Polyhistorian Arthur Thesleff, the visionary mycologist

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Arthur Thesleff became acquainted with various fields in his research. He is best known worldwide as an expert on Romani people's culture, being the president of the International Gypsy Lore Society 1911–1913. He is also known for setting up a Finnish colony (Colonia Finlandesa) in Misiones, Argentina. In particular, maté (*Ilex paraguariensis*) was cultivated. At most 112 immigrants lived in the area, but the soil was not suitable for agriculture and the project failed.

A less well-known fact is that Thesleff was a skilled mycologist. He identified 770 species of fungi from the Vyborg area (Russia today) in southeastern Finland. At that time, 1 100 species of fungi were known from Finland. Most notably, in his main work in 1920, he studied the fungal species at 24 different habitat types at different times of the year. He also studied the decomposers of trees and fungi separately. In addition, he considered, among other things, the colours of fungi, the spread of fungi and the effect of climate on fungal growth. Because the study was published in Swedish, it did not become widely known.

Introduction

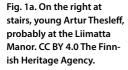
Arthur Thesleff (Fig. 1a,b) was born in Vyborg at Liimatta Manor (Lazarevka) on 5 March 1871. He was the youngest child and had seven sisters. His father was Colonel Fredrik Wilhelm Thesleff, who married his cousin Olga Maria Thesleff. The family was of German origin. The Thesleffs were of Finnish nobility, and as such, they had the right to participate in the Parliament.

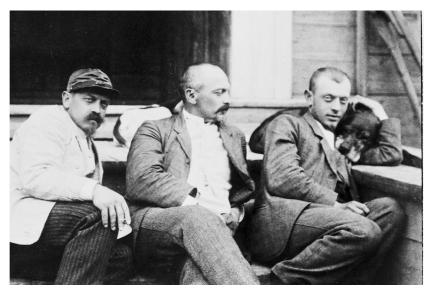
Arthur Theleff graduated from Nya Svenska Lärovärk in 1890 and began to study botany and geography in the Imperial Alexander University. He may have become a Master of Philosophy in 1898 (though this is disputed). He married Bertha Oliwa Järnefelt (Fig. 2) in 1902, and died in Stockholm on 17 December1920.

There are different views on Thesleff's degrees. According to the university records (ylioppilasmatrikkeli.helsinki.fi/1853-1899/), he may have graduated with a Master of Philosophy, but according to

Laaksonen (1999), he did not. The latter is probably more correct; at least Thesleff did not introduce himself as a Master of Philosophy.

Liimatta Manor (Fig. 3, www.sotahistoriallisetkohteet.fi/app/sights/view/-/id/38) was built by Thesleff's mother's father, the infantry general Alexander Amatus Thesleff (1778-1847). He served as the Deputy Governor-General of the Grand Duchy of Finland from 1833 to 1847. At the same time, he also served as Chairman of the Finnish Senate, although he did not speak Finnish and Swedish. A. A. Thesleff was a friend of Tsar Alexander I and Vice Chancellor of the Imperial Alexander University in Helsinki from 1828 to 1830 and in 1832. His position as Chairman of the Board of Censorship did not make him popular, but he promoted the establishment the post of Professor of Finnish language at the Imperial Alexander University. It was founded in 1850. The first holder was Matthias Alexander Castrén, the second from 1854 Elias Lönnrot.





Liimatta Manor was one of the oldest manor houses in the Vyborg region. It was located about 5 km southeast of the city centre of Vyborg, at the bottom of a narrow bay east of Käremäki Bay. The main building of the manor, completed in 1824, was designed by Carl Ludvig Engel. The art patron Juho Lallukka and his wife Maria bought the manor from Thesleff's in 1912. The building was destroyed in World War II, leaving only the stone footing. The surroundings of the manor were an important mushroom-gathering area for Thesleff.

The family had some individual characteristics, the most important of which was marriages between cousins. Of A. A. Thesleff's five daughters, four married their cousins, like Arthur Thesleff's parents. This developed into an inwardlooking sense of family customs, and the concentration of wealth within the family (Laaksonen 1999). On the outskirts of the family's Juustila manor, furnished apartments were offered for rent to Baltic or Russian citizens (Wiborgs Nyheter 254, 5 November 1919), Finns were obviously not wanted. Around Vyborg, there were 90 manors largely owned by non-Finns. In terms of wealth, Arthur Thesleff was an exception: he collected everything possible except that (Kotiranta 1981). On the other hand, without a wealthy background Thesleff would not have been able to pursue his scientific interests. Renting houses was one mean to gathering of wealth.



Fig. 1b. Older Arthur Thesleff (Lagerborg 1921).

Extraordinary amanuensis at the University of Helsinki Library

The post of extraordinary amanuensis at the University of Helsinki Library was the only permanent one held by Arthur Thesleff. During his office there from 1893 to 1902 he found several forgotten botanical manuscripts in the library's archives and informed of three written before the Great Fire of Turku (Åbo) in 1827 (Thesleff 1895c). One was Johan Magnus af Tengström's list of plants in the Åbo Academy collections from the time before the Great Fire. It contained



Fig. 2. Bertha Järnefelt (on the left) on the way to Argentina. CC BY 4.0 Europeana collections.



Fig. 3. Drawing of Liimatta manor in 1834. Artist Carl Johan Mauritz Nymander CC BY 4.0 The Finnish Heritage Agency. Painter Carl Johan Mauritz Nymander 1834.

the names of more than 7 000 herbarium specimens, all consumed in the fire. He also found lectures held by Professors Johan Browallius (1707–1755) and Carl von Linné (1707–1778).

Plant geography

To his later career, it was significant that Thesleff also studied geography. He was a member of the Finnish Geographical Association founded in 1888 and gave a presentation on Madagascar to the Association. It mentions some native plants such as coastal Casuarina, Pandanus, and the palms *Areca madagascariensis*, *Drypsis* = *Dypsis* and Raphia ruffia = farinifera. There was a common genus with the Cape region, Philippia [today Erica]. In the forests of Madagascar grew such large trees as Bignonia acuminata = Fridericia dichotoma and Urtica furialis = Obetia radula. Ravenala madagascariensis was indigenous in the island (Thesleff 1892-93a). In 1887, geologist Georg M. Dawson studied the Yukon area, where he observed trees like Abies subalpina = lasiocarpa, Alnus rubra, Amelanchier alnifolia, Betula glandulosa, Elaeagnus = Shepherdia argentea, Larix americana = laricina, L. lyallii, Picea alba = glauca, P. nigra = mariana and Pi*nus murrayana* = *contorta* ssp. *latifolia* (Thesleff

1892–93b). One can guess already from the items that trees, especially the large trees, were of interest (Thesleff 1893b). An omnivorous mycologist must be familiar with woody and other plants.

Societas pro Fauna et Flora Fennica

Thesleff was elected a member of the Fauna et Flora Society in 1891. Fredrik Elfving (1854– 1942), a Professor of Botany at the time, had studied fungal physiology. With the support of the Society, Thesleff studied South Karelia in the summer of 1892, like Elfving had done 20 years earlier. The result was a detailed distribution map (Fig. 4) of *Quercus robur*, with their dimensions, as well as general information on oaks throughout the country (Thesleff 1895a). The northernmost occurrence was in Kalvola (61°05'30"N, 24°08′05″E). The northern border followed the accumulation of heat sum of +10°C. The oak was designated the property of the crown during the Swedish rule and as a consequence the common people did not favour it and the protection turned

against itself. The article mentions oak-themed place names and the oak from the Kalevala, the national epic of Finland.

To the oak article (Thesleff 1895a) was appended with the history of the establishment of Raivola's *Larix archangelica* plantations. Thesleff translated Fockel's manuscript about the early stages of the plantations. Fockel had established Raivola on the wish of the Empress Anna Ivanova. The first plantings were made in 1738. This article of Raivola was also published in *Finska Forstföreningens Meddelanden* [Finnish Forestry Association Announcements] (Thesleff 1895b).

Thesleff was also interested in people's relationship with forests: "Finns are a people who rape and destroy the forest, even more destructive in our time than before, because of the economic benefits generated by the forest. Our people have always valued forest products at an extremely cheap value, which is most evident in many places from the general burning of birch".

Although forests were extensively cut down, Finns had special trees that were worshipped or

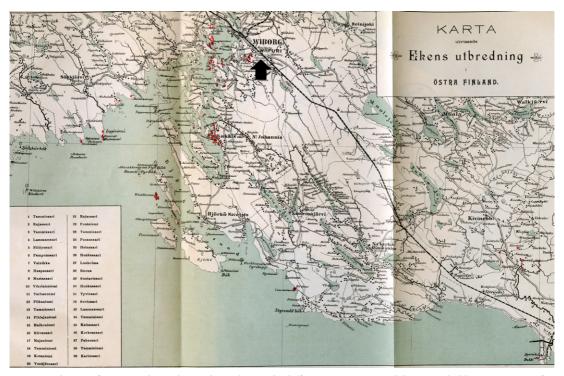


Fig. 4. Distribution of Quercus robur in the Karelian Isthmus (Thesleff 1895a). Laetiporus sulphureus probably grew on many if them (Thesleff 1920). The black arrow points to the Liimatta manor.

respected because of their size or age. Food sacrifices were brought to some trees. Sometimes a tree was planted when a child was born into the family and was cherished for generations. Thesleff hoped this practice would become more widespread, and that people would plant especially hardwoods such as oak, ash, elm, lime and maple, which could then spread into the nearby natural environment and gradually turn into forests (Thesleff 1898a,b, 1899).

Romani scholar

From 1894, Thesleff focused on the study of Romani culture and soon he was given the nickname "Gypsy Baron" (Kotiranta 1981). During his mushroom-collecting trips in Liimatta, he often met Romani people and as a result started drawing up a Romani lexicon. At first, the Romani deliberately supplied wrong meanings to words, though Thesleff got to hear about this. Despite this, he began to become thoroughly acquainted with the customs and culture of the Romani. He identified himself with the ever-moving Romani and began living with them, including travelling abroad. In 1896, he travelled with the Romani in Austria, Italy, Greece, Egypt, Tunisia, Algeria, Spain, France, England, the Netherlands and finally Sweden, and in the following year in Russia in Samara, the Urals, Orenburg, Moscow, the Caucasus, Batumi, Crimea, Odessa, Poland, and the Baltics (Laaksonen 1999). The "blond bandit", as he came to be called by the Romani, extended his most distant journey all the way to Nepal, where he bought his first suit, as it was custom of the Thesleffs to wear used garments. Unfortunately, the suit was made of paper and dissolved in the rain (Kotiranta 1981). In 1897, the newspaper Nya Pressen published an eight-part series of articles by Thesleff on "Gypsy life in Finland".

Thesleff's most significant work on the Romani was in *Wörterbuch des Dialekts der finnichen Zigeuner*, which was published in 1901. During his travels, he also became acquainted with dialects. Based on the dialect words, he concluded that the Romani had moved to Finland from Sweden. This was evidenced by numerous Swedish loanwords in Romani names. This was not ac-

cepted, however, as the migration had most probably taken place also from Russia (Laaksonen 1999). Thesleff was invited to become the secretary of the "Gypsy Committee" (Åbo Underrättelser 31, 2 February 1900). When the Committee's report was published in 1908, he was given the nickname "Gypsy Baron". Thesleff continued travelling in the 20th century, but not with Romani anymore. Thesleff went to Argentina, as the Director of the Finnish colony Colonia Finlandesa (1906–1909) in northeastern Argentina.

In the 1910 Atlas of Finland, he wrote a presentation on the distribution of Finnish Romani people. On the merits of this he was invited to become a member of the Gypsy Lore Society in London, and was elected its President from 1911 to 1913 (Borgåbladet 82, 22 August 1911, Nya Pressen 190, 21 August 1911). For this purpose, he travelled to London in 1910 (Uusi Aura 53 3 daily edition, 5 May 1910), where he arranged and presented his Romani material. Founded in 1888, the organization still operates, and is based toady in the United States. Thesleff was an avid photographer and left behind a large number of photographs of the Romani. He donated his Romani library to the Royal Library in Stockholm (Hufvudstadsbladet 17, 18 January 1914). The magazine Finsk Tidskrift posthumously published Thesleff's article "Gypsy music" (Wiborgs Nyheter 146, 1 July 1922). Clearly, Thesleff profoundly entered into Romani culture.

Colonia Finlandesa – Finnish Settlement in Misiones

When the Russian period of oppression began in Finland, Thesleff travelled to Argentina in the autumn of 1904 to explore the territory that the Argentine state had assigned to the future colony. He aroused a desire to establish an "ideal society" for people who were in trouble on account of political persecution. He returned to Finland in 1905, and in 1906, a leaflet was published describing the conditions of the future settlement. A true and realistic picture of the area, its nature and cultivation possibilities were described.

Thesleff had some prior knowledge of the conditions in Argentina and the Misisones when the Donner half brothers had travelled the country in 1888, and had published an extensive travelogue describing the natural environment, the inhabitants, and the standard of living in the country (Donner & Donner 1891). In addition, Gustaf Enström (1893) had given a presentation on Argentina at the Geographical Association at the same time as Thesleff had given his own.

Thesleff led a migrant group of more than a hundred people to South America on two ships. In 1907 there were 112 settlers, some of them living in Colonia Bonplandia and Bonpoland Norte (Fig. 5). The migrants founded *Colonia Finlandesa* in Misiones, Argentina. The name Misiones derives from the conversion work done by the Spanish Jesuits from 1610 to 1767 (Lunnasvaara 1932) among the native Guarani people (meaning "fighters").

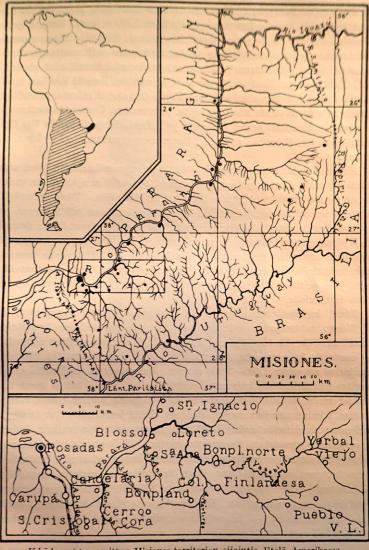
The plant name guarana (*Paullinia cupana*) comes from the Guaraní word guara-ná, meaning "fruit like the eyes of people" or "the eyes of the gods". It is a climbing plant in the family Sapindaceae, native to the Amazon basin, and is best known for the seeds from its fruit, which are about the size of a coffee bean. The seed is an effective stimulant: it contains about twice the concentration of caffeine found in coffee seeds. The additive has gained notoriety for being used in energy drinks. However, it was not mentioned as being amongst cultivated crops (Table 1).

different crops (Table 1) (Lunnasvaara 1932, Thesleff 1906a,b). The surrounding dense old forest, the selva, was cleared for arable land by using slash and burn culture. Lunnasvaara had taken part in a 1928 expedition to study natural conditions in Argentina, twenty years after

Thesleff's departure.

The Finnish Settlers cultivated 69

Yerba maté was cultivated under the guidance of Nielsen, a Danish gardener (Åbo Underrättelser 6, 7 January 1907). The first plantations were established in 1902–1903, one in a German colony in Paraguay, another on a San Ignacio farm in Misiones, where an area of 100 acres is planted



Yläkartta osoittaa Misiones-territorion sijaintia Etelä Amerikassa. Keskikartta Misiones-territorio. Alakartta on suurennos keskikartan suunnikkaanmuotoisesta alueesta.

Fig. 5. Location of Colonia Finlandesa in Misiones, Argentina (Lunnasvaara 1932).

with maté. The latter locality has also succeeded in growing seedlings from root suckers and cuttings. "However, maté is a sensitive plant, so cultivating it requires quite diligent care" (Thesleff 1906a). Cassava was another economically important crop. "This root is of great value to migrants in warm zones. It is easy to cultivate, it does not need storage facilities. It is harvested in

Table 1. Crops cultivated in *Colonesa Finlandesa* in 1928 (Lunnasvaara 1932). Those also mentioned by Thesleff (1906b) are in green and those only by him in red. The local names of all the crops that were not mentioned by Lunnasvaara or Thesleff have been translated into Spanish, with the Finnish name used by Thesleff in brackets.

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mani (maapähkinä), Arachis hypogaea
                                            alfalfa, Medicago sativa
                                                                                         aceite de castor (risiini), Ricinus
avena, Avena sativa
                                            paraiso, Melia azedarach
                                                                                             communis
mostaza (sinappi), Brassica nigra, Sinapis
                                            tobacco, Nicotiana
                                                                                         caña de azúcar (sokeriruoko).
                                                 "Batavia'
                                                                                             Saccharum officinale
grama gras (grammaheinä), Bouteloua
                                                 "Canova"
                                                                                         centeno. Secale cereale
                                                 "Chilenu amarillo"
    [curtipendula]
                                                                                         sésamo (seesami), Sesamum indicum
                                                 "Chilenu chicu'
    "Grama polonesa"
                                                                                         corcum, Sorghum halepense
    "Grama Jesuitica"
                                                 "Chilenu grande, syn. Iguazú"
                                                                                             "Corcum du azúcar"
    "Grama San Paolo"
                                                 "Chilenu"
                                                                                         tomilla (timjami), Thymus vulgaris
limón, Citrus limon
                                                 "Maryland"
                                                                                         trigo, Triticum aestivum
mandarín, Citrus reticulata
                                                                                         viña (viiniköynnös), Vitis vinifera
                                                 "Nearo"
                                                 "Paraguay"
naranja (appelsiini), Citrus sinensis
                                                                                             "Blanco"
                                            banano, Musa Paradisiaca-Group
arbusto de cafe (kahvipensas), Coffea
                                                                                             "Vino Tinto" (ranskalainen)
                                                 "Enano" (kääpiö), 'Dwarf
    arabica
                                                                                         maiz (maissi), Zea mays
membrillo, Cydonia oblonga
                                                       Cavendish'?
                                                                                             "Carapé maiz"
algodón (pumpuli), Gossypium hirsutum
                                                 "Gigante" (jättiläinen)
                                                                                             "Cateta maiz'
cebada, Hordeum vulgare
                                                 "Negro" (musta)
                                                                                             "Glass maiz"
                                            mejorana, Origanum majorana
                                                                                             "Horse teeth corn"
yerba maté, llex paraguariensis
                                            arroz (riisi), Oryza sativa
batata (bataatti), Ipomoea batatas
                                                                                             "Tipoca" [perhaps Tapioca corn]
manzano, Malus domestica
                                            porotos, Phaseolus vulgaris
                                                                                             "White maiz"
                                                 "Amarillo" (keltapapu)
mandioca, Manihot esculenta
                                                                                             "Yellow seeded maiz"
    "Batata rosada"
                                                 "Negro" (mustapapu)
                                                                                        jengibre (inkivääri), Zingiber officinale
    "Carape"
                                                 "Troperos"
    "Mandioca amarillo"
                                            fecha (taatelipalmu), Phoenix dactylifera
    "Mandioca blanco"
                                            anís, Pimpinella anisum
                                            arveja, Pisum sativum
    "Mandioca manteca"
    "Mandioca fariña"
                                            ciruelos, Prunus domestica
    "Mandioca negro"
                                            durazano, Prunus persica
    "Mandioca Paraguay"
                                            granados, Punica granatum
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the first year and is a nutritious food. The harvest is 1 500–5 000 kg per hectare" (Thesleff 1906b).

The Finnish press followed with interest the events of the Finnish colony in 1906–1910. *Pohjois-Suomi* published four articles by Thesleff entitled "Notes from Misiones in the Argentine Republic". The magazine, "Voice of the free people of Aunus and Viena Karelia", *Vapaa Karjala* 2, 11 January 1923) recalled the colony with a slight longing. However, not everything went according to plan. The land allocated for cultivation was poor, and the project largely failed (*Helsingin Sanomat*, 2 September 2017), and Thesleff returned in 1909 to Stockholm (Brunnsgatan 5), where he settled. He lived in Sweden the rest of his years. However, the King of Sweden did not grant him citizenship (*Dagens Press* 113, 2 May 1915).

Thesleff's language studies continued in Stockholm. *Nya Pressen* (277, 28 November 1912) wrote about Thesleff's dictionary of underworld slang "*Stockholms förbrytarspråk och lägre slang*" 1910–1912. In Finland, it was introduced under the name "Thieves' dictionary" (*Turun Sanomat* 2259, 7 July 1912). About 200 of the words were adopted from Romani.

Mycologist

Thesleff and the world famous Petter Adolf Karsten (1834–1917) in Mustila agricultural school were the only ones familiar with the fungal species of their time in Finland. Karsten had taught Thesleff about mushrooms (Thesleff 1920, *Wiborgs Nyheter* 5, 8 August 1921). To begin with, in 1893 Thesleff wrote eight brief notes about new or otherwise interesting mushrooms to the country.

A new find was *Bulgaria* = *Sarcosoma globosum*, which in general had previously been found in Sweden in the 1820s (Thesleff 1893d). Thesleff (1893e) donated polypores to the Botanical Museum, University of Helsinki, which had been collected from the Juustila manor of the family, and a malformed specimen of *Laccaria laccata*. There were also specimens of *Helvella* = *Gyromitra ambigua*, which was only known in Finland (Thesleff 1893f) at that time, and *Armillaria imperialis* = *Catathelasma imperriale* from Liimatta (Thesleff 1893g), the growth of which he had followed (Thesleff 1892). After only three days, the cap of the mushroom had grown to a width of

31 cm and the stem was 24 cm long. Note about the fungal species of the Raivola larch plantations included symbiotic fungi with larch, Boletus = Suillus cavipes and Boletus elegans = Suillus grevillei, and parasitic Polystichus = Phaeolus schweinitzii, new fungi to Finland such as Hydnotrya carnea (Thesleff 1893i), also considered synonymous with H. tulasnei, and three earth star species (Geaster). Thesleff (1895d) made a communication about the common stinkhorn (Phallus impudicus), found by Professor P. A. Gadd in in 1755 in Rauma, in coastal southern Finland. A new fungus to Finland, Hysterangium, was collected at Liimatta, though in the absence of spores its species could not be determined (Thesleff 1900a). The determination of Hydnotrya carnea was specified by new collections (Thesleff 1900b).

In his article "Svampjätter" from 1893 Thesleff (1893c) wrote about the huge *Armillaria = Catathelasma imperialis* in Liimatta (1350 g), of *Macrolepiota procera* in Helsinki close to today's Parliament (**cap diameter, d,** 30 cm), *Polyporellus = Polyporus squamosus* at Vyborg

(d 25 m), Polystichus = Phaeolus schweinitzii) at Raivola (d 37 cm), Piptoporus betulinus in southern Finland (d 30 cm), Polyporus = Laetiporus sulphureus in Johannes, Lenzites = Daedalea quercina in Johannes (d 30 cm), Trametes = Fomitopsis pinicola) in Liimatta (broadest edge 39 cm), Fomes fomentarius at Liimatta (d 27 cm), Fomes = Phellinus igniarius at Liimatta (d 30 cm), Fomes = Ganoderma applanatum in Helsinki (d 53 cm, circle 137 cm) and Clavaria flava = Ramaria eosanguinea in Karjaa (2444 g).

An early Finnish mushroom guide

Thesleff wrote in the newspaper *Kansan Lehti* 1, 1 April 1893: "Special mention should be made of the fact that the coming Pentecostal issue [*Kansan Lehti* 2, 1 May 1893] will be distributed free of charge to all subscribers to the magazine. It contains the images of the 28 most common edible fungi in completely natural colour, as if they had just been taken from the ground" (Table 2). The fungal map (Fig. 6a,b) is provided by fun-





Fig. 6a,b. Picture board made of Thesleff's drawings Finland's most important edible mushrooms – Finlands förnämsta ätliga svampar (Thesleff 1893k).

			1		1	
No.	Finnish name	Current one	Swedish name	Scientific name	Current one	
1	Herkkusieni	nurmiherkkusieni	Champignon	Psalliota campestris	Agaricus campestris	
2	Karwalaukku	karvarousku	Skäggig riska	Lactarius torminosus	Lactarius torminosus	
3, 4	Leppäsieni	männynleppärousku	Riska	Lactarius deliciosus	Lactarius deliciosus	
5, 6	Sikorousku	mustarousku	Svart riska	Lactarius necator	Lactarius turpis	
7	Walkorousku	koivurousku	Hwit riska	Lactarius resimus	Lactarius resimus	
	Walkea rousku	pippurirousku	Hwit riska	Lactarius piperatus	Lactarius piperatus	
	Keltarousku	isovoirousku	Gula riskan	Lactarius scrobiculatus	Lactarius scrobiculatus	
8	Haapasieni	haaparousku	Grå riska	Lactarius flexuosus	Lactarius trivialis	
9	Kangasieni	kangasrousku	Brun riska	Lactarius rufus	Lactarius rufus	
10	Pilperoinen	mantelihapero	Kremla	Russula integra	Russula integra	
11, 12	Ruskuaissieni	keltavahvero	Kantarell	Cantharellus cibarius	Cantharellus cibarius	
13	Mesisieni	nuijamesisieni	jamesisieni Honungssvamp <i>Armillaria mellea</i>		Armillaria flava	
	Waihtelewa lehtisieni	koivunkantosieni	Tofsskivlingen	Pholiota mutabilis	Kuehneromyces mutabilis	
14	Laukkasieni	nurminahikas	Brosksvamp	Marasmius oreades	Marasmius oreades	
15, 16	Hepotatti	koivunherkkutatti	Stensvamp	Boletus edulis	Marasmius oreades	
17	Lehmäntatti	lehmäntatti	Kosvamp	Boletus scaber	Leccinium scabrum	
18, 19	Oravikko	koivunpunikkitatti	Björksvamp	Boletus versipellis	Leccinum versipelle	
20, 21	Woitatti	voitatti	Smörsvamp	Boletus luteus	Suillus luteus	
22, 23	Keltatatti	nummitatti	Sandsvamp	Boletus bovinus	Suillus bovinus	
24	Kangastatti	kangastatti	Tallsvamp	Boletus variegatus	Suillus variagatus	
25	Lampaantatti	lampaankääpä	Fårsticka	Polyporus ovinus	Albatrellus ovinus	
26	Waalea oratatti	vaaleaorakas	Blek taggsvamp	Hydnum repandum	Hydnum repandum	
27	Suomunen oratatti	Suomunen oratatti suomuorakas Fjällig taggsvamp		Hydnum imbricatum	Sarcodon imbricatus	
28	Haarakassieni	kangaskeltahaarakas	Blomkålssvamp	Clavaria flava	Ramaria eosanguinea	
29	Maamuna	nurmimaamuna	Röksvamp	Bovista nigrescens	Bovista nigrescens	
30	Korwasieni	korvasieni	Murkla	Gyromitra esculenta	Gyromitra esculenta	

gal researcher A. Thesleff. They have been funded by the Imperial Senate and the *Finnish Economic Society* in printing it, because when a map of that colour is printed in eight colours, it costs many thousands of marks".

The 30 drawings of 26 edible mushrooms by Thesleff (1893j,k) with their descriptions were a fine example of his skills (Fig. 6a,b). Scientific names are given only in the guide, which was published in Swedish and Finnish.

The toxicity of the *Gyromitra esculenta* was not mentioned, but the instruction that the fungus should be dried, and soaked before use, was sufficient. The descriptions are good but do not meet modern requirements. For example, the description of *Sarcodon imbicatus*: "Cap dark brown,

with coarse scales. Spikes grey. Common in coniferous forests in autumn. A good mushroom that is eaten in most European countries. It requires boiling to make it softer". The guide explains how to make, dry, salt, pluck and vinegar mushrooms. Many mushrooms could be fried as such, e.g., Leccinum versipelle, but they should not to be heated too much, as this will result in a loss of flavour. Boletus, Cantharellus, Lactarius and Russula are mentioned as good vinegar mushrooms: "Russulas are boiled in salted water, then the water is poured out and the mushrooms are put into a glass container. Pour hot vinegar and salt and allspice on top. Cloves and bay leaves can be added to taste. Finally, put a weight on the lid so that the mushrooms are covered under the broth. Similarly, chanterelles and gourds can be prepared, but no salt should be added to the boiling water.

The guide begins with an article by Alli Trygg (1852–1926), a civic activist and Finnish pioneer in the women's movement, on how to get people to eat mushrooms (Trygg 1893a,b). Trygg edited *Kansan Lehti* in Helsinki, in which the picture board of mushrooms was published. The Swedish and Finnish versions were different in terms of the title and page numbers. The cover page number was missing in the Finnish edition.

In relation to the theme of the guide, Thesleff organized "the largest mushroom exhibition ever" in Stockholm. The mushrooms on display were fresh and his mushroom paintings were also on display in the exhibition (Kotiranta 1981). Thesleff was an accomplished painter and about twenty of his orchid paintings are in the University of Helsinki library (Lagerborg 1921a,b).

Fungi of Isthmus Karelicus

Thesleff studied the fungal species around Southeast Finland and Vyborg in the early 1890s. He managed to publish his main results (Thesleff 1920) before his early death.

In Liimatta, Thesleff had organized a dozen boys aged 10 to 12 into three or four groups, always circling the same routes in the forests and collecting three sporocarps of each fungal species. When the boys arrived in the evening with their full mushroom baskets, the work of identification began. If there were previously unknown species among them, Thesleff followed the group that had brought them on the following day, and thus often found very rare fungi.

While touring the surroundings of Vyborg from 1891 to 1894, Thesleff was given the first of his many nicknames, "Mushroom Thesleff" (Kotiranta 1981). As his guide, Thesleff (1920) cites in particular the doctrine he received from Karsten, his and Elias Fries's publications, including the picture boards published by Cooke in *British Fungi*, and ones by Britzelmayer, Corda, Krombholz and Tulasne.

Professor Elfving presented a valuable study Studies on the basidiomycete flora in southeastern Finland with regard to its composition, physiognomy, phenology and ecology at the Fauna and Flora meeting 5.2.1921 (Hufvudstadsbladet 44, 14 February 1921). Ascomycetes were not included, although Morchella esculenta and Gyromitra esculenta grew in the area, and Sarcosoma globosum was discovered on moist soil (Thesleff 1920). Fungal diseases are not treated, except for Exobasidium.

Calculated from the index, Thesleff identified a collection of 149 genera with 754 species and 16 varieties. He did not describe any fungal taxon that was new to science. Table 3 summarizes some current generic names, but in some cases, there are too many to present here.

The publication is a mycofloristic study, with the guiding principle that certain fungi usually occur in a particular plant community (Table 4). Because Thesleff wanted to know what species grow in the woods of one tree species, he let all other tree species be felled apart from oak. The number of mycorrhizal fungi was high in the forests dominated by our main tree species. The sporocarps of different seasons, including winter, were taken into account, and Thesleff considered the contribution of climate and the role of temperature and humidity in the growth of sporocarps.

He also observed the importance of mycelium for growth and fairy rings, spore colour in different fungal genera, sporocarps growth rate, the lifespan, death, and fungal spread as spores and sporocarps. Many animals ate and spread mushrooms, including wolves. Many insects lived in fungi, 200 species of dipteras and coleopteras, but also many others like snails. The presentation of the results was exceptionally progressive, no similar ones have been published in Finland. Determinations have certainly changed over the years, but e.g. decomposers are decomposers, mycorrhizal fungi are mycorrhizal. The results should still be evaluated in broader contexts.

Thesleff also considered the decomposer fungi on different woody species (Table 5). There were also fungi that decompose the organic matter on the surface of the wood. The list of decomposers had been published earlier (Thesleff 1893a). Laetiporus sulphureus was common in Quercus robur, occurring likely in most of the oak forests in the Isthmus (Fig. 4).

In 1893, Thesleff donated a large collection, 924 labelled (Fig. 7a,b,c,d) fungal specimens to

		mbers of the fungal gen				1		
Acia	2	Asterodon, Mycoacia	Grandinia	2	Christinia, Phlebia	Piptoporus	1	
Agaricus	4		Hebeloma	6		Pleurodon	1	Auriscalpium
Amanita	7		Hydnum	4		Pleurotus	10	Many genera
Amanitopsis	1	Amanita	Hygrocybe	8		Pluteus	5	
Anellaria	1		Hygrophorus	10		Polypilus	1	Laetiporus sulphureus
Armillaria	3		Hypholoma	4	Lacrymaria,	Polyporellus	7	Many genera
Bjerkandera	26	Many genera			Psathyrella	Polyporia	1	Albatrellus
Bolbitius	3		Hypochnus	3	Many genera	Polyporus	2	Albatrellus, Boletopsis
Boletus	8		Inocybe	11		Polysaccum	1	Pisolithus
Bovista	2		Inonotus	5		Polystictus	3	Coltricia, Onnia,
Bovistaria	3	Bovista, Lagermannia	Irpex	3		,		Phaeolus
Calocera	2		Ischnoderma	1		Poria	3	Inonotus, Phellinus
Calodon	6		Kneiffia	6		Psathyra	4	Paneolina, Psathyrella
Camarophyllus	6		Krombholzia	3	Leccinium	Psathyrella	5	
Cantharellus	5		Laccaria	3		Pselliophora	2	Coprinopsis
Chaetocarpus	1		Lactarius	27		Psilocybe	6	Many genera
Claudopus	1		Lentinus	3		Pycnoporus	3	Many genera
Clavaria	19	Many genera	Lenzites	2	Daedalea, Lenzites	Radulum	1	Xylodon
Clavariella	9	Many genera	Lepiota	9		Rhizopogon	1	
Climacodon	1	, 5	Leptoglossum	1	Arrhenia	Rozites	1	Cortinarius
Clitocybe	30		Leptonia	5	Entoloma	Russula	14	
Clitopilus	3		Leptotus	1	Arrhenia	Sarcodon	4	Many genera
Clypeus	2		Lomatia	1	Cytidia	Schizophyllum	1	
Collybia	20		Lycoperdon	5	7	Scleroderma	1	
•	5				Corticium,	Sclerodon	1	Gloiodon
Coniophora	9		Lyomyces	2	Dendrocorticium	Scytinotus	1	Panellus
Coprinus	9		Marasmius	11		Sistotrema	1	
Corticium			Merisma	1	Thelephora			Henningsomyces,
Cortinarius	58		Merulius	9	Many genera	Solenia	2	Maireina
Craterellus	2		Mucronella	1	, 3	Sparassis	1	
Crepidotus	2		Mycena	27		Sphaerobolus	1	
Cricunopus	3	Suillus	Naematelia	1	Tremella	Sterellum	1	
Crucibulum	1		Naematoloma	6	Hypholoma	C4		Hymenochaete,
Cryptochaete	2	Peniophora	Naucoria	10	Many genera	Stereum	8	Stereum
Cyathus	2		Nidularia	1	many genera	Stropharia	9	
Cyphella	5	Many genera	Nolanea	4	Entoloma	Suillus	1	Gyroporus
Dacryomyces	4		Nyctalis	1	Asterophora	Tapinia	1	
Daedalea	2		Nyctuns		Hyphodontia,	Thelephora	1	
Deconica	2	Deconica, Psilocybe	Odontia	2	Steccherinum	Tomentella	1	Xenasmatella
Ditiola	1				Rickenella,	Trametes	3	
Dochmiopus	1	Crepidotus	Omphalia	16	Xeromphalia ym.	Tremella	2	
Dryodon	2	Hericium	Omphalina	1	Chrysomphalina	Tremellodon	1	
Eccilia	2	Entoloma	Panellus	1	, , , , , , , , , , , , , , , , , , , ,	Tricholoma	33	
Entoloma	9		Paneolus	4		Trogia	1	Lentinus
Exidia	12		Panus	1		Tubaria	2	Galerina, Tubaria
Exobasidium	4					Tubiporus	1	Boletus
			Paxillus	2		Tylopilus	1	
Flammula	16		Peniophora	4		Typhula	5	
Fomes	6		Phanerochaete	2	Peniophora, Phanerochaete	Tyrodon	2	Hydnum
Fomitopsis	3		Dhlohi -	2	Thunerochuete	Volvaria	1	Volvopluteus
Galera	7	Many genera	Phlebia	2		Xerocarpus	2	Amylostereum,
Geaster	4		Pholiota	12		Xylodon	3	Annylostereum,
Gloeophyllum	2		Phyllotus	4	Resupinatus ym.	Ayloudii	3	
Gomphidius	3		Physisporus	15	Many genera			

Table 4. Number of fungal spe	cies in each h	abitats.			
Pinus sylvesris forests	202	Tilia cordata forests	20	Dunes	8
Pinus sylvestris moors	59	Quercus robur forests	90	Calluna vulgaris heaths	23
Picea abies forests	146	Corylus avellana thickets	52	Open areas and fiels	32
Mixed Picea – Pinus forests	27	Mixed deciduous forests	44	Compost, dung	39
Larix forests	98	Populus tremula forests	75	Gardens	40
Mixed forests	35	Meadows	45	Burnt soils	28
Betula forests	125	Moist peat lands	42	Shady areas	53
Alnus forests	121	Rocks	46	Greenhouses	40

Table 5. The number of decomp	ooser fungi	found on various tree species and on	other fun	gi.	
Acer platanoides 10		Fraxinus excelsior	4	Quercus robur	40
Aesculus hippocastaneum	3	Fungi	30	Rhododendron tomentosum	1
Alnus glutinosa, A. incana 81		Juniperus communis	4	Salix	43
Andromeda poliflia	1	Larix archangelica	30	Sambucus racemosa	4
Arctostaphylos uva-ursi	1	Lonicera caerulea, L. xylosteum	2	Sorbus aucuparia	24
Betula pendula, B. pubescens	141	Malus domestica	12	Syringa vulgaris	3
Caragana sibirica	1	Picea abies	114	Tilia cordata, T. platyphyllos	14
Corylus avellana	16	Pinus sylvestris	129	Ulmus glabra, U. laevis	6
Crataegus	1	Populus tremula	84	Vaccinium uliginosum	1
Fagus sylvatica	1	Prunus cerasus	2	Vaccinium vitis-idaea	1
Frangula alnus	1	Prunus padus	5		



Fig. 7a,b,c,d. Label and sporocarp of *Armillaria imperialis = Catathelasma imperiale* and *Inonotus radiatus* collected by Thesleff in the collections of the Botanical Museum of the Finnish Museum of Natural History. Photos Henry Väre.





Fig. 8a,b. Bust of Thesleff sculpted by the Swedish sculptor Börje Börjeson (1881–1958). Photos Henry Väre, Botanical Museum of the Finnish Museum of Natural History.

the Imperial Alexander University (today University of Helsinki) Botanical Museum (*Meddeland. Soc. Fauna et Fl. Fenn.* 21:33). The donation was the largest collection of fungi received at the Botanical Museum at this time (Palmgren 1921). The bust of Thesleff at the Botanical Museum (Fig. 8a,b) is likely a later donation. The sculpror was Swedish Börje Börjeson (1881–1958).

The natural history of the Bible

Thesleff left behind a manuscript on the natural history of the Bible, which Lagerborg submitted for publication (Thesleff 1921) together with

Thesleff's biography and literary production (Lagerborg 1921). The aim of the Bible project was to compare the translations of different countries in relation to plant species: Norway 1919, Denmark 1919, Germany 1917, England 1916, France 1917, Russia 1908 and Finland 1917, and the old Bible 1562. The translations were not consistent. Of the plants, *Quercus* was of particular interest, and was as often translated as Pistacia terebinthus as Quercus. Today six species are recognized in Israel Q. boissieri, Q. calliprinos, Q. cerris, Q. ithaburensis and O. look. Acacia, Cedrus libani, Malus and Vitis vinifera also received attention. Thesleff paid attention to what really grew in the Middle East. In the book, he notes not only many translation errors from the Bible, but also factual errors, and points out that the Bible writers were clearly not botanists (Kotiranta 1981). Thesleff, incidentally, did not believe in God, nor in general in any higher power.

Arthur Thesleff died on 11 December 1920 in Stockholm and was buried in Stockholm North Cemetery. Thesleff was a well-known person in Finland and many newspapers published an obituary of him (Wiborgs Nyheter 5, 8 January 1921). The warmest was one by Rolf Lagerborg (Hufvudstadsbladet 317, 20 November 1921; Hufvudstadsbladet 347, 18 December 1920: Hufvudstadsbladet 349, 20 December 1920, Svenska Tidningen 89, 20 April 1921). Thesleff was remembered as a scholar of wood plants, fungi and the Romani people.

Johan Leksell (1874–1932), a Swedish painter, illustrator, sculptor and silhouette editor, wrote this about Thesleff in the *Uppsala* newspaper: "How often in his original home, by the table he had made of all the Nordic tree species, comfortably resting in his chairs cut out of a single log, a well-groomed and carefree audience, we listened to his words filled with wisdom, we drank from his goblets filled with nectar and we were glad to have our friend among us" (*Wiborgs Nyheter* 5, 8 January 1921).

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