from two extreme laterals, extending towards margin of lamina. These veins locally forking, and bent in light arches, terminating in teeth. Midrib emitting yet 2–3 alternating secondary veins, anteriorly of median line of lamina, directed upwards and, forking in front of margin, terminating in teeth. Midrib and secondary veins connected by parallel, more or less broken tertiaries, discernible only locally. Reticulation between tertiaries hardly visible on impressions. Leaves probably slightly coriaceous.

1. **Tuzsonia hungarica** ANDREÁNSZKY, 1949 (Pl. XLIX, 4)
2. Holotype: BP. 83.288.1.
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDREÁNSZKY, G. (1949a). — Acta biol. hung. 1 (2), pp. 34–36, Pl. 1–3, figs. 1–3.
6. Spadix simpliciter ramosus, in ramos ca. 10 simplices partitus; ramis ca. 20 cm longis, basi in tractu 2–3 cm nudis, superne perdense floribus obtectis, una cum floribus 6–7 mm latis. Bracteis in apice ramorum conspicuis, ca. 3 mm longis, lanceolatis; floribus minutis masculinus tantum notis (?), sessilibus, 3-3 1/2 mm longis; tepala in numero verisimiliter 3, ovata, apice obtusa vel rotundata, in parte 1/3 inferiore strangulata, an basi connata?, longitudinaliter striata. Stamina in numero 6, filamentis brevissimis suffulta, linearia, an basifixa? Ovarium et flos femininus, fructus etc. ignoti. Spatha late lanceolata, in medio ca. 4–5 cm lata, apice ignoto, longitudinaliter valde striata. Granulata pollinaria rotundato-tetraëdra, dense et minute aranulata, ca. 20 μ diam.

1. **Ulmus paucinervia** CZIFFERY, 1955 (Pl. LI, 3)
2. Holotype: BP. 83.270.1 (8918).
3. Miocene, Sarmatian, bluish-grey Clay.
4. Erdőbénye, Barnamáj, Hungary.
5. CZIFFERY-SZILÁGYI, G. (1955). — Annls Inst. geol. pub. hung. 44 (1), pp. 28–29, Pl. 6 : 16, fig. 4.
6. Folium unicum adest, petiolus deest. Lamina obovato-orbicularis, parum acuminata, apice rotundata, basi paulum asymmetrica et emarginata, 36 mm longa et paulum supra medium 27 mm lata. Margine grosse et obtuse duplicito-crenatomdentata. Nervus principalis rectus, nervi secundarii in numero 6–7, sat irreguliter dispositi, recti, in parte superiore bifurcati et in dentes exeuntes.

1. **Ulmus subintegrifolia** CZIFFERY, 1956 (Pl. L, 2)
2. Syntype: BP. 60.1928.1.
3. Miocene, Sarmatian.
4. Felsőtárkány, Hungary.

5. CZIFFERY-SZILÁGYI, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 235, Pl. 7 : 8, fig. 1.
6. Folia in dimensiore sat variabilia, 4,5–8 cm longa, 2,4–4,3 cm lata, oblongo-elliptica, basi modice asymmetrica, apice acuta vel longe cuspidata. Nervi laterales primi ordinis variabiliter crebri, inter se aequidistantes, in folio uno majore 8–9, in altero minore 10–11 pares, paralleli et praecipue prope marginem prorsum arcuati, hinc inde ramosi. Margo laminae valde variabilis, solum raro biserratus, frequentibus simpliciter et levissime crenato-dentatus, dentibus e basi lata ortis, acuminatis, vel levissime rotundato-crenatus, vel integer.

1. **Vitex lobkowitzii** ETTINGSHAUSEN, 1868 (Pl. LI, 1)

2. Holotype: BP. 59.872.1.
3. Upper Oligocene, Egerian, Menilitopale.
4. Žichov (Schihow), Czechoslovakia.
5. ETTINGSHAUSEN, C. F. (1868). — Denkschr. d. Math.-Nat. Cl. d. kais. Akad. d. Wissensch. 28, p. 31, Pl. 37, fig. 4.
6. V. foliis compositis petiolatis unifoliolatis, foliolis coriaceis, obovatis, basi subobliqua acutis, margine integerrimis vel remote denticulatis; nervatione brochidodroma, nervo primario prominente, recto, nervis secundariis distinctis arcuatis subflexuosis remotis, inferioribus sub angulis 40–50°, mediis et superioribus sub angulis 70–80° orientibus, segmentis secundariis oblongis, arcubus laqueorum prominentibus maculis externis instructis, nervis tertiaris distinctis simplicibus vel furcatis, in latere externo angulis acutis in interno angulis obtusis exeuntibus, inter se conjunctis, segmenta oblonga formantibus, nervis quaternariis numerosis utrinque angulo recto divaricatis, rete tenerrimum includentibus.

1. **Vitis bánensis** ANDREÁNSZKY, 1964 (Pl. LI, 4)

2. Holotype: BP. 64.428.2 (26629).
3. Miocene, Sarmatian.
4. Bánfalva, Ortásgödör, Hungary.
5. ANDREÁNSZKY, G. (1964a). — Annls hist.-nat. Mus. natn. hung. 56, p. 104, fig. 4.
6. Folium ovato-orbiculare, 5,5–10 cm longum, 4,5–8 cm latum, basi recte abscissum, apice rotundato-apiculatum, margine solum ad narvosexeentes leviter dentatum, dentibus brevibus, acuminatis. Sinus inter dentes superficialis. Nervi basales 5–7. Nervus medius in tertia parte inferiore simplex, supra nervos secundarios 4-pares emittens, nervi basales laterales solum extus ramosi, omnes craspedodromi. Folium No. 8629 (e loco Ortásgödör prope Bánfalva) basi parum asymmetricum, suborbiculare. Folium No. 8713 e loco Mocsolyamál prope Dédestapolcsány maximum, 10 cm longum et 7,5–8 cm latum.

1. **Weinmannia ettinghausenii** KOVÁTS, 1856 (Pl. XLV, 3)

2. Holotype: BP. 64.114.1.
3. Miocene, Sarmatian, bluish-grey clay.

4. Erdőbénye, Barnamáj, Hungary.
 5. Kováts, J. (1856a). — Arb. geol. Ges. Ung. p. 31, Pl. 6, fig. 9.
 6. W. foliis impari-pinnatis, foliolis coriaceis, ovatis, sessilibus, deciduis, inferne integerrimis, superne remote crenatis rhachide alata, ala utrinque dilatata ad insertionem foliorum constricta. Longit circ. 12 millm., latit. 7 millm.
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1. **Xylopiacarpum eocaenicum** RÁSKY, 1956 (Pl. XL, 2)
 2. Holotype: BP. 56.31.1.
 3. Middle Eocene.
 4. Tokod, Hungary.
 5. RÁSKY, K. (1956). — Földtani Közl. 86 (3), pp. 291–292, Pl. 41 : 2.
 6. This fruit is composed of 9 arch-like curved follicles which radiate from a centre and are star-like arranged. Diameter: 7 cm but it might have been still somewhat greater, the follicles being broken. Length of the single follicle: about 5 cm, breadth: 6–10 mm. The base of the follicles radiating from a centre is narrow; the follicles become then broader, show an arch-like curvation and end in a relatively obtuse top. The follicles are cylindrical, their margin is entire, strangulation may be seen only seldom. Along the follicles there is an accentuated suture, situated somewhat aside from the middle-line and dividing hereby the follicles lengthways in two unequal parts. The position of the seeds on the surface of the follicles is undiscernible and may be only supposed here and there. The surface of the follicles seems to be smooth, rather leathery.
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1. **Zelkova juglandina** ANDRÉÁNSZKY, 1959 (Pl. LII, 3)
 2. Holotype: BP. 83.255.1 (AC/a).
 3. Miocene, Sarmatian, rhyolitic tuff.
 4. Balaton, Dellő, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, P. 134, fig. 133.
 6. Folium magnum, 10–11 cm longum (pars 7,5 cm longa adest), 5,2 cm latum, ellipticum, basi late cuneatum, margine simpliciter grosse dentatum, dentibus in uno latere 10, vel 12, obtusis vel subrotundatis. Petiolus 1,3 cm, vel ultra (– 2 cm) longus, tenuis. Nervus principalis tenuis, sed validus, rectus. Nervi laterales in numero utrinque verisimiliter 11–11, tenues, sed conspicui' inferiores suboppositi, superiores sparsi, in angulo sat aperto (ca. 50°) orti, infimis 2 paribus exceptis prorsum arcuati, hinc inde bifurcati, craspedodromi, in dentes exeuntes. Spatium inter nervos valde inaequale, 5–13 mm, nervi inter se non parallelvi, valde irregulares. Nervi tertiarii e nervis lateralibus in rectangulo orti, inter se conjuncti.
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1. **Zelkova ungeri** KOVÁTS, 1856 (Pl. LII, 1, 4)
 2. Syntype: BP. 64.39.1 = 64.40.1; 64.51.1.
 3. Miocene, Sarmatian, bluish-grey clay.
 4. Erdőbénye, Barnamáj, Hungary.
 5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung. pp. 27–29, Pl. 6, fig. 4; Pl. 5, fig. 10.

6. Z. foliis distichis, membranaceis breviter petiolatis, basi subaequalibus ovatis vel ovato-oblongis, grande dentatis vel crenatis penninerviis, nervis secundariis sub angulo 40–70° ortis.
 7. *Zelkova zelkovaefolia* (UNG.) BŮŽEK & KOTLABA, F. (1963). — Sbor. Nár. Mus. v. Praze, Ř. B, přir. Vědy, 19, p. 59.
1. **Zichya nostratum** KOVÁTS, 1856 (Pl. LII, 2)
 2. Holotype: BP. 64.111.1 = 64.112.1.
 3. Miocene, Sarmatian, bluish-grey clay.
 4. Erdőbénye, Barnamáj, Hungary.
 5. KOVÁTS, J. (1856a). — Arb. geol. Ges. Ung. p. 34, Pl. 7, fig. 8.
 6. Z. foliis ternatis, foliolis sessilibus (?) obovato cuneatis membranaceis integerrimis, apice emarginatis, nervo primario distincto sat valido, nervis secundariis tenuibus, e nervo primario sub angulis 60–70° ortis, nervulos paucos tertii ordinis emitentibus, inter se laxe arcuatim nexit. Foliol. longit. circ. 2 centm. lat. maxima parum apicem 13 millm.

TYPES IN THE DOBÓ ISTVÁN MUSEUM (EGER)

These types are treated separately because they are housed in an other museum, and a preliminary list has already been published (FÜKÖH 1981). That list comprises, however, neither the description, nor the revision data. Complemented with these, the species are listed here in order to have a comprehensive presentation.

FERNS

1. **Leptochilites sarmaticus** ANDREÁNSZKY, 1959
2. Holotype: 64.1213.1 (Ba 237).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 48, fig. 6.
6. Characteres generis ei speciei. Folium verisimiliter simpliciter pinnatum, pinna asymmetrica, lanceolata, basi oblique cuneata, apicem versus longe angustata, apice ipso obtuso, margine in toto tractu (?) simpliciter serrata, dentibus prorsum spectantibus, acutis, basi ca. 2 mm latis et ca. 1,5 mm altis, hinc inde dente secundario instructis. Nervus principalis pinnae basi validus, apicem versus sensim attenuatus, sed usque ad apicem distinctus. Venatio laminae reticulata; a nervo principali nervi secundarii orti, nervatio tertiaria parum debilior laminam in areolas inaequales, rhombicas vel valde irregulares dividens. Nervi margine liberi et in dentibus terminantes.

1. **Lygodium latifolium** CZIFFERY, 1961
2. Holotype: 78.23.2 (A 433).
3. Miocene, Badenian.
4. Andornaktállya, Pincevölgy, Hungary.
5. CZIFFERY-SZILÁGYI, G. (1961). — Annls hist.-nat. Mus. natn. hung. 53, pp. 40–42, fig. 3.
6. Pinna bivalva, valvae inaequales, minor 1 cm lata et 2 cm longa, major basi 1 cm lata, in parte superiore latior, incompleta, in tractu 3,5 cm solum conservata. Nervatio pinnato-dichtoma, nervus principalis vix validior quam laterales, dichotomice ramosus et flexuosus. Nervi laterales bis vel pluries dichotomi, rami

ultimi ordinis usque ad marginem pinnae protracti ibique non anastomosantes, inter se paralleli, crebri. Spatium inter nervos ultimi ordinis ca. 0,5 mm.

ANGIOSPERMS

1. **Acer agriense** ANDRÉÁNSZKY, 1962
2. Holotype: 78.11.2 (W 9, W 9a).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 230–232, fig. 7, Pl. 3 : 3.
6. Folium indivisum, paulo asymmetricum, obovatum, basi angustatum et in ipsa basi anguste et superficialiter cordatum, apice triangulari-subacuminatum, margine irregulariter duplicito-serratum, dentibus principalibus in parte media laminae holotypi 2–2,5 mm altis, acutis, prorsum spectantibus, in parte inferiore, in apice holotypi et in speciminibus alteris ubique minoribus et minus acutis. Dentibus secundariis minusculis. Nervatio palmata, nervis basalibus in holotypo quinis in specimine altero pluribus, in parte inferiore in holotypo craspedodroma, in parte superiore et in speciminibus alteris in parte inferiore quoque camptodroma, arcus bene evolutos formans. Nervus medius validus, usque ad apicem conspicuus, in parte 2/3 superiore ramosus, ramis in angulo 60–70° egredientibus, mox valde prorsum arcuatis, demum subrectis et cum nervo medio angulum solum 20–25° formantibus, a margine 3 mm cum nervis basalibus lateribus in arco anastomosantibus. Nervi basales laterales interiores cum nervo medio angulum peracutum (ca. 25°) formantes, recti, solum apicem versus arcuati et anastomosantes, extus ramosi. Nervi basales exteriores debiles, inter se inaequales, breves, margini laminae paralleli. (In specimine altero, W 1559, nervi basales in numero 7 adsunt, laterales exteriores paulo longiores quam in holotypo et validiores.) Nervatio tertiaria distinctissima, ad nervos principales et secundarios perpendicularis. Lamina holotypi 8,5 cm longa et in parte 3/5 superiore 5,6 cm lata.

1. **Acer firmianoides** ANDRÉÁNSZKY, 1959
2. Syntype: 64.1448.2 (Bhv 1, Bhv 5).
3. Miocene, Sarmatian, andesitic tuff.
4. Bánhorváti, Verőbánya, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, pp. 163–164, fig. 195, Pl. 50 : 5.
6. Folium profunde trilobatum, in specimine 4 cm, in altero ca. 5,5 cm longum, 4,2–7,2 cm latum, basi cordatum. Lobus medius a sinu usque ad apicem 3–4 cm longus ovatus, basi attenuatus, apice obtusus, margine lobulato-undulatus, caeterum integer. Sinus inter lobos late rotundatus. Lobi laterales breviores quam lobus medius, oblique ovati, in margine superiore convexi, in latere inferiore superne concavi, in parte inferiore convexi, apice valde acuminati et

obtusi, margine parum undulati, caeterum integri. Nervus medius subvalidus, usque ad apicem distinctus. Nervi laterales cum nervo medio angulum apertum 70–80° formantes, postea prorsum arcuati. Rami nervorum principalium tenues, sed distincti, valde camptodromi.

1. **Acer platanaceum** ANDREÁNSZKY, 1959

2. Holotype: 78.17.1 (Bh 146).
3. Miocene, Sarmatian, andesitic tuff.
4. Bánhorváti, Kővágó-tető, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 167, Pl. 53 : 2.
6. Folium in ambitu subrotundatum, parum longius quam latum, 7 cm longum, 5,8 cm latum, petiolatum, petiolus in tractu 1,5 cm adest. Lamina basi rotundata, superficialiter trilobata. Lobus medius latior et longior, quam lobi laterales. Lobus medius a sinu inter lobos 3,5 longus, zriangulari-ovatus, basi 3,6 cm latus, margine inaequaliter subduplicato serrato-dentatus, dentibus apice prorsum arcuatis, obtusis, vel breviter acuminatis. Lobi laterales breves, paulum prorsum arcuati, basi 1,2 cm lati, a sinu 1,3 cm longi, longe acuminati et obtusi, margine superiore integri, solum undulati, inferiore uti lobus medius subduplicato serrato-dantati, cum dentibus fere uncinatis. Nervus medius validus, usque ad apicem conspicus, in parte superiore nervos secundarios suboppositos, in angulo inaequali (30–35°) exeuntes 7 pares craspedodromos emittens. Nervi secundarii infimi in vicinitate sinus bifurcati. Nervi basales laterales cum nervo medio angulum acutum, ca 40° formantes, recti, solum apicem versus leviter prorsum arcuati, ramos validiores solum extus emittentes; rami in dentibus terminantes.

1. **Alnus oligocenica** ANDREÁNSZKY, 1962

2. Holotype: 78.01.1 (W 17406).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDREÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), p. 220, fig. 1.
6. Folium fere completum, basis ipsa solum abest. Lamina basi leviter obliqua, anguste ovato-elliptica, apicem versus parum longius, basin versus brevius angustata, 5,2 cm longa, paulum infra medium 2 cm lata, basi ipsa verisimiliter rotundata, apice obtusa, margine subintegra, solum hinc inde irregulariter et minute serrato-dentata. Nervus principalis tenuis sed conspicus, subrectus, usque ad apicem laminae distinctus, nervi laterales craspedodromi, inferiores suboppositi, superiores alternantes, in angulo aperto (ca. 70°) orti, inferiores forte, superiores paulum arcuati, simplices, duo inter omnes dichotomi, omnes tenues sed usque ad marginem laminae visibles, 12 vel 13 pares.

1. **Alnus pendulifolia** ANDREÁNSZKY, 1959

2. Holotype: 77.2.1 (Ba 274).
3. Miocene, Sarmatian, rhyolitic tuff.

4. Balaton, Dellő, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 85, Pl. 20 : 5.
 6. Folium longe (3 cm) petiolatum, ellipticum, basi breviter cuneatum, apice rotundato-obtusum, margine dentibus acutis, gracilibus, ca. 1 mm longis, vel brevioribus, inter se ca. 3 mm distantibus obsitum. Nervus principalis usque ad apicem validus, rectus, nervi laterales 7-pares, alternantes, in angulo aperto (70–80°) orti, sed cito prorsum arcuati, in vicinitate evanescentes.
1. ***Alnus pseudonostratum*** ANDRÉÁNSZKY, 1959
 2. Holotype: 64.1450.1 (Bh 145).
 3. Miocene, Sarmatian, andesitic tuff.
 4. Bánhorváti, Kővágó-tető, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 84, Pl. 20 : 3.
 6. Folium petiolatum, petiolo 1,5 cm longo, crasso. Lamina leviter obovato-elliptica, basi cordata, apice subito contracta, obtusa, 6,5 cm longa, cum lobis basalibus 6,8 mm, in parte 2/3 superiore 4,7 cm lata, margine regulariter duplicato serrata, dentibus prorsum spectantibus, obtusis. Nervus principalis basi crassus, apicem versus sensim attenuatus, sed usque ad ipsum apicem distinctus. Nervi laterales in numero utrinque ca. 18-18, infimi in angulo 60–70°, superiores in angulo ca. 50° orti, leviter arcuati, craspedodromi, simplices, solum infimi extus ramificati.
1. ***Berchemia cuneata*** ANDRÉÁNSZKY, 1962
 2. Holotype: 78.8.1 (W 3201).
 3. Upper Oligocene, Egerian, Eger Formation.
 4. Eger, Wind's brick-yard, Hungary.
 5. ANDRÉÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 232–233, fig. 8.
 6. Folium apice defectuosum, basi cuneatum et leviter in petiolum ignotae longitudinis angustatum. Lamina verisimiliter 10 cm longa et 5,6 cm lata, elliptica, margine integerrima. Nervus principalis validus, rectus. Nervi laterales 10-pares, in angulo ca. 50° orti, subrecti, ad marginem laminae parum arcuati et in tractu brevi marginem sequentes mox evanescentes. Nervatio tertaria subtilissima, parallela, densa, ad nervum principalem perpendicularis.
1. ***Betula bánhorvátensis*** ANDRÉÁNSZKY, 1959
 2. Holotype: 64.1458.1.
 3. Miocene, Sarmatian, andesitic tuff.
 4. Bánhorváti, Kővágó-tető, Hungary.
 5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 77, fig. 41, Pl. 18 : 1.
 6. Folium longe (2 cm vel ultra) petiolatum, late rotundum, lamina 3,7 cm longa, 4,2 cm lata, basi leviter emarginata, apice rotundata, margine irregulariter denticulata, dentibus subacutis. Nervus principalis validus, rectus, laterales 7-pares, inferiores in angulo ca. 55°, superioriores in angulo ca. 45° orti, subrecti, paralleli, inter se aequidistantes, craspedodromi.

1. **Betula longipetiolata** ANDREÁNSZKY, 1959
2. Holotype: 64.856.1 (Ba 492).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 78, Pl. 18 : 2, 4.
6. Folium longe petiolatum, petiolo ultra 2 cm longo, lamina ovata, basi rotundata et breviter cuneata, apice longius angustata et acuminata, in specimine descripto (Ba 492) 10,5 cm longa, in parte 1/3 inferiore 5,4 cm, lata, margine superficialiter duplicato dentato-serrata dentibus obtusis vel breviter acuminatis. Nervus principalis validus, rectus, nervi laterales 8-pares, in speciminibus alteris 7-pares, in angulo ca. 50° orti, inferiores parum, superiores margis arcuati, simplices, solum versus apicem ramosi, tenues.

1. **Betula minima** ANDREÁNSZKY, 1959

2. Holotype: 64.404.1 (K 7a).
3. Miocene, Sarmatian, tuff.
4. Harica-völgy, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 79, fig. 45.
6. Folium minimum, petiolatum, petiolo in tractu brevissimo solum noto. Lamina minuta, suborbicularis, 2,5 cm longa, 2,2 cm lata, basi late rotundata et emarginata, apice verisimiliter subacuta, margine simpliciter et regulariter grosseserrata, dentibus in ambis lateribus 10 vel 11, late ovato triangularibus, acuminatis, parum prorsum arcuatis, basi 2,5 mm latis, 1,5 mm altis. Nervus principalis validus, rectus, nervi laterales 11-pares, infimi in angulo fere recto, medii in angulo 60–70°, superiores in angulo ca. 50° orti, medii leviter sigmoidei, superiores leviter prorsum arcuati, usque ad apicem dentium conspicui, simplicissimi. Nervatio tertiaria et subtilissima distincta, laminam in areolas aequilatas minimas dividens.

1. **Carpinus paucinervia** ANDREÁNSZKY, 1959

2. Holotype: 64.834.1 (Ba 572).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 89, Pl. 22 : 4, Pl. 23 : 1.
6. Folium lanceolatum, basi rotundatum, apice acutum, margine superficialiter duplicato-serrato-dentatum, dentibus brevibus, acutis. Lamina 5,3 cm longa, 2,8 cm lata. Nervus principalis validus, rectus, nervi laterales in specimine descriptio oppositi, 10-pares, in spatiis aequalibus et in angulo ca. 40° orti, recti, craspedodromi.

1. **Cissus populoides** ANDREÁNSZKY, 1959

2. Holotype: 64.690.1 (Mi 408).
3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy, Hungary.
5. ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 172, fig. 211.
6. Folium (vel foliolum) petiolatum, petiolo solum in tractu brevissimo conservato, ovatum, basi rotundatum et levissime asymmetricum, apice acuminatum, 8 cm longum et 5,6 cm latum, margine dentibus grossis utrinque 5, parum extus arcuatis, acuminatis instructum. Nervatio pinnata et craspedodroma; nervus principalis validus, rectus, nervi laterales 5-pares, par infimum exceptum in dentibus terminantes, et par praefimum exceptum simplices; par praefimum ramum unicum validiorem, in dente terminante emittens. Nervi omnes in angulo ca. 50° orti, subrecti, solum in apice parum fracti. Nervatio tertiaria indistincta.
1. **Cissus upponensis** ANDRÉÁNSZKY, 1961
2. Holotype: 61.380.1 (U 3517).
3. Miocene, Sarmatian.
4. Uppony, Szőlőhegy, Hungary.
5. ANDRÉÁNSZKY, G. (1961). — Annls hist.-nat. Mus. natn. hung. 53, p. 26, Pl. 4, fig. 18.
6. Folium (vel foliolum) ovatum, basi emarginatum, apice obtusum, margine in parte inferiore integrum, in parte superiore undulato-dentatum, dentibus brevissime acuminatis, 4,5 cm longum, in parte 2/5 inferiore 2,7 cm latum. Petiolus vel petiolulus deest. Nervatio palmata, nervi basilares 3, medius validus, rectus, usque ad apicem laminae conspicuus, laterales cum medio angulum 45–50° formantes, paulum arcuati, in dentem terminantes. Nervi secundarii 4–5 pares, cum basilaribus lateralibus parallelis, subrecti, craspedodromi. Nervatio tertiaria distincta, camptodroma, cum nervillis bene visibilibus retem subtilem formans.
1. **Cupania angustifolia** ANDRÉÁNSZKY & KOVÁCS, 1957
2. Holotype: 78.13.2 (NE 459, NE 459a).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. & NOVÁK, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, pp. 49–50, Pl. 3 : 10.
6. Folium ca. 6 mm longe petiolulatum, linear-lanceolatum, verisimiliter ca. 12 cm longum, in parte 1,3 inferiore 2,4 cm latum, basi asymmetricum, cuneatum, apicem versus longe attenuatum, apice ipso ignoto, margine subremote et aequaliter serrato-dentatum, dentibus 4–5 nm inter se distantibus, breviter prorsum arcuatis, subacutis. Nervus principalis validus, nervi secundarii numerosi, utrinque 20–20, vel ultra in numero, in uno latere in angulo ca. 45° orti et paulum arcuati, in latere altero sub angulo fere recto exeentes et validior arcuati, omnes in dentes exeentes, sed primum apicem versus ramum validiorem cum nervo superiore anastomosantem emitentes. Sic nervatio semicamptodroma. Nervi tertiarri creberrimi, laminam in areolas polygonas valde inaequales dividentes.

1. **Elaeocarpus mikófalvensis** ANDREÁNSZKY, 1964
2. Holotype: 63.1448.2.
3. Miocene, Sarmatian.
4. Mikófalva, Szőkehegy, Hungary.
5. ANDREÁNSZKY, G. (1964a).—Annls hist.-nat. Mus. natn. hung. 56, p. 105, fig. 6.
6. Folium petiolatum, petiolo 3,5 cm longo, mediocre grossio (1,5 mm). Lamina ovata vel elliptica, 7–14,5 cm longa, 4,5–8 cm lata, bassi late cuneata vel rotundata, rarissime leviter emarginata, apice breviter acuminata et obtusa, margine minute serrata, dentibus apicem folii versus spectantibus. Nervus medius validus, rectus, nervi secundarii 8–11 pares, in angulo 45–50° orti, mox prorsum arcuati, simplices et solum in vicinitate marginis laminae ramificati vel raro in medio laminae dimidii bifurcati, camptodromi.

1. **Fagus angusta** ANDREÁNSZKY, 1959
2. Holotype: BP. 64.601.1 (Mi I.).
3. Miocene, Sarmatian.
4. Mikófalva, Szőkehegy, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 97, fig. 83, Pl. 26: 3.
6. Folium linear-lanceolatum, prope basin latissimum, ibique 2,6 cm latum, 6 cm longum, apicem versus sensim angustatum, apice ipso acutum, basi late cuneatum, margine subundulatointegrum. Nervus principalis validus, rectus, nervi laterales 12-pares, infimi parum extus arcuati, caeteri rectissimi, craspedodromi.
7. *Fagus haidingeri* KOVÁTS; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren.—Brno, p. 79.

1. **Fagus denticulata** ANDREÁNSZKY, 1959
2. Holotype: 78.19.2 (Ba 331).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 116, Pl. 32: 2,3.
6. Folium longius (1,5 cm) petiolatum, petiolo gracili, lanceolatum, basi cuneatum, apice verisimiliter breviter acutum, margine inaequaliter denticulatum, denticulis prorsum spectantibus, maximis 1/2–3/4 mm altis. Nervus principalis usque ad apicem laminae validus, nervi laterales verisimiliter 13-pares, in angulo aperto (70–80°) orti, dein arcuati, inter se subparallelis, inferiores apice ramosi, ramis in dentibus terminantibus, superiores simplices, craspedodromi.

1. **Fagus palaeojaponica** ANDREÁNSZKY, 1959
2. Holotype: 77.5.1 (Ba 377).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 96, Pl. 25: 4.

6. Folium verisimiliter breviter petiolatum, oblongo-ovatum, basi late rotundatum, apice breviter contractum, margine integerrimum, lamina 6,2 cm longa, in parte inferiore 3,4 cm lata. Nervus principalis in parte inferiore validus, in parte superiore valde attenuatus, sed usque ad apicem distinctus, rectus. Nervi laterales 8-pares, infimi in angulo aperto ($60\text{--}70^\circ$), superiores in angulo ca. 50° orti, recti, vel parum prorsum arcuati, nonnulli extus ramum tenuem emittentes subcraspododromi, ad marginem laminae prorsum arcuati et evanescentes.

1. **Ficus agriensis** ANDREÁNSZKY, 1962

2. Holotype: BP. 78.10.1 (W 6439).

3. Eger, Wind's brick-yard, Hungary.

4. ANDREÁNSZKY, G. (1962).—Acta bot. hung. 8 (3–4), p. 226, fig. 4.

6. Folium petiolatum, petiolo 2 cm vel ultra longo, lamina paulum asymmetrica, lanceolata, basi cuneata, apice ignoto, margine integerrima, verisimiliter 12 cm longa, 4 cm lata. Nervatio subpalmata. Nervus principalis validus, versus apicem modice attenuatus. Nervi basales laterales ad ipsam basin orti, marginem laminae sequentes et 1t_3 partem longitudinis laminae attengetes. Nervi secundarii validiores quam nervi basales laterales, in ambis lateribus ca. 7–7, alternantes, in angulis inaequalibus ($45\text{--}70^\circ$) orti, valde arcuati, in vicinitate marginis versus apicem folii longe protracti et camptodromi. Nervatio tertaria indistincta.

1. **Ficus latsonoides** ANDREÁNSZKY, 1966

2. Syntype: 78.7.2 (W 3204, W 3074).

3. Upper Oligocene, Egerian, Eger Formation.

4. Eger, Wind's brick-yard, Hungary.

5. ANDREÁNSZKY, G. (1966a).—Stud. biol. hung. 5, pp. 79–84, figs. 70–72.

6. Folium in magnitude valde variable, ovato-rotundatum, vel rotundato-reniforme, maximum inter specimina verisimiliter 13 cm longum et 16 cm latum, minora 12 cm longa et 10 cm lata, minima 6 cm longa et 5,8 cm lata, apice rotundata, basi recte abscissa vel leviter emarginata, omnia longe (5 cm vel ultra) petiolata, petiolo ca. 3 mm crasso, margine undulatointegerrima. Nervatio palmata, nervi basales (3) 5. Medius validus, rectus usque ad apicem folii conspicuus in parte inferiore simplex, a medio vel in speciminibus alteris solum supra medium ramosus, ramis suboppositis vel alternis, in angulo ca. 50° ortis, parum arcuatis, ad marginem laminae arcos latos formantibus, camptodromis. Nervi basales laterales cum medio angulum $50\text{--}60^\circ$ formantes, solum extus ramosi. Nervi basales infimi brevissimi, simplices, marginem inferiorem laminae sequentes. Nervatio tertaria indistincta.

1. **Ficus mikófalvensis** ANDREÁNSZKY, 1961

2. Holotype: 61.382.2 (Mi 3498).

3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy, Hungary.

5. ANDRÉÁNSZKY, G. (1961).—Annls hist.-nat. Mus. natn. hung. 53, pp. 21–22, Pl. 3: 13.
6. Folium magnum, petiolatum, petiolo in tractu brevissimo (4 mm) solum conservato, subvalido, lamina rotundata (?) basi late cuneato-rotundata, apicem versus rotundato-contracta, apice ipso ignoto, margine subundulato-integerrima, ca. 12 cm longa et paulum infra medium 11 cm lata. Nervatio subraspedodroma, subpalmata, nervis basilaribus trinis. Nervus medius validus, rectus, pinnatim ramosus, nervi secundarii 5 vel 6-pares, inferiores in angulo 60–70°, superiores in angulo 45–50° orti, subrecti, duo inferiores in ambis lateribus extus ramos 1 vel 2 arcuatos emittentes, omnes ad ipsum marginem laminae protracti ibique breviter prorsum arcuati et evanescentes. Nervi basilares laterales cum nervo medio angulum ca. 60° formantes, nervis secundariis inferioribus et margini laminae subparallelis subrecti, ad marginem laminae subito prorsum arcuati et evanescentes, extus in toto tractu ramos valde arcuatos emittentes. Nervi tertiarii conspicui, ad nervos secundarios perpendiculares, inter se paralleli, crebri, areas inter nervos secundarios in areolas elongatas, in medio fractas dividentes.

1. **Leguminocarpum retamoides** ANDRÉÁNSZKY, 1967
2. Holotypes: 78.14.2 (KE 9404, KE 9404a).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.
4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1967b).—Egri Múz. évk. 5, pp. 12–13, figs. 2–4, Pl. 1: 5–6.
6. Kleine, einsame nicht aufspringende Hülsenfrucht. Die Hülsen sind in kleinen, dürftigen Fruchtständen vereinigt, sie sind ungestielt, am Grund abgerundet, auf der Spitze zugespitzt, von einer 8–15 mm Länge und 5–9 mm Breite, eiförmig. Die ziemlich kleinen Samen, etwa 4 mm im Durchmesser, sind in der Hülse oft gut sichtbar. Die Fruchtstände stehn wie bei der Untergattung *Retama* der Gattung *Genista* auf kurzen Seitenästen.

1. **Liquidambar ternata** ANDRÉÁNSZKY & NOVÁK, 1957
2. Holotype: 56.823.1.
3. Miocene, Badenian, tuff.
4. Eger, Fertő-völgy, Hungary.
5. ANDRÉÁNSZKY, G.–NOVÁK, É. (1957).—Annls hist.—nat. Mus. natn. hung. 8, pp. 43–45, fig. 2.
6. Folium trilobatum, lobis ovatis, verisimiliter acuminatis vel cuspidatis, ab insertione petiolo usque ad apicem lobi mediani ca. 9 cm longum, inter apices loborum lateralium 13–14 cm latum, basi cordatum; lobe medius basi 4,5 cm, lobi laterales basi 4 cm lati, sinibus inter lobos rectangulum formatibus. Folium margine subtiliter serratum, dentibus prorsum spectantibus, solum ca. 1/2 mm altis, obtusis. Nervi principales loborum distincti, solum apicem versus evanescentes, laterales cum nervo medio angulum 67–70° formantes, omnes subrecti. Nervatio secundaria indistincta.

7. *Liquidambar europaea* AL. BRAUN; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren.—Brno, p. 94.

1. **Lithocarpus calathoides** ANDREÁNSZKY & KOVÁCS, 1964

2. Syntype: 56.895.1.

3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Eger, Kiseged, Hungary.

5. ANDREÁNSZKY, G. (1964b).—Egri Múz. évk. 2, pp. 19–20, figs. 12, Pl. 3, fig. 9.

6. Blatt kurzgestielt, Stiel 5–8 mm lang, mittelstark. Blattgrösse veränderlich, bei Nr. 56.895 11 cm lang und 5 cm breit, bei 11187 14 cm lang und 7 cm breit. Spreite verkehrt-eiförmig am Grunde lange in den Stiel verschmälert, an der Spitze kurz zugespitzt, am Rande buchtig gezahnt, die Zähne nicht über 2 mm hoch; gegen den Grund zu ist das Blatt nur wellig. Seitenadern 16–18-Paar, sie gehen beinahe rechtwinkelig aus, die untersten sind bogenläufig, die übrigen enden in den Zähnen. Einige teilen sich bevor sie in den Zahn auslaufen in der Weise wie es bei *Castanopsis furcinervis* (Rossm.) Kr. & Wld. der Fall ist. Tertiärnervatur deutlich, auf die Seitennerven senkrecht und im allgemeinen dicht und parallel, stellenweise aber lockerer und auf die Seitennerven schief. Das Blatt entspricht in einem so hohen Mass der *L. calathiformis* (Skan) A. Camus, dass wir eine enge Verwandtschaft unter ihnen annehmen müssen. Besonders gross ist die Übereinstimmung mit den Blättern eines Herbarexemplars des Herb. Inst. Bot. Acad. Sinicae, Nr. 79246 aus Yunnan.

1. **Lithocarpus debilinervis** ANDREÁNSZKY & KOVÁCS, 1966

2. Holotype: 78.03.1 (W 6225).

3. Upper Oligocene, Egerian, Eger Formation

4. Eger, Wind's brick-yard, Hungary.

5. ANDREÁNSZKY, G. (1966a).—Stud. biol. hung. 5, pp. 48–49, fig. 32.

6. Folium petiolatum, petiolo tenui et brevi (8 mm). Lamina linear-lanceolata, in ambis extremitatibus plus minusve aequaliter angustata, basi cuneata vel parum in petiolum angustata, 11,5 cm longa, in medio 3,5 cm lata, integerrima. Nervus principalis validus, nervi secundarii debillimi, in angulo ca. 70° orti, fere recti, sed irregulares. Nervi secundarii longiores jam ante marginem laminae arcum formantes et anastomosantes.

1. **Lithocarpus glabroides** ANDREÁNSZKY & KOVÁCS, 1964

2. Holotype: 56.877.1.

3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Eger, Kiseged, Hungary.

5. ANDREÁNSZKY, G. (1964).—Egri Múz. évk. 2, p. 18, figs. 9–10, Pl. 1, fig. 4.

6. Holotypus verkehrt-eiförmig-lanzettlich, 7,7 cm lang und oberhalb der Mitte 2,5 cm breit, am Grunde herablaufend, Spitze ausgesprochen spitz, Rand im oberen Teil und auf der einen Seite auch im unteren Teil der Spreite mit spitzen Zähnen besetzt. Konsistenz des Blattes derb. Seitenadern 10-Paar (in dieser Hinsicht

entspricht das Blatt nicht der rezenten Art mit der es verglichen wird [*L. glabra* Nakaida] diese nur 7-Paar Seitennerven besitzen). Die Seitennerven entspringen in einem 50–55°-igen Winkel, biegen sich nach vorne, jene die in die Zähne auslaufen sind randläufig die übrigen bogenläufig. Von *L. palaeotruncara* mit welcher das Blatt eine gewisse Ähnlichkeit aufweist, durch die verkehrt-lanzettliche Form und die Zahnung wie auch durch die grössere Seitenaderzahl abweichend.

1. ***Morus lanceolata*** ANDREÁNSZKY, 1959
2. Holotype: 64.647.1 (Mi 215).
3. Miocene, Sarmatian.
4. Mikófalva, Szőkehegy, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 127–128, fig. 125.
6. Folium ovato-lanceolatum, basi leviter asymmetricum, emarginato-rotundatum, apice longe angustato-acuminatum, margine simpliciter serrato-dentatum, dentibus ca 3 mm latis et 1 mm altis, inter se aequalibus. Petiolus subvalidus, ca. 3/4 mm crassus, in tractu 3 mm adest. Nervus principalis basi validus, apicem versus sensim attenuatus, leviter laterales 11-pares, craspedodromi, in dentibus terminantes, infimi basales, sed non oppositi, in angulo ca. 45° orti, extus ramos breves, in dentibus terminantes emittentes, caeteri in angulo 50–60° exeuntes, magis arcuati quam infimi, solum apice ramosi. Lamina 7 cm longa et in parte inferiore 3 cm lata.

1. ***Nyssa hungarica*** ANDREÁNSZKY, 1959
2. Holotype: 64.894.2 (Nb 108).
3. Miocene, Sarmatian, tuff.
4. Nagybarca, Kőbánya, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 148, fig. 167.
6. Folium magnum, ellipticum, basin versus brevius, apicem versus sensim angustatum, basi cuneatum, apice acuminatum, 11 cm longum 5 cm latum margine basin versus grosse, in parte superiore minus grosse dentatum, dentibus distantibus, obtusis. Nervus principalis validus, rectus, usque ad apicem laminae conspicuus, nervi laterales 12-pares, par infimum in angulo acutiore (ca. 50°), caeteri in angulo fere recto egressientes, arcuati, camptodromi, solum ramos in dentes exeuntes emittentes, valde incerti.
7. *Nyssa meriani* (HEER) KNOBL.; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren.—Brno, p. 142.

1. ***Paeoniaecarpum hungaricum*** ANDREÁNSZKY, 1961
2. Holotype: 78.22.1 (Sz 3).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Szelecsyi-völgy, Hungary.
5. ANDREÁNSZKY, G. (1961).—Annls hist.-nat. Mus. natn. hung. 53, p. 15, Pl. 1 : 3.
6. Follicularium e folliculis 5 vel pluribus compositum. Pedunculus in tractu ca. 4

cm adest, validus, ca. 4 mm crassus, rectus. Folliculi secus suturam dehiscentes, oblongo-lanceolati, 23 mm longi, 12 mm lati. Follicularium ei generis *Paeoniae* simillimum.

1. **Populus acuminatifolia** ANDREÁNSZKY, 1961
2. Holotype: 61.381.1 (Mi 3492).
3. Miocene, Sarmatian.
4. Mikófalva, Szőkehegy, Hungary.
5. ANDREÁNSZKY, G. (1961).—Annls hist.-nat. Mus. natn. hung. 53, p. 19, Pl. 2 : 10.
6. Folium sat magnum, petiolatum. Petiolus in longitudine 3,5 cm conservatus, modice crassus. Lamina deltoidea, 12 cm longa et in 1/4 inferiore ubi latissima, 7 cm lata, basi late cuneata et in ipsa basi subito contracta, apice longe angustato-acuminata, apice ipso ignoto, margine in parte inferiore remote dentata, dentibus parvis, sinibus inter dentes superficialiter rotundatis, in parte laminae superiore regulariter et sat dense crenulato-serrata, dentibus prorsum spectantibus, late obtusis, 1,5 mm altis et ca. 5 mm inter se distantibus. Nervatio pinnata, nervus principalis validus, rectus, apicem versus sensim attenuatus sed usque ad apicem visibilis, ibique pertenuis et parum flexuosus. Nervi secundarii ca. 7-pares, debiles, valde flexuosi, in spatiis inaequalibus et in angulo 45–50° orti, ramosi, ad marginem laminae prorsum arcuati et anastomosantes. Nervatio tertaria valde inaequalis, inconspicua. *P. acuminatae* Rydb. simillima.

1. **Populus alnifolia** ANDREÁNSZKY, 1959
2. Holotype: 77.1.1 (Ba 84).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 122–123, fig. 116, Pl. 36 : 1.
6. Folium ellipticum, basi rotundato-cuneatum, apice ipso ignoto, ca 9,5 cm longum, in medio verisimiliter 5,4 cm latum, margine dentato-crenulatum, dentibus remotis, brevibus, obtusis. Nervatio basi palmatinervia, superne pinnatinervia. Nervus principalis validus, rectus, nervi laterales basales exteriore tenuissimi et brevissimi, par superiorus ca. 2 mm supra basin ortum, cum nervo medio angulum acutum, ca 30° formans, subrectum, cum ramos nervorum superiorum anastomosans. Nervi superiores in spatiis inaequalibus et in angulo ca 50° orti, prorsum arcuati, valde camptodromi.

1. **Populus bükkensis** ANDREÁNSZKY, 1966
2. Holotype: 78.21.2 (10549, 10549a).
3. Miocene, Sarmatian.
4. Bükkzentmárton, Isten-tető, Hungary.
5. ANDREÁNSZKY, G. (1966b).—Annls hist.-nat. Mus. natn. hung. 58, pp. 149–150, Pl. 2 : 7.

6. Folium petiolatum, petiolo in longitudine ca. 1 cm conservato, tenui. Lamina late ovata, basi rotundata et brevissime decurrentis, apice breviter acuminata, margine in parte inferiore integro, in parte superiore dentato, sinibus inter dentes rotundatis, dentibus inter se 5–8 mm distantibus, 1,5 mm altis, acuminatis. Nervatio basi trinervia, in parte superiore pinnata. Nervi laterales inferiores nervis basalibus lateralibus paralleli, parum extra arcuati, rigidi, in angulo ca. 30° orti, superiores in angulo magis aperto (40–45°) exeentes, recti, supremi parum intus arcuati, in dentibus terminati. Nervatio tertaria inconspicua. Nervi basales laterales extus non ramosi.

1. **Populus cordioides** ANDREÁNSZKY, 1959

2. Holotype: 73.112.2 (Mi 303).

3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 123, fig. 117.

6. Folium cordato-ovatum, basi asymmetricum. Petiolus deest. Lamina 5,8 cm longa, 4 cm lata, basi oblique cordata, sinu angusto, apex ipse deest, verisimiliter obtusus, margine minute serrata, dentibus ca. 1,5 mm inter se distantibus, adpressis, verisimiliter glandulosis. Nervus principalis validus, rectus, nervi laterales 7-pares, infimi parum refracti, par sequens in angulo ca. 45° exeuns, superiores in angulo apertio orti, omnes tenuissimi, valde arcuati, apice ramosi, ramis anastomosantibus.

1. **Populus palaeopruinosa** ANDREÁNSZKY, 1963

2. Holotype: 78.20.1 (7693).

3. Miocene, Sarmatian, tuff.

4. Dédestapolcsány, Gulyadéllő, Hungary.

5. ANDREÁNSZKY, G. (1963b).—Annls hist.-nat. Mus. natn. hung. 55, p. 33, fig. 3, Pl. 3 : 4.

6. Folium late ovoideo-orbiculare. Petiolus deest. Lamina 4,6 cm longa, 4,2 cm lata, basi latissime cuneata, apice rotundata et verisimiliter brevissime apiculata (apex ipse defectuosus), margine integra. Nervatio subpalmata. Nervus medius basi subvalidus, apicem versus valde attenuatus, ramosus, ramis in angulo acuto ortis; nervi basales laterales cum nervo medio angulum ca. 35° formantes, parum sinuosi et arcuati, extus ramosi, ramis in angulo 60–80° ortis et ad marginem laminae cum ramo vicino in arco anastomosantibus. Ramus infimus ad ipsam basin laminae ortus. Nervatio tertaria densa, inter se parallela et ad nervum medium perpendicularis,

1. **Populus trichocarpoides** ANDREÁNSZKY, 1964

2. Holotype: 63.1428.1.

3. Miocene, Sarmatian.

4. Bánfalva, Patakos II., Hungary.

5. ANDRÉÁNSZKY, G. (1964a).—Annls hist.-nat. Mus. natn. hung. 56, pp. 101–102, fig. 2, Pl. 3:12.
6. Petiolus deest. Laminaca. 10 cm longa, in parte tertia inferiore 5,2 cm lata, ovato-lanceolata, basi rotundata et levissime emarginata, apice longe acuminata, margine minute dentato-serrulata, dentibus prorsum curvatis. Nervus principalis validus, rectus, apicem versus valde attenuatus, nervi secundarii infimi alteris non validiores, nervatio ex toto pinnata, nervi omnes in angulo ca. 50° orti, 7-pares, valde prorsum arcuati secus marginem longo tractu apicem laminae versus protracti demum anastomosantes. Nervatio tertiaria distincta et eae speciminis recentis *Populus trichocarpa* Torr. & Gray simillima.

1. ***Quercus agriensis*** ANDRÉÁNSZKY, 1962

2. Holotype: 78.06.2 (W 6250, W 6250a).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1962).—Acta bot. hung. 8 (3–4), pp. 224–225, Pl. 3:2.
6. Folium parvum, petiolatum, petiolus 8 mm longus, tenuis, 3/4 mm crassus. Lamina lanceolato-elliptica, basin et apicem versus aequaliter angustata, parum arcuata, basi cuneata, apice obtusa, 4,5 cm longa et in medio 1,6 cm lata, margine remote serrato-dentata, dentibus im ambis lateribus 5–5, prorsum spectantibus, solum ca. 1 mm altis, subacutis. Nervus medius curvatus, in parte superiore parum flexuosus, validus, usque ad apicem conspicuus. Nervi laterales alternantes, 6-pares, infimis exceptis in dentibus terminantes, tenues, parum flexuosi, in angulo 45–50° orti, dein prorsum arcuati.

1. ***Quercus castanoides*** KOVÁCS, 1962

2. Holotype: 78.18.1 (Ba 161).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. KOVÁCS, É. (1962).—Acta bot. hung. 8 (3–4), p. 288, fig. 3.
6. Blatt länglich-elliptisch, 8 cm lang, 3,5 cm breit, Spitze fehlt, Grund sich verschmälernd, leicht asymmetrisch, Seitennerven 10 paarig, parallel zahnähnlich, die mittleren schliessen mit der Hauptader einen Winkel von 42 bis 43° ein. Blattrand mit groben, grossen, ein wenig nach aussen gebogenen, regelmässigen, spitzen, durch runde Buchten voneinander getrennten Sägezähnen belegt. Tertiäre Nervatur schwach sichtbar, verbindet die Seitennerven durch parallele Äderchen. Diese Art stimmt mit der rezenten, im Kaukasus und in Nordpersien, 1800 bis 2000 m ü. d. M. heimischen *Quercus castaneaefolia* C. A. Mey genau überein.

1. ***Quercus crassipetiolata*** ANDRÉÁNSZKY & KOVÁCS, 1966

2. Holotype: 78.09.1 (W 6875).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.

5. ANDRÉÁNSZKY, G. (1966a).—Stud. biol. hung. 5, pp. 64–65, figs. 50–51.
6. Folium petiolatum, petiolus 3 cm longus, pervalidus, 1.8 mm crassus, rectus; lamina oblongo-linearis, basi rotundato-cuneata, apice ignoto, verisimiliter ca. 7 cm longa (pars conservata typi 4.7 cm longa) et 2 cm lata, margine undulato-dentata, dentibus in numero utrinque 7, parum prominulis, dorso rotundatis, solum in parte superiore minute acuminatis. Nervus principalis validus, rectus, nervatio secundaria parum asymmetrica, nervi laterales in uno laterale in angulo 50–55°, in altero angulo 40–45° in spatiis inaequalibus exeuntes, verisimiliter 7 vel 8 pares (5 pares adsunt), leviter arcuati, craspedodromi, in proximitate marginis infracti et bifurcati. Nervatio tertiaria ad nervos secundarios perpendicularis, subparallelia, sinuosa. Nervi subtile conspicui, laminam in areolas minutis irregulares dividentes.

1. *Quercus legányii* ANDRÉÁNSZKY & KOVÁCS, 1966

2. Syntype: 78.02.3 (W 6717, W 6830).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1966a).—Stud. biol. hung. 5, pp. 52–53, figs. 36–37.
6. Folium oblanceolatum, petiolus mediocre validus, 1,5 mm diam. 1,5 cm longus vel longior. Lamina longe in petiolum angustata, apice ignoto, margine sat crebre minute denticulata, dentibus in numero nervos laterales aequantibus, usque ad 1,5 mm altis parum prorsum arcuatis. Lamina tota ca. 5,5 cm longa, in parte 1/3 superiore 2,1 cm late. Characteres enumerati speciminis 6717. Specimen alterum, 6830, longius, in parte 2/5 superiore 2,7 cm latum. Nervi laterales in speciminibus ambis 18 pares, parum asymmetrici, in angulo aperto (60–80°) orti et valde prorsum arcuati, in dentibus terminantes. Nervatio in ambis speciminibus identica. Petiolus speciminis 6830 parum longior et tenuior.

1. *Quercus palaeofournieri* ANDRÉÁNSZKY & KOVÁCS, 1966

2. Holotype: 78.05.1 (W 3126).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1966a).—Stud. biol. hung. 5, pp. 56–57, fig. 40.
6. Lamina oblongo-lanceolata, apice breviter triangularis, basi rotundata et parum emarginata, 7 cm longa, 2,2 cm lata, integra sed parum undulata. Nervus principalis validus, parum arcuatus. Nervi laterales in uno latere in numero 7, in altero in numero 8 adsunt, in angulo ca. 50° orti, mox valde arcuati et in vicinitate marginis in arco lato anastomosantes, camptodromi. Inter nervos laterales primi ordinis nervi debiliores et breviores in angulo fere recto orti. Area inter nervos secundarios a nervillis in areolas polygonas laxas irregulares divisa.

1. *Quercus stephani dobói* ANDRÉÁNSZKY & KOVÁCS, 1964

2. Holotype: 78.15.2 (KE 2451).
3. Lower Oligocene, Kiscellian, Tard Clay Formation.

4. Eger, Kiseged, Hungary.
5. ANDRÉÁNSZKY, G. (1964).—Egri Múz. évk. 2, pp. 29–30, fig. 22, Pl. 4: 13.
6. Stiel dick, d.h. eher etwas geflügelt (2,5 mm breit) und in einer Länge von 1,2 cm erhalten. Spitze des Blattes fehlt. Spreite länglichoval, durfte 9 cm lang gewesen sein und in der Mitte 3,4 cm breit, am Grunde breit keilförmig. Rand auf der einen Seite deutlich wellig, auf der anderen beinahe ganzrandig nur gegen den Grund zu deutlich wellig, schwach zurückgerollt. Hauptader markant, gegen die Spitze zu allmählich verdünnend, gerade. Seitennerven etwa 11-Paar, auf einer Seite in einem Winkel von 65–70°, auf der anderen in einem von 50–60° ausgehend, stark nach vorne gebogen, gegen den Blattrand zu noch stärker gekrümmmt, sie laufen eine Strecke dem Blattrand parallel weiter um dann zu verschwinden. Einige gabeln sich. Feine Nervatur eher auf den Mittelnerv senkrecht. Das Blatt war von einer derben Konsistenz, sicher immergrün, vielleicht hartlaubig.

1. ***Rhus succedanoides* ANDRÉÁNSZKY, 1962**

2. Holotype: 78.4.1 (W 1669).
3. Upper Oligocene, Egerian, Eger Formation.
4. Eger, Wind's brick-yard, Hungary.
5. ANDRÉÁNSZKY, G. (1962).—Acta bot. hung. 8, (3–4), pp. 229–230, fig. 6.
6. Foliolum folii verisimiliter pinnati adest. Foliolum sessile, asymmetricum, paulum falcatum, linear-lanceolatum, basi rotundatum vel late cuneatum (basis ipsa abest), apicem versus longe angustatum subacutum, margine integrum, 10 cm longum et in parte inferiore ubi latissimum, 2,2 cm latum. Nervus principalis usque ad apicem laminae validus, arcuatus, nervi laterales in latere convexo in angulo fere recto, in latere concavo in angulo 60–70° orti, creberrimi (ca. 26-pares), subrecti, versus marginem prorsum arcuati et furcati, rami cum ramis nervi vicini anastomosantes et arcum formantes. Inter nervos secundarios validiores hinc inde nervi secundarii breves, solum 2–3 mm longi intermixti. Nervi tertiarii conspicui, ad nervos secundarios perpendiculares, crebri, ramosi, cum ramis reticulum densem formantes.

1. ***Syringa palaeojosikae* ANDRÉÁNSZKY, 1968**

2. Holotype: 78.16.1 (Bh 1960).
3. Miocene, Sarmatian, andesitic tuff.
4. Bánhorváti, Kővágó-tető, Hungary.
5. ANDRÉÁNSZKY, G. (1968).—Acta bot. hung. 14 (1–2), pp. 1–4, figs. 1–2.
6. Folium unicum incompletum adest. Nervatio bene conservata. Apex folii adest, breviter acuminatus et obtusiusculus, basis deest, verisimiliter late cuneata. lamina elliptica, 9 cm longa et in medio 5.6 cm lata, margine integerrima. Nervus principalis validus, apicem versus cito attenuatus. nervi laterales primi ordinis 9-pares, marginem folii appropinquantes, in vicinitate marginis ramificati, ramis sine arcibus bene evolutis anastomosantes. Nervatio tertaria valde sinuata, superficiem in areolas polygonas dividens. Areolae nervis subtilissimis in areolas

minutas divisae. Nervi ultimi ordinis valde attenuati et in imagine expressa in areola finire videntur. In locis optime conservatis autem nervi subtilissimi omnes reticulato-conjuncti. Folium in forma, in dimensione et in nervatione *Syringae josikaeae* Jacq. f. *simillimum*.

1. ***Ulmiphyllum sarmaticum*** ANDREÁNSZKY, 1959

2. Holotype: 64.42.2 (Mi 465).

3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 135, Pl. 42:1.

6. Folium petiolatum, petiolo 5 mm longo, ovatum, valde asymmetricum, 4,2 cm longum, 2,6 cm latum, basi oblique cordatum, apice late obtusum, margine minute et superficialiter subduplicato-serratum, dentibus obsoletis, solum ad nervos laterales exeentes parum majoribus. Nervus principalis validus, subrectus, nervi laterales in uno latere 6, in altero 5, in spatiis inaequalibus et inferiores excepto in angulo ca. 50°, inferiores in latere latiore in angulo magis aperto, infimus in angulo recto, orti, arcuati, simplices et craspedodromi. Nervatio tertiaria indistincta.

1. ***Ulmus zelkovaeformis*** ANDREÁNSZKY, 1959

2. Holotype: 73.73.2 (Mi 250).

3. Miocene, Sarmatian.

4. Mikófalva, Szőkehegy, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 131–132, fig. 128.

6. Folium parvum, rotundato-ovatum, 4,5 cm longum, 3,6 cm latum, basi rotundatum, subsymmetricum, leviter emarginatum, apice rotundato-obtusum, margine simpliciter crenato-dentatum, dentibus late-triangularibus, apice acuminatis. Nervus principalis validus, leviter arcuatus, usque ad apicem conspicuus. Nervi laterales 12–12-pares, in angulo 45–50° orti, in principio extus, dein intus arcuati, solum inferiores extus ramosi, caeteri simplices, omnes in dentibus terminantes.

1. ***Zelkova latissima*** ANDREÁNSZKY, 1959

2. Holotype: 77.3.1 (Ba 256).

3. Miocene, Sarmatian, rhyolitic tuff.

4. Balaton, Dellő, Hungary.

5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, pp. 133–134, fig. 132, Pl. 41:1.

6. Folium late ellipticum, apice et basi aequaliter et subabrupte angustatum, apice acutum, basi obtuse cuneatum, 7,7 cm longum et 4,7 cm latum, margine simpliciter grosse dantatum, dentibus breviter acuminatis, basi ca 7 mm latis et 2–3 mm altis, in ambis lateribus 11. Nervus principalis validus, rectus. Nervi laterales 11-pares, inferiores suboppositi, infimi in angulo ca 60°, superiores in angulo 45–50° orti, spatiis inter nervo laterales valde inaequalibus (2–10 mm).

Nervi inferiores parum, superiores valde prorsum arcuati, omnes distincta craspedodromi et in dentes exeuntes. Nervi laterales infra apicem extus ramum in sinu inter dentes bifurcatum emittentes.

1. **Zelkova rotundilobata** ANDREÁNSZKY, 1959
2. Holotype: 77.4.2 (Ba 179, Ba 179a).
3. Miocene, Sarmatian, rhyolitic tuff.
4. Balaton, Dellő, Hungary.
5. ANDREÁNSZKY, G. (1959b).—Akadémiai Kiadó, Budapest, p. 134, Pl. 41 : 3.
6. Folium ellipticum, 8 cm longum, 4.2 cm latum, petiolo 4 mm longo, margine grosse sed superficialiter dentatum, fere lobatam, lobis 7-paribus, ca 10–12 mm latis et solum 2 mm altis, obtusis vel subrotundatis. Nervus principalis rectus, validus, nervi laterales utrinque 8–8, par infimum incertum et ad marginem evanescens, caeteri in angulo ca 60° orti, arcuati, craspedodromi, supremi ramosi et subcamptodromi, valde prorsum arcuati.

TYPES OF UNCERTAIN DEPOSITION

The great majority of the types is found in the Hungarian Natural History Museum, Budapest and the Dobó István Museum, Eger. However, there are a number of types in various publications which are not represented in these two collections. Some of the original papers give further references as to the placing of the types, contemporary to the issue of the publication, however, they have not been found during the revisionary work. This section includes all the data referring to the types grouped according to our present knowledge. Until the whereabouts of the hereunder listed types are ascertained, for the time being, they are considered to be lost.

HUNGARIAN NATURAL HISTORY MUSEUM (BUDAPEST)

Acer mātrense VARGA, 1955

Age: Miocene, Sarmatian.

Locality: Gyöngyöspata, Hungary.

Description: VARGA, I. (1955). — Annls. Inst. geol. pub. hung. 44 (1), p. 22.

Acer palaeotataricum É. Kovács, 1959

Age: Miocene, Upper Badenian

Locality: Nónárdszakál, Páris valley, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 162.

Adiantites latifolius ANDRÉÁNSZKY, 1952

Age: Pontusian

Locality: Kerecsend, Hungary

Description: ANDRÉÁNSZKY, G. (1952). — Földtani közl. 82 (10–12), p. 399.

Alnus báñhorvátensis ANDRÉÁNSZKY, 1961

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Verőbánya, Hungary.

Description: ANDRÉÁNSZKY, G. (1961). — Annls hist.-nat. Mus. natn. hung. 53, p. 16.

Alnus crebrinervis É. Kovács, 1957

Age: Miocene, Sarmatian.

Locality: Nagybarca, Hungary.

Description: Kovács, É. (1957). — Földt. közl. 87 (4), p. 436.

Revision: *Alnus cecropiaeefolia* (ETT.) BERGER; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren. — Brno, p. 76.

Alnus rosifolia ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 82.

Revision: *Alnus julianaeformis* (STERNBERG) KVAČEK & HOLÝ; KNOBLOCH, E.-KVAČEK, Z. (1976). —

Rozpravy U.u.g. 42, p. 29.

Anonaceaephyllum budense ANDRÉÁNSZKY, 1963

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Csillaghegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1963a). — Acta bot. hung. 9 (3–4), pp. 232–233.

Antrophytes egedensis ANDRÉÁNSZKY, 1954

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1954). — Bot. közlem. 44 (1–2), pp. 137–138.

Apocynocarpum eocaenicum É. Kovács, 1961

Age: Middle Eocene.

Locality: Lábatlan, Hungary.

Description: Kovács, É. (1961). — Földtani Int. évi jelentése az 1957–58. évről, p. 476.

Araceophyllum tarnocense RÁSKY, 1964

Age: Lower Miocene, Otnangian.

Locality: Ipolytarnóc, Hungary.

Description: RÁSKY, K. (1964). — Annls hist.-nat. Mus. natn. hung. 56, pp. 69–70.

Ardisia montis-stellae ANDRÉÁNSZKY, 1963

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Csillaghegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1963a). — Acta bot. hung. 9 (3–4), pp. 241–242.

Banisteriaecarpum papilio ANDRÉÁNSZKY, 1959

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, pp. 43–44.

Berchemiaephyllum dilleniiforme ANDRÉÁNSZKY & NOVÁK, 1957

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. & NOVÁK, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, p. 51.

Bignoniaecarpum catalpaeforme ANDRÉÁNSZKY, 1955

Age: Miocene, Karpatian.

Locality: Magyaregregy, Hungary.

Description: ANDRÉÁNSZKY, G. (1955b). — Annls Inst. geol. pub. hung. 44 (1), p. 16.

Bignoniaecarpum egreyense ANDRÉÁNSZKY, 1955

Age: Miocene, Karpatian.

Locality: Magyaregregy, Hungary.

Description: ANDRÉÁNSZKY, G. (1955b). — Annls Inst. geol. pub. hung. 44 (1), p. 16.

Buettneria apiculata É. Kovács, 1959

Age: Middle Eocene.

Locality: Lábatlan, Hungary.

Description: Kovács, É. (1959). — Annls univ. sci. Bud. sec. biol. 2, p. 137.

Cedrela sarmatica É. Kovács, 1957

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Kővágó-tető, Hungary.

Description: Kovács, É. (1957). — Földt. közl. 87 (4), p. 440.

Celtis occidentalooides É. Kovács, 1957

Age: Miocene, Sarmatian.

Locality: Upfony, Hungary.

Description: Kovács, É. (1957). — Földt. közl. 87 (4), p. 439.

Cercidiphyllum novemnervium ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 64.

Revision: *Cercidiphyllum crenatum* (UNGER) R. W. BROWN; JÄHNICHEN, H., MAI, D. H., WALThER, H. (1980). — Schriftenr. geol. Wiss. Berlin, 16, p. 358.

Combretum palaeosquamosum ANDRÉÁNSZKY, 1959

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Budaújlak, Hungary.

Description: ANDRÉÁNSZKY, G. (1959a). — Acta bot. hung. 5 (1–2), p. 12.

Cornus praeamomum É. Kovács, 1959

Age: Miocene, Upper Badenian.

Locality: Nógrádzsakál, Páris valley, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 177.

Diospyros báneasis É. Kovács, 1957

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Kővágótető, Hungary.

Description: Kovács, É. (1957). — Földt. közl. 87 (4), pp. 439–440.

Dodoneaecarpum hungaricum ANDRÉÁNSZKY, 1956

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Budaújlak; Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 227.

Echinodorus atavus ANDREÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 180.

Elaeodendron obovatum ANDREÁNSZKY, & NOVÁK, 1957

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDREÁNSZKY, G. & NOVÁK, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, pp. 51–52.

Eucalyptus transdanubica É. KOVÁCS, 1959

Age: Middle Eocene.

Locality: Lábatlan, Hungary.

Description: KOVÁCS, É. (1959). — Annls univ. sci. Bud. sec. biol. 2, pp. 135–136.

Ficus haynaldiana STAUB, 1882

Age: Miocene, Ottangian-Karpatian.

Locality: Abaliget, Hungary.

Description: STAUB M. (1882). — M. Kir. Földt. Int. évk. 6 (1), p. 33.

Grewiopsis ellipticus ANDREÁNSZKY, 1956

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Budaújlak, Hungary.

Description: ANDREÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 226.

Grewiopsis inaequalis É. KOVÁCS, 1959

Age: Middle Eocene.

Locality: Lábatlan, Hungary.

Description: KOVÁCS, É. (1959). — Annls univ. sci. Bud. sec. biol. 2, p. 136.

Leguminocarpum egedense ANDREÁNSZKY, 1967

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDREÁNSZKY, G. (1967b). — Egri Múz. évk. 5, p. 14.

Leguminocarpum meseckense ANDREÁNSZKY, 1955

Age: Miocene, Karpatian.

Locality: Magyaregregy, Hungary.

Description: ANDREÁNSZKY, G. (1955b). — Annls Inst. geol. pub. hung. 44 (1), p. 15.

Libocedrus tárkányensis ANDREÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Felsőtárkány, Gündörkert, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 55.

Revision: *Cercidiphyllum helveticum* (HEER) JÄHNICHEN; JÄHNICHEN, H., MAI, D. H., WALThER, H. (1980). — Schriftenr. geol. Wiss. Berlin 16 : 358.

Liquidambar pseudoprotensa ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Felsőtárkány, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 71.

Lithocarpus molluccoide ANDRÉÁNSZKY & É. KOVÁCS, 1964

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1964b). — Egri Múz. évk. 2, pp. 14–16.

Lithocarpus palaeotrunca ANDRÉÁNSZKY & É. KOVÁCS, 1964

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1964b). — Egri Múz. évk. 2, pp. 10–11.

Lygodites bipartitus ANDRÉÁNSZKY, 1952

Age: Upper Oligocene, Egerian.

Locality: Csörög, Kígyóhegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1952). — Földt. közl. 82 (10–12), pp. 398–399.

Mimosites budensis ANDRÉÁNSZKY, 1956

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Budaújlak, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 225.

Monopleurophyllum hungaricum ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 168.

Revision: *Monopleurophyllum quercifolium* (GOPPERT) KOTLABA; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren. — Brno, p. 53.

Myrica acutiloba var. **dentata** ANDRÉÁNSZKY, 1959

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, pp. 41–42.

Myrica grandifolia ANDRÉÁNSZKY, 1955

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, p. 42.

Revision: *Comptonia diformis* (STERNBERG) BERRY; RÜFFLE, L. (1976). — Abh. zentr. geol. Inst. 26, p. 345.

Nuphar hungaricum ANDRÉÁNSZKY & Novák, 1957

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. & Novák, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, p. 43.

Omphaleaephyllum weylandi RÁSKY, 1966

Age: Lower Miocene, Ottangian.

Locality: Ipolytarnóc, Hungary.

Description: RÁSKY, K. (1966). — The Paleobotanist 14 (1–3), pp. 266–267.

Osmunda legányii ANDRÉÁNSZKY, 1952

Age: Lower Oligocene, Kiscellian.

Locality: Budaújlak, Hungary.

Description: ANDRÉÁNSZKY, G. (1952). — Földt. közl. 82, (10–12), p. 398.

Osmunda parschlugiana (UNG.) ANDRÉÁNSZKY, n. comb.

Age: Miocene, Sarmatian.

Locality: Felsőtárkány, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 45.

Persea budensis ANDRÉÁNSZKY, 1963

Age: Lower Oligocene, Kiscellian.

Locality: Budapest, Batthyány square, Hungary.

Description: ANDRÉÁNSZKY, G. (1963a). — Acta bot. hung. 9, p. 228.

Phoenicites legányii ANDRÉÁNSZKY, 1955

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, p. 48.

Physolobium ettingshausenii STAUB, 1882

Age: Miocene, Ottangian-Karpatian.

Locality: Abaliget, Hungary.

Description: STAUB, M. (1882). — M. Kir. Földt. Int. évk. 6 (1), p. 40.

Platycerium atavum CZIFFERY, 1961

Age: Miocene, Badenian.

Locality: Andornaktállya, Pincevölgy, Hungary.

Description: SZ. CZIFFERY, G. (1961). — Annls hist.-nat. Mus. natn. hung. 53, pp. 42–44.

Pterocarpus hofmannii STAUB, 1882

Age: Miocene, Ottangian-Karpatian.

Locality: Abaliget, Hungary.

Description: STAUB, M. (1882). — M. Kir. Földt. Int. évk. 6 (1), p. 41.

Quercus böckhii STAUB, 1882

Age: Miocene, Ottangian-Karpatian.

Locality: Nádasd, Hungary.

Description: STAUB, M. (1882). — M. Kir. Földt. Int. évk. 6 (1), pp. 32–33.

Quercus glaucifolia ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 103.

Quercus kovátsii É. Kovács, 1962

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: Kovács, É. (1962). — Acta bot. hung. 8, pp. 291–292.

Quercus laurooides ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 104.

Quercus pontica-miocenica KUBÁT, 1955

Age: Miocene, Sarmatian.

Locality: Felsőtárkány, Hungary.

Description: KUBÁT, K. & BUBIK, I. (1955). — Annls Inst. geol. pub. hung. 44 (1), pp. 47–49, 175.

Quercus sályensis ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Sály, Meleg-oldal, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 107.

Schefflera protomulticaulis RÁSKY, 1959

Age: Lower Miocene, Ottnangian.

Locality: Ipolytarnóc, Hungary.

Description: RÁSKY, K. (1959). — Journ. of Pal. 33, pp. 453–461.

Revision: *Oreopanax protomulticaulis* (RÁSKY) HABLY; HABLY, L. (1985). — Geol. Hung. ser. Pal. 45, p. 116.

Sterculia sinuato-dentata ANDRÉÁNSZKY, 1959

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, pp. 45–47.

Tetragastigmophyllum hungaricum ANDRÉÁNSZKY, 1955

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1955b). — Annls hist.-nat. Mus. natn. hung. 6, p. 47.

Ulmus latissima ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Mág, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 130.

Revision: *Ulmus minuta* GOEPPERT; KNOBLOCH, E. (1969). — Tertiäre Floren von Mähren. — Brno, p. 105.

DOBÓ ISTVÁN MUSEUM (EGER)

Acer atavissimum ANDRÉÁNSZKY, 1959

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1959a). — Acta bot. hung. 5 (3–4), pp. 14–16.

Acer hyrcanoides ANDREÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Kővágó-tető, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 164.

Acer tataricoides ANDREÁNSZKY, 1961

Age: Miocene, Sarmatian.

Locality: Nagybarca, Hungary.

Description: ANDREÁNSZKY, G. (1961). — Annls hist.-nat. Mus. natn. hung. 53, pp. 23–24.

Alnus angustifrons ANDREÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 82.

Revision: *Alnus gaudinii* (HEER) KNOBLOCH & KVAČEK; KNOBLOCH, E. KVAČEK, Z. (1976). — Rozpravy Ú.ú.g. 42, p. 33.

Asplenium matrense ANDREÁNSZKY, 1956

Age: Upper Oligocene, Egerian.

Locality: Mátraderecske, Hungary.

Description: ANDREÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 221.

Betula pyramidalis ANDREÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Kővágó-tető, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 77.

Cassia agriensis ANDREÁNSZKY, 1967

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDREÁNSZKY, G. (1967b). — Egri Múz. évk. 5, p. 18.

Castanopsis callicomaefolia ANDREÁNSZKY, 1962

Age: Upper Oligocene.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDREÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 221–222.

Cercidiphyllum andreánszkyi É. KOVÁCS, 1957

Age: Miocene, Sarmatian.

Locality: Felsőtárkány, Hungary.

Description: KOVÁCS, É. (1957). — Földt. közl. 87 (4), p. 435.

Revision: *Cercidiphyllum crenatum* (UNGER) R. W. BROWN; JÄHNICHEN, H., MAI, D. H. & WALTHER, H. (1980). — Schriftenr. geol. Wiss. Berlin 16, p. 358.

Clethra palaearborea ANDREÁNSZKY, 1967

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDREÁNSZKY, G. (1967a). — Annls Hist.-nat. Mus. natn. hung. 59, p. 39.

Ficus adhatodaeformis ANDRÉÁNSZKY & Novák, 1957

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. & Novák, É. (1957). — Annls hist.-nat. Mus. natn. hung. 8, pp. 45–46.

Ficus palaeocuspidata ANDRÉÁNSZKY, 1963

Age: Miocene, Sarmatian.

Locality: Mikófalva, Szőkehegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1963b). — Annls hist.-nat. Mus. natn. hung. 55, pp. 34–35.

Juglans legányii ANDRÉÁNSZKY, 1956

Age: Miocene, Sarmatian.

Locality: Egerbocs, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 223.

Leguminocarpon machaerioides ANDRÉÁNSZKY, 1962

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 227–229.

Litsea europhylla ANDRÉÁNSZKY, 1962

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), p. 219.

Magnolia mikófalvensis ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Mikófalva, Szőkehegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 57.

Ostrya nervosa ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Uppony, Szőlő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 92.

Quercus alienoides ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 114.

Quercus crebrinervia ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 103.

Quercus macrantheroides ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Mikófalva, Szőkehegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 112.

Quercus rhyolitica ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 110.

Rhamnus angustifrons ANDRÉÁNSZKY, 1962

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: ANDRÉÁNSZKY, G. (1962). — Acta bot. hung. 8 (3–4), pp. 233–235.

Rinodina sarmatica ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Mikófalva, Szőkehegy, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 43.

Smilax borsodense ANDRÉÁNSZKY, 1956

Age: Miocene, Sarmatian.

Locality: Sály, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls. hist.-nat. Mus. natn. hung. 7, p. 228.

Smilax praeaspera ANDRÉÁNSZKY, 1956

Age: Miocene, Sarmatian.

Locality: Buják, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls. hist.-nat. Mus. natn. hung. 7, pp. 228–229.

Sorbariopsis linearifolia ANDRÉÁNSZKY, 1955

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, p. 43.

Sweetia oligocaenica ANDRÉÁNSZKY, 1967

Age: Lower Oligocene, Kiscellian.

Locality: Eger, Kiseged, Hungary.

Description: ANDRÉÁNSZKY, G. (1967b). — Egri Múz. évk. 5, pp. 19–20.

Tetracentron hungaricum ANDRÉÁNSZKY, 1959

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDRÉÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 61.

Revision: *Cercidiphyllum crenatum* (UNGER) R. W. BROWN; JÄHNICHEN, H., MAI, D. H. & WALTHER, H. (1980). — Schriftenr. geol. Wiss. Berlin 16, p. 358.

Tilia sarmatica ANDRÉÁNSZKY, 1956

Age: Miocene, Sarmatian.

Locality: Egerbocs, Hungary.

Description: ANDRÉÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, pp. 225–226.

***Ulmus angustissima* ANDREÁNSZKY, 1956**

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDREÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 223.

***Ulmus bükkensis* ANDREÁNSZKY, 1956**

Age: Miocene, Sarmatian.

Locality: Mikófalva, Szőkehegy, Hungary.

Description: ANDREÁNSZKY, G. (1956). — Annls hist.-nat. Mus. natn. hung. 7, p. 224.

Revision: *Ulmus minuta* GOEPPERT; KNOBLOCH, E. (1969): Tertiäre Floren von Mähren. — Brno, p. 105.

***Ulmus orbicularis* ANDREÁNSZKY & CZIFFERY, 1963**

Age: Miocene, Sarmatian.

Locality: Bükkmogyorósd, Baglyasgödör, Hungary.

Description: ANDREÁNSZKY, G. (1963b). — Annls hist.-nat. Mus. natn. hung. 55, p. 35.

***Viburnum hungaricum* ANDREÁNSZKY, 1955**

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: ANDREÁNSZKY, G. (1955a). — Annls hist.-nat. Mus. natn. hung. 6, pp. 47–48.

***Zelkova palaeojaponica* ANDREÁNSZKY, 1959**

Age: Miocene, Sarmatian.

Locality: Bánhorváti, Kővágó-tető, Hungary.

Description: ANDREÁNSZKY, G. (1959b). — Akadémiai Kiadó, Budapest, p. 133.

***Zelkova ungeri* KOVÁTS, var. *ulmoides* ANDREÁNSZKY, 1965**

Age: Miocene, Sarmatian.

Locality: Dédestapolcsány, Gulyadéllő, Hungary.

Description: ANDREÁNSZKY, G. (1965). — Annls hist.-nat. Mus. natn. hung. 55, pp. 35–36.

Revision: *Zelkova zelkovaefolia* (UNG.) BÚŽEK & KOTL.; KOTLABA, F. (1963). — Sbor. Nár. Muz. v.

Praze, R. B. prir. Védy, 19, 2, pp. 53–74.

HUNGARIAN GEOLOGICAL SURVEY (BUDAPEST)

***Calamus noszkyi* JABLONSZKY, 1915**

Age: Lower Miocene, Ottangian.

Locality: Ipolytarnóc, Hungary.

Description: JABLONSZKY, J. (1914–15). — M. kir. Földt. Int. évk. 22 (4), pp. 235–238, 257–261.

***Calocedrus (Libocedrus) salicornioides* (UNG.) PÁLFALVY, 1962**

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: NAGY, L. & PÁLFALVY, I. (1962). — Földt. Int. évi jel. 1960-ról, p. 227.

Revision: *Libocedrites salicornioides* (UNG.) ENDL.; MAI, D. H., WALTHER, H. (1978). — Rev. Abh.

Staat. Mus. Miner. Geol. Dresden 28, p. 29.

Castanopsis andreánszkyi PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jel. 1957–58-ról, p. 406.

Celtis hungarica PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jelentése 1957–58-ról, p. 405.

Celtis miocenica PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jelentése 1957–58-ról, p. 406.

Ceratophyllum hungaricum PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jelentése 1957–58-ról, p. 404.

Cyrilla hungarica PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jelentése 1957–58-ról, p. 404.

Dryopteris kümmeleri JABLONSZKY, 1915

Age: Lower Miocene, Ottangian.

Locality: Ipolytarnóc, Hungary.

Description: JABLONSZKY, J. (1914–15). — M. Kir. Földt. Int. évk. 22 (4), pp. 231–234, 253–255.

Gleichenites hungaricus PÁLFALVY, 1964

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1964). — Földt. Int. évi jelentése 1962-ről, pp. 71–73.

Hamamelis meckensis PÁLFALVY, 1961

Age: Miocene, Karpatian.

Locality: Magyaregregy, Farkasordító-árok, Hungary.

Description: PÁLFALVY, I. (1961). — Földt. Int. évi jelentése 1957–58-ról, p. 403.

Hicoria bilinica (UNG.) JABLONSZKY, 1915

Age: Lower Miocene, Ottangian.

Locality: Ipolytarnóc, Hungary.

Description: JABLONSZKY, J. (1914–15). — M. Kir. Földt. Int. évk. 22 (4), pp. 247–250, 269–271.

Revision: *Cyclocarya cycloarpa* (SCHLECHT.) KNOBL.; KNOBLOCH, E. & NEMEJC, F. (1973). — In: Papp, A., Rögl, F. & Senes, I. (eds.): Chronostratigraphie und Neostratotypen III. M_2 Ottangian–Bratislava, p. 697.

Leguminocarpon egerense PÁLFALVY, 1951

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: PÁLFALVY, I. (1951). — Földt. közl. 81 (1–3), p. 69.

Leguminocarpon legányii PÁLFALVY, 1951

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: PÁLFALVY, I. (1951). — Földt. közl. 81 (1–3), p. 69.

Leguminocarpon rectissimum PÁLFALVY, 1951

Age: Upper Oligocene, Egerian.

Locality: Eger, Wind's brick-yard, Hungary.

Description: PÁLFALVY, I. (1951). — Földt. közl. 81 (1–3), p. 70.

Leguminocarpon pachyrhizoides RÁSKY, 1964

Age: Lower Miocene, Ottnangian.

Locality: Ipolytarnóc, Hungary.

Description: RÁSKY, K. (1964). — Annls hist.-nat. Mus. natn. hung. 56, pp. 72–73.

Quercus pseudofurcinervis É. KOVÁCS & PÁLFALVY, 1962

Age: Miocene, Sarmatian.

Locality: Balaton, Dellő, Hungary.

Description: KOVÁCS, É. (1962). — Acta bot. hung. 8, p. 293.

Stenochlaena transdanubica PÁLFALVY, 1966

Age: Middle Eocene.

Locality: Tatabánya, Hosszúhajtai-völgy, Hungary.

Description: PÁLFALVY, I. (1966). — Földt. Int. évi jelentése 1964-ről, pp. 356–359.

KUNY DOMOKOS MUSEUM (TATA)

Syringa pannonica SKOFLEK, 1968

Age: Pleistocene.

Locality: Vérteszólós, Hungary.

Description: SKOFLEK, I. (1968). — Acta bot. hung. 14 (1–2), pp. 138–139.

Syringa pleistocenica SKOFLEK & BUDÓ, 1968

Age: Pleistocene.

Locality: Vérteszólós, Hungary.

Description: SKOFLEK, I. (1968). — Acta bot. hung. 14 (1–2), pp. 135–138.

SAVARIA MUSEUM (SZOMBATHELY)

Acer séensis HORVÁTH, 1972

Age: Miocene, Upper Pannonian.

Locality: Sé II., Comite Vas, Hungary.

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1. *Sphaeria kutschlinica* 55.2483.1. × 1.5
2. *Lobaria jablonszkyi* 55.591.1. × 1
3. *Lomariopsis bilinica* 55.2489.1. × 1
4. *Rhipidopteris palaeopeltata* 83.268.1. × 3

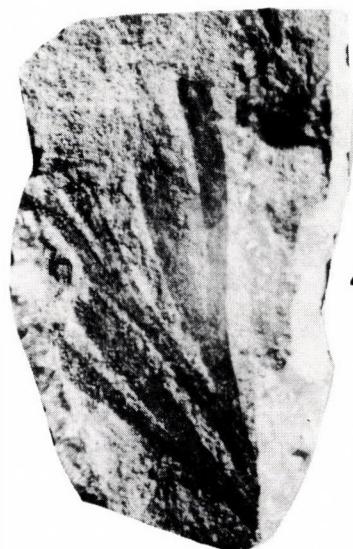
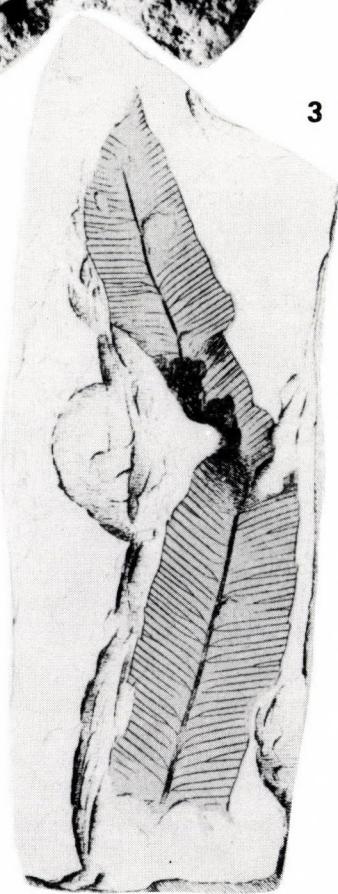
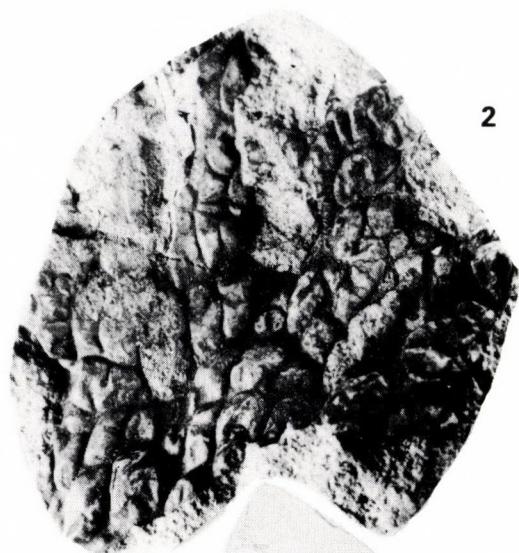


Plate II

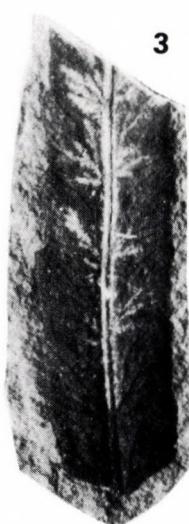
1. *Osmunda palaeobanksiaeefolia* 63.29.1. × 2.5
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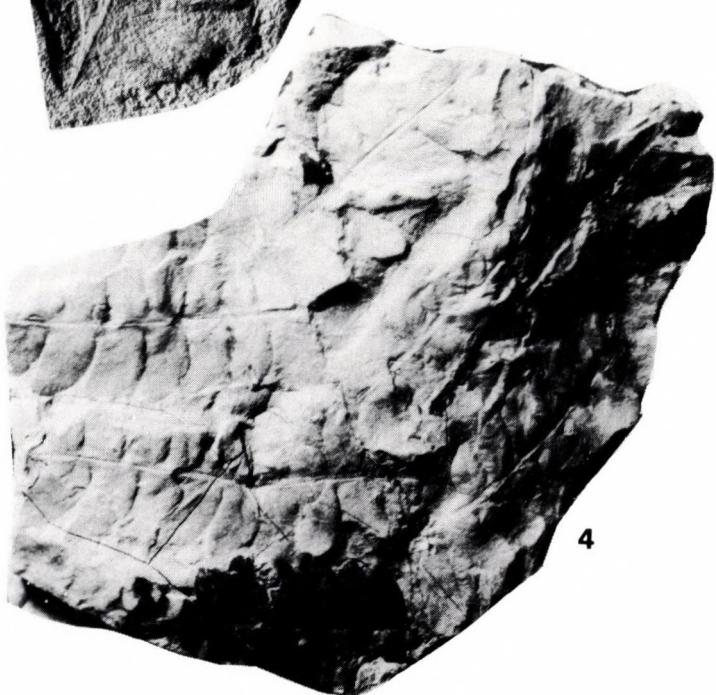
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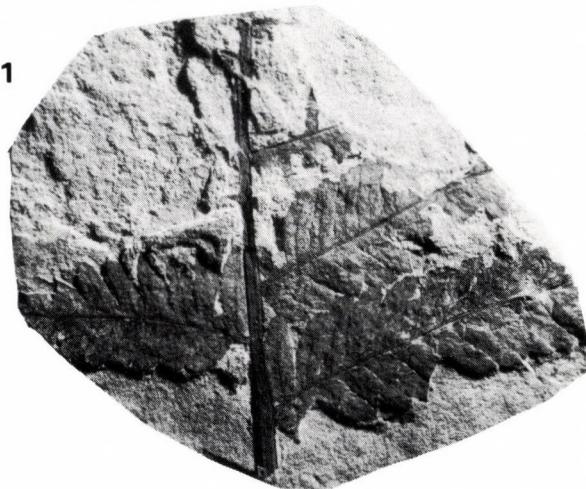


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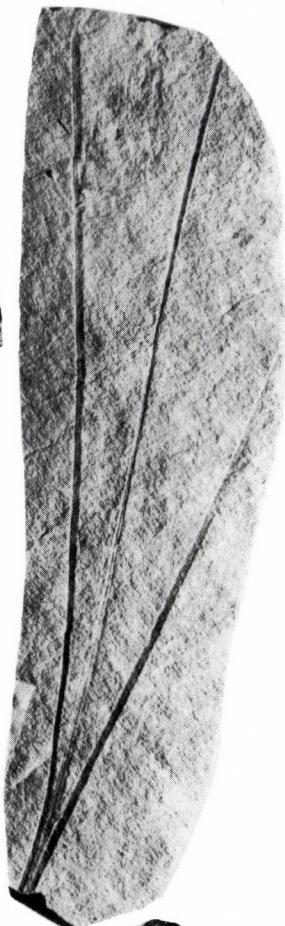
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1. *Pteris budensis* 83.269.1. × 1
2. *Pinus tuzsoni* 83.257.1. × 0.75
3. *Araucaria hungarica* 61.18.1. × 2.5
4. *Pinus palaeoponderosa* 83.305.1. × 1

1



2



4



3



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1. *Acer andreánszkyi* 56.1721.1. × 1
2. *Acer báñhorvátense* 55.7.1. × 1
3. *Acer bicorne* 83.297.2. × 1
4. *Acer connivens* 59.40.1. × 1

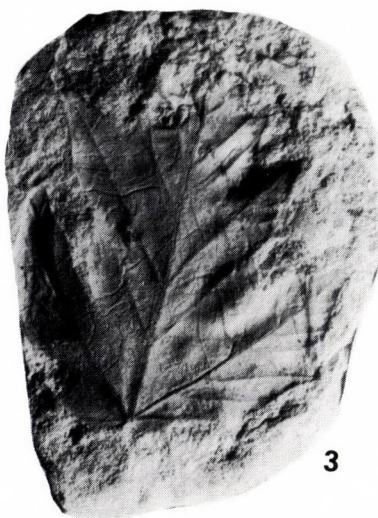
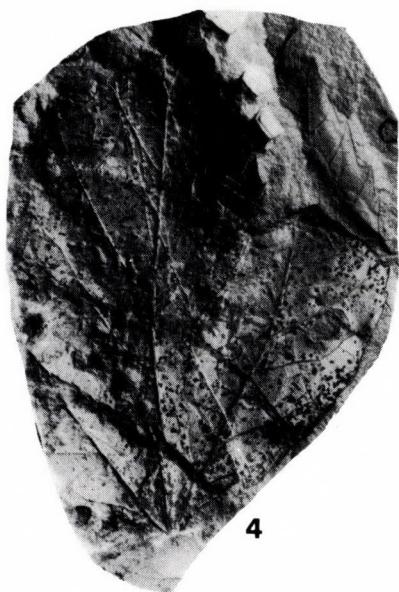
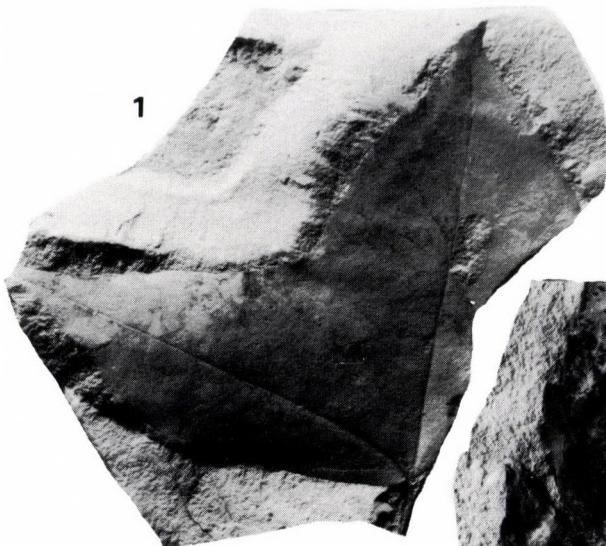


Plate V

1. *Acer crenatifolium* 59.846.1. × 1
- 1a. *Acer crenatifolium* 59.846.1. × 1
2. *Acer divaricatum* 83.276.1. × 1
3. *Acer trachyticum* 64.134.1. × 1
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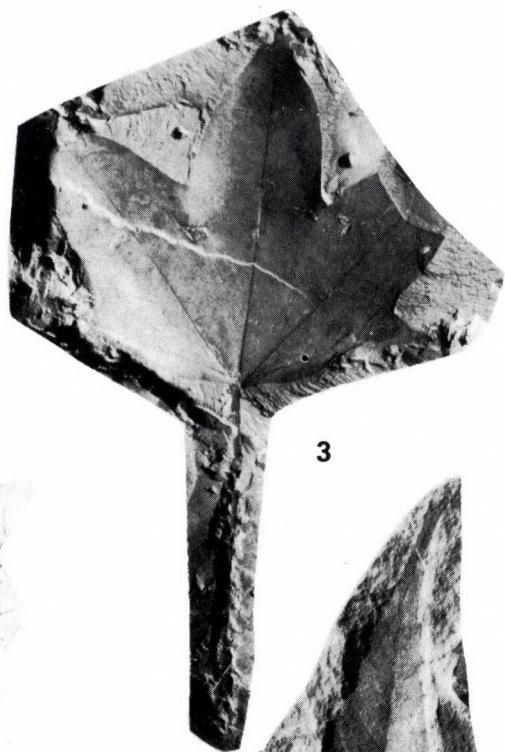
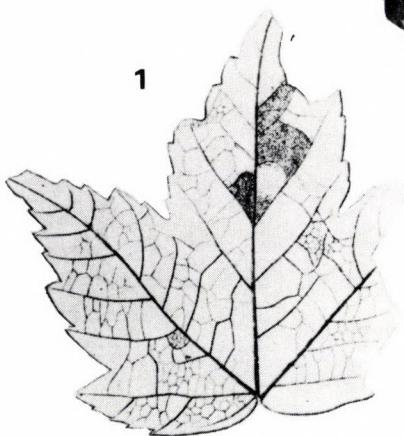


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1. *Acer latissimum* 59.40.1. × 1
2. *Acer monoïdes* var. *sályense* 60.1700.1. × 0.75
3. *Acer pseudodecipiens* var. *serratum* 59.163.1. × 1.5

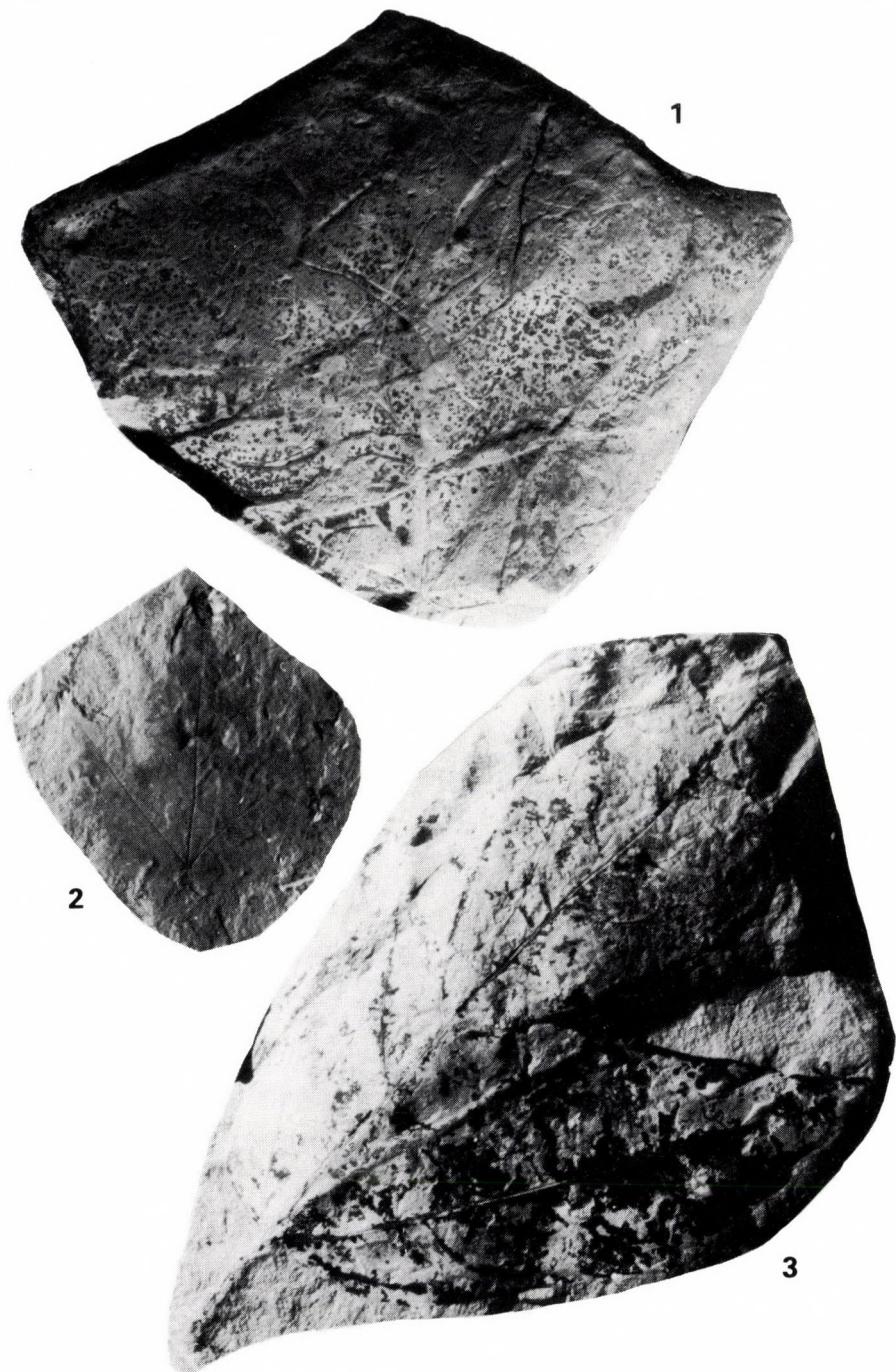


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1. *Actinorhytis eocaenica* 56.145.1 × 1
2. *Aherniaeophyllum kraeuseli* 60.34.2. × 1
3. *Alangium hungaricum* 83.254.1 × 0.75
4. *Alchorneaephylloides grammastis* 65.17.1 × 1

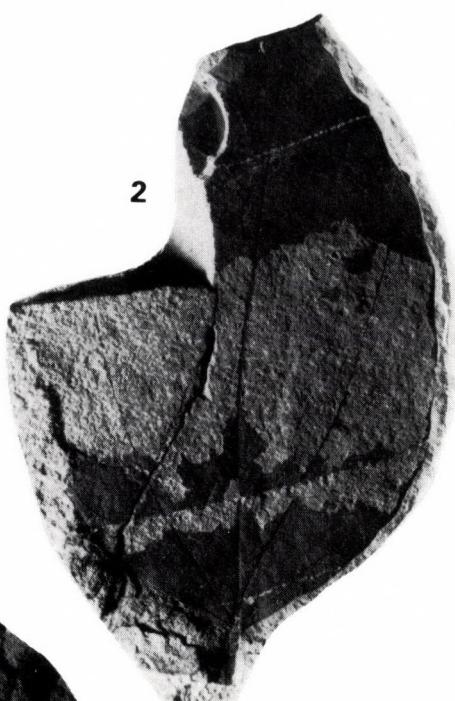


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1. *Aleuriteophyllum nemejci* 65.13.1. × 0.75
2. *Alnus laxinervia* 60.1761.1. × 1.5
3. *Aroites tallyanus* 58.364.1. × 3
4. *Arbutus praeunedo* 83.266.1. × 1
5. *Anaclosa protofrutescens* 58.6.1. × 1

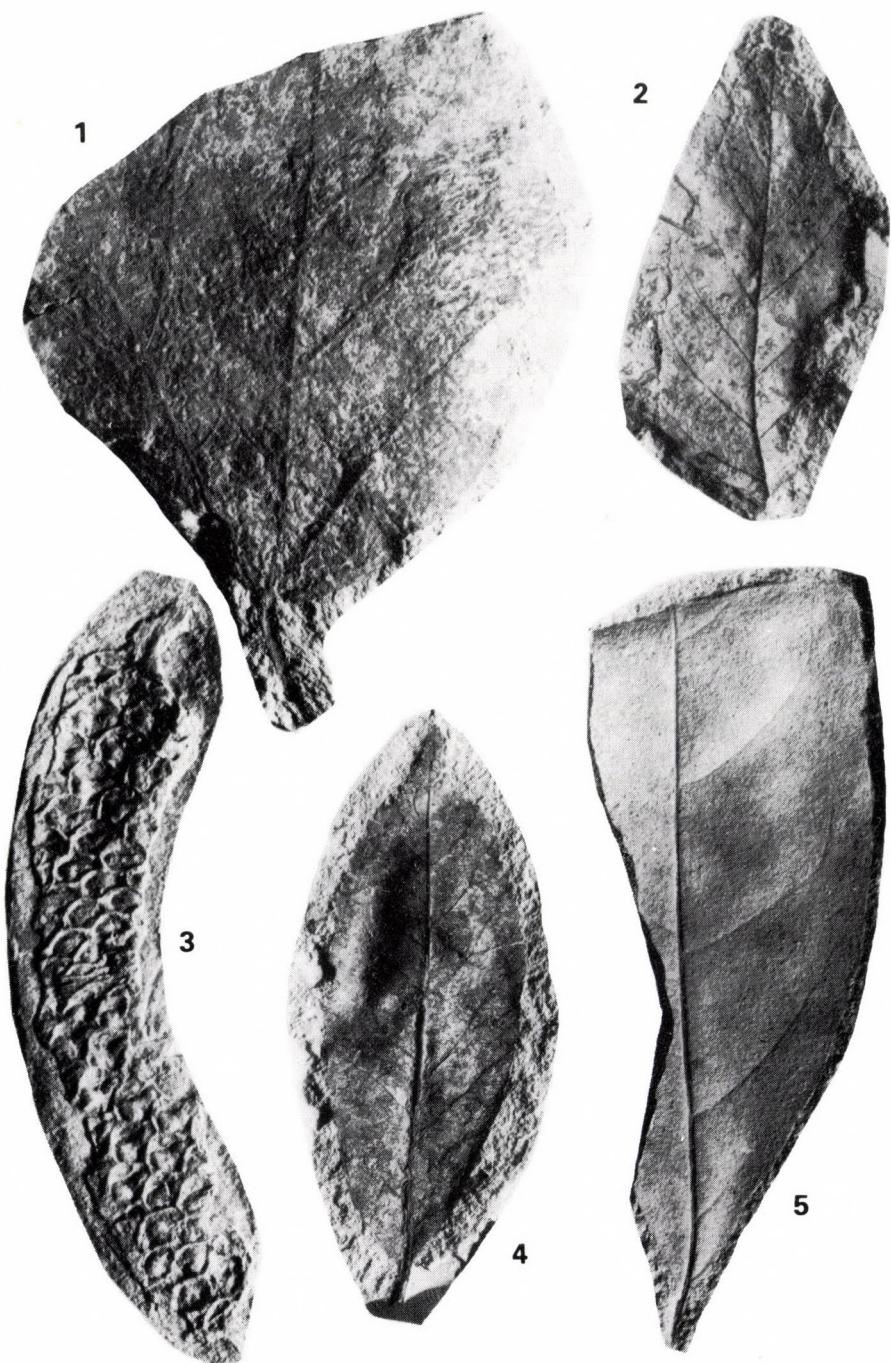


Plate IX

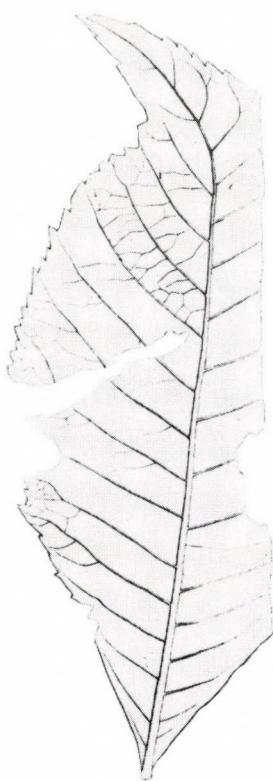
1. *Araceites hungaricus* 63.923.1. × 1
2. *Alnus nogrädensis* 83.361.1. × 1
3. *Aesculus palaeocastanum* 59.909.1. × 1
4. *Andromeda archerontis* 59.856.1. × 1
5. *Antholithes araliaeformis* 58.15.1. × 3



1



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1. *Aristolochia nogradiensis* 59.425.1. × 3
2. *Belangera obtusifolia* 59.1062.1. × 1
3. *Aronia prisca* 59.961.1. × 1
4. *Baloghia miocenica* 55.2340.1. × 1

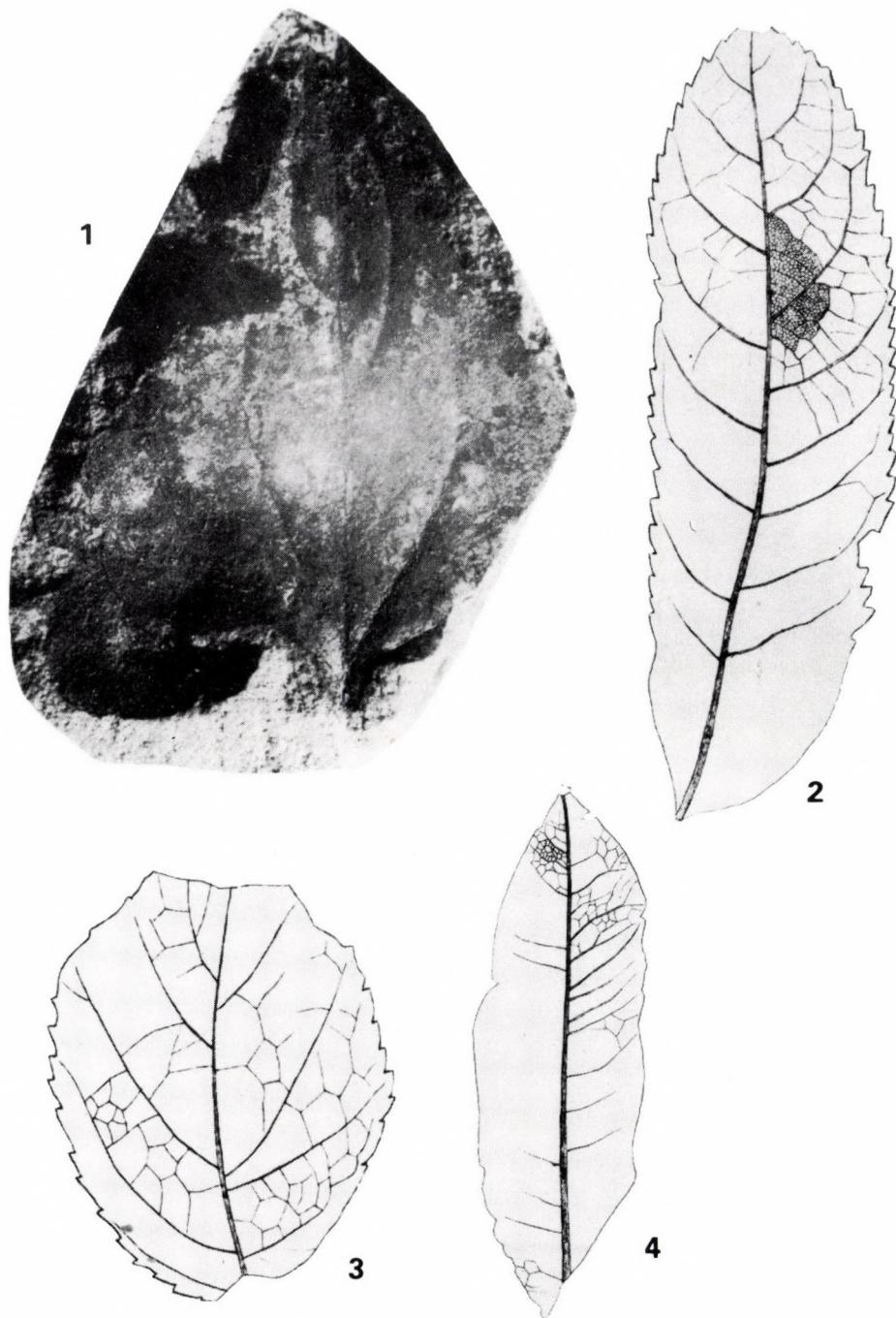


Plate XI

1. *Bambusium trachyticum* 62.35.1. × 1
2. *Baloghiaeophyllum miocenicum* 62.62.1. × 1
3. *Betula acutangula* 59.22.1. × 1.5
4. *Betula triangularis* 59.292.1. × 1.5.

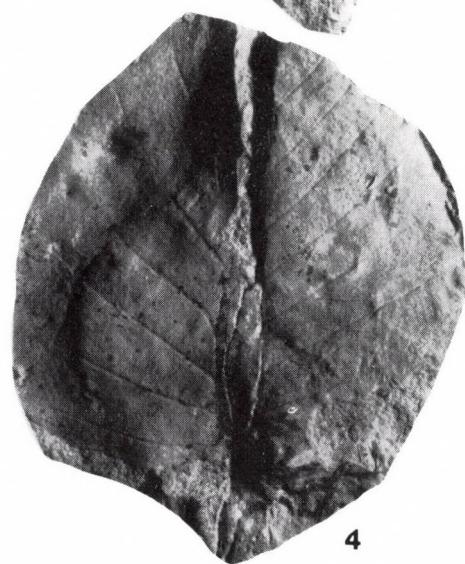
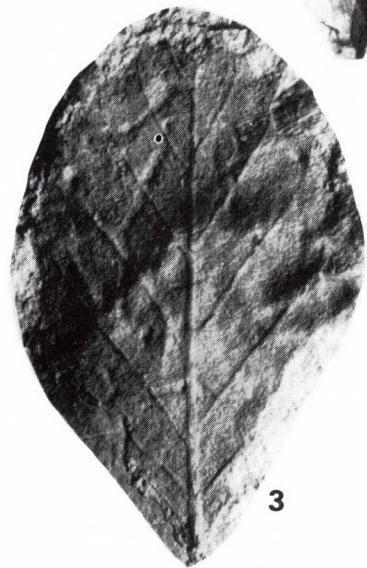
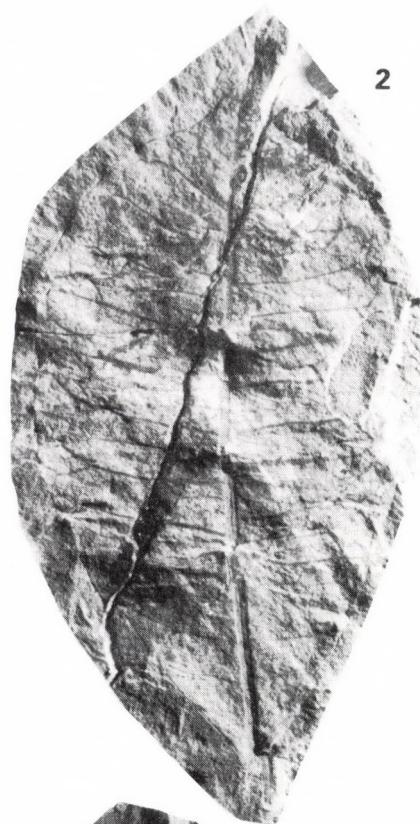
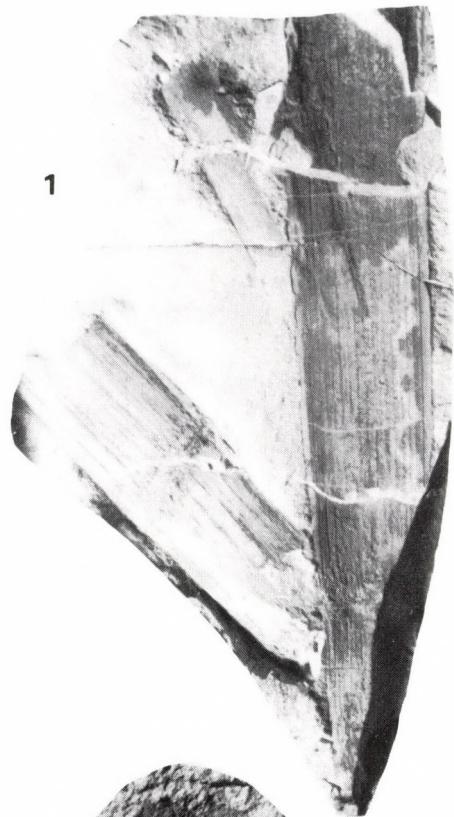


Plate XII

1. *Bumelia bohemica* 55.2472.1. × 1
2. *Blechnum ellipticum* 83.259.1. × 2
3. *Callistemophyllum hungaricum* 54.1549.2. × 1.5
4. *Betula quadrinervia* 59.27.2. × 2
5. *Callicoma bohemica* 55.2377.1. × 1

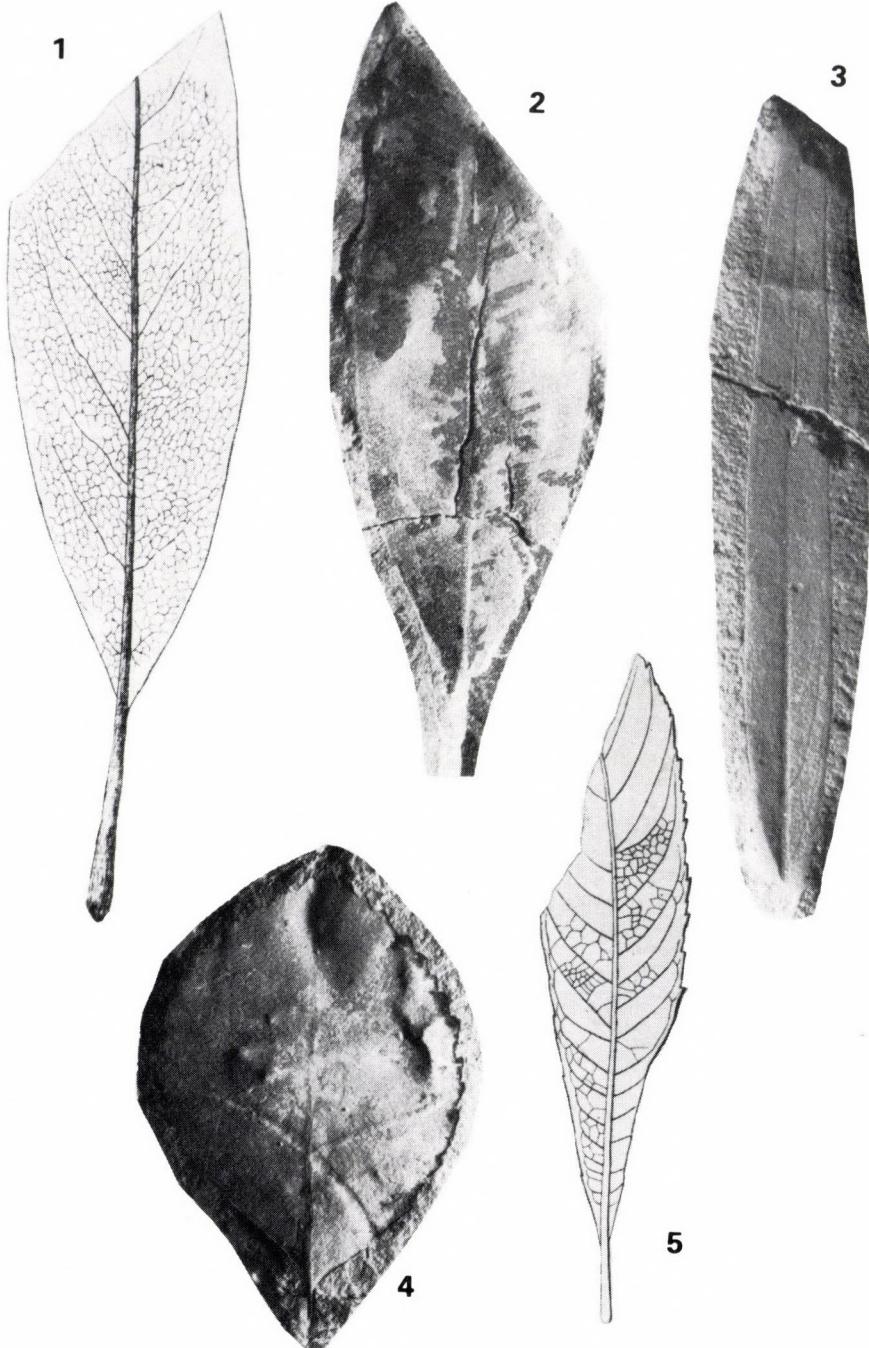


Plate XIII

1. *Callicoma egedensis* 83.256.1. × 1
2. *Carpinus neilreichii* 64.125.1. × 2
3. *Carya falcata* 83.261.2. × 1
4. *Carpinus neilreichii* 64.128.1. × 3
5. *Carpolithus combretaceoides* 60.55.2. × 3
6. *Cassia weinmanniaeefolia* 54.1862.1. × 3

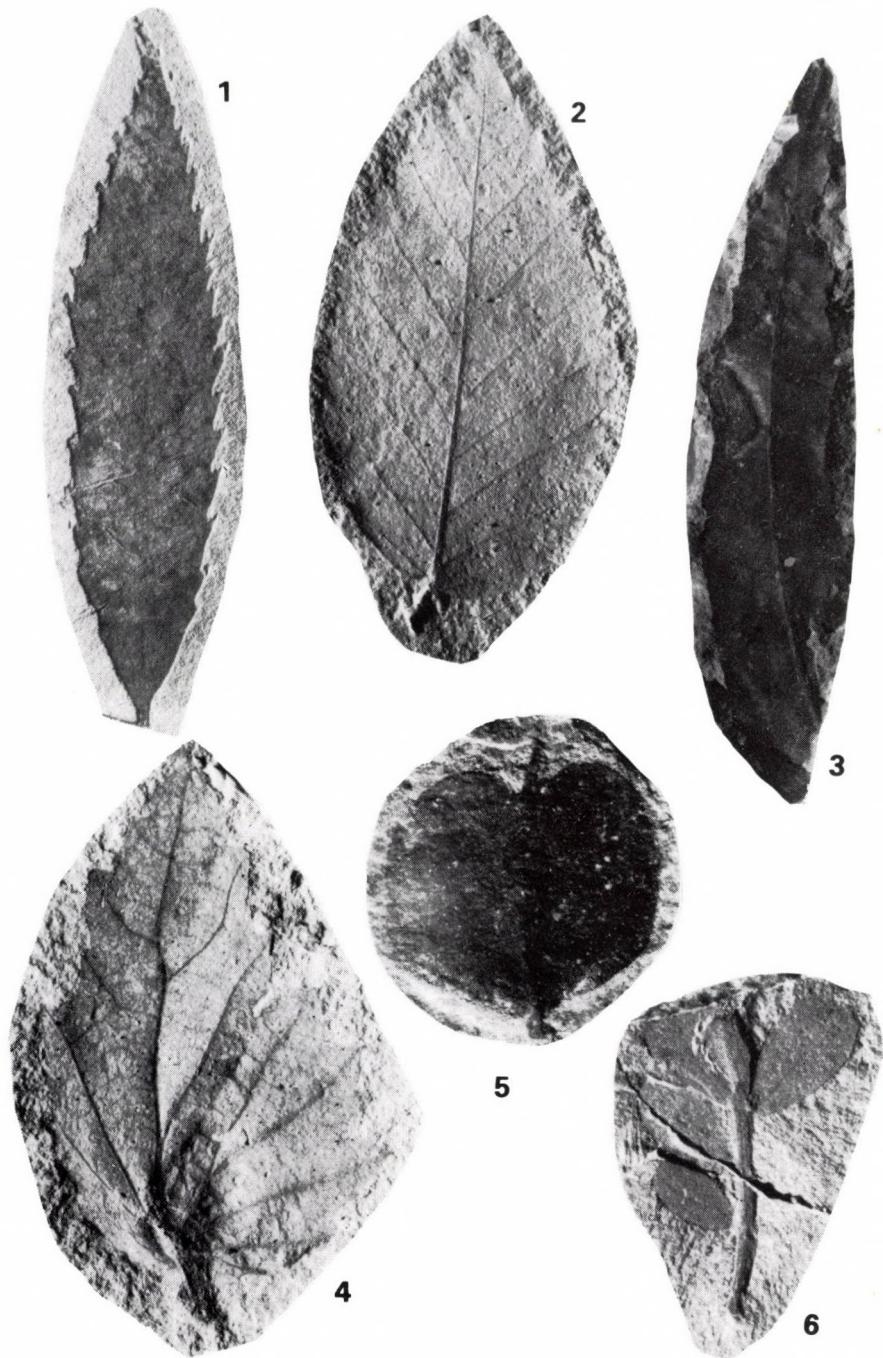


Plate XIV

1. *Castanea kubinyii* 64.98.1. × 1
2. *Carya sepulta* 64.109.1. × 2.5
3. *Catalpa cziffery* 59.35.2 × 1
4. *Carya falcata* 83.259.1. × 1

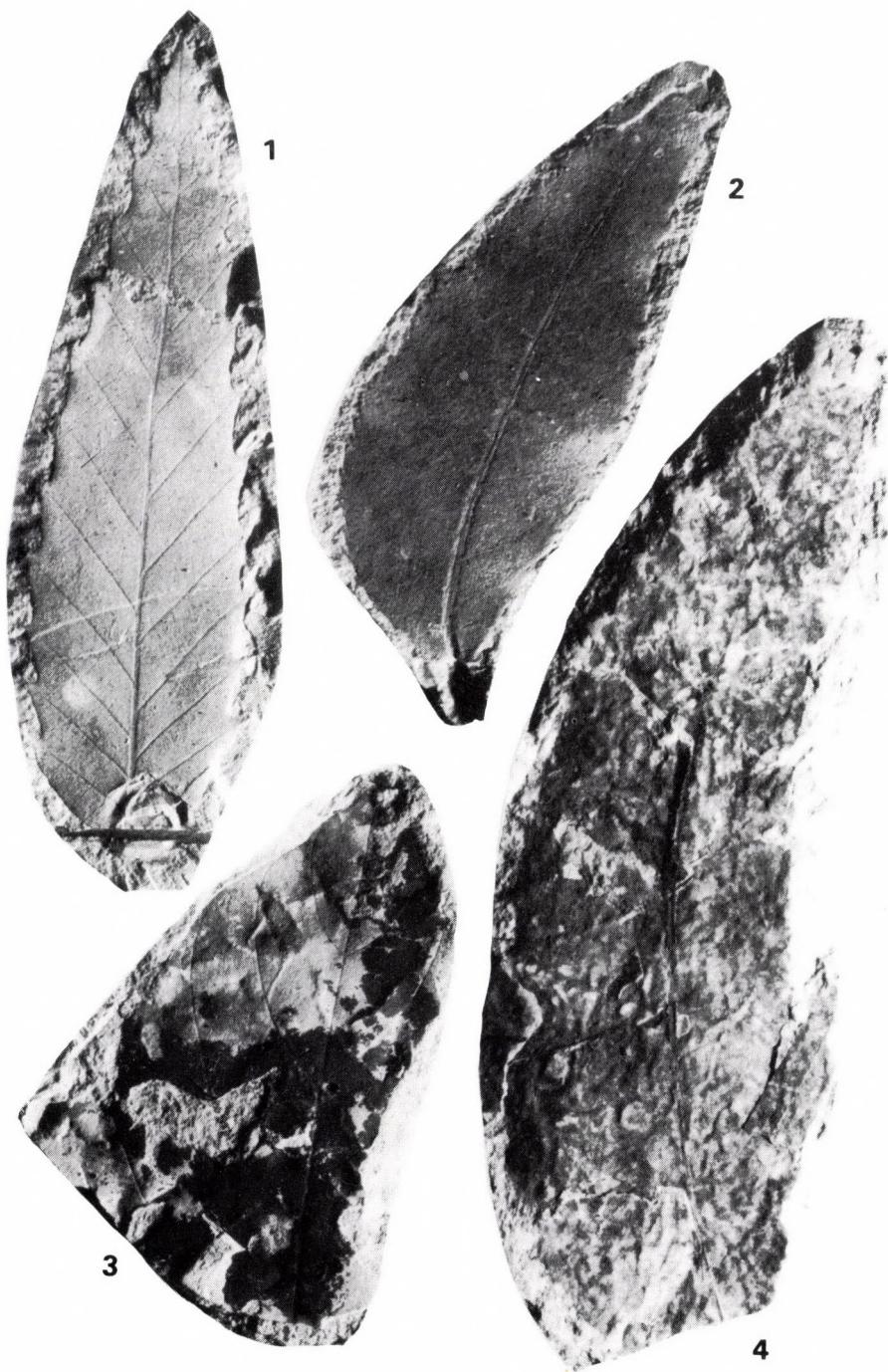


Plate XV

1. *Canotia tallyana* 58.5.1. × 3
2. *Castanea latissima* 59.201.1. × 1
3. *Caseariaeophyllum kraeuseli* 60.40.1. × 1

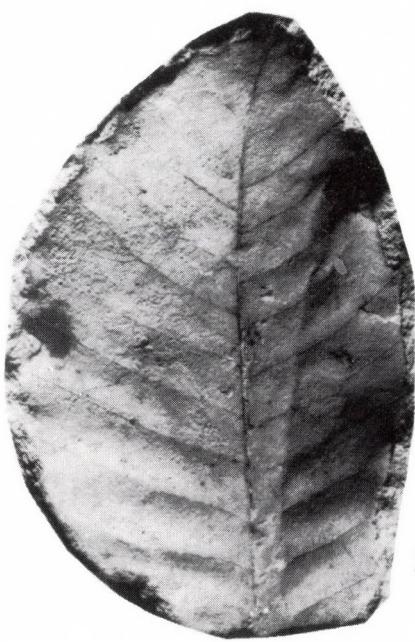
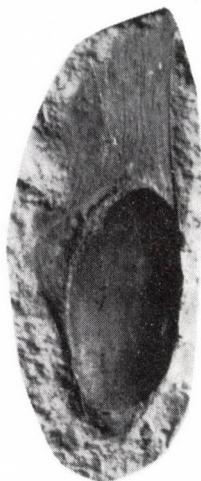


Plate XVI

1. *Carpinus heerii* 59.948.1. × 1
2. *Cedrela macrophylla* 54.1511.1. × 0.75
3. *Celastropodium mimusops* 55.2486.1. × 0.75
4. *Celastrus microtropoides* 55.2419.1. × 1.5

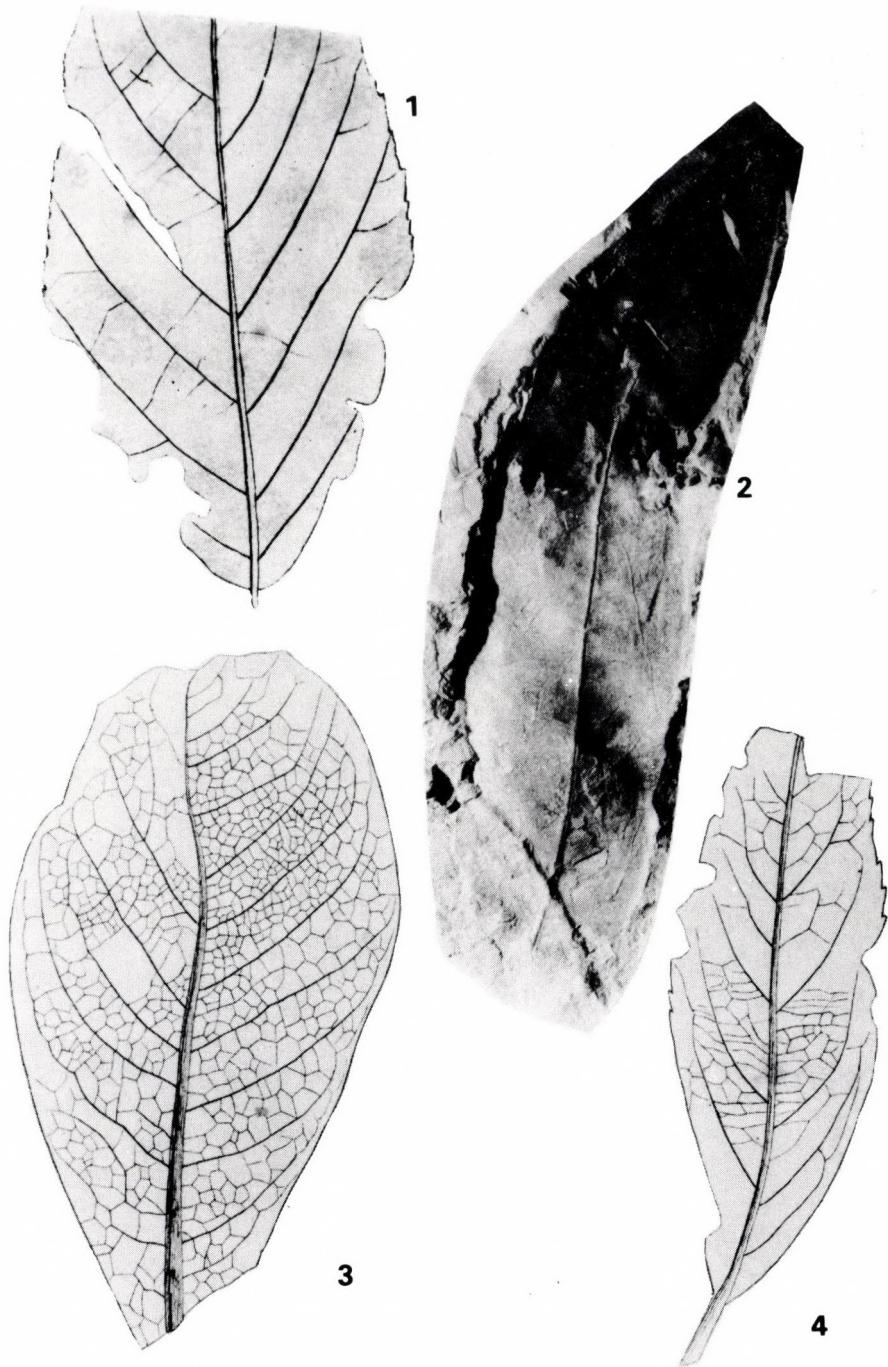


Plate XVII

1. *Celastrophyllum maytenoides* 55.1104.1. × 1.5
2. *Celtis vulcanica* 58.350.1. × 1.5
3. *Copaifera longestipitata* 58.355.1. × 2
4. *Cunonia oligocaenica* 83.298.1. × 1
5. *Cryptogrammites hungarica* 83.274.1. × 2

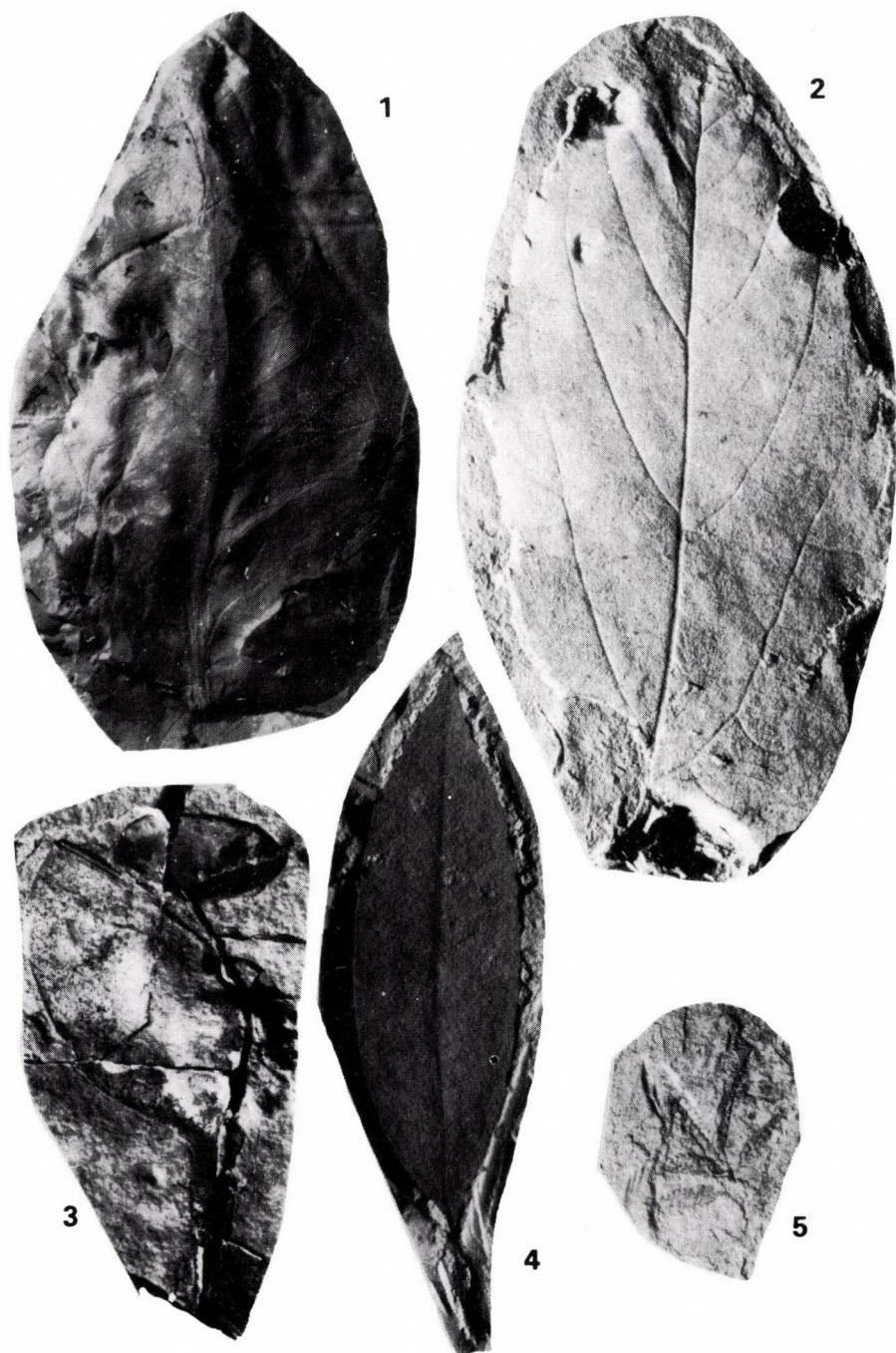
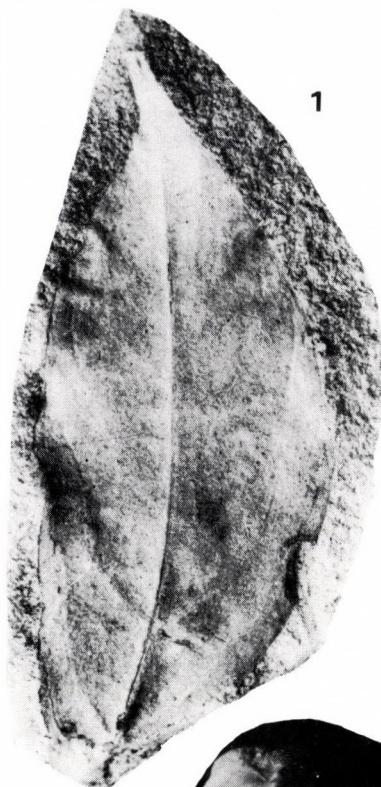
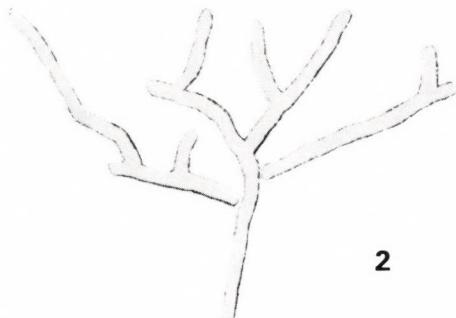


Plate XVIII

1. *Centroplacophyllum palaeoglaucinum* 65.2.1. × 1
2. *Chondrites bilinicus* 59.1015.1. × 2
3. *Corylus longipetiolata* 60.1668.1. × 1.5
4. *Cercis harmati* 61.21.1. × 2



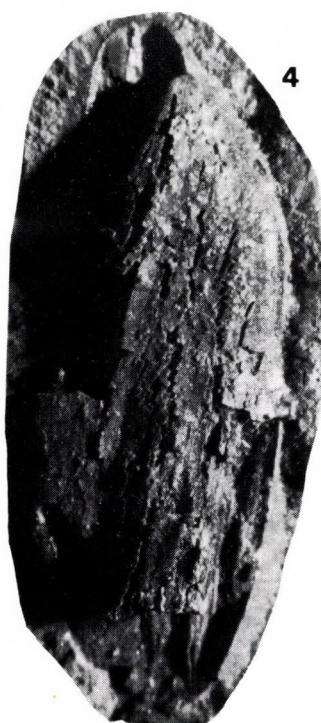
1



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Plate XIX

1. *Debeya hungarica* 79.5.2. × 1
2. *Ceratopetalum articulatum* 83.302.1. × 1.5
3. *Cupania palaeorhus* 55.2496.1. × 2
4. *Cercis hungarica* 61.24.1. × 0.75

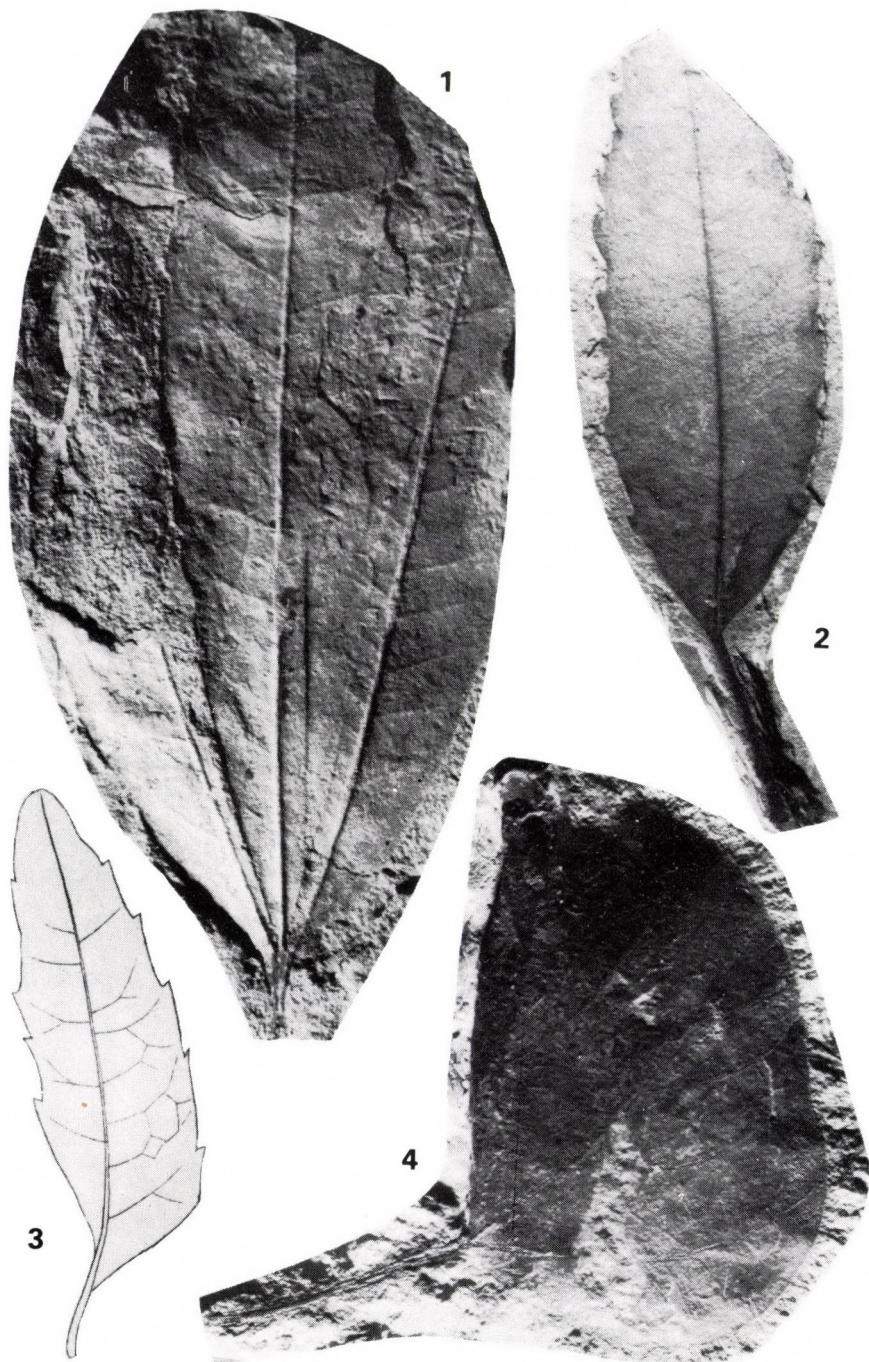


Plate XX

1. *Desmodium sarmaticum* 59.315.1. × 2
2. *Dioscorea carpum marginatum* 83.267.1. × 2.5
3. *Dodonaea salicoides* 83.299.2. × 1
4. *Dioscoreites giganteus* 83.286.1. × 0.75

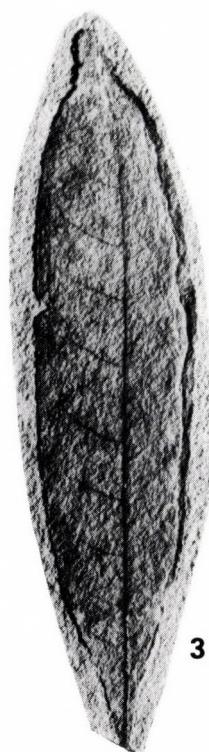
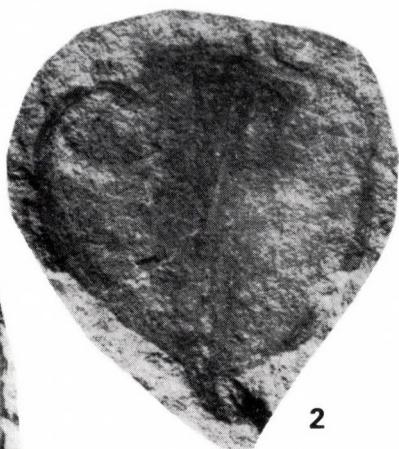


Plate XXI

1. *Dioscoreites agriensis* 83.265.1. × 0.75
2. *Dolichites triangularis* 83.291.1. × 1
3. *Dolichites triangularis* 83.289.1. × 1
4. *Dioclea agriensis* 83.290.1. × 0.75

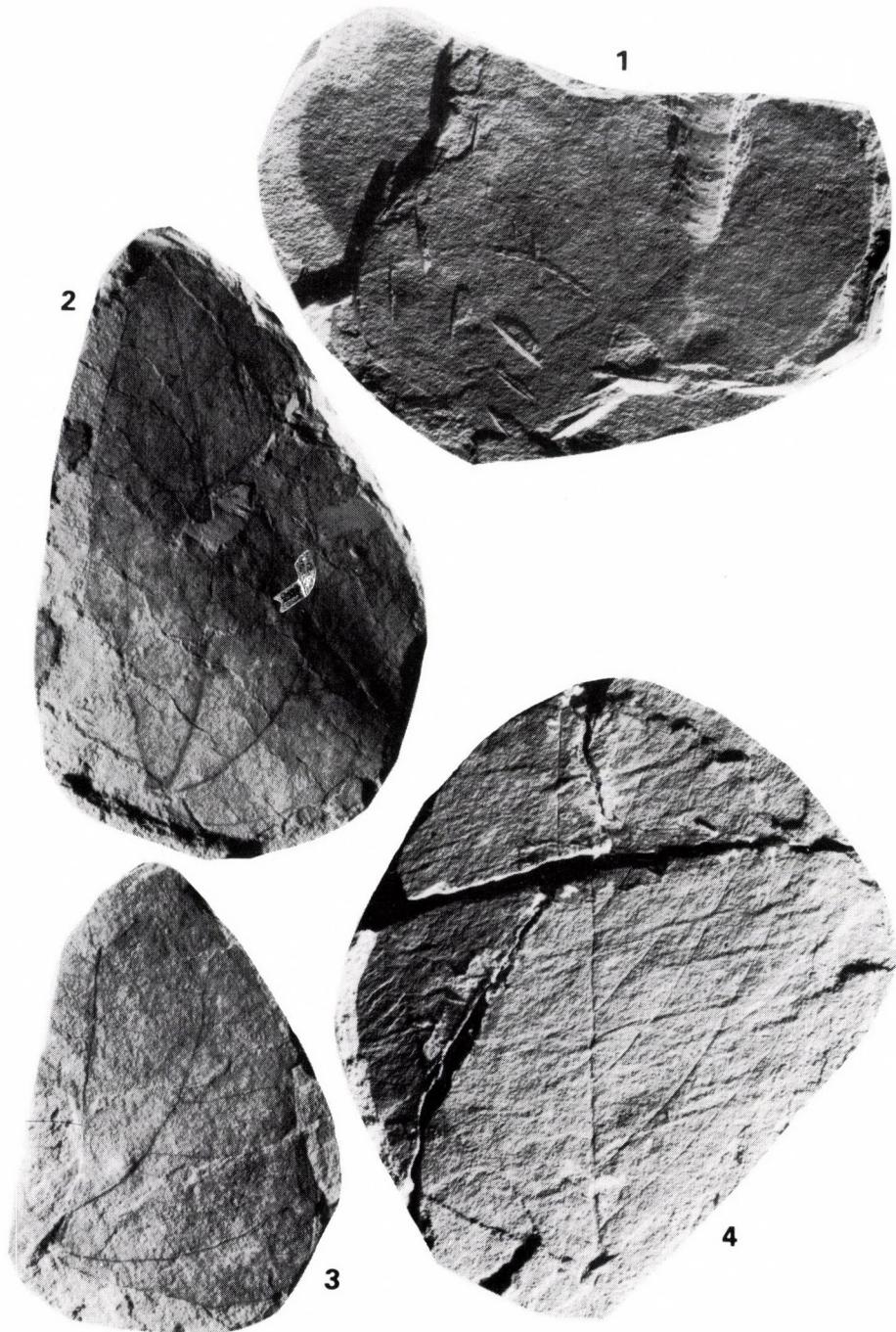
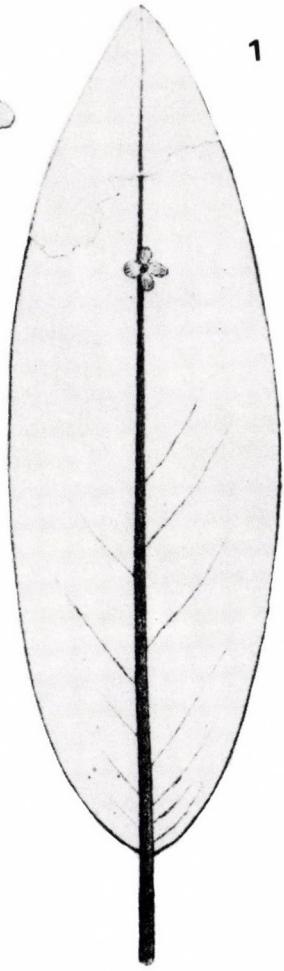
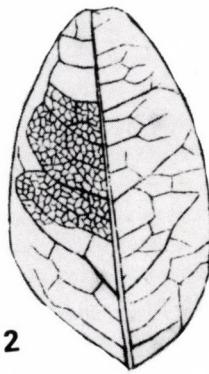


Plate XXII

1. *Diospyros bilinica* 59.986.1. × 1
2. *Dalbergia proserpinae* 59.901.1. × 1
3. *Elalocarpus agriensis* 83.296.1. × 1
4. *Donacites erdőbényensis* 54.1548.1. × 1



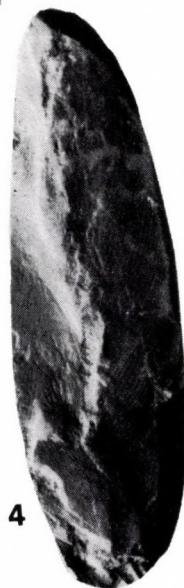
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Plate XXIII

1. *Ficus hercules* 55.2327.1. × 0.75
2. *Eriobotrya europaea* 60.1670.1. × 1
3. *Erythrospermophyllum ipolytarnocense* 65.4.1. × 0.75
4. *Elaeodendron ob lanceolatum* 69.238.1. × 1

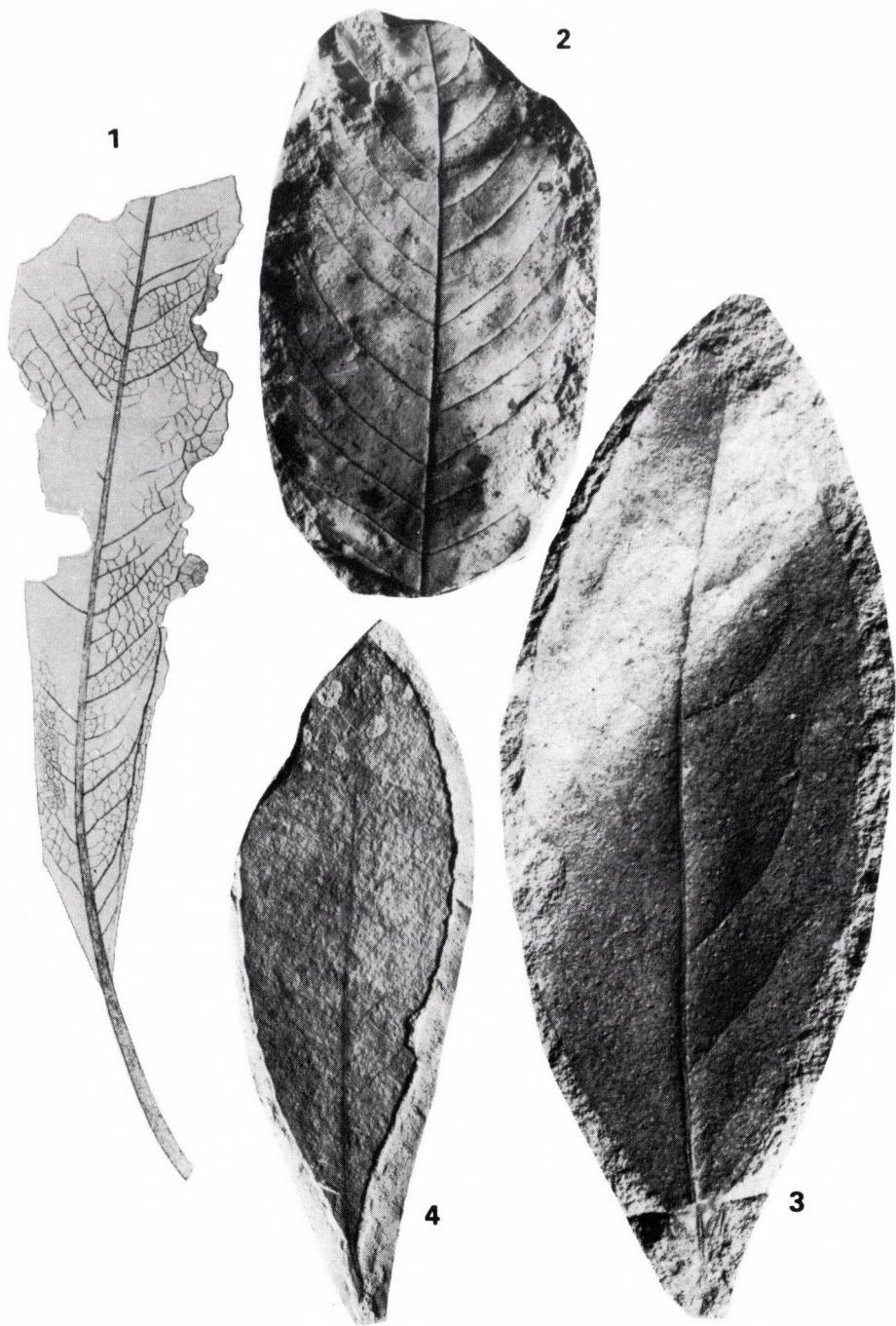
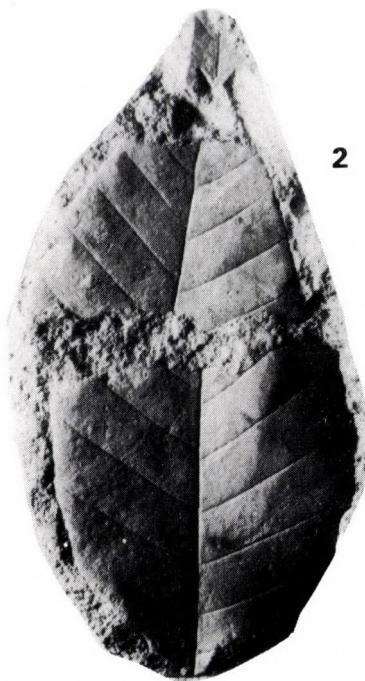


Plate XXIV

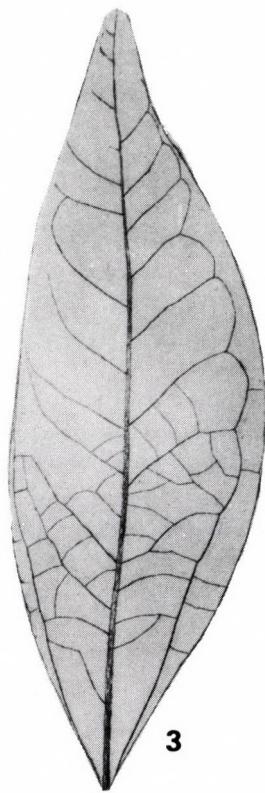
1. *Fagus latissima* 60.1654.1. × 1
2. *Fagus aperta* 83.287.1. × 1.5
3. *Ficus atlantidis* 55.2475.1. × 1.5
4. *Fothergilla ungeri* 59.1.1. × 2



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Plate XXV

1. *Ficus kräuseli* 61.16.1. × 0.75
2. *Forsythia hungarica* 59.423.1. × 2.5
3. *Fagus oblonga* 59.413.1. × 2
4. *Ficus vulcanica* 55.2355.1. × 1

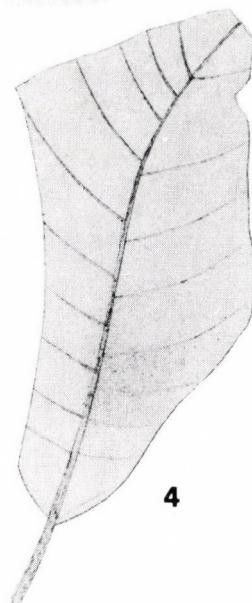
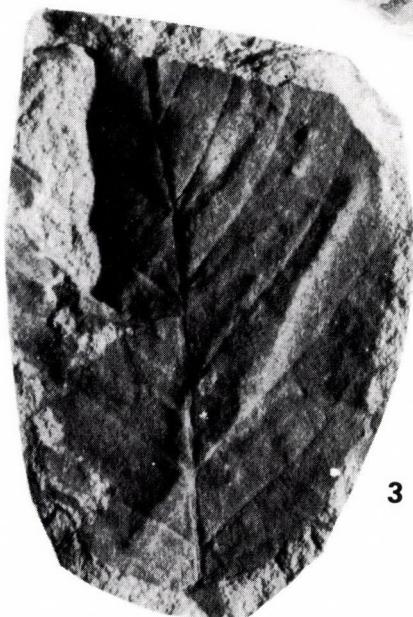
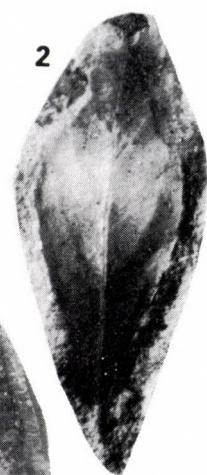
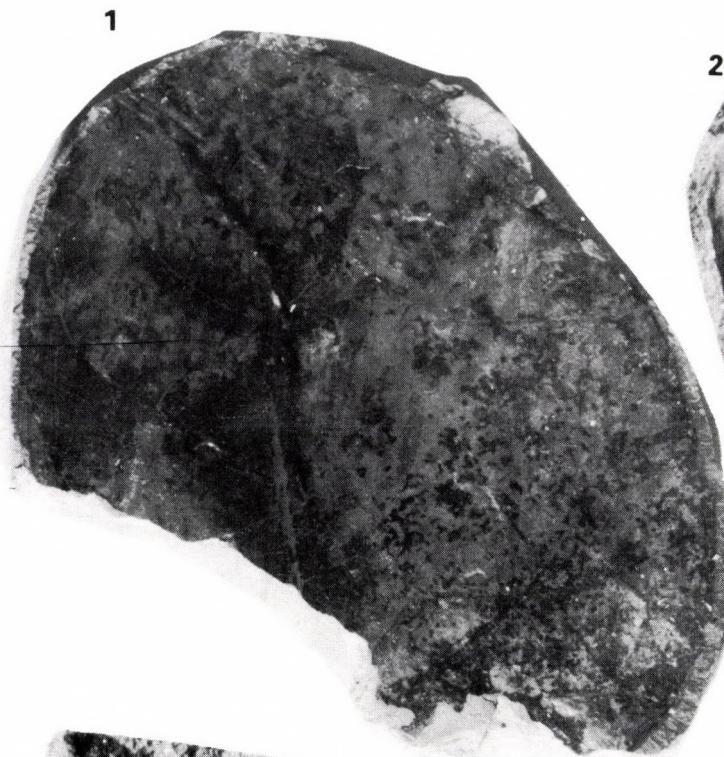
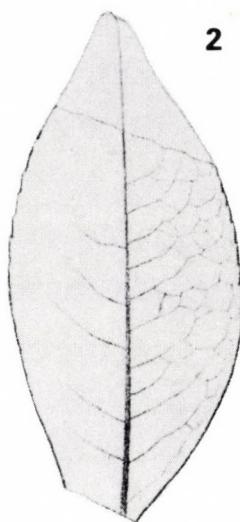


Plate XXVI

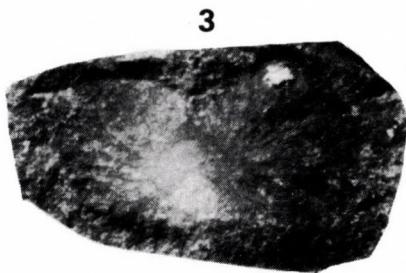
1. *Hydnocarpophyllum kraeuseli* 60.49.1. × 1
2. *Icacorea primaeva* 55.2487.1. × 1
3. *Hiraea microcarpa* 83.264.1. × 3
4. *Ficus goepperti* 59.905.1. × 1
5. *Heliotropites reussii* 59.975.1. × 1



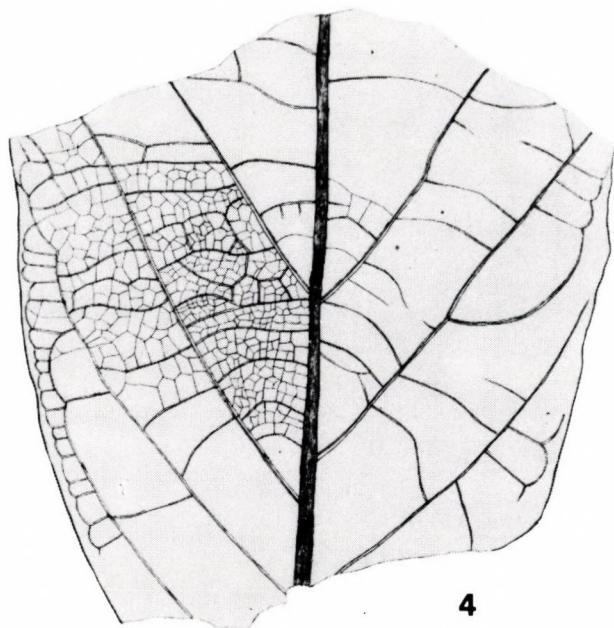
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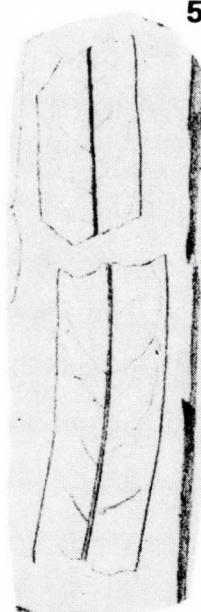
2



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Plate XXVII

1. *Kadsura protowightiana* 58.7.1. × 1
2. *Kydia hungarica* 56.28.1. × 1.5
3. *Kydia palaeocalycina* 56.138.1. × 0.5

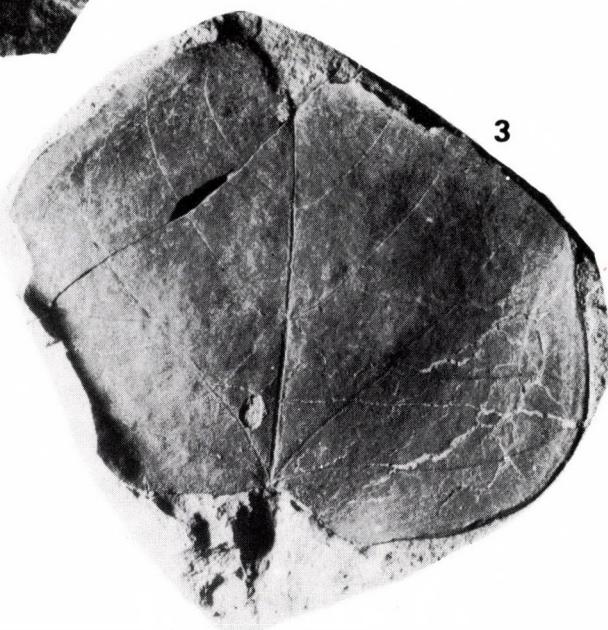


Plate XXVIII

1. *Ligustrum priscum* 55.2362.1. × 1
2. *Lithocarpus decurrens* 83.275.1. × 0.75
3. *Laurus hungarica* 61.20.1. × 1
4. *Laurelia glandulifera* 55.2410.1. × 1
5. *Lonicera lipthayana* 59.424.1. × 2

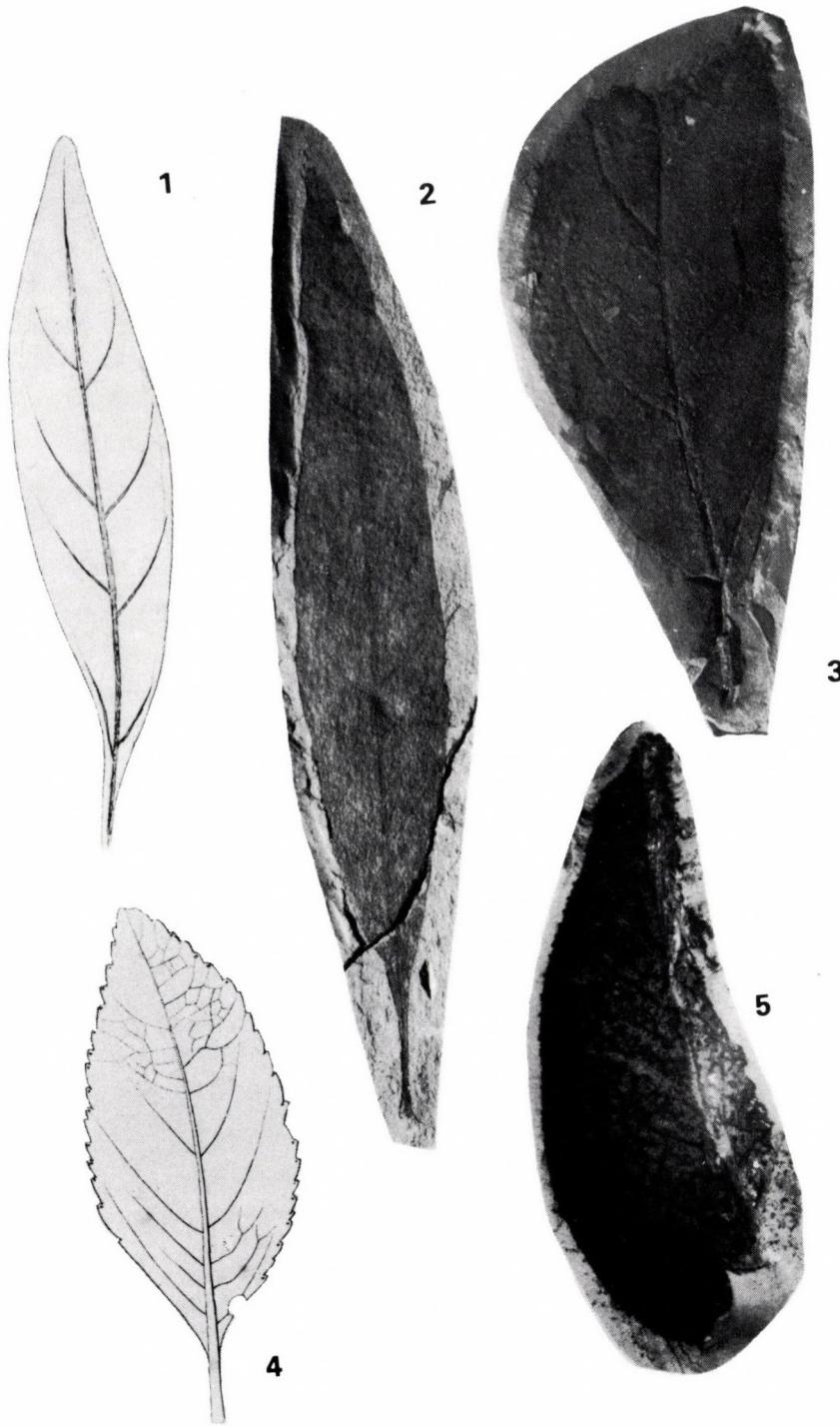


Plate XXIX

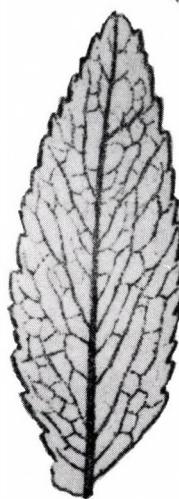
1. *Macarangaephyllum palaeomoandrum* 62.918.1. × 1
2. *Myrsine heerii* 55.2462.1. × 3
3. *Myrsinites antiquus* 56.1089.1. × 2
4. *Mallotophyllum palaeomiquelianum* 65.3.1. × 1.5



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Plate XXX

1. *Musophyllum tárkányense* 83.301.1. × 1
2. *Magnoliaestrobos hungaricus* 58.8.1. × 2.5
3. *Myrica macrodonta* 83.300.1. × 1.5
4. *Myrica onocleaefolia* 83.260.1. × 1



Plate XXXI

1. *Populus balsamoides* var. *obesa* 83.277.1. × 1
2. *Passifloraephyllum kraeuseli* 60.33.1. × 0.75
3. *Morus evae kovács* 60.1678.1. × 1.5
4. *Maoutia hungarica* 56.25.1. × 1.5

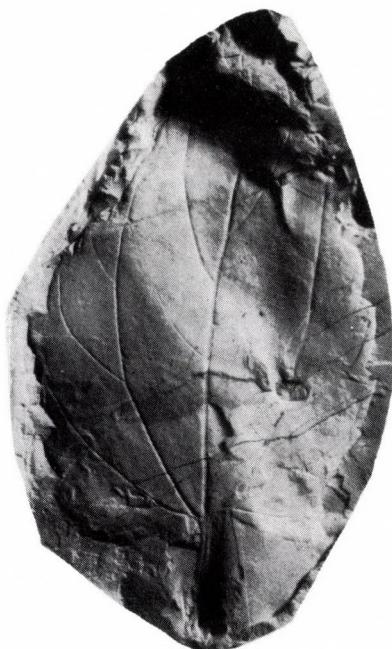
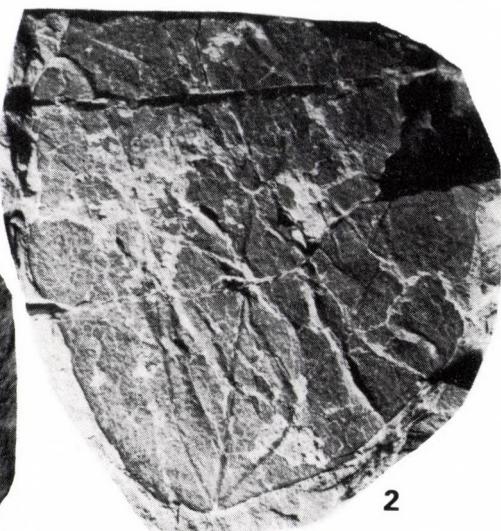
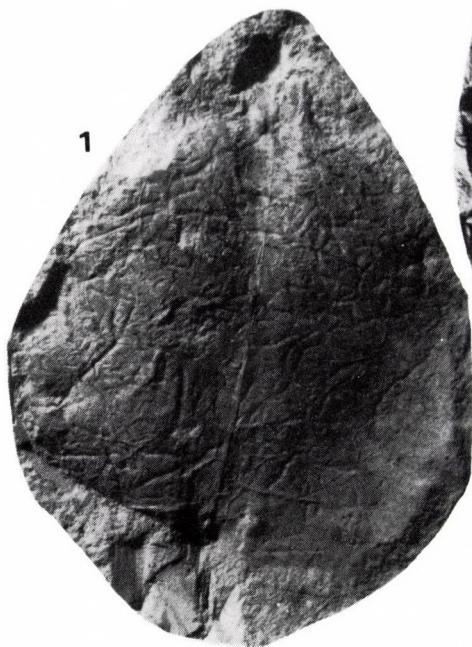


Plate XXXII

1. *Nectandra angustissima* 83.238.1. × 1.5.
2. *Ostrya angustifolia* 59.20.1. × 2
3. *Myrica bilinica* 59.863.1. × 2
4. *Notelaea philyrae* 55.2370.1. × 2
5. *Olea olympica* 55.2471.1. × 1

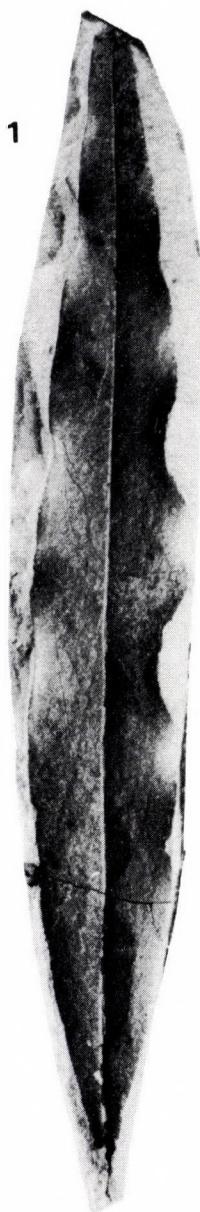
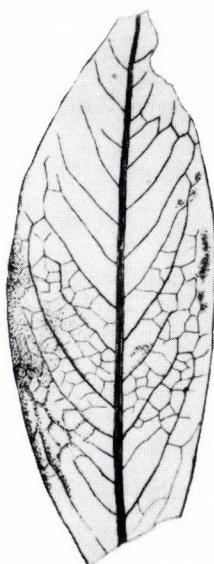
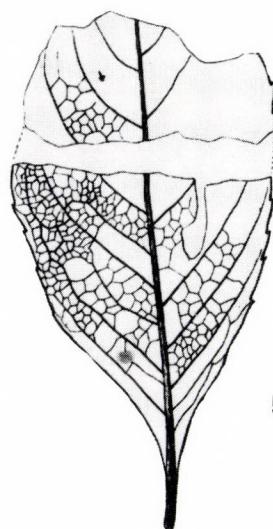
1**2****3****4****5**

Plate XXXIII

1. *Ptelea macroptera* 58.2.1. × 2
2. *Oxylobium miocenicum* 59.891.1. × 2
3. *Oxylobium miocenicum* 59.886.1. × 2
4. *Musa bilinica* 55.2363.1. × 1

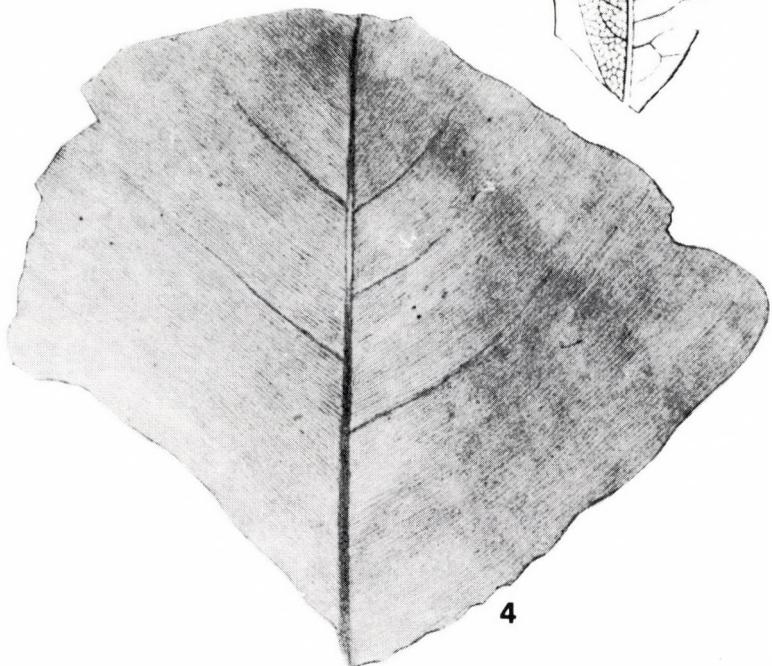
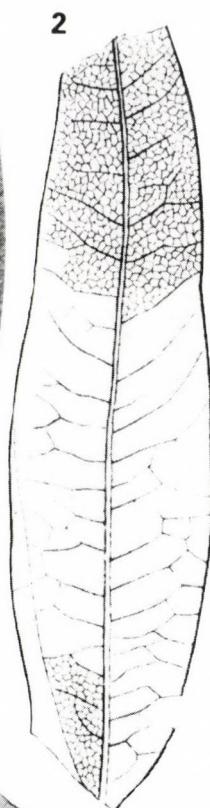
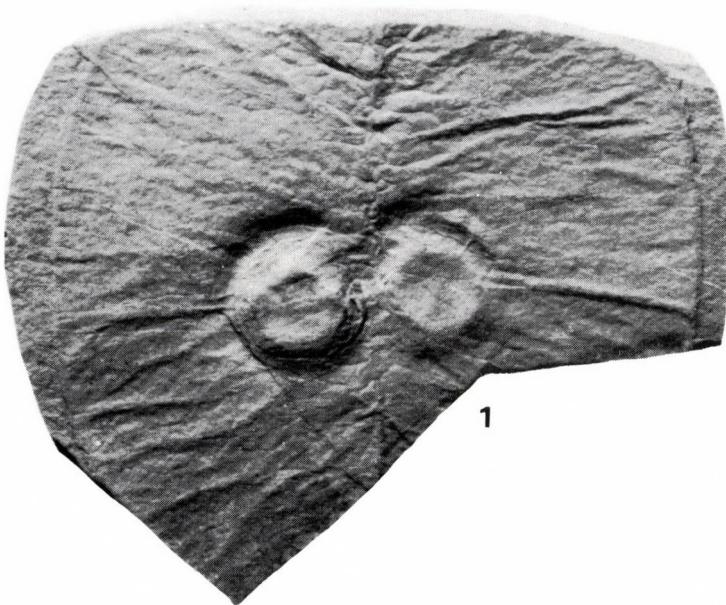
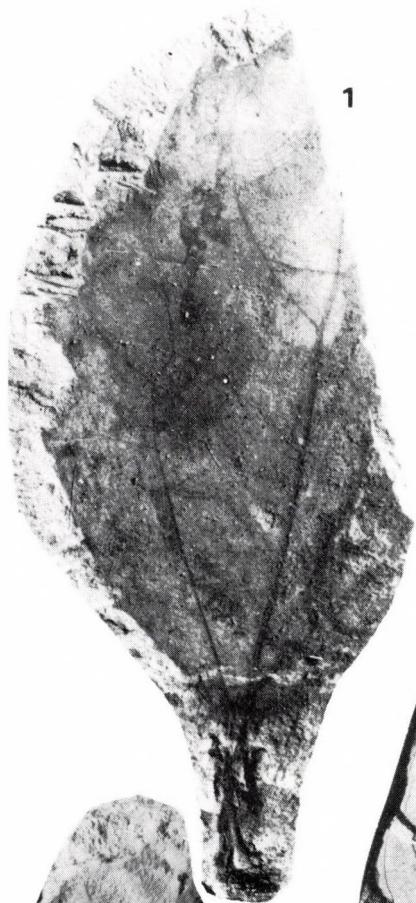
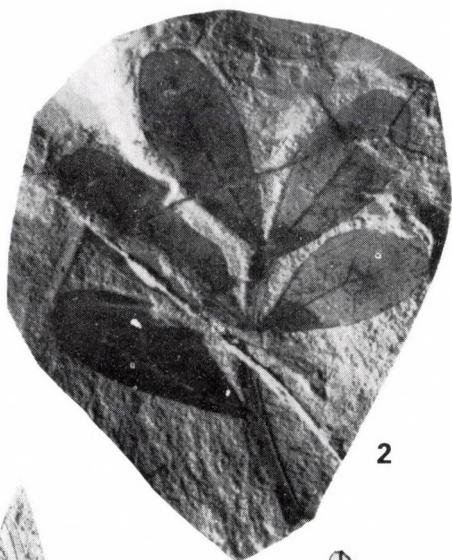


Plate XXXIV

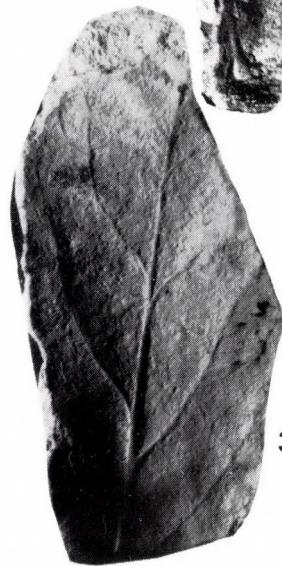
1. *Populus insularis* 64.124.1. × 1.5
2. *Pistacia lentiscoides* 54.159.1. × 2
3. *Pittosporum szántóinum* 59.258.1. × 1
4. *Pterospermophyllum hornafrantzieni* 62.75.1. × 1
5. *Pleiomerites reticulatus* 55.2392.1. × 2



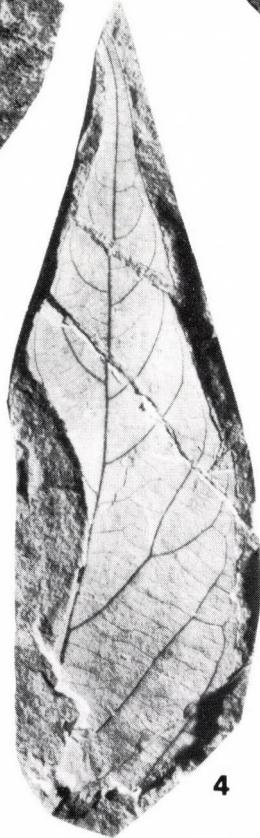
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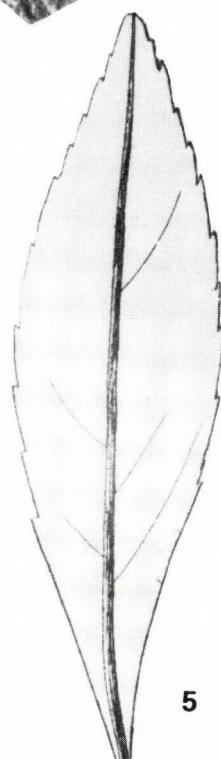
2



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Plate XXXV

1. *Parrotia fagifolia* var. *rhomboidalis* 56.1374.1. × 1.5
2. *Potamogeton fenzlii* 63.4.1. × 1
3. *Parrotia fagifolia* var. *retusa* 59.28.1. × 1
4. *Rapanea erdőbenyensis* 59.30.1. × 2
5. *Potamogeton wieseri* 58.361.1. × 1

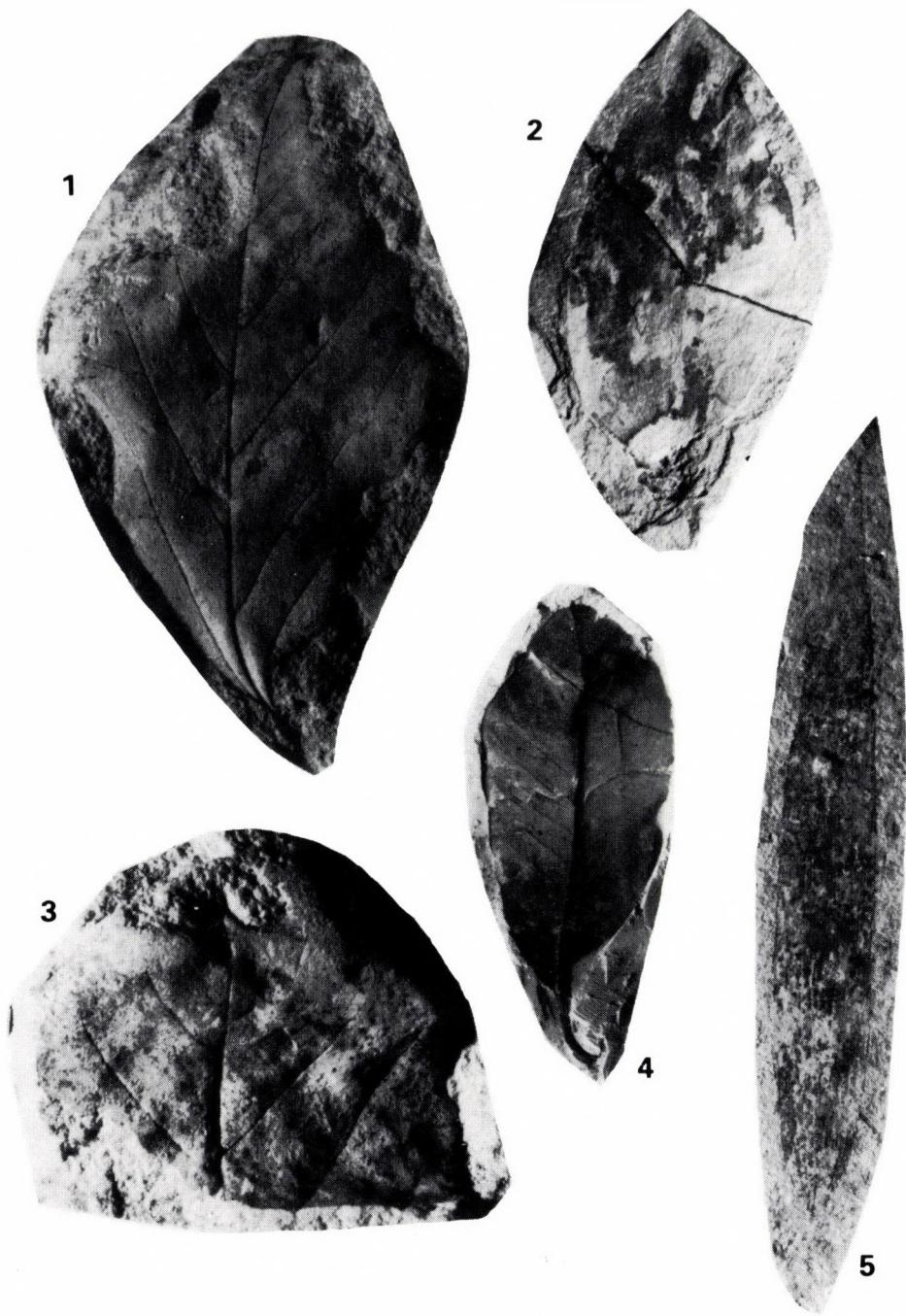
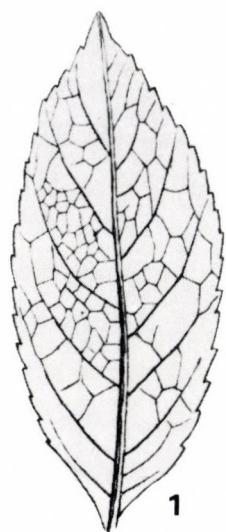
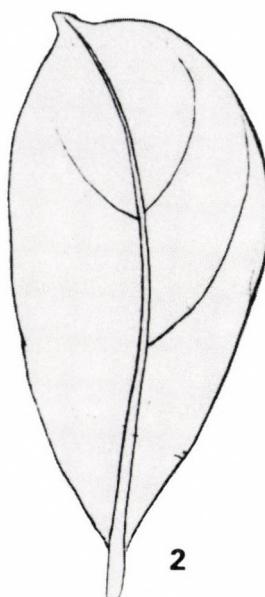


Plate XXXVI

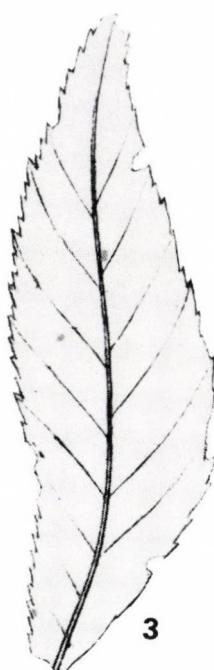
1. *Prunus olympica* 59.855.1. × 1.5
2. *Pterocelastrus oreonis* 59.841.1. × 2
3. *Quercus acheronitica* 59.1074.1. × 1
4. *Quercus alamoides* 59.902.1. × 1
5. *Pisonia bilinica* 59.868.1. × 1



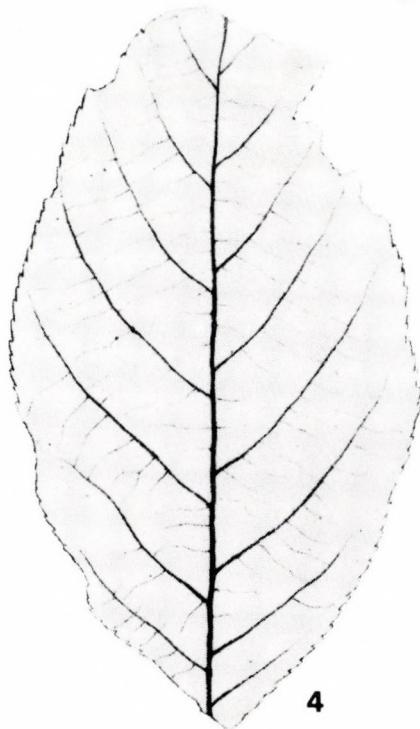
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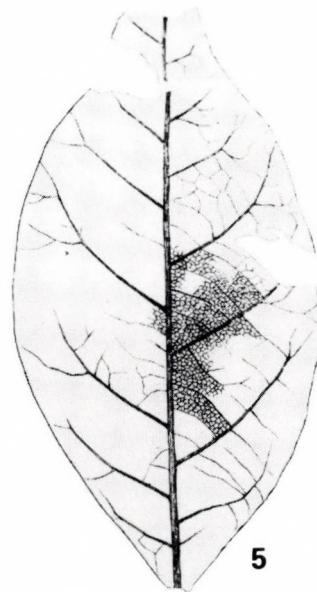
2



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Plate XXXVII

1. *Quercus pseudoserra* 62.22.1. × 1.5
2. *Quercus budensis* 83.285.1. × 1
3. *Quercus szirmayana* 62.30.1. × 2
4. *Quercus pseudoilex* 62.32.1. × 1.5.

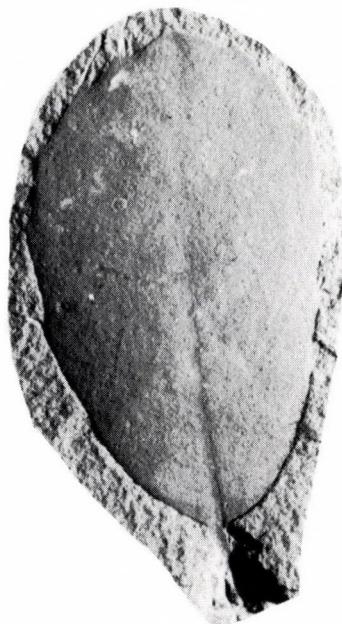


Plate XXXVIII

1. *Quercus palaeovirens* 60.1527.1. × 1.5
2. *Quercus kotschlinica* 55.2468.1. × 2
3. *Quercus enigmatica* 83.292.1. × 1.5
4. *Quercus pseudorobur* 62.20.1. × 1.5

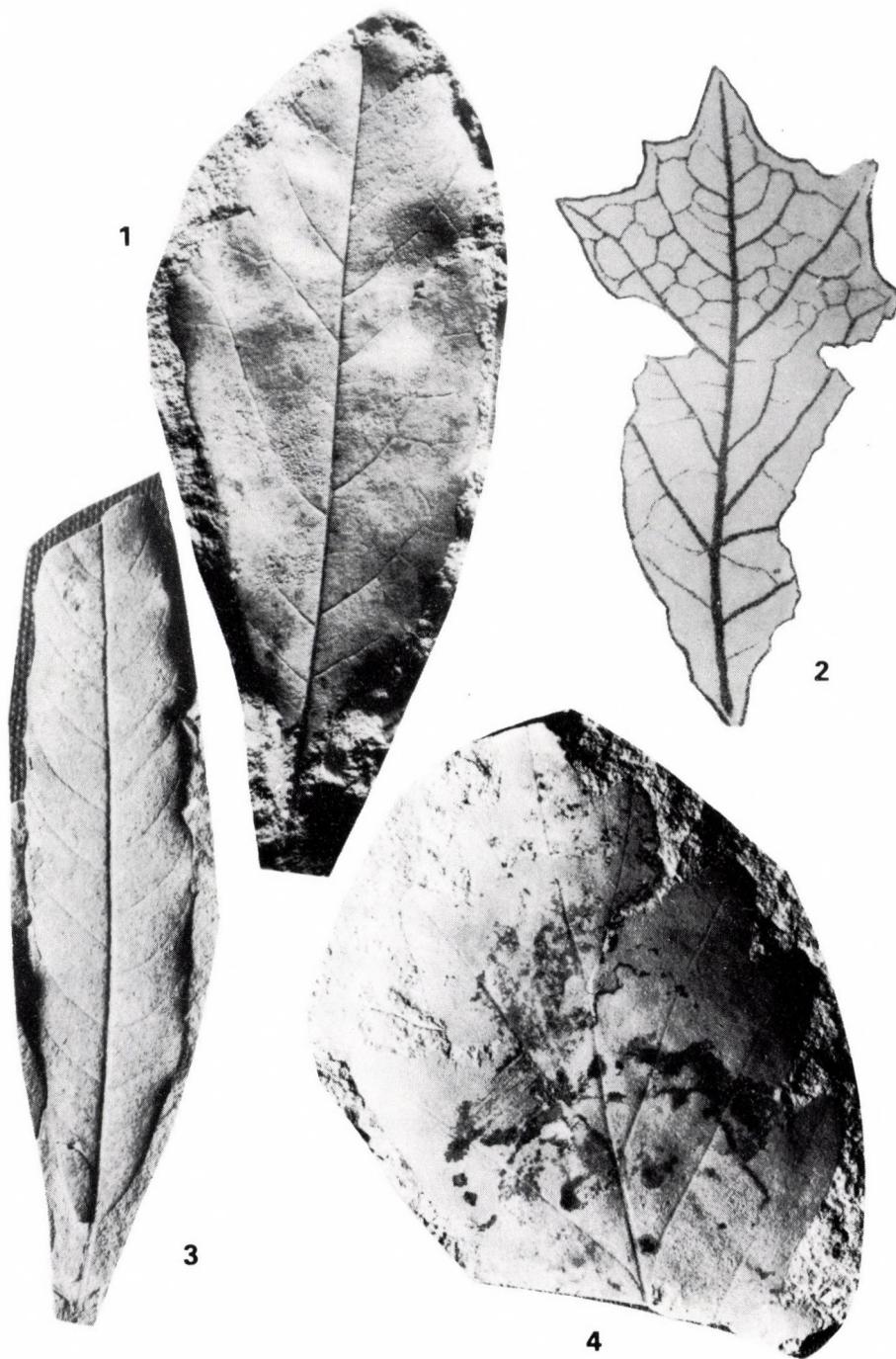


Plate XXXIX

1. *Quercus excelsior* 83.271.2. × 0.75
2. *Quercus egedenis* 83.282.1. × 0.75
3. *Quercus tenuipetiolata* 83.278.1. × 2
4. *Quercus zemplénensis* 54.1543.2. × 2



Plate XL

1. *Rhamnus palaeofrangula* 62.1202.1. × 1.5
2. *Xylopiaecarpum eocaenicum* 56.31.1. × 1
3. *Rhus bükkensis* 60.1511.1. × 2
4. *Quercus palaeomontana* 59.152.1. × 1

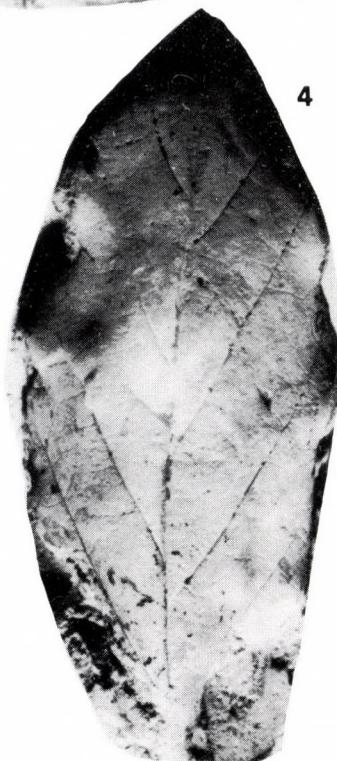
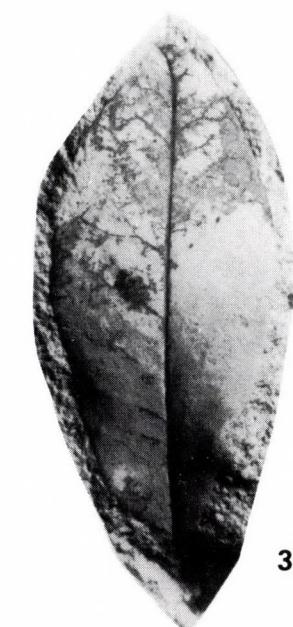


Plate XLII

1. *Rhododendron haueri* 55.2457.1. × 0.75
2. *Rhamnus brevifolia* var. *serrata* 83.258.2. × 2
3. *Sapindophyllum acuminatum* 55.2446.1. × 1
4. *Rhamnus paucinervis* 55.2479.1. × 2
5. *Schinus oligocaenicum* 83.280.1. × 1.5
6. *Schinus oligocaenicum* 83.272.1. × 1.5

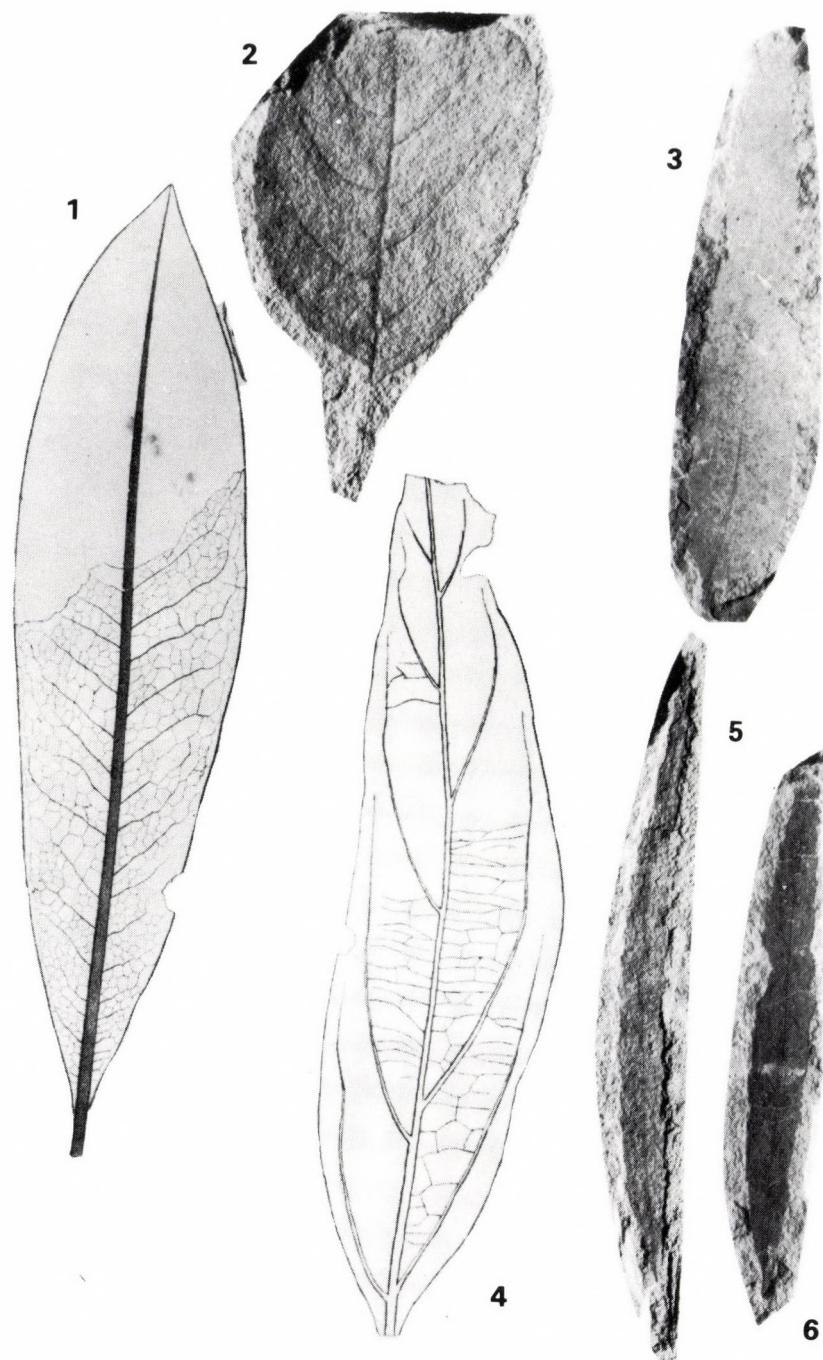


Plate XLII

1. *Schefflera protolucescens* 58.14.1. × 1.5
2. *Sapindophyllum falcatum* 55.2473.1. × 2
3. *Sapindus erdőbényensis* 64.116.1. × 1.5
4. *Sloaneaeacarpum eocenicum* 62.63.1. × 2



Plate XLIII

1. *Sloaneaephyllum hungaricum* 62.74.1. × 1
2. *Sapindaceacearpum lunulatum* 59.219.1. × 2.5
3. *Schefflera protomicrophylla* 58.12.1. × 2
4. *Sloaneaephyllum grambasti* 62.71.1. × 0.75

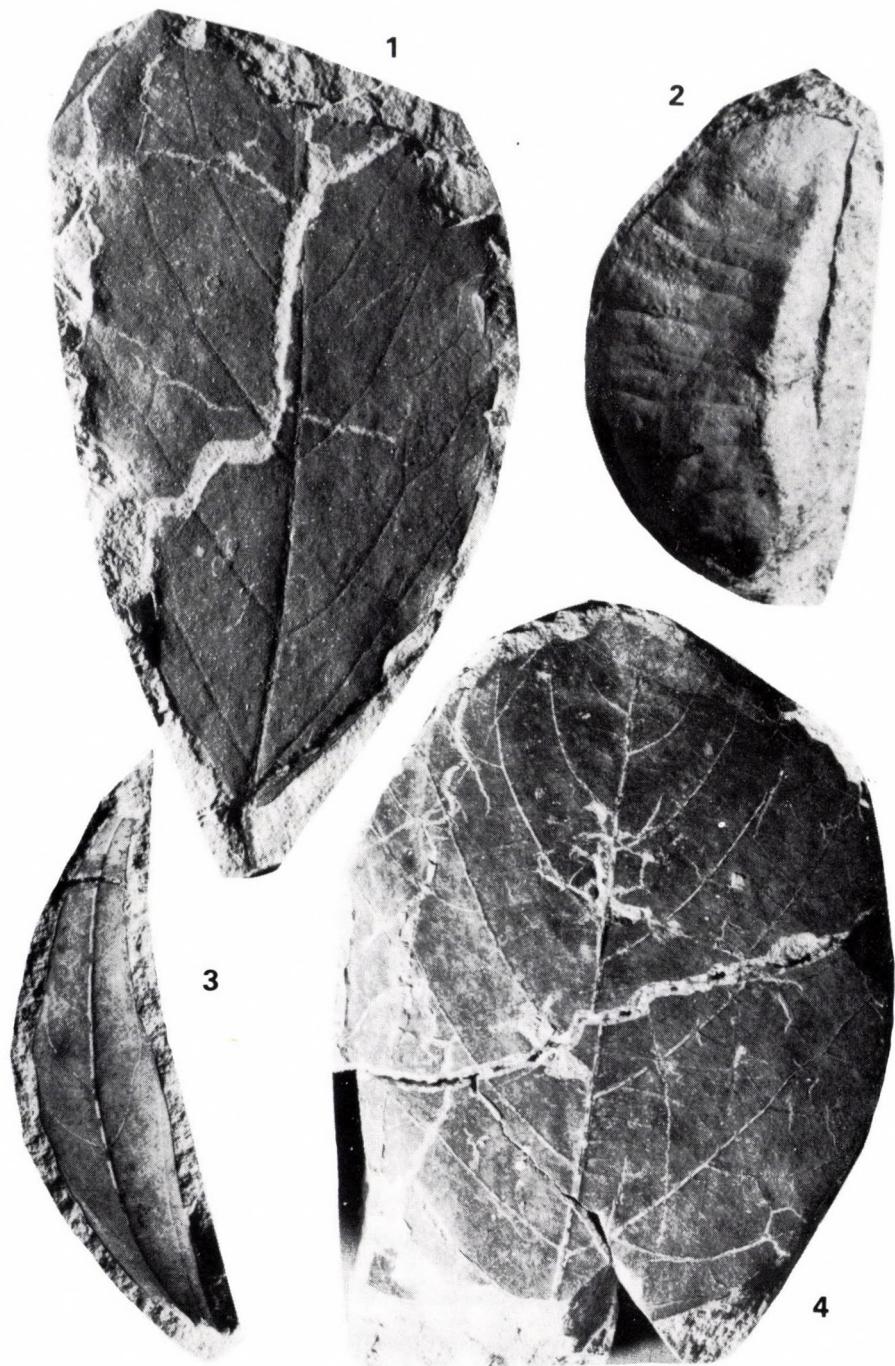
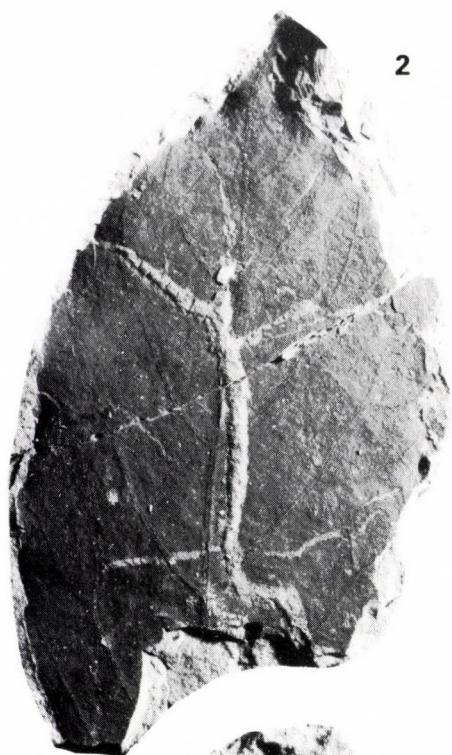


Plate XLIV

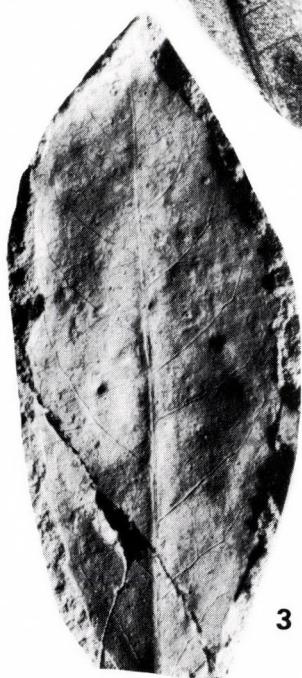
1. *Schefflera gaudini* 58.11.2. × 1
2. *Sloaneaephyllum hungaricum* 62.916.1. × 1
3. *Scolopia protoluzanensis* 58.10.1. × 1
4. *Sorbus borsodensis* 59.220.1. × 1.5



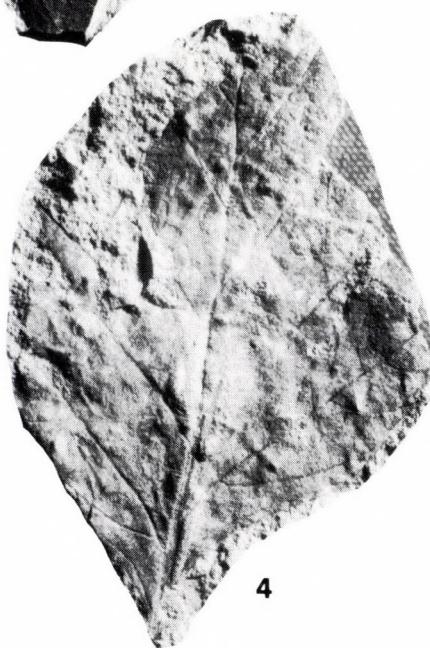
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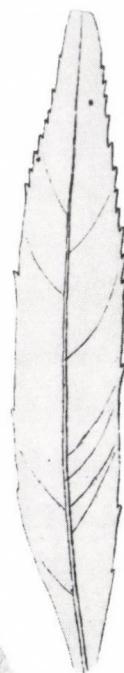
4

Plate XLV

1. *Smilax tataensis* 76.230.1. × 1
2. *Salix dianae* 59.1059.1. × 1
3. *Weinmannia ettingshausenii* 64.114.1. × 3



2



3



Plate XLVI

1. *Sassafras tenuilobatum* 83.303.1. × 1
2. *Syringa hungarica* 83.846.1. × 1.5
3. *Syringa bükkensis* 83.847.1. × 1.5

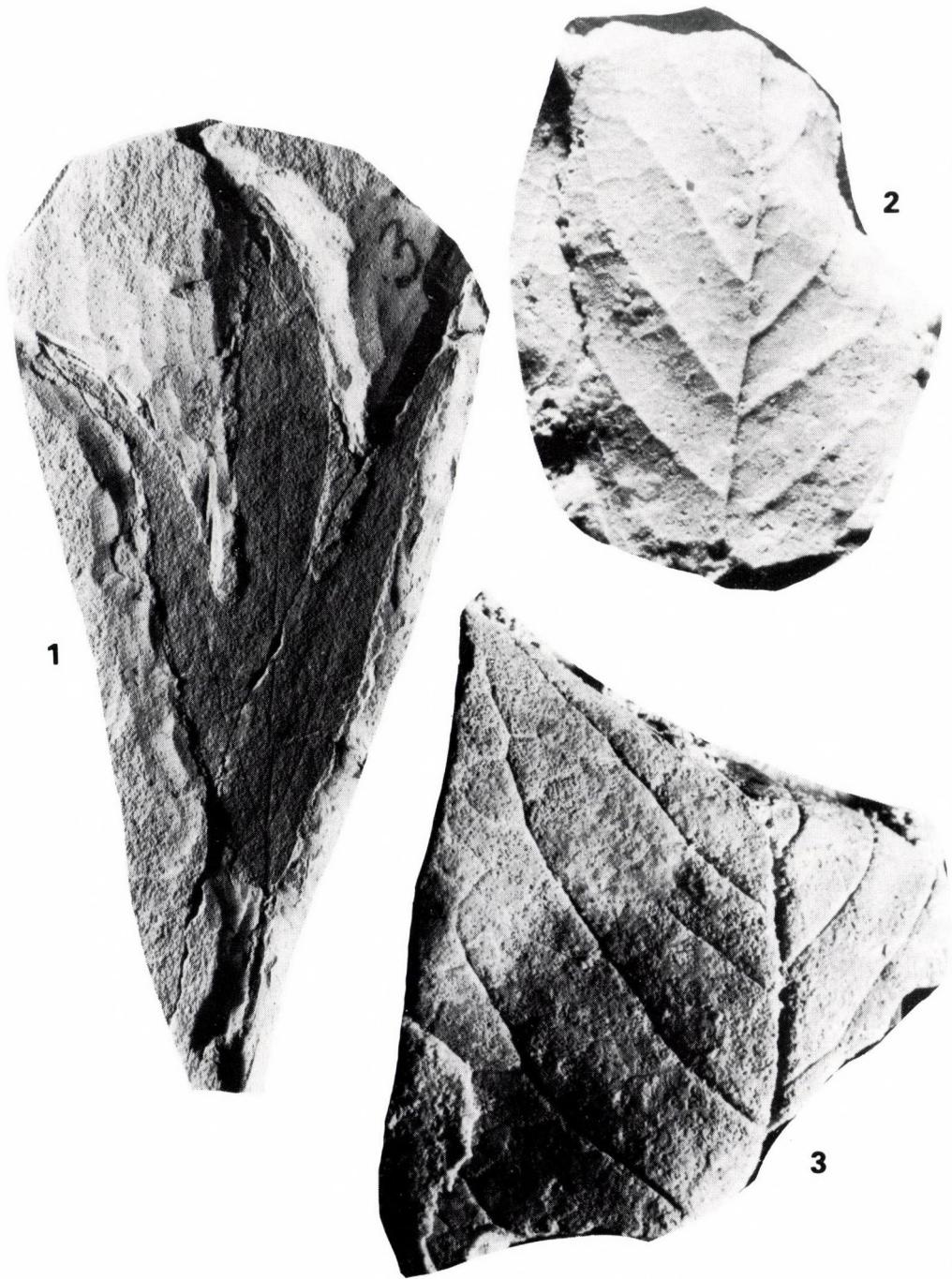


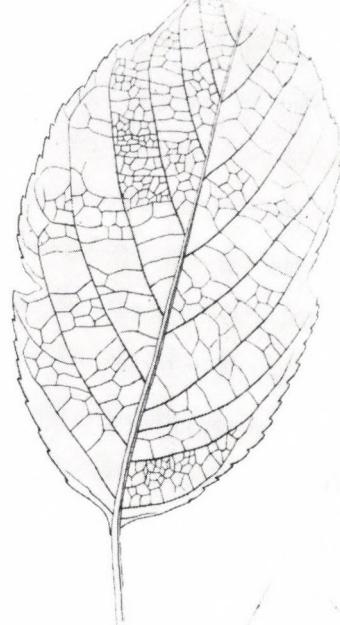
Plate XLVII

1. *Sparganium extinctum* 59.930.1. × 1
2. *Sorbus palaeo-aria* 59.843.1. × 1
3. *Sloaneaephyllum obudaense* 62.77.1. × 1
4. *Sapindus cupanioides* 59.964.1. × 1

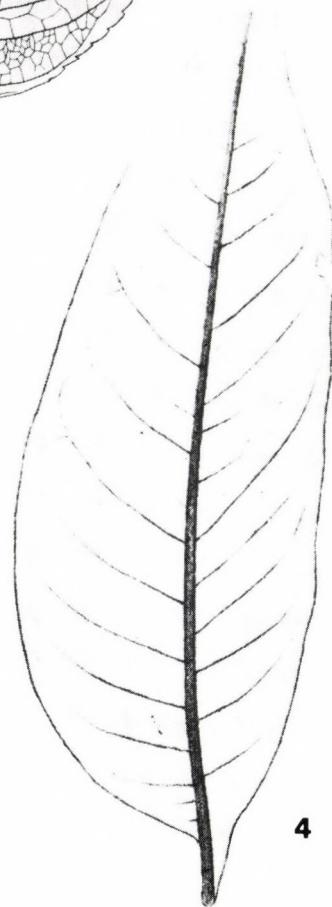


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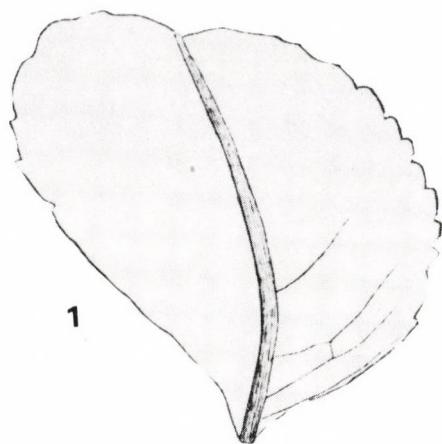
2



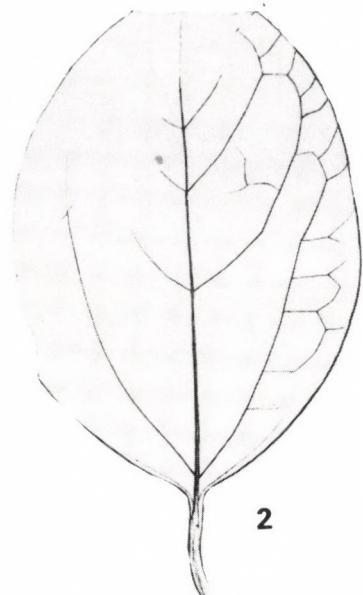
4

Plate XLVIII

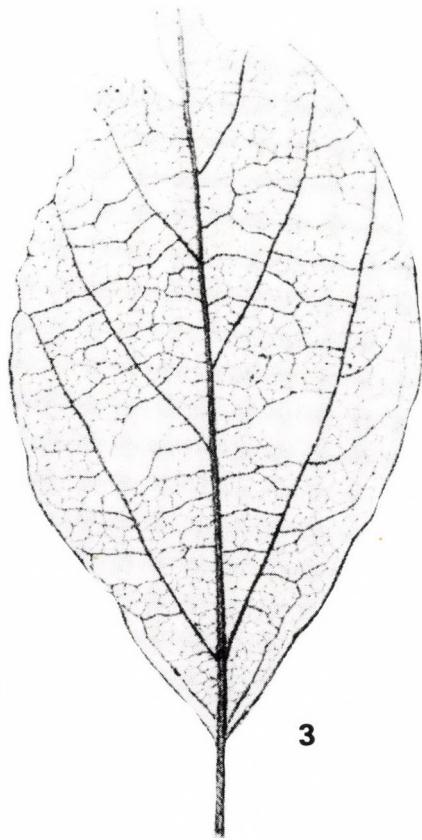
1. *Sapindophyllum dubium* 59.900.1. × 2
2. *Strychnos europaea* 59.873.1. × 1
3. *Styrax vulcanica* 59.862.1. × 1.5
4. *Swartzia borealis* 59.914.1. × 1



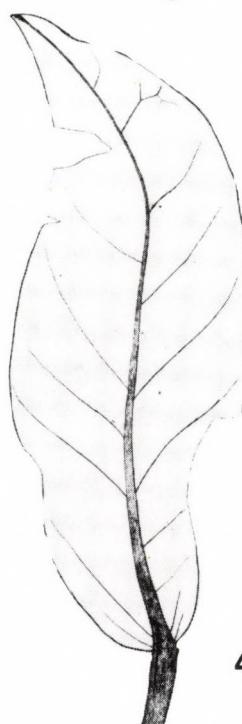
1



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Plate XLIX

1. *Talauma egerensis* 83.294.1. × 0.75
2. *Tricalysia proto javanica* 59.1497.2. × 1
3. *Tarrietia hungarica* 55.2199.2. × 1
4. *Tuzsonia hungarica* 83.288.1. × 0.5.

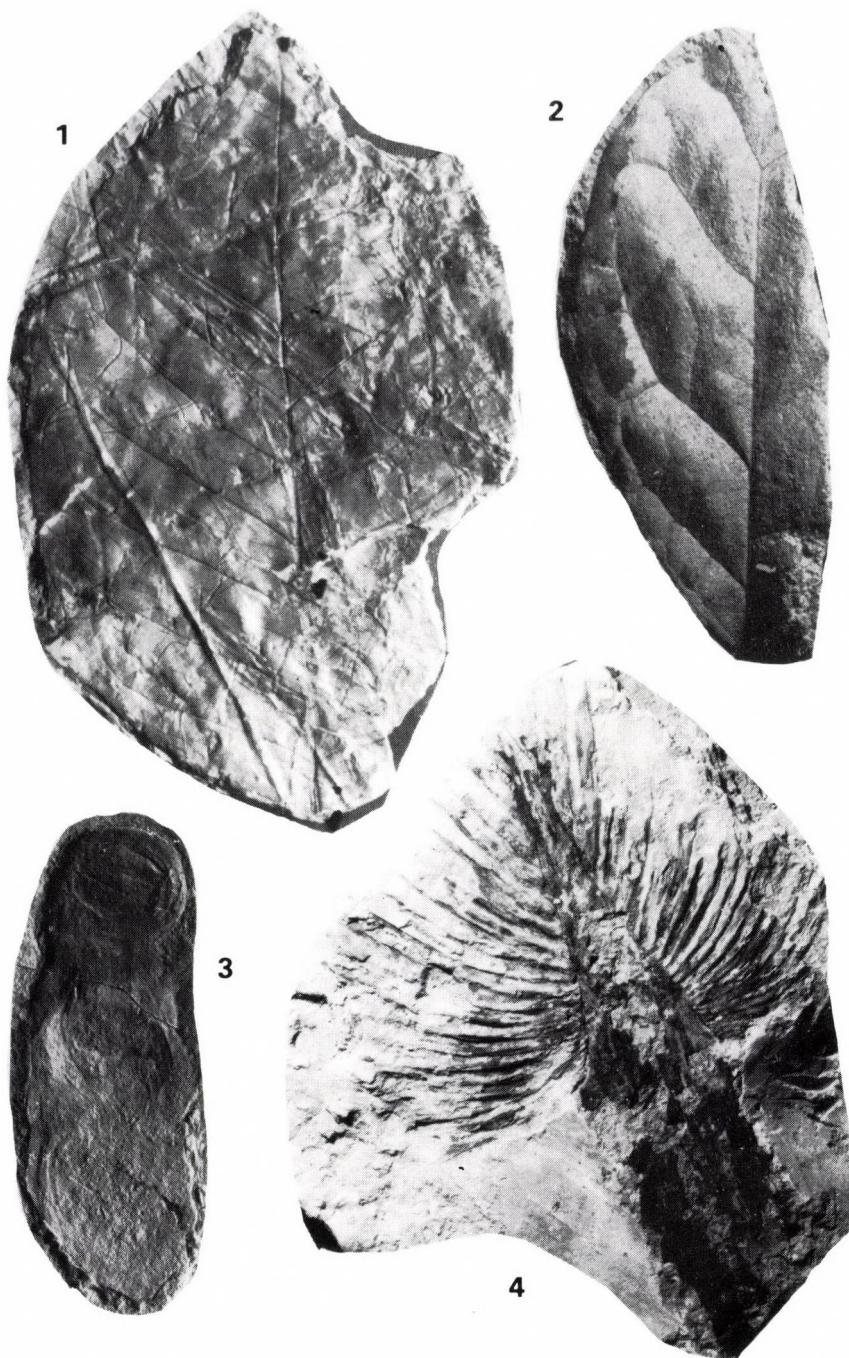


Plate L

1. *Tetrapteris bilinica* 59.971.1. × 1
2. *Ulmus subintegrifolia* 60.1928.1. × 1.5
3. *Tetragrostigmophyllum agriense* 83.279.1. × 1
4. *Tilia gigantea* 59.852.1. × 1

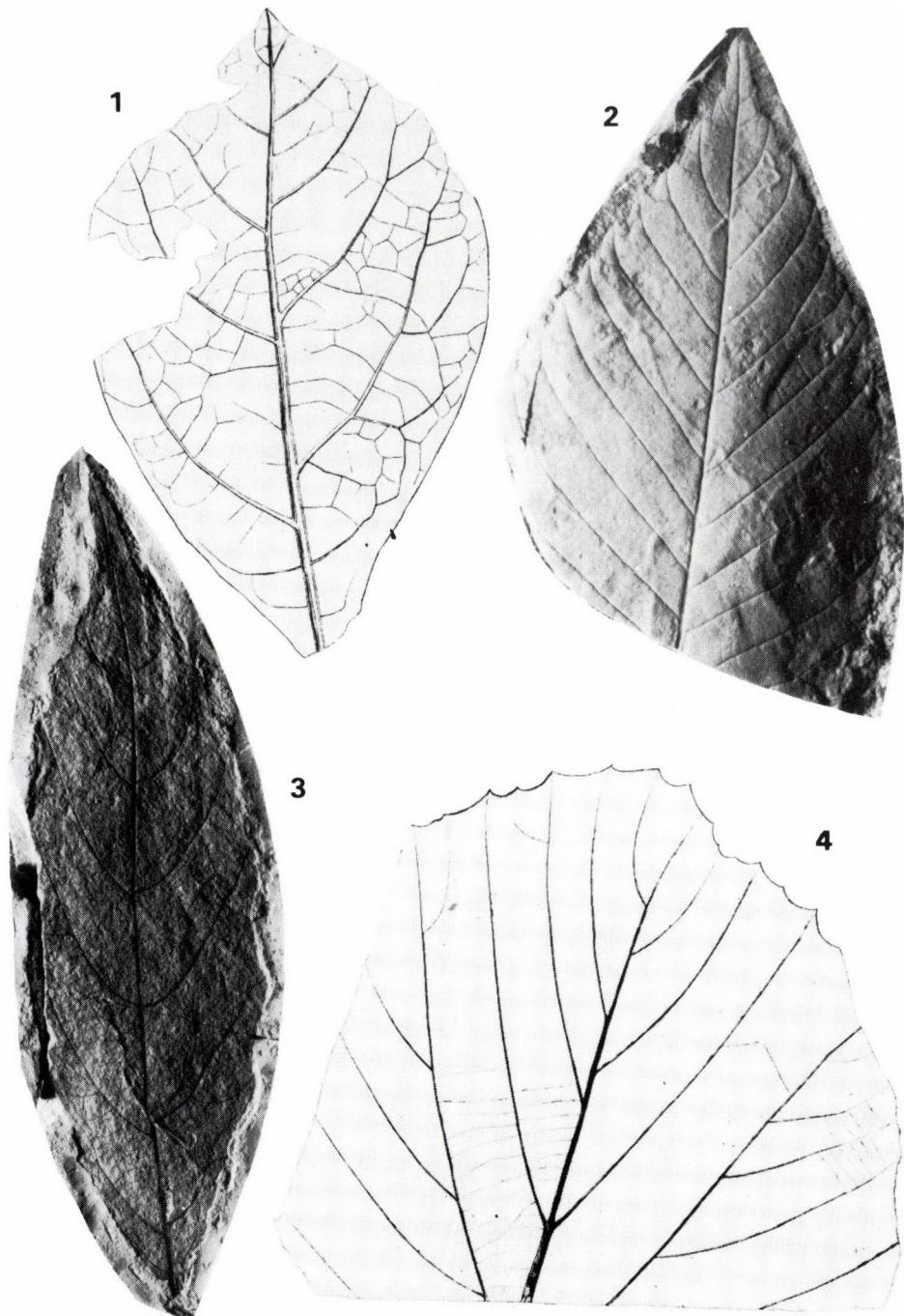


Plate LI

1. *Vitex lobkowitzii* 59.872.1. × 1
2. *Tilia lignitum* 59.949.1. × 1.5
3. *Ulmus paucinervia* 83.270.1. × 1
4. *Vitis báensis* 64.428.2. × 1
5. *Trimeriaephylum hungaricum* 62.69.1. × 1.5

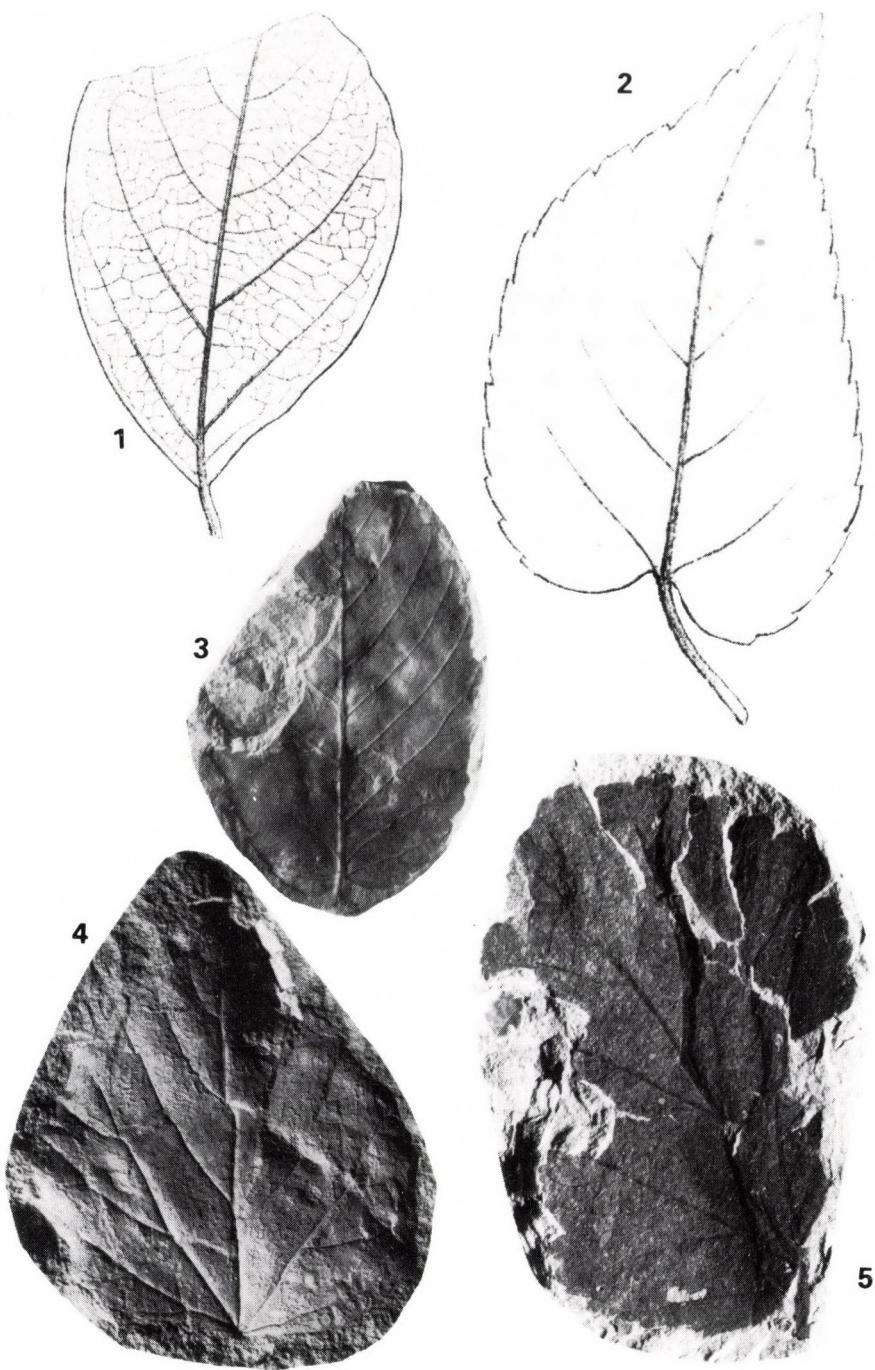


Plate LII

1. *Zelkova ungeri* 64.40.1. × 3
2. *Zichya nostratum* 64.111.1. × 3
3. *Zelkova juglandina* 83.255.1. × 1
4. *Zelkova ungeri* 64.51.1. × 1.5

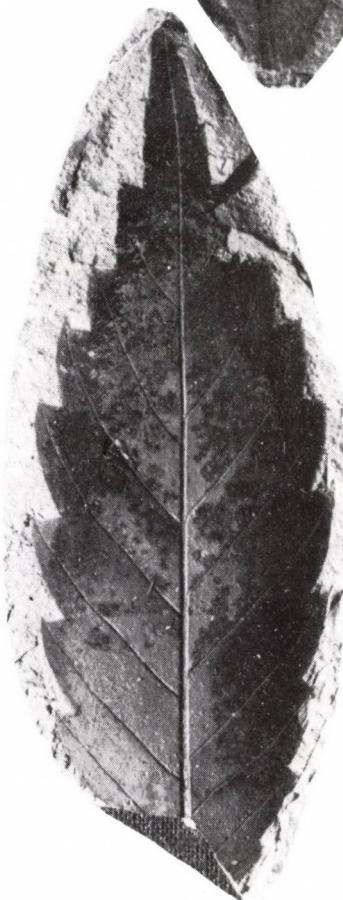
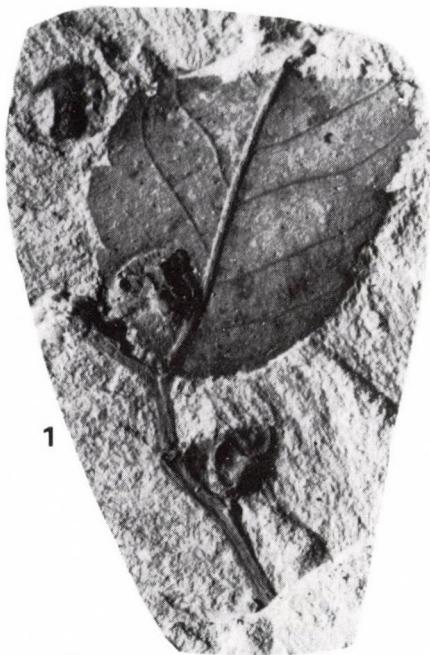


Plate LIII

1. *Agrostistachyophyllum tomharrisi* 65.26.1. × 1
2. *Baliospermophyllum kraeuseli* 65.31.1. × 1
3. *Codiaeophyllum palaeovariegatum* 65.32.1. × 1
4. *Mimusops hungarica* 83.375.1. × 2

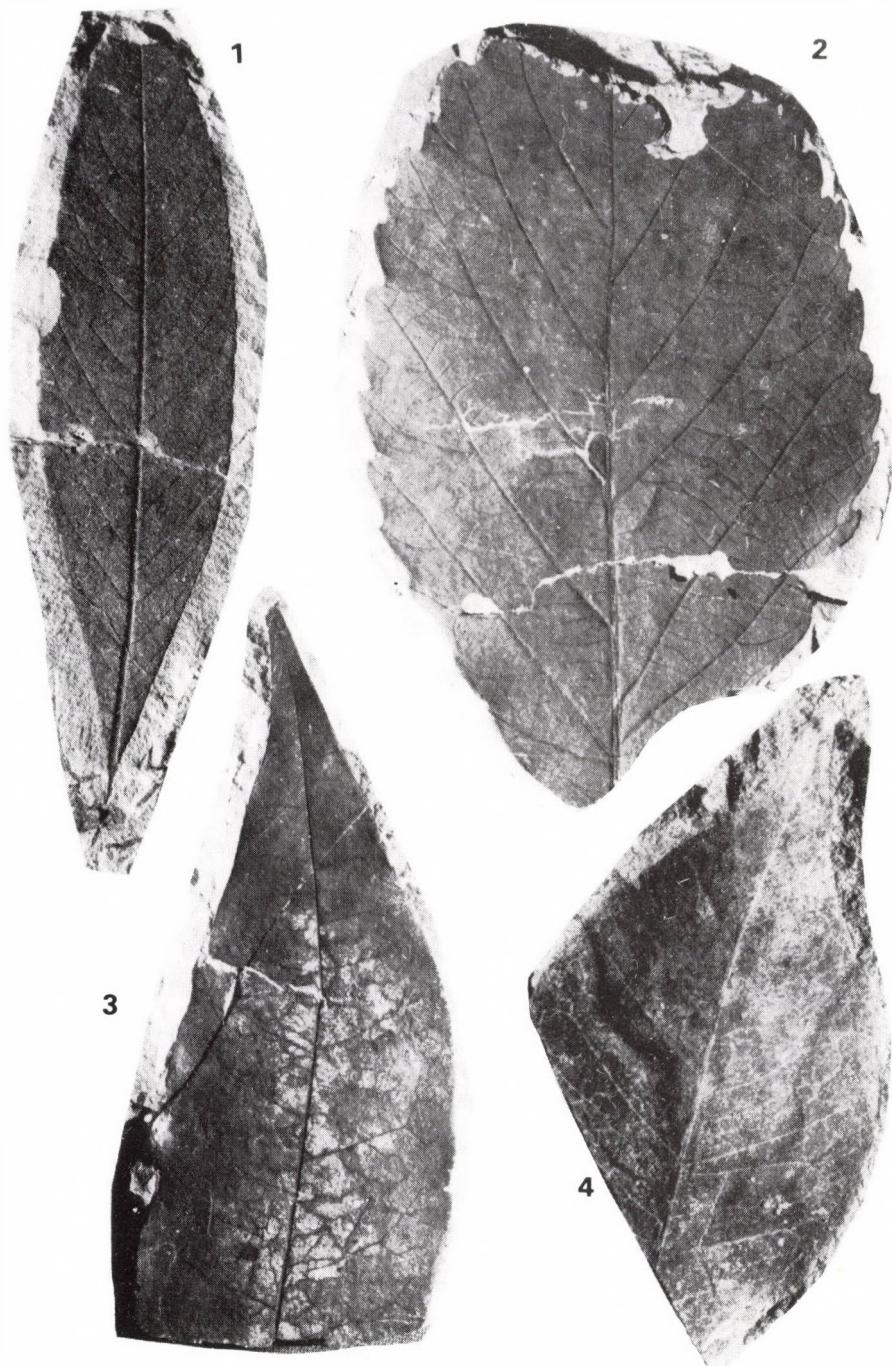


Plate LIV

1. *Baliospermophyllum kraeuseli* 65.30.1. × 1
2. *Codiaeophyllum palaeovariegatum* 65.32.1. × 1
3. *Codiaeophyllum palaeovariegatum* 65.33.1. × 2

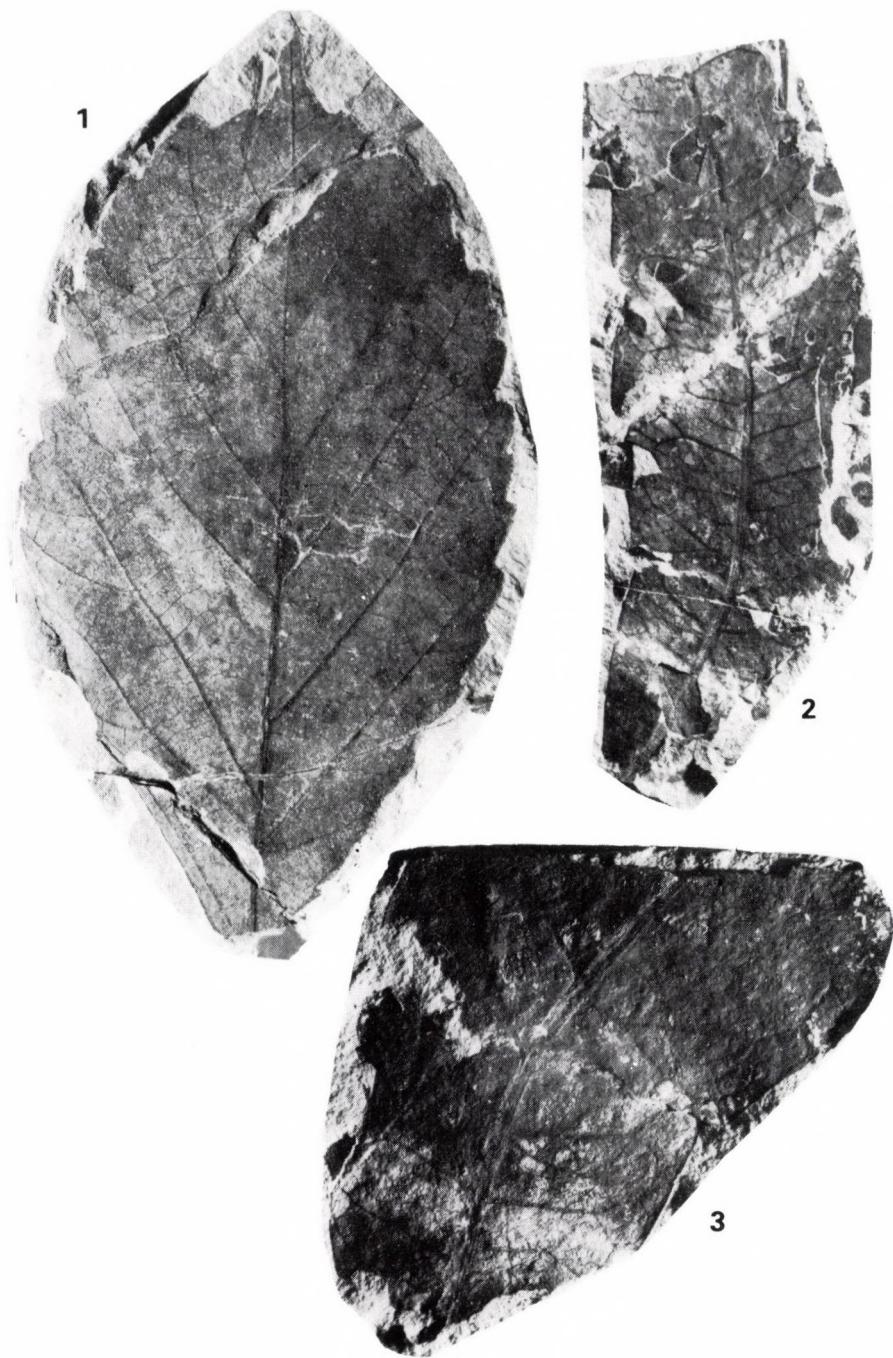
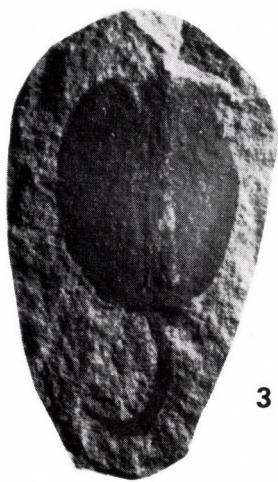
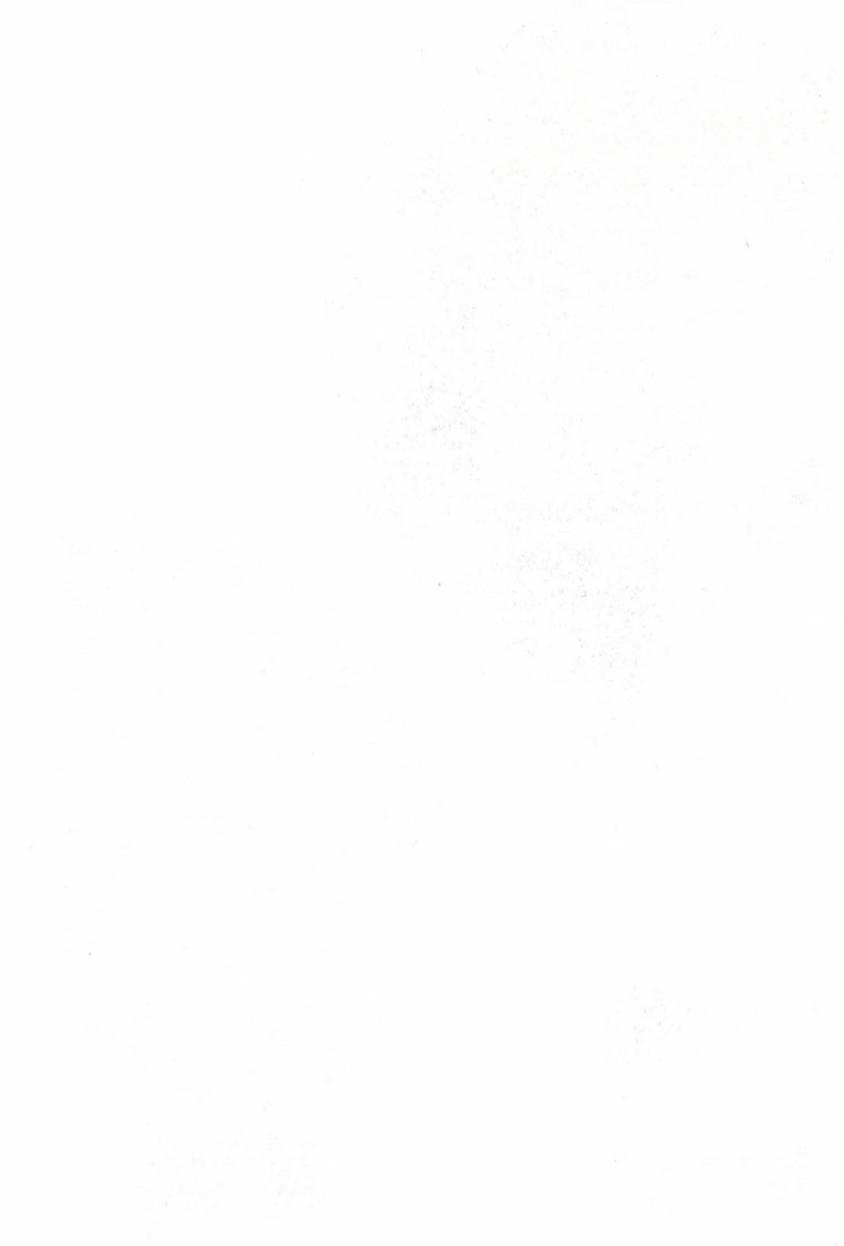


Plate LV

1. *Tilia subserratifolia* 71.629.1. × 1.5
2. *Amygdalus tuzsoni* 84.203.2. × 2
3. *Carpolithus alchorneaeformis* 63.1026.1. × 3





A faint botanical illustration occupies the center of the page. It depicts two separate fern fronds. The frond on the left is more upright and shows a rachis with several pinnae. The frond on the right is more horizontal and appears to have a different pinna arrangement or perhaps a different species. The drawing is done in a light gray wash over a white background.

Plate LVI

1. *Alchorneaephylum chandleri* 65.28.1. × 1
2. *Asplenium csörögiense* 85.441.3. × 3

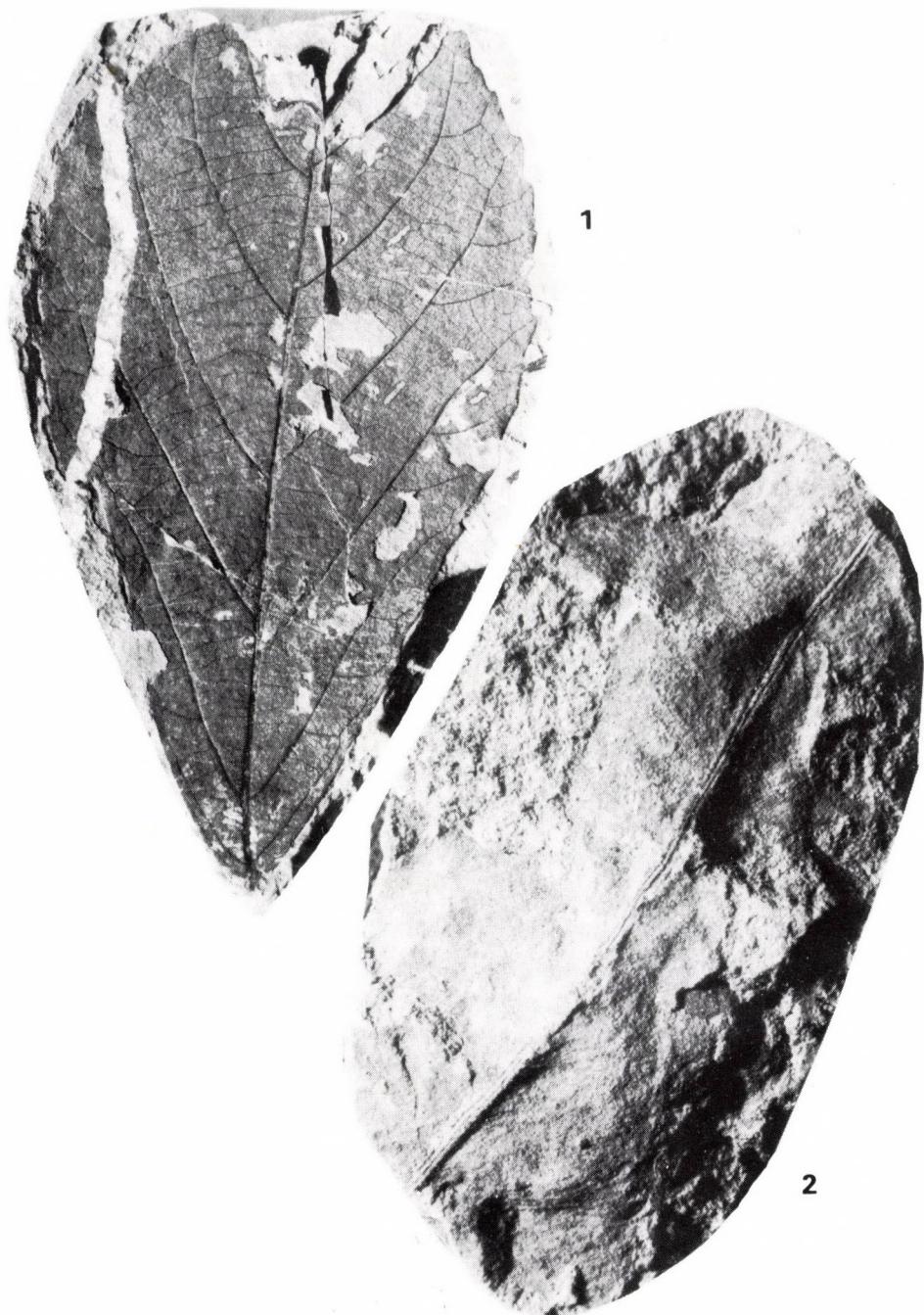
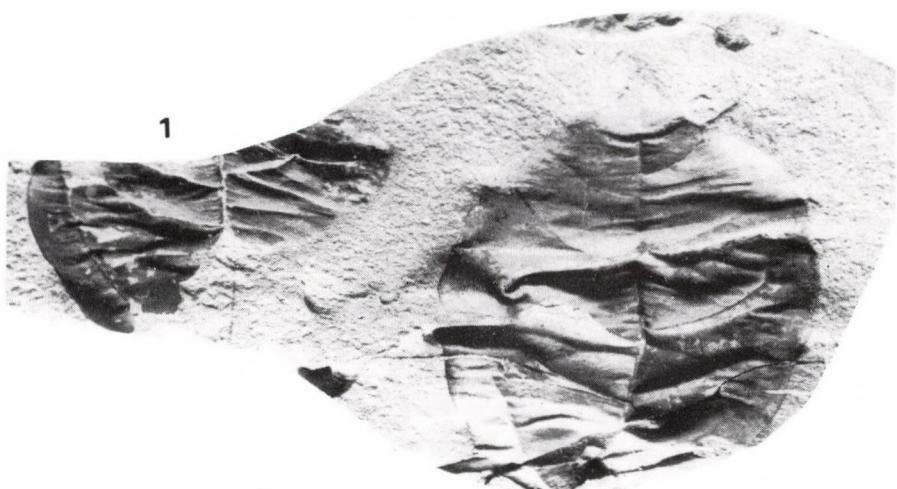
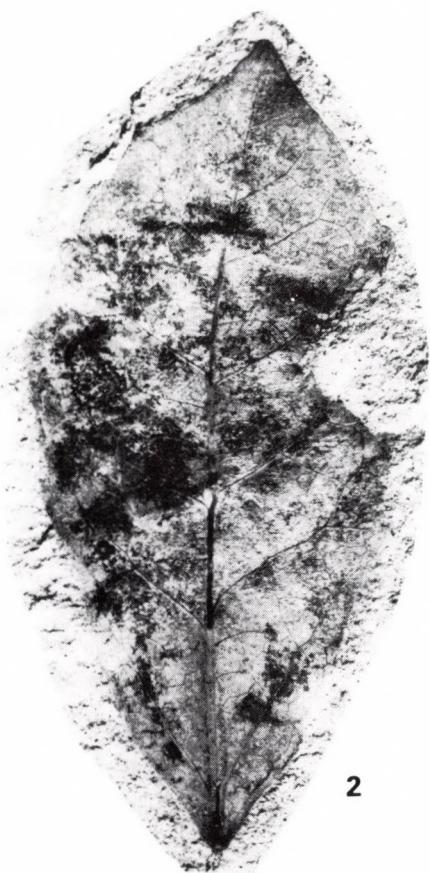


Plate LVII

1. *Litsea ipolytarnocense* 82.296.1. × 1
2. *Oreopanax protomulticaulis* KFM 60.96.1. × 1
3. *Litsea ipolytarnocense* 82.419.1. × 1.5



1



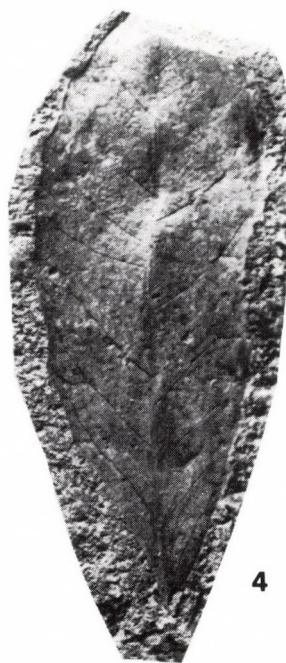
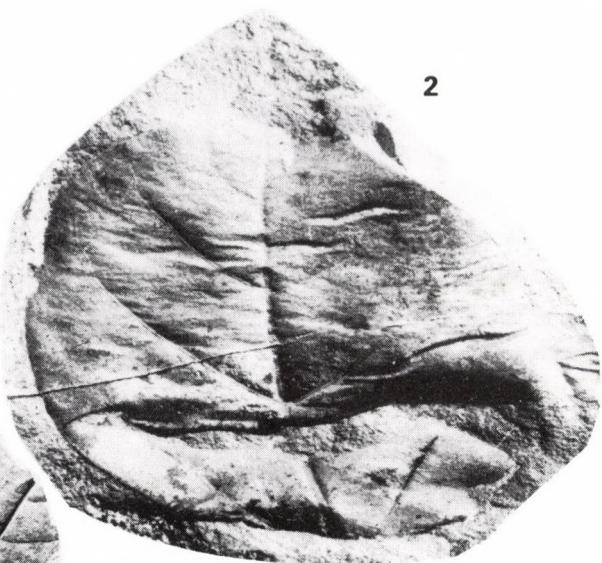
2



3

Plate LVIII

1. *Carya bartkoi* 82.247.1. × 1
2. *Litsea ipolytarnocense* 82.302.1. × 1.5
3. *Litsea ipolytarnocense* KFM 60.127.1. × 0.8
4. *Oreopanax protomulticaulis* 82.420.1. × 1





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