

STUDIES ON FLORISTIC DIVERSITY & ETHNOBOTANICAL STUDIES IN PONNUTHU HILLS

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Abstract: The present work was carried out in Ponnuthu hills, Coimbatore district, TamilNadu. Geographically the place lies between 11°5'21"N latitudes & 76°53'6"E longitudes. About 64 plant species belonging to various families were collected. Plants were enumerated with habit botanical, family & local names. In the current investigation, there are 32 Herbs, 24 Shrubs, 3 Climbers, 4 Trees and RET species were noted. The collected plants were preserved in the form of herbarium for further reference.

Index terms: Ponnuthuhills, Periyanaikenpalayam forest range, Floristic diversity, Ethnobotanical study, Herbarium, RET Species.

I INTRODUCTION

Plant Taxonomy is a science that deals with naming, describing and classification of plants. Classification is based on behavioral, genetic and biochemical variations. Characterization, identification and classification are the processes of taxonomy. Taxonomy knowledge is very important to the branches of life science like Morphology, Ecology, Genetics, Palynology, Anatomy, Cytology, Paleobotany etc. The country represents about 2.4 percent of the world's total landmass, it harbours a total of 47,513 plant species (Singh & Dash, 2014) out of about 0.4 million hitherto known in the world, representing as much as 11.4 percent of world flora. About 28 percent of plants that occur in India are endemic. They are distributed in different Groups, Angiosperms-2991 genera & 251 families (Karthikeyan 2009), Gymnosperms-15 genera & 8 families (Singh & Mudgal, 1997), Pteridophytes-204 genera (Ghosh & Ghosh, 1997), Algae-666 genera, Bryophytes-2800, Lichens-248, Fungi-14,500 species & 2300 genera in India. About 28 percent of plants that occur in India are endemic. Though this data are huge, there are few places which are yet to be explored. A taxonomist is always aware of the scientific part of the plants and they can able to describe the plant in technical way. Although the thought of the Elders and healers knew more about the medicinal plants, their distribution, the local ethnomedicinal practices and knowledge transfer patterns are highly appreciated. Hence the present investigation has the main objectives to record the endemic plants with especial reference to RET species of this unexplored area. This study also adds a note on the local names of the plants which are used by the plant healers and ethnic people. In this context, the Ponnuthuhills, Periyanaikenpalayam forest range was selected as the study area. According to the literature survey there is no taxonomical evidence reported in this area. The present study concentrates on the species diversity and also the conserve the medicinal & Rare, endangered and Threatened (RET) plants.

II. MATERIALS AND METHOD:

2.1. Study area

The study area Ponnuthu hills (Figure 2.1) located nearly 15 km away from Coimbatore. The study area is located in the Western Ghats. Geographically Ponnuthu hills between 11°5'21"N latitude and 76°53'6"E longitudes. This hill is very famous because of the Ponnuthu Mariamman Temple. The tribal and priest explained that the main deity is Goddess Mariamman, is embedded in the cave where no water can be poured for holy showering. To overcome this difficulty the nature has an answer. There is a waterfall which flows throughout the year. Because of this, the deity gets the holy shower always. The name of the hill can be divided into two words in regional language as "Ponn" meaning "Gold" and "Uthu" meaning as "spring". As the meaning emphasis the waterfall has high medicinal value and can cure many ailments. In the present investigation there are about 64 plant sps were reported and this also adds a strong proof for the medicinal value of the waterfall and hill.



Figuer 2.1: Ponnuthu hills

2.2. Field study:

Field survey was made to explore the floristic diversity and Ethnobotanical study in Ponnuthu hills. The present study was done between the periods from July 2018 to April 2019. During the field visit, the various plants were identified on the basis of spot identification. More information was collected from the tribal peoples of Ponnuthu hills. Frequently visited and collect the details of the plants. The Botanical identities of the plants have been confirmed with The Flora of Presidency of Madras (Gambel 1967) ,Coimbatore(Chandrabose et.al 1988).They were later verified at Botanical Survey of India ,Southern circle, Coimbatore,India.

III. RESULT AND DISCUSSION

Ponnuthuhill is of rich floristic wealth. There are about 64 plant species belong to plants of Angiosperms and pteridophytes coming under 58 Genus and 32 families were recorded and listed out in the Table 3.1, with Botanical, family, habit and local names. Ecological status of the plants were referred from the IUCN main website.

Table 3.1: List of plants present in study area

| S.N o. | BINOMIAL NAME | FAMILY | HABIT | ECOLOGICAL STATUS | COMMON NAME English / Tamil |
|--------|--|-----------------|---------------------|-------------------|---|
| 1 | <i>Abutilon persicum</i> Burm.f. | Malvaceae | Shrub | NE | Persian mallow |
| 2 | <i>Acalypha fruticose</i> Forssk. | Euphorbiaceae | Shrub | NE | Birch leaved cat tail /Chinni. |
| 3 | <i>Acanthospermumhispidum</i> DC. | Asteraceae | Herb | NE | Goats head / Mulluchedi. |
| 4 | <i>Actinopterisradiata</i> | Pteridaceae | Herb | NE | Peacocktail fern |
| 5 | <i>Adiantumlunulatum</i> Burm.f. | Pteridaceae | Herb | NE | Walking maidenhair fern / or black maidenhair |
| 6 | <i>Albiziaamara</i> (ROXB).boiv | Mimosaceae | Tree | NE | Oil cake tree Bitter Albizia / Usilai |
| 7 | <i>Anisomelesmalabarica</i> (L.) R.Br. ex Sims | Lamiaceae | Herb | NE | Malabar catmint/ Peymarutti |
| 8 | <i>Bambusaarundinacea</i> Willd. | Poaceae | Tree | NE | Thorny bamboo / Periyamungil |
| 9 | <i>Barleria acuminata</i> Nees. | Acanthaceae | Shrub | NE | Long flower Barleria / Vellaikurunji. |
| 10 | <i>Barleriaprionitis</i> L. | Acanthaceae | Shrub | NE | Porcupine flower / Cem-mulli |
| 11 | <i>Bidenspilosa</i> L. | Asteraceae | Herb | NE | Beggars tick |
| 12 | <i>Blepharismaderaspatensis</i> (L.) Roth. | Acanthaceae | Herb | NE | Creeping Blepharis |
| 13 | <i>Bulbostylisbarbata</i> (Rottb.) C.B.Clarke | Cyperaceae | Herb | LC | Watergrass |
| 14 | <i>Calophylluminophyllum</i> L. | Clusiaceae | Tree | LC | Beauty Leaf / Punnai. |
| 15 | <i>Cardiospermumcanescens</i> WALL | Sapindaceae | Climbing herb | NE | Balloon plant |
| 16 | <i>Cassia occidentalis</i> L. | Caesalpiniaceae | Shrub | NE | Coffee senna /Payaverai. |
| 17 | <i>Cleome monophylla</i> L. | Cleomaceae | Herb | NE | Spindle pod |
| 18 | <i>Commenlinabenghalensis</i> L. | Commelinaceae | Herb | NE | Bengal dayflower /kanangkozai |
| 19 | <i>Crotolaria obovate</i> (G.Don)Polhill | Fabaceae | Shrub | NE | Smooth rattle box |
| 20 | <i>Cyperus triceps</i> (Rottb.)Endl | Cyperaceae | Herb | NE | |
| 21 | <i>Dichrostachyscinerea</i> (L.) Wight&Arn | Fabaceae | Shrub | LC | Sickle Bush / Bell mimosa |
| 22 | <i>Ehretiaovalifolia</i> Wight. | Boraginaceae | Trees | NE | Karukamaram |
| 23 | <i>Euphorbia antiquorum</i> L. | Euphorbiaceae | Shrub | NE | Square milk edge / Chaturakalli |
| 24 | <i>Evolvulusalsinoides</i> Linn. | Convolvulaceae | Herb | NE | Dwarf Morning Glory / Vishnukranthi |
| 25 | <i>Flueggeavirosa</i> (Roxb.exWilld.) Voigt | Phyllanthaceae | Shrub | NE | White berry bush |
| 26 | <i>Grewiahirsuta</i> Vahl | Tiliaceae | Shrub or Small tree | NE | Bran plant |
| 27 | <i>Homonoiariparia</i> Lour. | Euphorbiaceae | Shrub | LC | Willow-Leaved Water Croton /Kattalari. |
| 28 | <i>Hugoniamystax</i> L | Linaceae | Climbing shrub | NE | Climbing flax / Mothirakanni |

| | | | | | |
|----|--|-----------------|------------------|----|---|
| 29 | <i>Jasminumpubescens</i> Willd | Oleaceae | Shrub | NE | Jasmine |
| 30 | <i>Kleinia grandiflora</i> (Wall ex. DC.) N.Rani | Asteraceae | Herb | NE | Large flower kleinia / Attukalchedi. |
| 31 | <i>Lasceamollis</i> CaV., | Asteraceae | Herb | NE | Silk leaf / American softhead |
| 32 | <i>Ludwigia peruviana</i> (L.) Hara | Onagraceae | Shrub | NE | Peruvian primrose bush |
| 33 | <i>Mimosa pudica</i> L. | Fabaceae | Herb | NE | Touch me not |
| 34 | <i>Mollugonudicaulis</i> Lam. | Molluginaceae | Herb | NE | Naked stem carpet weed |
| 35 | <i>Mollugopentaphylla</i> L. | Molluginaceae | Herb | NE | Seeragappoond / Turapoond |
| 36 | <i>Munduleasericea</i> Willd. | Fabaceae | Shrub or Tree | NE | Cork bush / Silver bush |
| 37 | <i>Notonia grandiflora</i> DC | Asteraceae | Herb | NE | Common fleshy rag – weed . |
| 38 | <i>Pavonia procumbens</i> (Wight & Arn.) Walp. | Malvaceae | Shrub | NE | Yellow Pavonia / Mukuku |
| 39 | <i>Pavonia zeylanica</i> (L.) Cav. | Malvaceae | Shrub | NE | Chirtamutti |
| 40 | <i>Pavonia odorata</i> Willd. | Malvaceae | Herb | NE | Fragrant swamp mallow / Avibattam |
| 41 | <i>Pedaliium murex</i> L. | Pedaliaceae | Herb | NE | Large Caltrops / Yanainerunjil |
| 42 | <i>Physalis minima</i> L. | Solanaceae | Herb | VU | Little gooseberry / Soddakkuthakkaali |
| 43 | <i>Plectranthus scutellarioides</i> (L.) R.Br | Lamiaceae | Herb | NE | Coleus |
| 44 | <i>Plumbago zeylanica</i> L. | Plumbaginaceae | Shrub | NE | White leadwort / chittiramoolam Karimai |
| 45 | <i>Polycarpha acorymbosa</i> (L.)LAM | Caryophyllaceae | Herb | NE | Oldmans cap |
| 46 | <i>Portulaca quadrifida</i> L. | Portulacaceae | Herb | NE | Chickenweed |
| 47 | <i>Portulaca tuberosa</i> ROXB. | Portulacaceae | Herb | NE | Jangli – gajar |
| 48 | <i>Premnatomentosa</i> Willd . | Lamiaceae | Tree | NE | Woolly-Leaved Fire-Brand Teak |
| 49 | <i>Pterolobium hexapetalum</i> (Roth) Santapau & Wagh | Fabaceae | Shrub | NE | White brasiletto climber/ Camp Siege |
| 50 | <i>Ravulfia tetraphylla</i> L. | Apocyanaceae | Shrub | NE | Wild snake root / Pampukaalaachchedi |
| 51 | <i>Salvia coccinea</i> Buc'hoz ex Etl. | Lamiaceae | Herb | NE | Blood sage / Cherry red sage |
| 52 | <i>Secamone emetic</i> R.Br. | Apocyanaceae | Shrub | NE | Emetic secamone /Ankaravalli |
| 53 | <i>Sida acuta</i> Burm .f. | Malvaceae | Herb | NE | Broom grass/ Broom weed |
| 54 | <i>Solanum pubescens</i> Willd. | Solanaceae | Shrub | NE | Thronless turkey berry |
| 55 | <i>Solanum surratense</i> Burm.f. | Solanaceae | Shrub | NE | Wild Eggplant / Yellow - Berried Nightshade. |
| 56 | <i>Solena amplexicaulis</i> Lam. | Cucurbitaceae | Climbing herb | NE | Creeping cucumber/ Pulivanci |
| 57 | <i>Spermacoce cymoides</i> Burm.f. | Rubiaceae | Herb | NE | |
| 58 | <i>Stachytarpheta jamaicensis</i> (L.) Vahl | Verbenaceae | Shrub | NE | Snakeweed / Braziltea. |
| 59 | <i>Stylosanthes fruticosa</i> (Retz.) Alston | Fabaceae | Herb | NE | shrubby pencilflower/African stylo |
| 60 | <i>Synedrella nodiflora</i> (L.) Gaertn | Asteraceae | Herb | NE | Cinderella weed / Pig grass |
| 61 | <i>Tarenna asiatica</i> (L.) | Rubiaceae | Shrub | NE | Tharani / Asiatic tarenna |
| 62 | <i>Tridax procumbens</i> L. | Asteraceae | Herb | NE | Mexican daisy / Seruppadithalazai |
| 63 | <i>Triumfetta pentandra</i> A.Rich | Tiliaceae | Herb | NE | Fivestamen Burrbark |
| 64 | <i>Vitex altissima</i> L.f | Lamiaceae | Tree | | Tall chaste tree/ Mayiladi |
| 65 | <i>Waltheria indica</i> L. | Malvaceae | Herb | NE | Uhaloa / Shenghalipoond. |

RET (NE = Not evaluated, DD = Data deficient, LC = Least concern, NT = Nearly threatened, VU = Vulnerable, EN = Endangered, CR = Critically endangered, EW = Extinct in the world, EX = Extinct.)

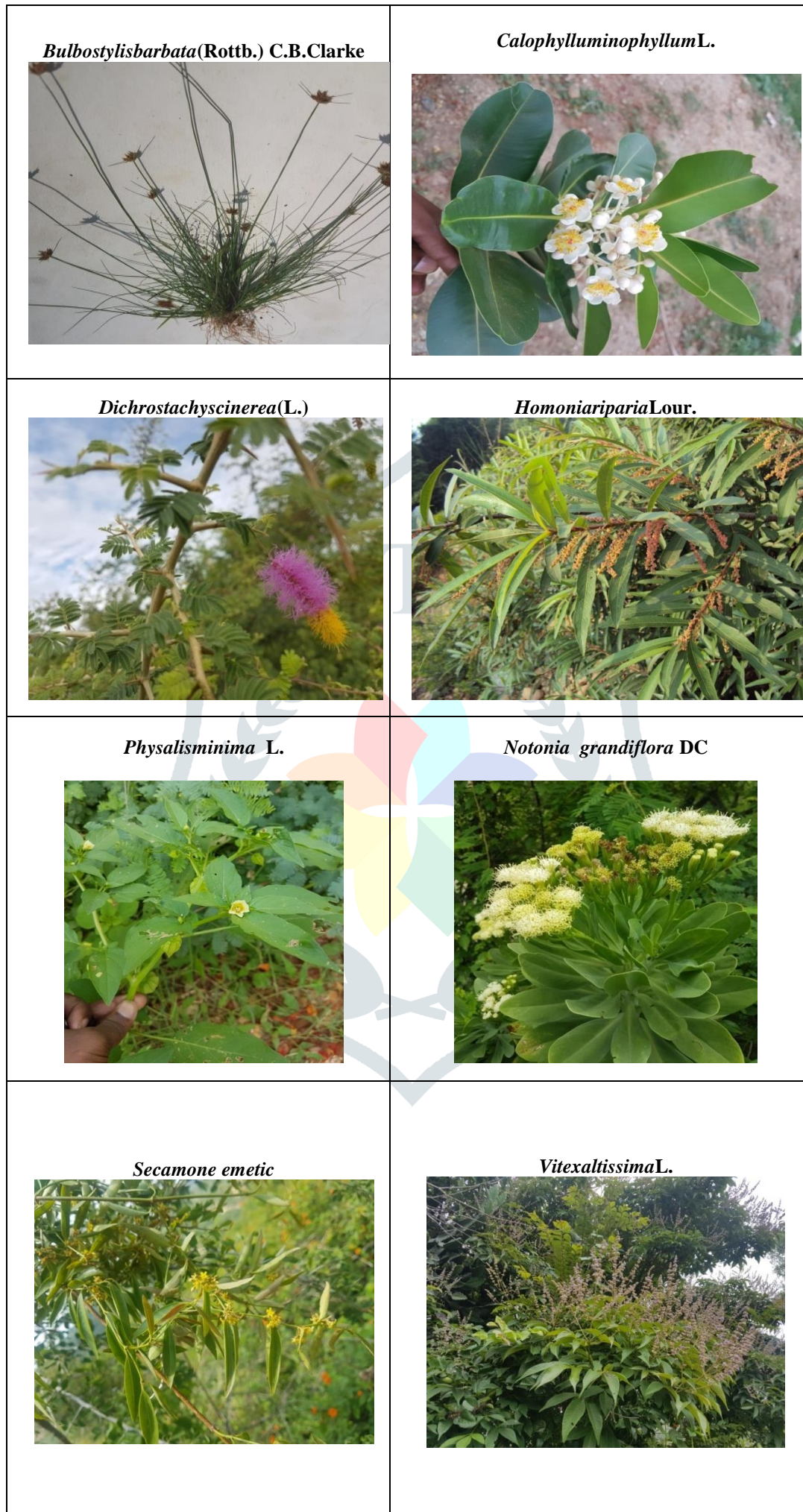


Fig. 3.1: Plants collected from Ponnuthu Hills

The plants which are reported in the study are considered to be rare, endemic, threatened & least concern based on their prevalence. As most of the plants are coming under Red data book, extra care was taken during the collection. Only small twig were collected and preserved in the form of herbarium for future investigation. According to the habit, they belong to 32 herbs, 24 shrubs, 3 climbers (herbaceous / lianes), 4 trees (Figure 3.3).

Hence the protection is very much necessary. In the Ponnuthu hills human activities like Gracing and cutting trees are prohibited. It is associated with large number of flora and fauna.

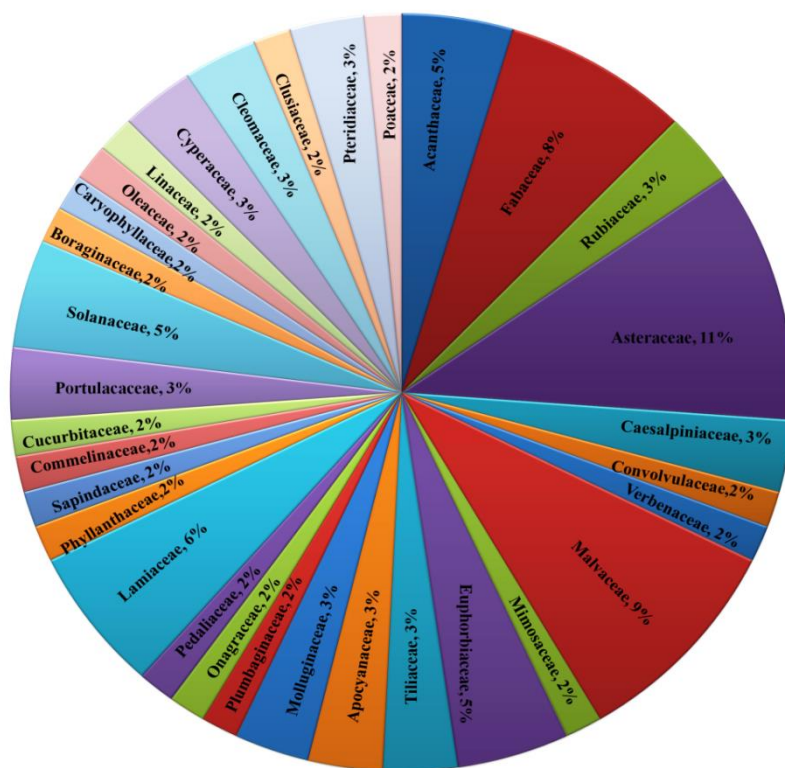


Figure 3.2: Families having maximum number of species present in the study area

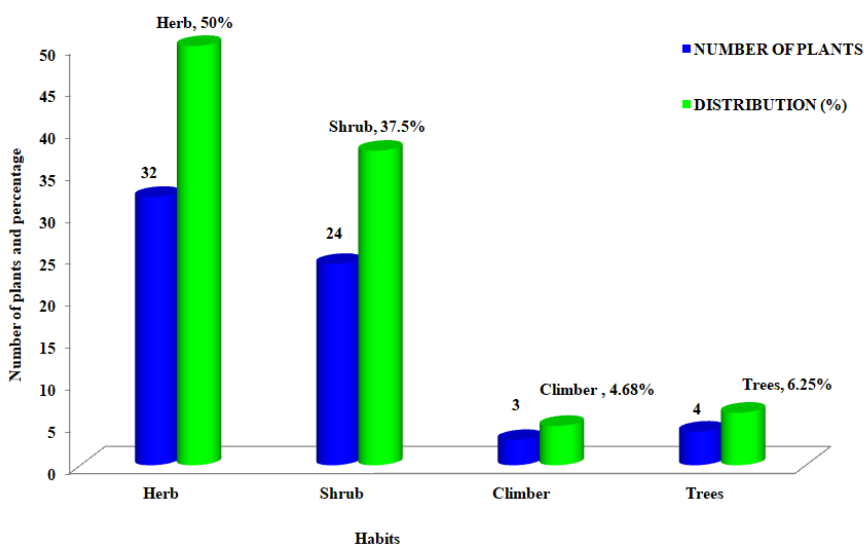


Figure 3.3: Percentage distribution of plant species in the study area

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