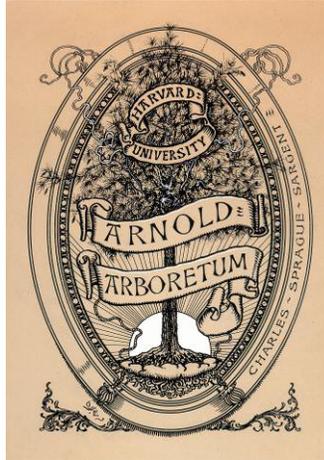


Archives IV B-3 Metas

***Metasequoia glyptostroboides* Records, 1940-2010: Guide**



The Arnold Arboretum of Harvard University

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IV B-3 METAS

***Metasequoia glyptostroboides* Records**

Archives of the Arnold Arboretum of Harvard University
125 Arborway, Jamaica Plain, Massachusetts

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Descriptive Summary

Repository: Archives of the Arnold Arboretum of Harvard University, Jamaica Plain, MA

Call No.: IV B-3 METAS

Location: Archives

Title: *Metasequoia glyptostroboides* Records

Dates: 1940-2010

Creator: Archives of the Arnold Arboretum

Quantity: 25 linear inches

Language of material: English

Abstract: This collection, most of which was transferred to the archives in 1984 by arboretum staff, contains correspondence, questionnaires, manuscripts, photographs and articles relating to *Metasequoia glyptostroboides* (dawn redwood). These materials also reflect the discovery, collection, cultivation and introduction of the species to The Arnold Arboretum. The collection ranges from 1941 to 2010, with the expectation that more materials will be added as articles, updates and photographs continue to be donated.

Note: Access to Finding Aid record in [HOLLIS](#).

Preferred Citation: *Metasequoia glyptostroboides* Records, 1940-2010. Archives of the Arnold Arboretum of Harvard University.

Additional Material: Additional information and photographs on *Metasequoia* may be found in the Arnold Arboretum Archives in the papers of Steven A. Spongberg, especially as they relate to the 1980 Sino-American expedition. In addition, photographs of specific Arnold Arboretum *Metasequoia* specimens may be found in the photographic archives.

The New York Botanical Garden (NYBG) Archives holds a collection of papers of Elmer Drew Merrill. Information on his work with *Metasequoia* may be found in Series 1 and 2 of that collection. Please see the NYBG web site: <http://www.nybg.org/library/> for further information.

Processing Information

1997, by Keiko Satoh. Revision 1, May 2002 by Lisa Pearson. Revised 2015 by Stephanie Turnbull. Revised 2023, 2024 by Larissa Glasser.

Acquisition Information

Provenance: This collection was transferred from the Arnold Arboretum's departmental holdings to the Arboretum's Archives in 1984 when the Archive was created.

Terms of Access

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Historical Note

Metasequoia glyptostroboides, popularly known in the west as the "dawn redwood" and in Chinese as shui-sha (water fir), was discovered in the Hupeh (Hubei)¹ Province on the border of Szechuan (Sichuan) Province in west central China in the 1940s. The tree had been believed to have become extinct millions of years ago but that was found not to be the case. It has been reintroduced to the rest of China and elsewhere in Asia and introduced to temperate areas of the world, including the United States, Europe, and New Zealand. It has proven to be very hardy, fast growing and suitable for use as an urban planting².

The Fossil Record – The fossil record would suggest that *Metasequoia* first evolved about 100 million years ago in eastern Russia. It spread out to Japan and across the Bering land bridge to North America, traveling as far as south as New Mexico and southern Japan. By 60 million years ago it had colonized northern Europe and northern North America, maintaining its distribution elsewhere. Changes in the temperature of the earth during the period 40 – 5 million years ago caused *Metasequoia* to retreat and advance again into northern latitudes and spread out further into lower latitudes. By the end of the Miocene period (5 million years ago), *Metasequoia* had vanished from the fossil records in Eurasia and North America. The fossil record indicates that *Metasequoia* is relatively new to central China having come from Japan less than 2 million years ago³. Present day *Metasequoia* shows a great degree of similarity in morphology with ancient examples⁴.

Rediscovery – *Metasequoia* was rediscovered in the winter of 1941 when Professor T. Kan (Gan Duo) of the National Central University in Chungking (Zhongjing) observed a large deciduous fir in Mou-tao-chi (Modaoqi), Hupeh Province. He did not collect any herbarium specimens at that time but directed Mr. Lung-hsin Yang to collect samples the next year. Those samples remained unidentified. Further specimens were collected in 1944 by Mr. Tsang Wang (Wang Zhang) of the Central bureau of Forest Research, Nanking (Nanjing). Wang gave a sample to Mr. Chung-lung Wu, of the National Central University, who showed it to Professor W.C. Cheng (Chen Wanjun), also of the National Central University, who felt that the tree was a new genus. He sent his assistant, Mr. C.Y. Hsieh (Hsueh Chi-ju or Xue Jiru) twice in 1946 to Mou-tao-chi to collect specimens. Professor Cheng shared his findings with Professor Hsen Hsu Hu (Hu Xiansu) of the Fan Memorial Institute of Biology in Peiping (Beijing). Professor Hu had in his possession two recent paleobiology papers, one by Shigeru Miki, that proposed the generic name *Metasequoia* for two fossil species from Pliocene deposits in Japan as well as one

¹ If appropriate, Chinese place and personal names will be rendered in the Wade-Giles system, in use prior to 1979, with the current spellings as rendered in the Pinyin system in parentheses.

² Satoh, Keiko. 1998-1999. *Metasequoia* travels the globe. *Arnoldia*. 58(4), 59(1).

³ Yang, Hong. 1998-1999. From fossils to molecules: the *Metasequoia* tale continues. *Arnoldia*. 58(4), 59(1).

⁴ Ibid.

by S. Endo in which he announced his discovery of *Sequoia chinensis*. The similarity of the fossils to the specimens from Mou-Tao-chi was enough for Professors Hu and Cheng to publish a paper in 1946 announcing the discovery of a living species of this tree. Shortly thereafter Hu contacted his old friend and colleague Professor Ralph Chaney of the University of California, a specialist in paleobiology with his findings. At about the same time Professor Cheng sent herbarium specimens to Dr. Elmer D. Merrill, Director of the Arnold Arboretum. Merrill sent a stipend of \$250 to enable Cheng's assistant⁵, to collect seeds of *Metasequoia* in Mou-tao-chi in the fall of 1947. This collecting trip was quite successful⁶, yielding about 1kg of seed⁷, much of which was sent to the Arnold Arboretum in two batches in December 1947 (they arrived in January and March respectively). Cheng sent some seed at the same time to Amsterdam and Copenhagen unbeknownst to Merrill. Merrill immediately began to distribute the seed he had received, sending out at least 600 packets, to numerous institutions and individuals throughout the United States and elsewhere in the world⁸.

In March 1948, Ralph Chaney made an expedition to *Metasequoia* valley to see the "living fossil" himself⁹. He was accompanied by Dr. Milton Silverman science reporter for the San Francisco Chronicle and C.T. Hwa. In the meantime, at the Arnold Arboretum and elsewhere, *Metasequoia* seeds had germinated and were beginning to vigorously grow into seedlings (see images of young plants in Series 3, Subseries C, Folder 3). Later that year in July and August a more extensive expedition, headed by J. Linsley Gressitt, was dispatched to "*Metasequoialand*" (E.D. Merrill's term) to survey the area and determine if there were any animal or insect species that might be related to ancient varieties. Gressitt counted 1,219 *Metasequoia* trees but even he conceded that his count was incomplete having missed a few of the bigger trees and all the young trees¹⁰. An expedition of Chinese botanists, including Professor W.C. Cheng, journeyed to the *Metasequoia* valley in August 1948 as well under the joint sponsorship of the American Philosophical Society, E.D. Merrill and R.W. Chaney. Their mission was to, "gather as much information as possible bearing upon the ecology of *Metasequoia* – its physical environment, its ecological life history, and its community relations." The authors admitted only partial success in their goals due to limited time, however valuable information was gleaned on *Metasequoias'* natural habitat, the influence of man upon its life cycle and the other flora of the valley¹¹.

⁵ Merrill's report states that Hsueh led the expedition as where Cheng says it was led by Mr. C. T. Hwa. Fulling suggests that perhaps both men were on the expedition, and this accounted for the confusion. A letter dated 5/12/1948 from Cheng to Merrill recently discovered in the Arnold Arboretum Archives specifically states that it was Hwa collected seed in 1947 (Series 1, Folder 3). See also: Fulling, Edmund H. 1976. *Metasequoia*, Fossil and Living: An Initial Thirty-Year (1941-1970) Annotated and Indexed Bibliography with an Historical Introduction. *The Botanical Review*. 42(3): 215-315 (Series 4, Subseries A).

⁶ Hu, H.H. 1948. How *Metasequoia*, the 'living fossil' was discovered in China. *Journal of the New York Botanical Garden*. 49(585): 201-207.

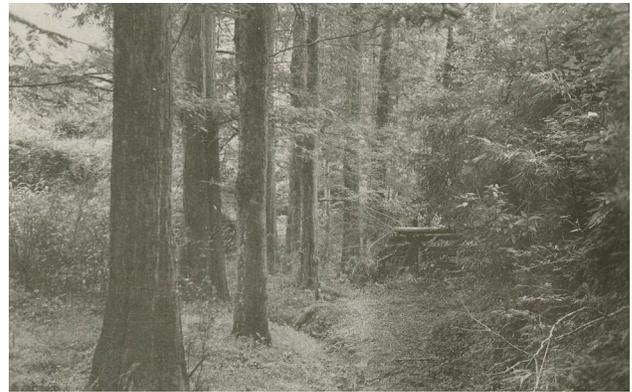
⁷ Bartholomew, B., D.E. Boufford, and S.A. Spongberg. 1983. *Metasequoia glyptostroboides* – its present status in central China. *Journal of the Arnold Arboretum*. 64:105-128.

⁸ Merrill, Elmer D. Letter to Aubrey Drury, June 8, 1954. Found in Series 1, Folder 6 of this collection.

⁹ Chaney, Ralph W. 1948. Redwoods in China. *Natural History Magazine*. 47: 440-444.

¹⁰ Gressitt, J. Linsley. 1953. The California Academy-Lignán Dawn-Redwood Expedition. *Proceedings of the California Academy of Sciences*, Fourth Series 28(2): 25-58.

¹¹ Chu, Kwei-Ling and Cooper, William S. 1950. An Ecological Reconnaissance in the Native Home of *Metasequoia glyptostroboides*. *Ecology* 31(2): 260-278.



(Left) C.T. Hwa, W.C. Cheng, K.L. Chu standing by a *Metasequoia glyptostroboides* from W. C. Cheng's expedition to the Hupeh Province, China. August 1948. (Right) A group of *Metasequoia* trees in a ravine. Lichuan: Shui-sa-pu Valley. August 1948.

Merrill-Chaney Controversy – During 1948, an academic storm began to brew between Elmer D. Merrill and Ralph W. Chaney which continued for a number of years thereafter. When Chaney and Silverman made their March 1948 expedition to China, Silverman wrote a series of articles which were posted from China about their journey to the valley of the *Metasequoia* or "Dawn Redwood" as it had been christened by Chaney (some of them may be found in Series 4 Subseries B). These articles, which duly mentioned the Arnold Arboretum's role in procuring the seed shipment from Cheng, made a great splash in the popular press and, especially on the west coast, Chaney began to be credited with collecting the seed that made up the 1948 distribution and even to be the tree's discoverer¹². In a long 1954 letter to Aubrey Drury of the "Save the Redwoods League," E.D. Merrill expressed his outrage at Chaney's actions, especially his perception that Chaney had not done enough to set the record straight¹³. See, "Interstices...Chaney and Merrill" in Series 2, Folder 19, for additional information on this controversy as well as Merrill's correspondence in Series 1, Folders 1-6.

Reestablishing Ties – With the takeover of China by the Communist Party in 1949, collaboration between western and Chinese botanists ceased. It was to be nearly 30 years before a group of ten delegates selected by the Botanical Society of America was to visit. During their 28 days in China they visited a variety of locations of botanical interest and worked to reestablish ties with their Chinese colleagues which were severed years before. The next year, in 1979, a delegation of Chinese botanists visited the United States. At that time plans were made for a joint expedition to Hubei Province in 1980. The 1980 Sino-American Botanical Expedition, which included Steven A. Spongberg of the Arnold Arboretum, primarily conducted fieldwork in the Shennongjia Forest District but was able to do additional fieldwork in the *Metasequoia* region in southwestern Hubei Province.

Progress Reports – Donald Wyman conducted a survey in 1968 of institutions and individuals possessing *Metasequoia* specimens, many of which had come from the 1948 distribution of seed, to find out basic information on the tree's growth and habits in cultivation. Wyman found that trees in cultivation could withstand much colder temperatures than in their native habitat although damage could occur in late spring or early fall frosts. Animal pests had been problematic. Rabbits especially had damaged or killed young trees by eating their bark and Japanese beetles had eaten foliage. Female cones were reported by many of the

¹² Madsen, Karen. 1998-1999. The Tree as Celebrity. *Arnoldia*. 58(4), 59(1). Chaney is credited as the tree's discoverer in his obituary, see Series 4, Subseries B, Folder 16.

¹³ Merrill, Elmer D. Letter to Aubrey Drury, June 8, 1954. Found in Series 1, Folder 6 of this collection.

correspondents but only a very small number of viable seeds had been produced. *Metasequoia* had proven to be very fast growing, many 20-year-old trees had reached 50 to 60 feet high¹⁴.

In 1969, T.J. Baldwin of William and Mary University, Williamsburg, VA reported that male cones were produced on some of the specimens at the University and that Dr. Bernice M. Speese was able to raise vigorous seedlings from seed that was collected in 1968. These trees were from the 1948 seed shipment from the Arnold Arboretum¹⁵.

In 1981, John Kuser of Rutgers University conducted a survey to determine the continuing progress of *Metasequoia* growth in the United States. Using the list compiled by Donald Wyman in 1968 of 50 of the tallest specimens as a start, and expanding to contact state forestry officials, institutions and individuals, Kuser was able to take an informative 'snapshot' of *Metasequoia* progress, 34 years since the introduction of the tree to the United States. The largest *Metasequoia* in Wyman's survey remained so. The tree growing on the campus of the College of William and Mary was 67 feet high in 1967 and 92 feet high in 1976. By 1981 it had shot up to 104 – a gain of 37 feet in 14 years. *Metasequoia* trees were thriving in the eastern United States in a belt from northern Alabama to southern New England where they enjoyed warm humid summers, moderate winters and adequate rainfall. The most robust specimens proved to be those planted near streams and other water sources, authenticating its Chinese name shui-sha (water fir). Damage by diseases and pests appeared to be minimal in this survey. Prior concerns about fungus proved much less than was thought (being primarily confined to the Washington, D.C. area) and insect damage was only reported by three of the respondents¹⁶.

Provenance Testing – John Kuser's interest in *Metasequoia* continued. In 1990, at the urging of Professor Li Minghe of the Huazhong Agricultural University (who was a former student of W.C. Cheng) Kuser proposed a program to examine the genetic diversity of the existing *Metasequoia* stock which emanated from the 1948 shipment of seed from China, and introduce new genetic material from China that would be gathered from a far more diverse number of parent trees than the introduction nearly a half a century before. It was not known from how many parent trees the 1948 seed derived; however inbreeding depression had been observed. The 1991 tests by scientists at Rutgers University, "compared the allozyme diversity and growth rates of seedlings grown from seeds of fifty-two parent trees in Hubei, Hunan and Sichuan Provinces with those of forty-five trees derived from the Arnold Arboretum's 1948 seedlot." Allozyme diversity in trees deriving from the 1948 seed shipment indicated that the seed must have come from more than one parent tree. Professor Li was able to provide the corroborating piece of evidence in the form of an unpublished paper by W.C. Cheng. In it he states that on his collecting trip in 1947 Hwa found about 100 large *Metasequoia* and gathered seed from them¹⁷.

The Continuing Story – In 1997, a search was carried out by Keiko Satoh, research fellow at the Arnold Arboretum, to trace the recipients of the seeds distributed from the Arboretum in 1948 and find out the current status of their *Metasequoia* trees. The search was conducted in the form of letters, telephone calls and e-mails and sought to contact as many individuals and institutions as possible. Recent images of many of the specimens were obtained. They will be found Series 3, Subseries B.

¹⁴ Wyman, Donald. 1968. *Metasequoia* After Twenty Years in Cultivation. *Arnoldia*. 28(10-11): 113-123.

¹⁵ Baldwin, J.T. 1969. *Metasequoia* produces male flowers in Williamsburg, Virginia. *American Horticultural Magazine*. 48(3): 137-138.

¹⁶ Kuser, John. 1982. *Metasequoia* Keeps on Growing. *Arnoldia*. 42(3).

¹⁷ Kuser, John, et al. 1997. Genetic Variation in Two *ex situ* Collections of *Metasequoia glyptostroboides* (Cupressaceae). *Silvae Genetica*. 46(5): 258-264.

There were great hopes initially that *Metasequoia* wood might prove to be a good timber source but unfortunately these hopes were unfounded. The wood was found to be brittle and the trees not as shade tolerant as *Sequoia sempervirens*, precluding its cultivation in commercial circumstances. They have however proven to be a good urban street tree as the plantings in Paramus and Maplewood, NJ have shown¹⁸.

Scope and Content

The *Metasequoia glyptostroboides* collection consists of four series, 1. Correspondence; 2. Questionnaires, Manuscripts, Miscellaneous Papers; 3. Photographic Collection; 4. Journal and Newspaper Articles. All materials pertain to the discovery and subsequent worldwide cultivation of the "fossil relic" *Metasequoia glyptostroboides*.

Approximately one-third of Series 1 consists of correspondence between Elmer D. Merrill, director of the Arnold Arboretum and leader in the discovery of *Metasequoia glyptostroboides*, and his associates, including Donald Wyman. This correspondence dates from the late 1940s and 1950s. There is a small amount of correspondence from the 1960s and 1970s primarily to and from R.A. Howard. The remaining correspondence dates from the 1980s and 1990s and primarily originates from John Kuser of Cook College within Rutgers University and Stephen A. Spongberg, horticultural taxonomist of the Arnold Arboretum. They began corresponding in the 1980s regarding the controlled cultivation of *Metasequoia glyptostroboides* in North American arboreta and botanic gardens and continued their professional association during Kuser's *Metasequoia* provenance testing project.

Series 2 contains a variety of materials. They include the supporting papers for the *Metasequoia* surveys of 1968 by Donald Wyman and 1981 by John Kuser. There are also manuscripts of *Metasequoia* articles, bibliographies and other *Metasequoia* related documents.

Series 3 is divided into three subseries. Subseries A consists of photographs of researchers who have studied *Metasequoia* such as E.D. Merrill and Ralph W. Chaney as well as images taken during expeditions to the *Metasequoia* regions of China. Subseries B consists of images of *Metasequoia* at the Arnold Arboretum and other various arboreta and botanical gardens throughout the world. Subseries C consists of photographs showing the habit of *Metasequoia*, including images of its foliage, cones, and trunk.

Series 4 is divided into two subseries. Subseries A consists of scholarly journal articles, including definitive works by Hu and Cheng, Chaney and Merrill. Subseries B consists of articles from the popular press including Silverman's 1948 San Francisco Chronicle articles detailing the Chaney trip to China

Folders in each series are numbered consecutively in that series. Subseries are each numbered consecutively.

Series Overview

Series 1: Correspondence, 1938-1997.

Series 2: Questionnaires, Manuscripts, Miscellaneous Papers, 1950-2001

Series 3: Photographs, 1925-1998

Subseries A: Researchers and Expeditions, 1925-1980

Subseries B: Specimens from Arboreta, 1948-1998

¹⁸ Kuser, John. 1998-1999. *Metasequoia glyptostroboides*: Fifty Years Growth in North America. *Arnoldia*, 58(4), 59(1)

Subseries C: Habit, 1948-1994
Series 4: Journal and Newspaper Articles, 1944-2024
Subseries A: Journal Articles, 1944-2024
Subseries B: Newspaper Clippings and Popular Articles, 1948-1998

Box 1

Series 1- Correspondence, 1938-1997

This series contains correspondence to and from the staff of the Arnold Arboretum and others about *Metasequoia*. Included here is much correspondence tracing the early interaction with Chinese botanists in the field and the Arboretum, information on the Merrill-Chaney controversy, John Kuser's research, and the 1991 provenance study. Folders are broadly arranged by author/recipient. All contents within each folder are arranged chronologically.

Folder

1: Correspondence of E.D. Merrill (EDM), 1938-1939

- 03/07/1938 • From H.H. Hu, discussing plant collecting details in Yunnan (sic) Province.
- 06/14/1938 • From H.H. Hu, discussing plant collection details and herbarium specimens.
- 07/27/1938 • From H.H. Hu, discussing new species from Yunnan (sic).
- 08/22/1938 • From H.H. Hu, discussing work on material from Yunnan (sic).
- 08/24/1938 • From H.H. Hu, discussing *Phaenanthus macrocarpus*.
- 10/06/1938 • From H.H. Hu, thanking EDM for a list of sight determinations.
- 12/23/1938 • From H.H. Hu, discussing his use of the list of sight determinations, and asking EDM for \$500 to get an expedition into the field in the coming year.
- 07/19/1939 • From W.C. Cheng discussing bombings and destruction in Nanking (Nanjing).

2: Correspondence of E.D. Merrill, 1947

- 01/27/1947 • To Henry Hicks, discussing the Arnold Arboretum's work and relations with Chinese botanists.
- 05/10/1947 • From W.C. Cheng, discussing specimens of the "new" living species of the paleogene genus. *Metasequoia* found in Wanshin, Eastern Szechuan Province.
- 05/17/1947 • To W.C. Cheng, discussing funding of *Metasequoia* expeditions.
- 12/08/1947 • To Frans Verdoorn from H.H.Hu (?), regarding a lithograph plate of *Metasequoia*. This fragment has "Dr. Merrill" written in pencil on the top left corner.

3: Correspondence of E.D. Merrill, 1948

- 01/14/1948 • From E.H. Walker sending a copy of an article by Chen Yung possibly about *Metasequoia*.
- 01/22/1948 • From Gordon W. Dillon, discussing a sketch of *Metasequoia*.
- 01/23/1948 • From E.H. Walker thanking him for information on *Metasequoia*.
- 02/12/1948 • From G.J. Jenker, asking for seeds of *Metasequoia*.
- 02/13/1948 • From E.H. Walker asking for a copy of EDM's article in Science.
- 02/16/1948 • To E.H. Walker, discussing the upcoming issue of *Arnoldia* on *Metasequoia*.

- 03/19/1948 • From Patrick M. Synger, asking to reprint the *Arnoldia* article on *Metasequoia* in a publication of the Royal Horticultural Society. Also, he thanks EDM for the additional packet of seeds which have germinated.
- 03/26/1948 • To W.C. Cheng, discussing a grant of \$100.00 to be used at Professor Cheng's discretion.
- 04/07/1948 • To J.T. Buchholz discussing 100 packets of seeds of *Metasequoia* being sent out around the globe.
- 05/03/1948 • To Godfrey L. Cabot, discussing the possibility of Cabot funding Asian plant collecting trips.
- 05/12/1948 • From W.C. Cheng thanking him for the \$100 check. In this letter he states that the
 - 1947 seeds were collected by Hwa NOT Hsueh.
- 05/12/1948 • To W.C. Cheng discussing duplicate checks of \$100 for fieldwork.
- 05/20/1948 • From Godfrey L. Cabot saying that he was not in a financial position to fund any more field work in China.
- 06/02/1948 • From W.C. Cheng acknowledging receipt of the duplicate check and thanking him.
- 07/28/1948 • To Godfrey L. Cabot with a request for funding for herbarium specimen duplicates from Leiden and London.
- 08/10/1948 • Response to the request for seeds by the Director-General of the Royal Forest Department, Bangkok, Siam to Harvard University.
- 11/04/1948 • From J.M. Schopf, discussing *Metasequoia* taxonomic nomenclature.
- 11/05/1948 • From I.W. Bailey, discussing confusions with *Metasequoia* scientific research.
- 11/06/1948 • To I.W. Bailey with book loan requests for reprints by Liang Chow and on the wood structure of *Metasequoia*.
- 12/01/1948 • To EGS with news of himself and the *Metasequoia* collections.

4: Correspondence of E.D. Merrill, 1949 and 1950

- 10/21/1949 • From Godfrey L. Cabot asking how long *Metasequoia* seed was viable.
- 07/08/1950 • From Ralph W. Chaney, discussing his manuscript on *Metasequoia* and quoting the acknowledgements to EDM.
- 12/04/1950 • From Ralph W. Chaney discussing manuscript changes as requested by EDM.

5: Correspondence of E.D. Merrill, 1952

- 09/10/1952 • From John J. Gribble, discussing his excitement and interest in *Metasequoia*.
- 11/01/1952 • To T.H. Goodspeed A.A. expedition to collect from the *Metasequoia* type tree.
- 11/10/1952 • From T.H. Goodspeed, discussing rooting *Metasequoia*.
- 11/17/1952 • To T.H. Goodspeed, discussing publications on *Metasequoia*, particularly that of Rudolf Florin.

6 Correspondence of E.D. Merrill, 1954

- 06/08/1954 • To Aubrey Drury, discussing Merrill's heated view on the false propaganda surrounding Chaney's *Metasequoia* expedition.

7: Correspondence of Donald Wyman (DW), 1951-1954.

- 04/16/1951 • From E. Von Oven, reporting that the sample plants which the Arboretum sent the previous spring did not survive the winter.
- 03/10/1952 • From Frank Bailey reporting his experience with *Metasequoia*, especially rabbit damage on young trees.
- 03/13/1952 • To Frank Bailey discussing wood quality and referring his to an article in *Ecology*.
- 04/12/1952 • From Kan Yashiroda discussing the growth of a cone from an inserted cutting on *Metasequoia*.
- 04/23/1952 • To Kan Yashiroda congratulating him on having his tree bear fruit (one of the first).
- 05/09/1952 • From H.R. Totten enclosing the abstract of a report on *Metasequoia* growth.
- 05/12/1952 • From Kan Yashiroda discussing further the growth of cones and enclosing photographs.
- 05/20/1952 • To Kan Yashiroda thanking him for the photographs and enclosing some publications on *Metasequoia*.
- 12/23/1952 • From H.R. Totten discussing growth of a specimen near his greenhouse.
- 04/28/1953 • From Ralph S. Hayes reporting the growth of three of his trees.
- 06/01/1953 • From Kan Yashiroda reporting on growth of his specimen that bore fruit the previous year.
- 06/16/1953 • From Ernest E. Fischer reporting that one of the trees in his grove had nine cones on it.
- 10/20/1953 • From H.H. reporting the growth in inches of various *Metasequoia* trees on the Arboretum grounds.
- n.d. (1953?) • From W. Warren Anderson discussing his theory that *Metasequoia* has two root systems.
- 01/12/1954 • From W. Warren Anderson discussing the 'midget redwood.'
- 05/13/1954 • From Brooke Adu (?) reporting on his six *Metasequoia* trees. [Includes 2 photographs.]

8: Correspondence of Donald Wyman, 1957-1964.

- 01/09/1957 • From Charles A. Bliss sending seeds from a *Metasequoia* tree in the Napa Valley in CA that he hoped would germinate.
- 01/11/1957 • To Charles A. Bliss, thanking him for the seed.
- 06/04/1959 • From W. Warren Anderson discussing redwoods.
- 06/15/1959 • To W. Warren Anderson suggesting that he contact G.L. Stethus at U.C. Davis to help with his redwood research.
- 10/08/1963 • From Oliver D. Diller thanking DW for his visit and enclosing a piece of sample paper made from *Metasequoia* wood as well as an article on *Metasequoia*.
- 12/10/1964 • From William Smith reporting on a *Metasequoia* they raised from seed received in 1949.

9: Correspondence of Donald Wyman, 1966-1970.

- 11/22/1966 • To Richard A. Howard discussing naming the clone of the *Metasequoia* in front of the Administration Building 'Tsang Wang' in honor of the man that originally discovered the tree.

- 12/01/1966 • Memo from DW naming the clone 'Tsang Wang.'
- 03/01/1968 • From Stanley Krugman requesting *Metasequoia* seed samples and information about the trees.
- 03/08/1968 • To Stanley Krugman, telling him he would send seed and a cone and saying that he was going to survey a number of institutions and individuals about the progress of their *Metasequoia* trees.
- 07/10/1968 • To the Director, USDA Forest Products Laboratory, discussing the quality of *Metasequoia* wood.
- 07/17/1968 • From Michael C. Contezac, discussing the USDA tests in *Metasequoia* wood.
- 01/16/1969 • From Woodbridge Metcalf to Norman Pierce (forwarded to DW) discussing seeds and cones collected from a *Metasequoia* tree in San Anselmo, CA. He also mentions that this tree was supposedly planted in 1939-40(?).
- 07/01/1970 • From John R. Larus discussing the tree on his property which had produced a few cones.

10: Correspondence of Richard A. Howard, 1963-1973.

- 08/26/1963 • From Francis de Vos discussing sources for *Metasequoia* 'National.' Also includes a press release from the USDA regarding the naming a release of new selections of Dawn Redwood.
- 05/22/1968 • From Carleton Goff discussing health of his *Metasequoia* specimens, no cones.
- 04/22/1969 • From T.P. Haas, discussing a radio program (transcript of the program included) which mis-states Ralph Chaney's role in the early story of the discovery of the *Metasequoia*. Haas urges Howard to contact the radio station and set the facts straight.
- 04/28/1969 • To Dick Cook, discussing his contact with Haas and that the program is incorrect.
- 04/28/1969 • To T.P. Haas, discussing the radio program and their reversal of the Chaney/Merrill facts.
- 04/28/1969 • To the Radio Office at the University of California, Los Angeles, discussing the true facts of the introduction of *Metasequoia* to the US.
- 04/30/1969 • From Hale Sparks, acknowledging his letter of 4/28 and passing his concerns on to Chaney.
- 05/17/1973 • From Leroy C. Johnson, discussing when the Forest Service received their *Metasequoia* seeds.
- 05/29/1973 • From Leroy C. Johnson, discussing seed arrival times and atypical cone production.

11: Correspondence of Steven A. Spongberg (SAS) and J.E. Kuser (JEK), 1980-1986.

- 07/11/1980 • To SAS from Gregory D. Armstrong discussing natural germination of seedlings adjacent to one of their 1948 *Metasequoia*.
- 02/17/1981 • To the Arnold Arboretum from JEK inquiring if an update had been done to Wyman's 1968 survey of *Metasequoias*.
- 05/04/1981 • To Carl Lobig from JEK discussing plans to survey *Metasequoias* 33 years after introduction.
- 11/20/1981 • Notes from telephone call from JEK discussing habits observed in domestic *Metasequoia*.

- 07/28/1982 • From SAS to Bruce Bartholomew discussing their joint *Metasequoia* paper.
- 08/20/1982 • To SAS from Bruce Bartholomew discussing transfer of *Metasequoia* information to the Arnold Arboretum.
- 08/30/1982 • To Sheila Connor from SAS discussing the packet of materials sent by Bruce
 - Bartholomew from University of California Botanical Garden.
- 10/11/1985 • To E.A. Schofield from JEK, thanking him and stating that his manuscript was enclosed.
- 10/31/1985 • To E.A. Schofield from JEK, discussing the revised copy of the manuscript on rooting *Metasequoia*.
- 01/06/1986 • To William Flemer III from JEK, discussing how to produce viable *Metasequoia* seed in volume.
- 10/22/1986 • To E.A. Schofield from JEK, discussing *Metasequoia* slides for possible use on the back cover of *Arnoldia*.
- 10/24/1986 • To E.A. Schofield from JEK, discussing a slide of *Metasequoia* for *Arnoldia*.
- 11/18/1986 • To E A. Schofield from JEK, discussing photos comparing *Metasequoia* seedlings with rooted cuttings.

12: Correspondence of Steven A. Spongberg (SAS) and J.E. Kuser (JEK) 1990.

- 08/16/1990 • To SAS from JEK, packet of *Metasequoia* materials including:
 - Bartholomew, Bruce. 1981. Plant Collecting in China," *Botanical Garden Quarterly*.
 - 5/2/1990 Li Minghe to W.J. Libby & JEK, requesting funds for further *Metasequoia* collaborative study.
 - 7/4/1990 Li Minghe to JEK, request for a paper detailing the information/data Kuser would want recorded and for funds to collect seeds in China.
 - 7/19/1990 JEK to Li Minghe: discussion of plans and finances with METRIA.
 - 7/20/1990 JEK to Member of the *Metasequoia* Committee, METRIA, 2 pages: detailing *Metasequoia* study to be held in four plantations, including the A.A.
- 08/24/1990 • To JEK from J.B. Dewitt: Funding received from the "Save-the-Redwoods League" to collect and establish a *Metasequoia* gene bank.
- 08/24/1990 • To G.L. Koller from SAS, discussing JEK's plan for a *Metasequoia* seed collection and the AA's space issues if the plan goes through.
- 09/05/1990 • To JEK from SAS, discussing the proposal for A.A. progeny testing and AA concerns as to cost a space.
- 09/10/1990 • To Bruce Bartholomew from JEK discussing funding for the project, export licenses for the seeds and questions on how to do business with China.
- 10/29/1990 • To D.R. Hendricks from JEK, thanking Dawes Arboretum for funds for *Metasequoia* seed collecting trip in Hubei, China.
- 12/03/1990 • To JEK from Li Minghe, detailing collecting trip plus two photocopies of photographs of *Metasequoia* including the type II tree.
- 12/21/1990 • To Li Minghe from JEK, request for collected seeds for the provenance test.

13: Correspondence of Steven A. Spongberg (SAS) and J.E. Kuser (JEK) 1991

- 04/18/1991 • To Li Minghe from JEK, thanking him for the 53 packets of seed.
- 06/04/1991 • To SAS from JEK, invoicing him for \$500 for the *Metasequoia* provenance project.
- 06/19/1991 • To *Metasequoia* cooperators from JEK, a status report on the *Metasequoia* germination test.
- 06/21/1991 • To Li Minghe from JEK, germination update and a request for a list of parent trees.
- 07/23/1991 • To SAS from JEK, offering leftover *Metasequoia* seedlings.
- 08/08/1991 • To JEK from SAS, request for *Metasequoia* seedlings.
- 08/22/1991 • To SAS from JEK, provenance project update. Also includes:
 - August 1991 "Test gardens for *Metasequoia*", *AABGA Newsletter*.
 - Kuser, J.E. "Inbreeding Depression in *Metasequoia*," *Journal of the Arnold Arboretum*, 64: 475-481. July 1983.

14: Correspondence of Steven A. Spongberg (SAS) and J.E. Kuser (JEK) 1992

- 04/01/1992 • To *Metasequoia* Cooperators from JEK, "Cooperators' Update" detailing the methods, cooperators, work plan and plantation design for the program.
- 04/02/1992 • To the Dawn Redwood Provenance Test Cooperators, including the letter of 2/18/1992 from Minghe updating the *Metasequoia* seed project in China that inadvertently left out of the previous day's mailing.
- 07/29/1992 • From JEK, "*Metasequoia* Cooperator's Update", detailing the *Metasequoia* provenance test's progress.
- 08/12/1992 • To JEK from SAS, request for 125 seedlings.
- 08/24/1992 • To SAS from JEK, lists of *Metasequoia* trees arranged by family.
- 10/01/1991 (misdated) • To SAS from M.F. Gardner, requesting *Metasequoia* cuttings from 1980 collecting trip.
- 10/19/1992 • To M.F. Gardner from SAS replying to Gardner's request for *Metasequoia* cuttings.
- 10/27/1992 • To SAS from JEK, arranging to bring *Metasequoia* saplings to the Arboretum.
- 11/10/1992 • To JEK from SAS sending map of Boston for Kuser's *Metasequoia* drop-off trip to the Arboretum.
- 11/23/1992 • Memo and data from SAS to the Living Collections staff regarding the list of received *Metasequoia glyptostroboides* seedlings.
- 11/23/1992 • To JEK from SAS thanking him for the *Metasequoia* delivery plus a tally of plants received.
- 11/23/1992 • To Li Minghe from JEK requesting latitude/longitude data, provenance test update, and invitation to visit the U.S.
- 11/23/1992 • To SAS from JEK, 9 photographs of *Metasequoia* seedlings which have shown natural variations in form (weeping, dwarf, blue). (Photographs have been dispersed to Series 3, Subseries B and C, Broadmeade Grove Specimens; *Metasequoia*, Seedlings and Saplings; and *Metasequoia*, Views of Whole Tree.)
- 12/02/1992 • To G. Lester Alpaugh from JEK, offering his pick of the *Metasequoia* saplings.
- 12/15/1992 • To JEK from SAS discussing travel bill.

15: Correspondence of Steven A. Spongberg (SAS) and J.E. Kuser (JEK) 1993-1997

- 01/15/1993 • To M.F. Gardner from JEK discussing spare *Metasequoias* that would be available to ship to Scotland.
- 05/12/1993 • To SAS from M.F. Gardner, thanking him for the *Metasequoia* plants from Rutgers and the A.A.
- 10/17/1994 • To SAS and others from JEK, memo regarding *Metasequoia glyptostroboides* Provenance/Progeny Test
- 03/24/1995 • To SAS from JEK, two photographs and letter regarding the differences between seed-grown and cutting grown *Metasequoia glyptostroboides*, taken at Broadmeade, Princeton.
- 04/14/1995 • To JEK from SAS, thanking him for photographic documentation.
- 06/05/1995 • To Don Hendricks from JEK, discussing the Rutgers progeny test plantation.
- 01/21/1997 • To SAS from Mark Flanagan discussing the current state of the type tree in Moudao.
- 01/30/1997 • To Mark Flanagan from SAS thanking him for the photograph and saying that the tree has indeed declined since 1980.

16: Correspondence of H.H. Hu, 1931-1947

- 06/17/1931 • To J.G. Jack, China's horticultural developments during a war inflicted time.
- 07/15/1933 • To J.G. Jack, discussing progress with his work, W.C. Chen in Hainan.
- 06/27/1934 • To J.G. Jack, discussing a scientific renaissance (sic) in China.
- 08/06/1935 • To J.G. Jack, discussing the arboretum and botanical garden in Kuling; Jack's former students' activities.
- 12/05/1935 • To J.G. Jack, discussing Lu-Shan Arboretum, his students' studies abroad, explorations to Yunnan (sic), and Rehderodendron (sic).
- 11/18/1938 • To J.G. Jack, discussing studies of Miocene fossils and explorations in NW Yunnan.
- 02/03/1939 • To J.G. Jack, discussing his monograph of the Miocene flora of Shangwan co-authored with R. W. Chaney, organization of the new botanical institute in Kunming, updating Jack on activities of various colleagues.
- 01/16/1947 • To J.G. Jack, discussing seed collecting and exploration in Yunnan, Lushan Botanical Garden and the Botanical Institute in Sikong (eastern Tibet).
- 04/30/1947 • To T.H. Goodspeed sending two small bags of *Metasequoia* seeds.
- To R.W. Chaney discussing *Metasequoia* and other taxonomic concerns.
- *For additional H.H. Hu correspondence please see E.D. Merrill Correspondence, 1938-1939 (Folder 1).*

17: Correspondence of Peter H. Raven, 1996

- 07/30/1996 • To Robert E. Cook discussing *Metasequoia* introduction to the Missouri Botanic Gardens.
- 08/16/1996 • From SAS reply to Raven's letter of 7/30/1996 with archival

information on *Metasequoia*.

18: Correspondence of Keiko Satoh and Douglas Hanks, 1998

- 01/28/1996 • To SAS from Doug Hanks, thanking him for the information that he sent and asking him if he had a detailed account of the 1947 seed collecting expedition. (fax)
- 01/27/1998 • To Keiko Satoh from Doug Hanks, lengthy fax containing notes from his book on redwoods and copied pages from another publication as well as information on the Crescent Ridge Dawn Redwood Preserve. (fax)
- 01/28/1998 • To Doug Hanks from Keiko Satoh, thanking him for the fax of 1/27/1998. (fax)
- 07/10/1998 • To Keiko Satoh from Doug Hanks, thanking her for the information she sent.

19: Miscellaneous Correspondence, 1935-1948

- 04/15/1935 • To J.G. Jack from Y. Chen, a former student of Jack gives personal update.
- 11/24/1947 • To Albert G. Johnson from Feng-Hwai Chen (Lu Shan Botanical Garden), regarding speaking with Dr. H.H. Hu and preservation of *Metasequoia* and Dr. Cheng offering seeds.
- 02/12/1948 • To Albert G. Johnson from Feng-Hwai Chen (Lu Shan Botanical Garden), enclosing seeds of *Metasequoia glyptostroboides*.
- 03/25/1948 • To W.C. Cheng from R.V. Perry, receipt for \$100 for exploration money.
- 04/09/1948 • To Albert G. Johnson from Feng-Hwai Chen (Lu Shan Botanical Garden), regarding formation of a *Metasequoia* committee led by Dr. H.H. Hu, the cultivation of *Pinus armandi* in America, and enclosing *Pinus bungeana* seeds.
- 05/11/1948 • To W.C. Cheng from R.V. Perry, receipt for \$100 for exploration money (duplicate of 3/25/1947).
- 10/12/1948 • To H.B. Nichols from Roscoe Pound, requesting funds to help secure the grove of *Metasequoia* from destruction or injury.
- 10/20/1948 • To Karl Sax from H.B. Nichols, requesting funds to help secure the *Metasequoia* grove.
- 10/25/1948 • To H.B. Nichols from Karl Sax, reply stating the matter has been turned over to Merrill.

20: Miscellaneous Correspondence, 1949-1997

- 01/27/1949 • To Harper [Goodspeed] from Howard Baxter, requesting "Dawn" seeds.
- 02/04/1949 • To Otto Haas from J.M. Schopf, discussing problems of nomenclature for fossil plants.
- 03/16/1949 • To H. Baxter from T.H. Goodspeed, offering *Metasequoia* seeds and an invitation to the Botanical Garden.
- 03/29/1949 • To Albert G. Johnson from Feng-Hwai Chen (Lu Shan Botanical Garden), regarding cultivation in China of *Metasequoia*, and a large *Cryptomeria japonica* growing at Lu Shan Botanical Garden.
- 11/04/1949 • To Mr. Whitehead from Robert B. Deering, requesting seeds and/or seedlings of *Metasequoia*.

- 11/29/1949 • To Robert Deering from M.T., discussing *Metasequoia* saplings' progress at the Botanical Gardens and offering some specimens.
- 12/19/1949 • To T.H. Goodspeed from Robert B. Deering, a thank you letter for the three *Metasequoia* plants he received from the Botanical Gardens.
- 09/02/1952 • To J.E. Gribble from H.G. Schenck, thanking Gribble for the received credit, but suggesting he look to Chaney who really deserves the credit.
- 05/12/1978 • To G.T. Fearn from Frank S. Santamour, cc: Gary Koller discussing canker disease in *Metasequoia*.
- 11/12/1981 • To David Boufford from Bruce Bartholomew, draft and editing of a *Metasequoia* article.
- 10/26/1984 • To C.Y. Hsueh from Edmund A. Schofield, requesting Hsueh write an article to be published in *Arnoldia* on *Metasequoia* for the 40th anniversary of its discovery.
- 03/22/1985 • To C.Y. Hsueh from Edmund A. Schofield, follow-up letter requesting article again.
- 02/10/1987 • To Edmund Schofield from Helen Roca-Garcia, enclosing an article she had written on the history of the discovery of *Metasequoia* in 1972. [See Series 2, Folder for the original letter and photographs.]
- 10/11/1996 • To the Faculty and Staff of the Harvard University Herbaria, an invitation to a reception for Professor Ji Ru Xie.
- 10/01/1997 • To Keiko Satoh from William Louis Culbertson, discussing the exceptionally buttressed example at the Duke Gardens.

Series 2 - Questionnaires, Manuscripts, Miscellaneous Papers, 1950-2001.

This series contains several distinct classes of items. There are manuscript versions of journal articles; materials compiled by the researchers while conducting the *Metasequoia* surveys of 1968 and 1981; bibliographies of *Metasequoia* articles; and other miscellaneous *Metasequoia* information.

Folder

1. *Metasequoia* Survey, questionnaire, addressees, notes, chart and outline, and article. Compiled and analyzed by Donald Wyman of the Arnold Arboretum, 1968.
2. *Metasequoia* Survey, responses A-F. Compiled and analyzed by Donald Wyman of the Arnold Arboretum, 1968.
3. *Metasequoia* Survey, responses G-L. Compiled and analyzed by Donald Wyman of the Arnold Arboretum, 1968.
4. *Metasequoia* Survey, responses M-S. Compiled and analyzed by Donald Wyman of the Arnold Arboretum, 1968.
5. *Metasequoia* Survey, responses T-Z and miscellaneous. Compiled and analyzed by Donald Wyman of the Arnold Arboretum, 1968.
6. *Metasequoia* Survey, survey analysis, mailing lists, and questionnaire. Compiled and analyzed by John Kuser of the Department of Horticulture and Forestry, Cook College, Rutgers University, New Jersey, 1981.
7. *Metasequoia* Survey, returned questionnaires numbers 19-100. Compiled and analyzed by John Kuser of the Department of Horticulture and Forestry, Cook College, Rutgers University, New Jersey, 1981.

Box 2 Folder

8. *Metasequoia* Survey, returned questionnaires numbers 101-145. Compiled and analyzed by John Kuser of the Department of Horticulture and Forestry, Cook College, Rutgers University, New Jersey, 1981.
9. *Metasequoia* Survey, returned questionnaires numbers 158-185. Compiled and analyzed by John Kuser of the Department of Horticulture and Forestry, Cook College, Rutgers University, New Jersey, 1981.
10. *Metasequoia* Survey, returned questionnaires numbers 202-226 and unnumbered. Compiled and analyzed by John Kuser of the Department of Horticulture and Forestry, Cook College, Rutgers University, New Jersey, 1981.
11. Manuscript by John E. Kuser, "Clonal and Juvenility Differences in *Metasequoia* Rooting," drafts dated 10/11/1985 and 10/21/1986.
12. Manuscript by Hsueh Chi -ju, "Reminiscences of Collecting the Type Specimens of *Metasequoia glyptostroboides*."
13. Manuscript by Helen Roca-Garcia, "*Metasequoia* and the Arnold Arboretum." Manuscript sent to E. Schofield for review for the *Arnoldia*, 02/10/1987. Seven photographs of the *Metasequoia glyptostroboides* valleys by E.H. Wilson (and photocopies) accompany the manuscript.
14. Manuscript by Donald Wyman, "*Metasequoia* a Result of Modern Plant Distribution," 1952.
15. Manuscript by E.D. Merrill, "*Metasequoia*." Typed at the top, "Never finished; never published; some of the "data" are now out of date. Hence the fossil records of *Metasequoia* extend from Manchuria and Japan, N.W. United States; Alaska; eastern seaboard of the U.S. northern Europa, Spitzbergen, etc. That is, in former geologic times it extended throughout the North Temperate Zona as did Gingko."
16. Mockup of Section on *Metasequoia* from Proposed Arboretum Guidebook, possibly by Jeannie Braasch. n.d.
17. Chronologies Tracing the History of *Metasequoia*, 1941-1998. Compiled by Karen Madsen, 1/21/1999 and Keiko Satoh 1998.
18. *Metasequoia* Bibliographies, covering material 1928-2001. Includes "Key *Metasequoia* articles," compiled by Karen Madsen, 1/21/1999 and "A List of *Metasequoia* Publications, 1941-2001," by JinShuang Ma.
19. Interstices...Chaney and Merrill, Tracing the Controversy, compiled by Karen Madsen, 1/1999.
20. *Metasequoia* notes, 1950-1962 by H. Howard. Periodic observations made on plants on grounds.
21. Arnold Arboretum Map Showing Location of *Metasequoias*, 6/24/1953.
22. Curatorial Review of *Metasequoia* Accessions, S.A. Spongberg, February 1992. Data source (DS) Number 590, IMS Conifer Project, 6 pages.
23. Provenance testing results, John Kuser, 1992.
24. Marienstatt Abbey *Metasequoia* materials, 1960s. Includes correspondence and articles in German.
25. Satellite views of the *Metasequoia* region in China.
26. Maps of *Metasequoia* region in China, including a map of Hsueh's 1947 collecting trip.
27. Internet resources on *Metasequoia*.
28. *Metasequoia* notes, by Karen Madsen (?).
29. Spreadsheets listing institutions holding *Metasequoia* specimens (with acquisition years).
30. Summary of accessions for *Metasequoia* at the Arnold Arboretum.
31. Miscellaneous *Metasequoia* materials.



North Meadow with a Dawn Redwood (524-48*AA) on the right, Arnold Arboretum.
 Photograph by Carl Lobig. October 1980

Series 3 – Photographs, 1925-1998.

This series contains photographs and slides of *Metasequoia glyptostroboides*. It is divided into three subseries. Subseries A contains historical images from expeditions to *Metasequoia* Valley and of the researchers that have studied the tree. Subseries B contains images of *Metasequoia* in the collection of the Arnold Arboretum, as well as images of *Metasequoia* in other arboreta throughout the world. Where possible contact information for these arboreta have been included in the folders of images. In Subseries C there are images of *Metasequoia* foliage, cones, trunks and germinating seed. In this series the folders are numbered consecutively by subseries.

Subseries A – Researchers and Expeditions, 1925-1980

Folder

1. Photographs of researchers who have studied *Metasequoia*.

- 1925 Ralph Works Chaney. "Plant collecting in the Gobi", born August 24th, 1890. University of California Paleobotanist, 3rd Asiatic Expedition, 1925. Photo. From *Journal of the American Museum of Natural History*, 1926, xxvi."
- 1940s "E.D. Merrill, Director of the Arnold Arboretum and friend of Chinese botany. Merrill was instrumental in the introduction of *Metasequoia* into the west soon after its discovery as a living tree in China. Merrill was to provide \$250 for a special expedition to collect seed in the fall of 1947, a collecting trip that was arranged for in China by his friends and colleague, H.H. Hu." (5"x7")
- 07/1975 Z. Wang, discoverer of *Metasequoia glyptostroboides*, left, with his teacher Professor T.N. Liou, seated, and S.Y.Hu, right. Photograph

from color transparency, courtesy of Mr. K.B. Lau, Geography Department, Chinese University of Hong Kong.

n.d. "Professor Chen Huanyong, founder and director of South China Botanical Institute of Canton. Photo courtesy of F.H. Chen, director of South China Botanical Institute of China, Acad. Sci. (Academia Sinica) through Dr. Shiu-ying Hu." From *Arnoldia* 48(2): 21, Spring 1988. (3"x4")

2. Gressitt expedition, 1948, 38 color slides.

1948 Near Zhonglu (2 slides)
1948 Below Zhonglu (2 slides)
1948 S? of Zhonglu (1 slide)
1948 Across river from peaks – Zhonglu (1 slide)
1948 Peaks S.E. trip (1 slide)
1948 S. from Wen-too (1 slide)
1948 Modaoqi (3 slides)
1948 Xiaohe (5 slides)
1948 Near Xiaohe (2 slides)
1948 S. of Xiaohe (1 slide)
1948 S. of Wen-too S. of Xiaohe (1 slide)
1948 Shuishanba (10 slides)
1948 Upper Shuishanba (1 slide)
1948 S.E. of Shuishanba (1 slide)
1948 Branch of Shuishanba (1 slide)
1948 Branch of Shuishanba S.E. trip (2 slides)
1948 SC Shuishanba (2 slides)
1948 S. Shuishanba (1 slide)

3. Chaney expedition, 1948, 4 photographs by Ralph W. Chaney, added in E.D. Merrill's hand on an accompanying sheet, "Who couldn't wait for trees collecting season (summer to fall), for no seeds were available until late fall!"

03/1948 3 children and one adult male standing in front of 3 *Metasequoia* trees. Shui-hsa-ka. (3.5"x4.5")
03/1948 *Metasequoia* valley, Shui-hsa-ka. (3.5"x4.5")
03/1948 Type tree of *Metasequoia glyptostroboides*, Mo-tao-chi, Milton Silverman standing in front of specimen. (3.5"x4.5")
03/1948 Type tree of *Metasequoia glyptostroboides*, Mo-tao-chi. (3.5"x4.5")

4. Cheng expedition, 1948, 9 photographs by Professor Wan-Chun Cheng, for E.D. Merrill. Added in E.D. Merrill's hand on the accompanying envelope, "Even Cheng's photographs of 1947 were ahead of Chaney's of 1948."

08/1948 "A group of *Metasequoia* trees in a ravine. Lichuan: Shui-sa-pu Valley." (2"x3")
08/1948 "A largest tree of *Metasequoia glyptostroboides*: 44.6 m tall, 2.08 m in diam (DBH), isolate on the open slope near Wang-Xia-Ying, Hupeh: Lichuan, Wang-Xia Ying, Chao-Yu-Tai." (2"x3")
08/1948 "A part of the trunk of the largest tree of *Metasequoia glyptostroboides*, near Wang Kia-Yin. Three men standing before the trunk are: C.T. Hwa, W.C. Cheng, K.L. Chu, Hupeh, Lichua, Yang-Kia-

- Ying, Chao-Yu-Tai." (2"x3")
- 09/09/1948 "A part of the trunk with branches of the type tree of *Metasequoia glyptostroboides* des Szechuan: S. Wanh sien, Mou-tao-chi." (2"x3")
- 09/09/1948 "The basal part of the butress (sic) of the type tree of *Metasequoia glyptostroboides*, Szechuan: S. Wanh sien, Mou-tao-chi." (2"x3")
- 08/1948 "The trunk of the largest tree of *Metasequoia glyptostroboides*, Hupeh: Lichuan, Wang Kia-Ying, Chao-Yu-Tai." (2"x3")
- 08/20/1948 "A part of the trunk of the type tree of *Metasequoia glyptostroboides*, on which W.C. Cheng stands. Szechuan: S. of Wanh sien., Mou-tao-chi." (2"x3")
- 9/9/1948 "A part of the butress (sic) of the type tree of *Metasequoia glyptostroboides*. Szechuan: Wan hsien, Mou-tao-Chi." (2"x3")
- 9/9/1948 "Two *Metasequoia* trees with column crown show that the branches are cut nearly to the top. Hupeh: Lichuan, Shui-sa-pa Valley, Aug. 1948." (2"x3")



Dave Boufford, James Luteyn, B. Bartholomew, and S.A. Spongberg standing in front of type Tree of *Metasequoia glyptostroboides*, Modaoqi, Hubei Province, China. 1980

5. Sino-American Botanical Expedition, 1980, views, *Metasequoia*.

- 1980 #8, small grove of *Metasequoias* growing in small ravine of *Metasequoia* valley. (5"x7")
- 1980 #9-10, *Metasequoia glyptostroboides*- tallest and oldest specimen- 420 years old in Hubei Province, China. (5"x7")
- 1980 #13, *Metasequoia glyptostroboides* Type Tree in Modaoqi. Left photo by J.L. Gressit in 1948, right by Sino-American Expedition, 1980.
- 1980 #16-17, Type tree in Modaoqi. (8"x10")

6. Sino-American Botanical Expedition, 1980, views, landscape.

- 1980 #1-7, views of China's landscape: mountains, rice-paddied hillsides. (5"x7")
- 1980 #11-12, views of China's landscape (2 images.)
- 1980 #14, views of China's landscape- top image taken by Gressit in 1948 and bottom image by member of the Sino-American expedition, 1980.
- 1980 #15, view of terraced rice fields in the *Metasequoia* valley, note the scattered *Metasequoia glyptostroboides* trees, Sino-American Expedition (8"x10").
- 1980 #18, Wanxian, China- along the Changjiang (Yangtze river). (8"x10")
- 1980 #19, topography of the central China region. *Metasequoia* were collected from the type tree in Modaoqi. Map has an overlay of place names and travel routes (8"x10").
- 1980 #20, topography of the central China region. *Metasequoia* were collected from the type tree in Modaoqi. No names or routes are indicated (8"x10").

7. Sino-American Botanical Expedition, 1980, people.

- 1980 Type Tree of *Metasequoia glyptostroboides*, Modaoqi, Hubei Province, China; Dave Boufford, James Luteyn, B. Bartholomew, and S.A. Spongberg.
- 1980 S.A. Spongberg of the Arnold Arboretum and Jian-ri Chien.
- 1980 Chinese botanists standing in front of the Type tree of *Metasequoia glyptostroboides*.
- 1980 "Crowds of Chinese Awaiting our Arrival at Modaoqi at type locality of *Metasequoia glyptostroboides* in October of 1980". (9"x7"). (2 copies)

Box 3

Series 3

Subseries B – Specimens from Arboreta, 1948-1998

Folder

1. Arnold Arboretum specimen #524-48, 1951-1989.

- 09/1951 Case Estates, Weston, MA. (5"x7", R-772)
- 09/1951 Case Estates, Weston, MA, "Pointing to where growth started in 1951, grew 4'4: in 1951-- now 8'8" tall." (5"x7", R773)
- 09/1951 Case Estates, Weston, MA. (2 copies, 5"x7", R774)

2. Arnold Arboretum specimen #524-48-AA, 1960-1989.

- 06/08/1960 Photographer: Heman Howard (5"x7", L-26-27)
- 09/19/1963 Photographer: Heman Howard (2 copies, 5"x7", L-49-15).
- 10/15/1966 Photographer: Heman Howard (5"x7", R-4497)
- 10/15/1966 Photographer: Heman Howard (2 copies, 5"x7", R-4495)
- 02/1989 Close-up of lower trunk. (8"x10")

- n.d. #5, whole tree. (8"x10")
n.d. #6, whole tree. (8"x10")
- 3.** Arnold Arboretum specimen #524-48-DD, 1963.
09/19/1963 Photographer: Heman Howard (2 copies, 5"x7", L-49-17).
- 4.** Arnold Arboretum specimen #524-48-M, 1979.
01/24/1979 Photographer: E. Gray. (5"x7")
1979 Whole tree, looking towards Administration Building. (8"x10")
- 5.** Arnold Arboretum specimen #524-48-Z, 1989.
1988/1989 R & D 89011060, view of snow-covered branches and trunk. (8"x10")
- 6.** Arnold Arboretum specimen #740-62-M, 1979.
01/24/1979 Habit, taken in wintertime, photographer: E. Gray. (5"x7")
- 7.** Bailey Arboretum, Locust Valley, NY, specimens, 1981-1983.
12/1981 Trunk. (color slide)
07/1983 Whole tree. (color slide)
n.d. "Tree growing in the Bailey Arboretum, Locust Valley, New York. From H.H. Hu and W.C. Cheng." (2 copies)
- 8.** Botanic Gardens of Adelaide, South Australia, specimens, 1997.
12/12/1997 View of whole tree, sent via email by Trevor Christainsen, horticultural botanist. (color copy)
12/12/1997 View of whole tree, sent via email by Trevor Christainsen, horticultural botanist. (color copy)
- 9.** Bramley, Surrey, England, specimens, 1950.
11/18/1950 "A 28-month-old specimen, growing in the open and now 5-1/2 feet high."
11/18/1950 "A 28-month-old specimen, grown in a cold house at Bramley, Surrey and now 8'3" high."
- 10.** Broadmeade Grove, Princeton, NJ, specimens, 1981-1997.
05/1981 View of three tall specimens. (color slide)
11/23/1992 #8, view of the grove in Fall, photographer: J. Kuser. (3"x5")
03/24/1995 View of 14 year old, seed grown tree (very twiggy at base), photographer: J. Kuser.
03/24/1995 View of 14 year old, cutting grown tree (relatively clear boled), photographer: J. Kuser.
12/27/1997 View uphill of the grove. (4"x6")
12/27/1997 View from road of the grove. (4"x6")
12/27/1997 View of the trunks of eight trees. (4"x6")
n.d. #7, same view as #4 above. (8"x10")

11. Sarah P. Duke Gardens, Durham, NC, specimens, 1996.

- 05/28/1996 Specimen in photograph below. Photographer: E.H. Alltech. (color slide)
6
n.d. Exceptionally buttressed specimen at the North Lawn. (photocopy, original and
explanatory letter can be found in Series 1, Folder 19)
n.d. Exceptionally buttressed specimen. (4"x6")

12. Dunedin Botanic Garden, Dunedin, New Zealand, specimens, 1997.

- 02/21/1997 8 color slides of trees in their collection.
7

13. Fairhaven Estate, RI, specimen, 1997.

- 1997(?) View up the trunk, photographer: Kirsten Thornton. (4"x6")

14. Jardin des Plantes, Orleans, France, specimen, 1997.

- 12/07/1997 Whole tree with foliage. (4"x6")
12/07/1997 Whole tree with half foliage dropped. (4"x6")
12/07/1997 Color slide of #1.
12/14/1997 Color slide of #2.

15. Mainau Island, Lake Constance, Germany, specimens, 1970.

- 1970 *Metasequoia glyptostroboides*, "Die einmalige Allee von *Metasequoia* auf der
Insel Mainau; aufgenommen. (8"x10")

16. Marienstatt Abbey, Mareinstatt, Germany, specimens, 1964.

- 1964 View of whole sapling with foliage. (4"x6")
1964 View of whole sapling without foliage. (4"x6")
1964 View of sign in front of sapling which reads (in German):
"*Metasequoia glyptostroboides* Hu et Cheng
Taxodiaceae () Primitive Mammoth Tree
1941 fossil discovered (Japan, researcher Miki)
1945 was found in China
By means of the Arnold-Arboretum of Harvard University was diffused
throughout the world (1948)
1957 planted (from Fa. H.A. Hesse Weener/Ems)
1957 trunk thumb thick about 1.45m high." (4"x6")
1964 View of whole sapling without foliage, monk in left side of image. (3"x5")
1962(?) View of seedling with foliage. A sign next to it reads:
"Primitive Mammoth Tree
Metasequoia glyptostroboides
Taxodiaceae. From the Arnold-
Arboretum received by airmail on
11/24/1962; planted on 11/25/1962.
Height about 60cm. (3"x5")
1964 View of foliage on branch. (4"x6")
1964 View of foliage. (4"x6")
1964 View of trunk of sapling with same sign as #3. (4"x6")

1964 View of trunk of sapling with same sign as #3, monk in background. (4"x6")

17.Missouri Botanic Garden specimens, 1966.

09/1966 Allee of 18-year-old specimens, photographer: Paul Kohl. (5"x5") (See Series 2, *Metasequoia* Survey, 1968, Responses A-F for further information.)

18.Montreal Botanic Garden, Montreal, Quebec, Canada, specimens, 1997.

10/22/1997 View of whole tree, #0405-MET-0037. (color slide)
10/22/1997 View of whole tree, #0405-MET-0038. (color slide)
11/22/1997 View of whole tree, #0405-MET-0039. (color slide)
11/22/1997 View of whole tree, #0405-MET-0040. (color slide)
11/22/1997 View of whole tree, #0405-MET-0041. (color slide)

19.Morton Arboretum, Lisle, IL, specimen, 1997.

10/1997 View of tree in grove, #29-48. (color slide)
10/1997 View of tree in grove, #29-48. (color slide)

20.Mount Auburn Cemetery, Cambridge, MA, specimens, 1993-1998.

10/1993 *Metasequoia* at Auburn Lake, view of trunk. (color slide)
11/10/1997 *Metasequoia* at Auburn Lake, tree with fall foliage. (color slide)
11/11/1997 *Metasequoia* at Auburn Lake, view of tree across lake. (color slide)
01/05/1998 View of whole tree in winter without foliage. (color slide)
01/05/1998 View of trunk with snow at base. (color slide)
01/05/1998 View of highly buttressed trunk with snow. (color slide)
01/05/1998 View of trunk with snow at base. (color slide)
01/05/1998 View of trunk with snow at base. (color slide)

21.National Arboretum, Washington, D.C., specimens, 1958-1968.

1958 'National,' 10 years old from seed.
05/15/1959 Photographer: D. Wyman, 2 copies. (5"x7", R-2910)
07/19/1968 Grouping of transplanted seedlings.
07/19/1968 Cutting propagation of *Metasequoia* 'National,' approximate age, 5 years.

22.National Botanic Garden, Glasnevin, Republic of Ireland, specimen 1996-1997.

05/1996 Beside pond. (4"x6")
11/21/1997 View at bottom of Pine Hill near Rockery. (color slide)
11/21/1997 *Metasequoia* beside pond. (color slide)

23.Oxford University Botanic Garden, Oxford, England, specimens, 1997.

10/11/1997 View of tree. (color slide)
10/11/1997 View of tree. (color slide)

24.Royal Botanic Gardens, Burlington, Ontario, Canada, specimens, 1997.

10/11/1997 View of tree with a white post in foreground. (color slide)
10/11/1997 View of trunk in shadows. (color slide)

10/11/1997 View of trunk with sun shining on it. (color slide)
10/11/1997 View of whole tree. (color slide)

25.Royal Botanic Gardens, Edinburgh, Scotland, specimen, 1997.

11/21/1997 View of tree without foliage, #19480054, photographer: Debbie White. (color slide)
11/21/1997 View of trunk of tree, #19480054, photographer: Debbie White. (color slide)

26.Royal Tasmanian Botanical Garden, Hobart, Australia, specimen, 1998.

02/1998 Whole tree. (4"x6")

27.Scott Arboretum, Swarthmore College, Swarthmore, PA, specimens, 1988.

12/1988 View of whole tree without foliage. (color slide)

28.Secrest Arboretum, Wooster, Ohio, specimens, 1963-1998.

10/07/1963 Forest plot, photographer: D. Wyman. (5"x7", R-4038)
10/05/1967 Grove, 14 years old, photographer: D. Wyman. (5"x7", R-4618)
10/05/1967 Grove, 14 years old, photographer: D. Wyman. (5"x7", R-4619)
03/18/1968 Image of 19-year-old specimen with a sample of its seed, photographer: Oliver D. Diller. (4"x6") (See Series 2, *Metasequoia* Survey, 1968, Responses A-F for further information.)
06/23/1998 Dawn redwood trees planted by Dr. Diller in about 1948. (3"x5")

29.Timaru Botanic Gardens, Timaru, New Zealand, specimens, 1994-1997.

07/1994 View of tree in winter without foliage. (color slide)
03/26/1997 View of whole tree. (color slide)
n.d. View of whole tree with foliage. (color slide)

30.Type Tree, Modaoxi, China, 1948.

1948 Type Tree and temple, from Gressitt expedition.
n.d. "Drawing by unknown artist of a 420 yr. old *Metasequoia* tree in *Metasequoia* valley, Xiahoe Commune, China, in *Arnoldia* 45(4): 16, Fall 1985." (8"x10")
n.d. Photograph of a painting by an anonymous Chinese artist of the trees from which Hsueh Chi-Ju collected the type specimens of *Metasequoia glyptostroboides*, H.H. Hu & Cheng. (8"x10") (2 copies)

31.University of Copenhagen Botanic Garden, Copenhagen, Denmark, specimen, 1987.

01/04/1987 Tree without foliage. (4"x6")

32.Wallingford Rose Garden, specimens, 1998.

02/1998 #3, view of whole tree without foliage. (color slide)
02/1998 #4, view of whole tree without foliage. (color slide)
02/1998 #5, view of trunk. (color slide)
02/1998 #6, view of trunk. (color slide)
02/1998 #7, view up trunk into branches. (color slide)

02/1998 #9, view of large specimen without foliage. (color slide)
02/1998 #11, view of large specimen without foliage. (color slide)
02/1998 #12, view of large specimen without foliage. (color slide)
02/1998 #13, view of large specimen without foliage. (color slide)
02/1998 #15, view of large specimen without foliage. (color slide)
02/1998 #17, view of trunk. (color slide)
02/1998 #18, view up trunk into branches. (color slide)
02/1998 #17, view of trunk. (color slide)
02/1998 #21, view at a distance of large specimen without foliage. (color slide)

33. Washington Park Arboretum, Seattle, WA, specimens, 1997.

10/1997 Branch, Rhododendron Glen, photographer: Joy Spurr. (color slide, #2432)
10/1997 Four trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2433)
10/1997 Four trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2434)
10/1997 Four trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2435)
10/1997 View up into four trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2436)
10/1997 Bark, tree above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2437)
10/1997 Bark, trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2438)
10/1997 Tree with broken trunk in valley below Honeysuckle Hill, photographer: Joy Spurr. (color slide, #2439)
10/1997 Foliage of tree with broken trunk in valley below Honeysuckle Hill, photographer: Joy Spurr. (color slide, #2440)
10/1997 Trunk of tree with broken trunk in valley below Honeysuckle Hill, photographer: Joy Spurr. (color slide, #2442)
10/1997 View up into two trees above stream renewal area near Rhododendron Glen, photographer: Joy Spurr. (color slide, #2441)

34. Winterthur Garden, Winterthur, DE, specimens, 1968.

04/24/1968 75' specimen, photographer: D. Wyman. (5"x7", L-106-5A)



Metasequoia glyptostroboides, Arnold Arboretum.
 Photograph by Kyle Port, February 13, 2014.

Series 3
Subseries C – Habit, 1948-1994
Folder

1. *Metasequoia*, cones, 1989.

- 1989(?) #1, seven cones on a branch. (3"x5")
- 1989(?) #2, three cones on a branch. (3"x5")
- 1989(?) One cone. (3"x5")
- 1989(?) Two cones on a branch. (3"x5")
- 1989(?) Seven cones on a branch. (3"x5")
- n.d. #12, cones, picked from branch, sitting on white poster board. (8"x10")
- n.d. #13, a cone and branch with catkins, photographer: Ralph S. McFarland, USDA Forest Service. (8"x10")
- n.d. #1, two female cones, photographer: L.C Johnson. (8"x10")
- n.d. #2, one male cone, photographer: L.C Johnson. (8"x10")
- n.d. #5, from 3 growing at IFG, Placerville, originally collected/paid for by Harvard University, photographer: L.C Johnson. (8"x10")

2. *Metasequoia*, germinating seed, n.d.

- n.d. #3, germinating seed, photographer: L.C. Johnson. (8"x10")

- n.d. #4, germinating seed, photographer: L.C. Johnson. (8"x10")
- 3. *Metasequoia*, seedlings and saplings, 1948.**
- 1948 Pot of seedlings that germinated in 2 weeks at the Missouri Botanic Garden, photographer: Paul A. Kohl. (3"x5") (See Series 2, *Metasequoia* Survey, 1968, Responses A-F for further information.)
- 1948 Image of 5 potted seedlings 75 days old, photographer: Paul A. Kohl. (3"x5") (See Series 2, *Metasequoia* Survey, 1968, Responses A-F for further information.)
- 05/01/1950 Seedling. (5"x7", R-203)
- 11/23/1992 #1, image of 6 variant seedlings. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #2, image of "corkscrew" seedling. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #3, image of "normal" seedling. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #4, image of "bonsai" seedling. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #5, image of "weeping blue" seedling. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #6, image of "blue-white dwarf" seedling. Photographer: J. Kuser. (3"x5")
- 11/23/1992 #7, image of "blue" seedling. Photographer: J. Kuser. (3"x5")
- n.d. Sapling. (3"x5")
- 4. *Metasequoia*, foliage, 1953.**
- 08/04/1953 Branch taken on photograph grid. (5"x7", CW 412)
- n.d. #3, foliage. (5"x7")
- n.d. #4, foliage. (3"x5")
- n.d. #6, foliage. (3"x5")
- n.d. #7, foliage. (8"x10")
- n.d. #8, foliage. (8"x10")
- n.d. #9, underside of foliage. (5"x8")
- n.d. #10, foliage. (8"x10")
- n.d. #11, foliage and cones. (8"x10")
- n.d. #6, foliage and cones. (8"x10")
- n.d. #7, branch with cones. (8"x10")
- n.d. A, foliage. (3"x5")
- n.d. B, foliage. (3"x5")
- n.d. C, foliage. (3"x5")
- n.d. D, foliage. (3"x5")
- n.d. E, foliage. (3"x5")
- n.d. F, foliage. (3"x5")
- n.d. G, foliage. (3"x5")
- 5. *Metasequoia*, trunks, 1979-1994.**
- 04/1979 Trunk, photographer: G. Koller. (3"x5")
- 1981 Heavily fluted trunk of a specimen on the Biltmore Estate, Ashville, NC. (8"x10")
- 10/08/1981 View of trunk of tree on the property of George A. Hunt, Syracuse, NY, "outer bark of lower trunk stripped off by squirrels – shredded for use in nests. Bark is wet and shows streaks of lighter tone where bark has been removed." Photographer: George A. Hunt. (3"x3" Polaroid) (See Series 2, *Metasequoia* Survey, 1981, Returned Questionnaires Nos. 19-100.)
- 12/1981 "Mr. James Clark of Princeton stands by trunk of *Metasequoia glyptostroboides* which he grew from seed in 1948", cover photograph for *Arnoldia* 42(3), 3 photographs. (8"x10")

- 07/1994 Specimen from Arnold Arboretum, photographer unknown. (8"x10")
n.d. Series of four photographs of parts of the tree: 1a - Lower trunk and branches. (5"x7")
n.d. Series of four photographs of parts of the tree: 1b - Mid-trunk and branches. (5"x7")
n.d. Series of four photographs of parts of the tree: 1c - Upper-trunk and branches. (5"x7")
n.d. Series of four photographs of parts of the tree: 1c - Top of tree. (5"x7")
n.d. #2, trunk with foliage. (5"x7")
n.d. #3, trunk in winter. (5"x7")
n.d. #4, trunk with no foliage. (original and photocopy 5"x7")
n.d. #5, photograph of specimen's snow spotted trunk on A.A. grounds, photographer unknown. (color, 3"x5")
n.d. #6, mid-trunk with foliage. (8"x10")
n.d. #7, lower trunk with foliage. (2 copies, 8"x10")
n.d. View of trunk and lower branches. (3"x5")
n.d. Close up of bark. (3"x5")
n.d. View of trunk. (3"x5")

6. *Metasequoia*, views of various tree, 1962-1992.

- 5/20/1962 Image of sapling (from A.A.?), photographer: Heman Howard (5"x7", L-37-37)
5/20/1962 Image of whole tree (from A.A.?), photographer: H. H., 2 copies. (5"x7", L-37-8)
5/23/1963 Tree at the home of Dr. J.J. Willaman, Plymouth Meeting, PA, height 43', photographer: John M. Fogg, Jr. (see Series 2, *Metasequoia* Survey, 1968, Responses A-F for further information.)
9/4/1963 Image of whole tree (same tree as 1?), photographer: Heman Howard (5"x7", L-47-18)
10/5/1981 View of a tree on the property of Carlton Goff, Barrington, RI, "spectacular fern-like background for garden," photographer: Carlton Goff. (4"x5") (See Series 2, *Metasequoia* Survey, 1981, Responses 158-185, for further information.)
10/5/1981 View of a tree on the property of Carlton Goff, Barrington, RI, "75', 9" high, beautiful pyramid," photographer: Carlton Goff. (4"x5") (See Series 2, *Metasequoia* Survey, 1981, Responses 158-185, for further information.)
10/6/1981 View of a tree on the property of George A. Hunt, Syracuse, NY, photographer: George A. Hunt. (3"x3" Polaroid) (See Series 2, *Metasequoia* Survey, 1981, Returned Questionnaires Nos. 19-100.)
1990 Image of tree on the Hosmer property, Nashuan Island, MA. Photographer: J. Olmsted. (4"x6")
11/23/1992 #9, autumn view of the 40' specimen in J. Kuser's front yard in Princeton, NJ. Photographer: J. Kuser. (3"x5")
n.d. #1, contact sheet, 20 various images of *Metasequoia*. (8"x10")
n.d. #3, A.A., view of whole tree. (8"x10")
n.d. #4, A.A., view of whole tree. (8"x10")
n.d. #8, view of whole tree. (8"x10")
n.d. #9, A.A., view of whole tree. (2 copies, 8"x10")
n.d. View of whole tree, trunk shows for nearly the entire length. (3"x5")
n.d. View of whole tree, dense foliage. (3"x5")
n.d. View of whole tree, upper branches have more sparse foliage. (3"x5")

7. *Metasequoia* specimen sheets. Collected by Hsueh and Hwa, 1946 and 1947.

- n.d. Contact sheet and negatives showing 15 images of *Metasequoia glyptostroboides* herbarium type specimen sheets from 1946. Photographer: Dave Boufford. (8"x10")
- n.d. *Metasequoia glyptostroboides* specimen sheet, collected by Hsueh, 2/20/1946 in Modaoqi. Photographer: Dave Boufford.
- n.d. Herbarium specimen label: "*Metasequoia glyptostroboides*, Hu and Cheng, C.H. Hsueh, Locality: Wan-hsien; Date: 2/20/1946; Field no. 5, from the Herbarium of Forestry Department of Agricultural College of the National Central University, Nanking." (8"x10") Photographer: Dave Boufford.
- n.d. *Metasequoia glyptostroboides* type specimen sheet collected by C.T. Hwa in September-October 1947. Photographer: Dave Boufford.

8. Reproductions of the illustrations from: Bartholomew, B., D.E. Boufford, and S.A. Spongberg. 1983. *Metasequoia glyptostroboides*-- its present status in central China. *Journal of the Arnold Arboretum*. 64:105-128. Figures 7-11 and map 2.

9. Miscellaneous *Metasequoia* photographs, 1962-1968.

- 8/21/1962 *Metasequoia* hedge, Jackman's Nursery in Woking, England, photographer: D. Wyman. (5"x7", R-3422)
- 06/1968 4 potted plants, "Grown for, and donated to television Channel 2 auction." Photographer: H. Howard (R-4669, 5"x7")
- n.d. Timber Development Association at the Royal Show, Shrewsbury. "Part of the T.D.A. Stand showing the famous *Metasequoia* (Dawn Redwood) Tree discovered in China, with a growing plant 2' 3" high and descriptive panel; decorative veneers, foreign hardwoods, samples of home-grown woods and new uses for timber."
- n.d. #10 Forcing *Metasequoia glyptostroboides* in the Arnold Arboretum greenhouse. (mounted photograph, 8"x10")
- n.d. 4 images of the Arnold Arboretum landscape: 1. *Metasequoia glyptostroboides*, 2. Magnolia bud, 3. Peter's Hill, 4. Trunk (Elm) with suckers growing from the base. (photographs and negatives in a contemporary photo envelope, 2.5"x4")

10. Photographs of trees that might not be *Metasequoia*, 1950-1964.

- 09/18/1950 Seedling. There is a piece of paper included with it that says, "11/19/63, I think this is *Pseudolarix*." (5"x7", R-642)
- 10/01/1964 Tree at Cutting Arboretum, Long Island, NY. Photographer: D. Wyman. (5"x7", R-4187)
- n.d. #1, image of whole tree. (3"x5")
- n.d. #2, image of whole tree. (3"x5")
- n.d. #3, image of whole tree. (3"x5")
- n.d. #4, close up of #3. (3"x5")
- n.d. #5, branch. (3"x5")
- n.d. #6, close up of #5. (3"x5")

11. *Sequoiadendron giganteum*, foliage.

- n.d. #5, foliage. (3"x5")

n.d.	A, foliage. (3"x5")
n.d.	B, foliage. (3"x5")
n.d.	C, foliage. (3"x5")
n.d.	D, foliage. (3"x5")

Series 4 - Journal and Newspaper Articles, 1944-1999. Monographs, 1990-

This series contains scholarly articles and stories from the popular press concerning *Metasequoia glyptostroboides*. The series is divided into two subseries. Subseries A contains scholarly articles from 1941-1999. Subseries B consists of articles from the popular press from 1948-1998. Folders are arranged chronologically. In this series the folders are numbered consecutively by subseries. There is an alphabetical listing of all the articles and news clippings at the beginning of Subseries A.

Subseries A - Journal Articles Folder

1. Alphabetical listing of articles and news clippings, 1941-1999.
2. Steven A. Spongberg's article folder, the contents of this folder have been dispersed to the specific relevant folders as of 4/2002.
3. Miki, Shigeru. 1941. On the change of flora in Eastern Asia since Tertiary Period (I). Clay or lignite beds flora in Japan with special reference to the *Pinus triflora* beds in Central Hondo. *Japanese Journal of Botany*, 11(3): 237-303.
4. Li, Lin-Hui. 1944. Botanical exploration in China during the last twenty-five years. *Proceedings of the Linnean Society of London*. 156: 25-44.
5. Hu, Hsen Hsu. 1946. Notes on a Palaeogene Species of *Metasequoia* in China. *Bulletin of the Geographical Society of China*, 26: 105-107.
6. Hu, H.H. 1947. The Sequoia of western United State of America and the Shui-Sah (*Metasequoia viva*) of Wan H-sien (Szechuan, China). *Observation*. 2(14): 11?
7. Merrill, E.D. 1948. A tree from the age of reptiles. *Horticulture*. 26: 192.
8. Merrill, E.D. 1948. A living *Metasequoia* in China. *Science*. 107: 140.
9. Merrill, E.D. 1948. *Metasequoia*, a living relic of a fossil genus. *The Journal of the Royal Horticultural Society*, 23(7): 211-216.

Box 4

10. Merrill, E.D. 1948. *Metasequoia*, another 'living fossil'. *Arnoldia*. 8(1): 1-8. (4 copies)
11. Andrews, H.N. 1948. *Metasequoia* and the living fossils. *Missouri Botanical Garden Bulletin*. 36(5): 79-85.
12. Hu, H.H. and W.C. Cheng. 1948. On the new family *Metasequoiaceae* and on *Metasequoia glyptostroboides*, a living species of the genus *Metasequoia* found in Szechuan and Hupeh. *Bulletin Fan Institute*, II (1): 153-161.
13. Stebbins, G.L. 1948. The chromosomes and relationships of *Metasequoia* and *Sequoia*. *Science*. 108: 95-98.
14. Hu, H.H. 1948. How *Metasequoia*, the 'living fossil' was discovered in China. *Journal of the New York Botanical Garden*. 49(585): 201-207.
15. Ingram, Collingwood. 1948. Remarkable habit of growth in the seedling *Metasequoia*. *The Gardener's Chronicle*, 3rd Series, 124 (3231): 198.
16. Skinner, H.T. 1949. Growth habit of *Metasequoia*. *The Gardener's Chronicle*. 3rd Series, 125(3239): 44.
17. Davy, E.W. 1949. Bud formation in *Metasequoia*. *The Gardener's Chronicle*. 3rd Series, 125(3239): 44.

18. Ingram, Collingwood. 1949. Growth habit of *Metasequoia*. *The Gardener's Chronicle*. 3rd Series, 125(3243): 82.
19. Chaney, Ralph W. 1950. A revision of fossil sequoia and taxodium in western North America based on the recent discovery of *Metasequoia*. *Transactions of the American Philosophical Society*. 40(3): 171-262.
20. Chu, Kwei-Ling and William S. Cooper. 1950. An ecological reconnaissance in the native home of *Metasequoia glyptostroboides*. *Ecology*. 31(2): 260-278. (2 copies)
21. Wyman, Donald. 1951. *Metasequoia* brought up to date. *Arnoldia*. 11(3): 25-28. (4 copies)
22. Just, Theodor. 1951. Review of: A revision of fossil *Sequoia* and *Taxodium* in western North America based on the recent discovery of *Metasequoia*. *Transactions of the American Philosophical Society*. 40(3): 171-262. *Journal of Paleontology*. 25(4).
23. Florin, Rudolph. 1952. On *Metasequoia*, living and fossil. *Botaniska Notiser*. 1: 1-29.
24. Gressitt, J. Linsley. 1953. The California Academy-Lingnan dawn-redwood expedition. *Proceedings of the California Academy of Sciences*. 4th Series, 28(2): 25-58.
25. Howard, Richard A. 1956. Elmer Drew Merrill, 1876-1956. *Journal of the Arnold Arboretum*. 27(3): 198-216.
26. De Vos, Francis. 1963. The gardeners' pocketbook: *Metasequoia glyptostroboides* 'National'. *The American Horticultural Magazine*. 42(3): 174-177.
27. Mitchell, A.L. 1964. The growth of *Metasequoia*. *Journal of the Royal Horticultural Society*. 89(11): 468-469.
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Box 5

Series 4

Subseries B - Newspaper Clippings and Popular Articles

Folder

1. "Dinosaur-Age tree seeds from China to grow here." *Pittsburgh Press*, 1/29/1948.
2. "More on Redwoods: ancestors of California trees found in remote part of China," *San Francisco Chronicle*, 3/25/1948.
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3. "The Dawn-Redwoods, after 20,000 miles, 20,000,000 years," *San Francisco Chronicle*, 4/5/1948.
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31. Gittlen, William. "Reunion with a Chinese Redwood," *California Wild*, Fall 1998, pp.28-32. (2 copies).
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33. Copies of clippings discussing the discovery of *Metasequoia*. From the scrapbooks, primarily 1948.
34. Payton, Greg, "Conserving the Dawn Redwood: The Ex Situ Collection at the Dawes Arboretum," *Arnoldia*, 68:1, 2010, pp. 26-33.

Box 5

Series 4

Subseries C – Monographs, 1990-

Folder

1. Silverman, Milton. *Search for the Dawn Redwoods*. [California]: Author, 1990. Gift of Dr. Allen M. Brackley, June 22, 2020. [Catalog record](#).
 - Donation letter from Dr. Brackley to Lisa Pearson, Head of the Library and Archives, Arnold Arboretum. June 22, 2020.
 - o Includes donor's own history of *Metasequoia* seed distribution and opinion regarding controversy between Merrill and Chaney.
 - Obituary for Milton Silverman, SFGate. January 21, 1997. Computer printout, timestamped August 16, 2012.
 - "Dawn Redwood broadcast, Dr. Ralph Chaney and Dr. Milton Silverman. KNBC." Newspaper clipping, [*San Francisco Chronicle*??], April 6, 1948.