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Linnaeus, Chinese flora and 'linguistic imperialism'

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Theses

- Linnaeus did not practice 'linguistic imperialism' in naming Chinese plants;
- In naming Chinese plants, Linnaeus
 - applied his rules less restrictively than is generally thought (Needham, Schiebinger);
 - assigned a relatively small percentage of patronymic names; and
 - offered a road map to many indigenous usages and names through his synonymies and *materia medica*.

Some statistics

- 160 Chinese species determined by Linnaeus father and son; 100 of these in *Species plantarum* (1753):
 - *SP* marks official beginning of modern botanical nomenclature
 - Binomial names: Genus + specific epithet
- Total of 319 Chinese species known to L. and L. fil.
- Total genera named by Linnaeus: 1,313
- 23% of 286 economically-useful species named by Linnaeus have generic names referring to *use*
 - contradicting his rules of 1737 (Crit. Bot.)
- Patronymics: 10% (i.e. 13) of 131 genera designations of Chinese plants by L. and L. fil.
- However, mine is primarily a qualitative, rather than a quantitative or statistical, argument.

Critiques of Linnaean generic names

- ❑ Joseph Needham, with Lu Gwei-Djen and Huang Hsin-Tsung, *Science and Civilisation in China*, vol. 6: *Biology and Biological Technology*, part I: *Botany* (Cambridge: Cambridge UP, 1986).
- ❑ Londa Schiebinger, *Plants and Empire: Colonial Biosprospecting in the Atlantic World* (Cambridge, MA: Harvard Univ. Press, 2004).
- ❑ Michel Adanson, *Familles des plantes*, facs. ed., introduction by Frans A. Stafleu (New York: J. Cramer-Lehre, 1966 [1763-4]).

Needham's Critique of Linnaeus

- It has to be admitted that Linnaeus was the **evil genius** of this Europocentrism. In +1737 [*Critica botanica*] he laid down that he would admit no generic name unless it came from Greek or Latin, or looked as if it did, or commemorated a king or someone who had advanced the study of botany. He was only prepared to accept 'barbarous' words as adjectival nouns forming a specific name....Linnaeus's transfer of old classical names to plants or groups unknown in antiquity was very unfortunate, and he also employed Latin names without any regard for their original use, e.g. *Cactus*, *Ceonathus*... (emph. added; Needham, et al. p. 168).

Schiebinger's Critique of Linnaeus

- ❑ Linnaean Latin generic names, especially those commemorating famous botanists, banish folk wisdom re: *uses*;
- ❑ Ignore contributions of indigenous peoples, e.g. Taino, Arawak
- ❑ Women's contributions to herbalism are marginalized;
- ❑ The same holds for the herbal knowledge of African slaves in the Caribbean.

18th c. critic: Adanson

- ❑ Adanson criticises 'règle de latinité' imposed universally (Adanson 1966: pp. clxxiii-iv).
- ❑ Champions 'indigenous names [noms de païs], that some modern Botanists call Barbaric':
 - '...if these Dogmatic Authors had traveled, they would have recognized that in these diverse countries people treat our European names as equally Barbaric [...si ces Auteurs Dogmatiques eussent voyagé, ils eussent reconnu que dans ces divers païs on traite pareillement de Barbares nos noms Européens...]' (Adanson 1966, p. clxxiii).

Why the critique fails: what indigenous names actually do

- ❑ Many names not based on *use*
- ❑ Folk taxonomies not based on *utility* (Atran, 1983 and 1990);
- ❑ Names based on various plant features, e.g. names for ginseng based on *appearance*:
 - 人參 (*ren shen*, man-root)—Chinese;
 - human thighs—Iroquois.
- ❑ Occult character of plant names:
 - Medical use of plant a professional secret of shamans, and traditional healers, e.g. Delaware Indians' medicine lodge;
 - This point has been passed over in the literature.

What Chinese plant names do

- Chinese plant names refer not only to uses, but also to
 - shape and form,
 - size
 - colour
 - aroma
 - taste
 - special characteristics
 - habitat, geographical origin
 - climatic property
 - sex
 - famous people:
- 'there was an exact parallelism between East and West in the choice and construction of plant names...every one of the categories into which the Chinese phytonyms were divided has its counterpart among the Western ones' (Needham, p. 165).

Patronymics

- 'Generic names that have been formed to perpetuate the memory of a botanist who has done excellent service should be religiously preserved' (Linnaeus, *Phil. Bot.* 2003 [1751], p. 185);
- '...a naming *system* abstract in relation to the properties of plants, but concrete in relation to the history of botany in Europe' (emph. added; Schiebinger 2004, p. 201);
- 'Chinese names were also derived from the names of people in a way analogous to that which gave us *Fuchsia* or *Sigesbeckia*' (Needham, p. 159).
 - Needham calls this 'surprising' (p. 159).

Needham on patronymics

- ❑ patronymics 'are indeed much more common in Latin binomials than they are in the Chinese nomenclature' (Needham, p. 167);
- ❑ He does not provide statistics to support this claim;
- ❑ Actually, only 10% of names bestowed on Chinese plants by Linnaeus and son were patronymics (13 out of 131)!
- ❑ Hence, a minority practice in respect to Chinese plants named by Linnaeus and Linnaeus filius.

Chinese patronymics

- Li Shizhen (1518-1593), *Bencao gangmu* (Outline of roots and herbs, 本草綱目 [1596]):
 - *Solidago Virga-aurea* Auct. (Golden rod, 劉寄奴草)
 - named for an emperor
 - *Eucommia ulmoides* Oliv. (Rubber tree, 杜仲)
 - named for a 'semi-legendary Taoist',
 - *Heterosmilax japonica* Kunth (China root, 草禹餘糧):
 - named for a 'legendary culture-hero';
 - *Paeonia moutan* Sims (Tree-peony, 姚黃)
 - named for a 'family of gardeners'.
 - Needham, p. 155.

Banishment of



certain categories of names

Linnaeus's rules for naming

- ❑ 'No sane person introduces primitive generic names.
- ❑ All barbarous names are regarded by us as primitive, since they are from languages not understood by the learned.
- ❑ [So are] doubtful appellations of plants, when it is hard to decide what language they are derived from'.
- ❑ 'Generic names that do not have a root derived from Greek or Latin are to be rejected' (*Phil. Bot.*, p. 172)

Banishment of vernacular names?

- ❑ Latin names are for communication among *botanists*;
- ❑ Linnaeus *never* advocated the abolition of indigenous or vernacular names:
 - 'Let each nation use its own language, only let Botanists come to an agreement among themselves...';
 - 'I do not object to any nation retaining its own *vernacular names* for plants; what I do earnestly desire is that all learned Botanists should agree over the Latin names; since they have not done so, I foresee barbarism knocking at our gates' (emph. added; *Crit. Bot.*, pp. 37, 38).

Chinese botanical nomenclature 'unscientific'?

- ❑ 'The idea often prevalent that traditional Chinese botanical nomenclature was in some sense "unscientific" is clearly connected with the prejudice in the European, and now in the modern, mind, that nothing can be scientifically identifiable unless it bears a Latin name.
- ❑ But the fission of the learned from the popular plant nomenclature occurred remarkably late in Europe. According to Greene, the distinction between Latin names and European vernacular names is hardly found before the time of Otto Brunfels...' (Needham, p. 144).

Did Linnaeus consider the Chinese language 'unscientific'?

- ❑ There is no evidence that Linnaeus took this view of the Chinese language;
- ❑ It simply fell outside Latin and Greek, and for him was therefore 'barbarous';
- ❑ Linnaeus knew only Swedish and Latin;
- ❑ Even his geographical knowledge of Asia was limited and sometimes outright wrong (next slide);
- ❑ However, he did not stick to his naming rules, admitting names from Taino (Caribbean) and Malayalam (South Asia)!

Was Linnaeus anti-Chinese (a Sinophobe) and/or an imperialist?

- Not a Sinophobe, praised China
 - Influence of physiocrats, e.g. Mirabeau
 - Sinophile Swedish aristocrat, Carl Fredrik Scheffer (1715-1786)
- L. dispatched Pehr Osbeck and Olaf Torèn to collect Chinese plants
 - But confused many of their 'habitats' as 'in India'
- An autarkic cameralist; favored inward-looking imperialism:
 - Import substitution
 - Colonization of Lapland (Müller-Wille, Koerner)
- Naming system transcended cultures;
- Although it did serve colonial botany very well.

Linnaean Geography

- 'Linnaeus the father is generally very careless in his statements regarding the native countries of exotic plants. He seems to have had a very confused idea with respect to the geographical position of China, for he identifies it not unfrequently [sic] with India....Many of Osbeck's Chinese plants appear in the *Species Plantarum* as plants collected by Osbeck in India. But... Osbeck never visited India. Linnaeus even does not distinguish between India *orientalis* and India *occidentalis*. Linnaeus, in describing new plants he had received from foreign countries deems it generally superfluous to notice the names of the collectors' (Bretschneider 1898, p. 64).

Swedish Tea:

A bio-geographical mistake?

- Linnaeus believed that tea grows as far north as Beijing, and that he could cultivate it in Uppsala, Sweden;
- He had a plant brought from China in 1763,
 - 'It has been an object of wonder that the tea plant has not been introduced into Europe ... and we must look for the cause of our want of success in the plant itself. This has been overcome by the most consummate Botanist of his age, and we may now promise ourselves, that the Tea plant will be in a little time as common in Europe as the Syringa, and native of the same country [China]' ('*Usus Historiæ Naturalis*' (1769).
 - Despite his efforts, tea has never been naturalised in Europe;
- By 1765 the one remaining tea plant was nearly dead;
- Linnaeus's climatological assumptions were simply incorrect:
 - '...tea is not grown at Peking. The extreme line of its cultivation does not go farther north than the 31o degree of lat.', e.g. Shanghai (Bretschneider, p. 64).

Multiple indigenous names: what to do?

- 'It might have been difficult to decide, in the case of a plant growing in six different countries, which of the six different names should be adopted as official. But there was not even the will to consider the problem' (Needham et al., p. 168, n. (d)).
- '...doubtless some figure like Linnaeus would have arisen to insist on a limitation in the number of characters used' (Needham et al., p. 167).

Why generic names should not be based on uses (“properties”) of plants

- ‘[t]he use of a plant supplies the botanist with a worthless distinguishing character’;
- ‘...one and the same plant may often supply the user uses differing according to the various desires of those that make use of them’,
- ‘...one and the same drug often has effects varying with the disease, the patient, and the time’;
 - Effects on different species vary: bitter almond is fatal to dogs, horses, and parrots, yet not to man;
- plant use differs by region:
 - ‘...a number of plants are officinal in one region, but not in another. It is not fitting that the Botanist should visit the Pharmacists in order to learn about plants from them, but rather is it necessary that the Pharmacist should be instructed by the Botanist’ (*Crit. Bot.* 1938 [1737], pp. 146-7).

Cross-cultural naming of genera in which Chinese plants are found

- *Urena* (from Malayalam—Ooren, Uren; Reede, *Hort. Mal.*, vol. 10, p. 7, via Dillenius, *Hortus Elthamensis*, 1732)
- *Basella* (from *Hort. Mal.*, vol. 7, p. 45)
- *Annona* (from Taino, pre-Columbian Caribbean language)
- *Sapindus* (= *Koelreuteria*): Latin for native-American use as soap
 - *Mat. Med.* cites its use for 'chlorosis' (greenish skin caused by anemia)
- *Panax*: Greek for 'cure-all', Asian and Western view
 - *Mat. Med.* cites its use for fatigue ('Debilitas')
- *Thea* (*Camellia sinensis*) (山茶): closely follows original Chinese
 - *Mat. Med.* cites its use for 'Calculus' (stones).

Names adopted from Malayalam

- H. A. Rheede tot Drakenstein (1636-1691), *Hortus indicus malabaricus*, 12 vols. (Amsterdam, 1678-1703)
 - a massive, unprecedented collaborative work among Indian and European medical and botanical experts;
- *Urena* (*HM*, vol. 10, pp. 3-4, via Dillenius, *Hortus Elthamensis*, [London, 1732])
- *Basella* (*HM*, vol. 7, p. 45; *Basella rubra* L. 紅落葵)
- Both have medicinal uses in India, yet neither entry in *SP* carries a reference to *Mat. med.*
- Linnaeus may not have had direct access to *HM* until he was preparing the 2nd ed. of *SP* (Manilal 2003, p. 6);
- Hence he may therefore have been unaware of the medicinal uses of these plants when composing *Mat. Med.*

K.S. Manilal on the *Hortus Malabaricus*

- ❑ Leading Indian botanist
- ❑ Studied *HM* for thirty years;
 - English trans. (2003)
- ❑ Pays tribute to L.'s extensive use of Malayalam names in *Species plantarum*:
 - 'Carl Linnaeus and *Hortus Malabaricus*: A 250th Anniversary Tribute to *Species Plantarum*', *Rheedea* 13, pp. 3-18.
- ❑ 258 Malayalam names in *SP* for naming 255 species in 149 genera;
- ❑ A further 95 Malayalam names in subsequent works.

Urena procumbens L. (梵天花)
(Linn. Herb., London, no. 873.4)



Latin names



based on indigenous uses

Sapindus chinensis L. (= *Koelreuteria paniculata*; 藥木)

(Linn. Herb., London, no. 514.5)



Taino name

Pre-Columbian language of the
Caribbean (present-day Haiti,
Puerto Rico, Dominican
Republic, Cuba)

Annona hexapetala L. fil. (鷹爪花根)
(Linn. Herb., London, no. 708.9)



Panax (P. ginseng, 人參) in Linnaeus,
Materia medica, liber I, de plantis (1749)

PANAX.

quinquefoli- I, PANAX foliis ternis quinatis. *Gron. virg.* 147. *Mat.*
um. *med.* 116.
Aureliana canadensis. *Lafit. gins.* 51. t. 1. *Catesb. car.*
3. p. 16. t. 16.

Ara-

Why botanical Latin has stood the test of time

- For the very reasons stated by Needham:
 - Differentiation b/w Latin and vernacular in early-modern Europe
 - Latin becomes a 'dead' language;
 - Hence uncontested, apolitical.
- As '[t]he property of no one nation or linguistic group, Latin has, in consequence of its neutrality, become world-wide' (Stearn 1992, p. 9).

Other perspectives



Linnaeus, imperialism and
the Other

Müller-Wille, 'Walnuts in Hudson Bay' (2005)

- '...binomial nomenclature was...designed to operate in, or rather, to mediate between different cultures rather than to serve the interests of a particular one';
- 'Rather than instituting incommensurability between metropolitan and peripheral frameworks, science *makes* knowledge frameworks commensurate through symbolic representations' (emph. original; p. 48).

Kapil Raj on European knowledge production in/with early-modern India

- ❑ Europeans were 'making knowledge through negotiations with South Asian groups' (Raj 2005, p. 269);
- ❑ Europeans and indigenes created working relationships in the 'contact zone';
- ❑ Europeans reconfigured local knowledge, placed it on the knowledge market;
- ❑ knowledge in early-modern S. Asia a 'prerogative of well-defined, discrete groups' e.g. healers, elites;
- ❑ My point: Linnaeus participates in this process by applying *HM* names to Chinese plants.

Conclusion

- ❑ Linnaeus father and son were more open to cross-cultural nomenclature than has been alleged;
- ❑ their synonymies and compilations of *materia medica* offer a road map to many indigenous usages and names;
- ❑ the rules stated in Linnaeus's early work, *Critica botanica*, should therefore not be taken as a definitive guide to their actual naming *practices*, which bear further investigation.