GIUSEPPE RADDI
BOTANICUS

SCIENTIFIC LEGACY

Giuseppe Raddi. Lithograph by G. Galli.

Personal archive and herbaria

The paper documentation produced by Raddi is scattered among various offices and institutions.

Part of his archive is currently kept in the botanical headquarters of the Library of Sciences of the University of Florence, but the methods and timing of the acquisition are still uncertain. It is likely that there was a donation from the heirs around the 1840s, following the interest of Grand Duke Leopold II and coinciding with the arrival in Florence, as director of the Botanical Museum, of Filippo Parlatore. The papers are divided into five binders and include correspondence, deeds and documents, manuscripts (notes on fungi, pteridophytes and Brazilian flora, writings on zoology, memoirs of trips made to Brazil and Egypt).

Renzo Nelli - Francesca Cagnani University of Florence - Library of Sciences

Raddi's archive probably arrived at the Natural History Museum in the mid-19th century, and was later entrusted to the Institute of Botany and finally to the Science Library.

Personal archive and herbaria

Other correspondences of Raddi are kept in six different institutions, namely:

-National Central Library of Florence (146)

-Galileo Museum in Florence (19)

-State archives of Florence (20)

-University Library of Pisa (9)

-Vatican Apostolic Library (2)

-Library of the Intronati, Siena (24)

-National Academy of Sciences called XL

Most of Raddi's botanical collections are in the herbaria of the universities of Florence, Pisa and Bologna.

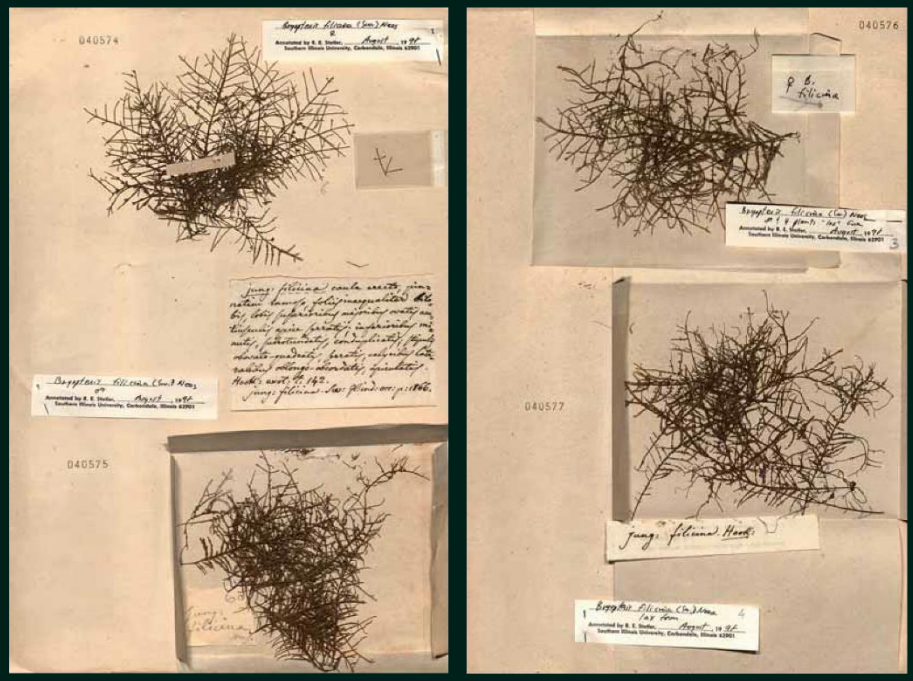
Renzo Nelli

Biblioteca di Botanica University of Florence

A scholar and his legacy

When biology asserted itself as a discipline in the mid-18th century, natural history was among its main foundations. Naturalists aimed to discover and document the flora and fauna of the world, whose specimens were preserved by being exsiccated, pressed, stuffed, pinned or bound in alcohol, in order to compose collections that could be examined by future generations of scholars with new methods.

A pioneer of natural history who had one foot in the 18th century and the other in the 19th century was Giuseppe Raddi (1770-1829), who contributed on a double front: he was one of the fathers of the study of liverworts in Europe and established important collections of plants and insects from the coast of Brazil and Egypt. His material and his knowledge from various biomes on three continents have retained their importance for studies related to biodiversity to this day.

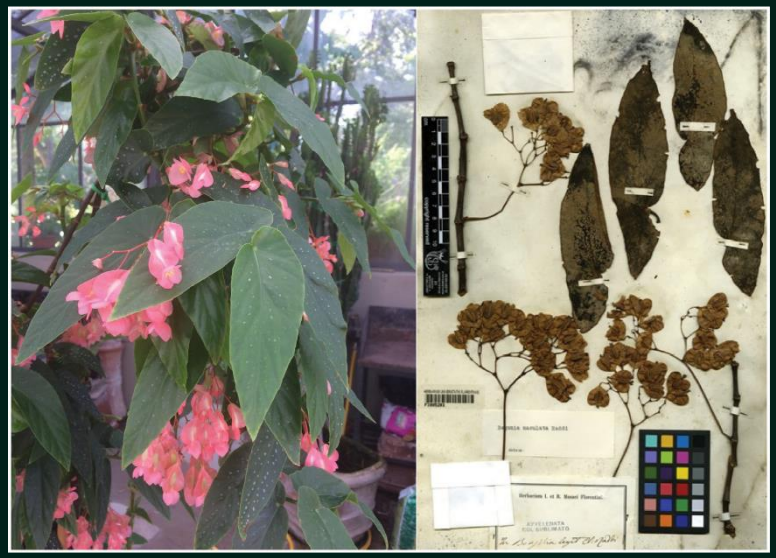


Bryopteris filicina (Sw.) Nees, *specimens collected by Raddi in Brazil; on the left, the hand-written description of the species also present at Crittogame brasiliane, Pisa, Botanical Museum, Herbarium*

A scholar and his legacy

Collections were at the origin of the main organizing theory of evolution formulated by Charles Darwin in On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life (John Murray, London, 1859) and continue to be, to this day, a vital segment of science. Natural history collections, fundamental to disciplines such as ecology, agriculture and medicine, also attracted strong popular interest, as Paul L. Farber states in Finding Order in Nature: The Naturalist Tradition from Linnaeus to E. O. Wilson (Johns Hopkins University Press, 2000).

It is estimated that Raddi collected during his lifetime about 6800 specimens of fungi and plants (3000 - 4000 plants including 340 seed samples), each with 2-3 duplicates that would be distributed to the various European institutions.



Begonia maculata Raddi *in the greenhouse of the 'Giardino dei Semplici' (Botanical Garden, natural history museum, university of florence), propagated by cuttings from plants grown from of seeds originally collected by Raddi, left;*

A Begonia maculata *isotype in the herbarium (© the natural history museum, botany section, universty of florence), right.*

http://parlatore.msn.unifi.it/types/search.php

Chronology of publications
Giuseppe Raddi's scientific papers - Part I

1807

Delle specie nuove di funghi ritrovate nei con- torni di Firenze, e non registrate nel Systema Naturae di Lin- neo. Memorie di Matematica e di Fisica della Società delle Scienze in Modena. 13: 345-362. 5 plates outside the text.

1808

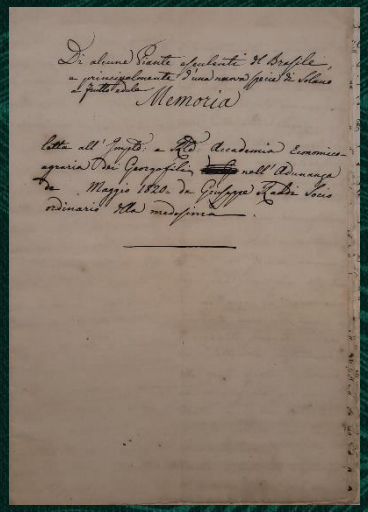
Di alcune specie nuove e raro di piante critrove para ritrovate nei contorni di Firenze. Atti dell'Accademia delle Scienze di Siena, detta de' Fisiocritici. 9: 230-240. 4 external text plates.

Novae species cryptogamarum inventae in Florentinis suburbanitatibus, et descriptae in quadam me - moria inserta in Volumine Academiae Senensis. 4 fuo- ri text plates. Siena.

1818

Junger nanniografia etrusca. Memoria del Signor Giuseppe Raddi Fiorentino. Proceedings of the Italian Society of Sciences in Modena 18: 1-45, plates 1-7.

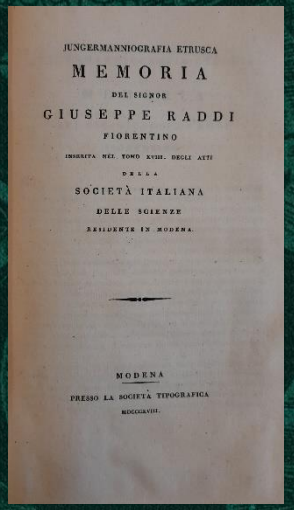
Novarum vel rariorum ex cryptogamia Stirpium in agro Florentino collectarum Decades duae. Opusco- li Scientifici, Bologna 2: 349-361. 2 external text plates.



1819

Synopsis filicum brasiliensium auctore Josepho Raddio ex XL Viris Societatis Italicae Scientiarum aliarunque Academiarum Socio. Typis Annesii de Nobilibus, Bonomiae: 1-19. Tables 1-2.

Di alcune piante esculenti del Brasile, e specialmente di una nuova specie di Solano a frutta edule. Annales da I. e R. Accademia de' Georgofili 2: 537-543.


JUNGERMANNIOGRAFIA ETRUSCA

MEMORIA

DEL SIGNOR

GIUSEPPE RADDI

FIORENTINO

INSERITA NEL TOMO XVIII. DEGLI ATTI

DELLA

SOCIETÀ ITALIANA

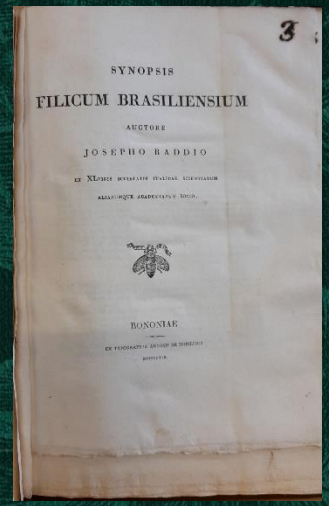
DELLE SCIENZE

RESIDENTE IN MODENA.

MODENA

PRESSO LA SOCIETÀ TIPOGRAFICA

MDCCCXVIII.


SYNOPSIS

FILICUM BRASILIENSIUM

AUCTORE

JOSEPHO RADDIO

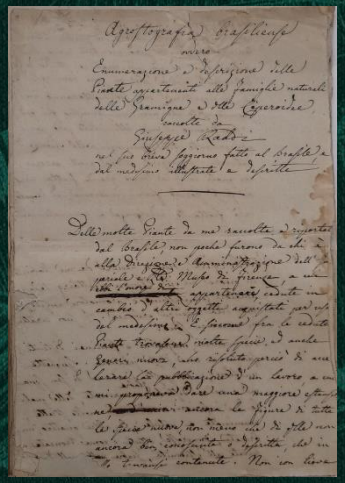
BONONIAE

Chronology of publications
Giuseppe Raddi's scientific papers - Part II

1820

Di alcune specie nuove di rettili e piante brasiliane. Annals of the Italian Society of Sciences in Modena. 18: 1-39. Tables 1-4.

Quaranta piante nuove del Brasile raccolte e descritte da Giuseppe Raddi. Proceedings of the Italian Society of Sciences
in Modena. 18: 1-35. Table 1.



1821

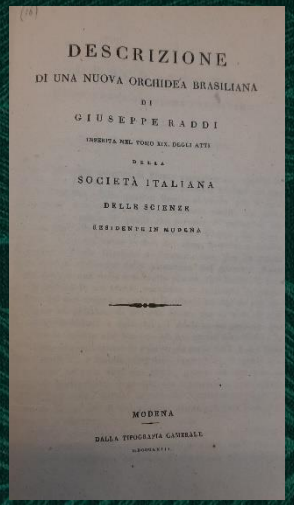
Notizie riguardanti la Vita e gli Studi del Dotrasgou Giovacchino Carradori. Annals of the Italian Society of Sciences in Modena. 19(1): 1-8.

A brief observation on the island of Madeira made on the voyage from Livorno to Rio-Janeiro by Giuseppe Raddi fio... 47 rentino. Luigi Pezzati Printing Works, Florence. Pd. 1-19.

Of some species of indigenous pear (Psidium Lin.). Memoir. Annex Nobili, Bologna. Pd. 1-7. Table 7.

1822

Brazilian Cryptogams collected and described by Signor Giuseppe Raddi. Memoria. Camera typography, Mo- dena. Pd. 1-33.


DESCRIZIONE
DI UNA NUOVA ORCHIDEA BRASILIANA
DI
GIUSEPPE RADDI
INSERITA NEL TOMO XIX. DEGLI ATTI
DELLA
SOCIETÀ ITALIANA
DELLE SCIENZE
RESIDENTE IN MODENA
MODENA
DALLA TIPOGRAFIA CAMERALE

1823

Agrostografia brasiliensis. Atti della Reale Ac- cademia Lucchese di Scienze, Lettere ed Arti. 2: 331- 383. Table 1.

Continuation of the description of Brazilian reptiles. Memoir. Proceedings of the Society of Sciences in Modena. Printing House. Pages 58-73.

Descrizione di una nuova Orchidea Brasiliana. Memoirs of Mathematics and Physics of the Italian Science Society. 19: 219-222. Table 6.

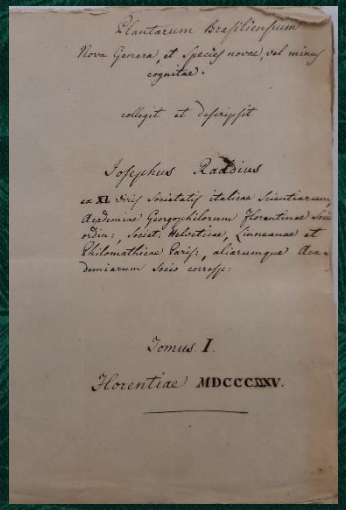
Rapporto intorno alle Crisalidi di alcuni in septi dannosi al grano. Continuation of the Annals of the I. and R. Accademia de' Georgofili. 3: 353-356.

Melastome brasiliane. Memoirs of the Italian Science Society in Modena. Camerale Printing House, Modena. Pd. 1-64. Tables 1-6.

Chronology of publications
Giuseppe Raddi's scientific papers - Part III

1825

Plantarum Brasiliensium nova genera et species novae. Typographia Aloysii Pezzati, Florentiae. Pp. 1- 101. Tables 1-97.


Plantarum Brasiliensium
Nova Genera, et Species novae, vel minus
cognitae.

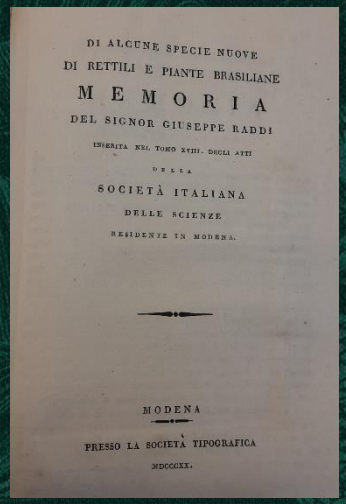
collegit et descripsit

Josephus Raddius

ex XI. Reg. Societatis italicae Scientiarum,
Academiae Georgofilorum Florentinae vicis
Dia; Societ. Helveticae, Linnaeanae et
Philomathicae Paris; aliarumque Aca-
demiarum Socio correspo:

Tomus I.

Florentiae MDCCCXXV.


DI ALCUNE SPECIE NUOVE
DI RETTILI E PIANTE BRASILIANE
MEMORIA
DEL SIGNOR GIUSEPPE RADDI
INSERITA NEL TOMO XVIII. DEGLI ATTI
DELLA
SOCIETÀ ITALIANA
DELLE SCIENZE
RESIDENTE IN MODENA.

MODENA
PRESSO LA SOCIETÀ TIPOGRAFICA
MDCCCXX.

1827

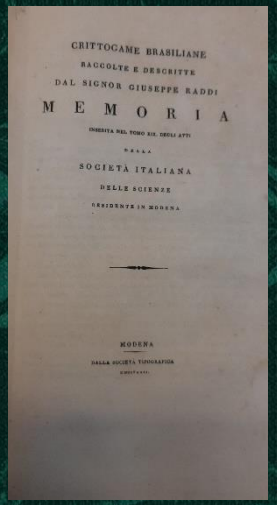
Dell'Araucaria del Brasile. Proceedings of the I. and R. Ac Academia do Georgofili. 5: 185-189.

Supplement to the memoirs of Giuseppe Raddi entitled Crittogame Brasiliane. Camerale Printing House, Modena. Pd. 1-14. Tables 1-6.

1828

Enumerazione delle specie di Piper raccolte dal Sig. Giuseppe Raddi. Nuovo Giornale de' Letterati in Pisa. 17: 3-8. Table 1.

Descrizione di una nuova specie di Elettari o Cardamomo del Brasile. Nuovo Giornale de' Letterati in Pisa. 17: 12-15. Table 1.

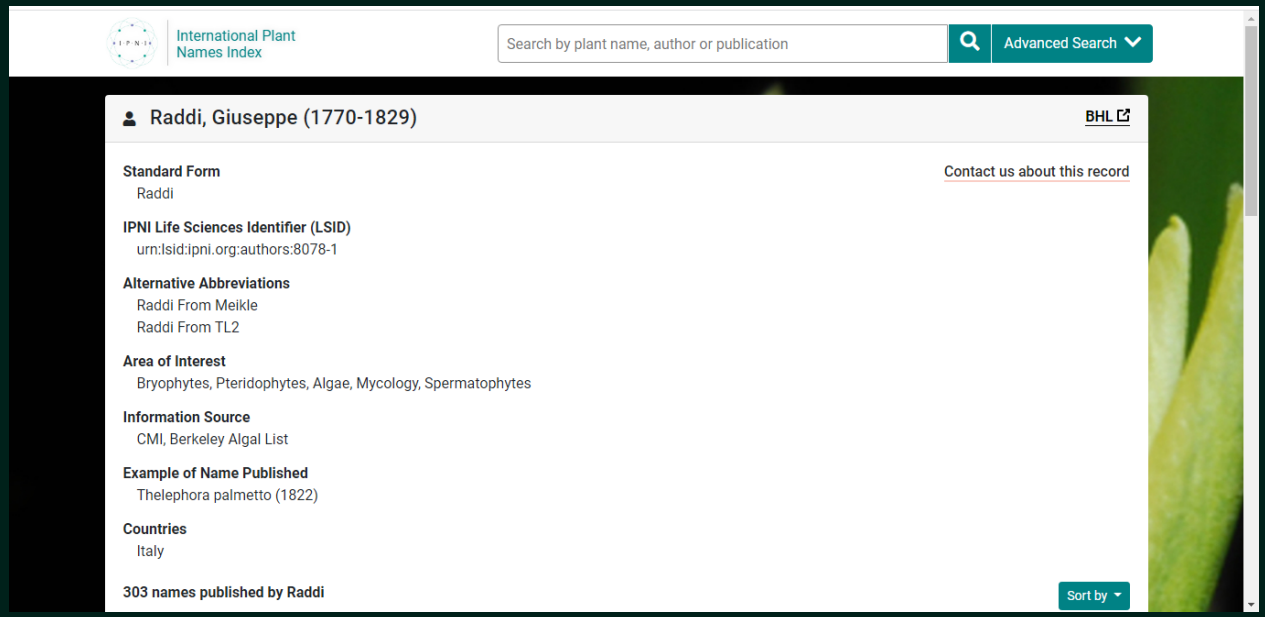

CRITTOGAME BRASILIANE
RACCOLTE E DESCRITTE
DAL SIGNOR GIUSEPPE RADDI
MEMORIA
INSERITA NEL TOMO XIX. DEGLI ATTI
DELLA
SOCIETÀ ITALIANA
DELLE SCIENZE
RESIDENTE IN MODENA

MODENA


345
DELLE SPECIE NUOVE DI FUNGHI
RITROVATE NEI CONTORNI DI FIRENZE
E NON REGISTRATE NEL *SYSTEMA NATURÆ* DI LINNEO
EDIZIONE XIII.
MEMORIA
DEL SOC. GIUSEPPE RADDI FIORENTINO
Presentata il dì 4 Giugno 1826
DAL SIGNOR GIOVANNI FABBRONI
Agaricus subscriptus.
Solitario, e grandissimo. Il Cappello piano, rosso-cerasco con il margine seriato ondulato, e quasi increspato. Le Lamelle carnicine, e parimente ondulate. Il Gambo color verde oliva, carnoso, e ingrossato alla base. Tav. I.
a. parte inferiore:
b. porzione del Cappello veduto superiormente.
Trovasi in Autunno lungo l' Argine del fiume Ema.
Agaricus niger.
Solitario e grandissimo. Il Cappello piano, cerreo-ferrugineo, con fascie concentriche, ovvero zone verdi, e con il margine intero. Le Lamelle nere, numerosissime, carnose, e assai fitte. Il Gambo carnoso, pallido, gobbo, e più sottile verso la base. Tav. II.
a. parte inferiore
b. porzione del Cappello veduto superiormente.
Nel mese di Novembre nei Boschi presso la Certosa di Firenze sul Fiume Grieve.
Tomo XIII 44 *Agar.*

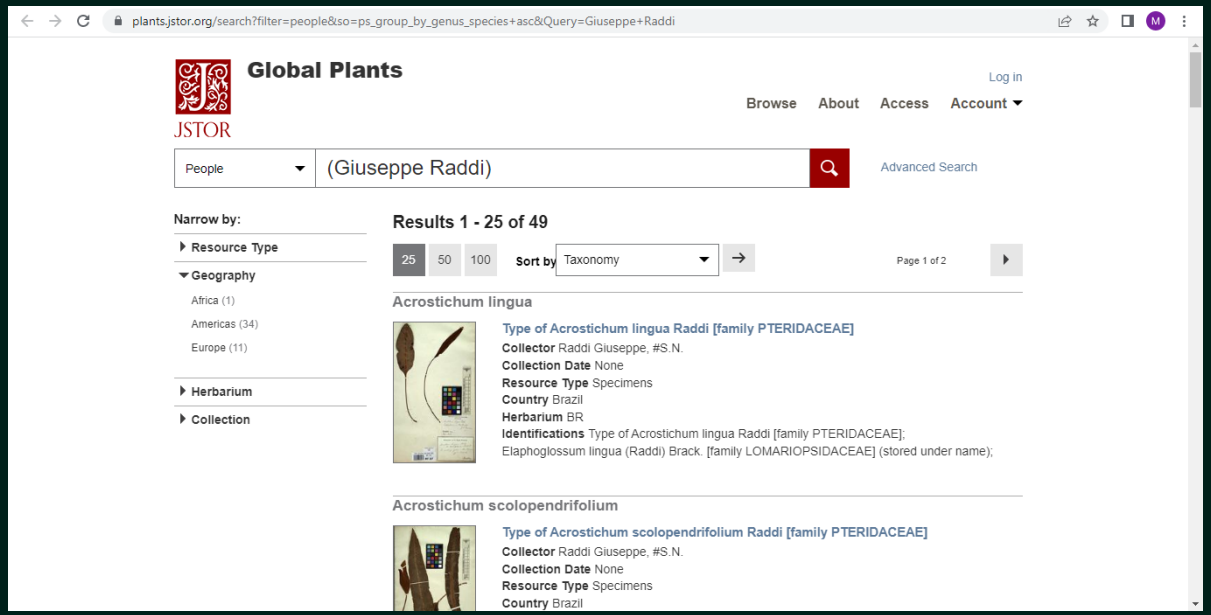
Giuseppe Raddi
on the great scientific publications

His name stands out with great projection in major publications and websites dedicated to scientific issues of biodiversity. A projection that is more than deserved and that stands out thanks to his meticulous and in-depth dedicated work on fauna and flora.



https://www.ipni.org/a/8078-1

Giuseppe Raddi
on the great scientific publications



https://plants.jstor.org/search?filter=people&so=ps_group_by_genus_species+asc&Query=Giuseppe+Raddi

Biodiversity in Brazil

The Brazilian territory is occupied by six biomes, each with its typical climate, vegetation and fauna. They are: the Amazon, the Cerrado, the Atlantic Forest, the Caatinga, the Pampa and the Pantanal.

49,30% — **AMAZON**

The most extensive biome and also the most internationally known. With a hot and humid climate, it is considered the largest biological reserve in the world.

Area: 4,198,273 (km²)

9,74% — **CAATINGA**

Biome of the semiarid region of Brazil. Savannah-type vegetation with species that withstand long droughts.

Area: 829,436 (km²)

2,10% — **PANTANAL**

It is the largest floodplain on the planet. It houses representatives from almost all Brazilian fauna.

Area: 151,581 (km²)

1,78% — **PAMPA**

Located in the extreme south of Brazil, it has typical steppe vegetation with few forests. The climate is marked by the frequency of polar fronts and sub-zero temperatures in Winter.

Area: 178,831 (km²)

24,04% — **CERRADO**

Savannah-type vegetation with forests occurrence. It has been the main area of expansion of agricultural activity in Brazil in recent decades.

Area 2,047,190 (km²)

13,04% — **ATLANTIC FOREST**

It is located in the most densely populated region in Brazil. Exploited economically for five centuries, it has the most characterless nature.

Area: 1,110,456 (km²)

Biodiversity in Brazil

THE AMAZON

It is the most extensive biome and also the best known internationally. It is characterized by its hot and humid climate and its dense forest, the rainforest. Due to the variety of plant and animal species it houses, it is considered the largest biological reserve in the world.

THE CAATINGA

It is the biome of the semiarid region of Brazil. Its characteristic vegetation is a type of savannah with species capable of withstanding long droughts, interspersed with short and irregular rainy periods. The climate is hot and its forests are sparse.

THE CERRADO

It has a warm tropical climate with only two distinct seasons: the rainy one and the dry one. It is Savanna-type vegetation, with forests occurrence. The Cerrado has been the main area of expansion of agricultural activity in Brazil in recent decades.

THE PAMPA

It is located in the extreme south of Brazil. It has typical steppe vegetation with few forests. Rains are regular and the climate is marked by the frequency of polar fronts and sub-zero temperatures in winter.

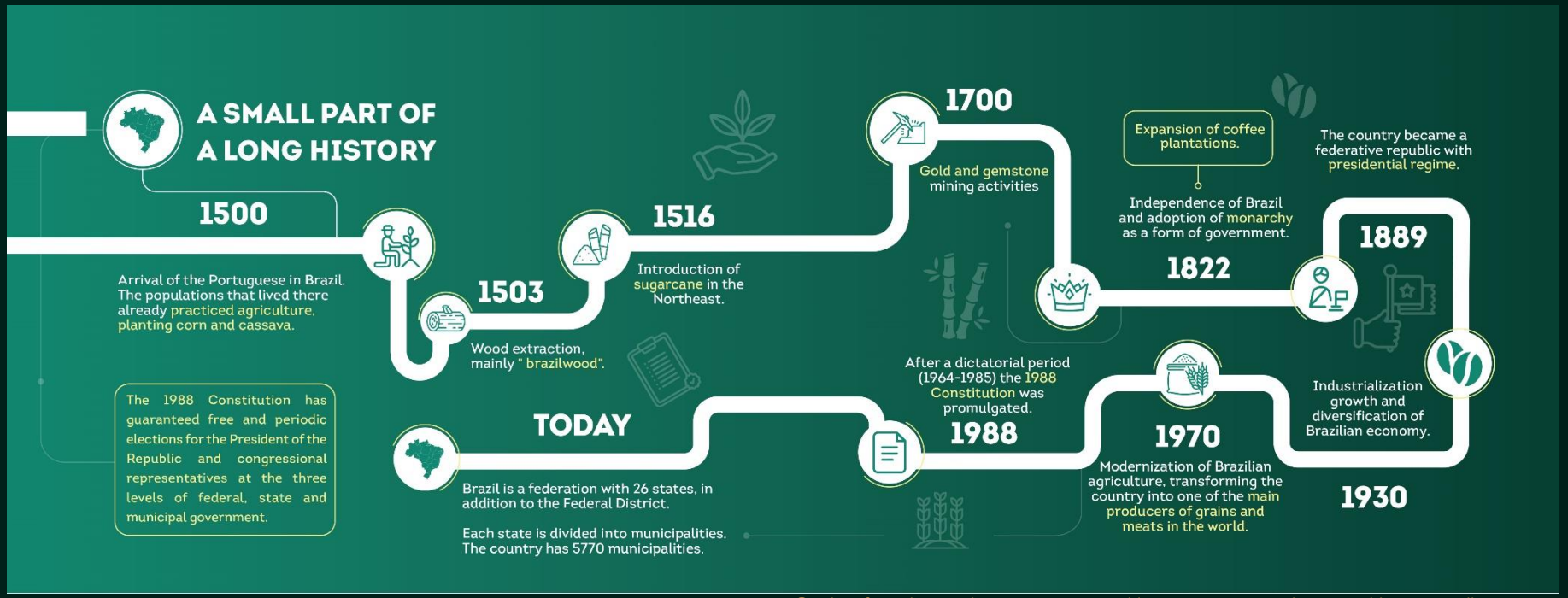
THE ATLANTIC FOREST

It is located in the most densely populated region in Brazil. Exploited economically for five centuries, it has the most characterless nature. Its typical vegetation is the rainforest, which can be dense or open and dependent on regular rainfall, without marked dry periods.

THE PANTANAL

It is the great floodplain of central-west Brazil. For several months a year, it is covered by the waters of the Paraguay River basin. Its typical vegetation is savannah with some forests occurrence. The Pantanal is also home to representatives of almost all Brazilian fauna.

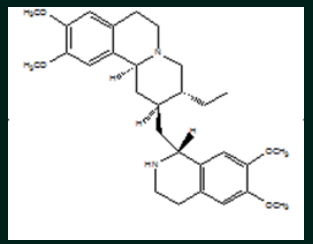
Biodiversity in Brazil

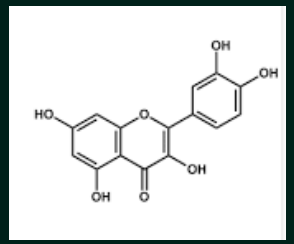


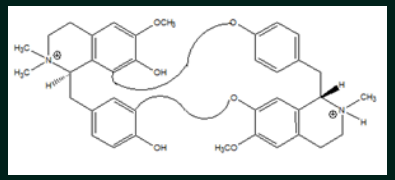
Medicinal plants of Brazil: the contribution of Giuseppe Raddi

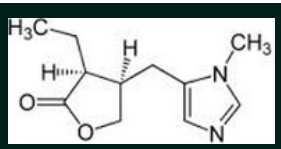
Brazil

- A territory with a continental dimension
- World's largest plant biodiversity
- Six different phytogeographic domains: diversity of natural metabolites
- Millenarian traditional Amerindian medicine
- Sociodiversity: Amerindians, Africans and Europeans









Economic cycles
(to supply the international market)

- Paubrasilia echinata (Lam.) Gagnon, H.C.Lima & G.P.Lewis, formerly Caesalpinia echinata Lam.
- Sugar cane
- Gold
- Coffee
- Rubber
- Today: meat, grain (soy) and iron ore exports

Coffee fruit

Sugarcane Plantation

Detail of the reddish trunk of the Pau Brasil

Devastation in Brazil

© Reuters/ Washington Alves

Dam collapse in Brumadinho

SOS Mata Atlantica

Deforestation of the Atlantic Forest

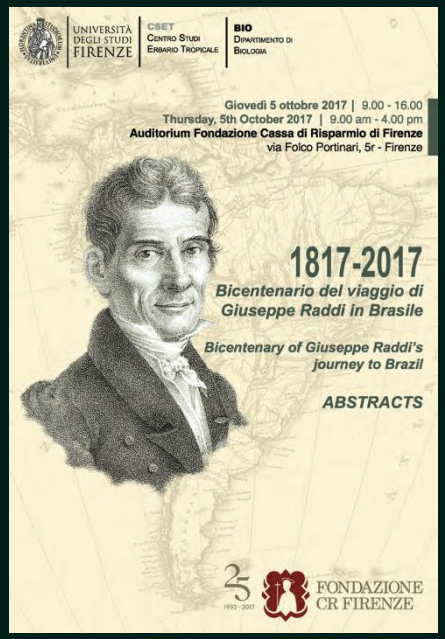
Credit Brazil de fato website

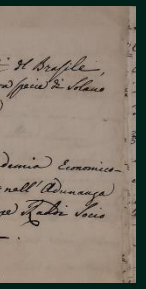
Devastation with little chance of reforestation

Source Globo.com

Impacts of mining on nature

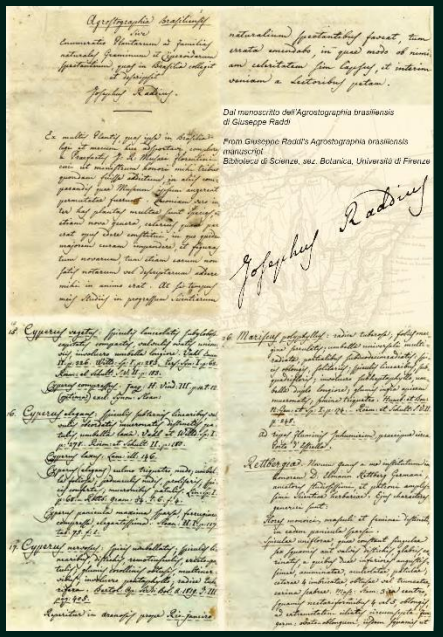
Giuseppe Raddi's highlights in Brazil




Di alcune Piante sfuggite al Sig. Raddi in Brasile, e principalmente di una nuova specie di Solano da lui scoperta.

Memoria

letta all'Imp. e R. Accademia Economico-agraria dei Georgofili nell'Adunanza de Maggio 1820. da Giuseppe Raddi Socio ordinario della medesima.


Dal manoscritto dell'Agrostographia brasiliensis di Giuseppe Raddi

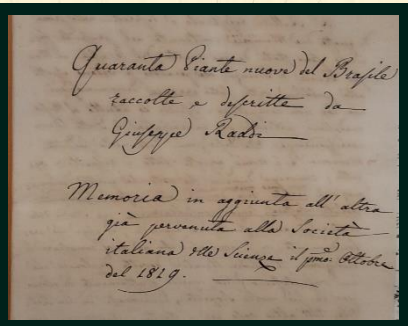
From Giuseppe Raddi's Agrostographia brasiliensis manuscript
Biblioteca di Scienze, sez. Botanica, Università di Firenze


Milastome Brasiliane

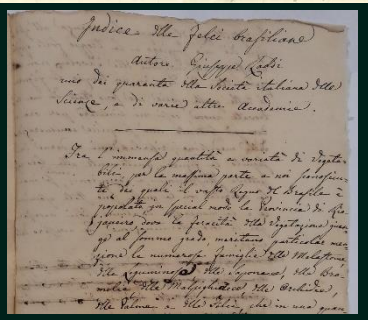
Memoria

di Giuseppe Raddi

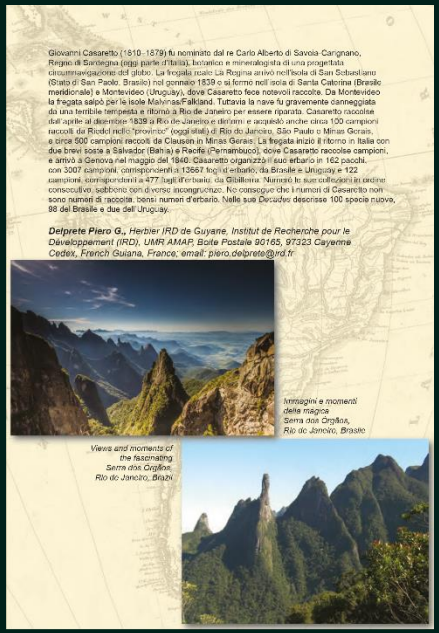

Syagrus pseudococos (Raddi) Glassman (= Langsdorffia pseudococos Raddi)
G. Raddi, "Di alcune specie nuove di reliti e piante brasiliane (1820).


Quaranta Piante nuove del Brasile raccolte e descritte da Giuseppe Raddi

Memoria in aggiunta all'altra già pervenuta alla Società italiana delle Scienze il giorno Ottobre del 1819.


Indice delle Felci brasiliane

Autore Giuseppe Raddi


Giovanni Casaretto (1810-1879) fu nominato dal re Carlo Alberto di Savoia-Carignano, Regno di Sardegna (oggi parte d'Italia), botanico e mineralogista di una progettata circumnavigazione del globo. La fregata reale La Regina arrivò nell'isola di San Sebastiano (Stato di San Paolo, Brasile) nel gennaio 1839 e si fermò nell'isola di Santa Caterina (Brasile meridionale) e Montevideo (Uruguay), dove Casaretto fece notevoli raccolte. Da Montevideo la fregata salpò per le isole Malvinas/Falkland. Tuttavia la nave fu gravemente danneggiata da una terribile tempesta e ritornò a Rio de Janeiro per essere riparata. Casaretto raccolse dall'aprile al dicembre 1839 a Rio de Janeiro e dintorni e acquisì anche circa 100 campioni raccolti da Riedel nella "provincia" (oggi stati) di Rio de Janeiro, São Paulo e Minas Gerais, e circa 500 campioni raccolti da Clausen in Minas Gerais. La fregata iniziò il ritorno in Italia con due brevi soste a Salvador (Bahia) e Recife (Pernambuco), dove Casaretto raccolse campioni, e arrivò a Genova nel maggio del 1840. Casaretto organizzò il suo erbario in 162 pacchi con 3007 campioni, corrispondenti a 13667 fogli di erbario, da Brasile e Uruguay, e 122 campioni, corrispondenti a 477 fogli di erbario, da Gibilterra. Numerò le sue collezioni in ordine consecutivo, sebbene con diverse incongruenze. Ne consegue che i numeri di Casaretto non sono numeri di raccolta, bensì numeri d'erbario. Nelle sue *Decades* descrisse 100 specie nuove, 98 del Brasile e due dell'Uruguay.

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Immagini e momenti della magica Serra dos Orgãos, Rio de Janeiro, Brasile

Views and moments of the fascinating Serra dos Orgãos, Rio de Janeiro, Brazil

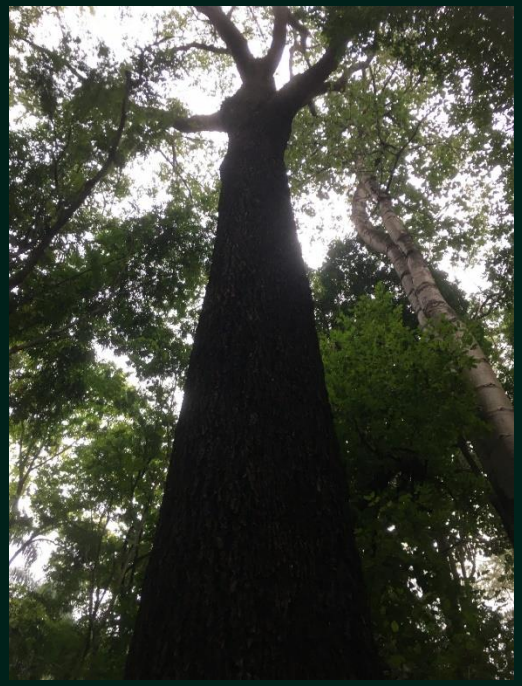
Some highlights of the the study of the botanist in Brazil

Cariniana estrellensis (Raddi) Kuntze, based on *Couratari estrellensis* Raddi

Popular name: Jequitibá-rei (in the Tupi language means "God's Direction" or "Giant of the Forest" and it is not for less, because this species is one of the largest of the Brazilian flora and the largest of the Atlantic Forest, reaching 25 to 35 meters on average, and can reach 50 meters in height.

Remarks by G. Raddi: "A *very rare tree 120 feet high, found by me in the mountains of Estrela, where it is known under the name of Red Balata.*"

Uses: laryngitis, tonsillitis, astringent



Jequitibá -rei Tree

Pito-de-macaco, fruit of the Jequitibá -rei tree

(c) Nelson Azevedo Filho

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Some highlights of the the study of the botanist in Brazil

Schinus terebinthifolia Raddi (Anacardiaceae)

Common name: mastic tree, peppercorn

Raddi's comments: *Very common in the interior of Rio de Janeiro.*

It has great commercial value as a condiment. These plants have been used traditionally to treat gastric disorders, wounds and rheumatic pains. It is also used as an antiseptic and anthelmintic agent. The analysis results have shown important chemical constituents (Na, Mg, Fe and K), bioactive substances (polyphenols, tannins and fatty acids), and very interesting biological activities. The gels obtained confer better physical and chemical properties (slightly acidic gels), a greater availability of phenolic compounds and better rheological (viscous gel) and organoleptic properties than their chemical counterparts.

Aroeira mana or Pimenta-rosa berries

Aroeira Mango Tree or Pink Pepper Tree

Some highlights of the the study of the botanist in Brazil

Schinus terebinthifolia Raddi (Anacardiaceae)

(© Felipe Gonzatti)

Detail of the flowering of the Aroeira mana or Pimenta-rosa tree

The photo shows the fruits of the species

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Some highlights of the the study of the botanist in Brazil

Cyrtopodium glutiniferum Raddi (Orchidaceae)

Popular name: glue plant, armadillo tail

Raddi's comments: *"... from its stem the Brazilians obtain a gluten which they use as glue, especially shoemakers, who use it to glue the soles of their shoes; this is why it is commonly called the glue plant by the Brazilians...".*

Important as an agglutinating technological product

Other uses: ornamental, chest ailments and wounds

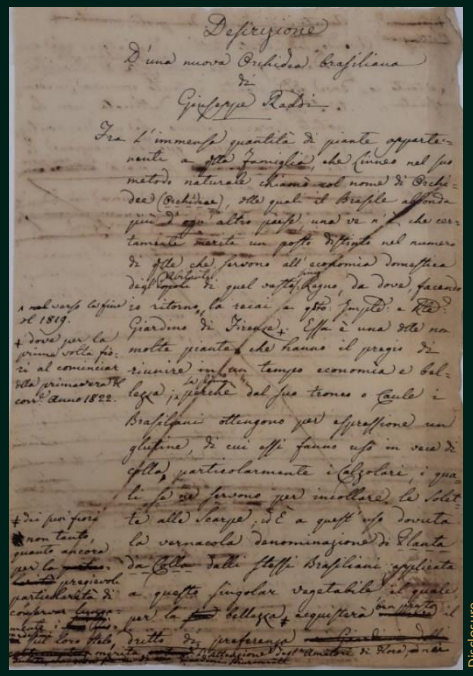
Illustration of the flowers of Cyrtopodium glutiniferum drawn by Giuseppe Raddi

Exsicata of Cyrtopodium glutiniferum Raddi deposited in the University Herbarium of Firenze

Some highlights of the the study of the botanist in Brazil

Cyrtopodium glutiniferum Raddi (Orchidaceae)

Cola-de-sapateiro or armadillo tail flower



Disclosure

Manuscript of G. Raddi's description of Cyrtopodium glutiniferum

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Some highlights of the the study of the botanist in Brazil

***Begonia* spp. - 7 species described by Raddi (Begoniaceae)**

Popular names: Begonia, Azedinha

Raddi's observations: *"I found individuals of this species* [B. bidentata] *in the mountains of Estrella"*

Uses: ornamental, medicinal, food.

Flowers of Begonia angularis *Raddi* (p*hoto: Rodrigo Freitas)*

Fruiting branch of Begonia bidentata *Raddi*

Photo: Diego Nunes

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Some highlights of the the study of the botanist in Brazil

Carpotroche brasiliensis (Raddi) A.Gray, based on *Mayna brasiliensis* Raddi (Achariaceae)

Popular names: Sapucainha, pau-de-lepra

Raddi's observations: *"I found this tree only in the rich forests of Corcovado, a mountain near Rio de Janeiro, where it is known as Pao de caximbo or Papo de anjo. The fruit is eaten by monkeys, and also by black people"*

Uses: food for humans and wildlife, timber, ornamental, insecticide and wide medicinal use

Photos: Eugênio Arantes de Melo

Flowering branch of Carpotroche brasiliensis

Fruiting banch of Carpotroche brasiliensis

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In the millennium

GIUSEPPE RADDI

Flora Brasiliana

MEMORIE 1819-1828
EDITE IN OCCASIONE DEL PRIMO CENTENARIO
DELL'EMIGRAZIONE AGRICOLA ITALIANA
1875-1975

ROMA
ISTITUTO ITALO-LATINO AMERICANO
1976