

Typification of *Phyllanthus emblica* Linnaeus

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Abstract

Linnaean Name typification project was taken up by Charlie E. Jarvis (2009). After that approximately 66 Linnaean names published in the *Species Plantarum* (1753), which were also found in Maharashtra (Almeida 2009), are yet to be typified.

Phyllanthus emblica Linnaeus is a medicinal plant originated in Eastern Asia. It is believed to be native to tropical South-East Asia, specifically of the parts of Central and Southern India. No Type has been designated for *Phyllanthus emblica* Linnaeus. For the purpose of present paper, the authors has designated a Lectotype for this name.

Key words: Typification, Lectotype, *Phyllanthus emblica*

Phyllanthus emblica Linnaeus (commonly known as ‘Amlaki’, ‘Aonla’, ‘Amla’, ‘Embelic Myrobalan’, ‘Indian gooseberry’) is a monoecious, small to medium sized deciduous tree, 15 – 20 m high with thin light grey bark exfoliating in small thin irregular flakes (Almeida 2009).

The characteristic features which help in identification of this species are:

- I. Leaves simple, sessile, close-set along the branchlets, light green having the appearance of pinnate leaves
- II. Flowers greenish yellow, in axillary fascicles, unisexual
- III. Males numerous on short slender pedicels
- IV. Females few, sessile, ovary 3-celled
- V. Fruits globose, fleshy, pale yellow with six obscure vertical furrows enclosing six trigonous seeds in three 2-seeded crustaceous cocci, facing downwards.

The flowering time is around March – May whereas the fruit are ripening during September to November.

Aonla (*Phyllanthus emblica* Linnaeus) originated in Eastern Asia. It is believed to be native to tropical South- East Asia, specifically of the parts of Central and Southern India (Firminger 1947). *Phyllanthus emblica* Linnaeus (wild and its cultivars) is distributed over large area ranging from Nepal, Pakistan, throughout India and Sri Lanka, throughout South-East Asia, West Malaysia to southern China. This species is widely cultivated also in other tropical countries. In India, it is grown commercially in Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Hariyana, Punjab and West Bengal (Morton 1987).

The accepted name for the species is *Phyllanthus emblica* Linnaeus, Sp. Pl. 2: 982. 1753 [Nasir & Ali, Flora of Pakistan, No. 172. 35. 1986; Dassanayake & Clayton, A Revised handbook to the Flora of Ceylon 11: 219. 1997]

The phrase name of *Phyllanthus emblica* in *Species Plantarum* (1753) of Linnaeus is *Phyllanthus emblica* states “*Follis pinnatis floriferis, caule arboreo, fructo baccato.*”

The elements involved in the protologue of *Phyllanthus emblica* Linnaeus (Sp. Pl. 2: 982. 1753) are:

1. ***Phyllanthus emblica* Linnaeus, Fl. Zeyl 5: 85, p. 158. 1747; Sp. Pl. 2: 982. 1753**
2. ***Myrobalanus emblica* C. Bauhin, Pin. 441. 1671**
3. ***Nelli – Camarum* Rheede, Malabaricus 1, p. 69, t. 38. 1678**
4. ***Nellika* Zan. Istoria Bot. 154. t. 61. 1675.**

According to Jarvis in “Order out of Chaos (740. 2007), the known original elements are Herb. Hermann 5: 85, p. 158, No. 333 (BM); Herb. Burser XXIII.47 (UPS); icon in Zanoni, Istoria Bot. 154, t. 61. 1675; [icon] in Rheede, Malabaricus 1, p. 69, t. 38. 1678 .

The application of a name is determined by means of its nomenclatural type. No type has been designated for the name. To protect the current usage of this name, designation of its type is necessary.

The analyses of the original elements mentioned above are as follows:

There is one image of *Phyllanthus emblica* Linnaeus found in Hermann Herbarium (5: 85, p. 158, No. 333) which is later on identified as *Phyllanthus distichus* Mueller Argoviensis by Trimen (1887). *Phyllanthus distichus* (Linnaeus) Mueller Argoviensis is an illegitimate name [The accepted name for which is *Phyllanthus acidus* (Linnaeus) Skeels, Bull. Bur. Pl. Industr. U.S.D.A. 148: 17 (1909)].

FZ Number: 333

FZ Page: 158

Volume/Page: 5: 85

Linnaean Name: *Phyllanthus emblica*

Family: Euphorbiaceae

Current Name: *Phyllanthus emblica* Linnaeus

Determination1: *Phyllanthus distichus* Mueller Argoviensis

Det. by: Trimen, 1887

Comments: Barcode: BM000594867

In *Phyllanthus acidus* (Linnaeus) Skeels [Bull. Bur. Pl. Industr. U.S.D.A. 148: 17 1909], the fruits borne in clusters, very shortly pedicellate and not solitary. The image in Hermann Herbarium (Fig. 1) has single fruit at each node with a distinct pedicel.

The above mentioned image (BM000594867) does not represent *Phyllanthus acidus* (Linnaeus) Skeels, Rather, its fruit closely resembles *Cleistanthes collinus* (Linnaeus) Bentham ex Hooker f. (*Fl. Brit. India* 5: 274. 1887.) but, its leaves do not resemble the later (in *C. collinus*, the apex of lamina is more rounded than acute).



Fig. 1. FZ Number: 333 (BM000594867)

Hence, according to the present authors, the image in the Hermann Herbarium at BM is a combination of 2 or more species.

Though it is mentioned by Jarvis that Herb. Herman 5. 85, No. 333 (BM000594867) is one of the original elements of *Phyllanthus emblica* Linnaeus, but now it cannot be considered for the typification of *Phyllanthus emblica* Linnaeus.

The name, *Phyllanthus emblica* Linnaeus has to be excluded from the said element of Hermann Herbarium and typified on the basis of a different element.

Many of Bauhin's collections are preserved in University of Basel Herbarium (BAS) in Switzerland. There is no specimen of *Myrobalani emblica* Bauhin which can be considered for this typification.

In the Burser Herbarium (UPS), there is only one specimen, i.e., voucher no. UPS-BURSER 23: 47 (Fig. 2). The specimen consists of pharmaceutical material which is of little

usage for typification. There is no precise collecting date given, but the material was collected between 1600 and 1625.



Fig. 2. Digital image of UPS-BURSER 23: 47

G. L. Webster mentioned that Rheede's plate is one of the possible choices for the type but, he has not designated it. Rather he was unsure of any choice for typification (Webster, I. *Arnold Arbor.* 38: 78. 1957) because of great variation found in the morphology of fruits and flowers. According to the present study, this variation in morphology of *Phyllanthus emblica* Linnaeus is found in its cultivars and not in its wild form.

Radcliff & Smith (in *Kew Bull.* 41: 35. 1986) designated a sterile specimen cultivated in Uppsala in *Herb. Linn.*, No. 1105/11 (LINN) as Holotype (Fig. 3 A).

Linnaean Name:	<i>Phyllanthus emblica</i> Linnaeus
Reference:	<i>Species Plantarum</i> 2: 982 (1753)
Provenance:	"Habitat in India."
Type:	Type not designated.
Current Name:	<i>Phyllanthus emblica</i> L.
Current Family:	Euphorbiaceae
Comments:	Radcliffe-Smith (in <i>Kew Bull.</i> 41: 35. 1986) indicated 1105.11 (LINN) as holotype, but this collection lacks the relevant <i>Species Plantarum</i> number (i.e. "6") and was a post-1753 addition to the herbarium, and is not original material for the name.
Record last updated:	10/07/2006

Genus:	<i>Phyllanthus</i>
Genus number:	1105
Sheet number:	11
Linnaeus script:	HU [Horto Upsaliensis] [on verso:] Folia pinnata argentis quotidaeum extremilate pennulis
Geography:	HU [Horto Upsaliensis]
Exherb:	Linnaeus, Carl
Collection history:	Linnaeus, C. >
Family:	Euphorbiaceae
Locality:	Cultivated < Sweden > Uppsala
Country:	Cultivated



Fig. 3: LINN 1105.11 *Phyllanthus* sp. (Herb Linn)

In our opinion, this cannot be considered as holotype because, it was never designated by Linnaeus (the original author) as type and this is not the only element involved in naming of *Phyllanthus emblica* Linnaeus.

As far as the typification is concerned, Herb. Linn., No. 1105/11 (LINN) is not the correct material. Linnaeus had never identified it as *Phyllanthus emblica*, he just identified it as *Phyllanthus* sp. Linnaean annotation on back side (verso) of the herbarium sheet is “*Folia pinnata argentis quotidaeum extremilate pennulis*”. It is different from his original protologue “*Follis pinnatis floriferis, caule arboreo, fructu baccato.*” (Fig. 3 B)

The image (Fig. 4) in Zanoni Istoria (154. 1675) does not totally agree (in terms of the morphology of leaves) with the Linnaean protologue of *Phyllanthus emblica*. Hence, it can not be considered for the typification of *Phyllanthus emblica* L.

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